

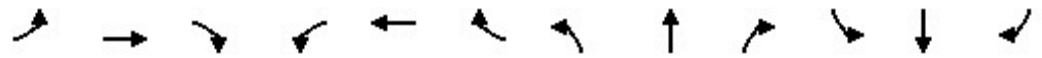
Appendices

Appendix A

Synchro Traffic Operations Reports: LOS and Vehicle Queuing Calculations

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	673	1	1	729	199	2	1	7	114	1	65
Future Volume (vph)	68	673	1	1	729	199	2	1	7	114	1	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.97			0.98			
Fr _t						0.850			0.850			0.850
Fl _t Protected	0.950			0.950				0.964			0.953	
Satd. Flow (prot)	1643	3521	0	1693	3386	1461	0	1832	1615	0	1811	1615
Fl _t Permitted	0.950			0.950				0.700			0.423	
Satd. Flow (perm)	1643	3521	0	1693	3386	1423	0	1330	1588	0	804	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						212			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	74	732	1	1	776	212	3	1	9	125	1	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	733	0	1	776	212	0	4	9	0	126	71
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	11.4	95.9		7.0	82.0	96.8		9.8	9.8		21.6	11.4
Actuated g/C Ratio	0.09	0.74		0.05	0.63	0.74		0.08	0.08		0.17	0.09
v/c Ratio	0.51	0.28		0.01	0.36	0.19		0.04	0.04		0.53	0.30
Control Delay	68.4	7.3		69.0	14.0	2.9		52.3	0.3		55.5	7.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	68.4	7.3		69.0	14.0	2.9		52.3	0.3		55.5	7.0
LOS	E	A		E	B	A		D	A		E	A
Approach Delay	12.9			11.7				16.3		38.1		
Approach LOS	B			B				B		D		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	14.8
Intersection LOS:	B
Intersection Capacity Utilization	58.9%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	74	733	1	776	212	4	9	126	71
v/c Ratio	0.51	0.28	0.01	0.36	0.19	0.04	0.04	0.53	0.30
Control Delay	68.4	7.3	69.0	14.0	2.9	52.3	0.3	55.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	7.3	69.0	14.0	2.9	52.3	0.3	55.5	7.0
Queue Length 50th (ft)	61	85	1	192	0	3	0	97	0
Queue Length 95th (ft)	109	196	m3	289	64	12	0	146	21
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2597	97	2135	1142	136	282	294	317
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	0.32	0.28	0.01	0.36	0.19	0.03	0.03	0.43	0.22

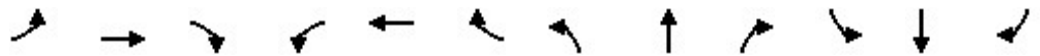
Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	673	1	1	729	199	2	1	7	114	1	65
Future Volume (vph)	68	673	1	1	729	199	2	1	7	114	1	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1643	3520		1693	3386	1428		1831	1581		1810	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.70	1.00		0.42	1.00
Satd. Flow (perm)	1643	3520		1693	3386	1428		1329	1581		804	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	74	732	1	1	776	212	3	1	9	125	1	71
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	9	0	0	65
Lane Group Flow (vph)	74	733	0	1	776	151	0	4	0	0	126	6
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	11.4	89.2		1.4	78.9	92.8		6.2	6.2		24.7	11.4
Effective Green, g (s)	11.4	89.2		1.4	78.9	92.8		6.2	6.2		24.7	11.4
Actuated g/C Ratio	0.09	0.69		0.01	0.61	0.71		0.05	0.05		0.19	0.09
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	144	2415		18	2055	1019		63	75		260	141
v/s Ratio Prot	c0.05	0.21		0.00	c0.23	0.02					c0.05	0.00
v/s Ratio Perm						0.09		0.00	0.00		c0.04	
v/c Ratio	0.51	0.30		0.06	0.38	0.15		0.06	0.01		0.48	0.04
Uniform Delay, d1	56.7	8.1		63.6	13.0	6.0		59.1	59.0		47.0	54.3
Progression Factor	1.00	1.00		1.19	1.04	2.26		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.3		1.3	0.5	0.2		0.4	0.0		1.7	0.1
Delay (s)	59.7	8.4		76.8	14.1	13.7		59.6	59.0		48.7	54.4
Level of Service	E	A		E	B	B		E	E		D	D
Approach Delay (s)		13.1			14.0			59.2			50.7	
Approach LOS		B			B			E			D	
Intersection Summary												
HCM 2000 Control Delay			17.6				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)		19.6			
Intersection Capacity Utilization			58.9%				ICU Level of Service		B			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	766	12	42	901	3	2
Future Volume (vph)	766	12	42	901	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.998				0.946	
Flt Protected			0.950		0.971	
Satd. Flow (prot)	3532	0	1796	3592	1711	0
Flt Permitted			0.950		0.971	
Satd. Flow (perm)	3532	0	1796	3592	1711	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	833	13	46	979	3	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	846	0	46	979	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	766	12	42	901	3	2
Future Volume (Veh/h)	766	12	42	901	3	2
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	833	13	46	979	3	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.92		0.94	0.92
vC, conflicting volume			846		1421	423
vC1, stage 1 conf vol					840	
vC2, stage 2 conf vol					582	
vCu, unblocked vol			664		1130	205
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			95		99	100
cM capacity (veh/h)			849		368	739
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	555	291	46	490	490	5
Volume Left	0	0	46	0	0	3
Volume Right	0	13	0	0	0	2
cSH	1700	1700	849	1700	1700	461
Volume to Capacity	0.33	0.17	0.05	0.29	0.29	0.01
Queue Length 95th (ft)	0	0	4	0	0	1
Control Delay (s)	0.0	0.0	9.5	0.0	0.0	12.9
Lane LOS	A			B		
Approach Delay (s)	0.0		0.4			12.9
Approach LOS				B		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			38.2%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	766	0	0	945	0	27
Future Volume (vph)	766	0	0	945	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	833	0	0	1027	0	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	833	0	0	1027	0	29
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	766	0	0	945	0	27
Future Volume (Veh/h)	766	0	0	945	0	27
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	833	0	0	1027	0	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.93	0.96	0.93
vC, conflicting volume				833	1346	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				674	1019	227
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	96
cM capacity (veh/h)				851	223	723
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	416	416	514	514	29	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	29	
cSH	1700	1700	1700	1700	723	
Volume to Capacity	0.24	0.24	0.30	0.30	0.04	
Queue Length 95th (ft)	0	0	0	0	3	
Control Delay (s)	0.0	0.0	0.0	0.0	10.2	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.2	
Approach LOS						B
Intersection Summary						
Average Delay				0.2		
Intersection Capacity Utilization				31.2%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	675	114	231	819	136	234
Future Volume (vph)	675	114	231	819	136	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						266
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	696	118	248	881	155	266
Shared Lane Traffic (%)						
Lane Group Flow (vph)	696	118	248	881	155	266
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

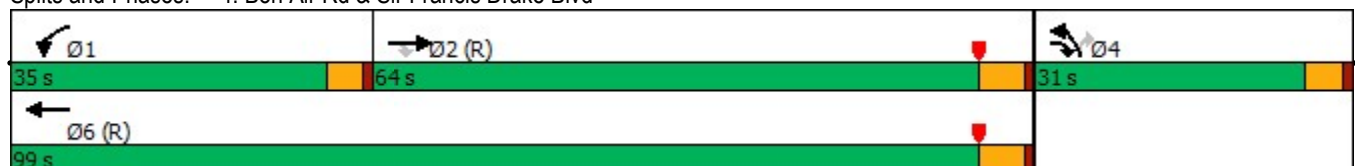


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	88.0	100.6	15.3	107.8	12.0	12.0
Actuated g/C Ratio	0.68	0.77	0.12	0.83	0.09	0.09
v/c Ratio	0.29	0.10	0.65	0.30	0.52	0.69
Control Delay	7.8	2.5	62.8	3.0	61.9	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	2.5	62.8	3.0	61.9	15.9
LOS	A	A	E	A	E	B
Approach Delay	7.1			16.1	32.9	
Approach LOS	A			B	C	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	16.0
Intersection LOS:	B
Intersection Capacity Utilization:	50.0%
ICU Level of Service:	A
Analysis Period (min):	15

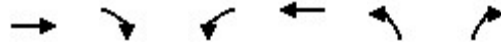
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	696	118	248	881	155	266
v/c Ratio	0.29	0.10	0.65	0.30	0.52	0.69
Control Delay	7.8	2.5	62.8	3.0	61.9	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	2.5	62.8	3.0	61.9	15.9
Queue Length 50th (ft)	107	10	104	67	65	0
Queue Length 95th (ft)	140	27	144	111	95	74
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2419	1394	759	2963	652	530
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.08	0.33	0.30	0.24	0.50

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	675	114	231	819	136	234
Future Volume (vph)	675	114	231	819	136	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1577	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1577	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	696	118	248	881	155	266
RTOR Reduction (vph)	0	0	0	0	0	241
Lane Group Flow (vph)	696	118	248	881	155	25
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	88.0	100.0	15.3	107.8	12.0	12.0
Effective Green, g (s)	88.0	100.0	15.3	107.8	12.0	12.0
Actuated g/C Ratio	0.68	0.77	0.12	0.83	0.09	0.09
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2419	1213	380	2963	298	145
v/s Ratio Prot	0.19	0.01	c0.08	c0.25	c0.05	
v/s Ratio Perm		0.07				0.02
v/c Ratio	0.29	0.10	0.65	0.30	0.52	0.17
Uniform Delay, d1	8.4	3.7	54.8	2.5	56.3	54.4
Progression Factor	0.82	0.80	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	4.0	0.3	1.6	0.6
Delay (s)	7.2	3.0	58.8	2.8	57.9	55.0
Level of Service	A	A	E	A	E	D
Approach Delay (s)	6.6			15.1	56.0	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	347	319	2
Future Volume (vph)	0	0	0	347	319	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr t					0.999	
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3536	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	377	347	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	377	349	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	12.9%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	4	7	337	316	4
Future Volume (vph)	12	4	7	337	316	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.968				0.998	
Flt Protected	0.963		0.950			
Satd. Flow (prot)	1736	0	1770	3539	3532	0
Flt Permitted	0.963		0.950			
Satd. Flow (perm)	1736	0	1770	3539	3532	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	4	8	366	343	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	8	366	347	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

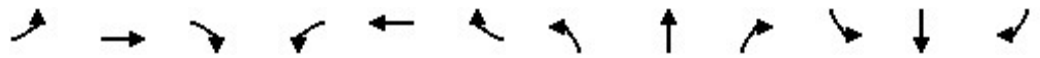


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	4	7	337	316	4
Future Volume (Veh/h)	12	4	7	337	316	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	4	8	366	343	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	544	174	347			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	544	174	347			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	99			
cM capacity (veh/h)	466	840	1209			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	17	8	183	183	229	118
Volume Left	13	8	0	0	0	0
Volume Right	4	0	0	0	0	4
cSH	521	1209	1700	1700	1700	1700
Volume to Capacity	0.03	0.01	0.11	0.11	0.13	0.07
Queue Length 95th (ft)	3	0	0	0	0	0
Control Delay (s)	12.1	8.0	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	12.1	0.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			19.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

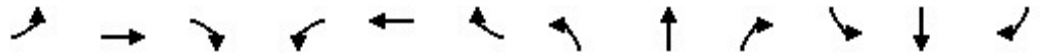


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	936	58	24	1026	120	126	35	25	78	11	33
Future Volume (vph)	54	936	58	24	1026	120	126	35	25	78	11	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.972		0.950	0.963	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1637	1615	1600	1622	1507
Flt Permitted	0.950			0.950			0.950	0.789		0.950	0.764	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1329	1529	1600	1287	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	57	985	61	25	1069	125	143	40	28	95	13	40
Shared Lane Traffic (%)							37%			43%		
Lane Group Flow (vph)	57	985	61	25	1069	125	90	93	28	54	54	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.2	66.6	66.6	8.1	63.2	63.2	16.9	16.9	33.8	8.9	7.3	29.8
Actuated g/C Ratio	0.07	0.51	0.51	0.06	0.49	0.49	0.13	0.13	0.26	0.07	0.06	0.23
v/c Ratio	0.48	0.53	0.07	0.26	0.62	0.16	0.43	0.44	0.06	0.50	0.59	0.10
Control Delay	72.0	24.5	0.2	64.7	28.4	2.8	61.6	61.6	0.2	73.8	84.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	24.5	0.2	64.7	28.4	2.8	61.6	61.6	0.2	73.8	84.2	0.5
LOS	E	C	A	E	C	A	E	E	A	E	F	A
Approach Delay	25.6			26.5			53.5			57.8		
Approach LOS	C			C			D			E		

Intersection Summary

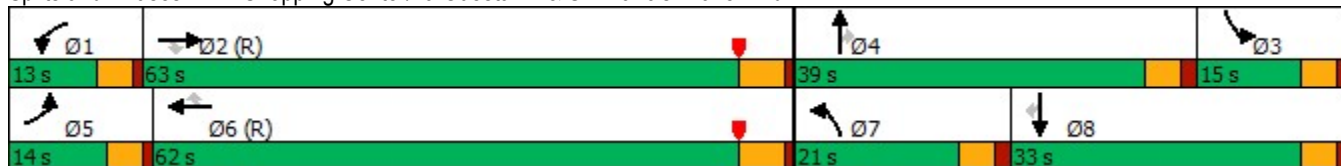
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	30.0
Intersection LOS:	C
Intersection Capacity Utilization:	64.0%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

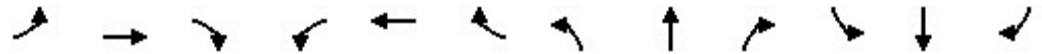
Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	985	61	25	1069	125	90	93	28	54	54	40
v/c Ratio	0.48	0.53	0.07	0.26	0.62	0.16	0.43	0.44	0.06	0.50	0.59	0.10
Control Delay	72.0	24.5	0.2	64.7	28.4	2.8	61.6	61.6	0.2	73.8	84.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	24.5	0.2	64.7	28.4	2.8	61.6	61.6	0.2	73.8	84.2	0.5
Queue Length 50th (ft)	47	321	0	20	368	0	77	81	0	47	47	0
Queue Length 95th (ft)	94	400	0	51	456	28	131	135	0	86	86	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	1849	871	104	1720	794	238	212	472	121	91	417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.53	0.07	0.24	0.62	0.16	0.38	0.44	0.06	0.45	0.59	0.10

Intersection Summary

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	936	58	24	1026	120	126	35	25	78	11	33
Future Volume (vph)	54	936	58	24	1026	120	126	35	25	78	11	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1638	1529	1600	1623	1477
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.79	1.00	0.95	0.76	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1329	1529	1600	1288	1477
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	57	985	61	25	1069	125	143	40	28	95	13	40
RTOR Reduction (vph)	0	0	31	0	0	66	0	0	21	0	0	33
Lane Group Flow (vph)	57	985	30	25	1069	59	90	93	7	54	54	7
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	7.4	63.8	63.8	4.9	61.3	61.3	16.9	33.8	33.8	7.3	24.2	24.2
Effective Green, g (s)	7.4	63.8	63.8	4.9	61.3	61.3	16.9	33.8	33.8	7.3	24.2	24.2
Actuated g/C Ratio	0.06	0.49	0.49	0.04	0.47	0.47	0.13	0.26	0.26	0.06	0.19	0.19
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	95	1771	768	60	1668	699	208	385	397	89	258	274
v/s Ratio Prot	c0.03	0.27		0.02	c0.30		c0.06	0.03		c0.03	0.01	
v/s Ratio Perm			0.02			0.04		c0.03	0.00		0.03	0.01
v/c Ratio	0.60	0.56	0.04	0.42	0.64	0.08	0.43	0.24	0.02	0.61	0.21	0.03
Uniform Delay, d1	59.9	23.2	17.2	61.2	26.0	18.9	52.1	38.0	35.8	59.9	44.8	43.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	1.3	0.1	1.7	1.9	0.2	0.5	0.1	0.0	7.8	0.1	0.0
Delay (s)	66.5	24.4	17.3	62.9	27.9	19.1	52.7	38.1	35.8	67.7	44.9	43.3
Level of Service	E	C	B	E	C	B	D	D	D	E	D	D
Approach Delay (s)		26.2			27.7			44.0			52.8	
Approach LOS		C			C			D			D	

Intersection Summary		
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.53	
Actuated Cycle Length (s)	130.0	Sum of lost time (s) 20.2
Intersection Capacity Utilization	64.0%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	744	1	1	779	209	2	1	7	136	1	65
Future Volume (vph)	68	744	1	1	779	209	2	1	7	136	1	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.97			0.98			
Fr _t						0.850			0.850			0.850
Fl _t Protected	0.950			0.950				0.964			0.953	
Satd. Flow (prot)	1643	3521	0	1693	3386	1461	0	1832	1615	0	1811	1615
Fl _t Permitted	0.950			0.950				0.699			0.439	
Satd. Flow (perm)	1643	3521	0	1693	3386	1423	0	1328	1588	0	834	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						222			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	74	809	1	1	829	222	3	1	9	149	1	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	810	0	1	829	222	0	4	9	0	150	71
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	11.4	93.8		7.0	79.8	96.1		10.4	10.4		23.7	11.4
Actuated g/C Ratio	0.09	0.72		0.05	0.61	0.74		0.08	0.08		0.18	0.09
v/c Ratio	0.51	0.32		0.01	0.40	0.20		0.04	0.04		0.57	0.30
Control Delay	68.4	8.2		69.0	14.2	2.0		51.3	0.3		55.3	7.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	68.4	8.2		69.0	14.2	2.0		51.3	0.3		55.3	7.0
LOS	E	A		E	B	A		D	A		E	A
Approach Delay	13.2			11.7				16.0		39.8		
Approach LOS	B			B				B		D		

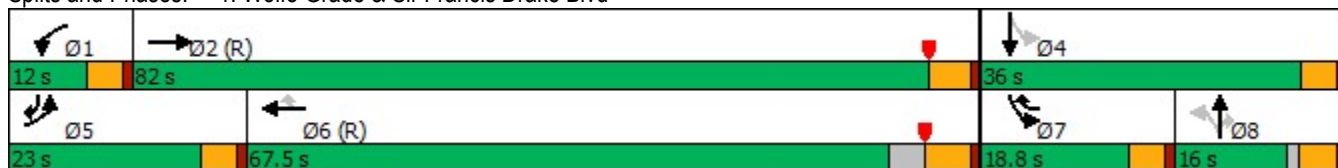
Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	15.2
Intersection LOS:	B
Intersection Capacity Utilization:	60.1%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	74	810	1	829	222	4	9	150	71
v/c Ratio	0.51	0.32	0.01	0.40	0.20	0.04	0.04	0.57	0.30
Control Delay	68.4	8.2	69.0	14.2	2.0	51.3	0.3	55.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	8.2	69.0	14.2	2.0	51.3	0.3	55.3	7.0
Queue Length 50th (ft)	61	108	0	193	10	3	0	114	0
Queue Length 95th (ft)	109	221	m2	321	20	12	0	170	21
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2539	97	2079	1135	143	290	309	317
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	0.32	0.32	0.01	0.40	0.20	0.03	0.03	0.49	0.22

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	744	1	1	779	209	2	1	7	136	1	65
Future Volume (vph)	68	744	1	1	779	209	2	1	7	136	1	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%			0%	
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1643	3520		1693	3386	1429		1831	1582		1810	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.70	1.00		0.44	1.00
Satd. Flow (perm)	1643	3520		1693	3386	1429		1328	1582		834	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	74	809	1	1	829	222	3	1	9	149	1	71
RTOR Reduction (vph)	0	0	0	0	0	65	0	0	9	0	0	65
Lane Group Flow (vph)	74	810	0	1	829	157	0	4	0	0	150	6
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	11.4	87.1		1.4	76.8	92.2		6.8	6.8		26.8	11.4
Effective Green, g (s)	11.4	87.1		1.4	76.8	92.2		6.8	6.8		26.8	11.4
Actuated g/C Ratio	0.09	0.67		0.01	0.59	0.71		0.05	0.05		0.21	0.09
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	144	2358		18	2000	1013		69	82		287	141
v/s Ratio Prot	c0.05	0.23		0.00	c0.24	0.02					c0.06	0.00
v/s Ratio Perm						0.09		0.00	0.00		c0.05	
v/c Ratio	0.51	0.34		0.06	0.41	0.16		0.06	0.01		0.52	0.04
Uniform Delay, d1	56.7	9.2		63.6	14.4	6.2		58.6	58.4		45.9	54.3
Progression Factor	1.00	1.00		1.19	0.95	1.39		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.4		1.2	0.6	0.2		0.4	0.0		2.0	0.1
Delay (s)	59.7	9.6		76.7	14.3	8.8		58.9	58.4		47.9	54.4
Level of Service	E	A		E	B	A		E	E		D	D
Approach Delay (s)		13.8			13.2			58.6			50.0	
Approach LOS		B			B			E			D	

Intersection Summary

HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	766	106	298	970	3	2
Future Volume (vph)	766	106	298	970	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.982				0.946	
Flt Protected			0.950		0.971	
Satd. Flow (prot)	3476	0	1796	3592	1711	0
Flt Permitted			0.950		0.971	
Satd. Flow (perm)	3476	0	1796	3592	1711	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	833	115	324	1054	3	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	948	0	324	1054	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	766	106	298	970	3	2
Future Volume (Veh/h)	766	106	298	970	3	2
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	833	115	324	1054	3	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked				0.90	0.93	0.90
vC, conflicting volume				948	2066	474
vC1, stage 1 conf vol					890	
vC2, stage 2 conf vol					1175	
vCu, unblocked vol				731	1705	206
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)				2.2	3.5	3.3
p0 queue free %				59	98	100
cM capacity (veh/h)				786	151	723
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	555	393	324	527	527	5
Volume Left	0	0	324	0	0	3
Volume Right	0	115	0	0	0	2
cSH	1700	1700	786	1700	1700	222
Volume to Capacity	0.33	0.23	0.41	0.31	0.31	0.02
Queue Length 95th (ft)	0	0	51	0	0	2
Control Delay (s)	0.0	0.0	12.8	0.0	0.0	21.6
Lane LOS				B	C	
Approach Delay (s)	0.0		3.0			21.6
Approach LOS						C
Intersection Summary						
Average Delay				1.8		
Intersection Capacity Utilization				54.4%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (vph)	766	0	0	1269	0	247
Future Volume (vph)	766	0	0	1269	0	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	833	0	0	1379	0	268
Shared Lane Traffic (%)						
Lane Group Flow (vph)	833	0	0	1379	0	268
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	766	0	0	1269	0	247
Future Volume (Veh/h)	766	0	0	1269	0	247
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	833	0	0	1379	0	268
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.93	0.94	0.93
vC, conflicting volume				833	1522	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				661	1072	211
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	64
cM capacity (veh/h)				856	202	736
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	416	416	690	690	268	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	268	
cSH	1700	1700	1700	1700	736	
Volume to Capacity	0.24	0.24	0.41	0.41	0.36	
Queue Length 95th (ft)	0	0	0	0	42	
Control Delay (s)	0.0	0.0	0.0	0.0	12.7	
Lane LOS						B
Approach Delay (s)	0.0		0.0		12.7	
Approach LOS						B
Intersection Summary						
Average Delay				1.4		
Intersection Capacity Utilization				43.1%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↑
Traffic Volume (vph)	799	210	369	1055	224	279
Future Volume (vph)	799	210	369	1055	224	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						317
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	824	216	397	1134	255	317
Shared Lane Traffic (%)						
Lane Group Flow (vph)	824	216	397	1134	255	317
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

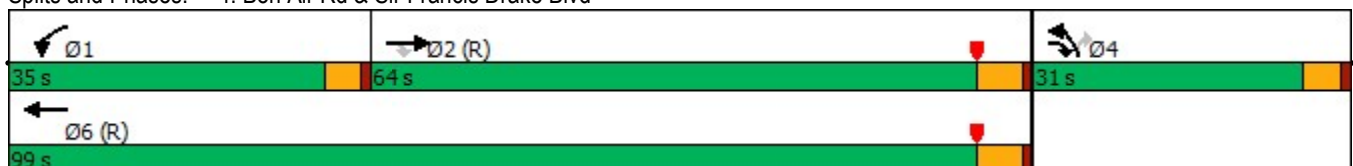


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	77.8	94.7	21.2	103.5	16.3	16.3
Actuated g/C Ratio	0.60	0.73	0.16	0.80	0.13	0.13
v/c Ratio	0.39	0.19	0.75	0.40	0.63	0.67
Control Delay	12.4	4.2	61.1	4.7	60.6	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	4.2	61.1	4.7	60.6	12.6
LOS	B	A	E	A	E	B
Approach Delay	10.7			19.3	34.0	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 19.2
 Intersection Capacity Utilization 52.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

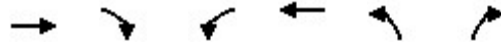
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



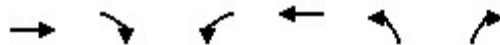
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	824	216	397	1134	255	317
v/c Ratio	0.39	0.19	0.75	0.40	0.63	0.67
Control Delay	12.4	4.2	61.1	4.7	60.6	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	4.2	61.1	4.7	60.6	12.6
Queue Length 50th (ft)	143	38	166	125	106	0
Queue Length 95th (ft)	184	55	212	189	141	76
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2139	1271	759	2845	652	570
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.17	0.52	0.40	0.39	0.56

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵↵	↑↑	↵↵	↑
Traffic Volume (vph)	799	210	369	1055	224	279
Future Volume (vph)	799	210	369	1055	224	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1578	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1578	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	824	216	397	1134	255	317
RTOR Reduction (vph)	0	0	0	0	0	277
Lane Group Flow (vph)	824	216	397	1134	255	40
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	77.8	94.1	21.2	103.5	16.3	16.3
Effective Green, g (s)	77.8	94.1	21.2	103.5	16.3	16.3
Actuated g/C Ratio	0.60	0.72	0.16	0.80	0.13	0.13
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2138	1142	527	2845	405	197
v/s Ratio Prot	0.23	0.02	c0.12	c0.32	c0.08	
v/s Ratio Perm		0.11				0.03
v/c Ratio	0.39	0.19	0.75	0.40	0.63	0.20
Uniform Delay, d1	13.6	5.7	51.9	4.0	54.0	51.0
Progression Factor	0.81	0.81	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	6.0	0.4	3.1	0.5
Delay (s)	11.5	4.7	57.9	4.4	57.0	51.5
Level of Service	B	A	E	A	E	D
Approach Delay (s)	10.1			18.3	54.0	
Approach LOS	B			B	D	

Intersection Summary

HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	469	455	64
Future Volume (vph)	0	0	0	469	455	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr t					0.981	
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3472	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3472	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	510	495	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	510	565	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	141	139	69	357	376	80
Future Volume (vph)	141	139	69	357	376	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.933				0.974	
Flt Protected	0.975		0.950			
Satd. Flow (prot)	1694	0	1770	3539	3447	0
Flt Permitted	0.975		0.950			
Satd. Flow (perm)	1694	0	1770	3539	3447	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	151	75	388	409	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	304	0	75	388	496	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

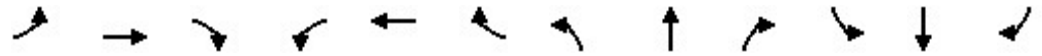


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶		↶	↷	↷	
Traffic Volume (veh/h)	141	139	69	357	376	80
Future Volume (Veh/h)	141	139	69	357	376	80
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	153	151	75	388	409	87
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	796	248	496			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	796	248	496			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	49	80	93			
cM capacity (veh/h)	301	752	1064			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	304	75	194	194	273	223
Volume Left	153	75	0	0	0	0
Volume Right	151	0	0	0	0	87
cSH	429	1064	1700	1700	1700	1700
Volume to Capacity	0.71	0.07	0.11	0.11	0.16	0.13
Queue Length 95th (ft)	135	6	0	0	0	0
Control Delay (s)	31.3	8.6	0.0	0.0	0.0	0.0
Lane LOS	D	A				
Approach Delay (s)	31.3	1.4	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			8.1			
Intersection Capacity Utilization			43.1%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	1095	58	24	1394	120	126	35	25	78	11	41
Future Volume (vph)	63	1095	58	24	1394	120	126	35	25	78	11	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.972		0.950	0.963	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1637	1615	1600	1622	1507
Flt Permitted	0.950			0.950			0.950	0.789		0.950	0.764	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1329	1529	1600	1287	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	66	1153	61	25	1452	125	143	40	28	95	13	50
Shared Lane Traffic (%)							37%			43%		
Lane Group Flow (vph)	66	1153	61	25	1452	125	90	93	28	54	54	50
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.3	66.6	66.6	8.1	63.1	63.1	16.9	16.9	33.8	8.9	7.3	29.8
Actuated g/C Ratio	0.07	0.51	0.51	0.06	0.49	0.49	0.13	0.13	0.26	0.07	0.06	0.23
v/c Ratio	0.55	0.62	0.07	0.26	0.85	0.16	0.43	0.44	0.06	0.50	0.59	0.12
Control Delay	75.8	26.6	0.2	64.7	36.9	2.8	61.6	61.6	0.2	73.8	84.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.8	26.6	0.2	64.7	36.9	2.8	61.6	61.6	0.2	73.8	84.2	0.6
LOS	E	C	A	E	D	A	E	E	A	E	F	A
Approach Delay	27.9			34.7			53.5			54.2		
Approach LOS	C			C			D			D		

Intersection Summary

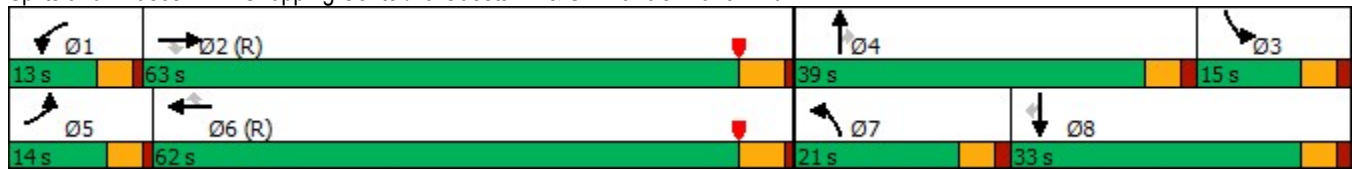
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.85
Intersection Signal Delay:	34.2
Intersection LOS:	C
Intersection Capacity Utilization	74.1%
ICU Level of Service	D
Analysis Period (min)	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

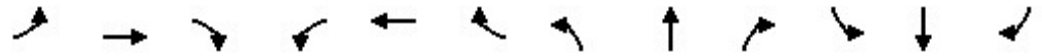
Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	66	1153	61	25	1452	125	90	93	28	54	54	50
v/c Ratio	0.55	0.62	0.07	0.26	0.85	0.16	0.43	0.44	0.06	0.50	0.59	0.12
Control Delay	75.8	26.6	0.2	64.7	36.9	2.8	61.6	61.6	0.2	73.8	84.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.8	26.6	0.2	64.7	36.9	2.8	61.6	61.6	0.2	73.8	84.2	0.6
Queue Length 50th (ft)	55	401	0	20	597	0	77	81	0	47	47	0
Queue Length 95th (ft)	105	494	0	51	#767	28	131	135	0	86	86	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	1849	871	104	1717	793	238	212	472	121	91	417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.62	0.07	0.24	0.85	0.16	0.38	0.44	0.06	0.45	0.59	0.12

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



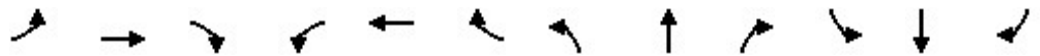
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	1095	58	24	1394	120	126	35	25	78	11	41
Future Volume (vph)	63	1095	58	24	1394	120	126	35	25	78	11	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1638	1529	1600	1623	1477
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.79	1.00	0.95	0.76	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1329	1529	1600	1288	1477
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	66	1153	61	25	1452	125	143	40	28	95	13	50
RTOR Reduction (vph)	0	0	31	0	0	66	0	0	21	0	0	41
Lane Group Flow (vph)	66	1153	30	25	1452	59	90	93	7	54	54	9
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	7.5	63.8	63.8	4.9	61.2	61.2	16.9	33.8	33.8	7.3	24.2	24.2
Effective Green, g (s)	7.5	63.8	63.8	4.9	61.2	61.2	16.9	33.8	33.8	7.3	24.2	24.2
Actuated g/C Ratio	0.06	0.49	0.49	0.04	0.47	0.47	0.13	0.26	0.26	0.06	0.19	0.19
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	97	1771	768	60	1666	698	208	385	397	89	258	274
v/s Ratio Prot	c0.04	c0.32		0.02	c0.41		c0.06	0.03		c0.03	0.01	
v/s Ratio Perm			0.02			0.04		c0.03	0.00		0.03	0.01
v/c Ratio	0.68	0.65	0.04	0.42	0.87	0.08	0.43	0.24	0.02	0.61	0.21	0.03
Uniform Delay, d1	60.1	24.8	17.2	61.2	30.9	19.0	52.1	38.0	35.8	59.9	44.8	43.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.5	1.9	0.1	1.7	6.6	0.2	0.5	0.1	0.0	7.8	0.1	0.0
Delay (s)	74.6	26.6	17.3	62.9	37.5	19.2	52.7	38.1	35.8	67.7	44.9	43.3
Level of Service	E	C	B	E	D	B	D	D	D	E	D	D
Approach Delay (s)		28.7			36.4			44.0			52.2	
Approach LOS		C			D			D			D	

Intersection Summary		
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.67	C
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	74.1%	20.2
Analysis Period (min)	15	ICU Level of Service
		D
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	221	0	0	326	106	0	0	0	50	0	22
Future Volume (vph)	23	221	0	0	326	106	0	0	0	50	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.97						
Fr _t						0.850						0.850
Flt Protected	0.950											0.950
Satd. Flow (prot)	1643	3521	0	1782	3386	1461	0	1900	1900	0	1805	1615
Flt Permitted	0.950											0.950
Satd. Flow (perm)	1643	3521	0	1782	3386	1423	0	1900	1900	0	1805	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						113						102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	25	240	0	0	347	113	0	0	0	55	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	240	0	0	347	113	0	0	0	0	55	24
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex				Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0				0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)		8.0			8.0							
Flash Dont Walk (s)		14.0			24.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	8.5	106.9		96.1	110.5						12.9	8.5
Actuated g/C Ratio	0.07	0.82		0.74	0.85						0.10	0.07
v/c Ratio	0.23	0.08		0.14	0.09						0.31	0.12
Control Delay	62.8	2.5		5.6	1.0						57.5	1.2
Queue Delay	0.0	0.0		0.0	0.0						0.0	0.0
Total Delay	62.8	2.5		5.6	1.0						57.5	1.2
LOS	E	A		A	A						E	A
Approach Delay		8.2			4.5						40.4	
Approach LOS		A			A						D	

Intersection Summary	
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.31
Intersection Signal Delay:	9.2
Intersection LOS:	A
Intersection Capacity Utilization:	42.9%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

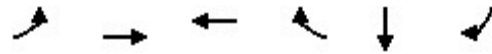
Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



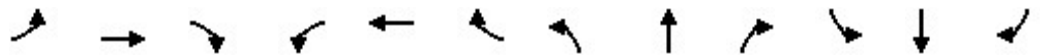
Lane Group	EBL	EBT	WBT	WBR	SBT	SBR
Lane Group Flow (vph)	25	240	347	113	55	24
v/c Ratio	0.23	0.08	0.14	0.09	0.31	0.12
Control Delay	62.8	2.5	5.6	1.0	57.5	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	2.5	5.6	1.0	57.5	1.2
Queue Length 50th (ft)	20	15	49	0	44	0
Queue Length 95th (ft)	50	31	64	0	83	0
Internal Link Dist (ft)		670	573		285	
Turn Bay Length (ft)	125			200		55
Base Capacity (vph)	233	2894	2502	1249	429	317
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	0.11	0.08	0.14	0.09	0.13	0.08

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	23	221	0	0	326	106	0	0	0	50	0	22	
Future Volume (vph)	23	221	0	0	326	106	0	0	0	50	0	22	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12	
Grade (%)		3%			-3%			0%				0%	
Total Lost time (s)	4.5	5.1			5.4	4.5					5.1	4.5	
Lane Util. Factor	1.00	0.95			0.95	1.00					1.00	1.00	
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	1.00			1.00	0.85					1.00	0.85	
Flt Protected	0.95	1.00			1.00	1.00					0.95	1.00	
Satd. Flow (prot)	1643	3521			3386	1427					1805	1615	
Flt Permitted	0.95	1.00			1.00	1.00					0.95	1.00	
Satd. Flow (perm)	1643	3521			3386	1427					1805	1615	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91	
Adj. Flow (vph)	25	240	0	0	347	113	0	0	0	55	0	24	
RTOR Reduction (vph)	0	0	0	0	0	19	0	0	0	0	0	23	
Lane Group Flow (vph)	25	240	0	0	347	94	0	0	0	0	55	1	
Confl. Peds. (#/hr)			1			3							
Confl. Bikes (#/hr)			1						2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over	
Protected Phases	5	2		1	6	7		8		7	4	5	
Permitted Phases						6	8		8		4		
Actuated Green, G (s)	6.9	106.9			95.2	108.7					13.5	6.9	
Effective Green, g (s)	6.9	106.9			95.2	108.7					13.5	6.9	
Actuated g/C Ratio	0.05	0.82			0.73	0.84					0.10	0.05	
Clearance Time (s)	4.5	5.1			5.4	4.5					5.1	4.5	
Vehicle Extension (s)	3.0	6.0			6.0	6.0					3.5	3.0	
Lane Grp Cap (vph)	87	2895			2479	1193					187	85	
v/s Ratio Prot	c0.02	0.07			c0.10	0.01					c0.03	0.00	
v/s Ratio Perm						0.06							
v/c Ratio	0.29	0.08			0.14	0.08					0.29	0.01	
Uniform Delay, d1	59.2	2.2			5.2	1.9					53.8	58.3	
Progression Factor	1.00	1.00			0.94	3.25					1.00	1.00	
Incremental Delay, d2	1.8	0.1			0.1	0.1					1.0	0.1	
Delay (s)	61.0	2.3			5.0	6.1					54.9	58.4	
Level of Service	E	A			A	A					D	E	
Approach Delay (s)		7.8			5.3			0.0			56.0		
Approach LOS		A			A			A			E		
Intersection Summary													
HCM 2000 Control Delay			11.1									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.17										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	19.6
Intersection Capacity Utilization			42.9%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	247	5	7	430	2	2
Future Volume (vph)	247	5	7	430	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Fr _t	0.997				0.932	
Fl _t Protected			0.950		0.976	
Satd. Flow (prot)	3529	0	1796	3592	1694	0
Fl _t Permitted			0.950		0.976	
Satd. Flow (perm)	3529	0	1796	3592	1694	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	5	8	467	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	273	0	8	467	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.9%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	247	5	7	430	2	2
Future Volume (Veh/h)	247	5	7	430	2	2
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	268	5	8	467	2	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked						
vC, conflicting volume			273		520	136
vC1, stage 1 conf vol					270	
vC2, stage 2 conf vol					250	
vCu, unblocked vol			273		520	136
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1287		650	887
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	179	94	8	234	234	4
Volume Left	0	0	8	0	0	2
Volume Right	0	5	0	0	0	2
cSH	1700	1700	1287	1700	1700	750
Volume to Capacity	0.11	0.06	0.01	0.14	0.14	0.01
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	7.8	0.0	0.0	9.8
Lane LOS			A			A
Approach Delay (s)	0.0		0.1			9.8
Approach LOS						A
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			21.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	245	0	0	437	0	49
Future Volume (vph)	245	0	0	437	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	0	0	475	0	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	266	0	0	475	0	53
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.8%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	245	0	0	437	0	49
Future Volume (Veh/h)	245	0	0	437	0	49
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	266	0	0	475	0	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked					1.00	
vC, conflicting volume			266		504	133
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			266		496	133
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	94
cM capacity (veh/h)			1295		502	892
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	133	133	238	238	53	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	53	
cSH	1700	1700	1700	1700	892	
Volume to Capacity	0.08	0.08	0.14	0.14	0.06	
Queue Length 95th (ft)	0	0	0	0	5	
Control Delay (s)	0.0	0.0	0.0	0.0	9.3	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		9.3	
Approach LOS					A	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			16.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

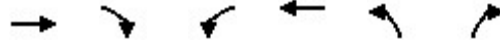
03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	256	38	74	380	63	86
Future Volume (vph)	256	38	74	380	63	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						98
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	264	39	80	409	72	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	264	39	80	409	72	98
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	99.1	108.6	10.2	110.9	8.9	8.9
Actuated g/C Ratio	0.76	0.84	0.08	0.85	0.07	0.07
v/c Ratio	0.10	0.03	0.32	0.13	0.32	0.49
Control Delay	3.9	1.4	60.1	1.7	61.3	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.9	1.4	60.1	1.7	61.3	19.4
LOS	A	A	E	A	E	B
Approach Delay	3.5			11.3	37.1	
Approach LOS	A			B	D	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 13.4
 Intersection Capacity Utilization 48.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

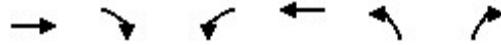
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



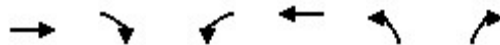
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	264	39	80	409	72	98
v/c Ratio	0.10	0.03	0.32	0.13	0.32	0.49
Control Delay	3.9	1.4	60.1	1.7	61.3	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.9	1.4	60.1	1.7	61.3	19.4
Queue Length 50th (ft)	23	3	33	21	30	0
Queue Length 95th (ft)	35	7	59	34	53	52
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2723	1495	759	3047	652	395
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.03	0.11	0.13	0.11	0.25

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	256	38	74	380	63	86
Future Volume (vph)	256	38	74	380	63	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1576	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1576	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	264	39	80	409	72	98
RTOR Reduction (vph)	0	0	0	0	0	91
Lane Group Flow (vph)	264	39	80	409	72	7
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	98.2	107.1	8.2	110.9	8.9	8.9
Effective Green, g (s)	98.2	107.1	8.2	110.9	8.9	8.9
Actuated g/C Ratio	0.76	0.82	0.06	0.85	0.07	0.07
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2699	1298	204	3048	221	107
v/s Ratio Prot	0.07	0.00	c0.02	c0.11	c0.02	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.10	0.03	0.39	0.13	0.33	0.06
Uniform Delay, d1	4.2	2.1	58.5	1.6	57.7	56.6
Progression Factor	0.83	0.81	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	1.2	0.1	0.9	0.2
Delay (s)	3.6	1.7	59.8	1.7	58.6	56.9
Level of Service	A	A	E	A	E	E
Approach Delay (s)	3.3			11.2	57.6	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	162	112	0
Future Volume (vph)	0	0	0	162	112	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	176	122	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	176	122	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	7.8%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	2	0	151	113	0
Future Volume (vph)	13	2	0	151	113	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	0.983					
Flt Protected	0.958					
Satd. Flow (prot)	1754	0	1863	3539	3539	0
Flt Permitted	0.958					
Satd. Flow (perm)	1754	0	1863	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2	0	164	123	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	164	123	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

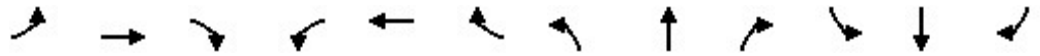


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	↑↑	↑↑	
Traffic Volume (veh/h)	13	2	0	151	113	0
Future Volume (Veh/h)	13	2	0	151	113	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	2	0	164	123	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	205	62	123			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	205	62	123			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	765	991	1462			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	16	0	82	82	62	62
Volume Left	14	0	0	0	0	0
Volume Right	2	0	0	0	0	0
cSH	787	1700	1700	1700	1700	1700
Volume to Capacity	0.02	0.00	0.05	0.05	0.04	0.04
Queue Length 95th (ft)	2	0	0	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	9.7	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.5					
Intersection Capacity Utilization	14.2%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

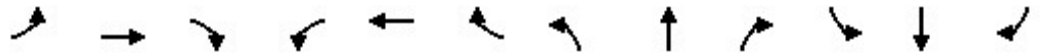


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	340	31	11	434	45	70	18	13	22	4	11
Future Volume (vph)	14	340	31	11	434	45	70	18	13	22	4	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.971		0.950	0.967	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1636	1615	1600	1629	1507
Flt Permitted	0.950			0.950			0.950	0.886		0.950	0.862	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1493	1529	1600	1452	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	358	33	11	452	47	80	20	15	27	5	13
Shared Lane Traffic (%)							38%			41%		
Lane Group Flow (vph)	15	358	33	11	452	47	50	50	15	16	16	13
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.0	85.1	85.1	8.0	82.2	82.2	14.8	13.0	35.4	8.0	3.2	25.0
Actuated g/C Ratio	0.07	0.65	0.65	0.06	0.63	0.63	0.11	0.10	0.27	0.06	0.02	0.19
v/c Ratio	0.13	0.15	0.03	0.11	0.20	0.05	0.27	0.30	0.03	0.16	0.40	0.04
Control Delay	59.6	13.1	0.1	60.5	15.4	0.1	58.5	59.5	0.2	61.9	85.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	13.1	0.1	60.5	15.4	0.1	58.5	59.5	0.2	61.9	85.8	0.2
LOS	E	B	A	E	B	A	E	E	A	E	F	A
Approach Delay	13.8			14.9			51.4			52.6		
Approach LOS	B			B			D			D		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.40
Intersection Signal Delay:	20.0
Intersection LOS:	B
Intersection Capacity Utilization:	54.5%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	15	358	33	11	452	47	50	50	15	16	16	13
v/c Ratio	0.13	0.15	0.03	0.11	0.20	0.05	0.27	0.30	0.03	0.16	0.40	0.04
Control Delay	59.6	13.1	0.1	60.5	15.4	0.1	58.5	59.5	0.2	61.9	85.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	13.1	0.1	60.5	15.4	0.1	58.5	59.5	0.2	61.9	85.8	0.2
Queue Length 50th (ft)	12	67	0	9	88	0	43	43	0	13	~29	0
Queue Length 95th (ft)	36	126	0	30	162	0	85	85	0	36	36	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	2363	1074	104	2238	990	238	164	490	121	40	408
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.15	0.03	0.11	0.20	0.05	0.21	0.30	0.03	0.13	0.40	0.03

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	14	340	31	11	434	45	70	18	13	22	4	11	
Future Volume (vph)	14	340	31	11	434	45	70	18	13	22	4	11	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10	
Grade (%)		-2%			2%			0%				0%	
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.97	1.00	
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1636	1528	1600	1629	1474	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.89	1.00	0.95	0.86	1.00	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1492	1528	1600	1452	1474	
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82	
Adj. Flow (vph)	15	358	33	11	452	47	80	20	15	27	5	13	
RTOR Reduction (vph)	0	0	14	0	0	20	0	0	12	0	0	11	
Lane Group Flow (vph)	15	358	19	11	452	27	50	50	3	16	16	2	
Confl. Peds. (#/hr)			4			16			24			5	
Confl. Bikes (#/hr)									2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	5	2		1	6		7	4		3	8		
Permitted Phases			2			6			4			8	
Actuated Green, G (s)	3.6	76.3	76.3	1.6	74.3	74.3	13.0	28.7	28.7	3.2	18.9	18.9	
Effective Green, g (s)	3.6	76.3	76.3	1.6	74.3	74.3	13.0	28.7	28.7	3.2	18.9	18.9	
Actuated g/C Ratio	0.03	0.59	0.59	0.01	0.57	0.57	0.10	0.22	0.22	0.02	0.15	0.15	
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	46	2118	919	19	2022	848	160	343	337	39	215	214	
v/s Ratio Prot	c0.01	0.10		0.01	c0.13		c0.03	0.01		c0.01	0.00		
v/s Ratio Perm			0.01			0.02		c0.02	0.00		0.01	0.00	
v/c Ratio	0.33	0.17	0.02	0.58	0.22	0.03	0.31	0.15	0.01	0.41	0.07	0.01	
Uniform Delay, d1	62.0	12.3	11.2	63.9	13.7	12.2	54.3	40.8	39.6	62.5	48.0	47.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	0.2	0.0	23.8	0.3	0.1	0.4	0.1	0.0	2.5	0.1	0.0	
Delay (s)	63.5	12.5	11.3	87.7	13.9	12.2	54.8	40.9	39.6	65.0	48.0	47.5	
Level of Service	E	B	B	F	B	B	D	D	D	E	D	D	
Approach Delay (s)		14.3			15.4			46.7			53.9		
Approach LOS		B			B			D			D		
Intersection Summary													
HCM 2000 Control Delay			19.9									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.23										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	20.2
Intersection Capacity Utilization			54.5%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	256	0	0	411	136	0	0	0	56	0	22
Future Volume (vph)	23	256	0	0	411	136	0	0	0	56	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.97						
Fr _t						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1643	3521	0	1782	3386	1461	0	1900	1900	0	1805	1615
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1643	3521	0	1782	3386	1423	0	1900	1900	0	1805	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						145						102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	25	278	0	0	437	145	0	0	0	62	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	278	0	0	437	145	0	0	0	0	62	24
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	8.5	106.2		95.4	110.5						13.6	8.5
Actuated g/C Ratio	0.07	0.82		0.73	0.85						0.10	0.07
v/c Ratio	0.23	0.10		0.18	0.12						0.33	0.12
Control Delay	62.8	2.7		5.5	1.1						57.3	1.2
Queue Delay	0.0	0.0		0.0	0.0						0.0	0.0
Total Delay	62.8	2.7		5.5	1.1						57.3	1.2
LOS	E	A		A	A						E	A
Approach Delay	7.7			4.4							41.6	
Approach LOS	A			A							D	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	8.7
Intersection LOS:	A
Intersection Capacity Utilization:	42.9%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

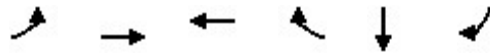
Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



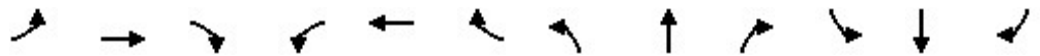
Lane Group	EBL	EBT	WBT	WBR	SBT	SBR
Lane Group Flow (vph)	25	278	437	145	62	24
v/c Ratio	0.23	0.10	0.18	0.12	0.33	0.12
Control Delay	62.8	2.7	5.5	1.1	57.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	2.7	5.5	1.1	57.3	1.2
Queue Length 50th (ft)	20	18	31	0	49	0
Queue Length 95th (ft)	50	36	117	35	91	0
Internal Link Dist (ft)		670	573		285	
Turn Bay Length (ft)	125			200		55
Base Capacity (vph)	233	2876	2485	1252	429	317
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	0.11	0.10	0.18	0.12	0.14	0.08

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↗		↖	↕↗	↖		↖	↖		↖	↖
Traffic Volume (vph)	23	256	0	0	411	136	0	0	0	56	0	22
Future Volume (vph)	23	256	0	0	411	136	0	0	0	56	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1			5.4	4.5					5.1	4.5
Lane Util. Factor	1.00	0.95			0.95	1.00					1.00	1.00
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	1.00			1.00	0.85					1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00					0.95	1.00
Satd. Flow (prot)	1643	3521			3386	1428					1805	1615
Flt Permitted	0.95	1.00			1.00	1.00					0.95	1.00
Satd. Flow (perm)	1643	3521			3386	1428					1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	25	278	0	0	437	145	0	0	0	62	0	24
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	0	23
Lane Group Flow (vph)	25	278	0	0	437	121	0	0	0	0	62	1
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.9	106.2			94.5	108.7					14.2	6.9
Effective Green, g (s)	6.9	106.2			94.5	108.7					14.2	6.9
Actuated g/C Ratio	0.05	0.82			0.73	0.84					0.11	0.05
Clearance Time (s)	4.5	5.1			5.4	4.5					5.1	4.5
Vehicle Extension (s)	3.0	6.0			6.0	6.0					3.5	3.0
Lane Grp Cap (vph)	87	2876			2461	1194					197	85
v/s Ratio Prot	c0.02	0.08			c0.13	0.01					c0.03	0.00
v/s Ratio Perm						0.07						
v/c Ratio	0.29	0.10			0.18	0.10					0.31	0.01
Uniform Delay, d1	59.2	2.4			5.6	1.9					53.4	58.3
Progression Factor	1.00	1.00			0.86	3.83					1.00	1.00
Incremental Delay, d2	1.8	0.1			0.2	0.1					1.1	0.1
Delay (s)	61.0	2.4			4.9	7.4					54.5	58.4
Level of Service	E	A			A	A					D	E
Approach Delay (s)		7.3			5.5			0.0			55.6	
Approach LOS		A			A			A			E	
Intersection Summary												
HCM 2000 Control Delay			10.5		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.21									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)					19.6		
Intersection Capacity Utilization			42.9%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	264	29	74	545	2	2
Future Volume (vph)	264	29	74	545	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.985				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	3486	0	1796	3592	1694	0
Flt Permitted			0.950		0.976	
Satd. Flow (perm)	3486	0	1796	3592	1694	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	287	32	80	592	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	319	0	80	592	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (veh/h)	264	29	74	545	2	2
Future Volume (Veh/h)	264	29	74	545	2	2
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	287	32	80	592	2	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked						
vC, conflicting volume			319		759	160
vC1, stage 1 conf vol					303	
vC2, stage 2 conf vol					456	
vCu, unblocked vol			319		759	160
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	100
cM capacity (veh/h)			1238		507	857
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	191	128	80	296	296	4
Volume Left	0	0	80	0	0	2
Volume Right	0	32	0	0	0	2
cSH	1700	1700	1238	1700	1700	638
Volume to Capacity	0.11	0.08	0.06	0.17	0.17	0.01
Queue Length 95th (ft)	0	0	5	0	0	0
Control Delay (s)	0.0	0.0	8.1	0.0	0.0	10.7
Lane LOS	A			B		
Approach Delay (s)	0.0		1.0			10.7
Approach LOS						B
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			25.7%	ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (vph)	252	0	0	618	0	248
Future Volume (vph)	252	0	0	618	0	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	0	0	672	0	270
Shared Lane Traffic (%)						
Lane Group Flow (vph)	274	0	0	672	0	270
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.0%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	252	0	0	618	0	248
Future Volume (Veh/h)	252	0	0	618	0	248
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	274	0	0	672	0	270
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked					0.98	
vC, conflicting volume			274		610	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			274		566	137
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	70
cM capacity (veh/h)			1286		446	886
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	137	137	336	336	270	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	270	
cSH	1700	1700	1700	1700	886	
Volume to Capacity	0.08	0.08	0.20	0.20	0.30	
Queue Length 95th (ft)	0	0	0	0	32	
Control Delay (s)	0.0	0.0	0.0	0.0	10.8	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.8	
Approach LOS						B
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			29.0%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↑
Traffic Volume (vph)	460	50	110	441	183	278
Future Volume (vph)	460	50	110	441	183	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						316
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	474	52	118	474	208	316
Shared Lane Traffic (%)						
Lane Group Flow (vph)	474	52	118	474	208	316
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

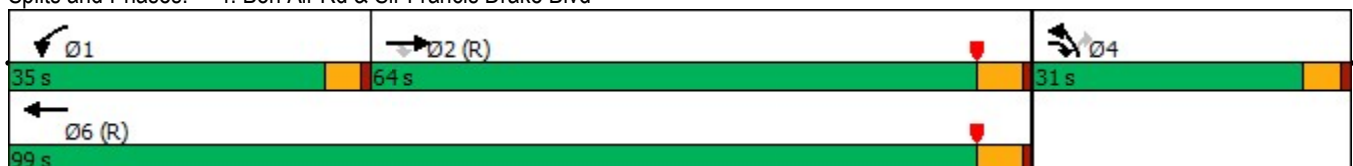


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	90.5	105.0	10.9	105.9	13.9	13.9
Actuated g/C Ratio	0.70	0.81	0.08	0.81	0.11	0.11
v/c Ratio	0.19	0.04	0.44	0.16	0.60	0.70
Control Delay	7.2	2.0	61.7	2.9	62.5	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	2.0	61.7	2.9	62.5	14.5
LOS	A	A	E	A	E	B
Approach Delay	6.7			14.6	33.6	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 18.1
 Intersection Capacity Utilization 50.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

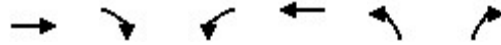
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



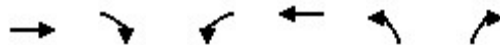
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	474	52	118	474	208	316
v/c Ratio	0.19	0.04	0.44	0.16	0.60	0.70
Control Delay	7.2	2.0	61.7	2.9	62.5	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	2.0	61.7	2.9	62.5	14.5
Queue Length 50th (ft)	71	5	50	35	87	0
Queue Length 95th (ft)	101	15	80	59	121	80
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2489	1425	759	2911	652	569
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	0.04	0.16	0.16	0.32	0.56

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	460	50	110	441	183	278
Future Volume (vph)	460	50	110	441	183	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1577	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1577	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	474	52	118	474	208	316
RTOR Reduction (vph)	0	0	0	0	0	282
Lane Group Flow (vph)	474	52	118	474	208	34
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	90.5	104.4	10.9	105.9	13.9	13.9
Effective Green, g (s)	90.5	104.4	10.9	105.9	13.9	13.9
Actuated g/C Ratio	0.70	0.80	0.08	0.81	0.11	0.11
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2488	1266	271	2911	346	168
v/s Ratio Prot	c0.13	0.00	c0.04	0.13	c0.06	
v/s Ratio Perm		0.03				0.02
v/c Ratio	0.19	0.04	0.44	0.16	0.60	0.20
Uniform Delay, d1	6.9	2.6	56.6	2.6	55.4	53.0
Progression Factor	0.96	1.07	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	1.1	0.1	2.9	0.6
Delay (s)	6.8	2.8	57.7	2.7	58.3	53.6
Level of Service	A	A	E	A	E	D
Approach Delay (s)	6.4			13.7	55.5	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	448	150	16
Future Volume (vph)	0	0	0	448	150	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr _t					0.986	
Fl _t Protected						
Satd. Flow (prot)	0	0	0	3539	3490	0
Fl _t Permitted						
Satd. Flow (perm)	0	0	0	3539	3490	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	487	163	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	487	180	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.7%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	153	53	16	297	131	20
Future Volume (vph)	153	53	16	297	131	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.965				0.980	
Flt Protected	0.964		0.950			
Satd. Flow (prot)	1733	0	1770	3539	3468	0
Flt Permitted	0.964		0.950			
Satd. Flow (perm)	1733	0	1770	3539	3468	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	58	17	323	142	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	224	0	17	323	164	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 6: Bon Air Rd & Dwy D

03/27/2024

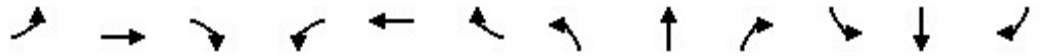


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	↑↑	↑↑	
Traffic Volume (veh/h)	153	53	16	297	131	20
Future Volume (Veh/h)	153	53	16	297	131	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	166	58	17	323	142	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	348	82	164			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	348	82	164			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	73	94	99			
cM capacity (veh/h)	615	961	1412			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	224	17	162	162	95	69
Volume Left	166	17	0	0	0	0
Volume Right	58	0	0	0	0	22
cSH	678	1412	1700	1700	1700	1700
Volume to Capacity	0.33	0.01	0.10	0.10	0.06	0.04
Queue Length 95th (ft)	36	1	0	0	0	0
Control Delay (s)	12.9	7.6	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	12.9	0.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization			29.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	714	31	11	529	45	70	18	13	22	4	13
Future Volume (vph)	35	714	31	11	529	45	70	18	13	22	4	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.971		0.950	0.967	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1636	1615	1600	1629	1507
Flt Permitted	0.950			0.950			0.950	0.886		0.950	0.862	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1493	1529	1600	1452	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	37	752	33	11	551	47	80	20	15	27	5	16
Shared Lane Traffic (%)							38%			41%		
Lane Group Flow (vph)	37	752	33	11	551	47	50	50	15	16	16	16
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0			
Flash Dont Walk (s)		18.0	18.0		17.0	17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0			
Act Effct Green (s)	9.1	85.1	85.1	8.0	79.4	79.4	14.8	13.0	35.4	8.0	3.2	25.0
Actuated g/C Ratio	0.07	0.65	0.65	0.06	0.61	0.61	0.11	0.10	0.27	0.06	0.02	0.19
v/c Ratio	0.32	0.32	0.03	0.11	0.25	0.05	0.27	0.30	0.03	0.16	0.40	0.04
Control Delay	65.0	14.7	0.1	60.5	17.4	0.1	58.5	59.5	0.2	61.9	85.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	14.7	0.1	60.5	17.4	0.1	58.5	59.5	0.2	61.9	85.8	0.2
LOS	E	B	A	E	B	A	E	E	A	E	F	A
Approach Delay		16.4			16.8			51.4			49.3	
Approach LOS		B			B			D			D	

Intersection Summary









Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.40
Intersection Signal Delay:	20.1
Intersection LOS:	C
Intersection Capacity Utilization	54.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

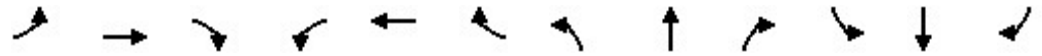
Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

 Ø1 13 s	 Ø2 (R) 63 s	 Ø4 39 s	 Ø3 15 s
 Ø5 14 s	 Ø6 (R) 62 s	 Ø7 21 s	 Ø8 33 s

Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	37	752	33	11	551	47	50	50	15	16	16	16
v/c Ratio	0.32	0.32	0.03	0.11	0.25	0.05	0.27	0.30	0.03	0.16	0.40	0.04
Control Delay	65.0	14.7	0.1	60.5	17.4	0.1	58.5	59.5	0.2	61.9	85.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	14.7	0.1	60.5	17.4	0.1	58.5	59.5	0.2	61.9	85.8	0.2
Queue Length 50th (ft)	30	161	0	9	143	0	43	43	0	13	~29	0
Queue Length 95th (ft)	68	276	0	30	201	0	85	85	0	36	36	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	2363	1074	104	2161	962	238	164	490	121	40	408
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.32	0.03	0.11	0.25	0.05	0.21	0.30	0.03	0.13	0.40	0.04

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	714	31	11	529	45	70	18	13	22	4	13
Future Volume (vph)	35	714	31	11	529	45	70	18	13	22	4	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1636	1528	1600	1629	1474
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.89	1.00	0.95	0.86	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1492	1528	1600	1452	1474
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	37	752	33	11	551	47	80	20	15	27	5	16
RTOR Reduction (vph)	0	0	14	0	0	21	0	0	12	0	0	14
Lane Group Flow (vph)	37	752	19	11	551	26	50	50	3	16	16	2
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	5.5	76.3	76.3	1.6	72.4	72.4	13.0	28.7	28.7	3.2	18.9	18.9
Effective Green, g (s)	5.5	76.3	76.3	1.6	72.4	72.4	13.0	28.7	28.7	3.2	18.9	18.9
Actuated g/C Ratio	0.04	0.59	0.59	0.01	0.56	0.56	0.10	0.22	0.22	0.02	0.15	0.15
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	71	2118	919	19	1970	826	160	343	337	39	215	214
v/s Ratio Prot	c0.02	c0.21		0.01	0.16		c0.03	0.01		c0.01	0.00	
v/s Ratio Perm			0.01			0.02		c0.02	0.00		0.01	0.00
v/c Ratio	0.52	0.36	0.02	0.58	0.28	0.03	0.31	0.15	0.01	0.41	0.07	0.01
Uniform Delay, d1	61.0	14.0	11.2	63.9	15.1	13.0	54.3	40.8	39.6	62.5	48.0	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.5	0.0	23.8	0.4	0.1	0.4	0.1	0.0	2.5	0.1	0.0
Delay (s)	64.1	14.5	11.3	87.7	15.5	13.1	54.8	40.9	39.6	65.0	48.0	47.6
Level of Service	E	B	B	F	B	B	D	D	D	E	D	D
Approach Delay (s)		16.6			16.6			46.7			53.5	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.33	B
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	54.5%	20.2
Analysis Period (min)	15	ICU Level of Service
		A
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	1065	6	9	1157	356	10	3	18	220	6	170
Future Volume (vph)	161	1065	6	9	1157	356	10	3	18	220	6	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.97			0.98			
Frt		0.999				0.850			0.850			0.850
Flt Protected	0.950			0.950				0.963			0.954	
Satd. Flow (prot)	1643	3517	0	1693	3386	1461	0	1830	1615	0	1813	1615
Flt Permitted	0.950			0.950				0.651			0.499	
Satd. Flow (perm)	1643	3517	0	1693	3386	1423	0	1237	1588	0	948	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				379			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	175	1158	7	10	1231	379	13	4	23	242	7	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	1165	0	10	1231	379	0	17	23	0	249	187
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	17.0	87.9		7.1	68.5	86.3		12.5	12.5		29.5	17.0
Actuated g/C Ratio	0.13	0.68		0.05	0.53	0.66		0.10	0.10		0.23	0.13
v/c Ratio	0.82	0.49		0.11	0.69	0.35		0.14	0.08		0.77	0.63
Control Delay	83.0	11.8		69.4	28.1	4.1		53.9	0.6		63.1	33.7
Queue Delay	0.0	0.3		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	83.0	12.1		69.4	28.1	4.1		53.9	0.6		63.1	33.7
LOS	F	B		E	C	A		D	A		E	C
Approach Delay	21.4			22.8				23.3			50.5	
Approach LOS	C			C				C			D	

Intersection Summary	
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	25.8
Intersection LOS:	C
Intersection Capacity Utilization:	72.6%
ICU Level of Service:	C
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	175	1165	10	1231	379	17	23	249	187
v/c Ratio	0.82	0.49	0.11	0.69	0.35	0.14	0.08	0.77	0.63
Control Delay	83.0	11.8	69.4	28.1	4.1	53.9	0.6	63.1	33.7
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.0	12.1	69.4	28.1	4.1	53.9	0.6	63.1	33.7
Queue Length 50th (ft)	143	223	9	470	56	13	0	187	66
Queue Length 95th (ft)	#252	361	m0	553	63	32	0	#339	148
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2378	97	1784	1101	142	300	333	317
Starvation Cap Reductn	0	559	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	0.75	0.64	0.10	0.69	0.34	0.12	0.08	0.75	0.59

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.

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	1065	6	9	1157	356	10	3	18	220	6	170
Future Volume (vph)	161	1065	6	9	1157	356	10	3	18	220	6	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1643	3517		1693	3386	1430		1830	1586		1812	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.65	1.00		0.50	1.00
Satd. Flow (perm)	1643	3517		1693	3386	1430		1237	1586		949	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	175	1158	7	10	1231	379	13	4	23	242	7	187
RTOR Reduction (vph)	0	0	0	0	0	136	0	0	21	0	0	89
Lane Group Flow (vph)	175	1165	0	10	1231	243	0	17	2	0	249	98
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	17.0	82.2		1.5	66.4	83.3		10.1	10.1		31.6	17.0
Effective Green, g (s)	17.0	82.2		1.5	66.4	83.3		10.1	10.1		31.6	17.0
Actuated g/C Ratio	0.13	0.63		0.01	0.51	0.64		0.08	0.08		0.24	0.13
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	214	2223		19	1729	916		96	123		342	211
v/s Ratio Prot	c0.11	0.33		0.01	c0.36	0.03					c0.09	0.06
v/s Ratio Perm						0.14		0.01	0.00		c0.08	
v/c Ratio	0.82	0.52		0.53	0.71	0.27		0.18	0.01		0.73	0.47
Uniform Delay, d1	55.0	13.1		63.9	24.4	10.1		56.1	55.4		45.2	52.3
Progression Factor	1.00	1.00		1.15	1.10	3.26		1.00	1.00		1.00	1.00
Incremental Delay, d2	20.9	0.9		20.9	2.2	0.4		0.9	0.0		7.8	1.6
Delay (s)	75.9	14.0		94.2	29.0	33.3		56.9	55.4		53.0	53.9
Level of Service	E	B		F	C	C		E	E		D	D
Approach Delay (s)		22.1			30.4			56.1			53.4	
Approach LOS		C			C			E			D	

Intersection Summary

HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
 2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	1243	30	45	1528	1	1
Future Volume (vph)	1243	30	45	1528	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Fr _t	0.996				0.932	
Fl _t Protected			0.950		0.976	
Satd. Flow (prot)	3525	0	1796	3592	1694	0
Fl _t Permitted			0.950		0.976	
Satd. Flow (perm)	3525	0	1796	3592	1694	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1351	33	49	1661	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1384	0	49	1661	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	1243	30	45	1528	1	1
Future Volume (Veh/h)	1243	30	45	1528	1	1
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1351	33	49	1661	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.82		0.89	0.82
vC, conflicting volume			1384		2296	692
vC1, stage 1 conf vol					1368	
vC2, stage 2 conf vol					928	
vCu, unblocked vol			1020		1446	172
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		100	100
cM capacity (veh/h)			552		230	687
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	901	483	49	830	830	2
Volume Left	0	0	49	0	0	1
Volume Right	0	33	0	0	0	1
cSH	1700	1700	552	1700	1700	344
Volume to Capacity	0.53	0.28	0.09	0.49	0.49	0.01
Queue Length 95th (ft)	0	0	7	0	0	0
Control Delay (s)	0.0	0.0	12.2	0.0	0.0	15.5
Lane LOS	B			C		
Approach Delay (s)	0.0		0.3			15.5
Approach LOS				C		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			52.2%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	1245	0	0	1565	0	73
Future Volume (vph)	1245	0	0	1565	0	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1353	0	0	1701	0	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1353	0	0	1701	0	79
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	1245	0	0	1565	0	73
Future Volume (Veh/h)	1245	0	0	1565	0	73
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1353	0	0	1701	0	79
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.82	0.90	0.82
vC, conflicting volume				1353	2204	676
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				990	1346	164
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	89
cM capacity (veh/h)				569	128	698
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	676	676	850	850	79	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	79	
cSH	1700	1700	1700	1700	698	
Volume to Capacity	0.40	0.40	0.50	0.50	0.11	
Queue Length 95th (ft)	0	0	0	0	10	
Control Delay (s)	0.0	0.0	0.0	0.0	10.8	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.8	
Approach LOS						B
Intersection Summary						
Average Delay				0.3		
Intersection Capacity Utilization				46.6%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	1130	179	200	1213	364	444
Future Volume (vph)	1130	179	200	1213	364	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						395
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1165	185	215	1304	414	505
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1165	185	215	1304	414	505
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

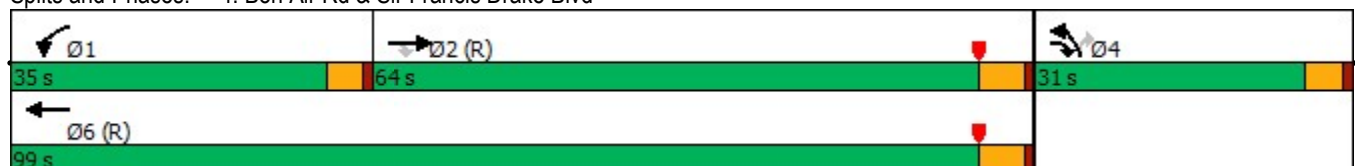


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	78.6	101.9	14.0	97.1	22.7	22.7
Actuated g/C Ratio	0.60	0.78	0.11	0.75	0.17	0.17
v/c Ratio	0.54	0.15	0.62	0.49	0.73	0.84
Control Delay	12.7	2.1	63.1	7.6	58.6	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	2.1	63.1	7.6	58.6	25.0
LOS	B	A	E	A	E	C
Approach Delay	11.2			15.5	40.1	
Approach LOS	B			B	D	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 19.9
 Intersection Capacity Utilization 67.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

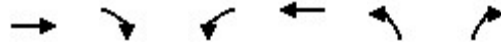
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1165	185	215	1304	414	505
v/c Ratio	0.54	0.15	0.62	0.49	0.73	0.84
Control Delay	12.7	2.1	63.1	7.6	58.6	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	2.1	63.1	7.6	58.6	25.0
Queue Length 50th (ft)	215	16	90	207	170	89
Queue Length 95th (ft)	260	m33	129	272	216	219
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2160	1280	759	2668	652	633
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	0.54	0.14	0.28	0.49	0.63	0.80

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	1130	179	200	1213	364	444
Future Volume (vph)	1130	179	200	1213	364	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1579	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1579	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	1165	185	215	1304	414	505
RTOR Reduction (vph)	0	0	0	0	0	326
Lane Group Flow (vph)	1165	185	215	1304	414	179
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	78.6	101.3	14.0	97.1	22.7	22.7
Effective Green, g (s)	78.6	101.3	14.0	97.1	22.7	22.7
Actuated g/C Ratio	0.60	0.78	0.11	0.75	0.17	0.17
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2160	1230	348	2669	565	275
v/s Ratio Prot	c0.33	0.03	c0.07	0.36	c0.13	
v/s Ratio Perm		0.09				0.11
v/c Ratio	0.54	0.15	0.62	0.49	0.73	0.65
Uniform Delay, d1	15.1	3.6	55.4	6.6	50.8	50.0
Progression Factor	0.73	0.70	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	3.2	0.6	4.9	5.4
Delay (s)	11.9	2.6	58.7	7.2	55.7	55.4
Level of Service	B	A	E	A	E	E
Approach Delay (s)	10.6			14.5	55.5	
Approach LOS	B			B	E	

Intersection Summary

HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	755	352	1
Future Volume (vph)	0	0	0	755	352	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	821	383	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	821	384	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

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

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	25	7	697	350	1
Future Volume (vph)	59	25	7	697	350	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.960					
Flt Protected	0.966		0.950			
Satd. Flow (prot)	1727	0	1770	3539	3539	0
Flt Permitted	0.966		0.950			
Satd. Flow (perm)	1727	0	1770	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	27	8	758	380	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	8	758	381	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
6: Bon Air Rd & Dwy D

03/27/2024

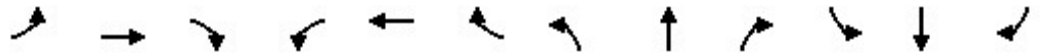


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	59	25	7	697	350	1
Future Volume (Veh/h)	59	25	7	697	350	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	27	8	758	380	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	776	190	381			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	776	190	381			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	97	99			
cM capacity (veh/h)	332	819	1174			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	91	8	379	379	253	128
Volume Left	64	8	0	0	0	0
Volume Right	27	0	0	0	0	1
cSH	403	1174	1700	1700	1700	1700
Volume to Capacity	0.23	0.01	0.22	0.22	0.15	0.08
Queue Length 95th (ft)	21	1	0	0	0	0
Control Delay (s)	16.5	8.1	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	16.5	0.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			30.7%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

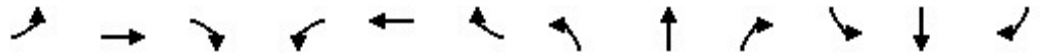


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1555	134	36	1293	103	240	50	39	139	16	78
Future Volume (vph)	85	1555	134	36	1293	103	240	50	39	139	16	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.968		0.950	0.962	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1631	1615	1600	1621	1507
Flt Permitted	0.950			0.950			0.950	0.500		0.950	0.669	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	842	1529	1600	1127	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	89	1637	141	38	1347	107	273	57	44	170	20	95
Shared Lane Traffic (%)							40%			44%		
Lane Group Flow (vph)	89	1637	141	38	1347	107	164	166	44	95	95	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.4	60.8	60.8	8.2	57.1	57.1	15.1	15.1	33.8	9.5	9.5	28.2
Actuated g/C Ratio	0.07	0.47	0.47	0.06	0.44	0.44	0.12	0.12	0.26	0.07	0.07	0.22
v/c Ratio	0.73	0.97	0.17	0.38	0.87	0.15	0.88	0.88	0.09	0.82	0.81	0.24
Control Delay	91.3	50.5	3.7	69.8	40.4	1.8	97.7	95.9	0.4	104.0	101.6	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.3	50.5	3.7	69.8	40.4	1.8	97.7	95.9	0.4	104.0	101.6	8.3
LOS	F	D	A	E	D	A	F	F	A	F	F	A
Approach Delay	48.9			38.4			85.5			71.3		
Approach LOS	D			D			F			E		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	50.0
Intersection LOS:	D
Intersection Capacity Utilization:	79.4%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

 Ø1 13 s	 Ø2 (R) 63 s	 Ø4 39 s	 Ø3 15 s
 Ø5 14 s	 Ø6 (R) 62 s	 Ø7 21 s	 Ø8 33 s

Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	89	1637	141	38	1347	107	164	166	44	95	95	95
v/c Ratio	0.73	0.97	0.17	0.38	0.87	0.15	0.88	0.88	0.09	0.82	0.81	0.24
Control Delay	91.3	50.5	3.7	69.8	40.4	1.8	97.7	95.9	0.4	104.0	101.6	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.3	50.5	3.7	69.8	40.4	1.8	97.7	95.9	0.4	104.0	101.6	8.3
Queue Length 50th (ft)	75	~740	0	31	536	0	144	146	0	84	84	0
Queue Length 95th (ft)	#162	#910	37	69	641	16	#266	#268	0	#158	#156	31
Internal Link Dist (ft)		873			1268			165				323
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	1687	808	104	1553	731	194	189	472	121	118	400
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.97	0.17	0.37	0.87	0.15	0.85	0.88	0.09	0.79	0.81	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.

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	85	1555	134	36	1293	103	240	50	39	139	16	78	
Future Volume (vph)	85	1555	134	36	1293	103	240	50	39	139	16	78	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10	
Grade (%)		-2%			2%			0%				0%	
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00	
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1631	1529	1600	1621	1479	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.50	1.00	0.95	0.67	1.00	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	843	1529	1600	1127	1479	
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82	
Adj. Flow (vph)	89	1637	141	38	1347	107	273	57	44	170	20	95	
RTOR Reduction (vph)	0	0	76	0	0	60	0	0	33	0	0	74	
Lane Group Flow (vph)	89	1637	65	38	1347	47	164	166	11	95	95	21	
Confl. Peds. (#/hr)			4			16			24			5	
Confl. Bikes (#/hr)									2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	5	2		1	6		7	4		3	8		
Permitted Phases			2			6			4			8	
Actuated Green, G (s)	9.4	59.9	59.9	6.6	57.1	57.1	15.1	33.8	33.8	9.5	28.2	28.2	
Effective Green, g (s)	9.4	59.9	59.9	6.6	57.1	57.1	15.1	33.8	33.8	9.5	28.2	28.2	
Actuated g/C Ratio	0.07	0.46	0.46	0.05	0.44	0.44	0.12	0.26	0.26	0.07	0.22	0.22	
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	121	1663	721	80	1554	651	185	310	397	116	280	320	
v/s Ratio Prot	c0.05	c0.45		0.02	0.38		c0.10	0.06		c0.06	0.02		
v/s Ratio Perm			0.04			0.03		c0.08	0.01		0.05	0.01	
v/c Ratio	0.74	0.98	0.09	0.47	0.87	0.07	0.89	0.54	0.03	0.82	0.34	0.06	
Uniform Delay, d1	59.1	34.6	19.7	60.0	33.0	21.1	56.6	41.4	35.9	59.4	43.0	40.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.0	18.7	0.2	1.6	6.8	0.2	35.2	0.9	0.0	32.9	0.3	0.0	
Delay (s)	77.1	53.2	20.0	61.6	39.8	21.3	91.9	42.2	35.9	92.3	43.3	40.5	
Level of Service	E	D	B	E	D	C	F	D	D	F	D	D	
Approach Delay (s)		51.9			39.0			63.2			58.7		
Approach LOS		D			D			E			E		
Intersection Summary													
HCM 2000 Control Delay			48.6									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	20.2
Intersection Capacity Utilization			79.4%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

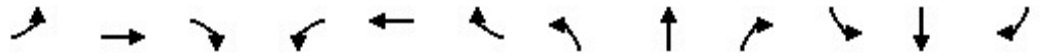


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	1074	6	9	1156	356	10	3	18	223	6	170
Future Volume (vph)	161	1074	6	9	1156	356	10	3	18	223	6	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.97			0.98			
Frt		0.999				0.850			0.850			0.850
Flt Protected	0.950			0.950				0.963			0.954	
Satd. Flow (prot)	1643	3517	0	1693	3386	1461	0	1830	1615	0	1813	1615
Flt Permitted	0.950			0.950				0.650			0.499	
Satd. Flow (perm)	1643	3517	0	1693	3386	1423	0	1235	1588	0	948	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				379			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	175	1167	7	10	1230	379	13	4	23	245	7	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	1174	0	10	1230	379	0	17	23	0	252	187
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	17.0	87.8		7.1	68.4	86.3		12.5	12.5		29.6	17.0
Actuated g/C Ratio	0.13	0.68		0.05	0.53	0.66		0.10	0.10		0.23	0.13
v/c Ratio	0.82	0.49		0.11	0.69	0.35		0.14	0.08		0.78	0.63
Control Delay	83.0	11.9		68.3	28.0	3.9		53.9	0.6		63.7	33.7
Queue Delay	0.0	0.3		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	83.0	12.2		68.3	28.0	3.9		53.9	0.6		63.7	33.7
LOS	F	B		E	C	A		D	A		E	C
Approach Delay	21.4			22.6				23.3		50.9		
Approach LOS	C			C				C		D		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	25.7
Intersection LOS:	C
Intersection Capacity Utilization:	72.7%
ICU Level of Service:	C
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	175	1174	10	1230	379	17	23	252	187
v/c Ratio	0.82	0.49	0.11	0.69	0.35	0.14	0.08	0.78	0.63
Control Delay	83.0	11.9	68.3	28.0	3.9	53.9	0.6	63.7	33.7
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.0	12.2	68.3	28.0	3.9	53.9	0.6	63.7	33.7
Queue Length 50th (ft)	143	226	9	468	51	13	0	189	66
Queue Length 95th (ft)	#252	365	m15	552	54	32	0	#345	148
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2376	97	1782	1101	141	300	333	317
Starvation Cap Reductn	0	557	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	0.75	0.65	0.10	0.69	0.34	0.12	0.08	0.76	0.59

Intersection Summary

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

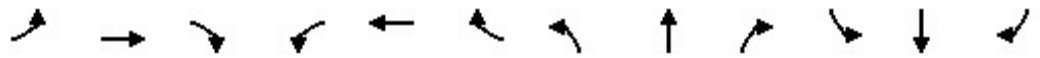
Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	1074	6	9	1156	356	10	3	18	223	6	170
Future Volume (vph)	161	1074	6	9	1156	356	10	3	18	223	6	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1643	3517		1693	3386	1430		1830	1586		1812	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.65	1.00		0.50	1.00
Satd. Flow (perm)	1643	3517		1693	3386	1430		1234	1586		949	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	175	1167	7	10	1230	379	13	4	23	245	7	187
RTOR Reduction (vph)	0	0	0	0	0	136	0	0	21	0	0	89
Lane Group Flow (vph)	175	1174	0	10	1230	243	0	17	2	0	252	98
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	17.0	82.2		1.5	66.4	83.3		10.1	10.1		31.6	17.0
Effective Green, g (s)	17.0	82.2		1.5	66.4	83.3		10.1	10.1		31.6	17.0
Actuated g/C Ratio	0.13	0.63		0.01	0.51	0.64		0.08	0.08		0.24	0.13
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	214	2223		19	1729	916		95	123		342	211
v/s Ratio Prot	c0.11	0.33		0.01	c0.36	0.03					c0.10	0.06
v/s Ratio Perm						0.14		0.01	0.00		c0.08	
v/c Ratio	0.82	0.53		0.53	0.71	0.27		0.18	0.01		0.74	0.47
Uniform Delay, d1	55.0	13.2		63.9	24.4	10.1		56.1	55.4		45.4	52.3
Progression Factor	1.00	1.00		1.13	1.09	3.05		1.00	1.00		1.00	1.00
Incremental Delay, d2	20.9	0.9		20.8	2.2	0.4		0.9	0.0		8.3	1.6
Delay (s)	75.9	14.1		93.0	28.8	31.2		57.0	55.4		53.7	53.9
Level of Service	E	B		F	C	C		E	E		D	D
Approach Delay (s)		22.1			29.7			56.1			53.8	
Approach LOS		C			C			E			D	

Intersection Summary		
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.76	
Actuated Cycle Length (s)	130.0	Sum of lost time (s) 19.6
Intersection Capacity Utilization	72.7%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	1243	42	73	1525	1	1
Future Volume (vph)	1243	42	73	1525	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Fr _t	0.995				0.932	
Fl _t Protected			0.950		0.976	
Satd. Flow (prot)	3522	0	1796	3592	1694	0
Fl _t Permitted			0.950		0.976	
Satd. Flow (perm)	3522	0	1796	3592	1694	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1351	46	79	1658	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1397	0	79	1658	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	1243	42	73	1525	1	1
Future Volume (Veh/h)	1243	42	73	1525	1	1
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1351	46	79	1658	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.81		0.89	0.81
vC, conflicting volume			1397		2361	698
vC1, stage 1 conf vol					1374	
vC2, stage 2 conf vol					987	
vCu, unblocked vol			1030		1501	172
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			86		100	100
cM capacity (veh/h)			545		219	685
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	901	496	79	829	829	2
Volume Left	0	0	79	0	0	1
Volume Right	0	46	0	0	0	1
cSH	1700	1700	545	1700	1700	332
Volume to Capacity	0.53	0.29	0.14	0.49	0.49	0.01
Queue Length 95th (ft)	0	0	13	0	0	0
Control Delay (s)	0.0	0.0	12.7	0.0	0.0	15.9
Lane LOS	B			C		
Approach Delay (s)	0.0		0.6			15.9
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			53.1%	ICU Level of Service		A
Analysis Period (min)	15					

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	1245	0	0	1594	0	69
Future Volume (vph)	1245	0	0	1594	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1353	0	0	1733	0	75
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1353	0	0	1733	0	75
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.4%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

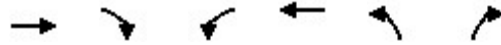
03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	1245	0	0	1594	0	69
Future Volume (Veh/h)	1245	0	0	1594	0	69
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1353	0	0	1733	0	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked	0.82			0.90	0.82	
vC, conflicting volume	1353			2220	676	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	987			1340	160	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			100	89	
cM capacity (veh/h)	569			129	701	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	676	676	866	866	75	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	75	
cSH	1700	1700	1700	1700	701	
Volume to Capacity	0.40	0.40	0.51	0.51	0.11	
Queue Length 95th (ft)	0	0	0	0	9	
Control Delay (s)	0.0	0.0	0.0	0.0	10.8	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.8	
Approach LOS						B
Intersection Summary						
Average Delay	0.3					
Intersection Capacity Utilization	47.4%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	1123	138	217	1242	364	443
Future Volume (vph)	1123	138	217	1242	364	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						395
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1158	142	233	1335	414	503
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1158	142	233	1335	414	503
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

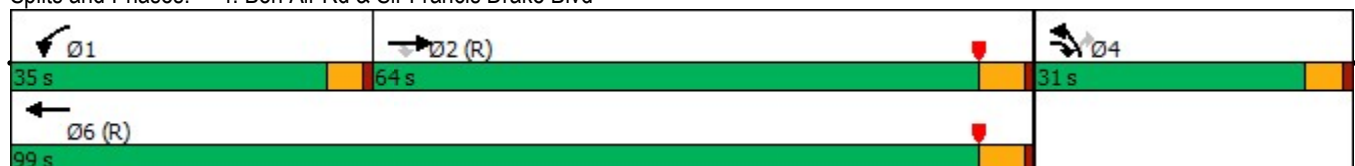


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	78.1	101.2	14.7	97.3	22.5	22.5
Actuated g/C Ratio	0.60	0.78	0.11	0.75	0.17	0.17
v/c Ratio	0.54	0.12	0.64	0.50	0.74	0.84
Control Delay	12.9	2.2	62.9	7.7	59.1	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	2.2	62.9	7.7	59.1	24.9
LOS	B	A	E	A	E	C
Approach Delay	11.7			15.9	40.3	
Approach LOS	B			B	D	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.84
Intersection Signal Delay:	20.4
Intersection LOS:	C
Intersection Capacity Utilization:	67.2%
ICU Level of Service:	C
Analysis Period (min):	15

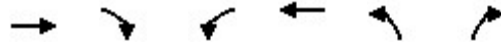
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1158	142	233	1335	414	503
v/c Ratio	0.54	0.12	0.64	0.50	0.74	0.84
Control Delay	12.9	2.2	62.9	7.7	59.1	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	2.2	62.9	7.7	59.1	24.9
Queue Length 50th (ft)	215	13	98	215	170	87
Queue Length 95th (ft)	258	m27	137	282	216	215
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2146	1274	759	2674	652	633
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	0.54	0.11	0.31	0.50	0.63	0.79

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	1123	138	217	1242	364	443
Future Volume (vph)	1123	138	217	1242	364	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1579	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1579	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	1158	142	233	1335	414	503
RTOR Reduction (vph)	0	0	0	0	0	327
Lane Group Flow (vph)	1158	142	233	1335	414	176
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	78.1	100.6	14.7	97.3	22.5	22.5
Effective Green, g (s)	78.1	100.6	14.7	97.3	22.5	22.5
Actuated g/C Ratio	0.60	0.77	0.11	0.75	0.17	0.17
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2147	1221	365	2675	560	272
v/s Ratio Prot	c0.32	0.02	c0.07	0.37	c0.13	
v/s Ratio Perm		0.07				0.11
v/c Ratio	0.54	0.12	0.64	0.50	0.74	0.65
Uniform Delay, d1	15.3	3.7	55.1	6.6	51.0	50.1
Progression Factor	0.73	0.70	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	3.6	0.7	5.1	5.2
Delay (s)	12.0	2.6	58.8	7.2	56.1	55.3
Level of Service	B	A	E	A	E	E
Approach Delay (s)	11.0			14.9	55.6	
Approach LOS	B			B	E	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	753	320	9
Future Volume (vph)	0	0	0	753	320	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr t					0.996	
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3525	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3525	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	818	348	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	818	358	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.1%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	23	15	700	350	11
Future Volume (vph)	55	23	15	700	350	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.960				0.995	
Flt Protected	0.966		0.950			
Satd. Flow (prot)	1727	0	1770	3539	3522	0
Flt Permitted	0.966		0.950			
Satd. Flow (perm)	1727	0	1770	3539	3522	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	25	16	761	380	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	16	761	392	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.5%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

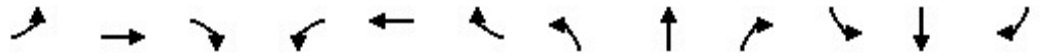


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	23	15	700	350	11
Future Volume (Veh/h)	55	23	15	700	350	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	25	16	761	380	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	798	196	392			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	798	196	392			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	97	99			
cM capacity (veh/h)	319	812	1163			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	85	16	380	380	253	139
Volume Left	60	16	0	0	0	0
Volume Right	25	0	0	0	0	12
cSH	388	1163	1700	1700	1700	1700
Volume to Capacity	0.22	0.01	0.22	0.22	0.15	0.08
Queue Length 95th (ft)	21	1	0	0	0	0
Control Delay (s)	16.9	8.1	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	16.9	0.2	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			30.5%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1547	134	36	1338	103	240	50	39	139	16	78
Future Volume (vph)	85	1547	134	36	1338	103	240	50	39	139	16	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.968		0.950	0.962	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1631	1615	1600	1621	1507
Flt Permitted	0.950			0.950			0.950	0.500		0.950	0.669	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	842	1529	1600	1127	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	89	1628	141	38	1394	107	273	57	44	170	20	95
Shared Lane Traffic (%)							40%			44%		
Lane Group Flow (vph)	89	1628	141	38	1394	107	164	166	44	95	95	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.4	60.8	60.8	8.2	57.1	57.1	15.1	15.1	33.8	9.5	9.5	28.2
Actuated g/C Ratio	0.07	0.47	0.47	0.06	0.44	0.44	0.12	0.12	0.26	0.07	0.07	0.22
v/c Ratio	0.73	0.97	0.17	0.38	0.90	0.15	0.88	0.88	0.09	0.82	0.81	0.24
Control Delay	91.3	49.5	3.7	69.8	42.9	1.8	97.7	95.9	0.4	104.0	101.6	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.3	49.5	3.7	69.8	42.9	1.8	97.7	95.9	0.4	104.0	101.6	8.3
LOS	F	D	A	E	D	A	F	F	A	F	F	A
Approach Delay	48.0			40.7			85.5			71.3		
Approach LOS	D			D			F			E		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	50.3
Intersection LOS:	D
Intersection Capacity Utilization:	79.1%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

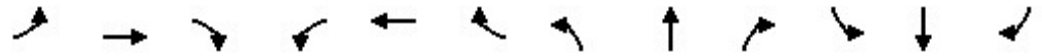
Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	89	1628	141	38	1394	107	164	166	44	95	95	95
v/c Ratio	0.73	0.97	0.17	0.38	0.90	0.15	0.88	0.88	0.09	0.82	0.81	0.24
Control Delay	91.3	49.5	3.7	69.8	42.9	1.8	97.7	95.9	0.4	104.0	101.6	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.3	49.5	3.7	69.8	42.9	1.8	97.7	95.9	0.4	104.0	101.6	8.3
Queue Length 50th (ft)	75	~726	0	31	567	0	144	146	0	84	84	0
Queue Length 95th (ft)	#162	#902	37	69	#678	16	#266	#268	0	#158	#156	31
Internal Link Dist (ft)		873			1268			165				323
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	1687	808	104	1553	731	194	189	472	121	118	400
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.97	0.17	0.37	0.90	0.15	0.85	0.88	0.09	0.79	0.81	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.

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

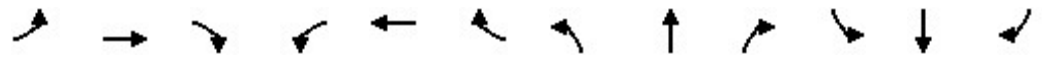


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	85	1547	134	36	1338	103	240	50	39	139	16	78	
Future Volume (vph)	85	1547	134	36	1338	103	240	50	39	139	16	78	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10	
Grade (%)		-2%			2%			0%				0%	
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00	
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1631	1529	1600	1621	1479	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.50	1.00	0.95	0.67	1.00	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	843	1529	1600	1127	1479	
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82	
Adj. Flow (vph)	89	1628	141	38	1394	107	273	57	44	170	20	95	
RTOR Reduction (vph)	0	0	76	0	0	60	0	0	33	0	0	74	
Lane Group Flow (vph)	89	1628	65	38	1394	47	164	166	11	95	95	21	
Confl. Peds. (#/hr)			4			16			24			5	
Confl. Bikes (#/hr)									2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	5	2		1	6		7	4		3	8		
Permitted Phases			2			6			4			8	
Actuated Green, G (s)	9.4	59.9	59.9	6.6	57.1	57.1	15.1	33.8	33.8	9.5	28.2	28.2	
Effective Green, g (s)	9.4	59.9	59.9	6.6	57.1	57.1	15.1	33.8	33.8	9.5	28.2	28.2	
Actuated g/C Ratio	0.07	0.46	0.46	0.05	0.44	0.44	0.12	0.26	0.26	0.07	0.22	0.22	
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	121	1663	721	80	1554	651	185	310	397	116	280	320	
v/s Ratio Prot	c0.05	c0.45		0.02	0.39		c0.10	0.06		c0.06	0.02		
v/s Ratio Perm			0.04			0.03		c0.08	0.01		0.05	0.01	
v/c Ratio	0.74	0.98	0.09	0.47	0.90	0.07	0.89	0.54	0.03	0.82	0.34	0.06	
Uniform Delay, d1	59.1	34.4	19.7	60.0	33.7	21.1	56.6	41.4	35.9	59.4	43.0	40.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.0	17.6	0.2	1.6	8.5	0.2	35.2	0.9	0.0	32.9	0.3	0.0	
Delay (s)	77.1	52.0	20.0	61.6	42.3	21.3	91.9	42.2	35.9	92.3	43.3	40.5	
Level of Service	E	D	B	E	D	C	F	D	D	F	D	D	
Approach Delay (s)		50.8			41.3			63.2			58.7		
Approach LOS		D			D			E			E		
Intersection Summary													
HCM 2000 Control Delay			48.9									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	20.2
Intersection Capacity Utilization			79.1%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	623	0	1	493	113	0	0	2	54	0	36
Future Volume (vph)	70	623	0	1	493	113	0	0	2	54	0	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.97			0.98			
Frt						0.850			0.850			0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1643	3521	0	1693	3386	1461	0	1900	1615	0	1805	1615
Flt Permitted	0.950			0.950							0.690	
Satd. Flow (perm)	1643	3521	0	1693	3386	1423	0	1900	1588	0	1311	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						120			389			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	76	677	0	1	524	120	0	0	3	59	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	677	0	1	524	120	0	0	3	0	59	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex				Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0				0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	11.6	104.1		7.0	92.6	105.2			6.0		13.4	11.6
Actuated g/C Ratio	0.09	0.80		0.05	0.71	0.81			0.05		0.10	0.09
v/c Ratio	0.52	0.24		0.01	0.22	0.10			0.01		0.34	0.17
Control Delay	68.6	4.2		69.0	7.3	1.0			0.0		57.8	1.6
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0		0.0	0.0
Total Delay	68.6	4.2		69.0	7.3	1.0			0.0		57.8	1.6
LOS	E	A		E	A	A			A		E	A
Approach Delay	10.7			6.2								
Approach LOS	B			A								

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	10.3
Intersection LOS:	B
Intersection Capacity Utilization:	53.3%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

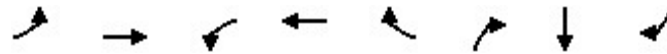
Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBR	SBT	SBR
Lane Group Flow (vph)	76	677	1	524	120	3	59	40
v/c Ratio	0.52	0.24	0.01	0.22	0.10	0.01	0.34	0.17
Control Delay	68.6	4.2	69.0	7.3	1.0	0.0	57.8	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	4.2	69.0	7.3	1.0	0.0	57.8	1.6
Queue Length 50th (ft)	62	52	0	80	0	0	47	0
Queue Length 95th (ft)	111	135	m4	154	2	0	88	0
Internal Link Dist (ft)		670		573			285	
Turn Bay Length (ft)	125		70		200	20		55
Base Capacity (vph)	233	2820	97	2410	1207	499	353	317
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	0.33	0.24	0.01	0.22	0.10	0.01	0.17	0.13

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	70	623	0	1	493	113	0	0	2	54	0	36	
Future Volume (vph)	70	623	0	1	493	113	0	0	2	54	0	36	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12	
Grade (%)		3%			-3%			0%				0%	
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5			5.2		5.1	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00			1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98			0.94		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	1.00		1.00	1.00	0.85			0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1643	3521		1693	3386	1427			1518		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00	1.00			1.00		0.69	1.00	
Satd. Flow (perm)	1643	3521		1693	3386	1427			1518		1310	1615	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91	
Adj. Flow (vph)	76	677	0	1	524	120	0	0	3	59	0	40	
RTOR Reduction (vph)	0	0	0	0	0	28	0	0	3	0	0	37	
Lane Group Flow (vph)	76	677	0	1	524	92	0	0	0	0	59	3	
Confl. Peds. (#/hr)			1			3							
Confl. Bikes (#/hr)			1						2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over	
Protected Phases	5	2		1	6	7		8		7	4	5	
Permitted Phases						6	8		8		4		
Actuated Green, G (s)	10.0	96.4		1.4	87.5	99.2			1.2		17.5	10.0	
Effective Green, g (s)	10.0	96.4		1.4	87.5	99.2			1.2		17.5	10.0	
Actuated g/C Ratio	0.08	0.74		0.01	0.67	0.76			0.01		0.13	0.08	
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5			5.2		5.1	4.5	
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0			3.0		3.5	3.0	
Lane Grp Cap (vph)	126	2610		18	2279	1088			14		220	124	
v/s Ratio Prot	c0.05	c0.19		0.00	0.15	0.01					c0.02	0.00	
v/s Ratio Perm						0.06			0.00		c0.01		
v/c Ratio	0.60	0.26		0.06	0.23	0.08			0.00		0.27	0.02	
Uniform Delay, d1	58.1	5.4		63.6	8.2	3.9			63.8		50.5	55.5	
Progression Factor	1.00	1.00		1.19	0.92	1.04			1.00		1.00	1.00	
Incremental Delay, d2	7.9	0.2		1.3	0.2	0.1			0.1		0.8	0.1	
Delay (s)	66.0	5.6		76.8	7.8	4.1			63.9		51.3	55.6	
Level of Service	E	A		E	A	A			E		D	E	
Approach Delay (s)		11.7			7.2			63.9			53.0		
Approach LOS		B			A			E			D		
Intersection Summary													
HCM 2000 Control Delay			12.6									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.31										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	19.6
Intersection Capacity Utilization			53.3%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	658	4	12	615	2	2
Future Volume (vph)	658	4	12	615	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Fr _t	0.999				0.932	
Fl _t Protected			0.950		0.976	
Satd. Flow (prot)	3536	0	1796	3592	1694	0
Fl _t Permitted			0.950		0.976	
Satd. Flow (perm)	3536	0	1796	3592	1694	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	715	4	13	668	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	719	0	13	668	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	658	4	12	615	2	2
Future Volume (Veh/h)	658	4	12	615	2	2
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	715	4	13	668	2	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			719		1077	360
vC1, stage 1 conf vol					717	
vC2, stage 2 conf vol					360	
vCu, unblocked vol			588		963	207
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			930		435	755
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	477	242	13	334	334	4
Volume Left	0	0	13	0	0	2
Volume Right	0	4	0	0	0	2
cSH	1700	1700	930	1700	1700	552
Volume to Capacity	0.28	0.14	0.01	0.20	0.20	0.01
Queue Length 95th (ft)	0	0	1	0	0	1
Control Delay (s)	0.0	0.0	8.9	0.0	0.0	11.6
Lane LOS	A			B		
Approach Delay (s)	0.0		0.2			11.6
Approach LOS				B		
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			28.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	656	0	0	626	0	22
Future Volume (vph)	656	0	0	626	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	713	0	0	680	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	713	0	0	680	0	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	656	0	0	626	0	22
Future Volume (Veh/h)	656	0	0	626	0	22
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	713	0	0	680	0	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.96	0.97	0.96
vC, conflicting volume				713	1053	356
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				613	890	241
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	97
cM capacity (veh/h)				922	274	728
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	356	356	340	340	24	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	24	
cSH	1700	1700	1700	1700	728	
Volume to Capacity	0.21	0.21	0.20	0.20	0.03	
Queue Length 95th (ft)	0	0	0	0	3	
Control Delay (s)	0.0	0.0	0.0	0.0	10.1	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.1	
Approach LOS						B
Intersection Summary						
Average Delay				0.2		
Intersection Capacity Utilization				28.1%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

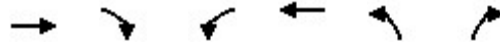


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	633	44	104	550	85	157
Future Volume (vph)	633	44	104	550	85	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						178
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	653	45	112	591	97	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	653	45	112	591	97	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

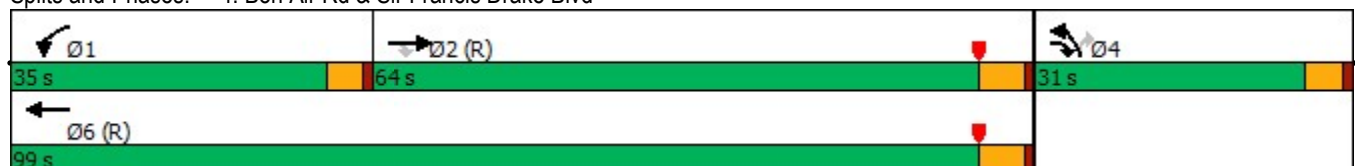


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	94.7	105.2	10.7	109.9	9.9	9.9
Actuated g/C Ratio	0.73	0.81	0.08	0.85	0.08	0.08
v/c Ratio	0.25	0.04	0.42	0.20	0.39	0.63
Control Delay	5.5	1.5	61.5	2.1	61.4	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	1.5	61.5	2.1	61.4	18.0
LOS	A	A	E	A	E	B
Approach Delay	5.3			11.6	33.3	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 12.5
 Intersection Capacity Utilization 50.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

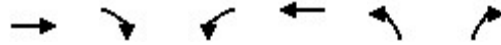
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	653	45	112	591	97	178
v/c Ratio	0.25	0.04	0.42	0.20	0.39	0.63
Control Delay	5.5	1.5	61.5	2.1	61.4	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	1.5	61.5	2.1	61.4	18.0
Queue Length 50th (ft)	71	3	47	34	41	0
Queue Length 95th (ft)	100	8	77	58	66	65
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2602	1474	759	3021	652	459
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	0.25	0.03	0.15	0.20	0.15	0.39

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	633	44	104	550	85	157
Future Volume (vph)	633	44	104	550	85	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1576	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1576	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	653	45	112	591	97	178
RTOR Reduction (vph)	0	0	0	0	0	164
Lane Group Flow (vph)	653	45	112	591	97	14
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	94.7	104.6	10.7	109.9	9.9	9.9
Effective Green, g (s)	94.7	104.6	10.7	109.9	9.9	9.9
Actuated g/C Ratio	0.73	0.80	0.08	0.85	0.08	0.08
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2603	1268	266	3021	246	120
v/s Ratio Prot	c0.18	0.00	c0.03	0.17	c0.03	
v/s Ratio Perm		0.03				0.01
v/c Ratio	0.25	0.04	0.42	0.20	0.39	0.11
Uniform Delay, d1	5.9	2.6	56.7	1.9	57.2	56.0
Progression Factor	0.85	0.80	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	1.1	0.1	1.0	0.4
Delay (s)	5.2	2.1	57.8	2.0	58.2	56.4
Level of Service	A	A	E	A	E	E
Approach Delay (s)	5.0			10.9	57.0	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	233	129	0
Future Volume (vph)	0	0	0	233	129	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	253	140	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	253	140	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	9.8%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	1	1	232	127	3
Future Volume (vph)	5	1	1	232	127	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.977				0.997	
Flt Protected	0.960		0.950			
Satd. Flow (prot)	1747	0	1770	3539	3529	0
Flt Permitted	0.960		0.950			
Satd. Flow (perm)	1747	0	1770	3539	3529	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1	1	252	138	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	1	252	141	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

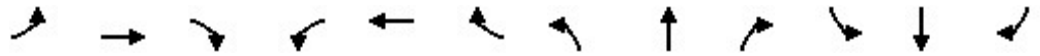


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1	1	232	127	3
Future Volume (Veh/h)	5	1	1	232	127	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	1	252	138	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	268	70	141			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	268	70	141			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	699	978	1440			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	6	1	126	126	92	49
Volume Left	5	1	0	0	0	0
Volume Right	1	0	0	0	0	3
cSH	734	1440	1700	1700	1700	1700
Volume to Capacity	0.01	0.00	0.07	0.07	0.05	0.03
Queue Length 95th (ft)	1	0	0	0	0	0
Control Delay (s)	9.9	7.5	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.9	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			16.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

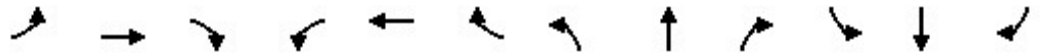


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	756	44	13	671	53	89	13	19	21	3	15
Future Volume (vph)	33	756	44	13	671	53	89	13	19	21	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.964		0.950	0.965	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1624	1615	1600	1626	1507
Flt Permitted	0.950			0.950			0.950	0.773		0.950	0.850	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1302	1529	1600	1432	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	35	796	46	14	699	55	101	15	22	26	4	18
Shared Lane Traffic (%)							43%			43%		
Lane Group Flow (vph)	35	796	46	14	699	55	58	58	22	15	15	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.1	82.6	82.6	8.0	79.4	79.4	15.2	13.4	35.5	8.0	3.2	24.7
Actuated g/C Ratio	0.07	0.64	0.64	0.06	0.61	0.61	0.12	0.10	0.27	0.06	0.02	0.19
v/c Ratio	0.30	0.35	0.04	0.14	0.32	0.06	0.31	0.35	0.04	0.15	0.38	0.05
Control Delay	64.4	16.7	0.1	61.4	18.3	0.1	58.8	60.1	0.2	61.7	83.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	16.7	0.1	61.4	18.3	0.1	58.8	60.1	0.2	61.7	83.3	0.3
LOS	E	B	A	E	B	A	E	E	A	E	F	A
Approach Delay	17.8		17.8		50.0			45.4				
Approach LOS	B		B		D			D				

Intersection Summary









Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.38
Intersection Signal Delay:	20.9
Intersection LOS:	C
Intersection Capacity Utilization	54.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

 Ø1 13 s	 Ø2 (R) 63 s	 Ø4 39 s	 Ø3 15 s
 Ø5 14 s	 Ø6 (R) 62 s	 Ø7 21 s	 Ø8 33 s

Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	796	46	14	699	55	58	58	22	15	15	18
v/c Ratio	0.30	0.35	0.04	0.14	0.32	0.06	0.31	0.35	0.04	0.15	0.38	0.05
Control Delay	64.4	16.7	0.1	61.4	18.3	0.1	58.8	60.1	0.2	61.7	83.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	16.7	0.1	61.4	18.3	0.1	58.8	60.1	0.2	61.7	83.3	0.3
Queue Length 50th (ft)	29	174	0	11	191	0	50	50	0	12	~27	0
Queue Length 95th (ft)	64	295	0	34	261	0	94	94	0	34	34	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	2293	1046	104	2161	961	238	167	490	121	40	405
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.35	0.04	0.13	0.32	0.06	0.24	0.35	0.04	0.12	0.38	0.04

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



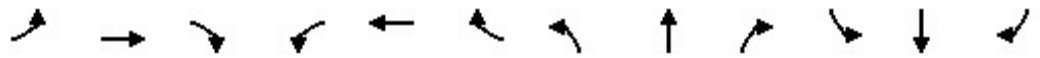
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	756	44	13	671	53	89	13	19	21	3	15
Future Volume (vph)	33	756	44	13	671	53	89	13	19	21	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1624	1528	1600	1625	1474
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.77	1.00	0.95	0.85	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1302	1528	1600	1432	1474
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	35	796	46	14	699	55	101	15	22	26	4	18
RTOR Reduction (vph)	0	0	20	0	0	24	0	0	17	0	0	15
Lane Group Flow (vph)	35	796	26	14	699	31	58	58	5	15	15	3
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	5.5	74.7	74.7	3.2	72.4	72.4	13.4	28.7	28.7	3.2	18.5	18.5
Effective Green, g (s)	5.5	74.7	74.7	3.2	72.4	72.4	13.4	28.7	28.7	3.2	18.5	18.5
Actuated g/C Ratio	0.04	0.57	0.57	0.02	0.56	0.56	0.10	0.22	0.22	0.02	0.14	0.14
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	71	2074	899	39	1970	826	164	320	337	39	208	209
v/s Ratio Prot	c0.02	c0.22		0.01	0.20		c0.04	0.02		c0.01	0.00	
v/s Ratio Perm			0.02			0.02		c0.02	0.00		0.01	0.00
v/c Ratio	0.49	0.38	0.03	0.36	0.35	0.04	0.35	0.18	0.01	0.38	0.07	0.01
Uniform Delay, d1	60.9	15.1	12.0	62.4	15.9	13.0	54.3	41.1	39.6	62.4	48.3	47.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.5	0.1	2.1	0.5	0.1	0.5	0.1	0.0	2.3	0.1	0.0
Delay (s)	62.8	15.6	12.0	64.4	16.4	13.1	54.7	41.2	39.6	64.7	48.4	47.9
Level of Service	E	B	B	E	B	B	D	D	D	E	D	D
Approach Delay (s)		17.3			17.0			46.6			53.3	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.36	C
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	54.6%	ICU Level of Service
Analysis Period (min)	15	A
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	625	0	1	504	116	0	0	2	55	0	36
Future Volume (vph)	70	625	0	1	504	116	0	0	2	55	0	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.97			0.98			
Frt						0.850			0.850			0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1643	3521	0	1693	3386	1461	0	1900	1615	0	1805	1615
Flt Permitted	0.950			0.950							0.690	
Satd. Flow (perm)	1643	3521	0	1693	3386	1423	0	1900	1588	0	1311	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						123			387			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	76	679	0	1	536	123	0	0	3	60	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	679	0	1	536	123	0	0	3	0	60	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	11.6	104.0		7.0	92.5	105.1			6.0		13.5	11.6
Actuated g/C Ratio	0.09	0.80		0.05	0.71	0.81			0.05		0.10	0.09
v/c Ratio	0.52	0.24		0.01	0.22	0.10			0.01		0.34	0.17
Control Delay	68.6	4.2		66.0	8.2	1.9			0.0		57.7	1.6
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0		0.0	0.0
Total Delay	68.6	4.2		66.0	8.2	1.9			0.0		57.7	1.6
LOS	E	A		E	A	A			A		E	A
Approach Delay	10.7			7.1								
Approach LOS	B			A								

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	10.7
Intersection LOS:	B
Intersection Capacity Utilization:	53.3%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

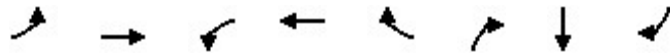
Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBR	SBT	SBR
Lane Group Flow (vph)	76	679	1	536	123	3	60	40
v/c Ratio	0.52	0.24	0.01	0.22	0.10	0.01	0.34	0.17
Control Delay	68.6	4.2	66.0	8.2	1.9	0.0	57.7	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	4.2	66.0	8.2	1.9	0.0	57.7	1.6
Queue Length 50th (ft)	62	52	0	77	0	0	48	0
Queue Length 95th (ft)	111	136	m4	168	10	0	88	0
Internal Link Dist (ft)		670		573			285	
Turn Bay Length (ft)	125		70		200	20		55
Base Capacity (vph)	233	2817	97	2408	1207	497	354	317
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	0.33	0.24	0.01	0.22	0.10	0.01	0.17	0.13

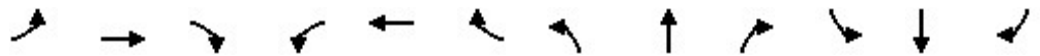
Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	625	0	1	504	116	0	0	2	55	0	36
Future Volume (vph)	70	625	0	1	504	116	0	0	2	55	0	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5			5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00			1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98			0.94		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	1.00		1.00	1.00	0.85			0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00			1.00		0.95	1.00
Satd. Flow (prot)	1643	3521		1693	3386	1427			1518		1805	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00			1.00		0.69	1.00
Satd. Flow (perm)	1643	3521		1693	3386	1427			1518		1310	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	76	679	0	1	536	123	0	0	3	60	0	40
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	3	0	0	37
Lane Group Flow (vph)	76	679	0	1	536	94	0	0	0	0	60	3
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8		4	
Actuated Green, G (s)	10.0	96.3		1.4	87.4	99.2			1.2		17.6	10.0
Effective Green, g (s)	10.0	96.3		1.4	87.4	99.2			1.2		17.6	10.0
Actuated g/C Ratio	0.08	0.74		0.01	0.67	0.76			0.01		0.14	0.08
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5			5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0			3.0		3.5	3.0
Lane Grp Cap (vph)	126	2608		18	2276	1088			14		222	124
v/s Ratio Prot	c0.05	c0.19		0.00	0.16	0.01					c0.02	0.00
v/s Ratio Perm						0.06			0.00		c0.01	
v/c Ratio	0.60	0.26		0.06	0.24	0.09			0.00		0.27	0.02
Uniform Delay, d1	58.1	5.4		63.6	8.3	3.9			63.8		50.4	55.5
Progression Factor	1.00	1.00		1.13	1.03	2.30			1.00		1.00	1.00
Incremental Delay, d2	7.9	0.2		1.3	0.2	0.1			0.1		0.8	0.1
Delay (s)	66.0	5.7		73.0	8.8	9.1			63.9		51.2	55.6
Level of Service	E	A		E	A	A			E		D	E
Approach Delay (s)		11.7			8.9			63.9			53.0	
Approach LOS		B			A			E			D	
Intersection Summary												
HCM 2000 Control Delay			13.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)				19.6	
Intersection Capacity Utilization			53.3%				ICU Level of Service				A	
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	658	7	21	630	2	2
Future Volume (vph)	658	7	21	630	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Flt	0.998				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	3532	0	1796	3592	1694	0
Flt Permitted			0.950		0.976	
Satd. Flow (perm)	3532	0	1796	3592	1694	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	715	8	23	685	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	723	0	23	685	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (veh/h)	658	7	21	630	2	2
Future Volume (Veh/h)	658	7	21	630	2	2
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	715	8	23	685	2	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.94	0.95	0.94	
vC, conflicting volume			723	1108	362	
vC1, stage 1 conf vol				719		
vC2, stage 2 conf vol				388		
vCu, unblocked vol			590	989	208	
tC, single (s)			4.1	6.8	6.9	
tC, 2 stage (s)				5.8		
tF (s)			2.2	3.5	3.3	
p0 queue free %			98	100	100	
cM capacity (veh/h)			927	427	754	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	477	246	23	342	342	4
Volume Left	0	0	23	0	0	2
Volume Right	0	8	0	0	0	2
cSH	1700	1700	927	1700	1700	546
Volume to Capacity	0.28	0.14	0.02	0.20	0.20	0.01
Queue Length 95th (ft)	0	0	2	0	0	1
Control Delay (s)	0.0	0.0	9.0	0.0	0.0	11.6
Lane LOS	A			B		
Approach Delay (s)	0.0		0.3			11.6
Approach LOS				B		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			28.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	656	0	0	650	0	63
Future Volume (vph)	656	0	0	650	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	713	0	0	707	0	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	713	0	0	707	0	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

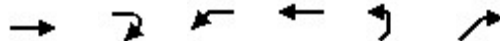
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

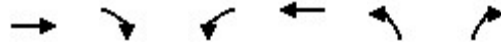
03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	656	0	0	650	0	63
Future Volume (Veh/h)	656	0	0	650	0	63
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	713	0	0	707	0	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.96	0.97	0.96
vC, conflicting volume				713	1066	356
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				613	897	241
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	91
cM capacity (veh/h)				922	271	728
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	356	356	354	354	68	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	68	
cSH	1700	1700	1700	1700	728	
Volume to Capacity	0.21	0.21	0.21	0.21	0.09	
Queue Length 95th (ft)	0	0	0	0	8	
Control Delay (s)	0.0	0.0	0.0	0.0	10.5	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.5	
Approach LOS						B
Intersection Summary						
Average Delay				0.5		
Intersection Capacity Utilization				28.7%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

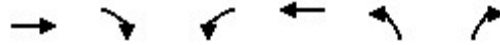


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↑
Traffic Volume (vph)	372	46	109	558	101	171
Future Volume (vph)	372	46	109	558	101	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						194
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	384	47	117	600	115	194
Shared Lane Traffic (%)						
Lane Group Flow (vph)	384	47	117	600	115	194
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



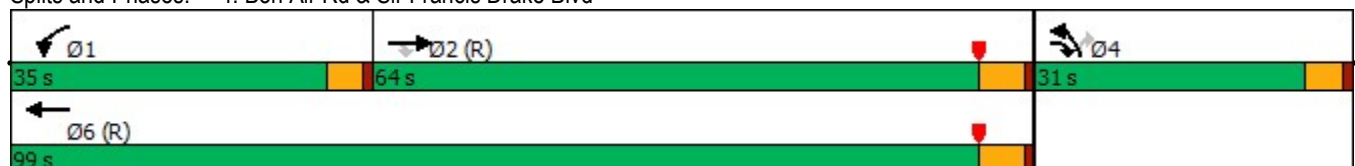
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	94.0	105.0	10.9	109.4	10.4	10.4
Actuated g/C Ratio	0.72	0.81	0.08	0.84	0.08	0.08
v/c Ratio	0.15	0.04	0.43	0.20	0.44	0.64
Control Delay	5.4	1.7	61.6	2.2	61.9	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	1.7	61.6	2.2	61.9	17.3
LOS	A	A	E	A	E	B
Approach Delay	5.0			11.9	33.9	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 50.0%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

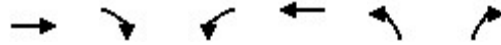
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	384	47	117	600	115	194
v/c Ratio	0.15	0.04	0.43	0.20	0.44	0.64
Control Delay	5.4	1.7	61.6	2.2	61.9	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	1.7	61.6	2.2	61.9	17.3
Queue Length 50th (ft)	41	4	49	37	48	0
Queue Length 95th (ft)	62	9	80	62	76	67
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2584	1466	759	3006	652	472
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	0.03	0.15	0.20	0.18	0.41

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	372	46	109	558	101	171
Future Volume (vph)	372	46	109	558	101	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1576	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1576	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	384	47	117	600	115	194
RTOR Reduction (vph)	0	0	0	0	0	178
Lane Group Flow (vph)	384	47	117	600	115	16
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	94.0	104.4	10.9	109.4	10.4	10.4
Effective Green, g (s)	94.0	104.4	10.9	109.4	10.4	10.4
Actuated g/C Ratio	0.72	0.80	0.08	0.84	0.08	0.08
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2584	1265	271	3007	258	126
v/s Ratio Prot	0.11	0.00	c0.04	c0.17	c0.04	
v/s Ratio Perm		0.03				0.01
v/c Ratio	0.15	0.04	0.43	0.20	0.45	0.12
Uniform Delay, d1	5.6	2.6	56.6	2.0	57.1	55.6
Progression Factor	0.89	0.88	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	1.1	0.1	1.2	0.4
Delay (s)	5.1	2.3	57.7	2.1	58.3	56.0
Level of Service	A	A	E	A	E	E
Approach Delay (s)	4.8			11.2	56.9	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	263	134	2
Future Volume (vph)	0	0	0	263	134	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr t					0.998	
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3532	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3532	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	286	146	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	286	148	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

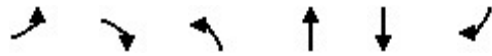
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	10.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	15	3	233	129	6
Future Volume (vph)	33	15	3	233	129	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.958				0.993	
Flt Protected	0.967		0.950			
Satd. Flow (prot)	1726	0	1770	3539	3514	0
Flt Permitted	0.967		0.950			
Satd. Flow (perm)	1726	0	1770	3539	3514	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	16	3	253	140	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	3	253	147	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

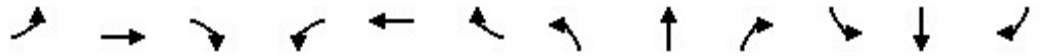


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	15	3	233	129	6
Future Volume (Veh/h)	33	15	3	233	129	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	16	3	253	140	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	276	74	147			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	276	74	147			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	98	100			
cM capacity (veh/h)	689	973	1432			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	52	3	126	126	93	54
Volume Left	36	3	0	0	0	0
Volume Right	16	0	0	0	0	7
cSH	757	1432	1700	1700	1700	1700
Volume to Capacity	0.07	0.00	0.07	0.07	0.05	0.03
Queue Length 95th (ft)	6	0	0	0	0	0
Control Delay (s)	10.1	7.5	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.1	0.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	1.2					
Intersection Capacity Utilization	16.4%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	806	44	13	684	53	89	13	19	21	3	15
Future Volume (vph)	36	806	44	13	684	53	89	13	19	21	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.964		0.950	0.965	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1624	1615	1600	1626	1507
Flt Permitted	0.950			0.950			0.950	0.773		0.950	0.850	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1302	1529	1600	1432	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	38	848	46	14	713	55	101	15	22	26	4	18
Shared Lane Traffic (%)							43%			43%		
Lane Group Flow (vph)	38	848	46	14	713	55	58	58	22	15	15	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.1	82.6	82.6	8.0	76.7	76.7	15.2	13.4	35.5	8.0	3.2	24.7
Actuated g/C Ratio	0.07	0.64	0.64	0.06	0.59	0.59	0.12	0.10	0.27	0.06	0.02	0.19
v/c Ratio	0.32	0.37	0.04	0.14	0.34	0.06	0.31	0.35	0.04	0.15	0.38	0.05
Control Delay	65.3	17.1	0.1	61.4	19.6	0.1	58.8	60.1	0.2	61.7	83.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	17.1	0.1	61.4	19.6	0.1	58.8	60.1	0.2	61.7	83.3	0.3
LOS	E	B	A	E	B	A	E	E	A	E	F	A
Approach Delay	18.2		19.0		50.0		45.4					
Approach LOS	B		B		D		D					

Intersection Summary


Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.38
Intersection Signal Delay:	21.5
Intersection LOS:	C
Intersection Capacity Utilization:	56.0%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

 Ø1 13 s	 Ø2 (R) 63 s	 Ø4 39 s	 Ø3 15 s
 Ø5 14 s	 Ø6 (R) 62 s	 Ø7 21 s	 Ø8 33 s

Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	38	848	46	14	713	55	58	58	22	15	15	18
v/c Ratio	0.32	0.37	0.04	0.14	0.34	0.06	0.31	0.35	0.04	0.15	0.38	0.05
Control Delay	65.3	17.1	0.1	61.4	19.6	0.1	58.8	60.1	0.2	61.7	83.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	17.1	0.1	61.4	19.6	0.1	58.8	60.1	0.2	61.7	83.3	0.3
Queue Length 50th (ft)	31	189	0	11	196	0	50	50	0	12	~27	0
Queue Length 95th (ft)	69	319	0	34	267	0	94	94	0	34	34	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	2293	1046	104	2087	934	238	167	490	121	40	405
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.37	0.04	0.13	0.34	0.06	0.24	0.35	0.04	0.12	0.38	0.04

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↗	↘	↗↗	↗	↘	↗	↗	↘	↗	↗
Traffic Volume (vph)	36	806	44	13	684	53	89	13	19	21	3	15
Future Volume (vph)	36	806	44	13	684	53	89	13	19	21	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1624	1528	1600	1625	1474
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.77	1.00	0.95	0.85	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1302	1528	1600	1432	1474
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	38	848	46	14	712	55	101	15	22	26	4	18
RTOR Reduction (vph)	0	0	20	0	0	25	0	0	17	0	0	15
Lane Group Flow (vph)	38	848	26	14	713	30	58	58	5	15	15	3
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	7.3	74.7	74.7	3.2	70.6	70.6	13.4	28.7	28.7	3.2	18.5	18.5
Effective Green, g (s)	7.3	74.7	74.7	3.2	70.6	70.6	13.4	28.7	28.7	3.2	18.5	18.5
Actuated g/C Ratio	0.06	0.57	0.57	0.02	0.54	0.54	0.10	0.22	0.22	0.02	0.14	0.14
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	94	2074	899	39	1921	805	164	320	337	39	208	209
v/s Ratio Prot	c0.02	c0.23		0.01	0.20		c0.04	0.02		c0.01	0.00	
v/s Ratio Perm			0.02			0.02		c0.02	0.00		0.01	0.00
v/c Ratio	0.40	0.41	0.03	0.36	0.37	0.04	0.35	0.18	0.01	0.38	0.07	0.01
Uniform Delay, d1	59.2	15.4	12.0	62.4	17.0	13.8	54.3	41.1	39.6	62.4	48.3	47.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.6	0.1	2.1	0.6	0.1	0.5	0.1	0.0	2.3	0.1	0.0
Delay (s)	60.3	16.0	12.0	64.4	17.5	13.9	54.7	41.2	39.6	64.7	48.4	47.9
Level of Service	E	B	B	E	B	B	D	D	D	E	D	D
Approach Delay (s)		17.6			18.1			46.6			53.3	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.37	C
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	56.0%	ICU Level of Service
Analysis Period (min)	15	B
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	933	3	6	1206	306	6	0	2	163	1	149
Future Volume (vph)	141	933	3	6	1206	306	6	0	2	163	1	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.97			0.98			
Fr _t						0.850			0.850			0.850
Fl _t Protected	0.950			0.950				0.950			0.953	
Satd. Flow (prot)	1643	3520	0	1693	3386	1461	0	1805	1615	0	1811	1615
Fl _t Permitted	0.950			0.950				0.644			0.437	
Satd. Flow (perm)	1643	3520	0	1693	3386	1423	0	1224	1588	0	830	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						318			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	153	1014	3	6	1283	326	8	0	3	179	1	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	1017	0	6	1283	326	0	8	3	0	180	164
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



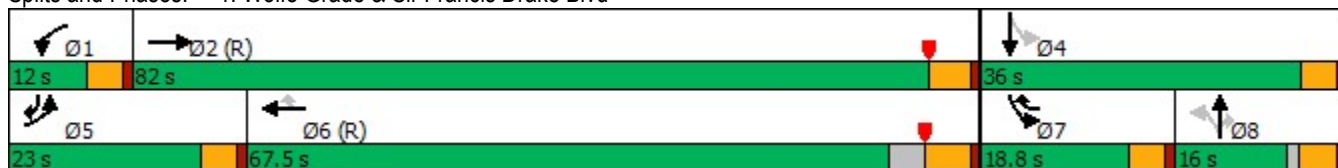
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	16.0	92.0		7.0	73.5	91.6		10.4	10.4		25.5	16.0
Actuated g/C Ratio	0.12	0.71		0.05	0.57	0.70		0.08	0.08		0.20	0.12
v/c Ratio	0.76	0.41		0.07	0.67	0.30		0.08	0.01		0.62	0.57
Control Delay	78.2	9.6		65.8	26.6	4.1		53.3	0.0		56.5	29.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	78.2	9.6		65.8	26.6	4.1		53.3	0.0		56.5	29.1
LOS	E	A		E	C	A		D	A		E	C
Approach Delay	18.6			22.2		38.8			43.4			
Approach LOS	B			C		D			D			

Intersection Summary	
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	23.2
Intersection LOS:	C
Intersection Capacity Utilization:	69.4%
ICU Level of Service:	C
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	153	1017	6	1283	326	8	3	180	164
v/c Ratio	0.76	0.41	0.07	0.67	0.30	0.08	0.01	0.62	0.57
Control Delay	78.2	9.6	65.8	26.6	4.1	53.3	0.0	56.5	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.2	9.6	65.8	26.6	4.1	53.3	0.0	56.5	29.1
Queue Length 50th (ft)	125	164	5	465	41	7	0	134	48
Queue Length 95th (ft)	#200	297	m10	578	88	19	0	202	121
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2490	97	1914	1119	131	289	323	317
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	0.66	0.41	0.06	0.67	0.29	0.06	0.01	0.56	0.52

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.

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	933	3	6	1206	306	6	0	2	163	1	149
Future Volume (vph)	141	933	3	6	1206	306	6	0	2	163	1	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00		1.00	1.00	0.85		1.00	0.85		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)	1643	3519		1693	3386	1430		1805	1582		1810	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.64	1.00		0.44	1.00
Satd. Flow (perm)	1643	3519		1693	3386	1430		1223	1582		830	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	153	1014	3	6	1283	326	8	0	3	179	1	164
RTOR Reduction (vph)	0	0	0	0	0	104	0	0	3	0	0	89
Lane Group Flow (vph)	153	1017	0	6	1283	222	0	8	0	0	180	75
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	16.0	85.3		1.4	70.4	87.6		6.8	6.8		28.6	16.0
Effective Green, g (s)	16.0	85.3		1.4	70.4	87.6		6.8	6.8		28.6	16.0
Actuated g/C Ratio	0.12	0.66		0.01	0.54	0.67		0.05	0.05		0.22	0.12
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	202	2309		18	1833	963		63	82		312	198
v/s Ratio Prot	c0.09	0.29		0.00	c0.38	0.03					c0.08	0.05
v/s Ratio Perm						0.12		0.01	0.00		c0.05	
v/c Ratio	0.76	0.44		0.33	0.70	0.23		0.13	0.00		0.58	0.38
Uniform Delay, d1	55.1	10.8		63.8	22.0	8.2		58.8	58.4		45.3	52.4
Progression Factor	1.00	1.00		1.10	1.15	2.87		1.00	1.00		1.00	1.00
Incremental Delay, d2	14.9	0.6		9.4	2.0	0.3		0.9	0.0		2.8	1.2
Delay (s)	70.1	11.4		79.7	27.3	23.8		59.7	58.4		48.1	53.6
Level of Service	E	B		E	C	C		E	E		D	D
Approach Delay (s)		19.1			26.8			59.3			50.7	
Approach LOS		B			C			E			D	
Intersection Summary												
HCM 2000 Control Delay			26.7									C
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			130.0							19.6		
Intersection Capacity Utilization			69.4%									C
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
 2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	1064	24	39	1498	2	1
Future Volume (vph)	1064	24	39	1498	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.997				0.955	
Flt Protected			0.950		0.968	
Satd. Flow (prot)	3529	0	1796	3592	1722	0
Flt Permitted			0.950		0.968	
Satd. Flow (perm)	3529	0	1796	3592	1722	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1157	26	42	1628	2	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1183	0	42	1628	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (veh/h)	1064	24	39	1498	2	1
Future Volume (Veh/h)	1064	24	39	1498	2	1
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1157	26	42	1628	2	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.86		0.92	0.86
vC, conflicting volume			1183		2068	592
vC1, stage 1 conf vol					1170	
vC2, stage 2 conf vol					898	
vCu, unblocked vol			885		1307	197
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			94		99	100
cM capacity (veh/h)			653		276	697
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	771	412	42	814	814	3
Volume Left	0	0	42	0	0	2
Volume Right	0	26	0	0	0	1
cSH	1700	1700	653	1700	1700	346
Volume to Capacity	0.45	0.24	0.06	0.48	0.48	0.01
Queue Length 95th (ft)	0	0	5	0	0	1
Control Delay (s)	0.0	0.0	10.9	0.0	0.0	15.5
Lane LOS	B			C		
Approach Delay (s)	0.0		0.3			15.5
Approach LOS				C		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			51.4%	ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (vph)	1065	0	0	1529	0	53
Future Volume (vph)	1065	0	0	1529	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1158	0	0	1662	0	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1158	0	0	1662	0	58
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	1065	0	0	1529	0	53
Future Volume (Veh/h)	1065	0	0	1529	0	53
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1158	0	0	1662	0	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.86	0.92	0.86
vC, conflicting volume				1158	1989	579
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				866	1238	195
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	92
cM capacity (veh/h)				667	155	702
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	579	579	831	831	58	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	58	
cSH	1700	1700	1700	1700	702	
Volume to Capacity	0.34	0.34	0.49	0.49	0.08	
Queue Length 95th (ft)	0	0	0	0	7	
Control Delay (s)	0.0	0.0	0.0	0.0	10.6	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.6	
Approach LOS						B
Intersection Summary						
Average Delay				0.2		
Intersection Capacity Utilization				45.6%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	965	155	202	1230	304	339
Future Volume (vph)	965	155	202	1230	304	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						385
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	995	160	217	1323	345	385
Shared Lane Traffic (%)						
Lane Group Flow (vph)	995	160	217	1323	345	385
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

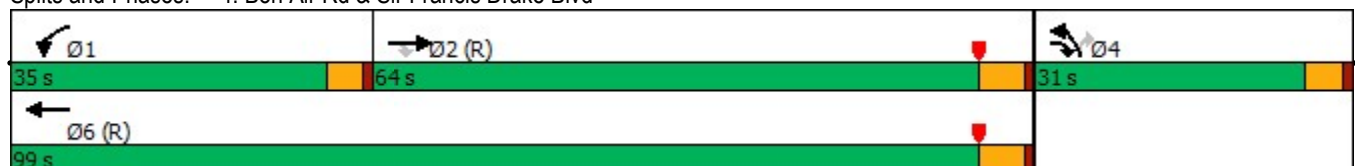


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	81.0	101.8	14.1	99.6	20.2	20.2
Actuated g/C Ratio	0.62	0.78	0.11	0.77	0.16	0.16
v/c Ratio	0.45	0.13	0.62	0.48	0.69	0.68
Control Delay	11.5	2.4	63.0	6.8	58.7	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	2.4	63.0	6.8	58.7	10.8
LOS	B	A	E	A	E	B
Approach Delay	10.2			14.7	33.4	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 17.2
 Intersection Capacity Utilization 56.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

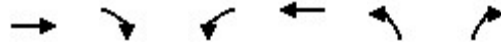
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



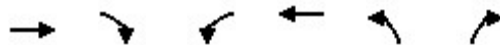
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	995	160	217	1323	345	385
v/c Ratio	0.45	0.13	0.62	0.48	0.69	0.68
Control Delay	11.5	2.4	63.0	6.8	58.7	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	2.4	63.0	6.8	58.7	10.8
Queue Length 50th (ft)	158	18	91	185	143	0
Queue Length 95th (ft)	225	29	130	278	180	78
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2226	1309	759	2737	652	625
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	0.45	0.12	0.29	0.48	0.53	0.62

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↓	↑↑	↑↓	↑
Traffic Volume (vph)	965	155	202	1230	304	339
Future Volume (vph)	965	155	202	1230	304	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1579	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1579	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	995	160	217	1323	345	385
RTOR Reduction (vph)	0	0	0	0	0	325
Lane Group Flow (vph)	995	160	217	1323	345	60
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	81.0	101.2	14.1	99.6	20.2	20.2
Effective Green, g (s)	81.0	101.2	14.1	99.6	20.2	20.2
Actuated g/C Ratio	0.62	0.78	0.11	0.77	0.16	0.16
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2226	1229	350	2738	502	244
v/s Ratio Prot	0.28	0.02	c0.07	c0.37	c0.11	
v/s Ratio Perm		0.08				0.04
v/c Ratio	0.45	0.13	0.62	0.48	0.69	0.25
Uniform Delay, d1	12.8	3.5	55.4	5.6	51.9	48.2
Progression Factor	0.78	0.80	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	3.3	0.6	3.9	0.5
Delay (s)	10.6	2.9	58.7	6.3	55.8	48.7
Level of Service	B	A	E	A	E	D
Approach Delay (s)	9.5			13.6	52.1	
Approach LOS	A			B	D	

Intersection Summary

HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	599	330	1
Future Volume (vph)	0	0	0	599	330	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	651	359	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	651	360	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.9%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	53	12	4	545	326	4
Future Volume (vph)	53	12	4	545	326	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.975				0.998	
Flt Protected	0.961		0.950			
Satd. Flow (prot)	1745	0	1770	3539	3532	0
Flt Permitted	0.961		0.950			
Satd. Flow (perm)	1745	0	1770	3539	3532	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	13	4	592	354	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	4	592	358	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.4%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

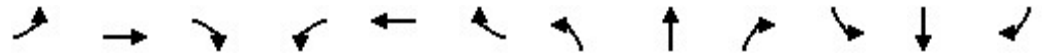


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Volume (veh/h)	53	12	4	545	326	4
Future Volume (Veh/h)	53	12	4	545	326	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	13	4	592	354	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	660	179	358			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	660	179	358			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	98	100			
cM capacity (veh/h)	395	833	1197			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	71	4	296	296	236	122
Volume Left	58	4	0	0	0	0
Volume Right	13	0	0	0	0	4
cSH	437	1197	1700	1700	1700	1700
Volume to Capacity	0.16	0.00	0.17	0.17	0.14	0.07
Queue Length 95th (ft)	14	0	0	0	0	0
Control Delay (s)	14.8	8.0	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	14.8	0.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	1.1					
Intersection Capacity Utilization	25.4%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

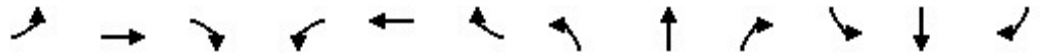


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1305	123	30	1319	111	225	42	24	110	16	67
Future Volume (vph)	69	1305	123	30	1319	111	225	42	24	110	16	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.967		0.950	0.964	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1629	1615	1600	1624	1507
Flt Permitted	0.950			0.950			0.950	0.543		0.950	0.717	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	915	1529	1600	1208	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	73	1374	129	31	1374	116	256	48	27	134	20	82
Shared Lane Traffic (%)							41%			43%		
Lane Group Flow (vph)	73	1374	129	31	1374	116	151	153	27	76	78	82
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.3	63.5	63.5	8.1	60.1	60.1	14.6	14.6	33.8	9.3	9.3	28.6
Actuated g/C Ratio	0.07	0.49	0.49	0.06	0.46	0.46	0.11	0.11	0.26	0.07	0.07	0.22
v/c Ratio	0.61	0.78	0.15	0.31	0.84	0.15	0.84	0.84	0.06	0.67	0.67	0.20
Control Delay	79.9	32.6	3.0	66.9	37.5	2.2	92.7	91.7	0.2	85.9	86.2	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	32.6	3.0	66.9	37.5	2.2	92.7	91.7	0.2	85.9	86.2	5.7
LOS	E	C	A	E	D	A	F	F	A	F	F	A
Approach Delay	32.3			35.5			84.7			58.1		
Approach LOS	C			D			F			E		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.84
Intersection Signal Delay:	40.0
Intersection LOS:	D
Intersection Capacity Utilization:	73.4%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

 Ø1 13 s	 Ø2 (R) 63 s	 Ø4 39 s	 Ø3 15 s
 Ø5 14 s	 Ø6 (R) 62 s	 Ø7 21 s	 Ø8 33 s

Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	1374	129	31	1374	116	151	153	27	76	78	82
v/c Ratio	0.61	0.78	0.15	0.31	0.84	0.15	0.84	0.84	0.06	0.67	0.67	0.20
Control Delay	79.9	32.6	3.0	66.9	37.5	2.2	92.7	91.7	0.2	85.9	86.2	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	32.6	3.0	66.9	37.5	2.2	92.7	91.7	0.2	85.9	86.2	5.7
Queue Length 50th (ft)	61	534	0	26	553	0	131	133	0	66	68	0
Queue Length 95th (ft)	#123	642	29	60	661	22	#236	#240	0	#114	#117	20
Internal Link Dist (ft)		873			1268			165				323
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	1764	838	104	1635	762	194	182	472	121	116	404
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.78	0.15	0.30	0.84	0.15	0.78	0.84	0.06	0.63	0.67	0.20

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↗	↗	↘	↗	↗
Traffic Volume (vph)	69	1305	123	30	1319	111	225	42	24	110	16	67
Future Volume (vph)	69	1305	123	30	1319	111	225	42	24	110	16	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1629	1529	1600	1624	1479
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.54	1.00	0.95	0.72	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	914	1529	1600	1208	1479
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	73	1374	129	31	1374	116	256	48	27	134	20	82
RTOR Reduction (vph)	0	0	68	0	0	63	0	0	20	0	0	64
Lane Group Flow (vph)	73	1374	61	31	1374	53	151	153	7	76	78	18
Confl. Peds. (#/hr)			4			16				24		5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	7.5	61.7	61.7	4.9	59.1	59.1	14.6	33.8	33.8	9.4	28.6	28.6
Effective Green, g (s)	7.5	61.7	61.7	4.9	59.1	59.1	14.6	33.8	33.8	9.4	28.6	28.6
Actuated g/C Ratio	0.06	0.47	0.47	0.04	0.45	0.45	0.11	0.26	0.26	0.07	0.22	0.22
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	97	1713	743	60	1608	674	179	317	397	115	295	325
v/s Ratio Prot	c0.04	c0.38		0.02	c0.39		c0.09	0.05		c0.05	0.02	
v/s Ratio Perm			0.04			0.04		c0.07	0.00		0.04	0.01
v/c Ratio	0.75	0.80	0.08	0.52	0.85	0.08	0.84	0.48	0.02	0.66	0.26	0.06
Uniform Delay, d1	60.3	29.0	18.7	61.4	31.6	20.0	56.6	40.7	35.8	58.7	42.0	40.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.9	4.1	0.2	3.1	6.0	0.2	27.7	0.4	0.0	10.5	0.2	0.0
Delay (s)	85.2	33.0	18.9	64.5	37.6	20.3	84.3	41.1	35.8	69.2	42.2	40.1
Level of Service	F	C	B	E	D	C	F	D	D	E	D	D
Approach Delay (s)		34.3			36.9			60.4			50.2	
Approach LOS		C			D			E			D	

Intersection Summary		
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.75	D
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	73.4%	ICU Level of Service
Analysis Period (min)	15	D
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	939	3	6	1208	306	6	0	2	165	1	149
Future Volume (vph)	141	939	3	6	1208	306	6	0	2	165	1	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.97			0.98			
Fr _t						0.850			0.850			0.850
Fl _t Protected	0.950			0.950				0.950				0.953
Satd. Flow (prot)	1643	3520	0	1693	3386	1461	0	1805	1615	0	1811	1615
Fl _t Permitted	0.950			0.950				0.643			0.437	
Satd. Flow (perm)	1643	3520	0	1693	3386	1423	0	1222	1588	0	830	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						318			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	153	1021	3	6	1285	326	8	0	3	181	1	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	1024	0	6	1285	326	0	8	3	0	182	164
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	16.0	91.8		7.0	73.3	91.6		10.4	10.4		25.7	16.0
Actuated g/C Ratio	0.12	0.71		0.05	0.56	0.70		0.08	0.08		0.20	0.12
v/c Ratio	0.76	0.41		0.07	0.67	0.30		0.08	0.01		0.63	0.57
Control Delay	78.2	9.7		66.2	26.6	4.1		53.3	0.0		56.5	29.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	78.2	9.7		66.2	26.6	4.1		53.3	0.0		56.5	29.1
LOS	E	A		E	C	A		D	A		E	C
Approach Delay	18.6			22.2		38.8			43.5			
Approach LOS	B			C		D			D			

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	23.3
Intersection LOS:	C
Intersection Capacity Utilization:	69.6%
ICU Level of Service:	C
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	153	1024	6	1285	326	8	3	182	164
v/c Ratio	0.76	0.41	0.07	0.67	0.30	0.08	0.01	0.63	0.57
Control Delay	78.2	9.7	66.2	26.6	4.1	53.3	0.0	56.5	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.2	9.7	66.2	26.6	4.1	53.3	0.0	56.5	29.1
Queue Length 50th (ft)	125	168	5	468	42	7	0	135	48
Queue Length 95th (ft)	#200	300	m10	580	89	19	0	#205	121
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2485	97	1910	1119	131	289	324	317
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	0.66	0.41	0.06	0.67	0.29	0.06	0.01	0.56	0.52

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.

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↖	↖		↖	↖
Traffic Volume (vph)	141	939	3	6	1208	306	6	0	2	165	1	149
Future Volume (vph)	141	939	3	6	1208	306	6	0	2	165	1	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00		1.00	1.00	0.85		1.00	0.85		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)	1643	3519		1693	3386	1430		1805	1582		1810	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.64	1.00		0.44	1.00
Satd. Flow (perm)	1643	3519		1693	3386	1430		1221	1582		830	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	153	1021	3	6	1285	326	8	0	3	181	1	164
RTOR Reduction (vph)	0	0	0	0	0	104	0	0	3	0	0	89
Lane Group Flow (vph)	153	1024	0	6	1285	222	0	8	0	0	182	75
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	16.0	85.1		1.4	70.2	87.6		6.8	6.8		28.8	16.0
Effective Green, g (s)	16.0	85.1		1.4	70.2	87.6		6.8	6.8		28.8	16.0
Actuated g/C Ratio	0.12	0.65		0.01	0.54	0.67		0.05	0.05		0.22	0.12
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	202	2303		18	1828	963		63	82		315	198
v/s Ratio Prot	c0.09	0.29		0.00	c0.38	0.03					c0.08	0.05
v/s Ratio Perm						0.12		0.01	0.00		c0.05	
v/c Ratio	0.76	0.44		0.33	0.70	0.23		0.13	0.00		0.58	0.38
Uniform Delay, d1	55.1	10.9		63.8	22.2	8.2		58.8	58.4		45.2	52.4
Progression Factor	1.00	1.00		1.11	1.15	2.87		1.00	1.00		1.00	1.00
Incremental Delay, d2	14.9	0.6		9.4	2.0	0.3		0.9	0.0		2.8	1.2
Delay (s)	70.1	11.6		80.1	27.4	23.8		59.7	58.4		47.9	53.6
Level of Service	E	B		F	C	C		E	E		D	D
Approach Delay (s)		19.2			26.9			59.3			50.6	
Approach LOS		B			C			E			D	

Intersection Summary

HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	1064	32	39	1499	2	1
Future Volume (vph)	1064	32	39	1499	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996				0.955	
Flt Protected			0.950		0.968	
Satd. Flow (prot)	3525	0	1796	3592	1722	0
Flt Permitted			0.950		0.968	
Satd. Flow (perm)	3525	0	1796	3592	1722	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1157	35	42	1629	2	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1192	0	42	1629	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	1064	32	39	1499	2	1
Future Volume (Veh/h)	1064	32	39	1499	2	1
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1157	35	42	1629	2	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.86	0.92	0.86	
vC, conflicting volume			1192	2073	596	
vC1, stage 1 conf vol				1174		
vC2, stage 2 conf vol				898		
vCu, unblocked vol			891	1298	195	
tC, single (s)			4.1	6.8	6.9	
tC, 2 stage (s)				5.8		
tF (s)			2.2	3.5	3.3	
p0 queue free %			94	99	100	
cM capacity (veh/h)			649	277	697	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	771	421	42	814	814	3
Volume Left	0	0	42	0	0	2
Volume Right	0	35	0	0	0	1
cSH	1700	1700	649	1700	1700	346
Volume to Capacity	0.45	0.25	0.06	0.48	0.48	0.01
Queue Length 95th (ft)	0	0	5	0	0	1
Control Delay (s)	0.0	0.0	10.9	0.0	0.0	15.5
Lane LOS	B			C		
Approach Delay (s)	0.0		0.3			15.5
Approach LOS						C
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			51.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (vph)	1065	0	0	1553	0	59
Future Volume (vph)	1065	0	0	1553	0	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1158	0	0	1688	0	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1158	0	0	1688	0	64
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 3: Dwy B & Sir Francis Drake Blvd

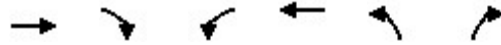
03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	1065	0	0	1553	0	59
Future Volume (Veh/h)	1065	0	0	1553	0	59
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1158	0	0	1688	0	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked	0.86			0.92	0.86	
vC, conflicting volume	1158			2002	579	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	863			1239	191	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			100	91	
cM capacity (veh/h)	668			154	705	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	579	579	844	844	64	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	64	
cSH	1700	1700	1700	1700	705	
Volume to Capacity	0.34	0.34	0.50	0.50	0.09	
Queue Length 95th (ft)	0	0	0	0	7	
Control Delay (s)	0.0	0.0	0.0	0.0	10.6	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.6	
Approach LOS						B
Intersection Summary						
Average Delay	0.2					
Intersection Capacity Utilization	46.3%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	969	123	214	1251	307	341
Future Volume (vph)	969	123	214	1251	307	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						388
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	999	127	230	1345	349	388
Shared Lane Traffic (%)						
Lane Group Flow (vph)	999	127	230	1345	349	388
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

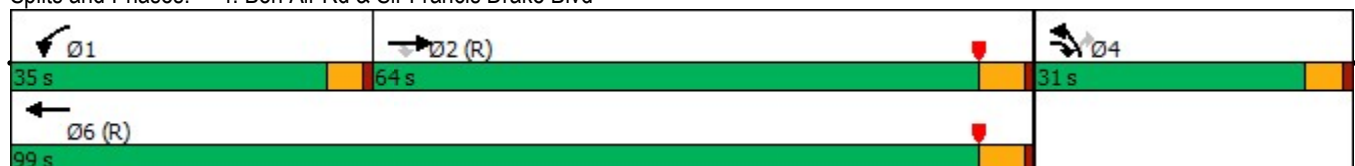


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	80.5	101.3	14.6	99.5	20.3	20.3
Actuated g/C Ratio	0.62	0.78	0.11	0.77	0.16	0.16
v/c Ratio	0.45	0.10	0.64	0.49	0.69	0.68
Control Delay	11.7	2.4	62.9	6.8	59.0	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	2.4	62.9	6.8	59.0	10.8
LOS	B	A	E	A	E	B
Approach Delay	10.7			15.0	33.6	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 17.6
 Intersection Capacity Utilization 57.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

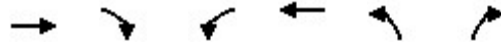
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	999	127	230	1345	349	388
v/c Ratio	0.45	0.10	0.64	0.49	0.69	0.68
Control Delay	11.7	2.4	62.9	6.8	59.0	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	2.4	62.9	6.8	59.0	10.8
Queue Length 50th (ft)	159	15	96	191	145	0
Queue Length 95th (ft)	227	24	136	282	183	80
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2212	1303	759	2736	652	627
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	0.45	0.10	0.30	0.49	0.54	0.62

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	969	123	214	1251	307	341
Future Volume (vph)	969	123	214	1251	307	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1579	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1579	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	999	127	230	1345	349	388
RTOR Reduction (vph)	0	0	0	0	0	327
Lane Group Flow (vph)	999	127	230	1345	349	61
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	80.4	100.7	14.6	99.5	20.3	20.3
Effective Green, g (s)	80.4	100.7	14.6	99.5	20.3	20.3
Actuated g/C Ratio	0.62	0.77	0.11	0.77	0.16	0.16
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2210	1223	363	2735	505	246
v/s Ratio Prot	0.28	0.02	c0.07	c0.38	c0.11	
v/s Ratio Perm		0.06				0.04
v/c Ratio	0.45	0.10	0.63	0.49	0.69	0.25
Uniform Delay, d1	13.1	3.6	55.1	5.7	51.9	48.1
Progression Factor	0.78	0.80	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	3.6	0.6	4.1	0.5
Delay (s)	10.9	2.9	58.7	6.4	55.9	48.7
Level of Service	B	A	E	A	E	D
Approach Delay (s)	10.0			14.0	52.1	
Approach LOS	A			B	D	

Intersection Summary

HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	604	304	4
Future Volume (vph)	0	0	0	604	304	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr t					0.998	
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3532	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3532	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	657	330	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	657	334	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.0%
ICU Level of Service	A
Analysis Period (min)	15

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	56	14	9	547	326	11
Future Volume (vph)	56	14	9	547	326	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.973				0.995	
Flt Protected	0.961		0.950			
Satd. Flow (prot)	1742	0	1770	3539	3522	0
Flt Permitted	0.961		0.950			
Satd. Flow (perm)	1742	0	1770	3539	3522	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	15	10	595	354	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	76	0	10	595	366	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↵		↵	↕↕	↕↕	
Traffic Volume (veh/h)	56	14	9	547	326	11
Future Volume (Veh/h)	56	14	9	547	326	11
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)	61	15	10	595	354	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	678	183	366			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	678	183	366			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	98	99			
cM capacity (veh/h)	383	828	1189			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	76	10	298	298	236	130
Volume Left	61	10	0	0	0	0
Volume Right	15	0	0	0	0	12
cSH	428	1189	1700	1700	1700	1700
Volume to Capacity	0.18	0.01	0.17	0.17	0.14	0.08
Queue Length 95th (ft)	16	1	0	0	0	0
Control Delay (s)	15.2	8.1	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	15.2	0.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			25.7%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1310	123	30	1351	111	225	43	24	110	16	68
Future Volume (vph)	69	1310	123	30	1351	111	225	43	24	110	16	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.967		0.950	0.964	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1629	1615	1600	1624	1507
Flt Permitted	0.950			0.950			0.950	0.543		0.950	0.716	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	915	1529	1600	1206	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	73	1379	129	31	1407	116	256	49	27	134	20	83
Shared Lane Traffic (%)							41%			43%		
Lane Group Flow (vph)	73	1379	129	31	1407	116	151	154	27	76	78	83
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.3	63.5	63.5	8.1	60.1	60.1	14.6	14.6	33.8	9.3	9.3	28.6
Actuated g/C Ratio	0.07	0.49	0.49	0.06	0.46	0.46	0.11	0.11	0.26	0.07	0.07	0.22
v/c Ratio	0.61	0.78	0.15	0.31	0.86	0.15	0.84	0.85	0.06	0.67	0.67	0.21
Control Delay	79.9	32.7	3.0	66.9	38.8	2.2	92.7	92.5	0.2	85.9	86.2	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	32.7	3.0	66.9	38.8	2.2	92.7	92.5	0.2	85.9	86.2	5.9
LOS	E	C	A	E	D	A	F	F	A	F	F	A
Approach Delay	32.4		36.6		85.1		58.0					
Approach LOS	C		D		F			E				

Intersection Summary

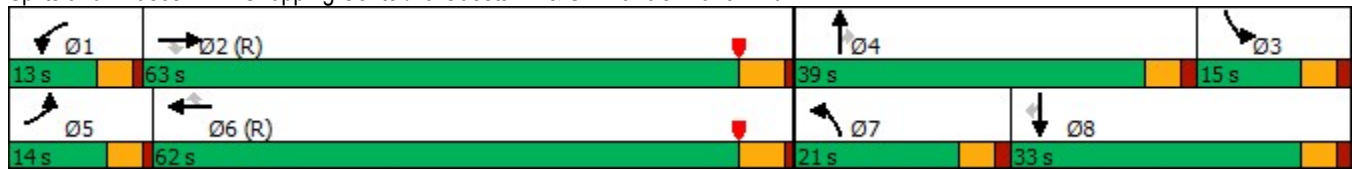
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	40.6
Intersection LOS:	D
Intersection Capacity Utilization:	74.3%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

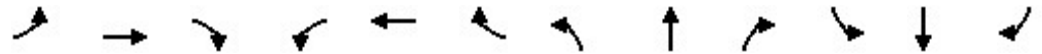
Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

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

























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	1379	129	31	1407	116	151	154	27	76	78	83
v/c Ratio	0.61	0.78	0.15	0.31	0.86	0.15	0.84	0.85	0.06	0.67	0.67	0.21
Control Delay	79.9	32.7	3.0	66.9	38.8	2.2	92.7	92.5	0.2	85.9	86.2	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	32.7	3.0	66.9	38.8	2.2	92.7	92.5	0.2	85.9	86.2	5.9
Queue Length 50th (ft)	61	537	0	26	575	0	131	134	0	66	68	0
Queue Length 95th (ft)	#123	644	29	60	#701	22	#236	#241	0	#114	#117	21
Internal Link Dist (ft)		873			1268			165				323
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	1764	838	104	1635	762	194	182	472	121	116	404
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.78	0.15	0.30	0.86	0.15	0.78	0.85	0.06	0.63	0.67	0.21

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

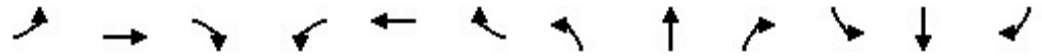
03/27/2024

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		 			 						 			
Traffic Volume (vph)	69	1310	123	30	1351	111	225	43	24	110	16	68		
Future Volume (vph)	69	1310	123	30	1351	111	225	43	24	110	16	68		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10		
Grade (%)		-2%			2%			0%			0%			
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00		
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00		
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1629	1529	1600	1624	1479		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.54	1.00	0.95	0.72	1.00		
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	916	1529	1600	1207	1479		
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82		
Adj. Flow (vph)	73	1379	129	31	1407	116	256	49	27	134	20	83		
RTOR Reduction (vph)	0	0	68	0	0	63	0	0	20	0	0	65		
Lane Group Flow (vph)	73	1379	61	31	1407	53	151	154	7	76	78	18		
Confl. Peds. (#/hr)			4			16			24			5		
Confl. Bikes (#/hr)								2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm		
Protected Phases	5	2		1	6		7	4		3	8			
Permitted Phases			2			6			4			8		
Actuated Green, G (s)	7.5	61.7	61.7	4.9	59.1	59.1	14.6	33.8	33.8	9.4	28.6	28.6		
Effective Green, g (s)	7.5	61.7	61.7	4.9	59.1	59.1	14.6	33.8	33.8	9.4	28.6	28.6		
Actuated g/C Ratio	0.06	0.47	0.47	0.04	0.45	0.45	0.11	0.26	0.26	0.07	0.22	0.22		
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1		
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	97	1713	743	60	1608	674	179	318	397	115	295	325		
v/s Ratio Prot	c0.04	c0.38		0.02	c0.40		c0.09	0.05		c0.05	0.02			
v/s Ratio Perm			0.04			0.04		c0.07	0.00		0.04	0.01		
v/c Ratio	0.75	0.81	0.08	0.52	0.88	0.08	0.84	0.48	0.02	0.66	0.26	0.06		
Uniform Delay, d1	60.3	29.0	18.7	61.4	32.1	20.0	56.6	40.7	35.8	58.7	42.0	40.0		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	24.9	4.1	0.2	3.1	7.0	0.2	27.7	0.4	0.0	10.5	0.2	0.0		
Delay (s)	85.2	33.2	18.9	64.5	39.1	20.3	84.3	41.1	35.8	69.2	42.2	40.1		
Level of Service	F	C	B	E	D	C	F	D	D	E	D	D		
Approach Delay (s)		34.4			38.2			60.3			50.1			
Approach LOS		C			D			E			D			
Intersection Summary														
HCM 2000 Control Delay			39.3									HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio			0.76											
Actuated Cycle Length (s)			130.0							20.2				
Intersection Capacity Utilization			74.3%										ICU Level of Service	D
Analysis Period (min)			15											
c Critical Lane Group														

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	548	0	1	566	136	1	0	1	65	0	51
Future Volume (vph)	53	548	0	1	566	136	1	0	1	65	0	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.97			0.98			
Frt						0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1643	3521	0	1693	3386	1461	0	1805	1615	0	1805	1615
Flt Permitted	0.950			0.950							0.635	
Satd. Flow (perm)	1643	3521	0	1693	3386	1423	0	1900	1588	0	1206	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						145			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	58	596	0	1	602	145	1	0	1	71	0	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	596	0	1	602	145	0	1	1	0	71	56
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	10.3	102.8		7.0	92.5	105.9		6.5	6.5		14.7	10.3
Actuated g/C Ratio	0.08	0.79		0.05	0.71	0.81		0.05	0.05		0.11	0.08
v/c Ratio	0.45	0.21		0.01	0.25	0.12		0.01	0.00		0.37	0.25
Control Delay	67.2	4.5		65.0	7.9	1.3		58.0	0.0		57.2	3.5
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	67.2	4.5		65.0	7.9	1.3		58.0	0.0		57.2	3.5
LOS	E	A		E	A	A		E	A		E	A
Approach Delay	10.0			6.7				29.0			33.5	
Approach LOS	B			A				C			C	

Intersection Summary

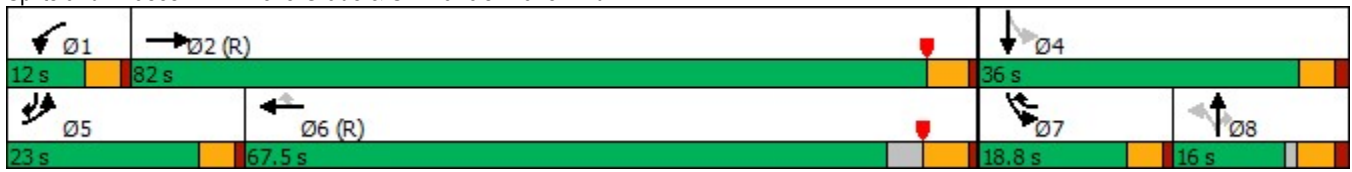
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.45
Intersection Signal Delay:	10.4
Intersection LOS:	B
Intersection Capacity Utilization:	56.1%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	58	596	1	602	145	1	1	71	56
v/c Ratio	0.45	0.21	0.01	0.25	0.12	0.01	0.00	0.37	0.25
Control Delay	67.2	4.5	65.0	7.9	1.3	58.0	0.0	57.2	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	4.5	65.0	7.9	1.3	58.0	0.0	57.2	3.5
Queue Length 50th (ft)	48	48	0	89	0	1	0	56	0
Queue Length 95th (ft)	92	125	m4	189	5	6	0	100	5
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2785	97	2409	1215	175	267	341	317
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	0.25	0.21	0.01	0.25	0.12	0.01	0.00	0.21	0.18

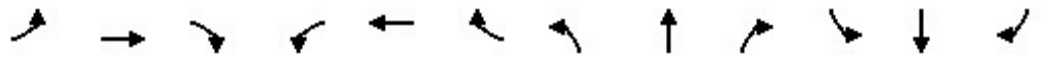
Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	53	548	0	1	566	136	1	0	1	65	0	51	
Future Volume (vph)	53	548	0	1	566	136	1	0	1	65	0	51	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12	
Grade (%)		3%			-3%			0%				0%	
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		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)	1643	3521		1693	3386	1428		1805	1541		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00	1.00		0.63	1.00	
Satd. Flow (perm)	1643	3521		1693	3386	1428		1900	1541		1206	1615	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91	
Adj. Flow (vph)	58	596	0	1	602	145	1	0	1	71	0	56	
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	1	0	0	52	
Lane Group Flow (vph)	58	596	0	1	602	112	0	1	0	0	71	4	
Confl. Peds. (#/hr)			1			3							
Confl. Bikes (#/hr)			1						2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over	
Protected Phases	5	2		1	6	7		8		7	4	5	
Permitted Phases						6	8		8	4			
Actuated Green, G (s)	8.7	95.1		1.4	87.5	100.0		1.7	1.7		18.8	8.7	
Effective Green, g (s)	8.7	95.1		1.4	87.5	100.0		1.7	1.7		18.8	8.7	
Actuated g/C Ratio	0.07	0.73		0.01	0.67	0.77		0.01	0.01		0.14	0.07	
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5	
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0	
Lane Grp Cap (vph)	109	2575		18	2279	1098		24	20		232	108	
v/s Ratio Prot	c0.04	0.17		0.00	c0.18	0.01					c0.03	0.00	
v/s Ratio Perm						0.07		0.00	0.00		c0.01		
v/c Ratio	0.53	0.23		0.06	0.26	0.10		0.04	0.00		0.31	0.03	
Uniform Delay, d1	58.7	5.6		63.6	8.4	3.8		63.3	63.3		49.8	56.7	
Progression Factor	1.00	1.00		1.11	0.96	1.51		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.9	0.2		1.3	0.3	0.1		0.7	0.0		0.9	0.1	
Delay (s)	63.6	5.8		72.2	8.4	5.8		64.1	63.3		50.6	56.9	
Level of Service	E	A		E	A	A		E	E		D	E	
Approach Delay (s)		11.0			8.0			63.7			53.4		
Approach LOS		B			A			E			D		
Intersection Summary													
HCM 2000 Control Delay			13.1									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.30										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	19.6
Intersection Capacity Utilization			56.1%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	598	4	8	700	3	0
Future Volume (vph)	598	4	8	700	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Fr _t	0.999					
Fl _t Protected			0.950		0.950	
Satd. Flow (prot)	3536	0	1796	3592	1770	0
Fl _t Permitted			0.950		0.950	
Satd. Flow (perm)	3536	0	1796	3592	1770	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	650	4	9	761	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	654	0	9	761	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

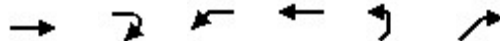
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	598	4	8	700	3	0
Future Volume (Veh/h)	598	4	8	700	3	0
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	650	4	9	761	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked				0.95	0.96	0.95
vC, conflicting volume				654	1050	327
vC1, stage 1 conf vol					652	
vC2, stage 2 conf vol					398	
vCu, unblocked vol				540	907	197
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)				2.2	3.5	3.3
p0 queue free %				99	99	100
cM capacity (veh/h)				977	458	774
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	433	221	9	380	380	3
Volume Left	0	0	9	0	0	3
Volume Right	0	4	0	0	0	0
cSH	1700	1700	977	1700	1700	458
Volume to Capacity	0.25	0.13	0.01	0.22	0.22	0.01
Queue Length 95th (ft)	0	0	1	0	0	0
Control Delay (s)	0.0	0.0	8.7	0.0	0.0	12.9
Lane LOS				A	B	
Approach Delay (s)	0.0		0.1			12.9
Approach LOS						B
Intersection Summary						
Average Delay				0.1		
Intersection Capacity Utilization				29.3%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	598	0	0	708	0	17
Future Volume (vph)	598	0	0	708	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	650	0	0	770	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	650	0	0	770	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	598	0	0	708	0	17
Future Volume (Veh/h)	598	0	0	708	0	17
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	650	0	0	770	0	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.97	0.98	0.97
vC, conflicting volume				650	1035	325
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				570	861	234
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	98
cM capacity (veh/h)				966	289	742
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	325	325	385	385	18	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	18	
cSH	1700	1700	1700	1700	742	
Volume to Capacity	0.19	0.19	0.23	0.23	0.02	
Queue Length 95th (ft)	0	0	0	0	2	
Control Delay (s)	0.0	0.0	0.0	0.0	10.0	
Lane LOS						A
Approach Delay (s)	0.0		0.0		10.0	
Approach LOS						A
Intersection Summary						
Average Delay				0.1		
Intersection Capacity Utilization				26.5%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

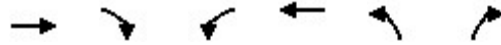


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	553	61	105	605	105	230
Future Volume (vph)	553	61	105	605	105	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						261
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	570	63	113	651	119	261
Shared Lane Traffic (%)						
Lane Group Flow (vph)	570	63	113	651	119	261
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

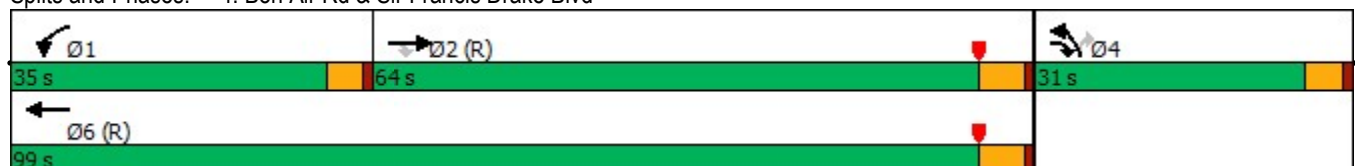


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	93.6	105.1	10.8	108.9	10.9	10.9
Actuated g/C Ratio	0.72	0.81	0.08	0.84	0.08	0.08
v/c Ratio	0.22	0.05	0.42	0.22	0.44	0.70
Control Delay	5.8	1.6	61.4	2.4	61.0	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	1.6	61.4	2.4	61.0	17.2
LOS	A	A	E	A	E	B
Approach Delay	5.3			11.2	30.9	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 13.3
 Intersection Capacity Utilization 50.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

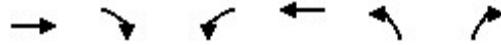
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	570	63	113	651	119	261
v/c Ratio	0.22	0.05	0.42	0.22	0.44	0.70
Control Delay	5.8	1.6	61.4	2.4	61.0	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	1.6	61.4	2.4	61.0	17.2
Queue Length 50th (ft)	55	5	47	41	50	0
Queue Length 95th (ft)	102	10	78	74	76	75
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2574	1462	759	2993	652	526
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	0.22	0.04	0.15	0.22	0.18	0.50

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	553	61	105	605	105	230
Future Volume (vph)	553	61	105	605	105	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1576	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1576	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	570	63	113	651	119	261
RTOR Reduction (vph)	0	0	0	0	0	239
Lane Group Flow (vph)	570	63	113	651	119	22
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	93.6	104.5	10.8	108.9	10.9	10.9
Effective Green, g (s)	93.6	104.5	10.8	108.9	10.9	10.9
Actuated g/C Ratio	0.72	0.80	0.08	0.84	0.08	0.08
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2573	1266	268	2993	271	132
v/s Ratio Prot	0.16	0.00	c0.03	c0.18	c0.04	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.22	0.05	0.42	0.22	0.44	0.17
Uniform Delay, d1	6.1	2.6	56.6	2.1	56.6	55.3
Progression Factor	0.86	0.82	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	1.1	0.2	1.1	0.6
Delay (s)	5.4	2.1	57.7	2.3	57.8	55.9
Level of Service	A	A	E	A	E	E
Approach Delay (s)	5.1			10.5	56.5	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	326	145	0
Future Volume (vph)	0	0	0	326	145	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	354	158	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	354	158	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	12.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	1	1	323	146	0
Future Volume (vph)	5	1	1	323	146	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	0.977					
Flt Protected	0.960		0.950			
Satd. Flow (prot)	1747	0	1770	3539	3539	0
Flt Permitted	0.960		0.950			
Satd. Flow (perm)	1747	0	1770	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1	1	351	159	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	1	351	159	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 6: Bon Air Rd & Dwy D

03/27/2024

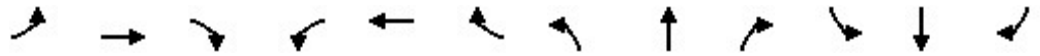


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1	1	323	146	0
Future Volume (Veh/h)	5	1	1	323	146	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	1	351	159	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	336	80	159			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	336	80	159			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	633	965	1418			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	6	1	176	176	80	80
Volume Left	5	1	0	0	0	0
Volume Right	1	0	0	0	0	0
cSH	671	1418	1700	1700	1700	1700
Volume to Capacity	0.01	0.00	0.10	0.10	0.05	0.05
Queue Length 95th (ft)	1	0	0	0	0	0
Control Delay (s)	10.4	7.5	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.4	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			18.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	734	60	20	703	65	94	19	16	32	3	26
Future Volume (vph)	38	734	60	20	703	65	94	19	16	32	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.968		0.950	0.961	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1631	1615	1600	1619	1507
Flt Permitted	0.950			0.950			0.950	0.784		0.950	0.828	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1321	1529	1600	1395	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	40	773	63	21	732	68	107	22	18	39	4	32
Shared Lane Traffic (%)							40%			45%		
Lane Group Flow (vph)	40	773	63	21	732	68	64	65	18	21	22	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.1	77.3	77.3	8.1	74.0	74.0	10.6	8.8	35.4	8.1	4.9	25.4
Actuated g/C Ratio	0.07	0.59	0.59	0.06	0.57	0.57	0.08	0.07	0.27	0.06	0.04	0.20
v/c Ratio	0.34	0.36	0.06	0.21	0.36	0.08	0.49	0.60	0.04	0.21	0.36	0.09
Control Delay	65.9	19.6	0.1	63.3	21.4	0.2	69.8	78.5	0.1	63.1	74.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	19.6	0.1	63.3	21.4	0.2	69.8	78.5	0.1	63.1	74.2	0.5
LOS	E	B	A	E	C	A	E	E	A	E	E	A
Approach Delay	20.3			20.7			65.1			39.6		
Approach LOS	C			C			E			D		

Intersection Summary



Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	24.7
Intersection LOS:	C
Intersection Capacity Utilization	55.0%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

 Ø1 13 s	 Ø2 (R) 63 s	 Ø4 39 s	 Ø3 15 s
 Ø5 14 s	 Ø6 (R) 62 s	 Ø7 21 s	 Ø8 33 s

Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	773	63	21	732	68	64	65	18	21	22	32
v/c Ratio	0.34	0.36	0.06	0.21	0.36	0.08	0.49	0.60	0.04	0.21	0.36	0.09
Control Delay	65.9	19.6	0.1	63.3	21.4	0.2	69.8	78.5	0.1	63.1	74.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	19.6	0.1	63.3	21.4	0.2	69.8	78.5	0.1	63.1	74.2	0.5
Queue Length 50th (ft)	33	230	0	17	219	0	55	56	0	17	18	0
Queue Length 95th (ft)	72	291	0	46	278	0	102	103	0	43	45	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	2145	988	104	2013	906	194	109	490	121	61	413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.36	0.06	0.20	0.36	0.08	0.33	0.60	0.04	0.17	0.36	0.08

Intersection Summary

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↘	↘	↗↗	↘	↘	↗	↘	↘	↗	↘
Traffic Volume (vph)	38	734	60	20	703	65	94	19	16	32	3	26
Future Volume (vph)	38	734	60	20	703	65	94	19	16	32	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1631	1528	1600	1618	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.78	1.00	0.95	0.83	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1320	1528	1600	1395	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	40	773	63	21	732	68	107	22	18	39	4	32
RTOR Reduction (vph)	0	0	28	0	0	32	0	0	14	0	0	26
Lane Group Flow (vph)	40	773	35	21	732	36	64	65	4	21	22	6
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	7.3	71.3	71.3	4.9	68.9	68.9	8.8	28.7	28.7	4.9	24.8	24.8
Effective Green, g (s)	7.3	71.3	71.3	4.9	68.9	68.9	8.8	28.7	28.7	4.9	24.8	24.8
Actuated g/C Ratio	0.06	0.55	0.55	0.04	0.53	0.53	0.07	0.22	0.22	0.04	0.19	0.19
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	94	1979	858	60	1875	786	108	312	337	60	274	281
v/s Ratio Prot	c0.02	c0.21		0.01	0.21		c0.04	0.01		c0.01	0.00	
v/s Ratio Perm			0.02			0.02		c0.03	0.00		0.01	0.00
v/c Ratio	0.43	0.39	0.04	0.35	0.39	0.05	0.59	0.21	0.01	0.35	0.08	0.02
Uniform Delay, d1	59.3	16.9	13.6	61.0	18.1	14.7	58.9	41.4	39.6	61.0	43.2	42.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.6	0.1	1.3	0.6	0.1	5.7	0.1	0.0	1.3	0.0	0.0
Delay (s)	60.5	17.4	13.6	62.3	18.7	14.8	64.5	41.5	39.6	62.3	43.3	42.8
Level of Service	E	B	B	E	B	B	E	D	D	E	D	D
Approach Delay (s)		19.1			19.5			51.3			48.4	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.38	C
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	55.0%	ICU Level of Service
Analysis Period (min)	15	B
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	551	0	1	577	140	1	0	1	66	0	51
Future Volume (vph)	53	551	0	1	577	140	1	0	1	66	0	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.97			0.98			
Frt						0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1643	3521	0	1693	3386	1461	0	1805	1615	0	1805	1615
Flt Permitted	0.950			0.950							0.635	
Satd. Flow (perm)	1643	3521	0	1693	3386	1423	0	1900	1588	0	1206	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						149			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	58	599	0	1	614	149	1	0	1	73	0	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	599	0	1	614	149	0	1	1	0	73	56
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	10.3	102.6		7.0	92.3	105.9		6.5	6.5		14.9	10.3
Actuated g/C Ratio	0.08	0.79		0.05	0.71	0.81		0.05	0.05		0.11	0.08
v/c Ratio	0.45	0.22		0.01	0.26	0.13		0.01	0.00		0.38	0.25
Control Delay	67.2	4.6		65.0	8.0	1.3		58.0	0.0		57.1	3.5
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	67.2	4.6		65.0	8.0	1.3		58.0	0.0		57.1	3.5
LOS	E	A		E	A	A		E	A		E	A
Approach Delay	10.1			6.8				29.0		33.8		
Approach LOS	B			A				C		C		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.45
Intersection Signal Delay:	10.4
Intersection LOS:	B
Intersection Capacity Utilization:	56.2%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	58	599	1	614	149	1	1	73	56
v/c Ratio	0.45	0.22	0.01	0.26	0.13	0.01	0.00	0.38	0.25
Control Delay	67.2	4.6	65.0	8.0	1.3	58.0	0.0	57.1	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	4.6	65.0	8.0	1.3	58.0	0.0	57.1	3.5
Queue Length 50th (ft)	48	48	0	97	0	1	0	58	0
Queue Length 95th (ft)	92	127	m4	198	9	6	0	101	5
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2779	97	2403	1215	175	267	342	317
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	0.25	0.22	0.01	0.26	0.12	0.01	0.00	0.21	0.18

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↖	↗		↖	↗
Traffic Volume (vph)	53	551	0	1	577	140	1	0	1	66	0	51
Future Volume (vph)	53	551	0	1	577	140	1	0	1	66	0	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		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)	1643	3521		1693	3386	1428		1805	1541		1805	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00	1.00		0.63	1.00
Satd. Flow (perm)	1643	3521		1693	3386	1428		1900	1541		1206	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	58	599	0	1	614	149	1	0	1	73	0	56
RTOR Reduction (vph)	0	0	0	0	0	34	0	0	1	0	0	52
Lane Group Flow (vph)	58	599	0	1	614	115	0	1	0	0	73	4
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	8.7	94.9		1.4	87.3	100.0		1.7	1.7		19.0	8.7
Effective Green, g (s)	8.7	94.9		1.4	87.3	100.0		1.7	1.7		19.0	8.7
Actuated g/C Ratio	0.07	0.73		0.01	0.67	0.77		0.01	0.01		0.15	0.07
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	109	2570		18	2273	1098		24	20		234	108
v/s Ratio Prot	c0.04	0.17		0.00	c0.18	0.01					c0.03	0.00
v/s Ratio Perm						0.07		0.00	0.00		c0.02	
v/c Ratio	0.53	0.23		0.06	0.27	0.10		0.04	0.00		0.31	0.03
Uniform Delay, d1	58.7	5.7		63.6	8.6	3.8		63.3	63.3		49.7	56.7
Progression Factor	1.00	1.00		1.11	0.96	1.61		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.9	0.2		1.3	0.3	0.1		0.7	0.0		0.9	0.1
Delay (s)	63.6	5.9		72.0	8.5	6.2		64.1	63.3		50.6	56.9
Level of Service	E	A		E	A	A		E	E		D	E
Approach Delay (s)		11.0			8.1			63.7			53.3	
Approach LOS		B			A			E			D	

Intersection Summary

HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
 2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	598	8	19	717	3	0
Future Volume (vph)	598	8	19	717	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Flt	0.998					
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3532	0	1796	3592	1770	0
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3532	0	1796	3592	1770	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	650	9	21	779	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	659	0	21	779	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (veh/h)	598	8	19	717	3	0
Future Volume (Veh/h)	598	8	19	717	3	0
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	650	9	21	779	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.95		0.96	0.95
vC, conflicting volume			659		1086	330
vC1, stage 1 conf vol					654	
vC2, stage 2 conf vol					432	
vCu, unblocked vol			543		937	197
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	100
cM capacity (veh/h)			974		448	773
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	433	226	21	390	390	3
Volume Left	0	0	21	0	0	3
Volume Right	0	9	0	0	0	0
cSH	1700	1700	974	1700	1700	448
Volume to Capacity	0.25	0.13	0.02	0.23	0.23	0.01
Queue Length 95th (ft)	0	0	2	0	0	1
Control Delay (s)	0.0	0.0	8.8	0.0	0.0	13.1
Lane LOS	A			B		
Approach Delay (s)	0.0		0.2			13.1
Approach LOS				B		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			29.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	598	0	0	734	0	62
Future Volume (vph)	598	0	0	734	0	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	650	0	0	798	0	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	650	0	0	798	0	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	598	0	0	734	0	62
Future Volume (Veh/h)	598	0	0	734	0	62
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	650	0	0	798	0	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.97	0.98	0.97
vC, conflicting volume				650	1049	325
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				570	867	234
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	91
cM capacity (veh/h)				966	287	743
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	325	325	399	399	67	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	67	
cSH	1700	1700	1700	1700	743	
Volume to Capacity	0.19	0.19	0.23	0.23	0.09	
Queue Length 95th (ft)	0	0	0	0	7	
Control Delay (s)	0.0	0.0	0.0	0.0	10.3	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.3	
Approach LOS						B
Intersection Summary						
Average Delay				0.5		
Intersection Capacity Utilization				27.0%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	595	64	110	614	122	245
Future Volume (vph)	595	64	110	614	122	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						278
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	613	66	118	660	139	278
Shared Lane Traffic (%)						
Lane Group Flow (vph)	613	66	118	660	139	278
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

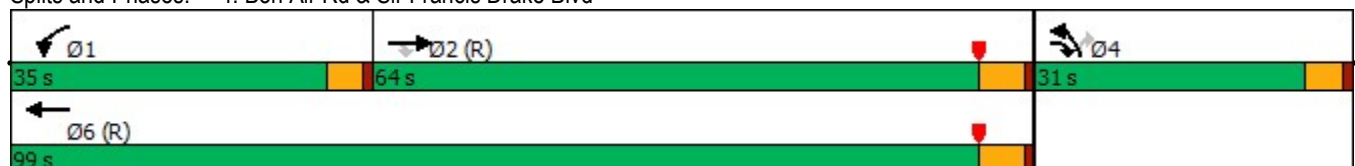


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	92.8	105.0	10.9	108.2	11.6	11.6
Actuated g/C Ratio	0.71	0.81	0.08	0.83	0.09	0.09
v/c Ratio	0.24	0.05	0.44	0.22	0.48	0.71
Control Delay	6.2	1.6	61.7	2.6	61.2	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	1.6	61.7	2.6	61.2	16.4
LOS	A	A	E	A	E	B
Approach Delay	5.7			11.6	31.3	
Approach LOS	A			B	C	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	13.9
Intersection LOS:	B
Intersection Capacity Utilization:	50.0%
ICU Level of Service:	A
Analysis Period (min):	15

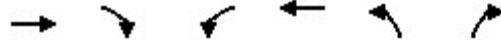
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	613	66	118	660	139	278
v/c Ratio	0.24	0.05	0.44	0.22	0.48	0.71
Control Delay	6.2	1.6	61.7	2.6	61.2	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	1.6	61.7	2.6	61.2	16.4
Queue Length 50th (ft)	62	5	50	44	58	0
Queue Length 95th (ft)	109	13	80	80	86	75
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2551	1452	759	2974	652	539
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	0.24	0.05	0.16	0.22	0.21	0.52

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	595	64	110	614	122	245
Future Volume (vph)	595	64	110	614	122	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1576	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1576	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	613	66	118	660	139	278
RTOR Reduction (vph)	0	0	0	0	0	253
Lane Group Flow (vph)	613	66	118	660	139	25
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	92.8	104.4	10.9	108.2	11.6	11.6
Effective Green, g (s)	92.8	104.4	10.9	108.2	11.6	11.6
Actuated g/C Ratio	0.71	0.80	0.08	0.83	0.09	0.09
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2551	1265	271	2974	288	140
v/s Ratio Prot	c0.17	0.00	c0.04	0.18	c0.04	
v/s Ratio Perm		0.04				0.02
v/c Ratio	0.24	0.05	0.44	0.22	0.48	0.18
Uniform Delay, d1	6.4	2.6	56.6	2.2	56.3	54.8
Progression Factor	0.86	0.82	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	1.1	0.2	1.3	0.6
Delay (s)	5.8	2.2	57.7	2.4	57.6	55.4
Level of Service	A	A	E	A	E	E
Approach Delay (s)	5.4			10.8	56.1	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	358	151	2
Future Volume (vph)	0	0	0	358	151	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr t					0.998	
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3532	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3532	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	389	164	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	389	166	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.2%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	13	3	324	149	3
Future Volume (vph)	37	13	3	324	149	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.965				0.997	
Flt Protected	0.964		0.950			
Satd. Flow (prot)	1733	0	1770	3539	3529	0
Flt Permitted	0.964		0.950			
Satd. Flow (perm)	1733	0	1770	3539	3529	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	14	3	352	162	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	0	3	352	165	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

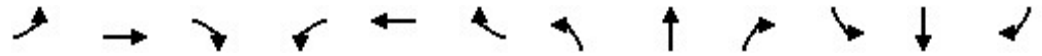


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↵		↵	↑↑	↑↑	
Traffic Volume (veh/h)	37	13	3	324	149	3
Future Volume (Veh/h)	37	13	3	324	149	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	14	3	352	162	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	346	82	165			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	346	82	165			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	99	100			
cM capacity (veh/h)	624	961	1411			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	54	3	176	176	108	57
Volume Left	40	3	0	0	0	0
Volume Right	14	0	0	0	0	3
cSH	686	1411	1700	1700	1700	1700
Volume to Capacity	0.08	0.00	0.10	0.10	0.06	0.03
Queue Length 95th (ft)	6	0	0	0	0	0
Control Delay (s)	10.7	7.6	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.7	0.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	1.0					
Intersection Capacity Utilization	19.0%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	788	60	20	717	65	94	19	16	32	3	26
Future Volume (vph)	41	788	60	20	717	65	94	19	16	32	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.968		0.950	0.961	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1631	1615	1600	1619	1507
Flt Permitted	0.950			0.950			0.950	0.784		0.950	0.828	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1321	1529	1600	1395	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	43	829	63	21	747	68	107	22	18	39	4	32
Shared Lane Traffic (%)							40%			45%		
Lane Group Flow (vph)	43	829	63	21	747	68	64	65	18	21	22	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.1	77.3	77.3	8.1	73.9	73.9	10.6	8.8	35.4	8.1	4.9	25.4
Actuated g/C Ratio	0.07	0.59	0.59	0.06	0.57	0.57	0.08	0.07	0.27	0.06	0.04	0.20
v/c Ratio	0.36	0.39	0.06	0.21	0.37	0.08	0.49	0.60	0.04	0.21	0.36	0.09
Control Delay	66.9	20.1	0.1	63.3	21.5	0.2	69.8	78.5	0.1	63.1	74.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	20.1	0.1	63.3	21.5	0.2	69.8	78.5	0.1	63.1	74.2	0.5
LOS	E	C	A	E	C	A	E	E	A	E	E	A
Approach Delay	20.9			20.8			65.1			39.6		
Approach LOS	C			C			E			D		

Intersection Summary

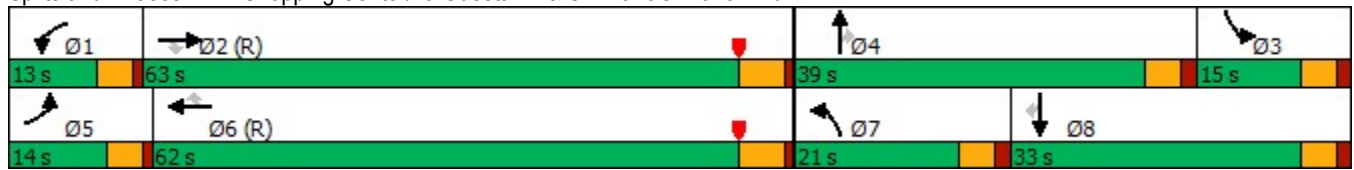
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	24.8
Intersection LOS:	C
Intersection Capacity Utilization	56.0%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

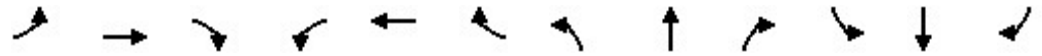
Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	43	829	63	21	747	68	64	65	18	21	22	32
v/c Ratio	0.36	0.39	0.06	0.21	0.37	0.08	0.49	0.60	0.04	0.21	0.36	0.09
Control Delay	66.9	20.1	0.1	63.3	21.5	0.2	69.8	78.5	0.1	63.1	74.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	20.1	0.1	63.3	21.5	0.2	69.8	78.5	0.1	63.1	74.2	0.5
Queue Length 50th (ft)	35	251	0	17	224	0	55	56	0	17	18	0
Queue Length 95th (ft)	76	315	0	46	285	0	102	103	0	43	45	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	2145	988	104	2013	905	194	109	490	121	61	413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.39	0.06	0.20	0.37	0.08	0.33	0.60	0.04	0.17	0.36	0.08

Intersection Summary

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	788	60	20	717	65	94	19	16	32	3	26
Future Volume (vph)	41	788	60	20	717	65	94	19	16	32	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1631	1528	1600	1618	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.78	1.00	0.95	0.83	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1320	1528	1600	1395	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	43	829	63	21	747	68	107	22	18	39	4	32
RTOR Reduction (vph)	0	0	28	0	0	32	0	0	14	0	0	26
Lane Group Flow (vph)	43	829	35	21	747	36	64	65	4	21	22	6
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	7.3	71.3	71.3	4.9	68.9	68.9	8.8	28.7	28.7	4.9	24.8	24.8
Effective Green, g (s)	7.3	71.3	71.3	4.9	68.9	68.9	8.8	28.7	28.7	4.9	24.8	24.8
Actuated g/C Ratio	0.06	0.55	0.55	0.04	0.53	0.53	0.07	0.22	0.22	0.04	0.19	0.19
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	94	1979	858	60	1875	786	108	312	337	60	274	281
v/s Ratio Prot	c0.03	c0.23		0.01	0.21		c0.04	0.01		c0.01	0.00	
v/s Ratio Perm			0.02			0.02		c0.03	0.00		0.01	0.00
v/c Ratio	0.46	0.42	0.04	0.35	0.40	0.05	0.59	0.21	0.01	0.35	0.08	0.02
Uniform Delay, d1	59.4	17.2	13.6	61.0	18.2	14.7	58.9	41.4	39.6	61.0	43.2	42.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.7	0.1	1.3	0.6	0.1	5.7	0.1	0.0	1.3	0.0	0.0
Delay (s)	60.7	17.9	13.6	62.3	18.8	14.8	64.5	41.5	39.6	62.3	43.3	42.8
Level of Service	E	B	B	E	B	B	E	D	D	E	D	D
Approach Delay (s)		19.5			19.6			51.3			48.4	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.40	C
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	56.0%	ICU Level of Service
Analysis Period (min)	15	B
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1022	2	7	1200	324	7	1	7	209	1	166
Future Volume (vph)	149	1022	2	7	1200	324	7	1	7	209	1	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.97			0.98			
Fr _t						0.850			0.850			0.850
Fl _t Protected	0.950			0.950				0.957			0.953	
Satd. Flow (prot)	1643	3520	0	1693	3386	1461	0	1818	1615	0	1811	1615
Fl _t Permitted	0.950			0.950				0.596			0.431	
Satd. Flow (perm)	1643	3520	0	1693	3386	1423	0	1132	1588	0	819	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						338			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	162	1111	2	7	1277	345	9	1	9	230	1	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	1113	0	7	1277	345	0	10	9	0	231	182
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	16.5	88.9		7.1	70.0	91.3		10.3	10.3		28.5	16.5
Actuated g/C Ratio	0.13	0.68		0.05	0.54	0.70		0.08	0.08		0.22	0.13
v/c Ratio	0.78	0.46		0.08	0.70	0.31		0.11	0.04		0.70	0.62
Control Delay	79.3	11.2		70.0	28.8	4.0		54.9	0.3		58.2	33.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	79.3	11.2		70.0	28.8	4.0		54.9	0.3		58.2	33.2
LOS	E	B		E	C	A		D	A		E	C
Approach Delay	19.8			23.7				29.0			47.2	
Approach LOS	B			C				C			D	

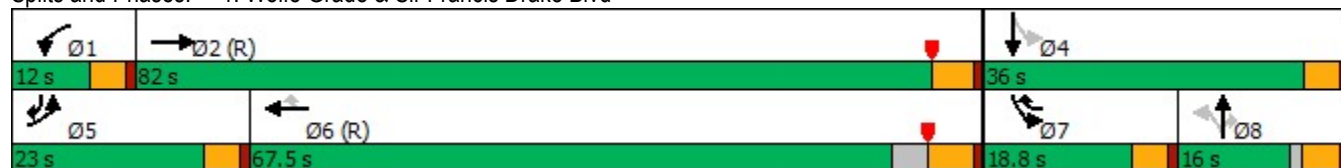
Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	25.2
Intersection LOS:	C
Intersection Capacity Utilization:	72.2%
ICU Level of Service:	C
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	162	1113	7	1277	345	10	9	231	182
v/c Ratio	0.78	0.46	0.08	0.70	0.31	0.11	0.04	0.70	0.62
Control Delay	79.3	11.2	70.0	28.8	4.0	54.9	0.3	58.2	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	11.2	70.0	28.8	4.0	54.9	0.3	58.2	33.2
Queue Length 50th (ft)	132	209	5	489	47	8	0	171	62
Queue Length 95th (ft)	#224	337	m12	575	72	22	0	#321	142
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2407	97	1821	1121	119	287	346	317
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	0.70	0.46	0.07	0.70	0.31	0.08	0.03	0.67	0.57

Intersection Summary

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

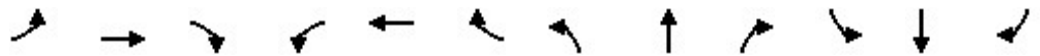
Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1022	2	7	1200	324	7	1	7	209	1	166
Future Volume (vph)	149	1022	2	7	1200	324	7	1	7	209	1	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1643	3520		1693	3386	1432		1818	1581		1810	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.60	1.00		0.43	1.00
Satd. Flow (perm)	1643	3520		1693	3386	1432		1132	1581		819	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	162	1111	2	7	1277	345	9	1	9	230	1	182
RTOR Reduction (vph)	0	0	0	0	0	111	0	0	9	0	0	89
Lane Group Flow (vph)	162	1113	0	7	1277	234	0	10	0	0	231	93
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	16.5	82.1		1.5	66.8	87.3		6.6	6.6		31.7	16.5
Effective Green, g (s)	16.5	82.1		1.5	66.8	87.3		6.6	6.6		31.7	16.5
Actuated g/C Ratio	0.13	0.63		0.01	0.51	0.67		0.05	0.05		0.24	0.13
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	208	2223		19	1739	961		57	80		355	204
v/s Ratio Prot	c0.10	0.32		0.00	c0.38	0.04					c0.10	0.06
v/s Ratio Perm						0.13		0.01	0.00		c0.06	
v/c Ratio	0.78	0.50		0.37	0.73	0.24		0.18	0.01		0.65	0.46
Uniform Delay, d1	55.0	12.9		63.8	24.7	8.4		59.1	58.6		44.2	52.6
Progression Factor	1.00	1.00		1.17	1.13	2.92		1.00	1.00		1.00	1.00
Incremental Delay, d2	16.7	0.8		10.3	2.5	0.3		1.5	0.0		4.4	1.6
Delay (s)	71.6	13.7		84.8	30.4	24.8		60.6	58.6		48.6	54.2
Level of Service	E	B		F	C	C		E	E		D	D
Approach Delay (s)		21.1			29.5			59.6			51.1	
Approach LOS		C			C			E			D	

Intersection Summary		
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.74	C
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	72.2%	19.6
Analysis Period (min)	15	ICU Level of Service
		C
c Critical Lane Group		

Lanes, Volumes, Timings
 2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	1182	32	43	1511	2	1
Future Volume (vph)	1182	32	43	1511	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996				0.955	
Flt Protected			0.950		0.968	
Satd. Flow (prot)	3525	0	1796	3592	1722	0
Flt Permitted			0.950		0.968	
Satd. Flow (perm)	3525	0	1796	3592	1722	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1285	35	47	1642	2	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1320	0	47	1642	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	1182	32	43	1511	2	1
Future Volume (Veh/h)	1182	32	43	1511	2	1
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1285	35	47	1642	2	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.83		0.90	0.83
vC, conflicting volume			1320		2218	660
vC1, stage 1 conf vol					1302	
vC2, stage 2 conf vol					915	
vCu, unblocked vol			971		1385	173
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			92		99	100
cM capacity (veh/h)			584		246	695
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	857	463	47	821	821	3
Volume Left	0	0	47	0	0	2
Volume Right	0	35	0	0	0	1
cSH	1700	1700	584	1700	1700	314
Volume to Capacity	0.50	0.27	0.08	0.48	0.48	0.01
Queue Length 95th (ft)	0	0	7	0	0	1
Control Delay (s)	0.0	0.0	11.7	0.0	0.0	16.6
Lane LOS	B			C		
Approach Delay (s)	0.0		0.3			16.6
Approach LOS				C		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			51.8%	ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	1177	0	0	1550	0	69
Future Volume (vph)	1177	0	0	1550	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	0	0	1685	0	75
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1279	0	0	1685	0	75
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.2%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

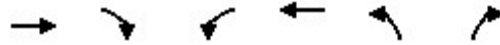
03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	1177	0	0	1550	0	69
Future Volume (Veh/h)	1177	0	0	1550	0	69
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1279	0	0	1685	0	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.83	0.91	0.83
vC, conflicting volume				1279	2122	640
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				932	1286	164
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	89
cM capacity (veh/h)				607	142	709
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	640	640	842	842	75	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	75	
cSH	1700	1700	1700	1700	709	
Volume to Capacity	0.38	0.38	0.50	0.50	0.11	
Queue Length 95th (ft)	0	0	0	0	9	
Control Delay (s)	0.0	0.0	0.0	0.0	10.7	
Lane LOS					B	
Approach Delay (s)	0.0		0.0		10.7	
Approach LOS					B	
Intersection Summary						
Average Delay				0.3		
Intersection Capacity Utilization				46.2%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
 4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	1064	177	207	1235	330	382
Future Volume (vph)	1064	177	207	1235	330	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						400
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1097	182	223	1328	375	434
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1097	182	223	1328	375	434
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

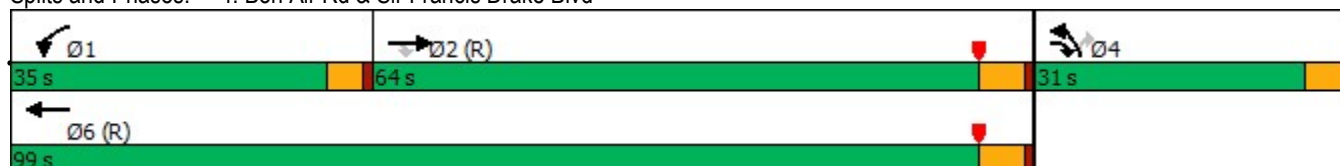


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	79.7	101.6	14.3	98.5	21.3	21.3
Actuated g/C Ratio	0.61	0.78	0.11	0.76	0.16	0.16
v/c Ratio	0.50	0.15	0.63	0.49	0.71	0.73
Control Delay	12.1	2.3	63.1	7.2	58.7	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	2.3	63.1	7.2	58.7	14.5
LOS	B	A	E	A	E	B
Approach Delay	10.7			15.2	35.0	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 18.0
 Intersection Capacity Utilization 61.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

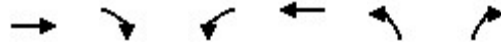
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1097	182	223	1328	375	434
v/c Ratio	0.50	0.15	0.63	0.49	0.71	0.73
Control Delay	12.1	2.3	63.1	7.2	58.7	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	2.3	63.1	7.2	58.7	14.5
Queue Length 50th (ft)	204	21	94	202	154	25
Queue Length 95th (ft)	250	37	132	280	196	120
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2192	1294	759	2708	652	637
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	0.50	0.14	0.29	0.49	0.58	0.68

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	1064	177	207	1235	330	382
Future Volume (vph)	1064	177	207	1235	330	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1579	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1579	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	1097	182	223	1328	375	434
RTOR Reduction (vph)	0	0	0	0	0	334
Lane Group Flow (vph)	1097	182	223	1328	375	100
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	79.7	101.0	14.3	98.5	21.3	21.3
Effective Green, g (s)	79.7	101.0	14.3	98.5	21.3	21.3
Actuated g/C Ratio	0.61	0.78	0.11	0.76	0.16	0.16
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2191	1226	355	2707	530	258
v/s Ratio Prot	0.31	0.02	c0.07	c0.37	c0.12	
v/s Ratio Perm		0.09				0.06
v/c Ratio	0.50	0.15	0.63	0.49	0.71	0.39
Uniform Delay, d1	14.0	3.7	55.3	6.1	51.4	48.5
Progression Factor	0.75	0.75	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	3.5	0.6	4.3	1.0
Delay (s)	11.3	2.8	58.8	6.7	55.7	49.5
Level of Service	B	A	E	A	E	D
Approach Delay (s)	10.1			14.2	52.4	
Approach LOS	B			B	D	

Intersection Summary

HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	669	358	1
Future Volume (vph)	0	0	0	669	358	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	727	389	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	727	390	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.8%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	19	6	608	354	4
Future Volume (vph)	58	19	6	608	354	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.966				0.998	
Flt Protected	0.964		0.950			
Satd. Flow (prot)	1735	0	1770	3539	3532	0
Flt Permitted	0.964		0.950			
Satd. Flow (perm)	1735	0	1770	3539	3532	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	21	7	661	385	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	7	661	389	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

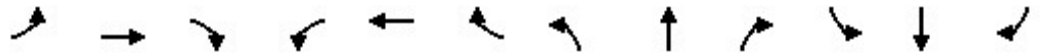


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶		↶	↷	↷	
Traffic Volume (veh/h)	58	19	6	608	354	4
Future Volume (Veh/h)	58	19	6	608	354	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	21	7	661	385	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	732	194	389			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	732	194	389			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	97	99			
cM capacity (veh/h)	355	814	1166			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	84	7	330	330	257	132
Volume Left	63	7	0	0	0	0
Volume Right	21	0	0	0	0	4
cSH	413	1166	1700	1700	1700	1700
Volume to Capacity	0.20	0.01	0.19	0.19	0.15	0.08
Queue Length 95th (ft)	19	0	0	0	0	0
Control Delay (s)	15.9	8.1	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	15.9	0.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			27.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

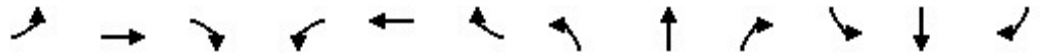


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	1471	131	32	1298	101	249	45	35	126	19	72
Future Volume (vph)	76	1471	131	32	1298	101	249	45	35	126	19	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.966		0.950	0.964	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1627	1615	1600	1624	1507
Flt Permitted	0.950			0.950			0.950	0.510		0.950	0.695	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	859	1529	1600	1171	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	80	1548	138	33	1352	105	283	51	40	154	23	88
Shared Lane Traffic (%)							41%			43%		
Lane Group Flow (vph)	80	1548	138	33	1352	105	167	167	40	88	89	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.3	63.3	63.3	8.2	57.2	57.2	15.2	15.2	33.8	9.5	9.5	28.1
Actuated g/C Ratio	0.07	0.49	0.49	0.06	0.44	0.44	0.12	0.12	0.26	0.07	0.07	0.22
v/c Ratio	0.67	0.88	0.17	0.33	0.87	0.14	0.90	0.88	0.08	0.76	0.75	0.22
Control Delay	84.8	38.2	3.5	67.6	40.5	1.7	99.8	97.0	0.3	95.3	94.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.8	38.2	3.5	67.6	40.5	1.7	99.8	97.0	0.3	95.3	94.5	7.0
LOS	F	D	A	E	D	A	F	F	A	F	F	A
Approach Delay	37.6			38.3			87.9			65.7		
Approach LOS	D			D			F			E		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.90
Intersection Signal Delay:	44.6
Intersection LOS:	D
Intersection Capacity Utilization:	77.1%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

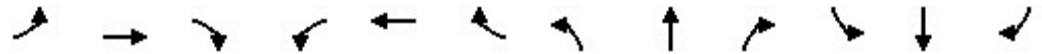
Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	1548	138	33	1352	105	167	167	40	88	89	88
v/c Ratio	0.67	0.88	0.17	0.33	0.87	0.14	0.90	0.88	0.08	0.76	0.75	0.22
Control Delay	84.8	38.2	3.5	67.6	40.5	1.7	99.8	97.0	0.3	95.3	94.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.8	38.2	3.5	67.6	40.5	1.7	99.8	97.0	0.3	95.3	94.5	7.0
Queue Length 50th (ft)	67	653	0	27	538	0	147	147	0	77	78	0
Queue Length 95th (ft)	#139	#829	35	63	643	15	#273	#271	0	#144	#144	25
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	1757	835	104	1556	732	194	189	472	121	118	400
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.88	0.17	0.32	0.87	0.14	0.86	0.88	0.08	0.73	0.75	0.22

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



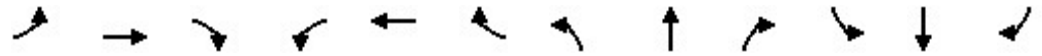
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	1471	131	32	1298	101	249	45	35	126	19	72
Future Volume (vph)	76	1471	131	32	1298	101	249	45	35	126	19	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1628	1529	1600	1624	1479
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.51	1.00	0.95	0.69	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	859	1529	1600	1171	1479
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	80	1548	138	33	1352	105	283	51	40	154	23	88
RTOR Reduction (vph)	0	0	73	0	0	59	0	0	30	0	0	69
Lane Group Flow (vph)	80	1548	65	33	1352	46	167	167	10	88	89	19
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	9.3	61.5	61.5	5.0	57.2	57.2	15.2	33.8	33.8	9.5	28.1	28.1
Effective Green, g (s)	9.3	61.5	61.5	5.0	57.2	57.2	15.2	33.8	33.8	9.5	28.1	28.1
Actuated g/C Ratio	0.07	0.47	0.47	0.04	0.44	0.44	0.12	0.26	0.26	0.07	0.22	0.22
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	120	1707	740	61	1557	652	187	313	397	116	286	319
v/s Ratio Prot	c0.05	c0.43		0.02	0.38		c0.10	0.06		c0.05	0.02	
v/s Ratio Perm			0.04			0.03		c0.08	0.01		0.04	0.01
v/c Ratio	0.67	0.91	0.09	0.54	0.87	0.07	0.89	0.53	0.03	0.76	0.31	0.06
Uniform Delay, d1	58.8	31.6	18.8	61.4	33.0	21.0	56.6	41.3	35.8	59.1	42.8	40.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	8.5	0.2	5.2	6.8	0.2	36.6	0.9	0.0	21.9	0.2	0.0
Delay (s)	69.2	40.1	19.1	66.5	39.8	21.3	93.2	42.2	35.8	81.0	43.0	40.5
Level of Service	E	D	B	E	D	C	F	D	D	F	D	D
Approach Delay (s)		39.8			39.1			64.3			54.8	
Approach LOS		D			D			E			D	

Intersection Summary		
HCM 2000 Control Delay	42.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.82	D
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	77.1%	20.2
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		D

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1025	2	7	1202	325	7	1	7	210	1	166
Future Volume (vph)	149	1025	2	7	1202	325	7	1	7	210	1	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.97			0.98			
Fr _t						0.850			0.850			0.850
Fl _t Protected	0.950			0.950				0.957			0.953	
Satd. Flow (prot)	1643	3520	0	1693	3386	1461	0	1818	1615	0	1811	1615
Fl _t Permitted	0.950			0.950				0.595			0.431	
Satd. Flow (perm)	1643	3520	0	1693	3386	1423	0	1130	1588	0	819	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						339			133			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	162	1114	2	7	1279	346	9	1	9	231	1	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	1116	0	7	1279	346	0	10	9	0	232	182
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	16.5	88.8		7.1	69.9	91.4		10.2	10.2		28.6	16.5
Actuated g/C Ratio	0.13	0.68		0.05	0.54	0.70		0.08	0.08		0.22	0.13
v/c Ratio	0.78	0.46		0.08	0.70	0.31		0.11	0.04		0.70	0.62
Control Delay	79.3	11.2		68.4	28.8	4.0		55.0	0.3		58.3	33.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	79.3	11.2		68.4	28.8	4.0		55.0	0.3		58.3	33.2
LOS	E	B		E	C	A		D	A		E	C
Approach Delay	19.8			23.7				29.1			47.2	
Approach LOS	B			C				C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	25.2
Intersection LOS:	C
Intersection Capacity Utilization:	72.3%
ICU Level of Service:	C
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	162	1116	7	1279	346	10	9	232	182
v/c Ratio	0.78	0.46	0.08	0.70	0.31	0.11	0.04	0.70	0.62
Control Delay	79.3	11.2	68.4	28.8	4.0	55.0	0.3	58.3	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	11.2	68.4	28.8	4.0	55.0	0.3	58.3	33.2
Queue Length 50th (ft)	132	210	5	490	46	8	0	172	62
Queue Length 95th (ft)	#224	338	m12	578	67	22	0	#322	142
Internal Link Dist (ft)		670		573		172		285	
Turn Bay Length (ft)	125		70		200		20		55
Base Capacity (vph)	233	2405	97	1820	1122	119	287	347	317
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	0.70	0.46	0.07	0.70	0.31	0.08	0.03	0.67	0.57

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.

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1025	2	7	1202	325	7	1	7	210	1	166
Future Volume (vph)	149	1025	2	7	1202	325	7	1	7	210	1	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98		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	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1643	3520		1693	3386	1432		1818	1581		1810	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.60	1.00		0.43	1.00
Satd. Flow (perm)	1643	3520		1693	3386	1432		1131	1581		819	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	162	1114	2	7	1279	346	9	1	9	231	1	182
RTOR Reduction (vph)	0	0	0	0	0	111	0	0	9	0	0	89
Lane Group Flow (vph)	162	1116	0	7	1279	235	0	10	0	0	232	93
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	16.5	82.0		1.5	66.7	87.3		6.6	6.6		31.8	16.5
Effective Green, g (s)	16.5	82.0		1.5	66.7	87.3		6.6	6.6		31.8	16.5
Actuated g/C Ratio	0.13	0.63		0.01	0.51	0.67		0.05	0.05		0.24	0.13
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0		3.0	3.0		3.5	3.0
Lane Grp Cap (vph)	208	2220		19	1737	961		57	80		357	204
v/s Ratio Prot	c0.10	0.32		0.00	c0.38	0.04					c0.10	0.06
v/s Ratio Perm						0.13		0.01	0.00		c0.06	
v/c Ratio	0.78	0.50		0.37	0.74	0.24		0.18	0.01		0.65	0.46
Uniform Delay, d1	55.0	13.0		63.8	24.8	8.4		59.1	58.6		44.1	52.6
Progression Factor	1.00	1.00		1.14	1.13	2.89		1.00	1.00		1.00	1.00
Incremental Delay, d2	16.7	0.8		10.2	2.5	0.3		1.5	0.0		4.2	1.6
Delay (s)	71.6	13.8		83.0	30.5	24.6		60.6	58.6		48.3	54.2
Level of Service	E	B		F	C	C		E	E		D	D
Approach Delay (s)		21.1			29.5			59.6			50.9	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay			29.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)		19.6			
Intersection Capacity Utilization			72.3%				ICU Level of Service			C		
Analysis Period (min)			15									
c	Critical Lane Group											

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (vph)	1182	36	55	1513	2	1
Future Volume (vph)	1182	36	55	1513	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996				0.955	
Flt Protected			0.950		0.968	
Satd. Flow (prot)	3525	0	1796	3592	1722	0
Flt Permitted			0.950		0.968	
Satd. Flow (perm)	3525	0	1796	3592	1722	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1285	39	60	1645	2	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1324	0	60	1645	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	51.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (veh/h)	1182	36	55	1513	2	1
Future Volume (Veh/h)	1182	36	55	1513	2	1
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1285	39	60	1645	2	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.83	0.90	0.83	
vC, conflicting volume			1324	2247	662	
vC1, stage 1 conf vol				1304		
vC2, stage 2 conf vol				942		
vCu, unblocked vol			973	1412	172	
tC, single (s)			4.1	6.8	6.9	
tC, 2 stage (s)				5.8		
tF (s)			2.2	3.5	3.3	
p0 queue free %			90	99	100	
cM capacity (veh/h)			582	241	696	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	857	467	60	822	822	3
Volume Left	0	0	60	0	0	2
Volume Right	0	39	0	0	0	1
cSH	1700	1700	582	1700	1700	308
Volume to Capacity	0.50	0.27	0.10	0.48	0.48	0.01
Queue Length 95th (ft)	0	0	9	0	0	1
Control Delay (s)	0.0	0.0	11.9	0.0	0.0	16.8
Lane LOS	B			C		
Approach Delay (s)	0.0		0.4			16.8
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			51.8%	ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (vph)	1177	0	0	1563	0	76
Future Volume (vph)	1177	0	0	1563	0	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	0	0	1699	0	83
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1279	0	0	1699	0	83
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

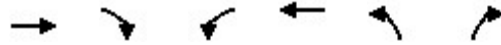
03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	1177	0	0	1563	0	76
Future Volume (Veh/h)	1177	0	0	1563	0	76
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1279	0	0	1699	0	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.83	0.91	0.83
vC, conflicting volume				1279	2128	640
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				930	1285	161
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	88
cM capacity (veh/h)				608	142	711
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	640	640	850	850	83	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	83	
cSH	1700	1700	1700	1700	711	
Volume to Capacity	0.38	0.38	0.50	0.50	0.12	
Queue Length 95th (ft)	0	0	0	0	10	
Control Delay (s)	0.0	0.0	0.0	0.0	10.7	
Lane LOS						B
Approach Delay (s)	0.0		0.0		10.7	
Approach LOS						B
Intersection Summary						
Average Delay				0.3		
Intersection Capacity Utilization				46.5%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	1068	136	213	1246	333	384
Future Volume (vph)	1068	136	213	1246	333	384
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						400
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1101	140	229	1340	378	436
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1101	140	229	1340	378	436
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

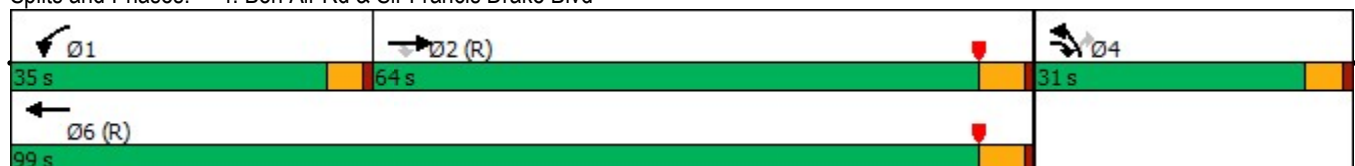


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	79.5	101.4	14.5	98.6	21.2	21.2
Actuated g/C Ratio	0.61	0.78	0.11	0.76	0.16	0.16
v/c Ratio	0.50	0.11	0.63	0.49	0.72	0.74
Control Delay	12.2	2.3	62.9	7.2	59.1	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	2.3	62.9	7.2	59.1	14.7
LOS	B	A	E	A	E	B
Approach Delay	11.1			15.3	35.4	
Approach LOS	B			B	D	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	18.4
Intersection LOS:	B
Intersection Capacity Utilization:	62.0%
ICU Level of Service:	B
Analysis Period (min):	15

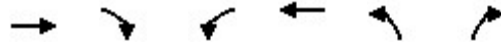
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1101	140	229	1340	378	436
v/c Ratio	0.50	0.11	0.63	0.49	0.72	0.74
Control Delay	12.2	2.3	62.9	7.2	59.1	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	2.3	62.9	7.2	59.1	14.7
Queue Length 50th (ft)	200	16	96	200	157	26
Queue Length 95th (ft)	252	m29	135	284	197	123
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2186	1291	759	2710	652	637
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	0.50	0.11	0.30	0.49	0.58	0.68

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↑
Traffic Volume (vph)	1068	136	213	1246	333	384
Future Volume (vph)	1068	136	213	1246	333	384
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1579	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1579	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	1101	140	229	1340	378	436
RTOR Reduction (vph)	0	0	0	0	0	335
Lane Group Flow (vph)	1101	140	229	1340	378	101
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	79.6	100.8	14.5	98.6	21.2	21.2
Effective Green, g (s)	79.6	100.8	14.5	98.6	21.2	21.2
Actuated g/C Ratio	0.61	0.78	0.11	0.76	0.16	0.16
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2188	1224	360	2710	527	257
v/s Ratio Prot	0.31	0.02	c0.07	c0.37	c0.12	
v/s Ratio Perm		0.07				0.06
v/c Ratio	0.50	0.11	0.64	0.49	0.72	0.39
Uniform Delay, d1	14.1	3.6	55.2	6.1	51.6	48.7
Progression Factor	0.75	0.76	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	3.7	0.6	4.6	1.0
Delay (s)	11.3	2.8	58.9	6.7	56.2	49.7
Level of Service	B	A	E	A	E	D
Approach Delay (s)	10.4			14.3	52.7	
Approach LOS	B			B	D	

Intersection Summary

HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	674	321	4
Future Volume (vph)	0	0	0	674	321	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr t					0.998	
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3532	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3532	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	733	349	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	733	353	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	62	22	9	609	354	7
Future Volume (vph)	62	22	9	609	354	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.964				0.997	
Flt Protected	0.964		0.950			
Satd. Flow (prot)	1731	0	1770	3539	3529	0
Flt Permitted	0.964		0.950			
Satd. Flow (perm)	1731	0	1770	3539	3529	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	24	10	662	385	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	10	662	393	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

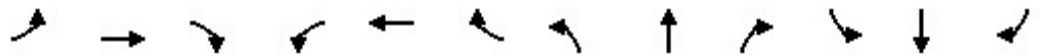


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	22	9	609	354	7
Future Volume (Veh/h)	62	22	9	609	354	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	24	10	662	385	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	740	196	393			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	740	196	393			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	97	99			
cM capacity (veh/h)	349	812	1162			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	91	10	331	331	257	136
Volume Left	67	10	0	0	0	0
Volume Right	24	0	0	0	0	8
cSH	411	1162	1700	1700	1700	1700
Volume to Capacity	0.22	0.01	0.19	0.19	0.15	0.08
Queue Length 95th (ft)	21	1	0	0	0	0
Control Delay (s)	16.2	8.1	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	16.2	0.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			28.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	1477	131	32	1315	101	249	45	35	126	19	72
Future Volume (vph)	76	1477	131	32	1315	101	249	45	35	126	19	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.966		0.950	0.964	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1627	1615	1600	1624	1507
Flt Permitted	0.950			0.950			0.950	0.510		0.950	0.695	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	859	1529	1600	1171	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	80	1555	138	33	1370	105	283	51	40	154	23	88
Shared Lane Traffic (%)							41%			43%		
Lane Group Flow (vph)	80	1555	138	33	1370	105	167	167	40	88	89	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.3	63.3	63.3	8.2	57.2	57.2	15.2	15.2	33.8	9.5	9.5	28.1
Actuated g/C Ratio	0.07	0.49	0.49	0.06	0.44	0.44	0.12	0.12	0.26	0.07	0.07	0.22
v/c Ratio	0.67	0.89	0.17	0.33	0.88	0.14	0.90	0.88	0.08	0.76	0.75	0.22
Control Delay	84.8	38.5	3.5	67.6	41.3	1.7	99.8	97.0	0.3	95.3	94.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.8	38.5	3.5	67.6	41.3	1.7	99.8	97.0	0.3	95.3	94.5	7.0
LOS	F	D	A	E	D	A	F	F	A	F	F	A
Approach Delay	37.8			39.1			87.9			65.7		
Approach LOS	D			D			F			E		

Intersection Summary

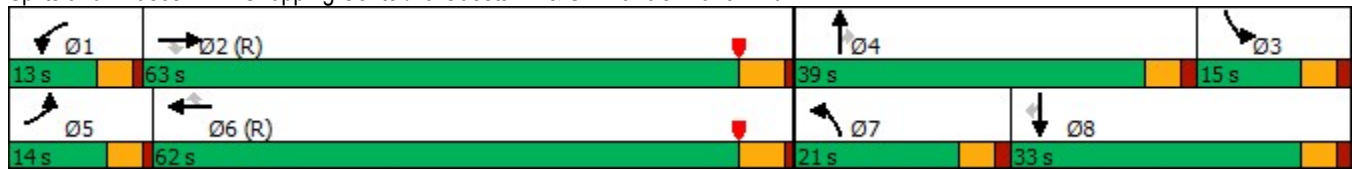
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.90
Intersection Signal Delay:	45.0
Intersection LOS:	D
Intersection Capacity Utilization:	77.3%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

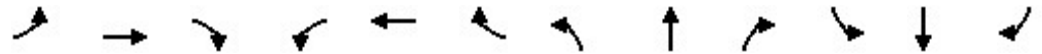
Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	1555	138	33	1370	105	167	167	40	88	89	88
v/c Ratio	0.67	0.89	0.17	0.33	0.88	0.14	0.90	0.88	0.08	0.76	0.75	0.22
Control Delay	84.8	38.5	3.5	67.6	41.3	1.7	99.8	97.0	0.3	95.3	94.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.8	38.5	3.5	67.6	41.3	1.7	99.8	97.0	0.3	95.3	94.5	7.0
Queue Length 50th (ft)	67	658	0	27	551	0	147	147	0	77	78	0
Queue Length 95th (ft)	#139	#835	35	63	657	15	#273	#271	0	#144	#144	25
Internal Link Dist (ft)		873			1268			165				323
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	1757	835	104	1556	732	194	189	472	121	118	400
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.89	0.17	0.32	0.88	0.14	0.86	0.88	0.08	0.73	0.75	0.22

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	1477	131	32	1315	101	249	45	35	126	19	72
Future Volume (vph)	76	1477	131	32	1315	101	249	45	35	126	19	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1628	1529	1600	1624	1479
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.51	1.00	0.95	0.69	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	859	1529	1600	1171	1479
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	80	1555	138	33	1370	105	283	51	40	154	23	88
RTOR Reduction (vph)	0	0	73	0	0	59	0	0	30	0	0	69
Lane Group Flow (vph)	80	1555	65	33	1370	46	167	167	10	88	89	19
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	9.3	61.5	61.5	5.0	57.2	57.2	15.2	33.8	33.8	9.5	28.1	28.1
Effective Green, g (s)	9.3	61.5	61.5	5.0	57.2	57.2	15.2	33.8	33.8	9.5	28.1	28.1
Actuated g/C Ratio	0.07	0.47	0.47	0.04	0.44	0.44	0.12	0.26	0.26	0.07	0.22	0.22
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	120	1707	740	61	1557	652	187	313	397	116	286	319
v/s Ratio Prot	c0.05	c0.43		0.02	0.39		c0.10	0.06		c0.05	0.02	
v/s Ratio Perm			0.04			0.03		c0.08	0.01		0.04	0.01
v/c Ratio	0.67	0.91	0.09	0.54	0.88	0.07	0.89	0.53	0.03	0.76	0.31	0.06
Uniform Delay, d1	58.8	31.7	18.8	61.4	33.3	21.0	56.6	41.3	35.8	59.1	42.8	40.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	8.8	0.2	5.2	7.4	0.2	36.6	0.9	0.0	21.9	0.2	0.0
Delay (s)	69.2	40.6	19.1	66.5	40.7	21.3	93.2	42.2	35.8	81.0	43.0	40.5
Level of Service	E	D	B	E	D	C	F	D	D	F	D	D
Approach Delay (s)		40.2			39.9			64.3			54.8	
Approach LOS		D			D			E			D	

Intersection Summary		
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.82	D
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	77.3%	20.2
Analysis Period (min)	15	ICU Level of Service
		D
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	489	0	1	394	90	0	0	2	43	0	29
Future Volume (vph)	56	489	0	1	394	90	0	0	2	43	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.97			0.98			
Frt						0.850			0.850			0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1643	3521	0	1693	3386	1461	0	1900	1615	0	1805	1615
Flt Permitted	0.950			0.950							0.690	
Satd. Flow (perm)	1643	3521	0	1693	3386	1423	0	1900	1588	0	1311	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						96			470			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	61	532	0	1	419	96	0	0	3	47	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	532	0	1	419	96	0	0	3	0	47	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	10.6	105.0		7.0	94.4	106.2			6.0		12.5	10.6
Actuated g/C Ratio	0.08	0.81		0.05	0.73	0.82			0.05		0.10	0.08
v/c Ratio	0.46	0.19		0.01	0.17	0.08			0.01		0.28	0.14
Control Delay	67.4	3.8		67.0	6.3	0.9			0.0		57.3	1.3
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0		0.0	0.0
Total Delay	67.4	3.8		67.0	6.3	0.9			0.0		57.3	1.3
LOS	E	A		E	A	A			A		E	A
Approach Delay	10.3			5.5								
Approach LOS	B			A								

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.46
Intersection Signal Delay:	9.8
Intersection LOS:	A
Intersection Capacity Utilization:	53.3%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

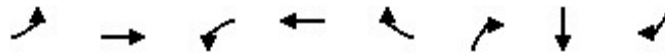
Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBR	SBT	SBR
Lane Group Flow (vph)	61	532	1	419	96	3	47	32
v/c Ratio	0.46	0.19	0.01	0.17	0.08	0.01	0.28	0.14
Control Delay	67.4	3.8	67.0	6.3	0.9	0.0	57.3	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.4	3.8	67.0	6.3	0.9	0.0	57.3	1.3
Queue Length 50th (ft)	50	35	0	54	0	0	38	0
Queue Length 95th (ft)	95	103	m5	85	2	0	73	0
Internal Link Dist (ft)		670		573			285	
Turn Bay Length (ft)	125		70		200	20		55
Base Capacity (vph)	233	2843	97	2458	1218	573	350	317
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	0.26	0.19	0.01	0.17	0.08	0.01	0.13	0.10

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	56	489	0	1	394	90	0	0	2	43	0	29	
Future Volume (vph)	56	489	0	1	394	90	0	0	2	43	0	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12	
Grade (%)		3%			-3%			0%				0%	
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5			5.2		5.1	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00			1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98			0.94		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	1.00		1.00	1.00	0.85			0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1643	3521		1693	3386	1427			1518		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00	1.00			1.00		0.69	1.00	
Satd. Flow (perm)	1643	3521		1693	3386	1427			1518		1310	1615	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91	
Adj. Flow (vph)	61	532	0	1	419	96	0	0	3	47	0	32	
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	3	0	0	30	
Lane Group Flow (vph)	61	532	0	1	419	74	0	0	0	0	47	2	
Confl. Peds. (#/hr)			1			3							
Confl. Bikes (#/hr)			1						2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over	
Protected Phases	5	2		1	6	7		8		7	4	5	
Permitted Phases						6	8		8		4		
Actuated Green, G (s)	9.0	97.2		1.4	89.3	100.2			1.2		16.7	9.0	
Effective Green, g (s)	9.0	97.2		1.4	89.3	100.2			1.2		16.7	9.0	
Actuated g/C Ratio	0.07	0.75		0.01	0.69	0.77			0.01		0.13	0.07	
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5			5.2		5.1	4.5	
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0			3.0		3.5	3.0	
Lane Grp Cap (vph)	113	2632		18	2325	1099			14		209	111	
v/s Ratio Prot	c0.04	c0.15		0.00	0.12	0.01					c0.02	0.00	
v/s Ratio Perm						0.05			0.00		c0.01		
v/c Ratio	0.54	0.20		0.06	0.18	0.07			0.00		0.22	0.02	
Uniform Delay, d1	58.5	4.9		63.6	7.3	3.6			63.8		50.8	56.4	
Progression Factor	1.00	1.00		1.14	0.92	1.02			1.00		1.00	1.00	
Incremental Delay, d2	4.9	0.2		1.3	0.2	0.1			0.1		0.6	0.1	
Delay (s)	63.4	5.0		73.8	6.9	3.7			63.9		51.5	56.5	
Level of Service	E	A		E	A	A			E		D	E	
Approach Delay (s)		11.0			6.4			63.9			53.5		
Approach LOS		B			A			E			D		
Intersection Summary													
HCM 2000 Control Delay			12.0									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.25										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	19.6
Intersection Capacity Utilization			53.3%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	526	3	10	492	2	2
Future Volume (vph)	526	3	10	492	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Fr _t	0.999				0.932	
Fl _t Protected			0.950		0.976	
Satd. Flow (prot)	3536	0	1796	3592	1694	0
Fl _t Permitted			0.950		0.976	
Satd. Flow (perm)	3536	0	1796	3592	1694	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	572	3	11	535	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	575	0	11	535	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

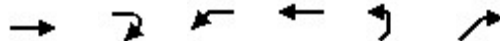
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (veh/h)	526	3	10	492	2	2
Future Volume (Veh/h)	526	3	10	492	2	2
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	572	3	11	535	2	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			575		863	288
vC1, stage 1 conf vol					574	
vC2, stage 2 conf vol					290	
vCu, unblocked vol			488		786	190
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1034		505	791
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	381	194	11	268	268	4
Volume Left	0	0	11	0	0	2
Volume Right	0	3	0	0	0	2
cSH	1700	1700	1034	1700	1700	617
Volume to Capacity	0.22	0.11	0.01	0.16	0.16	0.01
Queue Length 95th (ft)	0	0	1	0	0	0
Control Delay (s)	0.0	0.0	8.5	0.0	0.0	10.9
Lane LOS	A			B		
Approach Delay (s)	0.0		0.2			10.9
Approach LOS				B		
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			24.6%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↑
Traffic Volume (vph)	525	0	0	501	0	18
Future Volume (vph)	525	0	0	501	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	571	0	0	545	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	571	0	0	545	0	20
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	525	0	0	501	0	18
Future Volume (Veh/h)	525	0	0	501	0	18
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	571	0	0	545	0	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked				0.98	0.99	0.98
vC, conflicting volume				571	844	286
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				527	769	236
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	97
cM capacity (veh/h)				1018	333	752
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	286	286	272	272	20	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	20	
cSH	1700	1700	1700	1700	752	
Volume to Capacity	0.17	0.17	0.16	0.16	0.03	
Queue Length 95th (ft)	0	0	0	0	2	
Control Delay (s)	0.0	0.0	0.0	0.0	9.9	
Lane LOS						A
Approach Delay (s)	0.0		0.0		9.9	
Approach LOS						A
Intersection Summary						
Average Delay				0.2		
Intersection Capacity Utilization				24.5%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

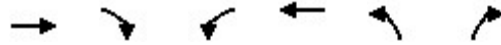


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	506	35	83	440	68	126
Future Volume (vph)	506	35	83	440	68	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						143
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	522	36	89	473	77	143
Shared Lane Traffic (%)						
Lane Group Flow (vph)	522	36	89	473	77	143
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

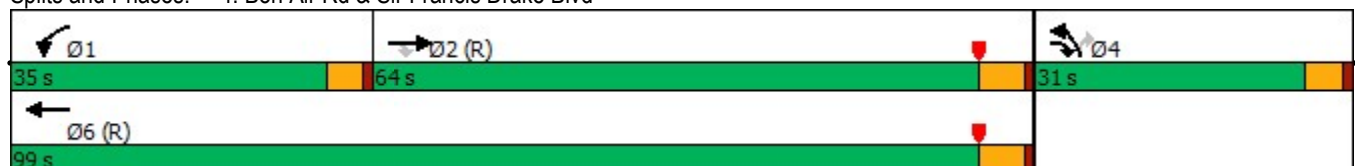


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	95.7	105.6	10.3	110.5	9.3	9.3
Actuated g/C Ratio	0.74	0.81	0.08	0.85	0.07	0.07
v/c Ratio	0.20	0.03	0.35	0.16	0.33	0.58
Control Delay	5.0	1.4	60.5	1.9	60.8	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	1.4	60.5	1.9	60.8	18.8
LOS	A	A	E	A	E	B
Approach Delay	4.8			11.2	33.5	
Approach LOS	A			B	C	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	12.2
Intersection LOS:	B
Intersection Capacity Utilization	50.0%
ICU Level of Service	A
Analysis Period (min)	15

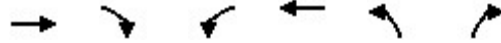
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	522	36	89	473	77	143
v/c Ratio	0.20	0.03	0.35	0.16	0.33	0.58
Control Delay	5.0	1.4	60.5	1.9	60.8	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	1.4	60.5	1.9	60.8	18.8
Queue Length 50th (ft)	46	3	37	25	32	0
Queue Length 95th (ft)	83	6	64	44	56	60
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2630	1486	759	3037	652	431
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	0.20	0.02	0.12	0.16	0.12	0.33

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	506	35	83	440	68	126
Future Volume (vph)	506	35	83	440	68	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1576	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1576	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	522	36	89	473	77	143
RTOR Reduction (vph)	0	0	0	0	0	133
Lane Group Flow (vph)	522	36	89	473	77	10
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	95.7	105.0	10.3	110.5	9.3	9.3
Effective Green, g (s)	95.7	105.0	10.3	110.5	9.3	9.3
Actuated g/C Ratio	0.74	0.81	0.08	0.85	0.07	0.07
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2631	1272	256	3037	231	112
v/s Ratio Prot	c0.15	0.00	c0.03	0.13	c0.02	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.20	0.03	0.35	0.16	0.33	0.09
Uniform Delay, d1	5.3	2.5	56.7	1.7	57.4	56.4
Progression Factor	0.88	0.84	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.8	0.1	0.9	0.4
Delay (s)	4.8	2.1	57.5	1.8	58.3	56.8
Level of Service	A	A	E	A	E	E
Approach Delay (s)	4.7			10.6	57.3	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	189	103	0
Future Volume (vph)	0	0	0	189	103	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3539	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	205	112	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	205	112	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	8.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	3	1	186	102	1
Future Volume (vph)	3	3	1	186	102	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.932				0.999	
Flt Protected	0.976		0.950			
Satd. Flow (prot)	1694	0	1770	3539	3536	0
Flt Permitted	0.976		0.950			
Satd. Flow (perm)	1694	0	1770	3539	3536	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	3	1	202	111	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	1	202	112	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.1%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

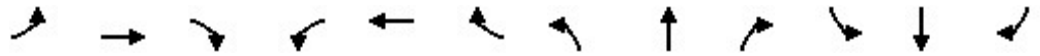


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	3	1	186	102	1
Future Volume (Veh/h)	3	3	1	186	102	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	3	1	202	111	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	214	56	112			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	214	56	112			
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)	754	999	1475			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	6	1	101	101	74	38
Volume Left	3	1	0	0	0	0
Volume Right	3	0	0	0	0	1
cSH	859	1475	1700	1700	1700	1700
Volume to Capacity	0.01	0.00	0.06	0.06	0.04	0.02
Queue Length 95th (ft)	1	0	0	0	0	0
Control Delay (s)	9.2	7.4	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.2	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			15.1%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

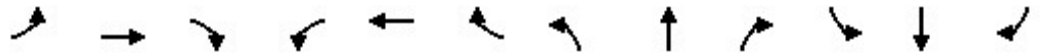


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	605	35	10	537	42	71	10	15	17	2	12
Future Volume (vph)	26	605	35	10	537	42	71	10	15	17	2	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.963		0.950	0.961	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1622	1615	1600	1619	1507
Flt Permitted	0.950			0.950			0.950	0.845		0.950	0.856	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1424	1529	1600	1442	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	27	637	37	10	559	44	81	11	17	21	2	15
Shared Lane Traffic (%)							44%			45%		
Lane Group Flow (vph)	27	637	37	10	559	44	45	47	17	12	11	15
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.0	85.1	85.1	8.0	79.5	79.5	14.6	12.8	35.4	8.0	3.2	25.2
Actuated g/C Ratio	0.07	0.65	0.65	0.06	0.61	0.61	0.11	0.10	0.27	0.06	0.02	0.19
v/c Ratio	0.23	0.27	0.03	0.10	0.26	0.05	0.25	0.30	0.03	0.12	0.28	0.04
Control Delay	62.3	14.1	0.1	60.2	17.4	0.1	58.4	59.7	0.1	60.7	74.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	14.1	0.1	60.2	17.4	0.1	58.4	59.7	0.1	60.7	74.9	0.2
LOS	E	B	A	E	B	A	E	E	A	E	E	A
Approach Delay	15.2			16.8			49.9			40.9		
Approach LOS	B			B			D			D		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.30
Intersection Signal Delay:	19.2
Intersection LOS:	B
Intersection Capacity Utilization	54.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	27	637	37	10	559	44	45	47	17	12	11	15
v/c Ratio	0.23	0.27	0.03	0.10	0.26	0.05	0.25	0.30	0.03	0.12	0.28	0.04
Control Delay	62.3	14.1	0.1	60.2	17.4	0.1	58.4	59.7	0.1	60.7	74.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	14.1	0.1	60.2	17.4	0.1	58.4	59.7	0.1	60.7	74.9	0.2
Queue Length 50th (ft)	22	131	0	8	145	0	38	41	0	10	~20	0
Queue Length 95th (ft)	54	228	0	27	203	0	78	81	0	29	28	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	2363	1074	104	2163	962	238	159	490	121	40	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.27	0.03	0.10	0.26	0.05	0.19	0.30	0.03	0.10	0.28	0.04

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	605	35	10	537	42	71	10	15	17	2	12
Future Volume (vph)	26	605	35	10	537	42	71	10	15	17	2	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1623	1528	1600	1618	1474
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.84	1.00	0.95	0.86	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1423	1528	1600	1442	1474
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	27	637	37	10	559	44	81	11	17	21	2	15
RTOR Reduction (vph)	0	0	15	0	0	19	0	0	13	0	0	13
Lane Group Flow (vph)	27	637	22	10	559	25	45	47	4	12	11	2
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	5.4	76.3	76.3	1.6	72.5	72.5	12.8	28.7	28.7	3.2	19.1	19.1
Effective Green, g (s)	5.4	76.3	76.3	1.6	72.5	72.5	12.8	28.7	28.7	3.2	19.1	19.1
Actuated g/C Ratio	0.04	0.59	0.59	0.01	0.56	0.56	0.10	0.22	0.22	0.02	0.15	0.15
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	69	2118	919	19	1973	827	157	333	337	39	216	216
v/s Ratio Prot	c0.02	c0.18		0.01	0.16		c0.03	0.01		c0.01	0.00	
v/s Ratio Perm			0.01			0.02		c0.02	0.00		0.01	0.00
v/c Ratio	0.39	0.30	0.02	0.53	0.28	0.03	0.29	0.14	0.01	0.31	0.05	0.01
Uniform Delay, d1	60.7	13.5	11.2	63.8	15.1	12.9	54.4	40.7	39.6	62.3	47.7	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4	0.0	11.6	0.4	0.1	0.4	0.1	0.0	1.6	0.0	0.0
Delay (s)	62.0	13.8	11.3	75.4	15.5	13.0	54.7	40.8	39.6	63.9	47.7	47.4
Level of Service	E	B	B	E	B	B	D	D	D	E	D	D
Approach Delay (s)		15.6			16.3			46.4			52.7	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.28	B
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	54.5%	ICU Level of Service
Analysis Period (min)	15	A
c Critical Lane Group		

Lanes, Volumes, Timings

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	502	0	1	400	92	0	0	2	44	0	29
Future Volume (vph)	56	502	0	1	400	92	0	0	2	44	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Storage Length (ft)	125		0	70		200	0		20	0		55
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	90			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.97			0.98			
Frt						0.850			0.850			0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1643	3521	0	1693	3386	1461	0	1900	1615	0	1805	1615
Flt Permitted	0.950			0.950							0.690	
Satd. Flow (perm)	1643	3521	0	1693	3386	1423	0	1900	1588	0	1311	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						98			462			102
Link Speed (mph)		35			40			25				25
Link Distance (ft)		750			653			252				365
Travel Time (s)		14.6			11.1			6.9				10.0
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	61	546	0	1	426	98	0	0	3	48	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	546	0	1	426	98	0	0	3	0	48	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.02	1.02	1.07	1.07	1.12	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	7	8	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0	3.1	6.0	6.0	6.0	3.1	9.0	8.0
Minimum Split (s)	12.5	27.1		11.5	37.4	8.5	16.0	16.0	16.0	8.5	14.4	12.5
Total Split (s)	23.0	82.0		12.0	67.5	18.8	16.0	16.0	16.0	18.8	36.0	23.0
Total Split (%)	17.7%	63.1%		9.2%	51.9%	14.5%	12.3%	12.3%	12.3%	14.5%	27.7%	17.7%
Maximum Green (s)	18.5	76.9		7.5	62.1	14.3	10.8	10.8	10.8	14.3	30.9	18.5
Yellow Time (s)	3.5	4.1		3.5	4.4	3.5	3.6	3.6	3.6	3.5	3.6	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.6	1.6	1.6	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	5.1		4.5	5.4	4.5		5.2	5.2		5.1	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?							Yes	Yes	Yes			
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0
Time Before Reduce (s)	3.0	6.0		3.0	6.0	6.0	3.0	3.0	3.0	6.0	3.5	3.0
Time To Reduce (s)	0.0	30.0		0.0	30.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	None	C-Min		None	C-Min	Min	None	None	None	Min	None	None
Walk Time (s)	8.0			8.0								
Flash Dont Walk (s)	14.0			24.0								
Pedestrian Calls (#/hr)	0			0								
Act Effct Green (s)	10.6	104.9		7.0	94.3	106.2			6.0		12.6	10.6
Actuated g/C Ratio	0.08	0.81		0.05	0.73	0.82			0.05		0.10	0.08
v/c Ratio	0.46	0.19		0.01	0.17	0.08			0.01		0.29	0.14
Control Delay	67.4	3.8		68.0	6.4	1.0			0.0		57.3	1.3
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0		0.0	0.0
Total Delay	67.4	3.8		68.0	6.4	1.0			0.0		57.3	1.3
LOS	E	A		E	A	A			A		E	A
Approach Delay	10.2			5.5								
Approach LOS	B			A								

Intersection Summary	
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	36 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.46
Intersection Signal Delay:	9.8
Intersection LOS:	A
Intersection Capacity Utilization:	53.3%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024

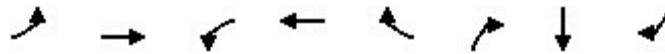
Splits and Phases: 1: Wolfe Grade & Sir Francis Drake Blvd



Queues

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBR	SBT	SBR
Lane Group Flow (vph)	61	546	1	426	98	3	48	32
v/c Ratio	0.46	0.19	0.01	0.17	0.08	0.01	0.29	0.14
Control Delay	67.4	3.8	68.0	6.4	1.0	0.0	57.3	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.4	3.8	68.0	6.4	1.0	0.0	57.3	1.3
Queue Length 50th (ft)	50	36	0	47	0	0	39	0
Queue Length 95th (ft)	95	106	m5	85	2	0	75	0
Internal Link Dist (ft)		670		573			285	
Turn Bay Length (ft)	125		70		200	20		55
Base Capacity (vph)	233	2841	97	2457	1218	565	350	317
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	0.26	0.19	0.01	0.17	0.08	0.01	0.14	0.10

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wolfe Grade & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	502	0	1	400	92	0	0	2	44	0	29
Future Volume (vph)	56	502	0	1	400	92	0	0	2	44	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	10	9	12	12	12	12	12	12
Grade (%)		3%			-3%			0%				0%
Total Lost time (s)	4.5	5.1		4.5	5.4	4.5			5.2		5.1	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00			1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98			0.94		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	1.00		1.00	1.00	0.85			0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00			1.00		0.95	1.00
Satd. Flow (prot)	1643	3521		1693	3386	1427			1518		1805	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00			1.00		0.69	1.00
Satd. Flow (perm)	1643	3521		1693	3386	1427			1518		1310	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	61	546	0	1	426	98	0	0	3	48	0	32
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	3	0	0	30
Lane Group Flow (vph)	61	546	0	1	426	76	0	0	0	0	48	2
Confl. Peds. (#/hr)			1			3						
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov			Perm	pm+pt	NA	Over
Protected Phases	5	2		1	6	7		8		7	4	5
Permitted Phases						6	8		8		4	
Actuated Green, G (s)	9.0	97.2		1.4	89.3	100.2			1.2		16.7	9.0
Effective Green, g (s)	9.0	97.2		1.4	89.3	100.2			1.2		16.7	9.0
Actuated g/C Ratio	0.07	0.75		0.01	0.69	0.77			0.01		0.13	0.07
Clearance Time (s)	4.5	5.1		4.5	5.4	4.5			5.2		5.1	4.5
Vehicle Extension (s)	3.0	6.0		3.0	6.0	6.0			3.0		3.5	3.0
Lane Grp Cap (vph)	113	2632		18	2325	1099			14		209	111
v/s Ratio Prot	c0.04	c0.16		0.00	0.13	0.01					c0.02	0.00
v/s Ratio Perm						0.05			0.00		c0.01	
v/c Ratio	0.54	0.21		0.06	0.18	0.07			0.00		0.23	0.02
Uniform Delay, d1	58.5	4.9		63.6	7.3	3.6			63.8		50.9	56.4
Progression Factor	1.00	1.00		1.17	0.92	1.07			1.00		1.00	1.00
Incremental Delay, d2	4.9	0.2		1.3	0.2	0.1			0.1		0.7	0.1
Delay (s)	63.4	5.1		75.5	6.9	3.9			63.9		51.5	56.5
Level of Service	E	A		E	A	A			E		D	E
Approach Delay (s)		10.9			6.5			63.9			53.5	
Approach LOS		B			A			E			D	

Intersection Summary

HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	526	9	25	501	2	2
Future Volume (vph)	526	9	25	501	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Storage Length (ft)		0	140		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Fr _t	0.997				0.932	
Fl _t Protected			0.950		0.976	
Satd. Flow (prot)	3529	0	1796	3592	1694	0
Fl _t Permitted			0.950		0.976	
Satd. Flow (perm)	3529	0	1796	3592	1694	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	653			414	201	
Travel Time (s)	11.1			7.1	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	572	10	27	545	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	582	0	27	545	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Dwy A & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (veh/h)	526	9	25	501	2	2
Future Volume (Veh/h)	526	9	25	501	2	2
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	572	10	27	545	2	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	653			917		
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			582		904	291
vC1, stage 1 conf vol					577	
vC2, stage 2 conf vol					326	
vCu, unblocked vol			493		826	191
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	100
cM capacity (veh/h)			1029		491	789
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NE 1
Volume Total	381	201	27	272	272	4
Volume Left	0	0	27	0	0	2
Volume Right	0	10	0	0	0	2
cSH	1700	1700	1029	1700	1700	605
Volume to Capacity	0.22	0.12	0.03	0.16	0.16	0.01
Queue Length 95th (ft)	0	0	2	0	0	0
Control Delay (s)	0.0	0.0	8.6	0.0	0.0	11.0
Lane LOS	A			B		
Approach Delay (s)	0.0		0.4			11.0
Approach LOS				B		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			30.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Dwy B & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (vph)	525	0	0	525	0	41
Future Volume (vph)	525	0	0	525	0	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Flt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	3592	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3592	0	1611
Link Speed (mph)	40			40	30	
Link Distance (ft)	414			503	163	
Travel Time (s)	7.1			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	571	0	0	571	0	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	571	0	0	571	0	45
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

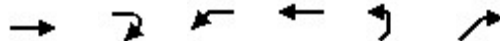
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

3: Dwy B & Sir Francis Drake Blvd

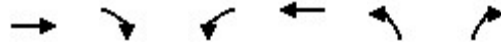
03/27/2024



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	525	0	0	525	0	41
Future Volume (Veh/h)	525	0	0	525	0	41
Sign Control	Free			Free	Stop	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	571	0	0	571	0	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1067			503		
pX, platoon unblocked	0.98			0.99	0.98	
vC, conflicting volume	571			856	286	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	528			777	237	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			100	94	
cM capacity (veh/h)	1017			330	751	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NE 1	
Volume Total	286	286	286	286	45	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	45	
cSH	1700	1700	1700	1700	751	
Volume to Capacity	0.17	0.17	0.17	0.17	0.06	
Queue Length 95th (ft)	0	0	0	0	5	
Control Delay (s)	0.0	0.0	0.0	0.0	10.1	
Lane LOS						B
Approach Delay (s)	0.0	0.0		10.1		
Approach LOS						B
Intersection Summary						
Average Delay	0.4					
Intersection Capacity Utilization	24.5%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings
4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	528	36	91	454	78	134
Future Volume (vph)	528	36	91	454	78	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	10	12
Storage Length (ft)		150	280		135	0
Storage Lanes		1	2		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor		0.98				0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3574	1599	3236	3574	3236	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3574	1573	3236	3574	3236	1576
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						152
Link Speed (mph)	40			40	25	
Link Distance (ft)	503			1696	358	
Travel Time (s)	8.6			28.9	9.8	
Confl. Peds. (#/hr)		3				2
Peak Hour Factor	0.97	0.97	0.93	0.93	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	544	37	98	488	89	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	544	37	98	488	89	152
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	18			20	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.00	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

Lanes, Volumes, Timings

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024

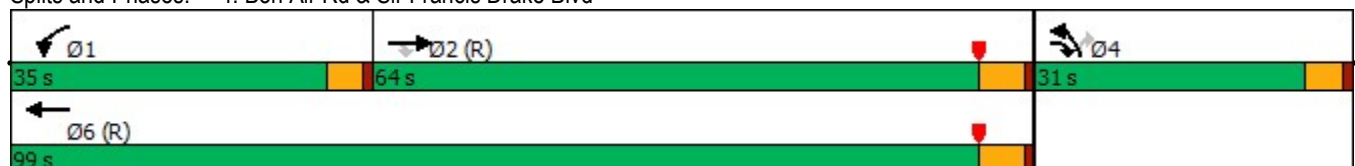


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	31.4	33.8	14.5	13.4	33.8	33.8
Total Split (s)	64.0	31.0	35.0	99.0	31.0	31.0
Total Split (%)	49.2%	23.8%	26.9%	76.2%	23.8%	23.8%
Maximum Green (s)	58.6	26.2	30.5	93.6	26.2	26.2
Yellow Time (s)	4.4	3.6	3.5	4.4	3.6	3.6
All-Red Time (s)	1.0	1.2	1.0	1.0	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	6.0	3.0	3.0	6.0	3.0	3.0
Time To Reduce (s)	30.0	0.0	0.0	30.0	0.0	0.0
Recall Mode	C-Min	None	None	C-Min	None	None
Walk Time (s)	8.0	8.0			8.0	8.0
Flash Dont Walk (s)	18.0	21.0			21.0	21.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	95.2	105.4	10.5	110.2	9.6	9.6
Actuated g/C Ratio	0.73	0.81	0.08	0.85	0.07	0.07
v/c Ratio	0.21	0.03	0.38	0.16	0.37	0.59
Control Delay	5.2	1.5	60.9	2.0	61.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	1.5	60.9	2.0	61.4	18.4
LOS	A	A	E	A	E	B
Approach Delay	5.0			11.8	34.2	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 12.8
 Intersection Capacity Utilization 50.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

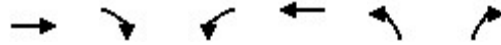
Splits and Phases: 4: Bon Air Rd & Sir Francis Drake Blvd



Queues

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	544	37	98	488	89	152
v/c Ratio	0.21	0.03	0.38	0.16	0.37	0.59
Control Delay	5.2	1.5	60.9	2.0	61.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	1.5	60.9	2.0	61.4	18.4
Queue Length 50th (ft)	53	3	41	27	37	0
Queue Length 95th (ft)	86	7	70	46	62	62
Internal Link Dist (ft)	423			1616	278	
Turn Bay Length (ft)		150	280		135	
Base Capacity (vph)	2618	1481	759	3030	652	438
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.02	0.13	0.16	0.14	0.35

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Bon Air Rd & Sir Francis Drake Blvd

03/27/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Traffic Volume (vph)	528	36	91	454	78	134
Future Volume (vph)	528	36	91	454	78	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	10	12
Total Lost time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3574	1576	3236	3574	3236	1576
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3574	1576	3236	3574	3236	1576
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.88	0.88
Adj. Flow (vph)	544	37	98	488	89	152
RTOR Reduction (vph)	0	0	0	0	0	141
Lane Group Flow (vph)	544	37	98	488	89	11
Confl. Peds. (#/hr)		3				2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	4	1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	95.2	104.8	10.5	110.2	9.6	9.6
Effective Green, g (s)	95.2	104.8	10.5	110.2	9.6	9.6
Actuated g/C Ratio	0.73	0.81	0.08	0.85	0.07	0.07
Clearance Time (s)	5.4	4.8	4.5	5.4	4.8	4.8
Vehicle Extension (s)	6.0	3.0	3.0	6.0	3.0	3.0
Lane Grp Cap (vph)	2617	1270	261	3029	238	116
v/s Ratio Prot	c0.15	0.00	c0.03	0.14	c0.03	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.21	0.03	0.38	0.16	0.37	0.10
Uniform Delay, d1	5.5	2.5	56.6	1.7	57.3	56.2
Progression Factor	0.88	0.84	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.9	0.1	1.0	0.4
Delay (s)	5.0	2.1	57.6	1.9	58.3	56.5
Level of Service	A	A	E	A	E	E
Approach Delay (s)	4.8			11.2	57.2	
Approach LOS	A			B	E	

Intersection Summary

HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
5: Bon Air Rd & Dwy C

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	0	203	109	4
Future Volume (vph)	0	0	0	203	109	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr _t					0.995	
Fl _t Protected						
Satd. Flow (prot)	0	0	0	3539	3522	0
Fl _t Permitted						
Satd. Flow (perm)	0	0	0	3539	3522	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	211			154	358	
Travel Time (s)	4.8			4.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	221	118	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	221	122	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	8.9%
Analysis Period (min)	15
	ICU Level of Service A

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
6: Bon Air Rd & Dwy D

03/27/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	19	9	5	187	103	7
Future Volume (vph)	19	9	5	187	103	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.956				0.990	
Flt Protected	0.967		0.950			
Satd. Flow (prot)	1722	0	1770	3539	3504	0
Flt Permitted	0.967		0.950			
Satd. Flow (perm)	1722	0	1770	3539	3504	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	209			337	154	
Travel Time (s)	4.8			9.2	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	10	5	203	112	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	5	203	120	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.2%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Bon Air Rd & Dwy D

03/27/2024

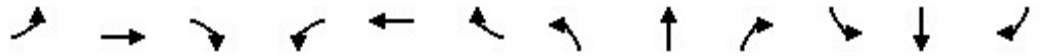


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	9	5	187	103	7
Future Volume (Veh/h)	19	9	5	187	103	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	10	5	203	112	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				337	512	
pX, platoon unblocked						
vC, conflicting volume	228	60	120			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	228	60	120			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	738	993	1466			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	31	5	102	102	75	45
Volume Left	21	5	0	0	0	0
Volume Right	10	0	0	0	0	8
cSH	804	1466	1700	1700	1700	1700
Volume to Capacity	0.04	0.00	0.06	0.06	0.04	0.03
Queue Length 95th (ft)	3	0	0	0	0	0
Control Delay (s)	9.7	7.5	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.7	0.2	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			15.2%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	633	35	10	559	42	71	10	15	17	2	12
Future Volume (vph)	28	633	35	10	559	42	71	10	15	17	2	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%			0%	
Storage Length (ft)	205		90	210		35	115		105	55		25
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor			0.97			0.94			0.95			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.963		0.950	0.961	
Satd. Flow (prot)	1685	3610	1615	1592	3539	1583	1600	1622	1615	1600	1619	1507
Flt Permitted	0.950			0.950			0.950	0.845		0.950	0.856	
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1424	1529	1600	1442	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			101			102
Link Speed (mph)		40			35			25				25
Link Distance (ft)		953			1348			245				403
Travel Time (s)		16.2			26.3			6.7				11.0
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	29	666	37	10	582	44	81	11	17	21	2	15
Shared Lane Traffic (%)							44%			45%		
Lane Group Flow (vph)	29	666	37	10	582	44	45	47	17	12	11	15
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	0.99	0.99	1.16	1.01	1.01	1.09	1.09	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
Minimum Split (s)	13.5	30.4	30.4	12.5	29.4	29.4	28.2	28.2	28.2	13.1	13.1	13.1
Total Split (s)	14.0	63.0	63.0	13.0	62.0	62.0	21.0	39.0	39.0	15.0	33.0	33.0
Total Split (%)	10.8%	48.5%	48.5%	10.0%	47.7%	47.7%	16.2%	30.0%	30.0%	11.5%	25.4%	25.4%
Maximum Green (s)	9.5	57.6	57.6	8.5	56.6	56.6	15.8	33.8	33.8	9.9	27.9	27.9
Yellow Time (s)	3.5	4.4	4.4	3.5	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)	7.0		7.0	7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	18.0		18.0	17.0		17.0	16.0	16.0	16.0			
Pedestrian Calls (#/hr)	0		0	0		0	0	0	0			
Act Effct Green (s)	9.1	85.1	85.1	8.0	79.4	79.4	14.6	12.8	35.4	8.0	3.2	25.2
Actuated g/C Ratio	0.07	0.65	0.65	0.06	0.61	0.61	0.11	0.10	0.27	0.06	0.02	0.19
v/c Ratio	0.25	0.28	0.03	0.10	0.27	0.05	0.25	0.30	0.03	0.12	0.28	0.04
Control Delay	62.8	14.3	0.1	60.2	17.5	0.1	58.4	59.7	0.1	60.7	74.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	14.3	0.1	60.2	17.5	0.1	58.4	59.7	0.1	60.7	74.9	0.2
LOS	E	B	A	E	B	A	E	E	A	E	E	A
Approach Delay	15.5			17.0			49.9			40.9		
Approach LOS	B			B			D			D		

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	68 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.30
Intersection Signal Delay:	19.2
Intersection LOS:	B
Intersection Capacity Utilization	54.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024

Splits and Phases: 7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd



Queues

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	29	666	37	10	582	44	45	47	17	12	11	15
v/c Ratio	0.25	0.28	0.03	0.10	0.27	0.05	0.25	0.30	0.03	0.12	0.28	0.04
Control Delay	62.8	14.3	0.1	60.2	17.5	0.1	58.4	59.7	0.1	60.7	74.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	14.3	0.1	60.2	17.5	0.1	58.4	59.7	0.1	60.7	74.9	0.2
Queue Length 50th (ft)	24	138	0	8	153	0	38	41	0	10	~20	0
Queue Length 95th (ft)	56	240	0	27	213	0	78	81	0	29	28	0
Internal Link Dist (ft)		873			1268			165			323	
Turn Bay Length (ft)	205		90	210		35	115		105	55		25
Base Capacity (vph)	123	2363	1074	104	2162	962	238	159	490	121	40	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.28	0.03	0.10	0.27	0.05	0.19	0.30	0.03	0.10	0.28	0.04

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Shopping Center/La Cuesta Dr & Sir Francis Drake Blvd

03/27/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↗	↗	↘	↗	↗
Traffic Volume (vph)	28	633	35	10	559	42	71	10	15	17	2	12
Future Volume (vph)	28	633	35	10	559	42	71	10	15	17	2	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	9	12	12	10	10	12	10	10	10
Grade (%)		-2%			2%			0%				0%
Total Lost time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.95	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1685	3610	1566	1592	3539	1484	1600	1623	1528	1600	1618	1474
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.84	1.00	0.95	0.86	1.00
Satd. Flow (perm)	1685	3610	1566	1592	3539	1484	1600	1423	1528	1600	1442	1474
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.88	0.88	0.88	0.82	0.82	0.82
Adj. Flow (vph)	29	666	37	10	582	44	81	11	17	21	2	15
RTOR Reduction (vph)	0	0	15	0	0	19	0	0	13	0	0	13
Lane Group Flow (vph)	29	666	22	10	582	25	45	47	4	12	11	2
Confl. Peds. (#/hr)			4			16			24			5
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	5.5	76.3	76.3	1.6	72.4	72.4	12.8	28.7	28.7	3.2	19.1	19.1
Effective Green, g (s)	5.5	76.3	76.3	1.6	72.4	72.4	12.8	28.7	28.7	3.2	19.1	19.1
Actuated g/C Ratio	0.04	0.59	0.59	0.01	0.56	0.56	0.10	0.22	0.22	0.02	0.15	0.15
Clearance Time (s)	4.5	5.4	5.4	4.5	5.4	5.4	5.2	5.2	5.2	5.1	5.1	5.1
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	71	2118	919	19	1970	826	157	333	337	39	216	216
v/s Ratio Prot	c0.02	c0.18		0.01	0.16		c0.03	0.01		c0.01	0.00	
v/s Ratio Perm			0.01			0.02		c0.02	0.00		0.01	0.00
v/c Ratio	0.41	0.31	0.02	0.53	0.30	0.03	0.29	0.14	0.01	0.31	0.05	0.01
Uniform Delay, d1	60.7	13.6	11.2	63.8	15.3	13.0	54.4	40.7	39.6	62.3	47.7	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.4	0.0	11.6	0.4	0.1	0.4	0.1	0.0	1.6	0.0	0.0
Delay (s)	62.1	14.0	11.3	75.4	15.7	13.0	54.7	40.8	39.6	63.9	47.7	47.4
Level of Service	E	B	B	E	B	B	D	D	D	E	D	D
Approach Delay (s)		15.8			16.4			46.4			52.7	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.29	B
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	54.5%	ICU Level of Service
Analysis Period (min)	15	A
c Critical Lane Group		

Appendix B

Study Scenarios: Daily Schedules and Trip Generation

Proposed Scenario: Football Game

Friday in November

Existing

Time	Events and Associated Trips						
2:00							
2:15							
2:30	6	3	4	2	3	2	3
2:45							
3:00							
3:15							
3:30							
3:45							
4:00	Varsity Football Practice	JV Football Practice	Freshman Football Practice	Boys V Soccer Practice	Boys JV Soccer Practice	Girls V Soccer Practice	Girls JV Soccer Practice
4:15							
4:30							
4:45							
5:00							
5:15							
5:30							
5:45				31	33	27	38
6:00	72	40	57				
6:15							
6:30							
6:45							
7:00							
7:15							
7:30							
7:45							
8:00							
8:15							
8:30							
8:45							
9:00							
9:15							
9:30							
9:45							
10:00							

Proposed

Time	Events and Associated Trips						
2:00							
2:15							
2:30							
2:45							
3:00							
3:15							
3:30	162						
3:45							
4:00							
4:15							
4:30	JV Football Game	2		3	2	3	
4:45							
5:00							
5:15							
5:30							
5:45							
6:00							
6:15							
6:30							
6:45	169						
7:00							
7:15							
7:30							
7:45							
8:00							
8:15							
8:30							
8:45							
9:00							
9:15							
9:30							
9:45							
10:00							
10:15	754						

Proposed Scenario: Soccer Game

Weekday in December

Existing

Time	Events and Associated Trips			
2:00				
2:15				
2:30	6	73	2	3
2:45				
3:00				
3:15	Varsity Football Practice	Girls' JV Soccer Game	Boys V Soccer Practice	Boys JV Soccer Practice
3:30				
3:45				
4:00				
4:15				
4:30				
4:45				
5:00				
5:15		77	31	33
5:30				
5:45				
6:00	72			
6:15				
6:30				
6:45				
7:00				
7:15				
7:30				
7:45				
8:00				
8:15				
8:30				
8:45				
9:00				
9:15				
9:30				
9:45				
10:00				

Proposed

Time	Events and Associated Trips			
2:00				
2:15				
2:30	6		2	3
2:45				
3:00				
3:15	Varsity Football Practice		Boys V Soccer Practice	Boys JV Soccer Practice
3:30				
3:45				
4:00				
4:15				
4:30				
4:45				
5:00				
5:15		96		
5:30			31	33
5:45				
6:00	72			
6:15		Girls' JV Soccer Game		
6:30				
6:45				
7:00				
7:15				
7:30				
7:45				
8:00				
8:15		100		
8:30				
8:45				
9:00				
9:15				
9:30				
9:45				
10:00				

Proposed Scenario: Lacrosse Game

Weekday in February

Existing

Time	Events and Associated Trips
2:00	
2:15	
2:30	
2:45	
3:00	
3:15	
3:30	68
3:45	
4:00	
4:15	
4:30	
4:45	JV LAX Game
5:00	82
5:15	
5:30	
5:45	
6:00	71
6:15	V LAX Game
6:30	
6:45	
7:00	
7:15	
7:30	86
7:45	
8:00	
8:15	
8:30	
8:45	
9:00	
9:15	
9:30	
9:45	
10:00	

Proposed

Time	Events and Associated Trips
2:00	
2:15	
2:30	
2:45	
3:00	
3:15	
3:30	
3:45	
4:00	90
4:15	
4:30	
4:45	
5:00	
5:15	
5:30	JV LAX Game
5:45	104
6:00	
6:15	
6:30	
6:45	94
7:00	V LAX Game
7:15	
7:30	
7:45	
8:00	
8:15	109
8:30	
8:45	
9:00	
9:15	
9:30	
9:45	
10:00	
10:15	

Proposed Scenario: Practices

Weekday in February

Existing

Time	Events and Associated Trips						
2:00							
2:15							
2:30	2	2					9
2:45							
3:00							
3:15							
3:30	Boys V Soccer Practice	Girls V Soccer Practice					Boys and Girls Track & Field Practice
3:45							
4:00			4	2	2	4	
4:15							
4:30							
4:45							
5:00	31	27	Girls JV Lacrosse Practice	Girls V Lacrosse Practice	Boys JV Lacrosse Practice	Boys V Lacrosse Practice	114
5:15							
5:30							
5:45							
6:00							
6:15							
6:30							
6:45							
7:00							
7:15							
7:30							
7:45							
8:00							
8:15							
8:30							
8:45							
9:00							
9:15							
9:30							
9:45							
10:00							

Proposed

Time	Events and Associated Trips						
2:00							
2:15							
2:30	2	2					9
2:45							
3:00							
3:15							
3:30	Boys V Soccer Practice	Girls V Soccer Practice					Boys and Girls Track & Field Practice
3:45							
4:00			4	2			
4:15							
4:30							
4:45							
5:00							
5:15	31	27	Girls JV Lacrosse Practice	Girls V Lacrosse Practice			114
5:30							
5:45							
6:00							
6:15							
6:30							
6:45							
7:00							
7:15							
7:30							
7:45							
8:00							
8:15							
8:30							
8:45							
9:00							
9:15							
9:30							
9:45							
10:00							