

Appendix F

HCM Unsignalized Intersection Capacity Analysis

11: Valencia Road & Mountain Eagle

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Volume (veh/h)	5	696	256	33	93	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	757	278	36	101	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	314				1064	296
vC1, stage 1 conf vol					296	
vC2, stage 2 conf vol					767	
vCu, unblocked vol	314				1064	296
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				76	99
cM capacity (veh/h)	1240				422	741

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	762	314	111
Volume Left	5	0	101
Volume Right	0	36	10
cSH	1240	1700	438
Volume to Capacity	0.00	0.18	0.25
Queue Length 95th (ft)	0	0	25
Control Delay (s)	0.1	0.0	16.0
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	16.0
Approach LOS			C

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization		53.0%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

13: Valencia Road & Eagles Talon PW

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	0	0	0	9	28	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	10	30	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	10				5	5
vC1, stage 1 conf vol					5	
vC2, stage 2 conf vol					0	
vCu, unblocked vol	10				5	5
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1603				991	1075

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	10	30
Volume Left	0	0	30
Volume Right	0	10	0
cSH	1700	1700	991
Volume to Capacity	0.00	0.01	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		6.6	
Intersection Capacity Utilization		13.3%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

15: Valencia Road & Vahalla Road

6/30/2011



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	819	0	0	374	0	0	9	0	0	32	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	890	0	0	407	0	0	10	0	0	35	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	407			890			1314	1297	890	1302	1297	407
vC1, stage 1 conf vol							890	890		407	407	
vC2, stage 2 conf vol							424	407		895	890	
vCu, unblocked vol	407			890			1314	1297	890	1302	1297	407
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	97	100	100	89	100
cM capacity (veh/h)	1147			757			300	327	340	298	327	642

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	890	407	10	35
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	257	327
Volume to Capacity	0.52	0.24	0.04	0.11
Queue Length 95th (ft)	0	0	3	9
Control Delay (s)	0.0	0.0	19.6	17.3
Lane LOS			C	C
Approach Delay (s)	0.0	0.0	19.6	17.3
Approach LOS			C	C

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		53.1%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis
 18: Valencia Road & Iberia Road

6/30/2011

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	1070	9	37	399	46	11	48	4	96	2	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	1163	10	40	434	50	12	52	4	104	2	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	484			1173			1727	1745	1168	1751	1725	459
vC1, stage 1 conf vol							1181	1181		539	539	
vC2, stage 2 conf vol							546	564		1211	1186	
vCu, unblocked vol	484			1173			1727	1745	1168	1751	1725	459
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			93			94	77	98	18	99	99
cM capacity (veh/h)	1074			592			207	232	234	127	203	600
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1179	524	68	112								
Volume Left	7	40	12	104								
Volume Right	10	50	4	5								
cSH	1074	592	227	133								
Volume to Capacity	0.01	0.07	0.30	0.84								
Queue Length 95th (ft)	0	5	31	132								
Control Delay (s)	0.2	1.9	27.6	103.1								
Lane LOS	A	A	D	F								
Approach Delay (s)	0.2	1.9	27.6	103.1								
Approach LOS			D	F								
Intersection Summary												
Average Delay			7.8									
Intersection Capacity Utilization			77.4%		ICU Level of Service					D		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

21: Valencia Road & Victor Drive

6/30/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Volume (veh/h)	0	10	0	0	25	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	0	0	27	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			11		5	5
vC1, stage 1 conf vol					5	
vC2, stage 2 conf vol					0	
vCu, unblocked vol			11		5	5
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1602		991	1075

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	0	27
Volume Left	0	0	27
Volume Right	11	0	0
cSH	1700	1700	991
Volume to Capacity	0.01	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		6.2	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

23: Valencia Road & Star Ridge PI

6/30/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↕	↔	
Volume (veh/h)	0	4	0	0	25	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	0	0	27	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			4		2	2
vC1, stage 1 conf vol					2	
vC2, stage 2 conf vol					0	
vCu, unblocked vol			4		2	2
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1611		994	1079

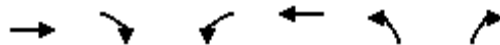
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	4	0	27
Volume Left	0	0	27
Volume Right	4	0	0
cSH	1700	1700	994
Volume to Capacity	0.00	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		7.5	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

25: Valencia Road & Star Diamond PI

6/30/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↕	↔	
Volume (veh/h)	0	13	0	0	9	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	14	0	0	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			14		7	7
vC1, stage 1 conf vol					7	
vC2, stage 2 conf vol					0	
vCu, unblocked vol			14		7	7
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1597		989	1072

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	14	0	10
Volume Left	0	0	10
Volume Right	14	0	0
cSH	1700	1700	989
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		3.5	
Intersection Capacity Utilization	13.3%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

27: Valencia Road & Wade Road

6/30/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻		↻	↻			↻	↻		↻	
Volume (veh/h)	0	2371	53	182	382	0	67	0	620	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2577	58	198	415	0	73	0	674	0	0	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)												
pX, platoon unblocked												
vC, conflicting volume	415			2635			3417	3417	2606	4091	3446	415
vC1, stage 1 conf vol							2606	2606		811	811	
vC2, stage 2 conf vol							811	811		3280	2635	
vCu, unblocked vol	415			2635			3417	3417	2606	4091	3446	415
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			0			0	0	0	0	0	100
cM capacity (veh/h)	1138			159			0	0	32	0	0	635

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	2635	198	415	73	674	0
Volume Left	0	198	0	73	0	0
Volume Right	58	0	0	0	674	0
cSH	1700	159	1700	0	32	1700
Volume to Capacity	1.55	1.24	0.24	Err	21.39	0.00
Queue Length 95th (ft)	0	283	0	Err	Err	0
Control Delay (s)	0.0	206.3	0.0	Err	Err	0.0
Lane LOS		F		F	F	A
Approach Delay (s)	0.0	66.6		Err		0.0
Approach LOS				F		A

Intersection Summary

Average Delay		Err	
Intersection Capacity Utilization		173.1%	ICU Level of Service
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 29: Valencia Road & South Arrow

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↘	
Volume (veh/h)	0	0	0	0	3	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	3	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)			1300			
pX, platoon unblocked						
vC, conflicting volume	0				0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				0	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1617				1021	1082

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	0	3
Volume Left	0	0	3
Volume Right	0	0	0
cSH	1700	1700	1021
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay		8.5	
Intersection Capacity Utilization		6.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis

32: Valencia Road & Camino Verde

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	505	1370	283	59	349	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7	5.3	5.3
Lane Util. Factor	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)	1752	1845	1759	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1845	1759	1568	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	549	1489	308	64	379	161
RTOR Reduction (vph)	0	0	0	41	0	133
Lane Group Flow (vph)	549	1489	308	23	379	28
Heavy Vehicles (%)	3%	3%	8%	3%	3%	3%
Turn Type	Prot			Prot		Perm
Protected Phases	5	2	6	6	4	
Permitted Phases						4
Actuated Green, G (s)	38.8	84.3	41.5	41.5	19.7	19.7
Effective Green, g (s)	38.8	84.3	41.5	41.5	19.7	19.7
Actuated g/C Ratio	0.34	0.73	0.36	0.36	0.17	0.17
Clearance Time (s)	4.0	5.7	5.7	5.7	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	1.0	1.0
Lane Grp Cap (vph)	591	1352	635	566	300	269
v/s Ratio Prot	0.31	c0.81	0.18	0.01	c0.22	
v/s Ratio Perm						0.02
v/c Ratio	0.93	1.10	0.49	0.04	1.26	0.10
Uniform Delay, d1	36.8	15.3	28.5	23.8	47.6	40.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.0	57.1	2.6	0.1	142.4	0.1
Delay (s)	57.7	72.5	31.1	24.0	190.1	40.3
Level of Service	E	E	C	C	F	D
Approach Delay (s)		68.5	29.9		145.4	
Approach LOS		E	C		F	

Intersection Summary

HCM Average Control Delay	77.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

34: Valencia Road & Mardick Road

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↘	
Volume (veh/h)	0	0	0	0	1	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	1	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)						
pX, platoon unblocked						
vC, conflicting volume	0				0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				0	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1617				1021	1082

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	0	1
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1700	1700	1021
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay		8.5	
Intersection Capacity Utilization		6.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

36: Valencia Road & Viviana Road

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	0	0	3	0	15	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	3	0	16	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)						
pX, platoon unblocked						
vC, conflicting volume	3				3	3
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3				3	3
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1612				1016	1078

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	3	16
Volume Left	0	0	16
Volume Right	0	0	0
cSH	1700	1700	1016
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay		7.2	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 38: Valencia Road & Casino del Sol

6/30/2011

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑	↖	↗
Volume (veh/h)	0	0	0	0	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						12
Median type	None		TWLTL			
Median storage veh	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0			0	0	0
vC1, stage 1 conf vol	0					
vC2, stage 2 conf vol	0					
vCu, unblocked vol	0			0	0	0
tC, single (s)	4.2			6.9	7.0	
tC, 2 stage (s)	5.9					
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			100	100	
cM capacity (veh/h)	1614			1020	1081	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	0	0	0	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0				0.0	0.0
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	0.0%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

40: Valencia Road & Ignacio Baumea

6/30/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑	↘	↗
Volume (veh/h)	1655	41	113	525	39	121
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1799	45	123	571	42	132
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						10
Median type	TWLTL		TWLTL			
Median storage veh	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1843		2330	899
vC1, stage 1 conf vol					1799	
vC2, stage 2 conf vol					531	
vCu, unblocked vol			1843		2330	899
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)					5.9	
tF (s)			2.2		3.5	3.3
p0 queue free %			62		60	53
cM capacity (veh/h)			322		107	280
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	899	899	45	313	380	174
Volume Left	0	0	0	123	0	42
Volume Right	0	0	45	0	0	132
cSH	1700	1700	1700	322	1700	370
Volume to Capacity	0.53	0.53	0.03	0.38	0.22	0.47
Queue Length 95th (ft)	0	0	0	43	0	61
Control Delay (s)	0.0	0.0	0.0	15.0	0.0	36.2
Lane LOS				B	E	
Approach Delay (s)	0.0		6.8		36.2	
Approach LOS					E	
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization			76.9%	ICU Level of Service		D
Analysis Period (min)			15			

Intersection Sign configuration not allowed in HCM analysis.

HCM Signalized Intersection Capacity Analysis

44: Valencia Road & Mark Road

6/30/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	1038	103	98	808	182	189	568	446	206	246	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.2		4.0	5.2		4.0	5.7		4.0	5.7	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.93		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3457		1752	3408		1752	1723		1752	1741	
Flt Permitted	0.11	1.00		0.11	1.00		0.20	1.00		0.20	1.00	
Satd. Flow (perm)	211	3457		206	3408		363	1723		363	1741	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	1128	112	107	878	198	205	617	485	224	267	160
RTOR Reduction (vph)	0	8	0	0	22	0	0	30	0	0	23	0
Lane Group Flow (vph)	165	1232	0	107	1054	0	205	1072	0	224	404	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	45.0	37.8		41.2	35.9		28.0	20.3		28.0	20.3	
Effective Green, g (s)	45.0	37.8		41.2	35.9		28.0	20.3		28.0	20.3	
Actuated g/C Ratio	0.50	0.42		0.46	0.40		0.31	0.23		0.31	0.23	
Clearance Time (s)	4.0	5.2		4.0	5.2		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	1.0	3.0		1.0	3.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	229	1452		185	1359		232	389		232	393	
v/s Ratio Prot	c0.06	c0.36		0.03	0.31		0.08	c0.62		c0.08	0.23	
v/s Ratio Perm	0.30			0.23			0.20			0.22		
v/c Ratio	0.72	0.85		0.58	0.78		0.88	2.76		0.97	1.03	
Uniform Delay, d1	16.3	23.5		17.6	23.5		37.3	34.8		37.8	34.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	6.3		2.7	2.8		29.5	797.1		48.7	52.6	
Delay (s)	25.4	29.9		20.3	26.4		66.8	831.9		86.5	87.4	
Level of Service	C	C		C	C		E	F		F	F	
Approach Delay (s)		29.3			25.8			711.9			87.1	
Approach LOS		C			C			F			F	

Intersection Summary

HCM Average Control Delay	232.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	121.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

11: Valencia Road & Mountain Eagle

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Volume (veh/h)	21	369	623	141	34	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	401	677	153	37	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	830				1201	754
vC1, stage 1 conf vol					754	
vC2, stage 2 conf vol					447	
vCu, unblocked vol	830				1201	754
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	97				91	99
cM capacity (veh/h)	797				402	408

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	424	830	42
Volume Left	23	0	37
Volume Right	0	153	5
cSH	797	1700	403
Volume to Capacity	0.03	0.49	0.11
Queue Length 95th (ft)	2	0	9
Control Delay (s)	0.9	0.0	15.0
Lane LOS	A		B
Approach Delay (s)	0.9	0.0	15.0
Approach LOS			B

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		51.4%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

13: Valencia Road & Eagles Talon PW

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	0	0	0	9	28	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	10	30	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	10				5	5
vC1, stage 1 conf vol					5	
vC2, stage 2 conf vol					0	
vCu, unblocked vol	10				5	5
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1603				991	1075

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	10	30
Volume Left	0	0	30
Volume Right	0	10	0
cSH	1700	1700	991
Volume to Capacity	0.00	0.01	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		6.6	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

15: Valencia Road & Vahalla Road

6/30/2011



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻			↻	↻		↻	
Volume (veh/h)	0	483	0	0	896	0	0	24	0	0	7	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	525	0	0	974	0	0	26	0	0	8	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	974			525			1503	1499	525	1512	1499	974
vC1, stage 1 conf vol							525	525		974	974	
vC2, stage 2 conf vol							978	974		538	525	
vCu, unblocked vol	974			525			1503	1499	525	1512	1499	974
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	91	100	100	97	100
cM capacity (veh/h)	704			1037			263	291	551	264	291	304

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	525	974	26	8
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	267	291
Volume to Capacity	0.31	0.57	0.10	0.03
Queue Length 95th (ft)	0	0	8	2
Control Delay (s)	0.0	0.0	19.9	17.7
Lane LOS			C	C
Approach Delay (s)	0.0	0.0	19.9	17.7
Approach LOS			C	C

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		57.2%	ICU Level of Service
Analysis Period (min)		15	B

HCM Unsignalized Intersection Capacity Analysis
 18: Valencia Road & Iberia Road

6/30/2011

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	695	3	91	1175	149	3	5	31	49	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	755	3	99	1277	162	3	5	34	53	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1439			759			2337	2414	757	2369	2334	1358
vC1, stage 1 conf vol							777	777		1556	1556	
vC2, stage 2 conf vol							1560	1637		813	778	
vCu, unblocked vol	1439			759			2337	2414	757	2369	2334	1358
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			88			97	96	92	50	100	98
cM capacity (veh/h)	468			848			104	121	406	107	134	181
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	768	1538	42	58								
Volume Left	10	99	3	53								
Volume Right	3	162	34	4								
cSH	468	848	266	110								
Volume to Capacity	0.02	0.12	0.16	0.52								
Queue Length 95th (ft)	2	10	14	60								
Control Delay (s)	0.6	7.6	21.1	69.1								
Lane LOS	A	A	C	F								
Approach Delay (s)	0.6	7.6	21.1	69.1								
Approach LOS			C	F								
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			132.8%		ICU Level of Service				H			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

21: Valencia Road & Victor Drive

6/30/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	0	10	0	0	25	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	0	0	27	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			11		5	5
vC1, stage 1 conf vol					5	
vC2, stage 2 conf vol					0	
vCu, unblocked vol			11		5	5
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1602		991	1075

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	0	27
Volume Left	0	0	27
Volume Right	11	0	0
cSH	1700	1700	991
Volume to Capacity	0.01	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		6.2	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

23: Valencia Road & Star Ridge PI

6/30/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Volume (veh/h)	0	4	0	0	25	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	0	0	27	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			4		2	2
vC1, stage 1 conf vol					2	
vC2, stage 2 conf vol					0	
vCu, unblocked vol			4		2	2
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1611		994	1079

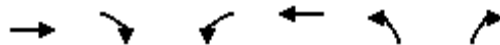
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	4	0	27
Volume Left	0	0	27
Volume Right	4	0	0
cSH	1700	1700	994
Volume to Capacity	0.00	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		7.5	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

25: Valencia Road & Star Diamond PI

6/30/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Volume (veh/h)	0	13	0	0	9	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	14	0	0	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			14		7	7
vC1, stage 1 conf vol					7	
vC2, stage 2 conf vol					0	
vCu, unblocked vol			14		7	7
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1597		989	1072

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	14	0	10
Volume Left	0	0	10
Volume Right	14	0	0
cSH	1700	1700	989
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		3.5	
Intersection Capacity Utilization	13.3%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

27: Valencia Road & Wade Road

6/30/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻		↻	↻			↻	↻		↻	
Volume (veh/h)	0	1223	69	1324	1466	0	26	0	245	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1329	75	1439	1593	0	28	0	266	0	0	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)												
pX, platoon unblocked												
vC, conflicting volume	1593			1404			5839	5839	1367	6105	5876	1593
vC1, stage 1 conf vol							1367	1367		4472	4472	
vC2, stage 2 conf vol							4472	4472		1633	1404	
vCu, unblocked vol	1593			1404			5839	5839	1367	6105	5876	1593
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			0			0	0	0	0	0	100
cM capacity (veh/h)	409			483			0	0	179	0	0	131

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	1404	1439	1593	28	266	0
Volume Left	0	1439	0	28	0	0
Volume Right	75	0	0	0	266	0
cSH	1700	483	1700	0	179	1700
Volume to Capacity	0.83	2.98	0.94	Err	1.49	0.00
Queue Length 95th (ft)	0	3097	0	Err	421	0
Control Delay (s)	0.0	914.3	0.0	Err	294.7	0.0
Lane LOS		F		F	F	A
Approach Delay (s)	0.0	433.9		Err		0.0
Approach LOS				F		A

Intersection Summary

Average Delay		Err	
Intersection Capacity Utilization		155.2%	ICU Level of Service
Analysis Period (min)		15	H

HCM Unsignalized Intersection Capacity Analysis
 29: Valencia Road & South Arrow

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↘	
Volume (veh/h)	0	0	0	0	3	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	3	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)			1300			
pX, platoon unblocked						
vC, conflicting volume	0				0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				0	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1617				1021	1082

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	0	3
Volume Left	0	0	3
Volume Right	0	0	0
cSH	1700	1700	1021
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay		8.5	
Intersection Capacity Utilization		6.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis

32: Valencia Road & Camino Verde

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	149	529	1056	272	242	812
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	5.7	5.3	5.3
Lane Util. Factor	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)	1752	1845	1759	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1845	1759	1568	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	575	1148	296	263	883
RTOR Reduction (vph)	0	0	0	60	0	466
Lane Group Flow (vph)	162	575	1148	236	263	417
Heavy Vehicles (%)	3%	3%	8%	3%	3%	3%
Turn Type	Prot			Prot		Perm
Protected Phases	5	2	6	6	4	
Permitted Phases						4
Actuated Green, G (s)	16.1	84.3	64.2	64.2	19.7	19.7
Effective Green, g (s)	16.1	84.3	64.2	64.2	19.7	19.7
Actuated g/C Ratio	0.14	0.73	0.56	0.56	0.17	0.17
Clearance Time (s)	4.0	5.7	5.7	5.7	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	1.0	1.0
Lane Grp Cap (vph)	245	1352	982	875	300	269
v/s Ratio Prot	c0.09	0.31	c0.65	0.15	0.15	
v/s Ratio Perm						c0.27
v/c Ratio	0.66	0.43	1.17	0.27	0.88	1.55
Uniform Delay, d1	46.9	6.0	25.4	13.2	46.5	47.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	1.0	87.1	0.8	23.1	265.6
Delay (s)	53.4	6.9	112.5	14.0	69.5	313.3
Level of Service	D	A	F	B	E	F
Approach Delay (s)		17.2	92.3		257.3	
Approach LOS		B	F		F	

Intersection Summary

HCM Average Control Delay	132.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	115.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

34: Valencia Road & Mardick Road

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	0	0	0	0	1	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	1	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)						
pX, platoon unblocked						
vC, conflicting volume	0				0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				0	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1617				1021	1082

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	0	1
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1700	1700	1021
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay		8.5	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

36: Valencia Road & Viviana Road

6/30/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	3	0	15	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	3	0	16	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)						
pX, platoon unblocked						
vC, conflicting volume	3				3	3
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3				3	3
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1612				1016	1078

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	3	16
Volume Left	0	0	16
Volume Right	0	0	0
cSH	1700	1700	1016
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay		7.2	
Intersection Capacity Utilization		13.3%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis
 38: Valencia Road & Casino del Sol

6/30/2011

	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑	↗		↑↑	↖	↗	
Volume (veh/h)	0	0	0	0	0	0	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	0	0	0	0	0	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)						12	
Median type	None		TWLTL				
Median storage (veh)	2						
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume			0			0	
vC1, stage 1 conf vol							0
vC2, stage 2 conf vol							0
vCu, unblocked vol			0			0	
tC, single (s)			4.2			7.0	
tC, 2 stage (s)							5.9
tF (s)			2.2			3.3	
p0 queue free %			100			100	
cM capacity (veh/h)			1614			1081	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	
Volume Total	0	0	0	0	0	0	
Volume Left	0	0	0	0	0	0	
Volume Right	0	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00	
Queue Length 95th (ft)	0	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS						A	
Approach Delay (s)	0.0				0.0	0.0	
Approach LOS						A	
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization			0.0%	ICU Level of Service		A	
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

40: Valencia Road & Ignacio Baumea

6/30/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗		↑↑	↗	↗
Volume (veh/h)	1218	48	97	710	71	573
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1324	52	105	772	77	623
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						10
Median type	TWLTL		TWLTL			
Median storage (veh)	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1376		1921	662
vC1, stage 1 conf vol					1324	
vC2, stage 2 conf vol					597	
vCu, unblocked vol			1376		1921	662
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)					5.9	
tF (s)			2.2		3.5	3.3
p0 queue free %			78		58	0
cM capacity (veh/h)			489		185	402
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	662	662	52	363	514	700
Volume Left	0	0	0	105	0	77
Volume Right	0	0	52	0	0	623
cSH	1700	1700	1700	489	1700	452
Volume to Capacity	0.39	0.39	0.03	0.22	0.30	1.55
Queue Length 95th (ft)	0	0	0	20	0	948
Control Delay (s)	0.0	0.0	0.0	6.8	0.0	257.0
Lane LOS				A	F	
Approach Delay (s)	0.0		2.8		257.0	
Approach LOS				F		
Intersection Summary						
Average Delay			61.8			
Intersection Capacity Utilization			75.8%	ICU Level of Service		D
Analysis Period (min)			15			

Intersection Sign configuration not allowed in HCM analysis.

HCM Signalized Intersection Capacity Analysis

44: Valencia Road & Mark Road

6/30/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	114	984	46	142	1620	203	214	227	202	156	143	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.2		4.0	5.2		4.0	5.7		4.0	5.7	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.93		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3481		1752	3446		1752	1714		1752	1695	
Flt Permitted	0.10	1.00		0.12	1.00		0.22	1.00		0.24	1.00	
Satd. Flow (perm)	192	3481		223	3446		403	1714		437	1695	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	1070	50	154	1761	221	233	247	220	170	155	182
RTOR Reduction (vph)	0	3	0	0	10	0	0	36	0	0	48	0
Lane Group Flow (vph)	124	1117	0	154	1972	0	233	431	0	170	289	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	44.9	38.4		45.9	38.9		27.1	18.3		24.3	16.9	
Effective Green, g (s)	44.9	38.4		45.9	38.9		27.1	18.3		24.3	16.9	
Actuated g/C Ratio	0.50	0.43		0.51	0.43		0.30	0.20		0.27	0.19	
Clearance Time (s)	4.0	5.2		4.0	5.2		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	1.0	3.0		1.0	3.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	208	1485		233	1489		253	349		226	318	
v/s Ratio Prot	0.04	0.32		c0.05	c0.57		c0.09	c0.25		0.06	0.17	
v/s Ratio Perm	0.25			0.29			0.19			0.14		
v/c Ratio	0.60	0.75		0.66	1.32		0.92	1.24		0.75	0.91	
Uniform Delay, d1	19.2	21.8		15.3	25.5		35.5	35.8		37.0	35.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	3.6		5.4	150.7		35.5	128.3		11.8	27.7	
Delay (s)	22.2	25.3		20.7	176.2		71.0	164.1		48.8	63.5	
Level of Service	C	C		C	F		E	F		D	E	
Approach Delay (s)		25.0			165.0			133.1			58.6	
Approach LOS		C			F			F			E	

Intersection Summary

HCM Average Control Delay	110.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			