

HCM Unsignalized Intersection Capacity Analysis

1: Red Rock Diner N & SH 133

11/16/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕↗	
Volume (veh/h)	0	28	0	712	861	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	34	0	1226	1483	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					739	
pX, platoon unblocked						
vC, conflicting volume	2101	746	1493			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2101	746	1493			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	90	100			
cM capacity (veh/h)	43	351	436			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	34	613	613	989	504
Volume Left	0	0	0	0	0
Volume Right	34	0	0	0	10
cSH	351	1700	1700	1700	1700
Volume to Capacity	0.10	0.36	0.36	0.58	0.30
Queue Length 95th (ft)	8	0	0	0	0
Control Delay (s)	16.3	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	16.3	0.0		0.0	
Approach LOS	C				

Intersection Summary					
Average Delay			0.2		
Intersection Capacity Utilization		47.2%		ICU Level of Service	A
Analysis Period (min)		15			

HCM Unsignalized Intersection Capacity Analysis

3: Cowen Dr & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	1	20	32	0	81	49	630	45	81	802	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	1	24	55	0	140	60	1085	78	140	1381	28
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)								1039				1029
pX, platoon unblocked	0.91	0.91		0.91	0.91	0.91				0.91		
vC, conflicting volume	2476	2957	705	2199	2893	542	1409			1162		
vC1, stage 1 conf vol	1674	1674		1205	1205							
vC2, stage 2 conf vol	802	1282		995	1688							
vCu, unblocked vol	2425	2952	705	2121	2883	301	1409			982		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.6	5.6		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	98	93	47	100	78	87			78		
cM capacity (veh/h)	65	64	374	103	50	627	470			625		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	13	26	55	140	60	542	542	78	140	921	489
Volume Left	13	0	55	0	60	0	0	0	140	0	0
Volume Right	0	24	0	140	0	0	0	78	0	0	28
cSH	65	304	103	627	470	1700	1700	1700	625	1700	1700
Volume to Capacity	0.21	0.08	0.53	0.22	0.13	0.32	0.32	0.05	0.22	0.54	0.29
Queue Length 95th (ft)	18	7	61	21	11	0	0	0	21	0	0
Control Delay (s)	74.9	17.9	74.2	12.4	13.8	0.0	0.0	0.0	12.4	0.0	0.0
Lane LOS	F	C	F	B	B				B		
Approach Delay (s)	37.5		29.9		0.7				1.1		
Approach LOS	E		D								

Intersection Summary

Average Delay			3.3								
Intersection Capacity Utilization			58.6%		ICU Level of Service				B		
Analysis Period (min)			15								

HCM Unsignalized Intersection Capacity Analysis

4: Cold Well Banker & SH 133

11/16/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↗			↕↖
Volume (veh/h)	0	12	702	4	0	860
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	15	1209	5	0	1481
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)			729			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	1952	607			1214	
vC1, stage 1 conf vol	1211					
vC2, stage 2 conf vol	741					
vCu, unblocked vol	1804	269			961	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)	5.9					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	238	634			613	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	15	806	408	741	741	
Volume Left	0	0	0	0	0	
Volume Right	15	0	5	0	0	
cSH	634	1700	1700	1700	1700	
Volume to Capacity	0.02	0.47	0.24	0.44	0.44	
Queue Length 95th (ft)	2	0	0	0	0	
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	10.8	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			40.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

5: The Alpine & SH 133

11/16/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↗			↕↗
Volume (veh/h)	0	22	684	30	0	861
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	27	1178	37	0	1483
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)			349			
pX, platoon unblocked	0.87	0.87			0.87	
vC, conflicting volume	1938	607			1215	
vC1, stage 1 conf vol	1196					
vC2, stage 2 conf vol	741					
vCu, unblocked vol	1779	250			948	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)	5.9					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	244	647			616	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	27	785	429	741	741
Volume Left	0	0	0	0	0
Volume Right	27	0	37	0	0
cSH	647	1700	1700	1700	1700
Volume to Capacity	0.04	0.46	0.25	0.44	0.44
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.8	0.0		0.0	
Approach LOS	B				

Intersection Summary					
Average Delay			0.1		
Intersection Capacity Utilization		40.4%		ICU Level of Service	A
Analysis Period (min)		15			

HCM Signalized Intersection Capacity Analysis

6: Village Rd & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕↕	↕	↕	↕↕	↕
Volume (vph)	10	7	39	83	4	61	6	643	66	82	765	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.91			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1640			1744	1553	1736	3471	1553	1736	3471	1553
Flt Permitted		0.93			0.64	1.00	0.17	1.00	1.00	0.23	1.00	1.00
Satd. Flow (perm)		1547			1177	1553	317	3471	1553	418	3471	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor (vph)	155%	155%	155%	155%	155%	155%	155%	155%	155%	155%	155%	155%
Adj. Flow (vph)	17	12	67	143	7	105	10	1107	114	141	1318	40
RTOR Reduction (vph)	0	55	0	0	0	86	0	0	28	0	0	8
Lane Group Flow (vph)	0	41	0	0	150	19	10	1107	86	141	1318	32
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)		17.9			17.9	17.9	72.6	72.6	72.6	72.6	72.6	72.6
Effective Green, g (s)		17.9			17.9	17.9	72.6	72.6	72.6	72.6	72.6	72.6
Actuated g/C Ratio		0.18			0.18	0.18	0.73	0.73	0.73	0.73	0.73	0.73
Clearance Time (s)		4.5			4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.5			3.5	3.5	0.2	0.2	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		277			211	278	230	2520	1127	303	2520	1127
v/s Ratio Prot								0.32			c0.38	
v/s Ratio Perm		0.03			c0.13	0.01	0.03		0.06	0.34		0.02
v/c Ratio		0.15			0.71	0.07	0.04	0.44	0.08	0.47	0.52	0.03
Uniform Delay, d1		34.6			38.6	34.1	3.9	5.5	4.0	5.7	6.1	3.8
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	0.82	0.69	0.46
Incremental Delay, d2		0.3			11.1	0.1	0.4	0.6	0.1	3.7	0.6	0.0
Delay (s)		34.9			49.7	34.2	4.2	6.1	4.1	8.3	4.7	1.8
Level of Service		C			D	C	A	A	A	A	A	A
Approach Delay (s)		34.9			43.3			5.9			5.0	
Approach LOS		C			D			A			A	

Intersection Summary

HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

7: Dolores Way & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↔		↖	↕		↘	↕	↙
Volume (veh/h)	0	0	5	1	0	0	40	715	2	3	859	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	9	1	0	0	69	1231	2	4	1479	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage (veh)												2
Upstream signal (ft)												786
pX, platoon unblocked	0.83	0.83	0.83	0.83	0.83		0.83					
vC, conflicting volume	2244	2863	744	2126	2866	617	1488			1234		
vC1, stage 1 conf vol	1491	1491		1370	1370							
vC2, stage 2 conf vol	753	1372		756	1495							
vCu, unblocked vol	2085	2834	269	1942	2837	617	1170			1234		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.6	5.6		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	99	100	100	86			99		
cM capacity (veh/h)	141	128	597	123	107	428	481			550		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	9	1	69	821	413	4	986	502
Volume Left	0	1	69	0	0	4	0	0
Volume Right	9	0	0	0	2	0	0	9
cSH	597	123	481	1700	1700	550	1700	1700
Volume to Capacity	0.01	0.01	0.14	0.48	0.24	0.01	0.58	0.30
Queue Length 95th (ft)	1	1	12	0	0	1	0	0
Control Delay (s)	11.1	34.6	13.7	0.0	0.0	11.6	0.0	0.0
Lane LOS	B	D	B			B		
Approach Delay (s)	11.1	34.6	0.7			0.0		
Approach LOS	B	D						

Intersection Summary

Average Delay	0.4
Intersection Capacity Utilization	53.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 8: Industry Way & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Volume (veh/h)	47	0	62	19	0	31	0	682	29	26	820	29
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	81	0	107	23	0	38	0	1175	35	32	1412	50
Approach Volume (veh/h)	188				61				1210		1494	
Crossing Volume (veh/h)	1467#				1256#				113		23	
High Capacity (veh/h)	422				504				1268		1360	
High v/c (veh/h)	0.44				0.12				0.95		1.10	
Low Capacity (veh/h)	314				382				1055		1139	
Low v/c (veh/h)	0.60				0.16				1.15		1.31	
Intersection Summary												
Maximum v/c High			1.10									
Maximum v/c Low			1.31									
Intersection Capacity Utilization			73.7%		ICU Level of Service						D	
# Crossing flow exceeds 1200, method is not applicable												

HCM Unsignalized Intersection Capacity Analysis

9: Crystal River Access 1 & SH 133

11/16/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕	↘
Volume (veh/h)	0	0	0	700	898	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	1206	1547	16
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	2157	781	1562			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2157	781	1562			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	40	333	410			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	603	603	1031	531	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	16	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.35	0.35	0.61	0.31	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	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			42.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Crystal River Access 2 & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Volume (veh/h)	80	22	66	36	23	65	0	602	55	42	828	66
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	89	24	73	44	26	79	0	1037	67	51	1426	73
Approach Volume (veh/h)		187			149			1104			1551	
Crossing Volume (veh/h)		1521#			1126			165			70	
High Capacity (veh/h)		403			561			1217			1312	
High v/c (veh/h)		0.46			0.27			0.91			1.18	
Low Capacity (veh/h)		298			430			1009			1095	
Low v/c (veh/h)		0.63			0.35			1.09			1.42	
Intersection Summary												
Maximum v/c High											1.18	
Maximum v/c Low											1.42	
Intersection Capacity Utilization			87.7%									E
# Crossing flow exceeds 1200, method is not applicable												

HCM Unsignalized Intersection Capacity Analysis

12: Crystal River Access 3 & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Volume (veh/h)	147	9	12	20	9	14	144	541	10	17	870	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	163	10	21	24	10	17	160	932	12	21	1498	24
Approach Volume (veh/h)		194			52			1104			1544	
Crossing Volume (veh/h)		1544#			1255#			194			194	
High Capacity (veh/h)		396			504			1190			1189	
High v/c (veh/h)		0.49			0.10			0.93			1.30	
Low Capacity (veh/h)		292			382			984			984	
Low v/c (veh/h)		0.66			0.13			1.12			1.57	

Intersection Summary

Maximum v/c High		1.30										
Maximum v/c Low			1.57									
Intersection Capacity Utilization			91.0%		ICU Level of Service				F			

Crossing flow exceeds 1200, method is not applicable

HCM Unsignalized Intersection Capacity Analysis
 15: Crystal River Access 4 & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕			↕	
Volume (veh/h)	0	0	82	0	0	18	0	627	6	14	804	123
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	91	0	0	22	0	1080	7	17	1385	137
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)								581				
pX, platoon unblocked												
vC, conflicting volume	2049	2574	761	1901	2639	544	1521			1087		
vC1, stage 1 conf vol	1487	1487		1084	1084							
vC2, stage 2 conf vol	562	1087		818	1556							
vCu, unblocked vol	2049	2574	761	1901	2639	544	1521			1087		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.6	5.6		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	73	100	100	95	100			97		
cM capacity (veh/h)	117	144	344	161	138	478	425			626		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	91	22	720	367	709	829
Volume Left	0	0	0	0	17	0
Volume Right	91	22	0	7	0	137
cSH	344	478	1700	1700	626	1700
Volume to Capacity	0.27	0.05	0.42	0.22	0.03	0.49
Queue Length 95th (ft)	26	4	0	0	2	0
Control Delay (s)	19.2	12.9	0.0	0.0	0.8	0.0
Lane LOS	C	B			A	
Approach Delay (s)	19.2	12.9	0.0		0.3	
Approach LOS	C	B				

Intersection Summary		
Average Delay		0.9
Intersection Capacity Utilization	52.7%	ICU Level of Service
Analysis Period (min)		15
		A

HCM Unsignalized Intersection Capacity Analysis
 16: Remax & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations								↑↑			↑↑		
Volume (veh/h)	0	0	0	0	0	0	0	576	0	0	820	34	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	0	0	0	0	0	0	0	992	0	0	1412	42	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type									None				
Median storage (veh)													
Upstream signal (ft)									199				
pX, platoon unblocked													
vC, conflicting volume	1929	2425	727	1698	2446	496	1454					992	
vC1, stage 1 conf vol	1433	1433		992	992								
vC2, stage 2 conf vol	496	992		706	1454								
vCu, unblocked vol	1929	2425	727	1698	2446	496	1454					992	
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2					4.2	
tC, 2 stage (s)	6.6	5.6		6.6	5.6								
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2	
p0 queue free %	100	100	100	100	100	100	100					100	
cM capacity (veh/h)	132	162	362	217	159	514	452					681	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	661	331	941	512
Volume Left	0	0	0	0
Volume Right	0	0	0	42
cSH	1700	1700	1700	1700
Volume to Capacity	0.39	0.19	0.55	0.30
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0	0.0		
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis

17: Main Street & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	98	44	104	106	188	113	227	63	193	463	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		5.5	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5
Lane Util. Factor	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	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	1742		1736	1827	1553	1736	1827	1553	1736	1827	1553
Flt Permitted	0.45	1.00		0.61	1.00	1.00	0.11	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	818	1742		1109	1827	1553	198	1827	1553	674	1827	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor (vph)	155%	155%	155%	155%	155%	155%	155%	155%	155%	155%	155%	155%
Adj. Flow (vph)	298	169	76	179	183	324	195	391	108	332	797	277
RTOR Reduction (vph)	0	19	0	0	0	259	0	0	64	0	0	153
Lane Group Flow (vph)	298	226	0	179	183	65	195	391	44	332	797	124
Turn Type	pm+pt			Perm		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	27.0	27.0		18.0	18.0	18.0	45.0	37.0	37.0	51.0	40.0	40.0
Effective Green, g (s)	27.0	27.0		18.0	18.0	18.0	45.0	37.0	37.0	51.0	40.0	40.0
Actuated g/C Ratio	0.30	0.30		0.20	0.20	0.20	0.50	0.41	0.41	0.57	0.44	0.44
Clearance Time (s)	4.0	5.5		5.5	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0		2.0	2.0	2.0	3.0	0.2	0.2	3.0	0.2	0.2
Lane Grp Cap (vph)	296	523		222	365	311	236	751	638	512	812	690
v/s Ratio Prot	c0.06	0.13			0.10		c0.07	0.21		c0.08	c0.44	
v/s Ratio Perm	c0.25			0.16		0.04	0.34		0.03	0.29		0.08
v/c Ratio	1.01	0.43		0.81	0.50	0.21	0.83	0.52	0.07	0.65	0.98	0.18
Uniform Delay, d1	31.8	25.3		34.3	32.0	30.1	19.1	19.9	16.1	11.7	24.6	15.1
Progression Factor	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	54.0	0.2		17.9	0.4	0.1	20.5	2.6	0.2	2.8	27.4	0.6
Delay (s)	85.9	25.5		52.3	32.4	30.2	39.5	22.4	16.3	14.5	52.0	15.7
Level of Service	F	C		D	C	C	D	C	B	B	D	B
Approach Delay (s)		58.6			36.5			26.3			36.0	
Approach LOS		E			D			C			D	



















Intersection Summary

HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 18: City Market & SH 133

11/16/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Volume (veh/h)	0	0	98	0	0	15	0	390	10	0	475	120
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	120	0	0	18	0	672	12	0	818	147
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)								1160				341
pX, platoon unblocked	0.52	0.52	0.52	0.52	0.52		0.52					
vC, conflicting volume	1172	1502	818	1616	1642	342	965			684		
vC1, stage 1 conf vol	818	818		678	678							
vC2, stage 2 conf vol	354	684		938	965							
vCu, unblocked vol	865	1504	180	1724	1776	342	464			684		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.6	5.6		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	72	100	100	97	100			100		
cM capacity (veh/h)	352	287	427	183	236	648	558			892		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	120	18	448	236	818	147						
Volume Left	0	0	0	0	0	0						
Volume Right	120	18	0	12	0	147						
cSH	427	648	1700	1700	1700	1700						
Volume to Capacity	0.28	0.03	0.26	0.14	0.48	0.09						
Queue Length 95th (ft)	28	2	0	0	0	0						
Control Delay (s)	16.7	10.7	0.0	0.0	0.0	0.0						
Lane LOS	C	B										
Approach Delay (s)	16.7	10.7	0.0		0.0							
Approach LOS	C	B										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			52.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 19: Crystal Valley MH & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	↔
Volume (veh/h)	4	2	0	9	0	23	1	380	14	39	507	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	5	2	0	11	0	28	1	654	17	48	873	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage (veh)												2
Upstream signal (ft)								869				632
pX, platoon unblocked	0.63	0.63	0.58	0.63	0.63	0.91	0.58			0.91		
vC, conflicting volume	1670	1650	881	1635	1650	663	889			672		
vC1, stage 1 conf vol	976	976		665	665							
vC2, stage 2 conf vol	694	674		970	984							
vCu, unblocked vol	1444	1413	433	1388	1412	579	447			588		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	100	95	100	94	100			95		
cM capacity (veh/h)	216	229	359	232	232	465	640			888		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	7	39	673	48	889
Volume Left	5	11	1	48	0
Volume Right	0	28	17	0	16
cSH	220	362	640	888	1700
Volume to Capacity	0.03	0.11	0.00	0.05	0.52
Queue Length 95th (ft)	3	9	0	4	0
Control Delay (s)	21.9	16.1	0.1	9.3	0.0
Lane LOS	C	C	A	A	
Approach Delay (s)	21.9	16.1	0.1	0.5	
Approach LOS	C	C			

Intersection Summary		
Average Delay		0.8
Intersection Capacity Utilization	52.2%	ICU Level of Service
Analysis Period (min)	15	A

HCM Unsignalized Intersection Capacity Analysis

20: Alley & SH 133

11/16/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	7	388	0	0	511
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	9	668	0	0	880
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			704			797
pX, platoon unblocked	0.69	0.91			0.91	
vC, conflicting volume	1548	668			668	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1267	583			583	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	127	461			890	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	668	880
Volume Left	0	0	0
Volume Right	9	0	0
cSH	461	1700	1700
Volume to Capacity	0.02	0.39	0.52
Queue Length 95th (ft)	1	0	0
Control Delay (s)	13.0	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.0	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		45.0%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis
 21: Euclid Ave & SH 133

11/16/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	13	375	4	18	499
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	16	646	5	22	859
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			548			953
pX, platoon unblocked	0.72	0.89			0.89	
vC, conflicting volume	1552	648			651	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1234	546			548	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	97			98	
cM capacity (veh/h)	135	477			902	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	24	651	22	859
Volume Left	9	0	22	0
Volume Right	16	5	0	0
cSH	253	1700	902	1700
Volume to Capacity	0.10	0.38	0.02	0.51
Queue Length 95th (ft)	8	0	2	0
Control Delay (s)	20.8	0.0	9.1	0.0
Lane LOS	C		A	
Approach Delay (s)	20.8	0.0	0.2	
Approach LOS	C			

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		50.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

23: Wells Fargo & SH 133

11/16/2012



Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations		↗	↖	↗		↖
Volume (veh/h)	0	22	484	20	0	375
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	27	834	24	0	646
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)			1226			275
pX, platoon unblocked	0.77	0.71			0.71	
vC, conflicting volume	1479	834			858	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1118	561			595	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			100	
cM capacity (veh/h)	175	371			689	

Direction, Lane #	EB 1	SE 1	SE 2	NW 1
Volume Total	27	834	24	646
Volume Left	0	0	0	0
Volume Right	27	0	24	0
cSH	371	1700	1700	1700
Volume to Capacity	0.07	0.49	0.01	0.38
Queue Length 95th (ft)	6	0	0	0
Control Delay (s)	15.4	0.0	0.0	0.0
Lane LOS	C			
Approach Delay (s)	15.4	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization	49.5%		ICU Level of Service A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis

25: SH 133 & Crystal River Shopping Center

11/16/2012



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	66	360	105	38	279	14	94	3	33	31	2	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5			5.5			5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99			0.97			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1736	1827	1553	1736	1814			1703			1643	
Flt Permitted	0.44	1.00	1.00	0.36	1.00			0.69			0.85	
Satd. Flow (perm)	800	1827	1553	664	1814			1220			1417	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor (vph)	110%	155%	110%	110%	155%	155%	110%	110%	110%	155%	155%	155%
Adj. Flow (vph)	81	620	128	46	480	24	115	4	40	53	3	96
RTOR Reduction (vph)	0	0	43	0	1	0	0	17	0	0	78	0
Lane Group Flow (vph)	81	620	85	46	503	0	0	142	0	0	74	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)	48.6	48.6	48.6	48.6	48.6			13.7			13.7	
Effective Green, g (s)	48.6	48.6	48.6	48.6	48.6			13.7			13.7	
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.66			0.19			0.19	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5			5.5			5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	530	1211	1030	440	1203			228			265	
v/s Ratio Prot		c0.34			0.28							
v/s Ratio Perm	0.10		0.05	0.07				c0.12			0.05	
v/c Ratio	0.15	0.51	0.08	0.10	0.42			0.62			0.28	
Uniform Delay, d1	4.6	6.3	4.4	4.5	5.8			27.4			25.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.6	1.5	0.2	0.5	1.1			5.2			0.6	
Delay (s)	5.2	7.8	4.6	4.9	6.8			32.6			26.1	
Level of Service	A	A	A	A	A			C			C	
Approach Delay (s)		7.1			6.7			32.6			26.1	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

27: SH 133 & 8th Street

11/16/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↗	↘	
Volume (veh/h)	0	420	299	12	33	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	723	515	15	40	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)		523	1156			
pX, platoon unblocked	0.92				0.85	0.92
vC, conflicting volume	530				1238	515
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	441				972	425
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				83	97
cM capacity (veh/h)	1016				237	573

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	723	515	15	60
Volume Left	0	0	0	40
Volume Right	0	0	15	20
cSH	1700	1700	1700	293
Volume to Capacity	0.43	0.30	0.01	0.20
Queue Length 95th (ft)	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	20.4
Lane LOS				C
Approach Delay (s)	0.0	0.0		20.4
Approach LOS				C

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		44.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 28: SH 133 & Keator Road

11/16/2012



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻		↻
Volume (veh/h)	432	22	0	301	0	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	744	27	0	518	0	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)	969			710		
pX, platoon unblocked			0.82		0.89	0.82
vC, conflicting volume			771		1276	757
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			609		873	592
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	98
cM capacity (veh/h)			785		284	411





















Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	771	518	7
Volume Left	0	0	0
Volume Right	27	0	7
cSH	1700	1700	411
Volume to Capacity	0.45	0.30	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	13.9
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.9
Approach LOS			B

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		46.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis

29: Thompson Park Access & SH 133

11/16/2012

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	10	4	3	53	8	6	10	420	21	15	301	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.94			0.99		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.96		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1787	1709			1733		1736	1827	1553		1824	1553
Flt Permitted	0.73	1.00			0.78		0.39	1.00	1.00		0.98	1.00
Satd. Flow (perm)	1367	1709			1402		704	1827	1553		1783	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor (vph)	100%	100%	100%	155%	100%	155%	155%	155%	100%	100%	155%	155%
Adj. Flow (vph)	11	4	3	91	9	10	17	723	23	17	518	102
RTOR Reduction (vph)	0	2	0	0	6	0	0	0	9	0	0	41
Lane Group Flow (vph)	11	5	0	0	104	0	17	723	14	0	535	61
Heavy Vehicles (%)	1%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.0	16.0			16.0		36.0	36.0	36.0		36.0	36.0
Effective Green, g (s)	16.0	16.0			16.0		36.0	36.0	36.0		36.0	36.0
Actuated g/C Ratio	0.27	0.27			0.27		0.60	0.60	0.60		0.60	0.60
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	365	456			374		422	1096	932		1070	932
v/s Ratio Prot		0.00						c0.40				
v/s Ratio Perm	0.01				c0.07		0.02		0.01		0.30	0.04
v/c Ratio	0.03	0.01			0.28		0.04	0.66	0.01		0.50	0.07
Uniform Delay, d1	16.3	16.2			17.4		4.9	7.9	4.8		6.9	5.0
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.0			1.8		0.2	3.1	0.0		1.7	0.1
Delay (s)	16.4	16.2			19.3		5.1	11.1	4.9		8.5	5.1
Level of Service	B	B			B		A	B	A		A	A
Approach Delay (s)		16.3			19.3			10.7			8.0	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM Average Control Delay			10.3		HCM Level of Service				B			
HCM Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			60.0		Sum of lost time (s)				8.0			
Intersection Capacity Utilization			55.5%		ICU Level of Service				B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

30: River Valley Ranch Rd & SH 133

11/16/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	5	1	57	26	57	1	279	29	50	406	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98			0.95			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98			1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	1788			1692			1827	1553	1736	1827	1553
Flt Permitted	0.47	1.00			0.86			1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	859	1788			1493			1826	1553	601	1827	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor (vph)	110%	110%	110%	155%	155%	155%	110%	155%	155%	155%	155%	110%
Adj. Flow (vph)	21	6	1	98	45	98	1	480	50	86	699	32
RTOR Reduction (vph)	0	1	0	0	37	0	0	0	25	0	0	12
Lane Group Flow (vph)	21	6	0	0	204	0	0	481	25	86	699	20
Turn Type	pm+pt			Perm			Perm		Perm	pm+pt		Perm
Protected Phases	7	4			8			2		1		6
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	18.9	18.9			13.3			35.0	35.0	43.1	43.1	43.1
Effective Green, g (s)	18.9	18.9			13.3			35.0	35.0	43.1	43.1	43.1
Actuated g/C Ratio	0.27	0.27			0.19			0.50	0.50	0.62	0.62	0.62
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	483			284			913	777	437	1125	956
v/s Ratio Prot	c0.00	0.00								0.01	c0.38	
v/s Ratio Perm	0.02				c0.14			0.26	0.02	0.11		0.01
v/c Ratio	0.08	0.01			0.72			0.53	0.03	0.20	0.62	0.02
Uniform Delay, d1	20.1	18.7			26.6			11.9	8.9	6.7	8.4	5.2
Progression Factor	1.00	1.00			1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0			8.4			2.2	0.1	0.2	2.6	0.0
Delay (s)	20.2	18.7			35.0			14.1	9.0	6.9	11.0	5.3
Level of Service	C	B			C			B	A	A	B	A
Approach Delay (s)		19.8			35.0			13.6			10.3	
Approach LOS		B			C			B			B	

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 31: gated school entrance & SH 133

11/16/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	4	28	272	5	38	434
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	5	34	468	6	46	747
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			639			876
pX, platoon unblocked	0.93	0.93			0.93	
vC, conflicting volume	938	472			475	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	894	390			393	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	94			96	
cM capacity (veh/h)	245	559			1063	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2	SB 3	
Volume Total	39	475	46	374	374	
Volume Left	5	0	46	0	0	
Volume Right	34	6	0	0	0	
cSH	482	1700	1063	1700	1700	
Volume to Capacity	0.08	0.28	0.04	0.22	0.22	
Queue Length 95th (ft)	7	0	3	0	0	
Control Delay (s)	13.1	0.0	8.5	0.0	0.0	
Lane LOS	B		A			
Approach Delay (s)	13.1	0.0	0.5			
Approach LOS	B					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			39.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

32: SH 133 & Crystal Bridge Dr

11/16/2012



Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	175	5	94	263	85	47	3	5	0	1	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	5.5
Lane Util. Factor	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		0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96			1.00	1.00
Satd. Flow (prot)	1736	1822		1736	1827	1553		1731			1827	1553
Flt Permitted	0.50	1.00		0.47	1.00	1.00		0.77			1.00	1.00
Satd. Flow (perm)	916	1822		852	1827	1553		1392			1827	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor (vph)	110%	155%	110%	110%	155%	110%	110%	110%	110%	110%	110%	110%
Adj. Flow (vph)	6	301	6	115	453	104	57	4	6	0	1	76
RTOR Reduction (vph)	0	1	0	0	0	45	0	4	0	0	0	69
Lane Group Flow (vph)	6	306	0	115	453	59	0	63	0	0	1	7
Turn Type	pm+pt			pm+pt		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4			8		8
Actuated Green, G (s)	24.8	23.9		35.4	29.2	29.2		4.8			4.8	4.8
Effective Green, g (s)	24.8	23.9		35.4	29.2	29.2		4.8			4.8	4.8
Actuated g/C Ratio	0.48	0.46		0.69	0.57	0.57		0.09			0.09	0.09
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	5.5
Vehicle Extension (s)	3.5	4.0		3.5	4.0	4.0		3.5			3.5	3.5
Lane Grp Cap (vph)	456	847		693	1038	882		130			171	145
v/s Ratio Prot	0.00	0.17		c0.02	c0.25						0.00	
v/s Ratio Perm	0.01			0.09		0.04		c0.05				0.00
v/c Ratio	0.01	0.36		0.17	0.44	0.07		0.49			0.01	0.05
Uniform Delay, d1	6.9	8.8		3.0	6.4	5.0		22.1			21.1	21.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.0	0.4		0.1	0.4	0.0		3.4			0.0	0.2
Delay (s)	6.9	9.2		3.1	6.8	5.0		25.5			21.2	21.4
Level of Service	A	A		A	A	A		C			C	C
Approach Delay (s)		9.2			5.9			25.5			21.4	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

33: High School & SH 133

11/16/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	13	176	2	23	243
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	16	303	2	28	418
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						763
pX, platoon unblocked	0.91					
vC, conflicting volume	779	304			306	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	709	304			306	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			98	
cM capacity (veh/h)	354	731			1244	

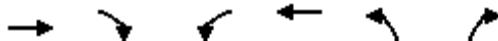
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	16	306	28	418
Volume Left	0	0	28	0
Volume Right	16	2	0	0
cSH	731	1700	1244	1700
Volume to Capacity	0.02	0.18	0.02	0.25
Queue Length 95th (ft)	2	0	2	0
Control Delay (s)	10.0	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	10.0	0.0	0.5	
Approach LOS	B			

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		31.0%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis

45: SH 82 & SH 133

11/16/2012



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵	↑↑	↵	↵
Volume (vph)	0	465	400	0	390	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		0.85	1.00		1.00	0.85
Flt Protected		1.00	0.95		0.95	1.00
Satd. Flow (prot)		1553	1736		1736	1553
Flt Permitted		1.00	0.76		0.95	1.00
Satd. Flow (perm)		1553	1383		1736	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor (vph)	155%	155%	155%	155%	155%	155%
Adj. Flow (vph)	0	801	689	0	672	551
RTOR Reduction (vph)	0	394	0	0	0	323
Lane Group Flow (vph)	0	407	689	0	672	228
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)		50.8	50.8		41.2	41.2
Effective Green, g (s)		50.8	50.8		41.2	41.2
Actuated g/C Ratio		0.51	0.51		0.41	0.41
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		789	703		715	640
v/s Ratio Prot					c0.39	
v/s Ratio Perm		0.26	c0.50			0.15
v/c Ratio		0.52	0.98		0.94	0.36
Uniform Delay, d1		16.4	24.1		28.2	20.3
Progression Factor		1.00	1.00		1.03	2.98
Incremental Delay, d2		0.6	28.9		21.1	1.5
Delay (s)		17.0	53.0		50.2	61.7
Level of Service		B	D		D	E
Approach Delay (s)	17.0			53.0	55.4	
Approach LOS	B			D	E	

Intersection Summary

HCM Average Control Delay	43.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

