













# HCM Signalized Intersection Capacity Analysis

## 3: Roper Mountain Road & I-385 SB Ramps

6/6/2011

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑↑	↑	↑	↑↑		↑	↑	↑↑			
Volume (vph)	0	1627	1068	1825	1143	0	709	0	533	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.4	6.4	5.8	6.4		6.1	6.1	6.1			
Lane Util. Factor		0.91	1.00	1.00	0.95		0.95	0.95	0.88			
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.95	1.00			
Satd. Flow (prot)		4940	1538	1719	3438		1633	1633	2707			
Flt Permitted		1.00	1.00	0.09	1.00		0.95	0.95	1.00			
Satd. Flow (perm)		4940	1538	161	3438		1633	1633	2707			
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
Adj. Flow (vph)	0	1808	1187	2028	1270	0	788	0	592	0	0	0
RTOR Reduction (vph)	0	0	172	0	0	0	0	0	192	0	0	0
Lane Group Flow (vph)	0	1808	1015	2028	1270	0	394	394	400	0	0	0
Turn Type		Perm		pm+pt			Perm		Perm			
Protected Phases		2		1	6			4				
Permitted Phases			2	6			4		4			
Actuated Green, G (s)		38.6	38.6	77.2	76.6		10.9	10.9	10.9			
Effective Green, g (s)		38.6	38.6	77.2	76.6		10.9	10.9	10.9			
Actuated g/C Ratio		0.39	0.39	0.77	0.77		0.11	0.11	0.11			
Clearance Time (s)		6.4	6.4	5.8	6.4		6.1	6.1	6.1			
Vehicle Extension (s)		4.9	4.9	4.3	4.9		4.9	4.9	4.9			
Lane Grp Cap (vph)		1907	594	626	2634		178	178	295			
v/s Ratio Prot		0.37		c1.04	0.37							
v/s Ratio Perm			0.66	c1.46			c0.24	0.24	0.15			
v/c Ratio		0.95	1.71	3.24	0.48		2.21	2.21	1.36			
Uniform Delay, d1		29.7	30.7	26.8	4.3		44.5	44.5	44.5			
Progression Factor		0.66	0.60	1.30	1.14		1.00	1.00	1.00			
Incremental Delay, d2		1.5	319.7	1008.2	0.1		563.9	563.9	181.4			
Delay (s)		21.0	338.0	1043.1	5.0		608.5	608.5	225.9			
Level of Service		C	F	F	A		F	F	F			
Approach Delay (s)		146.6			643.4			444.4			0.0	
Approach LOS		F			F			F			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			413.7			HCM Level of Service			F			
HCM Volume to Capacity ratio			3.03									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			11.9			
Intersection Capacity Utilization			178.6%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												