
























# HCM Signalized Intersection Capacity Analysis

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

5/27/2011

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		  			 				 			
Volume (vph)	0	1065	380	979	1633	0	818	0	458	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	0.14	1.00		0.95	0.95	1.00			
Satd. Flow (perm)		4940	1538	245	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	1183	422	1088	1814	0	909	0	509	0	0	0
RTOR Reduction (vph)	0	0	279	0	0	0	0	0	47	0	0	0
Lane Group Flow (vph)	0	1183	143	1088	1814	0	454	455	462	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)		31.6	31.6	70.2	69.6		17.9	17.9	17.9			
Effective Green, g (s)		31.6	31.6	70.2	69.6		17.9	17.9	17.9			
Actuated g/C Ratio		0.32	0.32	0.70	0.70		0.18	0.18	0.18			
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)		1561	486	647	2393		292	292	485			
v/s Ratio Prot		0.24		c0.54	0.53							
v/s Ratio Perm			0.09	c0.64			0.28	0.28	0.17			
v/c Ratio		0.76	0.29	1.68	0.76		1.55	1.56	0.95			
Uniform Delay, d1		30.8	25.8	24.0	9.8		41.0	41.0	40.6			
Progression Factor		0.39	0.50	0.77	0.49		1.00	1.00	1.00			
Incremental Delay, d2		2.9	1.3	307.3	0.2		265.9	267.4	29.7			
Delay (s)		14.8	14.2	325.8	5.0		306.9	308.4	70.3			
Level of Service		B	B	F	A		F	F	E			
Approach Delay (s)		14.7			125.3			222.5			0.0	
Approach LOS		B			F			F			A	
Intersection Summary												
HCM Average Control Delay		118.6		HCM Level of Service			F					
HCM Volume to Capacity ratio		1.62										
Actuated Cycle Length (s)		100.0		Sum of lost time (s)			11.9					
Intersection Capacity Utilization		146.5%		ICU Level of Service			H					
Analysis Period (min)		15										
c Critical Lane Group												