




















# HCM Signalized Intersection Capacity Analysis

## 2: I-385 NB Ramps & Roper Mountain Road

6/6/2011

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	687	0	757	536	1800	0	0	2281	793
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	6.0	6.0	6.0			6.0	6.0
Lane Util. Factor				0.95	0.95	0.88	0.97	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1633	1633	2707	3335	3438			3438	1538
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1633	1633	2707	3335	3438			3438	1538
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	0	0	763	0	841	596	2000	0	0	2534	881
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	0	0	0	262
Lane Group Flow (vph)	0	0	0	381	382	808	596	2000	0	0	2534	619
Turn Type				Perm		Perm	Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Actuated Green, G (s)				18.0	18.0	18.0	12.0	70.0			52.0	52.0
Effective Green, g (s)				18.0	18.0	18.0	12.0	70.0			52.0	52.0
Actuated g/C Ratio				0.18	0.18	0.18	0.12	0.70			0.52	0.52
Clearance Time (s)				6.0	6.0	6.0	6.0	6.0			6.0	6.0
Vehicle Extension (s)				4.9	4.9	4.9	4.3	4.9			4.9	4.9
Lane Grp Cap (vph)				294	294	487	400	2407			1788	800
v/s Ratio Prot							c0.18	0.58			c0.74	
v/s Ratio Perm				0.23	0.23	c0.30						0.40
v/c Ratio				1.30	1.30	1.66	1.49	0.83			1.42	0.77
Uniform Delay, d1				41.0	41.0	41.0	44.0	10.8			24.0	19.3
Progression Factor				1.00	1.00	1.00	0.94	1.59			0.80	0.64
Incremental Delay, d2				156.0	157.4	305.8	221.7	0.3			188.1	0.7
Delay (s)				197.0	198.4	346.8	263.1	17.5			207.2	13.1
Level of Service				F	F	F	F	B			F	B
Approach Delay (s)		0.0			275.9			73.9			157.1	
Approach LOS		A			F			E			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			153.8			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.48									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			178.6%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												