



















# HCM Signalized Intersection Capacity Analysis

## 15: Woodruff Road & I-385 NB Ramps

5/27/2011

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	861	1428	0	0	989	903	744	0	361	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1	6.1	5.0		5.0			
Lane Util. Factor	1.00	0.95			0.95	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)	1719	3438			3438	1538	1719		1538			
Flt Permitted	0.10	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	172	3438			3438	1538	1719		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)	957	1587	0	0	1099	1003	827	0	401	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	383	0	0	27	0	0	0
Lane Group Flow (vph)	957	1587	0	0	1099	620	827	0	374	0	0	0
Turn Type	pm+pt					Perm	Prot		custom			
Protected Phases	5	2			6		8					
Permitted Phases	2					6			8			
Actuated Green, G (s)	75.9	75.9			35.9	35.9	33.0		33.0			
Effective Green, g (s)	75.9	75.9			35.9	35.9	33.0		33.0			
Actuated g/C Ratio	0.63	0.63			0.30	0.30	0.28		0.28			
Clearance Time (s)	6.1	6.1			6.1	6.1	5.0		5.0			
Vehicle Extension (s)	4.3	4.3			4.3	4.3	4.3		4.3			
Lane Grp Cap (vph)	546	2175			1029	460	473		423			
v/s Ratio Prot	c0.50	0.46			0.32		c0.48					
v/s Ratio Perm	c0.61					0.40			0.24			
v/c Ratio	1.75	0.73			1.07	1.35	1.75		0.88			
Uniform Delay, d1	36.1	15.0			42.0	42.0	43.5		41.7			
Progression Factor	0.99	1.17			0.57	1.29	1.00		1.00			
Incremental Delay, d2	339.4	0.2			38.1	161.2	345.5		19.9			
Delay (s)	375.0	17.7			62.2	215.2	389.0		61.6			
Level of Service	F	B			E	F	F		E			
Approach Delay (s)		152.1			135.2			282.1			0.0	
Approach LOS		F			F			F			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		173.2			HCM Level of Service			F				
HCM Volume to Capacity ratio		1.70										
Actuated Cycle Length (s)		120.0			Sum of lost time (s)			11.1				
Intersection Capacity Utilization		181.3%			ICU Level of Service			H				
Analysis Period (min)		15										
c Critical Lane Group												