


















# HCM Signalized Intersection Capacity Analysis

## 9: I-85 SB Ramps & Woodruff Road

5/27/2011

																		
Movement	WBL2	WBL	WBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER							
Lane Configurations																		
Volume (vph)	541	0	340	0	2366	411	1007	1767	0	0	0							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900							
Total Lost time (s)	5.0		5.0		6.3	6.3	6.5	6.1										
Lane Util. Factor	0.97		0.88		0.95	1.00	1.00	0.95										
Frt	1.00		0.85		1.00	0.85	1.00	1.00										
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00										
Satd. Flow (prot)	3335		2707		3438	1538	1719	3438										
Flt Permitted	0.95		1.00		1.00	1.00	0.07	1.00										
Satd. Flow (perm)	3335		2707		3438	1538	118	3438										
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							
Adj. Flow (vph)	601	0	378	0	2629	457	1119	1963	0	0	0							
RTOR Reduction (vph)	0	0	68	0	0	109	0	0	0	0	0							
Lane Group Flow (vph)	601	0	310	0	2629	348	1119	1963	0	0	0							
Turn Type	custom		custom		Perm		pm+pt											
Protected Phases					2		1		6									
Permitted Phases	4		4		2		6											
Actuated Green, G (s)	11.0		11.0		54.7		97.9		97.9									
Effective Green, g (s)	11.0		11.0		54.7		97.9		97.9									
Actuated g/C Ratio	0.09		0.09		0.46		0.82		0.82									
Clearance Time (s)	5.0		5.0		6.3		6.5		6.1									
Vehicle Extension (s)	4.3		4.3		4.3		4.3		4.3									
Lane Grp Cap (vph)	306		248		1567		583		2805									
v/s Ratio Prot					0.76		c0.58		0.57									
v/s Ratio Perm	c0.18		0.11				0.23		c0.98									
v/c Ratio	1.96		1.25		1.68		0.50		1.92		0.70							
Uniform Delay, d1	54.5		54.5		32.6		23.0		37.4		4.7							
Progression Factor	1.00		1.00		0.52		0.28		0.91		0.84							
Incremental Delay, d2	445.5		141.2		305.2		0.2		414.3		0.1							
Delay (s)	500.0		195.7		322.3		6.6		448.2		4.1							
Level of Service	F		F		F		A		F		A							
Approach Delay (s)			382.5		275.6				165.4		0.0							
Approach LOS			F		F				F		A							
<b>Intersection Summary</b>																		
HCM Average Control Delay			242.7		HCM Level of Service		F											
HCM Volume to Capacity ratio			1.86															
Actuated Cycle Length (s)			120.0		Sum of lost time (s)		11.5											
Intersection Capacity Utilization			150.3%		ICU Level of Service		H											
Analysis Period (min)			15															
c Critical Lane Group																		