














































I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

1: Woodruff Road & Roper Mountain Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	192	614	339	348	362	59	420	1317	261	292	1386	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3255		1719	3438	1538	1719	3438	1538	3335	3438	1538
Flt Permitted	0.35	1.00		0.16	1.00	1.00	0.11	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	636	3255		290	3438	1538	200	3438	1538	3335	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)	213	682	377	387	402	66	467	1463	290	324	1540	166
RTOR Reduction (vph)	0	30	0	0	0	54	0	0	79	0	0	57
Lane Group Flow (vph)	213	1029	0	387	402	12	467	1463	211	324	1540	109
Turn Type	pm+pt			pm+pt		Perm	Perm		Perm	Prot		Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2			6
Actuated Green, G (s)	36.0	23.0		40.0	25.0	25.0	72.0	72.0	72.0	9.0	86.0	86.0
Effective Green, g (s)	36.0	23.0		40.0	25.0	25.0	72.0	72.0	72.0	9.0	86.0	86.0
Actuated g/C Ratio	0.26	0.16		0.29	0.18	0.18	0.51	0.51	0.51	0.06	0.61	0.61
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	4.3	5.5		4.3	5.5	5.5	4.9	4.9	4.9	4.3	4.9	4.9
Lane Grp Cap (vph)	264	535		236	614	275	103	1768	791	214	2112	945
v/s Ratio Prot	0.07	c0.32		c0.18	0.12			0.43		c0.10	0.45	
v/s Ratio Perm	0.13			0.29		0.01	c2.34		0.14			0.07
v/c Ratio	0.81	1.92		1.64	0.65	0.04	4.53	0.83	0.27	1.51	0.73	0.12
Uniform Delay, d1	45.2	58.5		44.2	53.5	47.6	34.0	28.7	19.1	65.5	18.9	11.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.40	0.12	0.00
Incremental Delay, d2	17.6	422.3		306.3	3.7	0.2	1612.4	4.6	0.8	233.5	0.2	0.0
Delay (s)	62.9	480.8		350.5	57.2	47.8	1646.4	33.4	20.0	325.0	2.6	0.0
Level of Service	E	F		F	E	D	F	C	B	F	A	A
Approach Delay (s)		410.8			189.2			370.9			53.8	
Approach LOS		F			F			F			D	
Intersection Summary												
HCM Average Control Delay			253.6			HCM Level of Service				F		
HCM Volume to Capacity ratio			3.56									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			25.0			
Intersection Capacity Utilization			127.0%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												





















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

2: Woodruff Road & Costco Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	29	1215	40	90	888	46	40	2	86	12	2	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	3422		1719	3438	1538	1719	1544		1719	1810	1538
Flt Permitted	0.21	1.00		0.19	1.00	1.00	0.76	1.00		0.69	1.00	1.00
Satd. Flow (perm)	385	3422		349	3438	1538	1369	1544		1255	1810	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)	32	1350	44	100	987	51	44	2	96	13	2	20
RTOR Reduction (vph)	0	3	0	0	0	22	0	80	0	0	0	17
Lane Group Flow (vph)	32	1391	0	100	987	29	44	18	0	13	2	3
Turn Type	pm+pt			Perm		Perm	Perm			Perm		pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	54.0	54.0		42.7	42.7	42.7	8.0	8.0		8.0	8.0	12.8
Effective Green, g (s)	54.0	54.0		42.7	42.7	42.7	8.0	8.0		8.0	8.0	12.8
Actuated g/C Ratio	0.72	0.72		0.57	0.57	0.57	0.11	0.11		0.11	0.11	0.17
Clearance Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	4.3	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	4.3
Lane Grp Cap (vph)	363	2464		199	1957	876	146	165		134	193	396
v/s Ratio Prot	0.01	c0.41			0.29			0.01			0.00	0.00
v/s Ratio Perm	0.06			0.29		0.02	c0.03			0.01		0.00
v/c Ratio	0.09	0.56		0.50	0.50	0.03	0.30	0.11		0.10	0.01	0.01
Uniform Delay, d1	4.2	5.0		9.7	9.8	7.1	30.9	30.3		30.2	30.0	25.8
Progression Factor	1.00	1.00		0.50	0.45	0.60	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.9		7.6	0.8	0.1	2.8	0.7		0.8	0.1	0.0
Delay (s)	4.4	5.9		12.5	5.2	4.3	33.8	31.0		31.0	30.0	25.8
Level of Service	A	A		B	A	A	C	C		C	C	C
Approach Delay (s)		5.9			5.8			31.8			28.0	
Approach LOS		A			A			C			C	
Intersection Summary												
HCM Average Control Delay			7.5			HCM Level of Service			A			
HCM Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			75.0			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			85.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												





















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

3: Green Heron Road & Woodruff Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	6	2	42	2	2	10	14	909	73	87	1238	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	5.0	6.3	6.3		6.3	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		0.89			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1595			1765	1538	1719	3400		1719	3438	1538
Flt Permitted		0.96			0.85	1.00	0.17	1.00		0.25	1.00	1.00
Satd. Flow (perm)		1539			1544	1538	316	3400		453	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)	7	2	47	2	2	11	16	1010	81	97	1376	7
RTOR Reduction (vph)	0	42	0	0	0	10	0	8	0	0	0	2
Lane Group Flow (vph)	0	14	0	0	4	1	16	1083	0	97	1376	5
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		8			4			2			6	
Permitted Phases	8			4		4	2			6		6
Actuated Green, G (s)		7.4			7.4	7.4	56.3	56.3		56.3	56.3	56.3
Effective Green, g (s)		7.4			7.4	7.4	56.3	56.3		56.3	56.3	56.3
Actuated g/C Ratio		0.10			0.10	0.10	0.75	0.75		0.75	0.75	0.75
Clearance Time (s)		5.0			5.0	5.0	6.3	6.3		6.3	6.3	6.3
Vehicle Extension (s)		4.3			4.3	4.3	5.5	5.5		5.5	5.5	5.5
Lane Grp Cap (vph)		152			152	152	237	2552		340	2581	1155
v/s Ratio Prot								0.32			c0.40	
v/s Ratio Perm		c0.01			0.00	0.00	0.05			0.21		0.00
v/c Ratio		0.09			0.03	0.01	0.07	0.42		0.29	0.53	0.00
Uniform Delay, d1		30.7			30.5	30.5	2.5	3.4		3.0	3.9	2.3
Progression Factor		1.00			1.00	1.00	0.49	0.86		0.55	0.63	0.65
Incremental Delay, d2		0.4			0.1	0.0	0.5	0.4		1.7	0.7	0.0
Delay (s)		31.1			30.7	30.5	1.7	3.4		3.4	3.1	1.5
Level of Service		C			C	C	A	A		A	A	A
Approach Delay (s)		31.1			30.6			3.4			3.1	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM Average Control Delay			4.0				HCM Level of Service			A		
HCM Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			75.0				Sum of lost time (s)			11.3		
Intersection Capacity Utilization			82.3%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												


















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

4: Woodruff Industrial Lane & Woodruff Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	55	7	93	33	7	4	19	811	123	250	1272	56
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	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.86		1.00	0.95		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1558		1719	1719		1719	3370		1719	3416	
Flt Permitted	0.69	1.00		0.51	1.00		0.15	1.00		0.21	1.00	
Satd. Flow (perm)	1249	1558		921	1719		274	3370		381	3416	
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)	61	8	103	37	8	4	21	901	137	278	1413	62
RTOR Reduction (vph)	0	96	0	0	4	0	0	6	0	0	2	0
Lane Group Flow (vph)	61	15	0	37	8	0	21	1032	0	278	1473	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	15.7	10.1		14.1	9.3		98.8	94.9		117.1	107.2	
Effective Green, g (s)	15.7	10.1		14.1	9.3		98.8	94.9		117.1	107.2	
Actuated g/C Ratio	0.10	0.07		0.09	0.06		0.66	0.63		0.78	0.71	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.3	4.3		4.3	4.3		4.3	5.5		4.3	5.5	
Lane Grp Cap (vph)	148	105		112	107		218	2132		442	2441	
v/s Ratio Prot	c0.02	0.01		0.01	0.00		0.00	0.31		c0.07	0.43	
v/s Ratio Perm	c0.03			0.02			0.06			c0.42		
v/c Ratio	0.41	0.14		0.33	0.08		0.10	0.48		0.63	0.60	
Uniform Delay, d1	62.3	65.9		62.9	66.3		9.6	14.6		8.6	10.7	
Progression Factor	1.00	1.00		1.00	1.00		0.94	1.15		0.88	0.71	
Incremental Delay, d2	2.9	1.0		2.7	0.5		0.3	0.7		2.9	0.9	
Delay (s)	65.3	66.9		65.7	66.8		9.2	17.4		10.4	8.5	
Level of Service	E	E		E	E		A	B		B	A	
Approach Delay (s)		66.3			65.9			17.3			8.8	
Approach LOS		E			E			B			A	
Intersection Summary												
HCM Average Control Delay			16.0			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			67.7%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												












I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

5: I-85 SB Ramps & Woodruff Road

																		
Movement	WBL2	WBL	WBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER							
Lane Configurations																		
Volume (vph)	540	0	299	0	813	124	712	1279	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	0.08	1.00										
Satd. Flow (perm)	3335		2707		3438	1538	144	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)	600	0	332	0	903	138	791	1421	0	0	0							
RTOR Reduction (vph)	0	0	129	0	0	77	0	0	0	0	0							
Lane Group Flow (vph)	600	0	203	0	903	61	791	1421	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)	26.0		26.0		43.7		112.9		112.9									
Effective Green, g (s)	26.0		26.0		43.7		112.9		112.9									
Actuated g/C Ratio	0.17		0.17		0.29		0.75		0.75									
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)	578		469		1002		765		2588									
v/s Ratio Prot					0.26		c0.43		0.41									
v/s Ratio Perm	c0.18		0.08				0.04		c0.35									
v/c Ratio	1.04		0.43		0.90		0.14		1.03		0.55							
Uniform Delay, d1	62.0		55.4		51.1		39.2		39.1		7.8							
Progression Factor	1.00		1.00		0.64		0.65		0.99		0.50							
Incremental Delay, d2	47.0		1.0		11.7		0.6		35.8		0.6							
Delay (s)	109.0		56.3		44.2		26.0		74.7		4.5							
Level of Service	F		E		D		C		E		A							
Approach Delay (s)			90.2		41.8				29.6		0.0							
Approach LOS			F		D				C		A							
Intersection Summary																		
HCM Average Control Delay			46.1		HCM Level of Service		D											
HCM Volume to Capacity ratio			1.01															
Actuated Cycle Length (s)			150.0		Sum of lost time (s)		11.5											
Intersection Capacity Utilization			93.5%		ICU Level of Service		F											
Analysis Period (min)			15															
c Critical Lane Group																		

I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

6: I-85 NB Ramps & Woodruff Rd

						
Movement	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	489	816	1098	255	0	1502
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	6.5	6.5		6.5
Lane Util. Factor	0.97	0.88	0.95	1.00		0.95
Frt	1.00	0.85	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	3335	2707	3438	1538		3438
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	3335	2707	3438	1538		3438
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	543	907	1220	283	0	1669
RTOR Reduction (vph)	0	275	0	105	0	0
Lane Group Flow (vph)	543	632	1220	178	0	1669
Turn Type		Prot		Perm		
Protected Phases	3	3	2			2 4
Permitted Phases				2		
Actuated Green, G (s)	25.4	25.4	94.5	94.5		112.5
Effective Green, g (s)	25.4	25.4	94.5	94.5		105.5
Actuated g/C Ratio	0.17	0.17	0.63	0.63		0.70
Clearance Time (s)	5.6	5.6	6.5	6.5		
Vehicle Extension (s)	4.3	4.3	4.3	4.3		
Lane Grp Cap (vph)	565	458	2166	969		2418
v/s Ratio Prot	0.16	c0.23	0.35			c0.49
v/s Ratio Perm				0.12		
v/c Ratio	0.96	1.38	0.56	0.18		0.69
Uniform Delay, d1	61.8	62.3	15.9	11.6		12.8
Progression Factor	1.00	1.00	0.01	0.01		1.15
Incremental Delay, d2	28.4	184.3	0.3	0.1		0.4
Delay (s)	90.3	246.6	0.4	0.3		15.2
Level of Service	F	F	A	A		B
Approach Delay (s)	188.0		0.4			15.2
Approach LOS	F		A			B
Intersection Summary						
HCM Average Control Delay			64.6		HCM Level of Service	E
HCM Volume to Capacity ratio			0.82			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	18.6
Intersection Capacity Utilization			69.0%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

























7: Carolina Point Pkwy & Woodruff Road



Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations	↰↰	↰	↰↰	↰	↰	↰↰
Volume (vph)	176	139	1663	251	206	2297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	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	1538	3438	1538	1719	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.10	1.00
Satd. Flow (perm)	3335	1538	3438	1538	183	3438
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	196	154	1848	279	229	2552
RTOR Reduction (vph)	0	53	0	44	0	0
Lane Group Flow (vph)	196	101	1848	235	229	2552
Turn Type	Perm		Perm		Perm	
Protected Phases	4		2 3 6			2 3 6
Permitted Phases	4	4		2 3 6	2 3 6	
Actuated Green, G (s)	11.0	11.0	126.4	126.4	126.4	126.4
Effective Green, g (s)	11.0	11.0	126.4	126.4	126.4	126.4
Actuated g/C Ratio	0.07	0.07	0.84	0.84	0.84	0.84
Clearance Time (s)	7.0	7.0				
Vehicle Extension (s)	4.3	4.3				
Lane Grp Cap (vph)	245	113	2897	1296	154	2897
v/s Ratio Prot	0.06		0.54			0.74
v/s Ratio Perm		c0.07		0.15	c1.25	
v/c Ratio	0.80	0.90	0.64	0.18	1.49	0.88
Uniform Delay, d1	68.4	68.9	4.0	2.2	11.8	7.2
Progression Factor	1.00	1.00	0.63	1.34	1.12	0.76
Incremental Delay, d2	18.2	54.4	0.3	0.1	222.3	0.3
Delay (s)	86.6	123.3	2.8	3.0	235.5	5.8
Level of Service	F	F	A	A	F	A
Approach Delay (s)	102.7		2.8			24.7
Approach LOS	F		A			C
Intersection Summary						
HCM Average Control Delay			21.1		HCM Level of Service	C
HCM Volume to Capacity ratio			1.45			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			79.8%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						
























I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

8: Woodruff Road & Market Point Drive

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	253	1407	142	39	2206	91	100	2	48	39	2	197	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.1	6.1	5.8	6.1	6.1	6.1	5.8	5.8	6.1	5.8	5.8	5.8	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3335	3438	1538	1719	3438	1538	1719	1810	1538	3335	3438	1538	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3335	3438	1538	1719	3438	1538	1719	1810	1538	3335	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)	281	1563	158	43	2451	101	111	2	53	43	2	219	
RTOR Reduction (vph)	0	0	42	0	0	21	0	0	45	0	0	123	
Lane Group Flow (vph)	281	1563	116	43	2451	80	111	2	8	43	2	96	
Turn Type	Prot	pm+ov		Prot	Perm		Prot	pm+ov		Prot	Perm		
Protected Phases	5	2	3	1	6	3		8	1	7	4		
Permitted Phases	2			6						8			4
Actuated Green, G (s)	11.9	99.3	108.5	9.5	96.9	96.9	9.2	12.0	21.5	5.4	8.2	8.2	
Effective Green, g (s)	11.9	99.3	108.5	9.5	96.9	96.9	9.2	12.0	21.5	5.4	8.2	8.2	
Actuated g/C Ratio	0.08	0.66	0.72	0.06	0.65	0.65	0.06	0.08	0.14	0.04	0.05	0.05	
Clearance Time (s)	6.1	6.1	5.8	6.1	6.1	6.1	5.8	5.8	6.1	5.8	5.8	5.8	
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	
Lane Grp Cap (vph)	265	2276	1112	109	2221	994	105	145	220	120	188	84	
v/s Ratio Prot	c0.08	0.45	0.01	0.03	c0.71	c0.06		0.00	c0.00	0.01	0.00		
v/s Ratio Perm	0.07			0.05				0.00			c0.06		
v/c Ratio	1.06	0.69	0.10	0.39	1.10	0.08	1.06	0.01	0.03	0.36	0.01	1.14	
Uniform Delay, d1	69.0	15.7	6.2	67.5	26.5	9.9	70.4	63.6	55.3	70.6	67.1	70.9	
Progression Factor	1.22	0.44	0.62	0.74	0.48	0.69	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	64.4	1.3	0.0	1.5	49.9	0.1	104.1	0.1	0.1	2.9	0.0	142.4	
Delay (s)	148.9	8.2	3.9	51.5	62.6	6.9	174.5	63.6	55.4	73.5	67.1	213.3	
Level of Service	F	A	A	D	E	A	F	E	E	E	E	F	
Approach Delay (s)	27.7		60.2				135.1			189.4			
Approach LOS	C		E				F			F			
Intersection Summary													
HCM Average Control Delay			56.5		HCM Level of Service				E				
HCM Volume to Capacity ratio			1.15										
Actuated Cycle Length (s)			150.0		Sum of lost time (s)				29.9				
Intersection Capacity Utilization			95.4%		ICU Level of Service				F				
Analysis Period (min)			15										
c Critical Lane Group													


















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

9: Woodruff Road & Garlington Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	309	1024	161	152	1577	666	360	346	94	199	160	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.1	6.1	5.2	6.1	6.1	5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3335	3438	1538	1719	3438	1538	3335	1752		3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.14	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	3438	1538	250	3438	1538	3335	1752		3335	1810	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)	343	1138	179	169	1752	740	400	384	104	221	178	443
RTOR Reduction (vph)	0	0	76	0	0	134	0	6	0	0	0	0
Lane Group Flow (vph)	343	1138	103	169	1752	606	400	482	0	221	178	443
Turn Type	Prot		Perm	pm+pt		Perm	Prot			Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6						Free
Actuated Green, G (s)	13.8	72.0	72.0	83.6	70.9	70.9	21.0	34.8		8.8	22.6	150.0
Effective Green, g (s)	13.8	72.0	72.0	83.6	70.9	70.9	21.0	34.8		8.8	22.6	150.0
Actuated g/C Ratio	0.09	0.48	0.48	0.56	0.47	0.47	0.14	0.23		0.06	0.15	1.00
Clearance Time (s)	5.2	6.1	6.1	5.2	6.1	6.1	5.2	5.2		5.2	5.2	
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3		4.3	4.3	
Lane Grp Cap (vph)	307	1650	738	264	1625	727	467	406		196	273	1538
v/s Ratio Prot	c0.10	0.33		0.05	c0.51		0.12	c0.28		c0.07	0.10	
v/s Ratio Perm			0.07	0.30		0.39						c0.29
v/c Ratio	1.12	0.69	0.14	0.64	1.08	0.83	0.86	1.19		1.13	0.65	0.29
Uniform Delay, d1	68.1	30.3	21.7	21.6	39.5	34.4	63.0	57.6		70.6	60.0	0.0
Progression Factor	1.29	0.55	0.29	1.61	0.39	0.09	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	80.1	1.8	0.3	3.0	41.3	5.4	15.1	106.3		102.7	6.4	0.5
Delay (s)	168.1	18.4	6.6	37.9	56.6	8.4	78.1	163.9		173.3	66.4	0.5
Level of Service	F	B	A	D	E	A	E	F		F	E	A
Approach Delay (s)		48.0			42.0			125.3			59.8	
Approach LOS		D			D			F			E	
Intersection Summary												
HCM Average Control Delay			58.4			HCM Level of Service				E		
HCM Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			21.7			
Intersection Capacity Utilization			100.1%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												





















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

10: Woodruff Road & I-385 SB Ramps

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1105	212	91	1660	0	0	0	0	1184	0	735
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.6		6.6	6.6					5.7		4.0
Lane Util. Factor		0.95		1.00	0.95					0.97		1.00
Frt		0.98		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		3355		1719	3438					3335		1538
Flt Permitted		1.00		0.05	1.00					0.95		1.00
Satd. Flow (perm)		3355		99	3438					3335		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	1228	236	101	1844	0	0	0	0	1316	0	817
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1453	0	101	1844	0	0	0	0	1316	0	817
Turn Type			pm+pt							Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases				6								Free
Actuated Green, G (s)		66.2		79.4	79.4					58.3		150.0
Effective Green, g (s)		66.2		79.4	79.4					58.3		150.0
Actuated g/C Ratio		0.44		0.53	0.53					0.39		1.00
Clearance Time (s)		6.6		6.6	6.6					5.7		
Vehicle Extension (s)		4.3		4.3	4.3					4.3		
Lane Grp Cap (vph)		1481		124	1820					1296		1538
v/s Ratio Prot		0.43		0.04	c0.54					c0.39		
v/s Ratio Perm				0.39								0.53
v/c Ratio		0.98		0.81	1.01					1.02		0.53
Uniform Delay, d1		41.3		33.5	35.3					45.9		0.0
Progression Factor		0.63		2.01	0.81					0.99		1.00
Incremental Delay, d2		14.0		4.1	10.0					28.9		1.3
Delay (s)		39.9		71.4	38.6					74.4		1.3
Level of Service		D		E	D					E		A
Approach Delay (s)		39.9			40.3			0.0			46.4	
Approach LOS		D			D			A			D	
Intersection Summary												
HCM Average Control Delay			42.5			HCM Level of Service				D		
HCM Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				12.3		
Intersection Capacity Utilization			172.4%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												





















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

11: Woodruff Road & I-385 NB Ramps

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	861	1428	0	0	989	903	762	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	0.08	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	148	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	847	0	401	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	389	0	0	26	0	0	0
Lane Group Flow (vph)	957	1587	0	0	1099	614	847	0	375	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)	94.9	94.9			42.9	42.9	44.0		44.0			
Effective Green, g (s)	94.9	94.9			42.9	42.9	44.0		44.0			
Actuated g/C Ratio	0.63	0.63			0.29	0.29	0.29		0.29			
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)	574	2175			983	440	504		451			
v/s Ratio Prot	c0.51	0.46			0.32		c0.49					
v/s Ratio Perm	c0.55					0.40			0.24			
v/c Ratio	1.67	0.73			1.12	1.40	1.68		0.83			
Uniform Delay, d1	45.3	18.8			53.5	53.5	53.0		49.5			
Progression Factor	1.13	1.09			0.71	1.06	0.97		0.96			
Incremental Delay, d2	302.0	0.5			59.4	183.5	314.7		13.0			
Delay (s)	353.0	21.0			97.4	240.2	366.0		60.6			
Level of Service	F	C			F	F	F		E			
Approach Delay (s)		145.9			165.5			267.9			0.0	
Approach LOS		F			F			F			A	
Intersection Summary												
HCM Average Control Delay		178.7			HCM Level of Service			F				
HCM Volume to Capacity ratio		1.63										
Actuated Cycle Length (s)		150.0			Sum of lost time (s)			11.1				
Intersection Capacity Utilization		172.4%			ICU Level of Service			H				
Analysis Period (min)		15										
c Critical Lane Group												



















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

12: Woodruff Road & Commercial Drive

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	1492	132	31	1683	62	121	7	10	111	29	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.5		5.5	5.5		5.3	5.4		5.4	5.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	3396		1719	3420		1719	1652		1719	1605	
Flt Permitted	0.04	1.00		0.10	1.00		0.34	1.00		0.75	1.00	
Satd. Flow (perm)	75	3396		181	3420		611	1652		1348	1605	
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)	183	1658	147	34	1870	69	134	8	11	123	32	98
RTOR Reduction (vph)	0	4	0	0	2	0	0	9	0	0	74	0
Lane Group Flow (vph)	183	1801	0	34	1937	0	134	10	0	123	56	0
Turn Type	pm+pt			Perm			pm+pt			Perm		
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	110.5	110.5		91.2	91.2		28.6	28.6		15.5	15.5	
Effective Green, g (s)	110.5	110.5		91.2	91.2		28.6	28.6		15.5	15.5	
Actuated g/C Ratio	0.74	0.74		0.61	0.61		0.19	0.19		0.10	0.10	
Clearance Time (s)	5.3	5.5		5.5	5.5		5.3	5.4		5.4	5.4	
Vehicle Extension (s)	4.3	4.3		4.3	4.3		4.3	4.3		4.3	4.3	
Lane Grp Cap (vph)	209	2502		110	2079		174	315		139	166	
v/s Ratio Prot	c0.08	0.53			c0.57		c0.04	0.01			0.04	
v/s Ratio Perm	0.56			0.19			c0.11			0.09		
v/c Ratio	0.88	0.72		0.31	0.93		0.77	0.03		0.88	0.34	
Uniform Delay, d1	52.3	11.1		14.2	26.6		56.1	49.4		66.4	62.5	
Progression Factor	1.23	0.56		0.92	0.79		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.9	1.2		5.0	6.7		20.3	0.1		45.1	1.9	
Delay (s)	87.5	7.4		18.0	27.8		76.4	49.5		111.4	64.4	
Level of Service	F	A		B	C		E	D		F	E	
Approach Delay (s)		14.7			27.6			73.0			87.3	
Approach LOS		B			C			E			F	
Intersection Summary												
HCM Average Control Delay			26.8			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			16.1			
Intersection Capacity Utilization			85.8%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												




















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

13: Woodruff Road & Smith Hines Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1371	234	177	1667	2	105	2	148	2	2	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.98		1.00	1.00			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1719	3363		1719	3438			1634			1667	
Flt Permitted	0.09	1.00		0.10	1.00			0.86			0.90	
Satd. Flow (perm)	167	3363		185	3438			1438			1523	
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)	9	1523	260	197	1852	2	117	2	164	2	2	4
RTOR Reduction (vph)	0	9	0	0	0	0	0	33	0	0	4	0
Lane Group Flow (vph)	9	1774	0	197	1854	0	0	250	0	0	4	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	2			6			8			4		
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	120.7	120.7		121.0	121.0			18.0			18.0	
Effective Green, g (s)	120.7	120.7		121.0	121.0			18.0			18.0	
Actuated g/C Ratio	0.80	0.80		0.81	0.81			0.12			0.12	
Clearance Time (s)	6.3	6.3		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	4.3	4.3		4.3	4.3			4.3			4.3	
Lane Grp Cap (vph)	134	2706		149	2773			173			183	
v/s Ratio Prot	0.53			0.54								
v/s Ratio Perm	0.05			c1.06				c0.17			0.00	
v/c Ratio	0.07	0.66		1.32	0.67			1.44			0.02	
Uniform Delay, d1	3.0	6.1		14.5	6.1			66.0			58.3	
Progression Factor	0.67	0.96		0.54	0.25			1.00			1.00	
Incremental Delay, d2	0.6	0.8		163.1	0.5			228.7			0.1	
Delay (s)	2.7	6.7		171.0	2.1			294.7			58.3	
Level of Service	A	A		F	A			F			E	
Approach Delay (s)	6.6			18.3				294.7			58.3	
Approach LOS	A			B				F			E	
Intersection Summary												
HCM Average Control Delay			32.2	HCM Level of Service			C					
HCM Volume to Capacity ratio			1.34									
Actuated Cycle Length (s)			150.0	Sum of lost time (s)			11.0					
Intersection Capacity Utilization			107.2%	ICU Level of Service			G					
Analysis Period (min)			15									
c Critical Lane Group												






















I-85/I-385 Interchange Improvements
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14: Woodruff Road & Walmart Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	4623	118	31	2055	24	120	2	12	70	4	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.3	6.3		5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.87			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1719	3425		1719	3432		1719	1574			1677	
Flt Permitted	0.04	1.00		0.04	1.00		0.67	1.00			0.80	
Satd. Flow (perm)	64	3425		68	3432		1207	1574			1378	
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)	22	5137	131	34	2283	27	133	2	13	78	4	39
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	0	0	12	0
Lane Group Flow (vph)	22	5267	0	34	2309	0	133	15	0	0	109	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	116.6	116.6		106.3	106.3		22.1	22.1			22.1	
Effective Green, g (s)	116.6	116.6		106.3	106.3		22.1	22.1			22.1	
Actuated g/C Ratio	0.78	0.78		0.71	0.71		0.15	0.15			0.15	
Clearance Time (s)	6.3	6.3		6.3	6.3		5.0	5.0			5.0	
Vehicle Extension (s)	4.3	4.3		4.3	4.3		4.3	4.3			4.3	
Lane Grp Cap (vph)	94	2662		48	2432		178	232			203	
v/s Ratio Prot	0.01	c1.54			0.67			0.01				
v/s Ratio Perm	0.18			0.50			c0.11				0.08	
v/c Ratio	0.23	1.98		0.71	0.95		0.75	0.06			0.54	
Uniform Delay, d1	33.3	16.7		12.8	19.5		61.3	55.1			59.2	
Progression Factor	0.94	0.72		0.35	0.31		1.00	1.00			1.00	
Incremental Delay, d2	2.0	441.7		7.7	1.2		17.1	0.2			3.9	
Delay (s)	33.1	453.7		12.2	7.2		78.4	55.2			63.1	
Level of Service	C	F		B	A		E	E			E	
Approach Delay (s)		451.9			7.3			76.1			63.1	
Approach LOS		F			A			E			E	
Intersection Summary												
HCM Average Control Delay			307.1			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.78									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			11.3			
Intersection Capacity Utilization			153.9%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												




















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

15: Woodruff Road & Verdin Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1061	29	134	2960	77	479	352	39	67	285	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.3	6.3		5.2	5.0	5.0	5.2	5.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3424		1719	3425		1719	1810	1538	1719	1739	
Flt Permitted	0.04	1.00		0.16	1.00		0.15	1.00	1.00	0.53	1.00	
Satd. Flow (perm)	81	3424		295	3425		276	1810	1538	961	1739	
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)	64	1179	32	149	3289	86	532	391	43	74	317	112
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	29	0	3	0
Lane Group Flow (vph)	64	1210	0	149	3374	0	532	391	14	74	426	0
Turn Type	Perm			Perm			pm+pt			Perm	Perm	
Protected Phases	2			6			3		8		4	
Permitted Phases	2			6			8		8		4	
Actuated Green, G (s)	89.7	89.7		89.7	89.7		49.0	49.0	49.0	20.8	20.8	
Effective Green, g (s)	89.7	89.7		89.7	89.7		49.0	49.0	49.0	20.8	20.8	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.33	0.33	0.33	0.14	0.14	
Clearance Time (s)	6.3	6.3		6.3	6.3		5.2	5.0	5.0	5.2	5.2	
Vehicle Extension (s)	4.3	4.3		4.3	4.3		4.3	4.3	4.3	4.3	4.3	
Lane Grp Cap (vph)	48	2048		176	2048		309	591	502	133	241	
v/s Ratio Prot	0.35			c0.99			c0.26		0.22		0.24	
v/s Ratio Perm	0.79			0.51			c0.30			0.01	0.08	
v/c Ratio	1.33	0.59		0.85	1.65		1.72	0.66	0.03	0.56	1.77	
Uniform Delay, d1	30.1	18.7		24.5	30.1		45.7	43.4	34.3	60.3	64.6	
Progression Factor	0.92	1.04		0.61	0.64		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	162.5	0.1		4.8	291.5		338.1	3.2	0.0	6.8	361.0	
Delay (s)	190.3	19.5		19.6	310.7		383.8	46.6	34.4	67.1	425.6	
Level of Service	F	B		B	F		F	D	C	E	F	
Approach Delay (s)	28.1			298.4			231.8			372.9		
Approach LOS	C			F			F			F		
Intersection Summary												
HCM Average Control Delay	239.1			HCM Level of Service			F					
HCM Volume to Capacity ratio	1.65											
Actuated Cycle Length (s)	150.0			Sum of lost time (s)			11.5					
Intersection Capacity Utilization	172.8%			ICU Level of Service			H					
Analysis Period (min)	15											
c Critical Lane Group												



















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

16: Woodruff Road & Butler Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1007	74	759	2693	2	231	40	555	32	42	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3		6.3	6.3			5.0	6.3	5.0	5.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frt		0.99		1.00	1.00			1.00	0.85	1.00	0.97	
Flt Protected		1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)		3402		1719	3438			1735	1538	1719	1751	
Flt Permitted		0.74		0.07	1.00			0.72	1.00	0.15	1.00	
Satd. Flow (perm)		2517		130	3438			1294	1538	278	1751	
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)	8	1119	82	843	2992	2	257	44	617	36	47	13
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	16	0	3	0
Lane Group Flow (vph)	0	1206	0	843	2994	0	0	301	601	36	57	0
Turn Type	Perm			pm+pt			Perm			pm+ov		Perm
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)		62.7		112.7	112.7			26.0	69.7	26.0	26.0	
Effective Green, g (s)		62.7		112.7	112.7			26.0	69.7	26.0	26.0	
Actuated g/C Ratio		0.42		0.75	0.75			0.17	0.46	0.17	0.17	
Clearance Time (s)		6.3		6.3	6.3			5.0	6.3	5.0	5.0	
Vehicle Extension (s)		4.3		4.3	4.3			4.3	4.3	4.3	4.3	
Lane Grp Cap (vph)		1052		561	2583			224	715	48	304	
v/s Ratio Prot				c0.44	0.87				0.25		0.03	
v/s Ratio Perm		0.48		c0.69				c0.23	0.15	0.13		
v/c Ratio		1.15		1.50	1.16			1.34	0.84	0.75	0.19	
Uniform Delay, d1		43.6		45.7	18.6			62.0	35.3	58.9	53.0	
Progression Factor		0.87		1.20	0.57			1.00	1.00	1.00	1.00	
Incremental Delay, d2		75.3		227.1	72.1			181.5	9.4	51.9	0.5	
Delay (s)		113.1		281.8	82.7			243.5	44.7	110.8	53.4	
Level of Service		F		F	F			F	D	F	D	
Approach Delay (s)		113.1			126.4			109.8			74.9	
Approach LOS		F			F			F			E	
Intersection Summary												
HCM Average Control Delay		120.5			HCM Level of Service			F				
HCM Volume to Capacity ratio		1.44										
Actuated Cycle Length (s)		150.0			Sum of lost time (s)			11.3				
Intersection Capacity Utilization		141.1%			ICU Level of Service			H				
Analysis Period (min)		15										
c Critical Lane Group												
























I-85/I-385 Interchange Improvements
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17: Woodruff Road & Bell Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	1572	128	40	3801	24	198	2	48	20	2	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2			5.4			5.4	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.97			0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.99	
Satd. Flow (prot)	1719	3399		1719	3435			1695			1600	
Flt Permitted	0.04	1.00		0.08	1.00			0.59			0.95	
Satd. Flow (perm)	64	3399		137	3435			1039			1531	
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)	39	1747	142	44	4223	27	220	2	53	22	2	94
RTOR Reduction (vph)	0	4	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	39	1885	0	44	4250	0	0	269	0	0	118	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	2			6			8			4		
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	112.8	112.8		112.8	112.8			25.6			25.6	
Effective Green, g (s)	112.8	112.8		112.8	112.8			25.6			25.6	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.17			0.17	
Clearance Time (s)	6.2	6.2		6.2	6.2			5.4			5.4	
Vehicle Extension (s)	4.3	4.3		4.3	4.3			4.3			4.3	
Lane Grp Cap (vph)	48	2556		103	2583			177			261	
v/s Ratio Prot	0.55			c1.24				c0.26			0.08	
v/s Ratio Perm	0.61			0.32							0.08	
v/c Ratio	0.81	0.74		0.43	1.65			1.52			0.45	
Uniform Delay, d1	11.9	10.4		6.8	18.6			62.2			55.9	
Progression Factor	1.15	1.22		0.60	0.48			1.00			1.00	
Incremental Delay, d2	39.6	0.7		1.2	290.5			261.1			2.0	
Delay (s)	53.2	13.3		5.2	299.4			323.3			57.9	
Level of Service	D	B		A	F			F			E	
Approach Delay (s)	14.2			296.4				323.3			57.9	
Approach LOS	B			F				F			E	
Intersection Summary												
HCM Average Control Delay	211.0			HCM Level of Service			F					
HCM Volume to Capacity ratio	1.62											
Actuated Cycle Length (s)	150.0			Sum of lost time (s)			11.6					
Intersection Capacity Utilization	136.2%			ICU Level of Service			H					
Analysis Period (min)	15											
c Critical Lane Group												

I-85/I-385 Interchange Improvements
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18: Woodruff Road & SC 14
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	851	131	72	2101	284	525	546	188	188	326	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	5.0	6.3	6.3		5.0	5.0	6.3	5.0	5.0	6.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1719	3377		1719	1810	1538	1719	1810	1538
Flt Permitted	0.06	1.00	1.00	0.22	1.00		0.15	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	100	3438	1538	389	3377		278	1810	1538	345	1810	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)	239	946	146	80	2334	316	583	607	209	209	362	504
RTOR Reduction (vph)	0	0	51	0	7	0	0	0	46	0	0	4
Lane Group Flow (vph)	239	946	95	80	2643	0	583	607	163	209	362	500
Turn Type	pm+pt		pm+ov	pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	5	2	3	1	6		3	8	1	7	4	5
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	85.0	72.3	97.3	77.8	68.7		51.0	36.0	45.1	31.0	21.0	33.7
Effective Green, g (s)	85.0	72.3	97.3	77.8	68.7		51.0	36.0	45.1	31.0	21.0	33.7
Actuated g/C Ratio	0.57	0.48	0.65	0.52	0.46		0.34	0.24	0.30	0.21	0.14	0.22
Clearance Time (s)	6.3	6.3	5.0	6.3	6.3		5.0	5.0	6.3	5.0	5.0	6.3
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		4.3	4.3	4.3	4.3	4.3	4.3
Lane Grp Cap (vph)	194	1657	998	282	1547		335	434	462	163	253	346
v/s Ratio Prot	0.10	0.28	0.02	0.02	c0.78		c0.29	0.34	0.02	0.09	0.20	c0.12
v/s Ratio Perm	c0.59		0.05	0.13			c0.30		0.08	0.18		0.20
v/c Ratio	1.23	0.57	0.09	0.28	1.71		1.74	1.40	0.35	1.28	1.43	1.45
Uniform Delay, d1	50.4	27.8	9.9	19.8	40.6		46.2	57.0	41.0	56.1	64.5	58.1
Progression Factor	0.97	0.95	2.40	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	129.5	0.9	0.0	0.9	321.6		345.3	192.9	0.7	165.5	215.2	216.1
Delay (s)	178.2	27.4	23.7	20.6	362.2		391.5	249.9	41.8	221.6	279.7	274.3
Level of Service	F	C	C	C	F		F	F	D	F	F	F
Approach Delay (s)		54.1			352.2			277.8			265.8	
Approach LOS		D			F			F			F	

Intersection Summary

HCM Average Control Delay	261.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	144.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

19: E Parkins Mill Road & US 276

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	142	135	67	182	31	139	131	1888	101	114	1648	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3268		3335	1810	1538	1719	4940	1538	3335	4940	1538
Flt Permitted	0.73	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1330	3268		3335	1810	1538	1719	4940	1538	3335	4940	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)	158	150	74	202	34	154	146	2098	112	127	1831	133
RTOR Reduction (vph)	0	67	0	0	0	140	0	0	52	0	0	54
Lane Group Flow (vph)	158	157	0	202	34	14	146	2098	60	127	1831	79
Turn Type	pm+pt			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8					4			6			2
Actuated Green, G (s)	14.0	7.0		8.0	8.0	8.0	11.7	48.0	48.0	6.0	42.3	42.3
Effective Green, g (s)	14.0	7.0		8.0	8.0	8.0	11.7	48.0	48.0	6.0	42.3	42.3
Actuated g/C Ratio	0.16	0.08		0.09	0.09	0.09	0.13	0.53	0.53	0.07	0.47	0.47
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	4.3	4.9		4.3	4.9	4.9	4.3	4.9	4.9	4.3	4.9	4.9
Lane Grp Cap (vph)	237	254		296	161	137	223	2635	820	222	2322	723
v/s Ratio Prot	0.05	0.05		c0.06	0.02		c0.08	c0.42		0.04	0.37	
v/s Ratio Perm	c0.05					0.01			0.04			0.05
v/c Ratio	0.67	0.62		0.68	0.21	0.10	0.65	0.80	0.07	0.57	0.79	0.11
Uniform Delay, d1	35.3	40.2		39.8	38.1	37.7	37.2	17.0	10.2	40.8	20.1	13.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.03	1.04	1.86	1.00	1.00	1.00
Incremental Delay, d2	8.0	6.2		7.2	1.3	0.6	3.7	1.2	0.1	4.6	2.8	0.3
Delay (s)	43.3	46.4		47.0	39.4	38.3	41.9	18.8	19.0	45.4	22.9	13.6
Level of Service	D	D		D	D	D	D	B	B	D	C	B
Approach Delay (s)		45.1			42.9			20.3			23.7	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM Average Control Delay			25.1				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			69.3%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

I-85/I-385 Interchange Improvements
2035 Alternate 4A AM
























20: Duvall Drive & US 276



Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	459	129	1592	305	138	1661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.3		6.3	6.3
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	4821		1719	4940
Flt Permitted	0.95	1.00	1.00		0.19	1.00
Satd. Flow (perm)	1719	1538	4821		350	4940
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	510	143	1769	339	153	1846
RTOR Reduction (vph)	0	4	63	0	0	0
Lane Group Flow (vph)	510	139	2045	0	153	1846
Turn Type	Perm		Perm		Perm	
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	12.0	12.0	20.7		20.7	20.7
Effective Green, g (s)	12.0	12.0	20.7		20.7	20.7
Actuated g/C Ratio	0.27	0.27	0.46		0.46	0.46
Clearance Time (s)	6.0	6.0	6.3		6.3	6.3
Vehicle Extension (s)	4.9	4.9	4.9		4.9	4.9
Lane Grp Cap (vph)	458	410	2218		161	2272
v/s Ratio Prot	c0.30		0.42			0.37
v/s Ratio Perm		0.09			c0.44	
v/c Ratio	1.11	0.34	0.92		0.95	0.81
Uniform Delay, d1	16.5	13.3	11.4		11.7	10.5
Progression Factor	1.00	1.00	0.95		1.00	1.00
Incremental Delay, d2	76.8	1.0	5.1		58.9	3.3
Delay (s)	93.3	14.3	16.0		70.5	13.8
Level of Service	F	B	B		E	B
Approach Delay (s)	76.0		16.0			18.1
Approach LOS	E		B			B
Intersection Summary						
HCM Average Control Delay			25.1		HCM Level of Service	C
HCM Volume to Capacity ratio			1.01			
Actuated Cycle Length (s)			45.0		Sum of lost time (s)	12.3
Intersection Capacity Utilization			91.8%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						





















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

23: US 276 & Millennium Blvd

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	137	1603	283	33	2233	77	96	101	83	6	20	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5	6.5	4.5	6.5	6.5	6.0	6.0		6.0	6.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	1.00	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	3335	3206		1719	1810	2707
Flt Permitted	0.04	1.00	1.00	0.09	1.00	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	72	3438	1538	154	3438	1538	3335	3206		1810	1810	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)	152	1781	314	37	2481	86	107	112	92	7	22	58
RTOR Reduction (vph)	0	0	89	0	0	21	0	86	0	0	0	16
Lane Group Flow (vph)	152	1781	225	37	2481	65	107	118	0	7	22	42
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			pm+pt		pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	2		2	6		6				4		4
Actuated Green, G (s)	109.1	101.1	101.1	103.2	98.4	98.4	8.0	9.0		7.0	4.0	12.0
Effective Green, g (s)	109.1	101.1	101.1	103.2	98.4	98.4	8.0	9.0		7.0	4.0	12.0
Actuated g/C Ratio	0.77	0.72	0.72	0.73	0.70	0.70	0.06	0.06		0.05	0.03	0.09
Clearance Time (s)	4.0	6.5	6.5	4.5	6.5	6.5	6.0	6.0		6.0	6.0	4.0
Vehicle Extension (s)	4.3	4.9	4.9	4.3	4.9	4.9	4.3	6.4		4.3	6.4	4.3
Lane Grp Cap (vph)	149	2467	1104	166	2401	1074	189	205		88	51	231
v/s Ratio Prot	c0.06	0.52		0.01	0.72		c0.03	c0.04		0.00	0.01	0.01
v/s Ratio Perm	c0.73		0.15	0.16		0.04				0.00		0.01
v/c Ratio	1.02	0.72	0.20	0.22	1.03	0.06	0.57	0.58		0.08	0.43	0.18
Uniform Delay, d1	53.4	11.7	6.6	10.0	21.2	6.7	64.8	64.1		63.9	67.3	59.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	79.1	1.3	0.2	1.1	27.6	0.0	5.1	8.1		0.6	17.2	0.6
Delay (s)	132.6	13.0	6.8	11.1	48.9	6.7	69.9	72.2		64.5	84.5	60.5
Level of Service	F	B	A	B	D	A	E	E		E	F	E
Approach Delay (s)		20.2			46.9			71.4			66.9	
Approach LOS		C			D			E			E	
Intersection Summary												
HCM Average Control Delay			37.3			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			140.9			Sum of lost time (s)				20.0		
Intersection Capacity Utilization			92.5%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

24: Pelham Road & The Parkway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	1294	1254	0	2248	1068	0	0	0	379	695	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8		5.8	5.3				5.3	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00		0.95	1.00				1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)	3335	3438	1538		3438	1538				1719	1810	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)	3335	3438	1538		3438	1538				1719	1810	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)	306	1438	1393	0	2498	1187	0	0	0	421	772	221
RTOR Reduction (vph)	0	0	11	0	0	1	0	0	0	0	0	89
Lane Group Flow (vph)	306	1438	1382	0	2498	1186	0	0	0	421	772	132
Turn Type	Prot		Perm	Perm		custom				Perm		Perm
Protected Phases	5	2			6	4					4	
Permitted Phases			2	6		6				4		4
Actuated Green, G (s)	12.2	95.2	95.2		77.2	120.9				43.7	43.7	43.7
Effective Green, g (s)	12.2	95.2	95.2		77.2	120.9				43.7	43.7	43.7
Actuated g/C Ratio	0.08	0.63	0.63		0.51	0.81				0.29	0.29	0.29
Clearance Time (s)	5.8	5.8	5.8		5.8	5.3				5.3	5.3	5.3
Vehicle Extension (s)	4.3	4.3	4.3		4.3	4.3				4.3	4.3	4.3
Lane Grp Cap (vph)	271	2182	976		1769	1240				501	527	448
v/s Ratio Prot	0.09	0.42			0.73	0.28					c0.43	
v/s Ratio Perm			c0.90			0.49				0.24		0.09
v/c Ratio	1.13	0.66	1.42		1.41	0.96				0.84	1.46	0.29
Uniform Delay, d1	68.9	17.2	27.4		36.4	12.3				49.9	53.1	41.2
Progression Factor	1.00	1.00	1.00		0.93	1.03				1.00	1.00	1.00
Incremental Delay, d2	94.0	1.6	193.3		185.8	2.4				12.8	219.5	0.6
Delay (s)	162.9	18.8	220.7		219.7	15.0				62.6	272.6	41.8
Level of Service	F	B	F		F	B				E	F	D
Approach Delay (s)		122.5			153.7			0.0			174.0	
Approach LOS		F			F			A			F	
Intersection Summary												
HCM Average Control Delay			145.3		HCM Level of Service					F		
HCM Volume to Capacity ratio			1.43									
Actuated Cycle Length (s)			150.0		Sum of lost time (s)					11.1		
Intersection Capacity Utilization			190.4%		ICU Level of Service					H		
Analysis Period (min)			15									
c Critical Lane Group												

I-85/I-385 Interchange Improvements
2035 Alternate 4A AM







25: Pelham Road & I-85 SB off ramp



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↘↘
Volume (vph)	0	1673	1531	0	998	1785
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6	5.6		5.3	5.3
Lane Util. Factor		0.95	0.95		1.00	0.88
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3438	3438		1719	2707
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3438	3438		1719	2707
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1859	1701	0	1109	1983
RTOR Reduction (vph)	0	0	0	0	0	3
Lane Group Flow (vph)	0	1859	1701	0	1109	1980
Turn Type					Perm	
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		62.4	62.4		76.7	76.7
Effective Green, g (s)		62.4	62.4		76.7	76.7
Actuated g/C Ratio		0.42	0.42		0.51	0.51
Clearance Time (s)		5.6	5.6		5.3	5.3
Vehicle Extension (s)		4.3	4.3		4.3	4.3
Lane Grp Cap (vph)		1430	1430		879	1384
v/s Ratio Prot		c0.54	0.49		0.65	
v/s Ratio Perm						c0.73
v/c Ratio		1.30	1.19		1.26	1.43
Uniform Delay, d1		43.8	43.8		36.6	36.6
Progression Factor		0.95	1.09		1.00	1.00
Incremental Delay, d2		138.7	90.5		126.9	198.0
Delay (s)		180.2	138.4		163.6	234.7
Level of Service		F	F		F	F
Approach Delay (s)		180.2	138.4		209.2	
Approach LOS		F	F		F	
Intersection Summary						
HCM Average Control Delay		183.0		HCM Level of Service		F
HCM Volume to Capacity ratio		1.37				
Actuated Cycle Length (s)		150.0		Sum of lost time (s)		10.9
Intersection Capacity Utilization		163.4%		ICU Level of Service		H
Analysis Period (min)		15				
c Critical Lane Group						




















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

26: Pelham Road & I-85 NB off ramp

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↗↘	↗
Volume (vph)	1540	0	0	782	1192	1268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.8	5.0	5.0
Lane Util. Factor	0.95			0.95	0.97	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			3438	3335	1538
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3438			3438	3335	1538
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1711	0	0	869	1324	1409
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1711	0	0	869	1324	1409
Turn Type					Perm	
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	53.2			53.2	86.0	86.0
Effective Green, g (s)	53.2			53.2	86.0	86.0
Actuated g/C Ratio	0.35			0.35	0.57	0.57
Clearance Time (s)	5.8			5.8	5.0	5.0
Vehicle Extension (s)	4.3			4.3	4.3	4.3
Lane Grp Cap (vph)	1219			1219	1912	882
v/s Ratio Prot	c0.50			0.25	0.40	
v/s Ratio Perm						c0.92
v/c Ratio	1.40			0.71	0.69	1.60
Uniform Delay, d1	48.4			41.8	22.6	32.0
Progression Factor	1.09			0.91	1.00	1.00
Incremental Delay, d2	182.1			1.9	1.2	274.0
Delay (s)	234.9			39.9	23.9	306.0
Level of Service	F			D	C	F
Approach Delay (s)	234.9			39.9	169.3	
Approach LOS	F			D	F	
Intersection Summary						
HCM Average Control Delay		169.3		HCM Level of Service		F
HCM Volume to Capacity ratio		1.52				
Actuated Cycle Length (s)		150.0		Sum of lost time (s)		10.8
Intersection Capacity Utilization		182.5%		ICU Level of Service		H
Analysis Period (min)		15				
c Critical Lane Group						






















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

27: Pelham Road & Boland Court

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	1933	830	157	1185	10	438	3	164	35	3	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	6.7		6.7	6.7			6.3	6.3		6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Flt Protected	1.00	0.95		1.00	1.00			1.00	0.85		0.96	
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.97	
Satd. Flow (prot)	1719	3283		1719	3434			1724	1538		1682	
Satd. Flow (perm)	0.19	1.00		0.04	1.00			0.71	1.00		0.15	
Peak-hour factor, PHF	342	3283		81	3434			1280	1538		258	
Adj. Flow (vph)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
RTOR Reduction (vph)	50	2148	922	174	1317	11	487	3	182	39	3	18
Lane Group Flow (vph)	0	32	0	0	0	0	0	0	73	0	11	0
Turn Type	Perm			pm+pt			Perm		Perm	Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	82.3	82.3		100.3	100.3			36.7	36.7		36.7	
Effective Green, g (s)	82.3	82.3		100.3	100.3			36.7	36.7		36.7	
Actuated g/C Ratio	0.55	0.55		0.67	0.67			0.24	0.24		0.24	
Clearance Time (s)	6.7	6.7		6.7	6.7			6.3	6.3		6.3	
Vehicle Extension (s)	4.9	4.9		4.3	4.9			4.3	4.3		4.3	
Lane Grp Cap (vph)	188	1801		178	2296			313	376		63	
v/s Ratio Prot		c0.93		c0.07	0.39							
v/s Ratio Perm	0.15			0.58				c0.38	0.07		0.19	
v/c Ratio	0.27	1.69		0.98	0.58			1.57	0.29		0.78	
Uniform Delay, d1	17.9	33.9		53.3	13.4			56.6	46.0		53.0	
Progression Factor	0.63	0.55		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	309.3		60.5	1.1			269.5	0.7		49.4	
Delay (s)	11.5	328.0		113.9	14.5			326.2	46.7		102.3	
Level of Service	B	F		F	B			F	D		F	
Approach Delay (s)		322.9			26.0			250.5			102.3	
Approach LOS		F			C			F			F	
Intersection Summary												
HCM Average Control Delay			228.0			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.59									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			19.7			
Intersection Capacity Utilization			136.2%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												


















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

28: Forsythia Dr & E Butler Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	0	22	22	0	166	3	1372	16	58	1240	14
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		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.88		1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1719	1538		1584		1719	3432		1719	3432	
Flt Permitted		0.51	1.00		0.96		0.15	1.00		0.12	1.00	
Satd. Flow (perm)		914	1538		1529		268	3432		210	3432	
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)	30	0	24	24	0	184	3	1524	18	64	1378	16
RTOR Reduction (vph)	0	0	20	0	34	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	30	4	0	174	0	3	1541	0	64	1393	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		13.5	13.5		13.5		49.5	49.5		49.5	49.5	
Effective Green, g (s)		13.5	13.5		13.5		49.5	49.5		49.5	49.5	
Actuated g/C Ratio		0.18	0.18		0.18		0.66	0.66		0.66	0.66	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.3	4.3		4.3		4.3	4.3		4.3	4.3	
Lane Grp Cap (vph)		165	277		275		177	2265		139	2265	
v/s Ratio Prot								c0.45				0.41
v/s Ratio Perm		0.03	0.00		c0.11		0.01			0.30		
v/c Ratio		0.18	0.02		0.63		0.02	0.68		0.46	0.62	
Uniform Delay, d1		26.1	25.3		28.5		4.4	7.9		6.2	7.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		0.58	0.61	
Incremental Delay, d2		0.8	0.0		5.6		0.2	1.7		8.6	1.0	
Delay (s)		26.9	25.3		34.1		4.6	9.5		12.2	5.5	
Level of Service		C	C		C		A	A		B	A	
Approach Delay (s)		26.2			34.1			9.5			5.8	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM Average Control Delay			9.7			HCM Level of Service				A		
HCM Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			75.0			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			74.9%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												





















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

30: E Butler Road & I-385 SB Ramps

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	1476	91	251	1003	0	783	0	344	0	0	0
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			
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00			
Frt		0.99		1.00	1.00		1.00		0.85			
Flt Protected		1.00		0.95	1.00		0.95		1.00			
Satd. Flow (prot)		3408		1719	3438		1719		1538			
Flt Permitted		1.00		0.06	1.00		0.95		1.00			
Satd. Flow (perm)		3408		111	3438		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)	0	1640	101	279	1114	0	870	0	382	0	0	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	0	1738	0	279	1114	0	870	0	339	0	0	0
Turn Type				pm+pt			Prot		custom			
Protected Phases		2		1	6		4					
Permitted Phases				6					4			
Actuated Green, G (s)		59.0		81.0	81.0		57.0		57.0			
Effective Green, g (s)		59.0		81.0	81.0		57.0		57.0			
Actuated g/C Ratio		0.39		0.54	0.54		0.38		0.38			
Clearance Time (s)		6.0		6.0	6.0		6.0		6.0			
Vehicle Extension (s)		4.3		4.3	4.3		4.3		4.3			
Lane Grp Cap (vph)		1340		231	1857		653		584			
v/s Ratio Prot		c0.51		c0.13	0.32		c0.51					
v/s Ratio Perm				0.52					0.22			
v/c Ratio		1.30		1.21	0.60		1.33		0.58			
Uniform Delay, d1		45.5		50.5	23.5		46.5		37.0			
Progression Factor		0.98		1.77	1.00		0.99		0.99			
Incremental Delay, d2		137.9		97.4	0.1		159.9		1.8			
Delay (s)		182.6		186.7	23.6		206.0		38.5			
Level of Service		F		F	C		F		D			
Approach Delay (s)		182.6			56.3			154.9			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM Average Control Delay			134.6			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.30									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			116.0%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												
























I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

31: E Butler Road & I-385 NB Ramps

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		 			 							
Volume (vph)	580	1679	0	0	1229	719	0	0	0	25	0	426
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
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	0.07	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	121	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)	644	1866	0	0	1366	799	0	0	0	28	0	473
RTOR Reduction (vph)	0	0	0	0	0	293	0	0	0	0	0	19
Lane Group Flow (vph)	644	1866	0	0	1366	506	0	0	0	28	0	454
Turn Type	pm+pt				custom				custom			custom
Protected Phases	5	2										8
Permitted Phases	2				6	6				8		
Actuated Green, G (s)	101.0	101.0			54.0	54.0				37.0		37.0
Effective Green, g (s)	101.0	101.0			54.0	54.0				37.0		37.0
Actuated g/C Ratio	0.67	0.67			0.36	0.36				0.25		0.25
Clearance Time (s)	6.0	6.0			6.0	6.0				6.0		6.0
Vehicle Extension (s)	4.3	4.3			4.3	4.3				4.3		4.3
Lane Grp Cap (vph)	518	2315			1238	554				424		379
v/s Ratio Prot	c0.34	0.54										c0.30
v/s Ratio Perm	c0.50				0.40	0.33				0.02		
v/c Ratio	1.24	0.81			1.10	0.91				0.07		1.20
Uniform Delay, d1	47.8	17.5			48.0	45.8				43.3		56.5
Progression Factor	1.50	0.59			1.00	1.00				1.00		1.00
Incremental Delay, d2	111.0	0.3			58.8	21.9				0.1		112.1
Delay (s)	182.6	10.6			106.8	67.7				43.4		168.6
Level of Service	F	B			F	E				D		F
Approach Delay (s)		54.8			92.4			0.0			161.6	
Approach LOS		D			F			A			F	
Intersection Summary												
HCM Average Control Delay			80.8		HCM Level of Service					F		
HCM Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			150.0		Sum of lost time (s)					12.0		
Intersection Capacity Utilization			116.0%		ICU Level of Service					H		
Analysis Period (min)			15									
c Critical Lane Group												




















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

34: Frontage Road & Roper Mountain Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	99	151	111	23	18	848	1234	1042	99	1751	37
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	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Flt Protected	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	1645		1633	1665	1538	1719	3438	1538	1719	3427	
Satd. Flow (perm)	1719	1645		1633	1665	1538	111	3438	1538	358	3427	
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)	4	110	168	123	26	20	942	1371	1158	110	1946	41
RTOR Reduction (vph)	0	40	0	0	0	19	0	0	99	0	1	0
Lane Group Flow (vph)	4	238	0	74	75	1	942	1371	1059	110	1986	0
Turn Type	Split			Split		Perm	pm+pt		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)	11.0	11.0		4.0	4.0	4.0	107.0	107.0	107.0	59.0	59.0	
Effective Green, g (s)	11.0	11.0		4.0	4.0	4.0	107.0	107.0	107.0	59.0	59.0	
Actuated g/C Ratio	0.08	0.08		0.03	0.03	0.03	0.76	0.76	0.76	0.42	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.9	4.9		4.9	4.9	4.9	4.3	4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	135	129		47	48	44	567	2628	1175	151	1444	
v/s Ratio Prot	0.00	c0.14		c0.05	0.05		c0.50	0.40			0.58	
v/s Ratio Perm						0.00	c0.77		0.69	0.31		
v/c Ratio	0.03	1.85		1.57	1.56	0.01	1.66	0.52	0.90	0.73	1.38	
Uniform Delay, d1	59.6	64.5		68.0	68.0	66.1	43.9	6.5	12.5	33.8	40.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.03	0.88	0.88	1.00	1.00	
Incremental Delay, d2	0.2	409.9		338.6	332.4	0.2	298.3	0.1	1.2	26.3	173.3	
Delay (s)	59.8	474.4		406.6	400.4	66.3	343.6	5.8	12.2	60.1	213.8	
Level of Service	E	F		F	F	E	F	A	B	E	F	
Approach Delay (s)		468.5			363.6			99.6			205.7	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			161.3			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.63									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			134.7%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												













I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

35: I-385 NB Ramps & Roper Mountain Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1061	0	1506	265	1618	0	0	1551	462
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	1179	0	1673	294	1798	0	0	1723	513
RTOR Reduction (vph)	0	0	0	0	0	8	0	0	0	0	0	160
Lane Group Flow (vph)	0	0	0	589	590	1665	294	1798	0	0	1723	353
Turn Type				Perm		Perm	Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Actuated Green, G (s)				58.0	58.0	58.0	10.0	70.0			54.0	54.0
Effective Green, g (s)				58.0	58.0	58.0	10.0	70.0			54.0	54.0
Actuated g/C Ratio				0.41	0.41	0.41	0.07	0.50			0.39	0.39
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)				677	677	1121	238	1719			1326	593
v/s Ratio Prot							0.09	c0.52			c0.50	
v/s Ratio Perm				0.36	0.36	c0.62						0.23
v/c Ratio				0.87	0.87	1.49	1.24	1.05			1.30	0.60
Uniform Delay, d1				37.5	37.6	41.0	65.0	35.0			43.0	34.3
Progression Factor				1.00	1.00	1.00	1.38	0.28			0.50	0.23
Incremental Delay, d2				12.6	12.7	223.3	109.3	22.6			135.3	0.4
Delay (s)				50.1	50.3	264.3	198.9	32.4			156.7	8.3
Level of Service				D	D	F	F	C			F	A
Approach Delay (s)		0.0			175.8			55.8			122.7	
Approach LOS		A			F			E			F	
Intersection Summary												
HCM Average Control Delay			124.3			HCM Level of Service					F	
HCM Volume to Capacity ratio			1.40									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			146.5%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												





















I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

36: Roper Mountain Road & I-385 SB Ramps

												
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	487	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			
Flt		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	0.10	1.00		0.95	0.95	1.00			
Satd. Flow (perm)		4940	1538	186	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	541	0	0	0
RTOR Reduction (vph)	0	0	206	0	0	0	0	0	45	0	0	0
Lane Group Flow (vph)	0	1183	216	1088	1814	0	454	455	496	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)		32.6	32.6	98.2	97.6		29.9	29.9	29.9			
Effective Green, g (s)		32.6	32.6	98.2	97.6		29.9	29.9	29.9			
Actuated g/C Ratio		0.23	0.23	0.70	0.70		0.21	0.21	0.21			
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)		1150	358	779	2397		349	349	578			
v/s Ratio Prot		0.24		c0.59	0.53							
v/s Ratio Perm			0.14	c0.39			0.28	0.28	0.18			
v/c Ratio		1.03	0.60	1.40	0.76		1.30	1.30	0.86			
Uniform Delay, d1		53.7	47.9	35.2	13.6		55.0	55.0	53.0			
Progression Factor		0.90	1.27	0.76	0.48		1.00	1.00	1.00			
Incremental Delay, d2		32.0	6.2	179.2	0.2		154.9	156.1	13.1			
Delay (s)		80.3	67.0	206.0	6.7		209.9	211.1	66.1			
Level of Service		F	E	F	A		F	F	E			
Approach Delay (s)		76.8			81.4			156.6			0.0	
Approach LOS		E			F			F			A	
Intersection Summary												
HCM Average Control Delay			98.5			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.35									
Actuated Cycle Length (s)			140.0			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												

I-85/I-385 Interchange Improvements
2035 Alternate 4A AM

37: Roper Mountain Road & Congaree Road

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	439	1127	2	6	1500	614	316	4	325	2	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.4			6.4	6.4	6.1	6.1			6.1	6.1
Lane Util. Factor	1.00	0.91			0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)	1719	4939			3437	1538	1719	1541			1780	1538
Flt Permitted	0.06	1.00			0.95	1.00	0.75	1.00			0.80	1.00
Satd. Flow (perm)	100	4939			3256	1538	1364	1541			1457	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)	488	1252	2	7	1667	682	351	4	361	2	4	2
RTOR Reduction (vph)	0	0	0	0	0	219	0	249	0	0	0	2
Lane Group Flow (vph)	488	1254	0	0	1674	463	351	116	0	0	6	0
Turn Type	pm+pt			Perm		Perm	Perm			Perm		Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6		6	4			8		8
Actuated Green, G (s)	98.6	98.6			66.6	66.6	28.9	28.9			28.9	28.9
Effective Green, g (s)	98.6	98.6			66.6	66.6	28.9	28.9			28.9	28.9
Actuated g/C Ratio	0.70	0.70			0.48	0.48	0.21	0.21			0.21	0.21
Clearance Time (s)	5.8	6.4			6.4	6.4	6.1	6.1			6.1	6.1
Vehicle Extension (s)	4.3	4.9			4.9	4.9	4.9	4.9			4.9	4.9
Lane Grp Cap (vph)	373	3478			1549	732	282	318			301	317
v/s Ratio Prot	c0.24	0.25						0.08				
v/s Ratio Perm	c0.68				0.51	0.30	c0.26				0.00	0.00
v/c Ratio	1.31	0.36			1.08	0.63	1.24	0.36			0.02	0.00
Uniform Delay, d1	49.1	8.2			36.7	27.5	55.5	47.7			44.3	44.1
Progression Factor	1.00	1.63			0.88	0.55	1.00	1.00			1.00	1.00
Incremental Delay, d2	149.7	0.2			44.0	2.5	136.3	1.4			0.1	0.0
Delay (s)	198.5	13.6			76.4	17.6	191.9	49.1			44.3	44.1
Level of Service	F	B			E	B	F	D			D	D
Approach Delay (s)		65.4			59.4			119.1			44.3	
Approach LOS		E			E			F			D	
Intersection Summary												
HCM Average Control Delay			70.4			HCM Level of Service				E		
HCM Volume to Capacity ratio			1.26									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.9		
Intersection Capacity Utilization			106.6%			ICU Level of Service				G		
Analysis Period (min)			15									
c Critical Lane Group												