
























I-85/I-385 Interchange Improvements























2035 Alternate 4A PM

1: Woodruff Road & Roper Mountain Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	458	515	77	202	889	633	58	755	177	898	755	105
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
Flt	1.00	0.98		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	3371		1719	3438	1538	1719	3438	1538	3335	3438	1538
Flt Permitted	0.12	1.00		0.30	1.00	1.00	0.34	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	226	3371		535	3438	1538	608	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)	509	572	86	224	988	703	64	839	197	998	839	117
RTOR Reduction (vph)	0	9	0	0	0	270	0	0	101	0	0	61
Lane Group Flow (vph)	509	649	0	224	988	433	64	839	96	998	839	56
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)	56.0	36.8		43.2	28.0	28.0	27.0	27.0	27.0	30.0	62.0	62.0
Effective Green, g (s)	56.0	36.8		43.2	28.0	28.0	27.0	27.0	27.0	30.0	62.0	62.0
Actuated g/C Ratio	0.43	0.28		0.33	0.22	0.22	0.21	0.21	0.21	0.23	0.48	0.48
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)	373	954		316	740	331	126	714	319	770	1640	734
v/s Ratio Prot	c0.25	0.19		0.08	0.29			c0.24		c0.30	0.24	
v/s Ratio Perm	c0.34			0.15		0.28	0.11		0.06			0.04
v/c Ratio	1.36	0.68		0.71	1.34	1.31	0.51	1.18	0.30	1.30	0.51	0.08
Uniform Delay, d1	39.9	41.4		33.6	51.0	51.0	45.6	51.5	43.5	50.0	23.5	18.5
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	180.5	2.8		7.9	159.9	158.9	6.4	93.1	1.1	142.8	0.5	0.1
Delay (s)	220.4	44.1		41.5	210.9	209.9	52.0	144.6	44.6	192.8	24.0	18.5
Level of Service	F	D		D	F	F	D	F	D	F	C	B
Approach Delay (s)		121.0			190.8			121.3			109.9	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			139.3			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.26									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			113.9%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												





















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

2: Woodruff Road & Costco Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	21	1411	137	305	1811	65	151	6	324	59	4	48
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	0.99		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	3393		1719	3438	1538	1719	1543		1719	1810	1538
Flt Permitted	0.05	1.00		0.12	1.00	1.00	0.76	1.00		0.23	1.00	1.00
Satd. Flow (perm)	85	3393		224	3438	1538	1366	1543		414	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)	23	1568	152	339	2012	72	168	7	360	66	4	53
RTOR Reduction (vph)	0	5	0	0	0	11	0	70	0	0	0	19
Lane Group Flow (vph)	23	1715	0	339	2012	61	168	297	0	66	4	34
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)	120.8	120.8		107.9	107.9	107.9	17.5	17.5		17.5	17.5	23.9
Effective Green, g (s)	120.8	120.8		107.9	107.9	107.9	17.5	17.5		17.5	17.5	23.9
Actuated g/C Ratio	0.80	0.80		0.71	0.71	0.71	0.12	0.12		0.12	0.12	0.16
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)	137	2709		160	2452	1097	158	178		48	209	309
v/s Ratio Prot	0.01	c0.51			0.59			c0.19			0.00	0.00
v/s Ratio Perm	0.13			c1.51		0.04	0.12			0.16		0.02
v/c Ratio	0.17	0.63		2.12	0.82	0.06	1.06	1.67		1.38	0.02	0.11
Uniform Delay, d1	17.6	6.2		21.7	15.0	6.5	66.9	66.9		66.9	59.3	54.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	1.1		523.9	3.2	0.1	89.4	324.6		258.5	0.1	0.3
Delay (s)	18.5	7.4		545.6	18.2	6.6	156.3	391.5		325.4	59.4	54.9
Level of Service	B	A		F	B	A	F	F		F	E	D
Approach Delay (s)		7.5			91.7			317.6			200.2	
Approach LOS		A			F			F			F	
Intersection Summary												
HCM Average Control Delay			89.1			HCM Level of Service			F			
HCM Volume to Capacity ratio			2.01									
Actuated Cycle Length (s)			151.3			Sum of lost time (s)			19.5			
Intersection Capacity Utilization			117.1%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												





















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

3: Green Heron Road & Woodruff Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	35	2	97	20	4	135	113	2125	18	4	1484	4
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		0.90			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1611			1736	1538	1719	3434		1719	3438	1538
Flt Permitted		0.90			0.49	1.00	0.12	1.00		0.06	1.00	1.00
Satd. Flow (perm)		1473			882	1538	221	3434		104	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)	39	2	108	22	4	150	126	2361	20	4	1649	4
RTOR Reduction (vph)	0	15	0	0	0	57	0	1	0	0	0	1
Lane Group Flow (vph)	0	134	0	0	26	93	126	2380	0	4	1649	3
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)		9.0			9.0	9.0	69.7	69.7		69.7	69.7	69.7
Effective Green, g (s)		9.0			9.0	9.0	69.7	69.7		69.7	69.7	69.7
Actuated g/C Ratio		0.10			0.10	0.10	0.77	0.77		0.77	0.77	0.77
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)		147			88	154	171	2659		81	2663	1191
v/s Ratio Prot								c0.69			0.48	
v/s Ratio Perm		c0.09			0.03	0.06	0.57			0.04		0.00
v/c Ratio		0.91			0.30	0.61	0.74	0.90		0.05	0.62	0.00
Uniform Delay, d1		40.1			37.6	38.8	5.3	7.5		2.4	4.4	2.3
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		48.8			3.0	8.2	24.4	5.2		1.2	1.1	0.0
Delay (s)		88.9			40.5	47.0	29.8	12.7		3.5	5.5	2.3
Level of Service		F			D	D	C	B		A	A	A
Approach Delay (s)		88.9			46.0			13.5			5.5	
Approach LOS		F			D			B			A	
Intersection Summary												
HCM Average Control Delay			14.3				HCM Level of Service			B		
HCM Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			11.3		
Intersection Capacity Utilization			113.7%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												



















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

4: Woodruff Industrial Lane & Woodruff Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	232	52	427	313	47	45	85	2037	120	346	1215	374
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	0.87		1.00	0.93		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1568		1719	1676		1719	3409		1719	3317	
Flt Permitted	0.46	1.00		0.23	1.00		0.06	1.00		0.05	1.00	
Satd. Flow (perm)	837	1568		421	1676		106	3409		98	3317	
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)	258	58	474	348	52	50	94	2263	133	384	1350	416
RTOR Reduction (vph)	0	94	0	0	24	0	0	3	0	0	20	0
Lane Group Flow (vph)	258	438	0	348	78	0	94	2393	0	384	1746	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)	44.0	25.0		30.2	17.2		73.0	68.0		89.0	78.0	
Effective Green, g (s)	44.0	25.0		30.2	17.2		73.0	68.0		89.0	78.0	
Actuated g/C Ratio	0.30	0.17		0.21	0.12		0.50	0.47		0.61	0.54	
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)	381	270		204	199		109	1599		228	1784	
v/s Ratio Prot	0.10	c0.28		c0.15	0.05		0.03	0.70		c0.17	0.53	
v/s Ratio Perm	0.11			0.20			0.40			c0.86		
v/c Ratio	0.68	1.62		1.71	0.39		0.86	1.50		1.68	0.98	
Uniform Delay, d1	41.6	60.0		54.1	59.1		31.6	38.5		50.7	32.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.4	297.2		337.7	2.0		47.9	226.7		326.2	16.8	
Delay (s)	47.0	357.2		391.8	61.1		79.5	265.2		376.9	49.5	
Level of Service	D	F		F	E		E	F		F	D	
Approach Delay (s)		255.9			316.8			258.2			108.0	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			207.5			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.63									
Actuated Cycle Length (s)			145.0			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			145.7%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												












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

5: I-85 SB Ramps & Woodruff Road

												
Movement	WBL2	WBL	WBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER	
Lane Configurations												
Volume (vph)	369	0	47	0	2366	411	1007	1888	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	0.05	1.00				
Satd. Flow (perm)	3335		2707		3438	1538	94	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)	410	0	52	0	2629	457	1119	2098	0	0	0	
RTOR Reduction (vph)	0	0	48	0	0	87	0	0	0	0	0	
Lane Group Flow (vph)	410	0	4	0	2629	370	1119	2098	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		70.7		70.7		127.9		127.9	
Effective Green, g (s)	11.0		11.0		70.7		70.7		127.9		127.9	
Actuated g/C Ratio	0.07		0.07		0.47		0.47		0.85		0.85	
Clearance Time (s)	5.0		5.0		6.3		6.3		6.5		6.1	
Vehicle Extension (s)	4.3		4.3		4.3		4.3		4.3		4.3	
Lane Grp Cap (vph)	245		199		1620		725		627		2931	
v/s Ratio Prot					0.76		c0.60		0.61			
v/s Ratio Perm	c0.12		0.00				0.24		c0.93			
v/c Ratio	1.67		0.02		1.62		0.51		1.78		0.72	
Uniform Delay, d1	69.5		64.5		39.6		27.6		46.0		4.2	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	320.3		0.1		283.1		2.6		359.5		1.5	
Delay (s)	389.8		64.6		322.8		30.2		405.5		5.7	
Level of Service	F		E		F		C		F		A	
Approach Delay (s)	353.2				279.5				144.8		0.0	
Approach LOS	F				F				F		A	
Intersection Summary												
HCM Average Control Delay			220.4		HCM Level of Service			F				
HCM Volume to Capacity ratio			1.73									
Actuated Cycle Length (s)			150.0		Sum of lost time (s)			11.5				
Intersection Capacity Utilization			145.4%		ICU Level of Service			H				
Analysis Period (min)			15									
c Critical Lane Group												

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

6: I-85 NB Ramps & Woodruff Rd

						
Movement	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	753	823	1187	1548	0	2142
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)	837	914	1319	1720	0	2380
RTOR Reduction (vph)	0	274	0	462	0	0
Lane Group Flow (vph)	837	640	1319	1258	0	2380
Turn Type		Prot		Perm		
Protected Phases	3	3	2			2 4
Permitted Phases				2		
Actuated Green, G (s)	30.4	30.4	86.5	86.5		107.5
Effective Green, g (s)	30.4	30.4	86.5	86.5		100.5
Actuated g/C Ratio	0.20	0.20	0.58	0.58		0.67
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)	676	549	1983	887		2303
v/s Ratio Prot	c0.25	0.24	0.38			c0.69
v/s Ratio Perm				c0.82		
v/c Ratio	1.24	1.17	0.67	1.42		1.03
Uniform Delay, d1	59.8	59.8	21.8	31.8		24.8
Progression Factor	1.00	1.00	1.00	1.00		0.91
Incremental Delay, d2	119.6	92.9	1.8	194.9		17.0
Delay (s)	179.4	152.7	23.6	226.7		39.4
Level of Service	F	F	C	F		D
Approach Delay (s)	165.4		138.5			39.4
Approach LOS	F		F			D
Intersection Summary						
HCM Average Control Delay			112.2		HCM Level of Service	F
HCM Volume to Capacity ratio			1.33			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	18.6
Intersection Capacity Utilization			101.3%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

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

























7: Carolina Point Pkwy & Woodruff Road



Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations	↰↰	↱	↰↰	↱	↰	↰↰
Volume (vph)	324	119	1920	90	87	3483
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	0.06	1.00
Satd. Flow (perm)	3335	1538	3438	1538	114	3438
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	360	132	2133	100	97	3870
RTOR Reduction (vph)	0	29	0	18	0	0
Lane Group Flow (vph)	360	103	2133	82	97	3870
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)	14.0	14.0	123.4	123.4	123.4	123.4
Effective Green, g (s)	14.0	14.0	123.4	123.4	123.4	123.4
Actuated g/C Ratio	0.09	0.09	0.82	0.82	0.82	0.82
Clearance Time (s)	7.0	7.0				
Vehicle Extension (s)	4.3	4.3				
Lane Grp Cap (vph)	311	144	2828	1265	94	2828
v/s Ratio Prot	c0.11		0.62			c1.13
v/s Ratio Perm		0.07		0.05	0.85	
v/c Ratio	1.16	0.72	0.75	0.07	1.03	1.37
Uniform Delay, d1	68.0	66.1	6.2	2.5	13.3	13.3
Progression Factor	1.00	1.00	0.59	0.53	1.00	1.00
Incremental Delay, d2	100.8	17.1	0.7	0.0	101.8	168.1
Delay (s)	168.8	83.2	4.3	1.3	115.1	181.4
Level of Service	F	F	A	A	F	F
Approach Delay (s)	145.8		4.2			179.8
Approach LOS	F		A			F
Intersection Summary						
HCM Average Control Delay			118.7		HCM Level of Service	F
HCM Volume to Capacity ratio			1.36			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			116.8%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						
























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

8: Woodruff Road & Market Point Drive

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	714	1202	123	138	2790	261	239	42	107	336	42	541	
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)	793	1336	137	153	3100	290	266	47	119	373	47	601	
RTOR Reduction (vph)	0	0	42	0	0	47	0	0	29	0	0	188	
Lane Group Flow (vph)	793	1336	95	153	3100	243	266	47	90	373	47	413	
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)	19.9	79.7	92.9	18.1	77.9	77.9	13.2	8.4	26.5	20.0	15.2	15.2	
Effective Green, g (s)	19.9	79.7	92.9	18.1	77.9	77.9	13.2	8.4	26.5	20.0	15.2	15.2	
Actuated g/C Ratio	0.13	0.53	0.62	0.12	0.52	0.52	0.09	0.06	0.18	0.13	0.10	0.10	
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)	442	1827	953	207	1785	799	151	101	272	445	348	156	
v/s Ratio Prot	c0.24	0.39	0.01	0.09	c0.90	c0.15		0.03	0.04	0.11	0.01		
v/s Ratio Perm	0.05			0.16			0.02			c0.27			
v/c Ratio	1.79	0.73	0.10	0.74	1.74	0.30	1.76	0.47	0.33	0.84	0.14	2.65	
Uniform Delay, d1	65.0	26.9	11.6	63.7	36.0	20.6	68.4	68.6	54.0	63.4	61.4	67.4	
Progression Factor	1.00	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	366.3	2.6	0.1	14.2	333.9	1.0	368.4	5.3	1.1	13.8	0.3	760.0	
Delay (s)	431.4	29.6	11.7	77.9	369.9	21.6	436.8	73.9	55.1	77.2	61.7	827.4	
Level of Service	F	C	B	E	F	C	F	E	E	E	E	F	
Approach Delay (s)	169.1		328.8			292.2		518.1					
Approach LOS	F		F			F		F					
Intersection Summary													
HCM Average Control Delay	303.4			HCM Level of Service			F						
HCM Volume to Capacity ratio	1.86												
Actuated Cycle Length (s)	150.0			Sum of lost time (s)			23.8						
Intersection Capacity Utilization	138.6%			ICU Level of Service			H						
Analysis Period (min)	15												
c Critical Lane Group													


















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

9: Woodruff Road & Garlington Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	230	1184	231	267	2550	263	379	214	169	478	395	260
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	0.93		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)	3335	3438	1538	1719	3438	1538	3335	1690		3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.07	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	3438	1538	120	3438	1538	3335	1690		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)	256	1316	257	297	2833	292	421	238	188	531	439	289
RTOR Reduction (vph)	0	0	100	0	0	52	0	19	0	0	0	0
Lane Group Flow (vph)	256	1316	157	297	2833	240	421	407	0	531	439	289
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)	8.8	68.4	68.4	94.9	80.9	80.9	12.8	22.8		15.8	25.8	150.0
Effective Green, g (s)	8.8	68.4	68.4	94.9	80.9	80.9	12.8	22.8		15.8	25.8	150.0
Actuated g/C Ratio	0.06	0.46	0.46	0.63	0.54	0.54	0.09	0.15		0.11	0.17	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)	196	1568	701	303	1854	829	285	257		351	311	1538
v/s Ratio Prot	c0.08	0.38		0.14	c0.82		0.13	c0.24		c0.16	c0.24	
v/s Ratio Perm			0.10	0.48		0.16						0.19
v/c Ratio	1.31	0.84	0.22	0.98	1.53	0.29	1.48	1.58		1.51	1.41	0.19
Uniform Delay, d1	70.6	36.0	24.7	48.7	34.5	18.9	68.6	63.6		67.1	62.1	0.0
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	169.6	5.6	0.7	46.3	240.4	0.9	232.8	281.0		245.0	203.3	0.3
Delay (s)	240.2	41.5	25.5	95.0	274.9	19.8	301.4	344.6		312.1	265.4	0.3
Level of Service	F	D	C	F	F	B	F	F		F	F	A
Approach Delay (s)		67.1			237.6			323.1			224.2	
Approach LOS		E			F			F			F	
Intersection Summary												
HCM Average Control Delay			202.7			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.59									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			26.9			
Intersection Capacity Utilization			130.4%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												





















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

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	1209	622	261	2181	0	0	0	0	1187	0	899
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		0.95		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		3263		1719	3438					3335		1538
Flt Permitted		1.00		0.05	1.00					0.95		1.00
Satd. Flow (perm)		3263		92	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	1343	691	290	2423	0	0	0	0	1319	0	999
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1991	0	290	2423	0	0	0	0	1319	0	999
Turn Type				pm+pt						Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases				6								Free
Actuated Green, G (s)		72.4		94.4	94.4					43.3		150.0
Effective Green, g (s)		72.4		94.4	94.4					43.3		150.0
Actuated g/C Ratio		0.48		0.63	0.63					0.29		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)		1575		225	2164					963		1538
v/s Ratio Prot		0.61		0.13	c0.70					c0.40		
v/s Ratio Perm				c0.68								0.65
v/c Ratio		1.26		1.29	1.12					1.37		0.65
Uniform Delay, d1		38.8		53.3	27.8					53.4		0.0
Progression Factor		1.00		1.00	1.00					1.00		1.00
Incremental Delay, d2		124.0		159.2	60.8					173.0		2.1
Delay (s)		162.8		212.5	88.6					226.4		2.1
Level of Service		F		F	F					F		A
Approach Delay (s)		162.8			101.8			0.0			129.7	
Approach LOS		F			F			A			F	
Intersection Summary												
HCM Average Control Delay			128.5			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.29									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				12.3		
Intersection Capacity Utilization			198.9%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												





















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

11: Woodruff Road & I-385 NB Ramps

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	686	1710	0	0	1559	963	883	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)	142	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)	762	1900	0	0	1732	1070	981	0	401	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	387	0	0	12	0	0	0
Lane Group Flow (vph)	762	1900	0	0	1732	683	981	0	389	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)	74.9	74.9			44.9	44.9	34.0		34.0			
Effective Green, g (s)	74.9	74.9			44.9	44.9	34.0		34.0			
Actuated g/C Ratio	0.62	0.62			0.37	0.37	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)	403	2146			1286	575	487		436			
v/s Ratio Prot	c0.38	0.55			0.50		c0.57					
v/s Ratio Perm	c0.80					0.44			0.25			
v/c Ratio	1.89	0.89			1.35	1.19	2.01		0.89			
Uniform Delay, d1	39.2	18.9			37.5	37.5	43.0		41.2			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	410.1	5.8			161.3	100.8	463.7		20.6			
Delay (s)	449.4	24.8			198.9	138.4	506.7		61.8			
Level of Service	F	C			F	F	F		E			
Approach Delay (s)		146.3			175.8		377.6				0.0	
Approach LOS		F			F		F				A	
Intersection Summary												
HCM Average Control Delay		205.1			HCM Level of Service		F					
HCM Volume to Capacity ratio		1.87										
Actuated Cycle Length (s)		120.0			Sum of lost time (s)		11.1					
Intersection Capacity Utilization		198.9%			ICU Level of Service		H					
Analysis Period (min)		15										
c Critical Lane Group												



















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

12: Woodruff Road & Commercial Drive

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	1767	64	15	2066	78	296	28	15	134	18	160
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	0.95		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	3420		1719	3419		1719	1713		1719	1566	
Flt Permitted	0.05	1.00		0.05	1.00		0.21	1.00		0.73	1.00	
Satd. Flow (perm)	83	3420		89	3419		383	1713		1313	1566	
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)	267	1963	71	17	2296	87	329	31	17	149	20	178
RTOR Reduction (vph)	0	2	0	0	2	0	0	13	0	0	138	0
Lane Group Flow (vph)	267	2032	0	17	2381	0	329	35	0	149	60	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)	101.5	101.5		81.5	81.5		37.6	37.6		13.6	13.6	
Effective Green, g (s)	101.5	101.5		81.5	81.5		37.6	37.6		13.6	13.6	
Actuated g/C Ratio	0.68	0.68		0.54	0.54		0.25	0.25		0.09	0.09	
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)	216	2314		48	1858		263	429		119	142	
v/s Ratio Prot	c0.12	0.59			c0.70		c0.16	0.02			0.04	
v/s Ratio Perm	0.71			0.19			c0.16			0.11		
v/c Ratio	1.24	0.88		0.35	1.28		1.25	0.08		1.25	0.42	
Uniform Delay, d1	54.7	19.3		19.4	34.2		51.6	43.0		68.2	64.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	139.5	5.1		19.3	131.0		140.4	0.1		165.1	3.2	
Delay (s)	194.2	24.5		38.7	165.2		192.0	43.1		233.3	67.6	
Level of Service	F	C		D	F		F	D		F	E	
Approach Delay (s)		44.2			164.3			173.0			138.8	
Approach LOS		D			F			F			F	
Intersection Summary												
HCM Average Control Delay			112.3			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			16.1			
Intersection Capacity Utilization			118.0%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												




















I-85/I-385 Interchange Improvements
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13: Woodruff Road & Smith Hines Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	1812	89	86	1904	2	240	2	190	7	2	15
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	0.99		1.00	1.00			0.94			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1719	3414		1719	3438			1656			1632	
Flt Permitted	0.06	1.00		0.06	1.00			0.81			0.90	
Satd. Flow (perm)	107	3414		106	3438			1383			1494	
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)	17	2013	99	96	2116	2	267	2	211	8	2	17
RTOR Reduction (vph)	0	4	0	0	0	0	0	15	0	0	13	0
Lane Group Flow (vph)	17	2108	0	96	2118	0	0	465	0	0	14	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	2			6			8			4		
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	67.7	67.7		68.0	68.0			21.0			21.0	
Effective Green, g (s)	67.7	67.7		68.0	68.0			21.0			21.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.21			0.21	
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)	72	2311		72	2338			290			314	
v/s Ratio Prot	0.62			0.62								
v/s Ratio Perm	0.16			c0.90				c0.34			0.01	
v/c Ratio	0.24	0.91		1.33	0.91			1.60			0.05	
Uniform Delay, d1	6.2	13.6		16.0	13.3			39.5			31.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	7.6	6.9		218.6	6.4			287.1			0.1	
Delay (s)	13.8	20.5		234.6	19.8			326.6			31.6	
Level of Service	B	C		F	B			F			C	
Approach Delay (s)	20.5			29.1				326.6			31.6	
Approach LOS	C			C				F			C	
Intersection Summary												
HCM Average Control Delay	54.8			HCM Level of Service			D					
HCM Volume to Capacity ratio	1.40											
Actuated Cycle Length (s)	100.0			Sum of lost time (s)			11.0					
Intersection Capacity Utilization	112.3%			ICU Level of Service			H					
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)	32	2216	195	32	3306	61	530	10	8	56	2	53
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	0.99		1.00	1.00		1.00	0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1719	3396		1719	3429		1719	1687			1651	
Flt Permitted	0.04	1.00		0.05	1.00		0.66	1.00			0.85	
Satd. Flow (perm)	79	3396		84	3429		1188	1687			1432	
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)	36	2462	217	36	3673	68	589	11	9	62	2	59
RTOR Reduction (vph)	0	4	0	0	1	0	0	4	0	0	22	0
Lane Group Flow (vph)	36	2675	0	36	3740	0	589	16	0	0	101	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)	97.0	97.0		85.9	85.9		43.0	43.0			43.0	
Effective Green, g (s)	97.0	97.0		85.9	85.9		43.0	43.0			43.0	
Actuated g/C Ratio	0.64	0.64		0.57	0.57		0.28	0.28			0.28	
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)	103	2177		48	1947		338	479			407	
v/s Ratio Prot	0.01	c0.79			c1.09			0.01				
v/s Ratio Perm	0.22			0.43			c0.50				0.07	
v/c Ratio	0.35	1.23		0.75	1.92		1.74	0.03			0.25	
Uniform Delay, d1	36.2	27.2		24.6	32.7		54.2	39.1			41.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	3.2	107.1		69.5	416.4		346.2	0.0			0.5	
Delay (s)	39.4	134.3		94.1	449.1		400.4	39.2			42.2	
Level of Service	D	F		F	F		F	D			D	
Approach Delay (s)		133.0			445.7			388.5			42.2	
Approach LOS		F			F			F			D	
Intersection Summary												
HCM Average Control Delay			316.5			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.87									
Actuated Cycle Length (s)			151.3			Sum of lost time (s)			17.6			
Intersection Capacity Utilization			138.8%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												




















I-85/I-385 Interchange Improvements
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15: Woodruff Road & Verdin Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	2702	61	90	1748	105	363	292	179	77	311	239
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	0.99		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3427		1719	3409		1719	1810	1538	1719	1692	
Flt Permitted	0.05	1.00		0.05	1.00		0.13	1.00	1.00	0.56	1.00	
Satd. Flow (perm)	85	3427		85	3409		240	1810	1538	1021	1692	
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)	160	3002	68	100	1942	117	403	324	199	86	346	266
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	1	0	12	0
Lane Group Flow (vph)	160	3069	0	100	2056	0	403	324	198	86	600	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)	84.7	84.7		84.7	84.7		44.0	44.0	44.0	24.8	24.8	
Effective Green, g (s)	84.7	84.7		84.7	84.7		44.0	44.0	44.0	24.8	24.8	
Actuated g/C Ratio	0.61	0.61		0.61	0.61		0.31	0.31	0.31	0.18	0.18	
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)	51	2073		51	2062		221	569	483	181	300	
v/s Ratio Prot		0.90			0.60		c0.18	0.18			0.35	
v/s Ratio Perm	c1.87			1.17			c0.39		0.13	0.08		
v/c Ratio	3.14	1.48		1.96	1.00		1.82	0.57	0.41	0.48	2.00	
Uniform Delay, d1	27.6	27.6		27.6	27.5		41.1	40.1	37.8	51.8	57.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1011.0	218.8		495.2	19.1		387.8	1.8	0.9	3.1	462.4	
Delay (s)	1038.7	246.5		522.9	46.7		428.9	41.8	38.7	54.8	520.0	
Level of Service	F	F		F	D		F	D	D	D	F	
Approach Delay (s)		285.7			68.7			209.6			462.7	
Approach LOS		F			E			F			F	
Intersection Summary												
HCM Average Control Delay			226.5		HCM Level of Service				F			
HCM Volume to Capacity ratio			2.64									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)				11.5			
Intersection Capacity Utilization			171.7%		ICU Level of Service				H			
Analysis Period (min)			15									
c Critical Lane Group												



















I-85/I-385 Interchange Improvements
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16: Woodruff Road & Butler Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	2394	167	528	1677	26	264	28	652	443	552	144
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)		3403		1719	3430			1731	1538	1719	1753	
Flt Permitted		0.83		0.08	1.00			0.18	1.00	0.29	1.00	
Satd. Flow (perm)		2830		145	3430			328	1538	528	1753	
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	2660	186	587	1863	29	293	31	724	492	613	160
RTOR Reduction (vph)	0	6	0	0	1	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	2872	0	587	1891	0	0	324	724	492	762	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)		43.7		57.7	57.7			21.0	28.7	21.0	21.0	
Effective Green, g (s)		43.7		57.7	57.7			21.0	28.7	21.0	21.0	
Actuated g/C Ratio		0.49		0.64	0.64			0.23	0.32	0.23	0.23	
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)		1374		228	2199			77	490	123	409	
v/s Ratio Prot				c0.22	0.55				0.13		0.43	
v/s Ratio Perm		1.01		c1.44				c0.99	0.34	0.93		
v/c Ratio		2.09		2.57	0.86			4.21	1.48	4.00	1.86	
Uniform Delay, d1		23.1		27.7	12.9			34.5	30.6	34.5	34.5	
Progression Factor		1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		493.2		721.2	4.7			1473.5	225.7	1369.2	398.0	
Delay (s)		516.4		748.9	17.6			1508.0	256.4	1403.7	432.5	
Level of Service		F		F	B			F	F	F	F	
Approach Delay (s)		516.4			190.8			643.3			810.2	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			476.9		HCM Level of Service				F			
HCM Volume to Capacity ratio			2.91									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)				11.3			
Intersection Capacity Utilization			192.3%		ICU Level of Service				H			
Analysis Period (min)			15									
c Critical Lane Group												
























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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)	96	3418	156	53	2464	16	209	2	58	21	2	88
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	3416		1719	3435			1691			1600	
Flt Permitted	0.04	1.00		0.04	1.00			0.61			0.95	
Satd. Flow (perm)	76	3416		76	3435			1064			1530	
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)	107	3798	173	59	2738	18	232	2	64	23	2	98
RTOR Reduction (vph)	0	2	0	0	0	0	0	1	0	0	5	0
Lane Group Flow (vph)	107	3969	0	59	2756	0	0	297	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)	95.8	95.8		95.8	95.8			22.6			22.6	
Effective Green, g (s)	95.8	95.8		95.8	95.8			22.6			22.6	
Actuated g/C Ratio	0.74	0.74		0.74	0.74			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)	56	2517		56	2531			185			266	
v/s Ratio Prot	1.16			0.80								
v/s Ratio Perm	c1.42			0.78			c0.28			0.08		
v/c Ratio	1.91	1.58		1.05	1.09			1.61			0.44	
Uniform Delay, d1	17.1	17.1		17.1	17.1			53.7			48.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	468.8	261.5		136.1	47.3			296.6			1.9	
Delay (s)	485.9	278.6		153.2	64.4			350.3			49.9	
Level of Service	F	F		F	E			F			D	
Approach Delay (s)	284.0			66.3			350.3			49.9		
Approach LOS	F			E			F			D		
Intersection Summary												
HCM Average Control Delay			199.0		HCM Level of Service			F				
HCM Volume to Capacity ratio			1.85									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)			11.6				
Intersection Capacity Utilization			131.0%		ICU Level of Service			H				
Analysis Period (min)			15									
c Critical Lane Group												
























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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)	223	1837	517	142	1214	105	264	393	77	288	586	167
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	0.99		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	3397		1719	1810	1538	1719	1810	1538
Flt Permitted	0.06	1.00	1.00	0.07	1.00		0.11	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	112	3438	1538	123	3397		196	1810	1538	196	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)	248	2041	574	158	1349	117	293	437	86	320	651	186
RTOR Reduction (vph)	0	0	20	0	4	0	0	0	9	0	0	15
Lane Group Flow (vph)	248	2041	554	158	1462	0	293	437	77	320	651	171
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)	79.4	64.7	81.7	67.4	58.7		54.0	37.0	45.7	54.0	37.0	51.7
Effective Green, g (s)	79.4	64.7	81.7	67.4	58.7		54.0	37.0	45.7	54.0	37.0	51.7
Actuated g/C Ratio	0.53	0.43	0.54	0.45	0.39		0.36	0.25	0.30	0.36	0.25	0.34
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)	217	1483	838	148	1329		243	446	469	243	446	530
v/s Ratio Prot	c0.11	c0.59	0.08	0.06	0.43		0.14	0.24	0.01	c0.15	c0.36	0.03
v/s Ratio Perm	0.49		0.29	0.42			0.30		0.04	0.33		0.08
v/c Ratio	1.14	1.38	0.66	1.07	1.10		1.21	0.98	0.16	1.32	1.46	0.32
Uniform Delay, d1	49.9	42.6	24.3	41.6	45.6		45.3	56.1	38.2	45.2	56.5	36.2
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	104.9	173.6	2.3	93.1	56.8		124.8	37.1	0.3	168.6	218.9	0.6
Delay (s)	154.8	216.3	26.6	134.8	102.4		170.1	93.2	38.4	213.8	275.4	36.8
Level of Service	F	F	C	F	F		F	F	D	F	F	D
Approach Delay (s)		172.9			105.6			115.1			220.0	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			157.1			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.41									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			22.6			
Intersection Capacity Utilization			122.9%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

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

19: E Parkins Mill Road & US 276

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	146	162	90	137	98	112	210	1553	266	115	1940	316
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	3254		3335	1810	1538	1719	4940	1538	3335	4940	1538
Flt Permitted	0.69	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1243	3254		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)	162	180	100	152	109	124	233	1726	296	128	2156	351
RTOR Reduction (vph)	0	76	0	0	0	114	0	0	127	0	0	111
Lane Group Flow (vph)	162	204	0	152	109	10	233	1726	169	128	2156	240
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	8.0		6.0	8.0	8.0	15.6	57.2	57.2	7.8	49.4	49.4
Effective Green, g (s)	14.0	8.0		6.0	8.0	8.0	15.6	57.2	57.2	7.8	49.4	49.4
Actuated g/C Ratio	0.14	0.08		0.06	0.08	0.08	0.16	0.57	0.57	0.08	0.49	0.49
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)	203	260		200	145	123	268	2826	880	260	2440	760
v/s Ratio Prot	c0.05	0.06		0.05	0.06		c0.14	0.35		0.04	c0.44	
v/s Ratio Perm	c0.06					0.01			0.11			0.16
v/c Ratio	0.80	0.78		0.76	0.75	0.08	0.87	0.61	0.19	0.49	0.88	0.32
Uniform Delay, d1	41.0	45.1		46.3	45.0	42.6	41.2	14.1	10.3	44.2	22.7	15.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.06	1.28	3.13	1.00	1.00	1.00
Incremental Delay, d2	20.8	16.2		16.9	22.6	0.6	13.1	0.4	0.2	2.3	5.1	1.1
Delay (s)	61.8	61.3		63.2	67.6	43.2	56.7	18.4	32.4	46.5	27.8	16.3
Level of Service	E	E		E	E	D	E	B	C	D	C	B
Approach Delay (s)		61.5			58.0			24.2			27.2	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM Average Control Delay			30.7				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			19.0		
Intersection Capacity Utilization			79.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

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
























20: Duvall Drive & US 276



Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	520	205	1668	499	190	1509
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	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	4769		1719	4940
Flt Permitted	0.95	1.00	1.00		0.14	1.00
Satd. Flow (perm)	1719	1538	4769		261	4940
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	578	228	1853	554	211	1677
RTOR Reduction (vph)	0	9	108	0	0	0
Lane Group Flow (vph)	578	219	2299	0	211	1677
Turn Type	Perm				Perm	
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	10.0	10.0	27.7		27.7	27.7
Effective Green, g (s)	10.0	10.0	27.7		27.7	27.7
Actuated g/C Ratio	0.20	0.20	0.55		0.55	0.55
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)	344	308	2642		145	2737
v/s Ratio Prot	c0.34		0.48			0.34
v/s Ratio Perm		0.14			c0.81	
v/c Ratio	1.68	0.71	0.87		1.46	0.61
Uniform Delay, d1	20.0	18.7	9.6		11.2	7.5
Progression Factor	1.00	1.00	1.02		1.00	1.00
Incremental Delay, d2	318.5	9.1	2.0		238.9	1.0
Delay (s)	338.5	27.8	11.8		250.0	8.6
Level of Service	F	C	B		F	A
Approach Delay (s)	250.6		11.8			35.5
Approach LOS	F		B			D
Intersection Summary						
HCM Average Control Delay			58.3		HCM Level of Service	E
HCM Volume to Capacity ratio			1.52			
Actuated Cycle Length (s)			50.0		Sum of lost time (s)	12.3
Intersection Capacity Utilization			101.0%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						





















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

23: US 276 & Millennium Blvd

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	126	2355	157	42	1711	14	118	71	92	84	28	68
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	0.92		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	3147		1719	1810	2707
Flt Permitted	0.06	1.00	1.00	0.04	1.00	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	100	3438	1538	70	3438	1538	3335	3147		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)	140	2617	174	47	1901	16	131	79	102	93	31	76
RTOR Reduction (vph)	0	0	33	0	0	4	0	67	0	0	0	38
Lane Group Flow (vph)	140	2617	141	47	1901	12	131	114	0	93	31	38
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)	118.3	109.1	109.1	107.4	102.7	102.7	8.0	7.0		9.0	4.0	15.6
Effective Green, g (s)	118.3	109.1	109.1	107.4	102.7	102.7	8.0	7.0		9.0	4.0	15.6
Actuated g/C Ratio	0.80	0.73	0.73	0.72	0.69	0.69	0.05	0.05		0.06	0.03	0.10
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)	206	2521	1128	103	2373	1062	179	148		106	49	284
v/s Ratio Prot	c0.05	c0.76		0.01	0.55		c0.04	c0.04		0.03	0.02	0.01
v/s Ratio Perm	0.49		0.09	0.31		0.01				0.02		0.00
v/c Ratio	0.68	1.04	0.13	0.46	0.80	0.01	0.73	0.77		0.88	0.63	0.14
Uniform Delay, d1	35.4	19.9	5.8	39.5	16.0	7.2	69.3	70.1		69.4	71.7	60.5
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	9.8	28.7	0.1	5.0	2.3	0.0	15.7	27.3		52.1	39.1	0.3
Delay (s)	45.2	48.6	5.9	44.5	18.3	7.2	85.0	97.4		121.5	110.8	60.8
Level of Service	D	D	A	D	B	A	F	F		F	F	E
Approach Delay (s)		45.9			18.8			92.2			96.8	
Approach LOS		D			B			F			F	
Intersection Summary												
HCM Average Control Delay			40.6			HCM Level of Service				D		
HCM Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			148.8			Sum of lost time (s)				22.5		
Intersection Capacity Utilization			98.8%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

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

24: Pelham Road & The Parkway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	1117	877	0	1264	1009	0	0	0	395	643	355
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)	267	1241	974	0	1404	1121	0	0	0	439	714	394
RTOR Reduction (vph)	0	0	12	0	0	11	0	0	0	0	0	179
Lane Group Flow (vph)	267	1241	962	0	1404	1110	0	0	0	439	714	215
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)	6.0	33.2	33.2		21.4	37.1				15.7	15.7	15.7
Effective Green, g (s)	6.0	33.2	33.2		21.4	37.1				15.7	15.7	15.7
Actuated g/C Ratio	0.10	0.55	0.55		0.36	0.62				0.26	0.26	0.26
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)	334	1902	851		1226	951				450	474	402
v/s Ratio Prot	0.08	0.36			0.41	0.31					c0.39	
v/s Ratio Perm			c0.63			0.42				0.26		0.14
v/c Ratio	0.80	0.65	1.13		1.15	1.17				0.98	1.51	0.54
Uniform Delay, d1	26.4	9.4	13.4		19.3	11.4				22.0	22.1	19.0
Progression Factor	1.00	1.00	1.00		1.27	0.73				1.00	1.00	1.00
Incremental Delay, d2	13.6	1.8	73.3		66.4	76.2				36.0	238.6	2.0
Delay (s)	40.0	11.1	86.7		90.9	84.5				57.9	260.8	21.0
Level of Service	D	B	F		F	F				E	F	C
Approach Delay (s)		43.9			88.1			0.0			142.1	
Approach LOS		D			F			A			F	
Intersection Summary												
HCM Average Control Delay			84.1		HCM Level of Service			F				
HCM Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			60.0		Sum of lost time (s)			11.1				
Intersection Capacity Utilization			137.2%		ICU Level of Service			H				
Analysis Period (min)			15									
c Critical Lane Group												

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







25: Pelham Road & I-85 SB off ramp



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↘↘
Volume (vph)	0	1512	1816	0	681	457
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	1680	2018	0	757	508
RTOR Reduction (vph)	0	0	0	0	0	4
Lane Group Flow (vph)	0	1680	2018	0	757	504
Turn Type					Perm	
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		29.4	29.4		19.7	19.7
Effective Green, g (s)		29.4	29.4		19.7	19.7
Actuated g/C Ratio		0.49	0.49		0.33	0.33
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)		1685	1685		564	889
v/s Ratio Prot		0.49	c0.59		c0.44	
v/s Ratio Perm						0.19
v/c Ratio		1.00	1.20		1.34	0.57
Uniform Delay, d1		15.3	15.3		20.1	16.6
Progression Factor		1.16	0.77		1.00	1.00
Incremental Delay, d2		17.1	89.5		165.6	1.1
Delay (s)		34.8	101.3		185.8	17.7
Level of Service		C	F		F	B
Approach Delay (s)		34.8	101.3		118.3	
Approach LOS		C	F		F	
Intersection Summary						
HCM Average Control Delay			83.1		HCM Level of Service	F
HCM Volume to Capacity ratio			1.26			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.9
Intersection Capacity Utilization			142.1%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						




















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

26: Pelham Road & I-85 NB off ramp

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↔	↔
Volume (vph)	812	0	0	815	1791	983
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)	902	0	0	906	1990	1092
RTOR Reduction (vph)	0	0	0	0	0	5
Lane Group Flow (vph)	902	0	0	906	1990	1087
Turn Type					Perm	
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	16.2			16.2	33.0	33.0
Effective Green, g (s)	16.2			16.2	33.0	33.0
Actuated g/C Ratio	0.27			0.27	0.55	0.55
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)	928			928	1834	846
v/s Ratio Prot	0.26			c0.26	0.60	
v/s Ratio Perm						c0.71
v/c Ratio	0.97			0.98	1.09	1.28
Uniform Delay, d1	21.7			21.7	13.5	13.5
Progression Factor	0.75			1.00	1.00	1.00
Incremental Delay, d2	4.5			24.3	48.2	137.2
Delay (s)	20.7			46.1	61.7	150.7
Level of Service	C			D	E	F
Approach Delay (s)	20.7			46.1	93.2	
Approach LOS	C			D	F	
Intersection Summary						
HCM Average Control Delay			71.1		HCM Level of Service	E
HCM Volume to Capacity ratio			1.18			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.8
Intersection Capacity Utilization			181.2%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						




















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

27: Pelham Road & Boland Court

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	77	1169	549	368	1581	26	321	23	362	36	16	40	
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		
Frt	1.00	0.95		1.00	1.00			1.00	0.85		0.94		
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98		
Satd. Flow (prot)	1719	3273		1719	3430			1729	1538		1671		
Flt Permitted	0.10	1.00		0.06	1.00			0.66	1.00		0.40		
Satd. Flow (perm)	173	3273		103	3430			1200	1538		675		
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)	86	1299	610	409	1757	29	357	26	402	40	18	44	
RTOR Reduction (vph)	0	39	0	0	1	0	0	0	221	0	20	0	
Lane Group Flow (vph)	86	1870	0	409	1785	0	0	383	181	0	82	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)	63.3	63.3		92.3	92.3			34.7	34.7		34.7		
Effective Green, g (s)	63.3	63.3		92.3	92.3			34.7	34.7		34.7		
Actuated g/C Ratio	0.45	0.45		0.66	0.66			0.25	0.25		0.25		
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)	78	1480		325	2261			297	381		167		
v/s Ratio Prot	0.57			c0.20	0.52								
v/s Ratio Perm	0.50			c0.63				c0.32	0.12		0.12		
v/c Ratio	1.10	1.26		1.26	0.79			1.29	0.47		0.49		
Uniform Delay, d1	38.4	38.4		49.2	16.9			52.6	44.9		45.1		
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00		
Incremental Delay, d2	132.5	124.0		138.9	2.9			153.3	1.5		3.6		
Delay (s)	170.9	162.4		188.0	19.8			205.9	46.4		48.7		
Level of Service	F	F		F	B			F	D		D		
Approach Delay (s)	162.7			51.2				124.2			48.7		
Approach LOS	F			D				F			D		
Intersection Summary													
HCM Average Control Delay	106.3			HCM Level of Service			F						
HCM Volume to Capacity ratio	1.23												
Actuated Cycle Length (s)	140.0			Sum of lost time (s)			13.0						
Intersection Capacity Utilization	112.3%			ICU Level of Service			H						
Analysis Period (min)	15												
c Critical Lane Group													


















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

28: Forsythia Dr & E Butler Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	0	6	48	0	139	9	947	23	111	1392	23
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		0.90		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		1607		1719	3426		1719	3430	
Flt Permitted		0.50	1.00		0.91		0.12	1.00		0.24	1.00	
Satd. Flow (perm)		906	1538		1475		213	3426		435	3430	
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)	19	0	7	53	0	154	10	1052	26	123	1547	26
RTOR Reduction (vph)	0	0	6	0	101	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	19	1	0	106	0	10	1076	0	123	1572	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)		11.4	11.4		11.4		51.6	51.6		51.6	51.6	
Effective Green, g (s)		11.4	11.4		11.4		51.6	51.6		51.6	51.6	
Actuated g/C Ratio		0.15	0.15		0.15		0.69	0.69		0.69	0.69	
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)		138	234		224		147	2357		299	2360	
v/s Ratio Prot								0.31			c0.46	
v/s Ratio Perm		0.02	0.00		c0.07		0.05			0.28		
v/c Ratio		0.14	0.00		0.47		0.07	0.46		0.41	0.67	
Uniform Delay, d1		27.5	27.0		29.1		3.8	5.3		5.1	6.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		0.89	0.87	
Incremental Delay, d2		0.7	0.0		2.5		0.9	0.6		2.7	1.0	
Delay (s)		28.3	27.0		31.5		4.7	6.0		7.2	6.8	
Level of Service		C	C		C		A	A		A	A	
Approach Delay (s)		27.9			31.5			6.0			6.8	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM Average Control Delay		8.4										
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		75.0										
Intersection Capacity Utilization		75.4%										
Analysis Period (min)		15										
c Critical Lane Group												





















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

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	1026	105	545	931	0	578	0	589	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)		3390		1719	3438		1719		1538			
Flt Permitted		1.00		0.08	1.00		0.95		1.00			
Satd. Flow (perm)		3390		137	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	1140	117	606	1034	0	642	0	654	0	0	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	79	0	0	0
Lane Group Flow (vph)	0	1252	0	606	1034	0	642	0	575	0	0	0
Turn Type				pm+pt			Prot		custom			
Protected Phases		2		1	6		4					
Permitted Phases				6					4			
Actuated Green, G (s)		47.0		91.0	91.0		47.0		47.0			
Effective Green, g (s)		47.0		91.0	91.0		47.0		47.0			
Actuated g/C Ratio		0.31		0.61	0.61		0.31		0.31			
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)		1062		484	2086		539		482			
v/s Ratio Prot		0.37		c0.32	0.30		0.37					
v/s Ratio Perm				c0.44					c0.37			
v/c Ratio		1.18		1.25	0.50		1.19		1.19			
Uniform Delay, d1		51.5		48.0	16.6		51.5		51.5			
Progression Factor		0.91		1.16	0.15		1.00		1.00			
Incremental Delay, d2		89.5		122.6	0.5		103.3		105.8			
Delay (s)		136.3		178.5	2.9		154.8		157.3			
Level of Service		F		F	A		F		F			
Approach Delay (s)		136.3			67.8			156.1			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM Average Control Delay			115.6			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			108.9%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												
























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

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)	376	1228	0	0	1417	1062	0	0	0	59	0	309
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	0.05	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	94	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)	418	1364	0	0	1574	1180	0	0	0	66	0	343
RTOR Reduction (vph)	0	0	0	0	0	248	0	0	0	0	0	87
Lane Group Flow (vph)	418	1364	0	0	1574	932	0	0	0	66	0	256
Turn Type	pm+pt		custom				custom				custom	
Protected Phases	5	2										8
Permitted Phases	2				6	6				8		
Actuated Green, G (s)	115.0	115.0			81.0	81.0				23.0		23.0
Effective Green, g (s)	115.0	115.0			81.0	81.0				23.0		23.0
Actuated g/C Ratio	0.77	0.77			0.54	0.54				0.15		0.15
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)	375	2636			1857	831				264		236
v/s Ratio Prot	c0.21	0.40										c0.17
v/s Ratio Perm	c0.64				0.46	0.61				0.04		
v/c Ratio	1.11	0.52			0.85	1.12				0.25		1.08
Uniform Delay, d1	51.8	6.8			29.3	34.5				55.9		63.5
Progression Factor	0.77	1.84			1.00	1.00				1.00		1.00
Incremental Delay, d2	55.5	0.1			5.0	70.3				0.8		82.7
Delay (s)	95.2	12.6			34.3	104.8				56.7		146.2
Level of Service	F	B			C	F				E		F
Approach Delay (s)		31.9			64.5			0.0			131.8	
Approach LOS		C			E			A			F	
Intersection Summary												
HCM Average Control Delay			58.3		HCM Level of Service					E		
HCM Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			150.0		Sum of lost time (s)					12.0		
Intersection Capacity Utilization			108.9%		ICU Level of Service					G		
Analysis Period (min)			15									
c Critical Lane Group												




















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

34: Frontage Road & Roper Mountain Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	590	954	80	88	280	1973	304	21	1530	40
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	
Frt	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	1547		1633	1649	1538	1719	3438	1538	1719	3425	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.06	1.00	1.00	0.07	1.00	
Satd. Flow (perm)	1719	1547		1633	1649	1538	117	3438	1538	129	3425	
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)	44	22	656	1060	89	98	311	2192	338	23	1700	44
RTOR Reduction (vph)	0	118	0	0	0	15	0	0	78	0	1	0
Lane Group Flow (vph)	44	560	0	572	577	83	311	2192	261	23	1743	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)	25.0	25.0		32.0	32.0	32.0	75.0	75.0	75.0	56.0	56.0	
Effective Green, g (s)	25.0	25.0		32.0	32.0	32.0	75.0	75.0	75.0	56.0	56.0	
Actuated g/C Ratio	0.17	0.17		0.21	0.21	0.21	0.50	0.50	0.50	0.37	0.37	
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)	287	258		348	352	328	197	1719	769	48	1279	
v/s Ratio Prot	0.03	c0.36		c0.35	0.35		0.14	c0.64			0.51	
v/s Ratio Perm						0.05	c0.65		0.17	0.18		
v/c Ratio	0.15	2.17		1.64	1.64	0.25	1.58	1.28	0.34	0.48	1.36	
Uniform Delay, d1	53.4	62.5		59.0	59.0	49.1	48.0	37.5	22.6	35.9	47.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	538.8		302.3	300.2	0.8	283.3	128.5	0.5	14.4	168.3	
Delay (s)	54.0	601.3		361.3	359.2	49.9	331.4	166.0	23.1	50.3	215.3	
Level of Service	D	F		F	F	D	F	F	C	D	F	
Approach Delay (s)		567.9			335.9			167.1			213.1	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			255.5			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.67									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			161.5%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												













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

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	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	34	0	0	0	0	0	175
Lane Group Flow (vph)	0	0	0	381	382	807	596	2000	0	0	2534	706
Turn Type				Perm		Perm	Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Actuated Green, G (s)				31.0	31.0	31.0	19.0	107.0			82.0	82.0
Effective Green, g (s)				31.0	31.0	31.0	19.0	107.0			82.0	82.0
Actuated g/C Ratio				0.21	0.21	0.21	0.13	0.71			0.55	0.55
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)				337	337	559	422	2452			1879	841
v/s Ratio Prot							c0.18	0.58			c0.74	
v/s Ratio Perm				0.23	0.23	c0.30						0.46
v/c Ratio				1.13	1.13	1.44	1.41	0.82			1.35	0.84
Uniform Delay, d1				59.5	59.5	59.5	65.5	14.7			34.0	28.5
Progression Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				89.2	90.3	209.5	199.2	2.5			160.5	8.3
Delay (s)				148.7	149.8	269.0	264.7	17.2			194.5	36.8
Level of Service				F	F	F	F	B			F	D
Approach Delay (s)		0.0			212.1			74.0			153.8	
Approach LOS		A			F			E			F	
Intersection Summary												
HCM Average Control Delay			138.9				HCM Level of Service				F	
HCM Volume to Capacity ratio			1.38									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			183.6%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												





















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

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	1627	1068	1825	1143	0	709	0	705	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	0.07	1.00		0.95	0.95	1.00			
Satd. Flow (perm)		4940	1538	123	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	1808	1187	2028	1270	0	788	0	783	0	0	0
RTOR Reduction (vph)	0	0	153	0	0	0	0	0	212	0	0	0
Lane Group Flow (vph)	0	1808	1034	2028	1270	0	394	394	571	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)		52.6	52.6	121.2	120.6		16.9	16.9	16.9			
Effective Green, g (s)		52.6	52.6	121.2	120.6		16.9	16.9	16.9			
Actuated g/C Ratio		0.35	0.35	0.81	0.80		0.11	0.11	0.11			
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)		1732	539	761	2764		184	184	305			
v/s Ratio Prot		0.37		c1.10	0.37							
v/s Ratio Perm			0.67	c1.05			c0.24	0.24	0.21			
v/c Ratio		1.04	1.92	2.66	0.46		2.14	2.14	1.87			
Uniform Delay, d1		48.7	48.7	39.4	4.6		66.5	66.5	66.5			
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d2		34.1	419.9	753.0	0.2		531.3	531.3	404.6			
Delay (s)		82.8	468.6	792.4	4.8		597.9	597.9	471.2			
Level of Service		F	F	F	A		F	F	F			
Approach Delay (s)		235.7			489.1			534.7			0.0	
Approach LOS		F			F			F			A	
Intersection Summary												
HCM Average Control Delay			401.7			HCM Level of Service			F			
HCM Volume to Capacity ratio			2.56									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			11.9			
Intersection Capacity Utilization			183.6%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

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

37: Roper Mountain Road & Congaree Road

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	167	1677	2	10	1233	605	1006	2	519	6	2	12
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			0.96	1.00
Satd. Flow (prot)	1719	4939			3437	1538	1719	1539			1742	1538
Flt Permitted	0.09	1.00			0.92	1.00	0.75	1.00			0.78	1.00
Satd. Flow (perm)	156	4939			3154	1538	1360	1539			1414	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)	186	1863	2	11	1370	672	1118	2	577	7	2	13
RTOR Reduction (vph)	0	0	0	0	0	332	0	62	0	0	0	2
Lane Group Flow (vph)	186	1865	0	0	1381	340	1118	517	0	0	9	11
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)	50.6	50.6			40.6	40.6	46.9	46.9			46.9	46.9
Effective Green, g (s)	50.6	50.6			40.6	40.6	46.9	46.9			46.9	46.9
Actuated g/C Ratio	0.46	0.46			0.37	0.37	0.43	0.43			0.43	0.43
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)	131	2272			1164	568	580	656			603	656
v/s Ratio Prot	c0.05	0.38						0.34				
v/s Ratio Perm	c0.60				0.44	0.22	c0.82				0.01	0.01
v/c Ratio	1.42	0.82			1.19	0.60	1.93	0.79			0.01	0.02
Uniform Delay, d1	29.7	25.8			34.7	28.1	31.6	27.3			18.2	18.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	227.5	2.8			92.8	2.5	423.8	7.2			0.0	0.0
Delay (s)	257.2	28.6			127.5	30.6	455.3	34.4			18.2	18.2
Level of Service	F	C			F	C	F	C			B	B
Approach Delay (s)		49.3			95.8			311.7			18.2	
Approach LOS		D			F			F			B	
Intersection Summary												
HCM Average Control Delay			142.0			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.61									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			11.9			
Intersection Capacity Utilization			145.0%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												