























Appendix C

Existing Intersection Levels of Service

HCM Signalized Intersection Capacity Analysis
















Existing AM

1: E. Glebe Road & US Route 1

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00					1.00	0.95			0.95	
Frt	1.00	0.85					1.00	1.00			0.99	
Flt Protected	0.95	1.00					0.95	1.00			1.00	
Satd. Flow (prot)	1770	1583					1770	3539			3520	
Flt Permitted	0.95	1.00					0.22	1.00			1.00	
Satd. Flow (perm)	1770	1583					413	3539			3520	
Volume (vph)	247	0	152	0	0	0	155	1824	0	0	930	35
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	260	0	160	0	0	0	163	1920	0	0	979	37
RTOR Reduction (vph)	0	134	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	260	27	0	0	0	0	163	1920	0	0	1015	0
Turn Type	pm+pt			Perm			pm+pt		Perm	pm+pt		
Protected Phases	7	4			8		5	2		2	1	6
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	20.2	20.2					97.8	97.8			82.7	
Effective Green, g (s)	21.2	21.2					98.8	98.8			83.7	
Actuated g/C Ratio	0.17	0.17					0.77	0.77			0.65	
Clearance Time (s)	5.0	5.0					5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	293	262					436	2732			2302	
v/s Ratio Prot	c0.15	0.02					0.03	c0.54			0.29	
v/s Ratio Perm							0.26					
v/c Ratio	0.89	0.10					0.37	0.70			0.44	
Uniform Delay, d1	52.2	45.3					5.7	7.3			10.8	
Progression Factor	1.00	1.00					1.26	0.86			1.00	
Incremental Delay, d2	25.9	0.2					0.5	1.5			0.6	
Delay (s)	78.1	45.5					7.6	7.7			11.4	
Level of Service	E	D					A	A			B	
Approach Delay (s)		65.7			0.0			7.7			11.4	
Approach LOS		E			A			A			B	
Intersection Summary												
HCM Average Control Delay			15.7				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			128.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			80.1%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
3: Swann Ave. & US Route 1
















Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		1.00						0.95			0.95	
Frt		0.98						1.00			1.00	
Flt Protected		0.96						1.00			1.00	
Satd. Flow (prot)		1749						3538			3530	
Flt Permitted		0.96						0.95			1.00	
Satd. Flow (perm)		1749						3355			3530	
Volume (vph)	30	0	6	0	0	0	9	1902	0	0	1119	19
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	0	6	0	0	0	9	2002	0	0	1178	20
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	32	0	0	0	0	0	2011	0	0	1198	0
Turn Type	Perm						Perm					
Protected Phases		4						2			6	
Permitted Phases	4						2					
Actuated Green, G (s)		5.4						112.6			112.6	
Effective Green, g (s)		6.4						113.6			113.6	
Actuated g/C Ratio		0.05						0.89			0.89	
Clearance Time (s)		5.0						5.0			5.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		87						2978			3133	
v/s Ratio Prot											0.34	
v/s Ratio Perm		0.02						c0.60				
v/c Ratio		0.37						0.68			0.38	
Uniform Delay, d1		58.9						2.0			1.2	
Progression Factor		1.00						0.08			2.16	
Incremental Delay, d2		2.7						0.9			0.3	
Delay (s)		61.5						1.1			3.0	
Level of Service		E						A			A	
Approach Delay (s)		61.5			0.0			1.1			3.0	
Approach LOS		E			A			A			A	
Intersection Summary												
HCM Average Control Delay		2.5						HCM Level of Service			A	
HCM Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		128.0						Sum of lost time (s)			8.0	
Intersection Capacity Utilization		69.6%						ICU Level of Service			C	
Analysis Period (min)		15										
c Critical Lane Group												

Existing AM





















HCM Signalized Intersection Capacity Analysis
4: Custis Ave. & US Route 1

Existing AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0						4.0			4.0		
Lane Util. Factor		1.00						0.95			0.95		
Fr _t		0.95						1.00			1.00		
Fl _t Protected		0.97						1.00			1.00		
Satd. Flow (prot)		1719						3539			3530		
Fl _t Permitted		0.97						0.95			1.00		
Satd. Flow (perm)		1719						3362			3530		
Volume (vph)	57	0	30	0	0	0	7	1909	0	0	1183	21	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	60	0	32	0	0	0	7	2009	0	0	1245	22	
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	1	0	
Lane Group Flow (vph)	0	75	0	0	0	0	0	2016	0	0	1266	0	
Turn Type	Perm						Perm						
Protected Phases		4							2		6		
Permitted Phases	4						2						
Actuated Green, G (s)		10.5							107.5		107.5		
Effective Green, g (s)		11.5							108.5		108.5		
Actuated g/C Ratio		0.09							0.85		0.85		
Clearance Time (s)		5.0							5.0		5.0		
Vehicle Extension (s)		3.0							3.0		3.0		
Lane Grp Cap (vph)		154							2850		2992		
v/s Ratio Prot											0.36		
v/s Ratio Perm		0.04							0.60				
v/c Ratio		0.49							0.71		0.42		
Uniform Delay, d ₁		55.4							3.7		2.3		
Progression Factor		1.00							0.45		1.33		
Incremental Delay, d ₂		2.4							1.0		0.4		
Delay (s)		57.8							2.7		3.5		
Level of Service		E							A		A		
Approach Delay (s)		57.8				0.0			2.7		3.5		
Approach LOS		E				A			A		A		
Intersection Summary													
HCM Average Control Delay		4.5				HCM Level of Service				A			
HCM Volume to Capacity ratio		0.69											
Actuated Cycle Length (s)		128.0				Sum of lost time (s)				8.0			
Intersection Capacity Utilization		69.7%				ICU Level of Service				C			
Analysis Period (min)		15											
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
5: Howell Ave. & US Route 1

Existing AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0					4.0	4.0			4.0		
Lane Util. Factor		1.00					1.00	0.95			0.95		
Frt		0.92					1.00	1.00			1.00		
Flt Protected		0.98					0.95	1.00			1.00		
Satd. Flow (prot)		1686					1770	3539			3537		
Flt Permitted		0.86					0.23	1.00			1.00		
Satd. Flow (perm)		1476					433	3539			3537		
Volume (vph)	11	0	14	0	0	0	6	2281	0	0	1118	4	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	12	0	15	0	0	0	6	2401	0	0	1177	4	
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	13	0	0	0	0	6	2401	0	0	1181	0	
Turn Type	Perm			Perm			Perm		Perm	Perm			
Protected Phases		4			8			2				6	
Permitted Phases	4			8			2		2	6			
Actuated Green, G (s)		4.5					113.5	113.5			113.5		
Effective Green, g (s)		5.5					114.5	114.5			114.5		
Actuated g/C Ratio		0.04					0.89	0.89			0.89		
Clearance Time (s)		5.0					5.0	5.0			5.0		
Vehicle Extension (s)		3.0					3.0	3.0			3.0		
Lane Grp Cap (vph)		63					387	3166			3164		
v/s Ratio Prot								c0.68			0.33		
v/s Ratio Perm		c0.01					0.01						
v/c Ratio		0.20					0.02	0.76			0.37		
Uniform Delay, d1		59.1					0.7	2.2			1.1		
Progression Factor		1.00					1.00	1.00			0.77		
Incremental Delay, d2		1.6					0.1	1.8			0.3		
Delay (s)		60.7					0.8	4.0			1.1		
Level of Service		E					A	A			A		
Approach Delay (s)		60.7		0.0				4.0			1.1		
Approach LOS		E		A				A			A		
Intersection Summary													
HCM Average Control Delay			3.5									HCM Level of Service	A
HCM Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			128.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			75.1%									ICU Level of Service	D
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
6: Monroe Ave & US Route 1

Existing AM














Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.15	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	283	3539	3539	1583
Volume (vph)	197	480	202	1705	1141	114
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	207	505	213	1795	1201	120
RTOR Reduction (vph)	0	240	0	0	0	19
Lane Group Flow (vph)	207	265	213	1795	1201	101
Turn Type		Perm	pm+pt		Perm	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	25.4	25.4	92.6	92.6	74.9	74.9
Effective Green, g (s)	26.4	26.4	93.6	93.6	75.9	75.9
Actuated g/C Ratio	0.21	0.21	0.73	0.73	0.59	0.59
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	365	326	366	2588	2099	939
v/s Ratio Prot	0.12		0.06	c0.51	0.34	
v/s Ratio Perm		c0.17	0.36			0.06
v/c Ratio	0.57	0.81	0.58	0.69	0.57	0.11
Uniform Delay, d1	45.7	48.5	11.3	9.4	16.0	11.3
Progression Factor	1.00	1.00	1.18	1.08	1.00	1.00
Incremental Delay, d2	2.0	14.3	1.1	0.7	1.1	0.2
Delay (s)	47.7	62.8	14.5	10.9	17.2	11.6
Level of Service	D	E	B	B	B	B
Approach Delay (s)	58.4			11.2	16.7	
Approach LOS	E			B	B	

Intersection Summary

HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
7: Slaters Lane & US Route 1























Existing AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2787	3539	1583	1770	3539
Flt Permitted		1.00	1.00	1.00	0.06	1.00
Satd. Flow (perm)		2787	3539	1583	110	3539
Volume (vph)	0	177	1654	442	485	1201
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	186	1741	465	511	1264
RTOR Reduction (vph)	0	177	0	157	0	0
Lane Group Flow (vph)	0	9	1741	308	511	1264
Turn Type		custom		Perm	pm+pt	
Protected Phases			2		1	6
Permitted Phases		8		2		6
Actuated Green, G (s)		5.5	63.0	63.0	112.5	112.5
Effective Green, g (s)		6.5	64.0	64.0	113.5	113.5
Actuated g/C Ratio		0.05	0.50	0.50	0.89	0.89
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		142	1770	792	688	3138
v/s Ratio Prot			c0.49		c0.26	0.36
v/s Ratio Perm		c0.00		0.19	0.40	
v/c Ratio		0.07	0.98	0.39	0.74	0.40
Uniform Delay, d1		57.9	31.5	19.9	32.2	1.3
Progression Factor		1.00	1.00	1.00	0.81	2.38
Incremental Delay, d2		0.2	17.8	1.4	3.5	0.3
Delay (s)		58.1	49.3	21.3	29.7	3.3
Level of Service		E	D	C	C	A
Approach Delay (s)	58.1		43.4			10.9
Approach LOS	E		D			B
Intersection Summary						
HCM Average Control Delay			30.2		HCM Level of Service	C
HCM Volume to Capacity ratio			0.84			
Actuated Cycle Length (s)			128.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			80.6%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
















Existing PM

1: E. Glebe Road & US Route 1

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	1.00		1.00	1.00		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)	1770	1590		1770	1863		1770	3539		1770	3493	
Flt Permitted	0.50	1.00		1.00	1.00		0.05	1.00		0.23	1.00	
Satd. Flow (perm)	931	1590		1863	1863		102	3539		436	3493	
Volume (vph)	159	4	168	8	5	0	250	1143	0	5	1639	157
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	4	177	8	5	0	263	1203	0	5	1725	165
RTOR Reduction (vph)	0	114	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	167	67	0	8	5	0	263	1203	0	5	1886	0
Turn Type	pm+pt			Perm			pm+pt			Perm		pm+pt
Protected Phases	7	4			8		5	2		2	1	6
Permitted Phases	4			8			2		2		6	
Actuated Green, G (s)	19.8	19.8		3.0	3.0		98.2	92.0		69.5	68.3	
Effective Green, g (s)	20.8	20.8		4.0	4.0		99.2	93.0		71.5	69.3	
Actuated g/C Ratio	0.16	0.16		0.03	0.03		0.78	0.73		0.56	0.54	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	258		58	58		417	2571		266	1891	
v/s Ratio Prot	c0.07	0.04			0.00		c0.13	0.34		0.00	c0.54	
v/s Ratio Perm	c0.04			0.00			0.36			0.01		
v/c Ratio	0.71	0.26		0.14	0.09		0.63	0.47		0.02	1.00	
Uniform Delay, d1	49.6	46.9		60.3	60.2		38.0	7.2		12.5	29.3	
Progression Factor	1.00	1.00		1.00	1.00		1.10	0.89		1.00	1.00	
Incremental Delay, d2	9.7	0.5		1.1	0.6		2.7	0.5		0.0	20.1	
Delay (s)	59.3	47.4		61.4	60.9		44.4	7.0		12.5	49.3	
Level of Service	E	D		E	E		D	A		B	D	
Approach Delay (s)		53.1			61.2			13.7			49.2	
Approach LOS		D			E			B			D	
Intersection Summary												
HCM Average Control Delay			35.7	HCM Level of Service				D				
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			128.0	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			93.0%	ICU Level of Service				F				
Analysis Period (min)			15									
c Critical Lane Group												
















HCM Signalized Intersection Capacity Analysis
3: Swann Ave. & US Route 1

Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		1.00						0.95			0.95	
Frt		0.96						1.00			1.00	
Flt Protected		0.97						1.00			1.00	
Satd. Flow (prot)		1724						3539			3535	
Flt Permitted		0.97						0.95			1.00	
Satd. Flow (perm)		1724						3367			3535	
Volume (vph)	39	0	18	0	0	0	3	1419	0	0	1771	14
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	0	19	0	0	0	3	1494	0	0	1864	15
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	44	0	0	0	0	0	1497	0	0	1879	0
Turn Type	Perm						Perm					
Protected Phases		4						2			6	
Permitted Phases	4						2					
Actuated Green, G (s)		7.4						110.6			110.6	
Effective Green, g (s)		8.4						111.6			111.6	
Actuated g/C Ratio		0.07						0.87			0.87	
Clearance Time (s)		5.0						5.0			5.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		113						2936			3082	
v/s Ratio Prot											c0.53	
v/s Ratio Perm		0.03						0.44				
v/c Ratio		0.39						0.51			0.61	
Uniform Delay, d1		57.3						1.9			2.2	
Progression Factor		1.00						0.81			0.28	
Incremental Delay, d2		2.2						0.5			0.9	
Delay (s)		59.6						2.1			1.5	
Level of Service		E						A			A	
Approach Delay (s)		59.6			0.0			2.1			1.5	
Approach LOS		E			A			A			A	
Intersection Summary												
HCM Average Control Delay			2.8					HCM Level of Service			A	
HCM Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			128.0					Sum of lost time (s)			8.0	
Intersection Capacity Utilization			61.4%					ICU Level of Service			B	
Analysis Period (min)			15									
c Critical Lane Group												





















HCM Signalized Intersection Capacity Analysis
4: Custis Ave. & US Route 1

Existing PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0						4.0			4.0		
Lane Util. Factor		1.00						0.95			0.95		
Frt		0.95						1.00			1.00		
Flt Protected		0.97						1.00			1.00		
Satd. Flow (prot)		1711						3537			3529		
Flt Permitted		0.97						0.88			1.00		
Satd. Flow (perm)		1711						3105			3529		
Volume (vph)	20	0	13	0	0	0	21	1409	0	0	1812	36	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	21	0	14	0	0	0	22	1483	0	0	1907	38	
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	22	0	0	0	0	0	1505	0	0	1945	0	
Turn Type	Perm						Perm						
Protected Phases		4							2		6		
Permitted Phases	4						2						
Actuated Green, G (s)		4.9							113.1		113.1		
Effective Green, g (s)		5.9							114.1		114.1		
Actuated g/C Ratio		0.05							0.89		0.89		
Clearance Time (s)		5.0							5.0		5.0		
Vehicle Extension (s)		3.0							3.0		3.0		
Lane Grp Cap (vph)		79							2768		3146		
v/s Ratio Prot											c0.55		
v/s Ratio Perm		0.01							0.48				
v/c Ratio		0.27							0.54		0.62		
Uniform Delay, d1		59.0							1.5		1.7		
Progression Factor		1.00							1.00		0.20		
Incremental Delay, d2		1.9							0.6		0.8		
Delay (s)		60.9							2.1		1.1		
Level of Service		E							A		A		
Approach Delay (s)		60.9				0.0			2.1		1.1		
Approach LOS		E				A			A		A		
Intersection Summary													
HCM Average Control Delay		2.1				HCM Level of Service				A			
HCM Volume to Capacity ratio		0.60											
Actuated Cycle Length (s)		128.0				Sum of lost time (s)				8.0			
Intersection Capacity Utilization		63.2%				ICU Level of Service				B			
Analysis Period (min)		15											
c Critical Lane Group													















HCM Signalized Intersection Capacity Analysis
5: Howell Ave. & US Route 1

Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0					4.0	4.0			4.0	
Lane Util. Factor		1.00					1.00	0.95			0.95	
Frt		0.91					1.00	1.00			1.00	
Flt Protected		0.98					0.95	1.00			1.00	
Satd. Flow (prot)		1672					1770	3539			3535	
Flt Permitted		1.00					0.11	1.00			1.00	
Satd. Flow (perm)		1703					198	3539			3535	
Volume (vph)	4	0	7	0	0	0	32	1850	0	0	1790	14
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	0	7	0	0	0	34	1947	0	0	1884	15
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	0	0	34	1947	0	0	1899	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		1.5					116.5	116.5			116.5	
Effective Green, g (s)		2.5					117.5	117.5			117.5	
Actuated g/C Ratio		0.02					0.92	0.92			0.92	
Clearance Time (s)		5.0					5.0	5.0			5.0	
Vehicle Extension (s)		3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)		33					182	3249			3245	
v/s Ratio Prot								c0.55			0.54	
v/s Ratio Perm		c0.00					0.17					
v/c Ratio		0.13					0.19	0.60			0.59	
Uniform Delay, d1		61.7					0.5	1.0			0.9	
Progression Factor		1.00					1.00	1.00			0.47	
Incremental Delay, d2		1.7					2.3	0.8			0.6	
Delay (s)		63.4					2.8	1.8			1.1	
Level of Service		E					A	A			A	
Approach Delay (s)		63.4		0.0				1.8			1.1	
Approach LOS		E		A				A			A	
Intersection Summary												
HCM Average Control Delay			1.6				HCM Level of Service				A	
HCM Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			128.0				Sum of lost time (s)				8.0	
Intersection Capacity Utilization			63.1%				ICU Level of Service				B	
Analysis Period (min)			15									
c Critical Lane Group												
















HCM Signalized Intersection Capacity Analysis
6: Monroe & US Route 1

Existing PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.06	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	106	3539	3539	1583
Volume (vph)	88	222	370	1332	1559	262
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	234	389	1402	1641	276
RTOR Reduction (vph)	0	211	0	0	0	39
Lane Group Flow (vph)	93	23	389	1402	1641	237
Turn Type		Perm	pm+pt		Perm	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	11.8	11.8	106.2	106.2	73.8	73.8
Effective Green, g (s)	12.8	12.8	107.2	107.2	74.8	74.8
Actuated g/C Ratio	0.10	0.10	0.84	0.84	0.58	0.58
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	158	458	2964	2068	925
v/s Ratio Prot	c0.05		c0.19	0.40	0.46	
v/s Ratio Perm		0.01	c0.53			0.15
v/c Ratio	0.53	0.15	0.85	0.47	0.79	0.26
Uniform Delay, d1	54.7	52.6	39.5	2.8	20.6	13.0
Progression Factor	1.00	1.00	1.02	0.14	1.00	1.00
Incremental Delay, d2	2.8	0.4	10.9	0.4	3.2	0.7
Delay (s)	57.5	53.1	51.2	0.8	23.8	13.7
Level of Service	E	D	D	A	C	B
Approach Delay (s)	54.3			11.7	22.4	
Approach LOS	D			B	C	
Intersection Summary						
HCM Average Control Delay			20.2		HCM Level of Service	C
HCM Volume to Capacity ratio			0.80			
Actuated Cycle Length (s)			128.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			80.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
7: Slaters Lane & US Route 1

Existing PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		 	 		 	 
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2787	3539	1583	1770	3539
Flt Permitted		1.00	1.00	1.00	0.09	1.00
Satd. Flow (perm)		2787	3539	1583	160	3539
Volume (vph)	0	400	1481	379	340	1685
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	421	1559	399	358	1774
RTOR Reduction (vph)	0	400	0	105	0	0
Lane Group Flow (vph)	0	21	1559	294	358	1774
Turn Type		custom		Perm	pm+pt	
Protected Phases			2		1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)		5.5	79.3	79.3	112.5	112.5
Effective Green, g (s)		6.5	80.3	80.3	113.5	113.5
Actuated g/C Ratio		0.05	0.63	0.63	0.89	0.89
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		142	2220	993	509	3138
v/s Ratio Prot			0.44		c0.16	0.50
v/s Ratio Perm		c0.01		0.19	c0.46	
v/c Ratio		0.15	0.70	0.30	0.70	0.57
Uniform Delay, d1		58.1	15.9	10.9	31.0	1.6
Progression Factor		1.00	1.00	1.00	0.61	2.89
Incremental Delay, d2		0.5	1.9	0.8	3.2	0.5
Delay (s)		58.6	17.8	11.7	22.2	5.3
Level of Service		E	B	B	C	A
Approach Delay (s)	58.6		16.5			8.1
Approach LOS	E		B			A
Intersection Summary						
HCM Average Control Delay			16.5		HCM Level of Service	B
HCM Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			128.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			67.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						