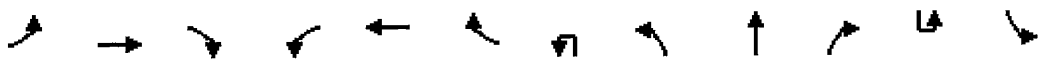
CAPACITY ANALYSIS – PHASE II WITH DICKINSON STREET RAMP

1: I-95 NB On Ramp & Chris Columbus Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
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					0.95			1.00	0.91			1.00
Frt					0.95			1.00	1.00			1.00
Flt Protected					0.98			0.95	1.00			0.95
Satd. Flow (prot)					3276			1770	5075			1770
Flt Permitted					0.98			0.95	1.00			0.95
Satd. Flow (perm)					3276			1770	5075			1770
Volume (vph)	0	0	0	10	5	8	4	377	1686	24	5	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	5	9	4	410	1833	26	5	18
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	0	0	0	16	0	0	414	1858	0	0	23
Turn Type				Split			Prot	Prot			Prot	Prot
Protected Phases				8	8		1	1	6		5	5
Permitted Phases												
Actuated Green, G (s)					2.8			31.3	69.2			2.0
Effective Green, g (s)					4.8			32.3	70.2			3.0
Actuated g/C Ratio					0.05			0.36	0.78			0.03
Clearance Time (s)					6.0			5.0	5.0			5.0
Vehicle Extension (s)					3.0			3.0	3.0			3.0
Lane Grp Cap (vph)					175			635	3959			59
v/s Ratio Prot					c0.01			c0.23	0.37			0.01
v/s Ratio Perm												
v/c Ratio					0.09			0.65	0.47			0.39
Uniform Delay, d1					40.5			24.1	3.4			42.6
Progression Factor					1.00			0.52	0.31			1.00
Incremental Delay, d2					0.2			1.6	0.3			4.2
Delay (s)					40.8			14.3	1.3			46.8
Level of Service					D			B	A			D
Approach Delay (s)		0.0			40.8				3.7			
Approach LOS		A			D				A			

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

1: I-95 NB On Ramp & Chris Columbus Blvd.

Movement	SBT	SBR
Lane Configurations	↑↑↑↱	
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	0.91	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5018	
Flt Permitted	1.00	
Satd. Flow (perm)	5018	
Volume (vph)	1405	136
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	1527	148
RTOR Reduction (vph)	12	0
Lane Group Flow (vph)	1663	0
Turn Type		
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	39.9	
Effective Green, g (s)	40.9	
Actuated g/C Ratio	0.45	
Clearance Time (s)	5.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2280	
v/s Ratio Prot	c0.33	
v/s Ratio Perm		
v/c Ratio	0.73	
Uniform Delay, d1	20.0	
Progression Factor	1.00	
Incremental Delay, d2	2.1	
Delay (s)	22.1	
Level of Service	C	
Approach Delay (s)	22.5	
Approach LOS	C	

Intersection Summary

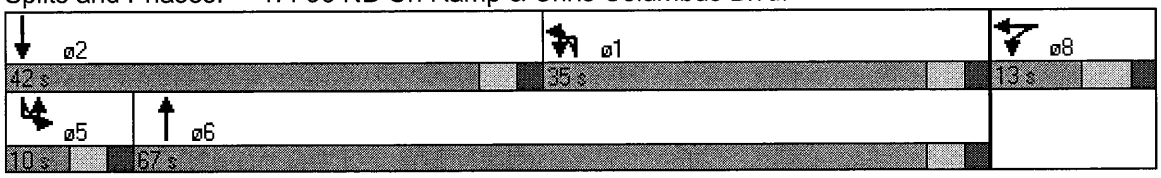
1: I-95 NB On Ramp & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		152		0		320
Storage Lanes	0		0	0		0		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50		50	50	50		50	50
Trailing Detector (ft)				0	0		0	0	0		0	0
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Right Turn on Red			Yes			Yes				Yes		
Link Speed (mph)		30			30				30			
Link Distance (ft)		369			514				1103			
Travel Time (s)		8.4			11.7				25.1			
Volume (vph)	0	0	0	10	5	8	4	377	1686	24	5	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Turn Type				Split			Prot	Prot			Prot	Prot
Protected Phases				8	8		1	1	6		5	5
Permitted Phases												
Detector Phases				8	8		1	1	6		5	5
Minimum Initial (s)				7.0	7.0		4.6	4.6	34.0		4.6	4.6
Minimum Split (s)				13.0	13.0		10.0	10.0	53.0		10.0	10.0
Total Split (s)	0.0	0.0	0.0	13.0	13.0	0.0	35.0	35.0	67.0	0.0	10.0	10.0
Total Split (%)	0.0%	0.0%	0.0%	14.4%	14.4%	0.0%	38.9%	38.9%	74.4%	0.0%	11.1%	11.1%
Yellow Time (s)				4.0	4.0		3.0	3.0	3.0		3.0	3.0
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0		2.0	2.0
Lead/Lag							Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Recall Mode				None	None		None	None	C-Min		None	None

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 76 (84%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: I-95 NB On Ramp & Chris Columbus Blvd.



1: I-95 NB On Ramp & Chris Columbus Blvd.

Lane Group	SBT	SBR
Lane Configurations		
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Total Lost Time (s)	4.0	4.0
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)		9
Right Turn on Red		Yes
Link Speed (mph)	30	
Link Distance (ft)	527	
Travel Time (s)	12.0	
Volume (vph)	1405	136
Peak Hour Factor	0.92	0.92
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phases	2	
Minimum Initial (s)	34.0	
Minimum Split (s)	39.0	
Total Split (s)	42.0	0.0
Total Split (%)	46.7%	0.0%
Yellow Time (s)	3.0	
All-Red Time (s)	2.0	
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	

Intersection Summary

2: I-676 On & I-676/95 Off Ramp & Chris Columbus Blvd.

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	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	0.97	0.88	0.97	0.91	1.00	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	3433	2787	3367	4988	1752	4964	
Flt Permitted	0.95	1.00	0.95	1.00	0.14	1.00	
Satd. Flow (perm)	3433	2787	3367	4988	254	4964	
Volume (vph)	143	794	485	1922	11	1294	114
Peak-hour factor, PHF	0.81	0.92	0.80	0.76	0.92	0.92	0.77
Adj. Flow (vph)	177	863	606	2529	12	1407	148
RTOR Reduction (vph)	0	2	0	0	0	14	0
Lane Group Flow (vph)	177	861	606	2529	12	1541	0
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%	3%
Turn Type		pt+ov	Prot		Perm		
Protected Phases	3	3 1	1	6		2	
Permitted Phases					2		
Actuated Green, G (s)	20.0	51.0	25.0	58.0	27.0	27.0	
Effective Green, g (s)	22.0	53.0	27.0	60.0	29.0	29.0	
Actuated g/C Ratio	0.24	0.59	0.30	0.67	0.32	0.32	
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	839	1641	1010	3325	82	1600	
v/s Ratio Prot	0.05	c0.31	0.18	c0.51		c0.31	
v/s Ratio Perm					0.05		
v/c Ratio	0.21	0.52	0.60	0.76	0.15	0.96	
Uniform Delay, d1	27.1	11.0	26.9	10.1	21.7	30.0	
Progression Factor	1.00	1.00	0.93	0.64	0.20	0.46	
Incremental Delay, d2	0.1	0.3	0.8	1.4	2.9	13.0	
Delay (s)	27.2	11.3	25.7	7.9	7.3	26.8	
Level of Service	C	B	C	A	A	C	
Approach Delay (s)	14.0			11.3		26.6	
Approach LOS	B			B		C	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

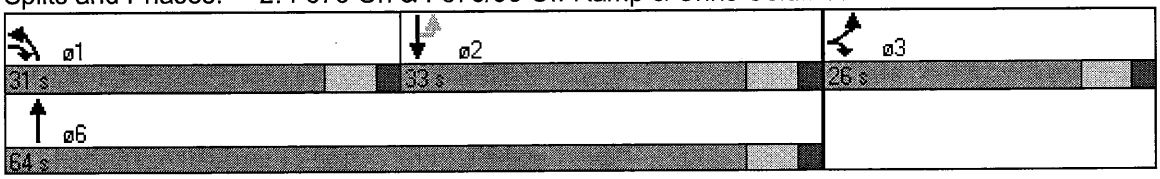
2: I-676 On & I-676/95 Off Ramp & Chris Columbus Blvd.

Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150		150		0
Storage Lanes	2	2	2		1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	
Turning Speed (mph)	15	9	15		9		9
Right Turn on Red		Yes					Yes
Link Speed (mph)	30			30		30	
Link Distance (ft)	589			1367		1103	
Travel Time (s)	13.4			31.1		25.1	
Volume (vph)	143	794	485	1922	11	1294	114
Peak Hour Factor	0.81	0.92	0.80	0.76	0.92	0.92	0.77
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%	3%
Turn Type		pt+ov	Prot		Perm		
Protected Phases	3	3 1	1	6		2	
Permitted Phases					2		
Detector Phases	3	3 1	1	6	2	2	
Minimum Initial (s)	20.0		25.0	27.0	27.0	27.0	
Minimum Split (s)	26.0		31.0	64.0	33.0	33.0	
Total Split (s)	26.0	57.0	31.0	64.0	33.0	33.0	0.0
Total Split (%)	28.9%	63.3%	34.4%	71.1%	36.7%	36.7%	0.0%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	
Lead/Lag			Lead		Lag	Lag	
Lead-Lag Optimize?			Yes		Yes	Yes	
Recall Mode	None		None	C-Max	C-Max	C-Max	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 6 (7%), Referenced to phase 2:SBTU and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-676 On & I-676/95 Off Ramp & Chris Columbus Blvd.



3: Christian St. & Chris Columbus Blvd.

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	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.85			1.00		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1787		1770	5081		1770	4990	
Flt Permitted	0.75	1.00			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1388	1583			1493		1770	5081		1770	4990	
Volume (vph)	258	0	96	15	3	0	189	2123	11	2	1842	262
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	280	0	104	16	3	0	205	2308	12	2	2002	285
RTOR Reduction (vph)	0	80	0	0	0	0	0	0	0	0	22	0
Lane Group Flow (vph)	280	24	0	0	19	0	205	2320	0	2	2265	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)	18.5	18.5			18.5		15.0	54.1		1.4	40.5	
Effective Green, g (s)	20.5	20.5			20.5		16.0	55.1		2.4	41.5	
Actuated g/C Ratio	0.23	0.23			0.23		0.18	0.61		0.03	0.46	
Clearance Time (s)	6.0	6.0			6.0		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	
Lane Grp Cap (vph)	316	361			340		315	3111		47	2301	
v/s Ratio Prot		0.01					0.12	c0.46		0.00	c0.45	
v/s Ratio Perm	c0.20				0.01							
v/c Ratio	0.89	0.07			0.06		0.65	0.75		0.04	0.98	
Uniform Delay, d1	33.6	27.2			27.2		34.4	12.4		42.7	23.9	
Progression Factor	1.00	1.00			1.00		0.64	0.21		1.23	0.56	
Incremental Delay, d2	24.3	0.1			0.1		2.5	0.9		0.2	11.2	
Delay (s)	57.9	27.3			27.2		24.6	3.5		52.7	24.4	
Level of Service	E	C			C		C	A		D	C	
Approach Delay (s)		49.6			27.2			5.2			24.5	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

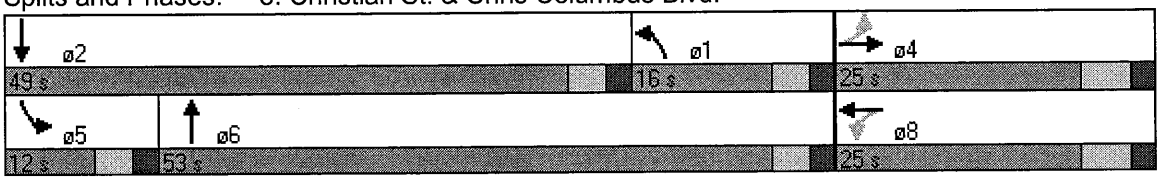
3: Christian St. & Chris Columbus Blvd.

Lane Group	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
Storage Length (ft)	0		0	0		0	130		0	90		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		792			277			631			1367	
Travel Time (s)		18.0			6.3			14.3			31.1	
Volume (vph)	258	0	96	15	3	0	189	2123	11	2	1842	262
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Detector Phases	4	4		8	8		1	6		5	2	
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		12.0	25.0		12.0	25.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	16.0	53.0	0.0	12.0	49.0	0.0
Total Split (%)	27.8%	27.8%	0.0%	27.8%	27.8%	0.0%	17.8%	58.9%	0.0%	13.3%	54.4%	0.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 33 (37%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Christian St. & Chris Columbus Blvd.



4: Washington Ave. & Chris Columbus Blvd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	16	12	12	12	12	12	10	13
Total Lost time (s)	4.0	4.0	4.0		4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.95	0.91	0.95		1.00			0.97	0.91		1.00	0.95
Frt	1.00	1.00	0.85		0.98			1.00	1.00		1.00	1.00
Flt Protected	0.95	0.95	1.00		0.96			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1665	1648	1504		2030			3433	5084		1652	3657
Flt Permitted	0.95	0.95	1.00		0.96			0.95	1.00		0.95	1.00
Satd. Flow (perm)	1665	1648	1504		2030			3433	5084		1652	3657
Volume (vph)	618	0	347	20	2	4	21	303	1699	4	3	1165
Peak-hour factor, PHF	0.80	0.92	0.92	0.69	0.69	0.69	0.92	0.92	0.92	0.92	0.89	0.89
Adj. Flow (vph)	772	0	377	29	3	6	23	329	1847	4	3	1309
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	0	0
Lane Group Flow (vph)	386	386	377	0	32	0	0	352	1851	0	3	1309
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type	Split		Free	Split			Prot	Prot			Prot	
Protected Phases	8	8		4	4		1	1	6		5	2
Permitted Phases			Free									
Actuated Green, G (s)	23.3	23.3	90.0		4.2			11.0	35.5		5.0	29.5
Effective Green, g (s)	25.3	25.3	90.0		6.2			12.0	36.5		6.0	30.5
Actuated g/C Ratio	0.28	0.28	1.00		0.07			0.13	0.41		0.07	0.34
Clearance Time (s)	6.0	6.0			6.0			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
Lane Grp Cap (vph)	468	463	1504		140			458	2062		110	1239
v/s Ratio Prot	0.23	c0.23			0.02			0.10	c0.36		0.00	c0.36
v/s Ratio Perm			0.25									
v/c Ratio	0.82	0.83	0.25		0.23			0.77	0.90		0.03	1.06
Uniform Delay, d1	30.3	30.4	0.0		39.6			37.7	25.0		39.3	29.8
Progression Factor	1.00	1.00	1.00		1.00			0.97	0.71		0.50	0.33
Incremental Delay, d2	11.3	12.2	0.4		0.9			6.7	5.9		0.1	35.8
Delay (s)	41.6	42.6	0.4		40.5			43.2	23.6		19.8	45.7
Level of Service	D	D	A		D			D	C		B	D
Approach Delay (s)		28.4			40.5				26.7			27.4
Approach LOS		C			D				C			C

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

4: Washington Ave. & Chris Columbus Blvd.

Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	802
Peak-hour factor, PHF	0.89
Adj. Flow (vph)	901
RTOR Reduction (vph)	0
Lane Group Flow (vph)	901
Heavy Vehicles (%)	2%
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	90.0
Effective Green, g (s)	90.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	c0.57
v/c Ratio	0.57
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.8
Delay (s)	0.8
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

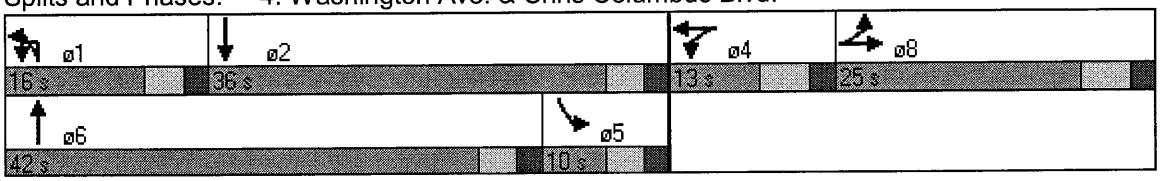
4: Washington Ave. & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	16	12	12	12	12	12	10	13
Storage Length (ft)	0		0	0		0		271		0	150	
Storage Lanes	1		1	0		0		2		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50	50		50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0		0	0
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Right Turn on Red			Yes			Yes				Yes		
Link Speed (mph)		30			30				30			30
Link Distance (ft)		130			507				821			631
Travel Time (s)		3.0			11.5				18.7			14.3
Volume (vph)	618	0	347	20	2	4	21	303	1699	4	3	1165
Peak Hour Factor	0.80	0.92	0.92	0.69	0.69	0.69	0.92	0.92	0.92	0.92	0.89	0.89
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type	Split		Free	Split			Prot	Prot			Prot	
Protected Phases	8	8		4	4		1	1	6		5	2
Permitted Phases			Free									
Detector Phases	8	8		4	4		1	1	6		5	2
Minimum Initial (s)	10.0	10.0		7.0	7.0		11.0	11.0	29.0		5.0	29.0
Minimum Split (s)	16.0	16.0		13.0	13.0		16.0	16.0	34.0		10.0	34.0
Total Split (s)	25.0	25.0	0.0	13.0	13.0	0.0	16.0	16.0	42.0	0.0	10.0	36.0
Total Split (%)	27.8%	27.8%	0.0%	14.4%	14.4%	0.0%	17.8%	17.8%	46.7%	0.0%	11.1%	40.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0		2.0	2.0
Lead/Lag							Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None		None	None		None	None	C-Min		Min	C-Min

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 47 (52%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Washington Ave. & Chris Columbus Blvd.



4: Washington Ave. & Chris Columbus Blvd.

Lane Group	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Storage Length (ft)	0
Storage Lanes	1
Total Lost Time (s)	4.0
Leading Detector (ft)	50
Trailing Detector (ft)	0
Turning Speed (mph)	9
Right Turn on Red	Yes
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	802
Peak Hour Factor	0.89
Heavy Vehicles (%)	2%
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Detector Phases	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	0.0
Total Split (%)	0.0%
Yellow Time (s)	
All-Red Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	

Intersection Summary

5: I-95 NB Off Ramp & Chris Columbus Blvd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
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	0.97		1.00					0.91			1.00	0.91
Frt	1.00		0.85					1.00			1.00	1.00
Flt Protected	0.95		1.00					1.00			0.95	1.00
Satd. Flow (prot)	3433		1583					5085			1805	5036
Flt Permitted	0.95		1.00					1.00			0.95	1.00
Satd. Flow (perm)	3433		1583					5085			1805	5036
Volume (vph)	424	0	358	0	0	0	0	1563	0	8	0	1531
Peak-hour factor, PHF	0.94	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.44	0.92	0.97
Adj. Flow (vph)	451	0	377	0	0	0	0	1699	0	18	0	1578
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	451	0	377	0	0	0	0	1699	0	0	18	1578
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	0%	3%
Turn Type	Prot		Free							Prot	Prot	
Protected Phases	3							6		5	5	2
Permitted Phases			Free									
Actuated Green, G (s)	16.6		90.0					55.9			1.5	62.4
Effective Green, g (s)	18.6		90.0					56.9			2.5	63.4
Actuated g/C Ratio	0.21		1.00					0.63			0.03	0.70
Clearance Time (s)	6.0							5.0			5.0	5.0
Vehicle Extension (s)	3.0							3.0			3.0	3.0
Lane Grp Cap (vph)	709		1583					3215			50	3548
v/s Ratio Prot	c0.13							c0.33			0.01	c0.31
v/s Ratio Perm			0.24									
v/c Ratio	0.64		0.24					0.53			0.36	0.44
Uniform Delay, d1	32.6		0.0					9.1			43.0	5.7
Progression Factor	1.00		1.00					0.77			1.30	0.26
Incremental Delay, d2	1.9		0.4					0.5			2.5	0.2
Delay (s)	34.5		0.4					7.5			58.3	1.7
Level of Service	C		A					A			E	A
Approach Delay (s)		18.9			0.0			7.5				2.4
Approach LOS		B			A			A				A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

5: I-95 NB Off Ramp & Chris Columbus Blvd.

Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	0
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	2%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

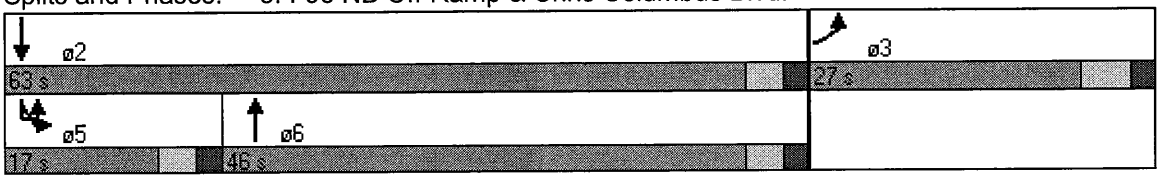
5: I-95 NB Off Ramp & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	148		0		110	
Storage Lanes	2		1	0		0	0		0		1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50		50					50		50	50	50
Trailing Detector (ft)	0		0					0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Right Turn on Red			Yes			Yes			Yes			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		596			153			500				821
Travel Time (s)		13.5			3.5			11.4				18.7
Volume (vph)	424	0	358	0	0	0	0	1563	0	8	0	1531
Peak Hour Factor	0.94	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.44	0.92	0.97
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	0%	3%
Turn Type	Prot		Free							Prot	Prot	
Protected Phases	3							6		5	5	2
Permitted Phases			Free									
Detector Phases	3							6		5	5	2
Minimum Initial (s)	10.0							35.0		7.0	7.0	35.0
Minimum Split (s)	16.0							40.0		12.0	12.0	52.0
Total Split (s)	27.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	0.0	17.0	17.0	63.0
Total Split (%)	30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	51.1%	0.0%	18.9%	18.9%	70.0%
Yellow Time (s)	4.0							3.0		3.0	3.0	3.0
All-Red Time (s)	2.0							2.0		2.0	2.0	2.0
Lead/Lag								Lag		Lead	Lead	
Lead-Lag Optimize?								Yes		Yes	Yes	
Recall Mode	None							C-Min		None	None	C-Min

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 84 (93%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 5: I-95 NB Off Ramp & Chris Columbus Blvd.



5: I-95 NB Off Ramp & Chris Columbus Blvd.

Lane Group	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Total Lost Time (s)	4.0
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	9
Right Turn on Red	Yes
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	0
Peak Hour Factor	0.92
Heavy Vehicles (%)	2%
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phases	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	0.0
Total Split (%)	0.0%
Yellow Time (s)	
All-Red Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Intersection Summary	

6: Reed St. & Chris Columbus Blvd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	12	12	13	12	10	10	11	12	10	10
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0			4.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95			1.00	0.91			1.00
Frt	1.00	1.00	0.85	1.00	0.92			1.00	1.00			1.00
Flt Protected	0.95	0.97	1.00	0.95	1.00			0.95	1.00			0.95
Satd. Flow (prot)	1793	1768	1583	1698	1693			1623	4899			1620
Flt Permitted	0.95	0.97	1.00	0.95	1.00			0.95	1.00			0.95
Satd. Flow (perm)	1793	1768	1583	1698	1693			1623	4899			1620
Volume (vph)	224	41	132	45	39	48	19	169	1280	18	12	84
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.84	0.84	0.75	0.75	0.80	0.47	0.92	0.87
Adj. Flow (vph)	243	45	143	54	46	57	25	225	1600	38	13	97
RTOR Reduction (vph)	0	0	124	0	51	0	0	0	3	0	0	0
Lane Group Flow (vph)	143	145	19	54	52	0	0	250	1635	0	0	110
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	4%	2%	2%	4%	4%
Turn Type	Split		Prot	Split			Prot	Prot			Prot	Prot
Protected Phases	3	3	3	7	7		1	1	6		5	5
Permitted Phases												
Actuated Green, G (s)	10.0	10.0	10.0	8.0	8.0			13.0	42.1			7.9
Effective Green, g (s)	12.0	12.0	12.0	10.0	10.0			14.0	43.1			8.9
Actuated g/C Ratio	0.13	0.13	0.13	0.11	0.11			0.16	0.48			0.10
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			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)	239	236	211	189	188			252	2346			160
v/s Ratio Prot	0.08	c0.08	0.01	c0.03	0.03			c0.15	0.33			0.07
v/s Ratio Perm												
v/c Ratio	0.60	0.61	0.09	0.29	0.28			0.99	0.70			0.69
Uniform Delay, d1	36.7	36.8	34.2	36.7	36.7			37.9	18.3			39.2
Progression Factor	1.00	1.00	1.00	1.00	1.00			0.52	0.13			1.33
Incremental Delay, d2	4.0	4.7	0.2	0.8	0.8			48.4	1.4			10.9
Delay (s)	40.7	41.5	34.4	37.6	37.5			68.2	3.9			63.2
Level of Service	D	D	C	D	D			E	A			E
Approach Delay (s)		38.9			37.5				12.4			
Approach LOS		D			D				B			

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

6: Reed St. & Chris Columbus Blvd.

Movement	SBT	SBR
Lane Configurations	↑↑↑	
Ideal Flow (vphpl)	1900	1900
Lane Width	10	12
Total Lost time (s)	4.0	
Lane Util. Factor	0.91	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	4615	
Flt Permitted	1.00	
Satd. Flow (perm)	4615	
Volume (vph)	1565	227
Peak-hour factor, PHF	0.97	0.80
Adj. Flow (vph)	1613	284
RTOR Reduction (vph)	27	0
Lane Group Flow (vph)	1870	0
Heavy Vehicles (%)	3%	0%
Turn Type		
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	37.0	
Effective Green, g (s)	38.0	
Actuated g/C Ratio	0.42	
Clearance Time (s)	5.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1949	
v/s Ratio Prot	c0.41	
v/s Ratio Perm		
v/c Ratio	0.96	
Uniform Delay, d1	25.3	
Progression Factor	0.32	
Incremental Delay, d2	12.3	
Delay (s)	20.3	
Level of Service	C	
Approach Delay (s)	22.7	
Approach LOS	C	

Intersection Summary

6: Reed St. & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	13	12	12	13	12	10	10	11	12	10	10
Storage Length (ft)	0		0	0		0		100		0		150
Storage Lanes	1		1	1		0		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50	50		50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0		0	0
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Right Turn on Red			Yes			Yes				Yes		
Link Speed (mph)		30			30				30			
Link Distance (ft)		625			893				453			
Travel Time (s)		14.2			20.3				10.3			
Volume (vph)	224	41	132	45	39	48	19	169	1280	18	12	84
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.75	0.75	0.80	0.47	0.92	0.87
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	4%	2%	2%	4%	4%
Turn Type	Split		Prot	Split			Prot	Prot			Prot	Prot
Protected Phases	3	3	3	7	7		1	1	6		5	5
Permitted Phases												
Detector Phases	3	3	3	7	7		1	1	6		5	5
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0	35.0		7.0	7.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		12.0	12.0	40.0		12.0	12.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	0.0	18.0	18.0	45.0	0.0	13.0	13.0
Total Split (%)	17.8%	17.8%	17.8%	17.8%	17.8%	0.0%	20.0%	20.0%	50.0%	0.0%	14.4%	14.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0
Lead/Lag							Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None		None	None	C-Min		None	None

Intersection Summary

Area Type: Other

Cycle Length: 90

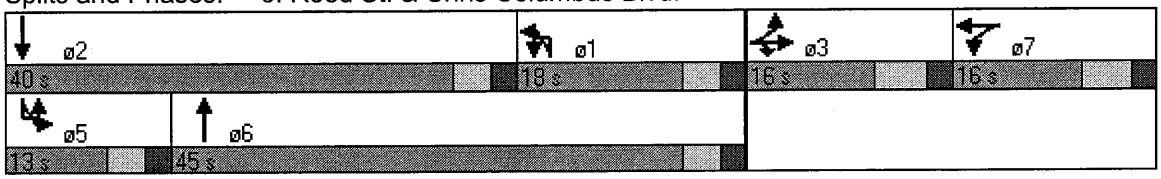
Actuated Cycle Length: 90

Offset: 86 (96%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 6: Reed St. & Chris Columbus Blvd.



6: Reed St. & Chris Columbus Blvd.

Lane Group	SBT	SBR
Lane Configurations	↑↑↑↱	
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	10	12
Storage Length (ft)		0
Storage Lanes		0
Total Lost Time (s)	4.0	4.0
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)		9
Right Turn on Red		Yes
Link Speed (mph)	30	
Link Distance (ft)	500	
Travel Time (s)	11.4	
Volume (vph)	1565	227
Peak Hour Factor	0.97	0.80
Heavy Vehicles (%)	3%	0%
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phases	2	
Minimum Initial (s)	35.0	
Minimum Split (s)	40.0	
Total Split (s)	40.0	0.0
Total Split (%)	44.4%	0.0%
Yellow Time (s)	3.0	
All-Red Time (s)	2.0	
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	

Intersection Summary

7: Dickinson St. & Chris Columbus Blvd.

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		0.95				0.88		0.91		1.00	0.91	
Frt		0.91				0.85		1.00		1.00	1.00	
Flt Protected		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		3211				2787		4964		1770	5073	
Flt Permitted		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		3211				2787		4964		1770	5073	
Volume (vph)	34	172	306	0	0	67	0	1383	50	93	1641	28
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.75	0.82	0.92	0.92	0.84	0.84
Adj. Flow (vph)	37	187	333	0	0	73	0	1687	54	101	1954	33
RTOR Reduction (vph)	0	13	0	0	0	65	0	3	0	0	2	0
Lane Group Flow (vph)	0	544	0	0	0	8	0	1738	0	101	1985	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Split					Over				Prot		
Protected Phases	4	4				1		2		1	6	
Permitted Phases												
Actuated Green, G (s)		19.2				7.8		46.0		7.8	59.8	
Effective Green, g (s)		21.2				9.8		47.0		9.8	60.8	
Actuated g/C Ratio		0.24				0.11		0.52		0.11	0.68	
Clearance Time (s)		6.0				6.0		5.0		6.0	5.0	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		756				303		2592		193	3427	
v/s Ratio Prot		c0.17				0.00		c0.35		0.06	c0.39	
v/s Ratio Perm												
v/c Ratio		0.72				0.03		0.67		0.52	0.58	
Uniform Delay, d1		31.7				35.8		15.8		37.9	7.8	
Progression Factor		1.00				1.00		0.31		0.75	0.20	
Incremental Delay, d2		3.3				0.0		1.2		1.6	0.4	
Delay (s)		35.0				35.9		6.1		29.9	2.0	
Level of Service		C				D		A		C	A	
Approach Delay (s)		35.0			35.9			6.1			3.3	
Approach LOS		C			D			A			A	

Intersection Summary				
HCM Average Control Delay	8.9	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	60.6%	ICU Level of Service	B	
Analysis Period (min)	15			

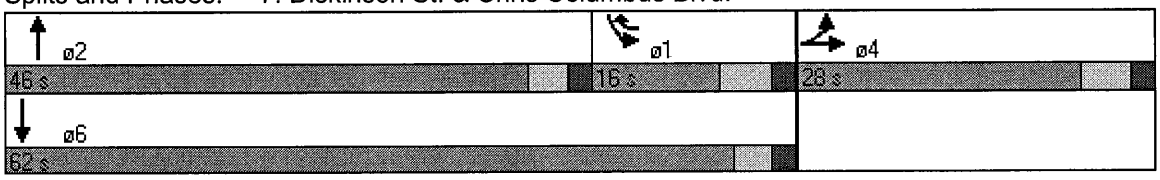
c Critical Lane Group

7: Dickinson St. & Chris Columbus Blvd.

Lane Group	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	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50				50		50		50	50	
Trailing Detector (ft)	0	0				0		0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		611			184			450			453	
Travel Time (s)		13.9			4.2			10.2			10.3	
Volume (vph)	34	172	306	0	0	67	0	1383	50	93	1641	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.75	0.82	0.92	0.92	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Split					Over				Prot		
Protected Phases	4	4				1		2		1	6	
Permitted Phases												
Detector Phases	4	4				1		2		1	6	
Minimum Initial (s)	10.0	10.0				7.0		35.0		7.0	35.0	
Minimum Split (s)	16.0	16.0				13.0		40.0		13.0	40.0	
Total Split (s)	28.0	28.0	0.0	0.0	0.0	16.0	0.0	46.0	0.0	16.0	62.0	0.0
Total Split (%)	31.1%	31.1%	0.0%	0.0%	0.0%	17.8%	0.0%	51.1%	0.0%	17.8%	68.9%	0.0%
Yellow Time (s)	4.0	4.0				4.0		3.0		4.0	3.0	
All-Red Time (s)	2.0	2.0				2.0		2.0		2.0	2.0	
Lead/Lag						Lag		Lead		Lag		
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None				None		C-Min		None	C-Min	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 7: Dickinson St. & Chris Columbus Blvd.



8: Tasker St. & Chris Columbus Blvd.

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	
Lane Util. Factor		0.95			1.00	0.88		0.91		1.00	0.95	
Frt		0.94			1.00	0.85		0.99		1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		3274			1815	2787		5028		1770	3515	
Flt Permitted		0.99			0.97	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		3274			1815	2787		5028		1770	3515	
Volume (vph)	82	82	113	93	84	122	0	1222	99	93	1681	81
Peak-hour factor, PHF	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.99	0.99
Adj. Flow (vph)	92	92	127	101	91	133	0	1328	108	101	1698	82
RTOR Reduction (vph)	0	99	0	0	0	92	0	10	0	0	4	0
Lane Group Flow (vph)	0	212	0	0	192	41	0	1426	0	101	1776	0
Turn Type	Split			Split		pt+ov				Prot		
Protected Phases	4	4		8	8	8 1		2		1	6	
Permitted Phases												
Actuated Green, G (s)		10.0			11.6	26.6		37.4		9.0	51.4	
Effective Green, g (s)		12.0			13.6	27.6		38.4		10.0	52.4	
Actuated g/C Ratio		0.13			0.15	0.31		0.43		0.11	0.58	
Clearance Time (s)		6.0			6.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		437			274	855		2145		197	2047	
v/s Ratio Prot		c0.06			c0.11	0.01		0.28		0.06	c0.51	
v/s Ratio Perm												
v/c Ratio		0.49			0.70	0.05		0.66		0.51	0.87	
Uniform Delay, d1		36.1			36.3	22.0		20.6		37.7	15.9	
Progression Factor		1.00			1.00	1.00		1.00		1.06	1.00	
Incremental Delay, d2		0.9			7.8	0.0		1.6		1.8	4.3	
Delay (s)		37.0			44.1	22.0		22.2		41.8	20.1	
Level of Service		D			D	C		C		D	C	
Approach Delay (s)		37.0			35.1			22.2			21.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

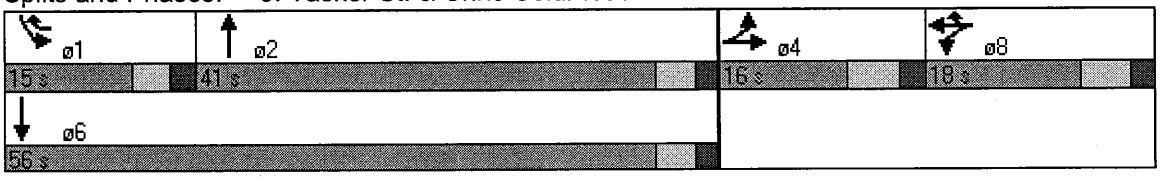
8: Tasker St. & Chris Columbus Blvd.

Lane Group	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	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50		50	50	
Trailing Detector (ft)	0	0		0	0	0		0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			820			229			450	
Travel Time (s)		13.6			18.6			5.2			10.2	
Volume (vph)	82	82	113	93	84	122	0	1222	99	93	1681	81
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.99	0.99
Turn Type	Split			Split		pt+ov				Prot		
Protected Phases	4	4		8	8	8 1		2		1	6	
Permitted Phases												
Detector Phases	4	4		8	8	8 1		2		1	6	
Minimum Initial (s)	10.0	10.0		10.0	10.0			30.0		4.0	30.0	
Minimum Split (s)	16.0	16.0		16.0	16.0			35.0		9.0	35.0	
Total Split (s)	16.0	16.0	0.0	18.0	18.0	33.0	0.0	41.0	0.0	15.0	56.0	0.0
Total Split (%)	17.8%	17.8%	0.0%	20.0%	20.0%	36.7%	0.0%	45.6%	0.0%	16.7%	62.2%	0.0%
Yellow Time (s)	4.0	4.0		4.0	4.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Recall Mode	None	None		None	None			C-Min		None	C-Min	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 74 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 8: Tasker St. & Chris Columbus Blvd.



9: Morris St. & Chris Columbus Blvd.

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
Lane Util. Factor			1.00	0.91	0.91	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	5085	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			1770	5085	5085	1583
Volume (vph)	0	0	171	1321	1462	425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	186	1436	1589	462
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	186	1436	1589	462
Turn Type			Prot			Free
Protected Phases			5	2	6	
Permitted Phases						Free
Actuated Green, G (s)			25.0	90.0	55.0	90.0
Effective Green, g (s)			26.0	90.0	56.0	90.0
Actuated g/C Ratio			0.29	1.00	0.62	1.00
Clearance Time (s)			5.0	5.0	5.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			511	5085	3164	1583
v/s Ratio Prot			c0.11	0.28	c0.31	
v/s Ratio Perm						0.29
v/c Ratio			0.36	0.28	0.50	0.29
Uniform Delay, d1			25.4	0.0	9.3	0.0
Progression Factor			1.00	1.00	0.29	1.00
Incremental Delay, d2			0.4	0.1	0.3	0.3
Delay (s)			25.9	0.1	3.1	0.3
Level of Service			C	A	A	A
Approach Delay (s)	0.0			3.1	2.4	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	2.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

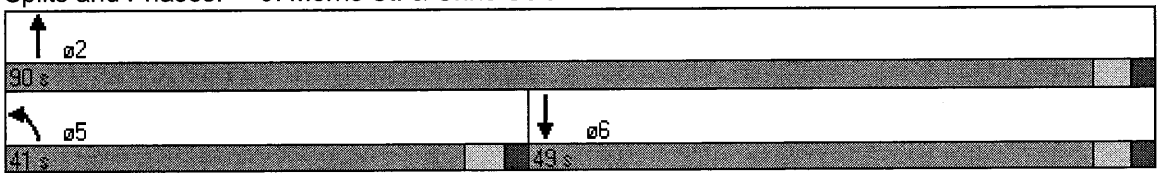
9: Morris St. & Chris Columbus Blvd.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			100
Storage Lanes	0	0	1			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)			50	50	50	50
Trailing Detector (ft)			0	0	0	0
Turning Speed (mph)	15	9	15			9
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	197			126	229	
Travel Time (s)	4.5			2.9	5.2	
Volume (vph)	0	0	171	1321	1462	425
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Turn Type			Prot			Free
Protected Phases			5	2	6	
Permitted Phases						Free
Detector Phases			5	2	6	
Minimum Initial (s)			25.0	35.0	35.0	
Minimum Split (s)			30.0	40.0	40.0	
Total Split (s)	0.0	0.0	41.0	90.0	49.0	0.0
Total Split (%)	0.0%	0.0%	45.6%	100.0%	54.4%	0.0%
Yellow Time (s)			3.0	3.0	3.0	
All-Red Time (s)			2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode			None	C-Min	C-Min	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 80 (89%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 9: Morris St. & Chris Columbus Blvd.



10: Morris St. & Water St.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	530	66	53	402	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	576	72	58	437	0	0	0	0

Direction, Lane #	WB 1	NB 1
Volume Total (vph)	648	495
Volume Left (vph)	0	58
Volume Right (vph)	72	0
Hadj (s)	-0.03	0.06
Departure Headway (s)	5.4	5.8
Degree Utilization, x	0.97	0.80
Capacity (veh/h)	657	610
Control Delay (s)	51.9	28.3
Approach Delay (s)	51.9	28.3
Approach LOS	F	D

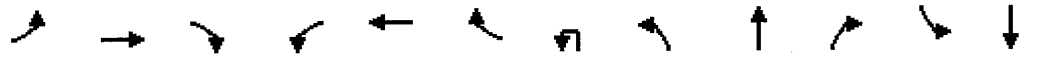
Intersection Summary				
Delay	41.7			
HCM Level of Service	E			
Intersection Capacity Utilization	62.7%	ICU Level of Service	B	
Analysis Period (min)	15			

10: Morris St. & Water St.

Lane Group	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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		60			197			103			95	
Travel Time (s)		1.4			4.5			2.3			2.2	
Volume (vph)	0	0	0	0	530	66	53	402	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

1: I-95 NB On Ramp & Chris Columbus Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
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					0.95			1.00	0.91		1.00	0.91
Frt					0.94			1.00	0.99		1.00	0.99
Flt Protected					0.98			0.95	1.00		0.95	1.00
Satd. Flow (prot)					3318			1788	5036		1736	5046
Flt Permitted					0.98			0.95	1.00		0.95	1.00
Satd. Flow (perm)					3318			1788	5036		1736	5046
Volume (vph)	0	0	0	10	3	9	6	549	1099	61	28	1326
Peak-hour factor, PHF	0.92	0.92	0.92	0.64	0.64	0.64	0.25	0.95	0.82	0.66	0.65	0.85
Adj. Flow (vph)	0	0	0	16	5	14	24	578	1340	92	43	1560
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	6	0	0	6
Lane Group Flow (vph)	0	0	0	0	22	0	0	602	1426	0	43	1653
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	1%	2%	2%	4%	2%
Turn Type				Split			Prot	Prot			Prot	
Protected Phases				8	8		1	1	6		5	2
Permitted Phases												
Actuated Green, G (s)					4.2			42.4	85.8		4.0	47.4
Effective Green, g (s)					6.2			43.4	86.8		5.0	48.4
Actuated g/C Ratio					0.06			0.39	0.79		0.05	0.44
Clearance Time (s)					6.0			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)					187			705	3974		79	2220
v/s Ratio Prot					c0.01			c0.34	0.28		0.02	c0.33
v/s Ratio Perm												
v/c Ratio					0.12			0.85	0.36		0.54	0.74
Uniform Delay, d1					49.3			30.4	3.4		51.4	25.7
Progression Factor					1.00			0.48	0.47		1.00	1.00
Incremental Delay, d2					0.3			8.9	0.2		7.5	2.3
Delay (s)					49.6			23.4	1.8		58.8	28.0
Level of Service					D			C	A		E	C
Approach Delay (s)		0.0			49.6				8.2			28.8
Approach LOS		A			D				A			C

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

1: I-95 NB On Ramp & Chris Columbus Blvd.

Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	82
Peak-hour factor, PHF	0.83
Adj. Flow (vph)	99
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

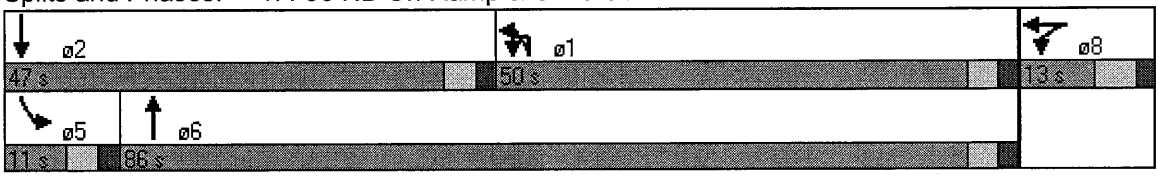
1: I-95 NB On Ramp & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		152		0	320	
Storage Lanes	0		0	0		0		1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50		50	50	50		50	50
Trailing Detector (ft)				0	0		0	0	0		0	0
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Right Turn on Red			Yes			Yes				Yes		
Link Speed (mph)		30			30				30			30
Link Distance (ft)		369			514				1103			527
Travel Time (s)		8.4			11.7				25.1			12.0
Volume (vph)	0	0	0	10	3	9	6	549	1099	61	28	1326
Peak Hour Factor	0.92	0.92	0.92	0.64	0.64	0.64	0.25	0.95	0.82	0.66	0.65	0.85
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	1%	2%	2%	4%	2%
Turn Type				Split			Prot	Prot			Prot	
Protected Phases				8	8		1	1	6		5	2
Permitted Phases												
Detector Phases				8	8		1	1	6		5	2
Minimum Initial (s)				7.0	7.0		5.0	5.0	27.0		5.0	27.0
Minimum Split (s)				13.0	13.0		10.0	10.0	53.0		10.0	32.0
Total Split (s)	0.0	0.0	0.0	13.0	13.0	0.0	50.0	50.0	86.0	0.0	11.0	47.0
Total Split (%)	0.0%	0.0%	0.0%	11.8%	11.8%	0.0%	45.5%	45.5%	78.2%	0.0%	10.0%	42.7%
Yellow Time (s)				4.0	4.0		3.0	3.0	3.0		3.0	3.0
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0		2.0	2.0
Lead/Lag							Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Recall Mode				None	None		None	None	C-Min		None	C-Min

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 14 (13%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: I-95 NB On Ramp & Chris Columbus Blvd.



1: I-95 NB On Ramp & Chris Columbus Blvd.

Lane Group	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Total Lost Time (s)	4.0
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	9
Right Turn on Red	Yes
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	82
Peak Hour Factor	0.83
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phases	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	0.0
Total Split (%)	0.0%
Yellow Time (s)	
All-Red Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Intersection Summary	

2: I-676 On & I-676/95 Off Ramp & Chris Columbus Blvd.

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	
Lane Util. Factor	0.97	0.88	0.97	0.91	0.91	
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)	3400	2814	3467	5085	5072	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3400	2814	3467	5085	5072	
Volume (vph)	139	725	685	1572	1235	107
Peak-hour factor, PHF	0.81	0.90	0.94	0.84	0.93	0.89
Adj. Flow (vph)	172	806	729	1871	1328	120
RTOR Reduction (vph)	0	7	0	0	9	0
Lane Group Flow (vph)	172	799	729	1871	1439	0
Heavy Vehicles (%)	3%	1%	1%	2%	1%	1%
Turn Type		pt+ov	Prot			
Protected Phases	3	3 1	1	6	2	
Permitted Phases						
Actuated Green, G (s)	20.0	55.5	29.5	78.0	42.5	
Effective Green, g (s)	22.0	57.5	31.5	80.0	44.5	
Actuated g/C Ratio	0.20	0.52	0.29	0.73	0.40	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	680	1471	993	3698	2052	
v/s Ratio Prot	0.05	c0.28	c0.21	0.37	c0.28	
v/s Ratio Perm						
v/c Ratio	0.25	0.54	0.73	0.51	0.70	
Uniform Delay, d1	37.1	17.5	35.5	6.5	27.2	
Progression Factor	1.00	1.00	1.14	0.89	0.19	
Incremental Delay, d2	0.2	0.4	1.8	0.3	1.5	
Delay (s)	37.3	17.9	42.1	6.1	6.7	
Level of Service	D	B	D	A	A	
Approach Delay (s)	21.3			16.2	6.7	
Approach LOS	C			B	A	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

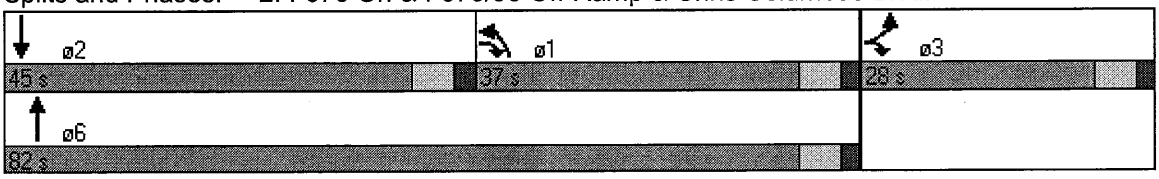
2: I-676 On & I-676/95 Off Ramp & Chris Columbus Blvd.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	2	2	2			0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	589			1367	1103	
Travel Time (s)	13.4			31.1	25.1	
Volume (vph)	139	725	685	1572	1235	107
Peak Hour Factor	0.81	0.90	0.94	0.84	0.93	0.89
Heavy Vehicles (%)	3%	1%	1%	2%	1%	1%
Turn Type		pt+ov	Prot			
Protected Phases	3	3 1	1	6	2	
Permitted Phases						
Detector Phases	3	3 1	1	6	2	
Minimum Initial (s)	20.0		25.0	27.0	27.0	
Minimum Split (s)	26.0		31.0	64.0	33.0	
Total Split (s)	28.0	65.0	37.0	82.0	45.0	0.0
Total Split (%)	25.5%	59.1%	33.6%	74.5%	40.9%	0.0%
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Min	C-Min	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 29 (26%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-676 On & I-676/95 Off Ramp & Chris Columbus Blvd.



3: Christian St. & Chris Columbus Blvd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
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
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91			1.00	0.91
Frt	1.00	0.86			0.98		1.00	1.00			1.00	0.97
Flt Protected	0.95	1.00			0.96		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1770	1628			1774		1805	5081			1805	5004
Flt Permitted	0.74	1.00			0.76		0.95	1.00			0.95	1.00
Satd. Flow (perm)	1374	1628			1407		1805	5081			1805	5004
Volume (vph)	162	2	146	13	2	2	177	2078	10	5	16	1600
Peak-hour factor, PHF	0.82	0.25	0.89	0.60	0.50	0.50	0.87	0.84	0.56	0.62	0.31	0.95
Adj. Flow (vph)	198	8	164	22	4	4	203	2474	18	8	52	1684
RTOR Reduction (vph)	0	133	0	0	3	0	0	1	0	0	0	27
Lane Group Flow (vph)	198	39	0	0	27	0	203	2491	0	0	60	2005
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%	0%	2%	0%	0%	0%	1%
Turn Type	Perm			Perm			Prot			Prot	Prot	
Protected Phases		4			8		1	6		5	5	2
Permitted Phases	4			8								
Actuated Green, G (s)	18.9	18.9			18.9		18.4	69.1			6.0	56.7
Effective Green, g (s)	20.9	20.9			20.9		19.4	70.1			7.0	57.7
Actuated g/C Ratio	0.19	0.19			0.19		0.18	0.64			0.06	0.52
Clearance Time (s)	6.0	6.0			6.0		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
Lane Grp Cap (vph)	261	309			267		318	3238			115	2625
v/s Ratio Prot		0.02					0.11	c0.49			0.03	c0.40
v/s Ratio Perm	c0.14				0.02							
v/c Ratio	0.76	0.13			0.10		0.64	0.77			0.52	0.76
Uniform Delay, d1	42.2	37.0			36.8		42.0	14.2			49.9	20.7
Progression Factor	1.00	1.00			1.00		0.78	0.52			0.88	0.78
Incremental Delay, d2	11.9	0.2			0.2		2.9	1.3			3.2	1.7
Delay (s)	54.1	37.2			37.0		35.8	8.7			46.9	17.8
Level of Service	D	D			D		D	A			D	B
Approach Delay (s)		46.2			37.0			10.7				18.7
Approach LOS		D			D			B				B

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

3: Christian St. & Chris Columbus Blvd.

Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	338
Peak-hour factor, PHF	0.97
Adj. Flow (vph)	348
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

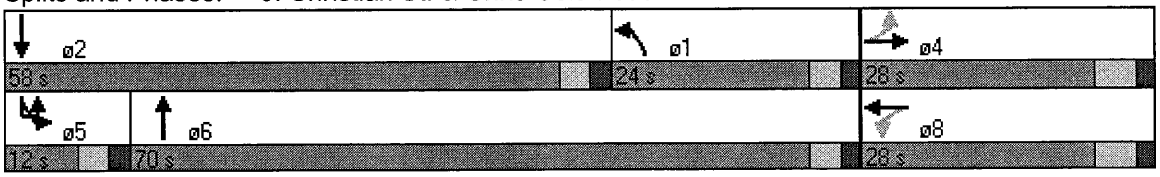
3: Christian St. & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	130		0		90	
Storage Lanes	1		0	0		0	1		0		1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Right Turn on Red			Yes			Yes			Yes			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		792			277			631				1367
Travel Time (s)		18.0			6.3			14.3				31.1
Volume (vph)	162	2	146	13	2	2	177	2078	10	5	16	1600
Peak Hour Factor	0.82	0.25	0.89	0.60	0.50	0.50	0.87	0.84	0.56	0.62	0.31	0.95
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%	0%	2%	0%	0%	0%	1%
Turn Type	Perm			Perm			Prot			Prot	Prot	
Protected Phases		4			8		1	6		5	5	2
Permitted Phases	4			8								
Detector Phases	4	4		8	8		1	6		5	5	2
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	7.0	20.0
Minimum Split (s)	16.0	16.0		16.0	16.0		12.0	25.0		12.0	12.0	25.0
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	24.0	70.0	0.0	12.0	12.0	58.0
Total Split (%)	25.5%	25.5%	0.0%	25.5%	25.5%	0.0%	21.8%	63.6%	0.0%	10.9%	10.9%	52.7%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lead/Lag							Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min		None	None	C-Min

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 92 (84%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 3: Christian St. & Chris Columbus Blvd.



3: Christian St. & Chris Columbus Blvd.

Lane Group	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Total Lost Time (s)	4.0
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	9
Right Turn on Red	Yes
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	338
Peak Hour Factor	0.97
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phases	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	0.0
Total Split (%)	0.0%
Yellow Time (s)	
All-Red Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Intersection Summary	

4: Washington Ave. & Chris Columbus Blvd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	16	12	12	12	12	12	12	10
Total Lost time (s)	4.0	4.0	4.0		4.0			4.0	4.0			4.0
Lane Util. Factor	0.95	0.91	0.95		1.00			0.97	0.91			1.00
Frt	1.00	1.00	0.85		0.95			1.00	1.00			1.00
Flt Protected	0.95	0.95	1.00		0.99			0.95	1.00			0.95
Satd. Flow (prot)	1665	1657	1504		2019			3433	5082			1652
Flt Permitted	0.95	0.95	1.00		0.99			0.95	1.00			0.95
Satd. Flow (perm)	1665	1657	1504		2019			3433	5082			1652
Volume (vph)	532	4	445	4	4	5	2	372	1723	3	6	0
Peak-hour factor, PHF	0.96	0.25	0.92	0.50	0.33	0.42	0.91	0.91	0.85	0.38	0.75	0.92
Adj. Flow (vph)	554	16	484	8	12	12	2	409	2027	8	8	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	278	292	484	0	21	0	0	411	2035	0	0	8
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type	Split		Free	Split			Prot	Prot			Prot	Prot
Protected Phases	8	8		4	4		1	1	6		5	5
Permitted Phases			Free									
Actuated Green, G (s)	20.6	20.6	110.0		4.2			14.0	58.0			5.2
Effective Green, g (s)	22.6	22.6	110.0		6.2			15.0	59.0			6.2
Actuated g/C Ratio	0.21	0.21	1.00		0.06			0.14	0.54			0.06
Clearance Time (s)	6.0	6.0			6.0			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)	342	340	1504		114			468	2726			93
v/s Ratio Prot	0.17	c0.18			0.01			c0.12	0.40			0.00
v/s Ratio Perm			c0.32									
v/c Ratio	0.81	0.86	0.32		0.18			0.88	0.75			0.09
Uniform Delay, d1	41.7	42.2	0.0		49.5			46.6	19.7			49.2
Progression Factor	1.00	1.00	1.00		1.00			0.88	0.78			1.44
Incremental Delay, d2	13.7	18.9	0.6		0.8			13.7	1.5			0.3
Delay (s)	55.4	61.0	0.6		50.2			54.7	16.9			71.3
Level of Service	E	E	A		D			D	B			E
Approach Delay (s)		31.8			50.2				23.3			
Approach LOS		C			D				C			

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

4: Washington Ave. & Chris Columbus Blvd.

Movement	SBT	SBR
Lane Configurations	↑↑	↱
Ideal Flow (vphpl)	1900	1900
Lane Width	13	12
Total Lost time (s)	4.0	4.0
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3657	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3657	1583
Volume (vph)	1302	450
Peak-hour factor, PHF	0.92	0.90
Adj. Flow (vph)	1415	500
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	1415	500
Heavy Vehicles (%)	2%	2%
Turn Type		Free
Protected Phases	2	
Permitted Phases		Free
Actuated Green, G (s)	49.2	110.0
Effective Green, g (s)	50.2	110.0
Actuated g/C Ratio	0.46	1.00
Clearance Time (s)	5.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1669	1583
v/s Ratio Prot	c0.39	
v/s Ratio Perm		0.32
v/c Ratio	0.85	0.32
Uniform Delay, d1	26.5	0.0
Progression Factor	0.42	1.00
Incremental Delay, d2	4.0	0.4
Delay (s)	15.3	0.4
Level of Service	B	A
Approach Delay (s)	11.6	
Approach LOS	B	

Intersection Summary

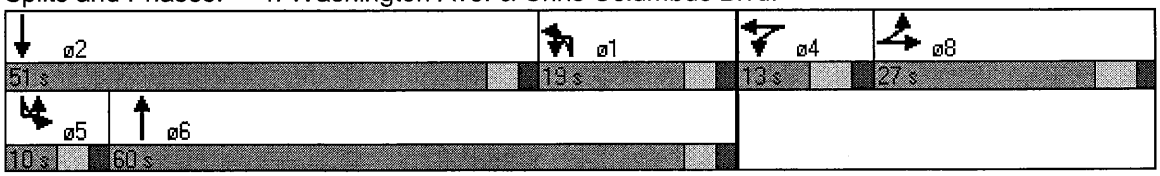
4: Washington Ave. & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	16	12	12	12	12	12	12	10
Storage Length (ft)	0		0	0		0		300		0		150
Storage Lanes	1		1	0		0		2		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50	50		50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0		0	0
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Right Turn on Red			Yes			Yes				Yes		
Link Speed (mph)		30			30				30			
Link Distance (ft)		259			507				821			
Travel Time (s)		5.9			11.5				18.7			
Volume (vph)	532	4	445	4	4	5	2	372	1723	3	6	0
Peak Hour Factor	0.96	0.25	0.92	0.50	0.33	0.42	0.91	0.91	0.85	0.38	0.75	0.92
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type	Split		Free	Split			Prot	Prot			Prot	Prot
Protected Phases	8	8		4	4		1	1	6		5	5
Permitted Phases			Free									
Detector Phases	8	8		4	4		1	1	6		5	5
Minimum Initial (s)	10.0	10.0		7.0	7.0		9.0	9.0	29.0		5.0	5.0
Minimum Split (s)	16.0	16.0		13.0	13.0		14.0	14.0	34.0		10.0	10.0
Total Split (s)	27.0	27.0	0.0	13.0	13.0	0.0	19.0	19.0	60.0	0.0	10.0	10.0
Total Split (%)	24.5%	24.5%	0.0%	11.8%	11.8%	0.0%	17.3%	17.3%	54.5%	0.0%	9.1%	9.1%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0		2.0	2.0
Lead/Lag							Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None		None	None		None	None	C-Min		Min	Min

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 95 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Washington Ave. & Chris Columbus Blvd.



4: Washington Ave. & Chris Columbus Blvd.

Lane Group	SBT	SBR
Lane Configurations	↑↑	↱
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	13	12
Storage Length (ft)		0
Storage Lanes		1
Total Lost Time (s)	4.0	4.0
Leading Detector (ft)	50	50
Trailing Detector (ft)	0	0
Turning Speed (mph)		9
Right Turn on Red		Yes
Link Speed (mph)	30	
Link Distance (ft)	631	
Travel Time (s)	14.3	
Volume (vph)	1302	450
Peak Hour Factor	0.92	0.90
Heavy Vehicles (%)	2%	2%
Turn Type		Free
Protected Phases	2	
Permitted Phases		Free
Detector Phases	2	
Minimum Initial (s)	29.0	
Minimum Split (s)	34.0	
Total Split (s)	51.0	0.0
Total Split (%)	46.4%	0.0%
Yellow Time (s)	3.0	
All-Red Time (s)	2.0	
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	

Intersection Summary

5: I-95 NB Off Ramp & Chris Columbus Blvd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
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	0.97		1.00					0.91			1.00	0.91
Frt	1.00		0.85					1.00			1.00	1.00
Flt Protected	0.95		1.00					1.00			0.95	1.00
Satd. Flow (prot)	3433		1568					5085			1805	5136
Flt Permitted	0.95		1.00					1.00			0.95	1.00
Satd. Flow (perm)	3433		1568					5085			1805	5136
Volume (vph)	403	0	410	0	0	0	0	1663	0	25	0	1729
Peak-hour factor, PHF	0.76	0.92	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.26	0.26	0.96
Adj. Flow (vph)	530	0	569	0	0	0	0	1808	0	96	0	1801
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	530	0	569	0	0	0	0	1808	0	0	96	1801
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%	2%	2%	2%	0%	0%	1%
Turn Type	Prot		Free							Prot	Prot	
Protected Phases	3							6		5	5	2
Permitted Phases			Free									
Actuated Green, G (s)	21.6		110.0					62.4			10.0	77.4
Effective Green, g (s)	23.6		110.0					63.4			11.0	78.4
Actuated g/C Ratio	0.21		1.00					0.58			0.10	0.71
Clearance Time (s)	6.0							5.0			5.0	5.0
Vehicle Extension (s)	3.0							3.0			3.0	3.0
Lane Grp Cap (vph)	737		1568					2931			181	3661
v/s Ratio Prot	c0.15							c0.36			0.05	c0.35
v/s Ratio Perm			0.36									
v/c Ratio	0.72		0.36					0.62			0.53	0.49
Uniform Delay, d1	40.1		0.0					15.3			47.0	7.0
Progression Factor	1.00		1.00					0.30			0.73	0.25
Incremental Delay, d2	3.4		0.7					0.7			2.1	0.3
Delay (s)	43.5		0.7					5.2			36.4	2.1
Level of Service	D		A					A			D	A
Approach Delay (s)		21.3			0.0			5.2				3.8
Approach LOS		C			A			A				A

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

5: I-95 NB Off Ramp & Chris Columbus Blvd.

Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	0
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

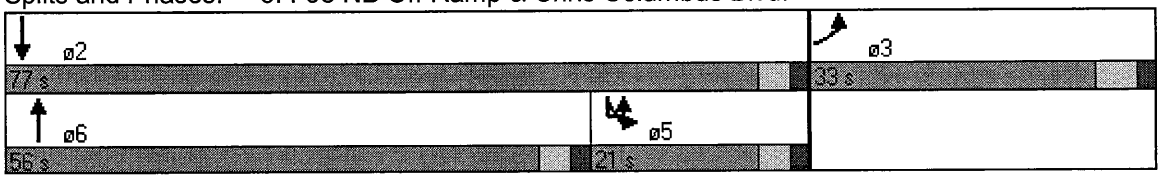
5: I-95 NB Off Ramp & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	148		0		110	
Storage Lanes	2		1	0		0	0		0		1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50		50					50		50	50	50
Trailing Detector (ft)	0		0					0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Right Turn on Red			Yes			Yes			Yes			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		596			153			487				821
Travel Time (s)		13.5			3.5			11.1				18.7
Volume (vph)	403	0	410	0	0	0	0	1663	0	25	0	1729
Peak Hour Factor	0.76	0.92	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.26	0.26	0.96
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%	2%	2%	2%	0%	0%	1%
Turn Type	Prot		Free							Prot	Prot	
Protected Phases	3							6		5	5	2
Permitted Phases			Free									
Detector Phases	3							6		5	5	2
Minimum Initial (s)	10.0							35.0		7.0	7.0	35.0
Minimum Split (s)	16.0							40.0		12.0	12.0	52.0
Total Split (s)	33.0	0.0	0.0	0.0	0.0	0.0	0.0	56.0	0.0	21.0	21.0	77.0
Total Split (%)	30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	0.0%	19.1%	19.1%	70.0%
Yellow Time (s)	4.0							3.0		3.0	3.0	3.0
All-Red Time (s)	2.0							2.0		2.0	2.0	2.0
Lead/Lag								Lead		Lag	Lag	
Lead-Lag Optimize?								Yes		Yes	Yes	
Recall Mode	None							C-Min		None	None	C-Min

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 95 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 5: I-95 NB Off Ramp & Chris Columbus Blvd.



5: I-95 NB Off Ramp & Chris Columbus Blvd.

Lane Group	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Total Lost Time (s)	4.0
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	9
Right Turn on Red	Yes
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	0
Peak Hour Factor	0.92
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phases	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	0.0
Total Split (%)	0.0%
Yellow Time (s)	
All-Red Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Intersection Summary	

6: Reed St. & Chris Columbus Blvd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	12	12	13	12	10	10	11	12	10	10
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0			4.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95			1.00	0.91			1.00
Frt	1.00	1.00	0.85	1.00	0.90			1.00	1.00			1.00
Flt Protected	0.95	0.97	1.00	0.95	1.00			0.95	1.00			0.95
Satd. Flow (prot)	1793	1777	1615	1681	1685			1636	4900			1652
Flt Permitted	0.95	0.97	1.00	0.95	1.00			0.95	1.00			0.95
Satd. Flow (perm)	1793	1777	1615	1681	1685			1636	4900			1652
Volume (vph)	194	40	163	46	29	68	18	212	1398	20	2	100
Peak-hour factor, PHF	0.87	0.83	1.00	0.70	0.50	0.65	0.92	0.92	0.80	0.47	0.69	0.69
Adj. Flow (vph)	223	48	163	66	58	105	20	230	1748	43	3	145
RTOR Reduction (vph)	0	0	145	0	59	0	0	0	2	0	0	0
Lane Group Flow (vph)	134	137	18	66	104	0	0	250	1789	0	0	148
Heavy Vehicles (%)	2%	1%	0%	2%	0%	0%	3%	3%	2%	0%	2%	2%
Turn Type	Split		Prot	Split			Prot	Prot			Prot	Prot
Protected Phases	3	3	3	7	7		1	1	6		5	5
Permitted Phases												
Actuated Green, G (s)	10.0	10.0	10.0	6.0	6.0			17.0	55.0			17.0
Effective Green, g (s)	12.0	12.0	12.0	8.0	8.0			18.0	56.0			18.0
Actuated g/C Ratio	0.11	0.11	0.11	0.07	0.07			0.16	0.51			0.16
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			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)	196	194	176	122	123			268	2495			270
v/s Ratio Prot	0.07	c0.08	0.01	0.04	c0.06			c0.15	0.36			0.09
v/s Ratio Perm												
v/c Ratio	0.68	0.71	0.10	0.54	0.84			0.93	0.72			0.55
Uniform Delay, d1	47.2	47.3	44.1	49.2	50.4			45.4	20.9			42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			0.75	0.37			0.65
Incremental Delay, d2	9.5	11.1	0.3	4.8	38.0			31.9	1.4			2.1
Delay (s)	56.6	58.4	44.4	54.1	88.3			65.8	9.1			29.6
Level of Service	E	E	D	D	F			E	A			C
Approach Delay (s)		52.6			78.5				16.0			
Approach LOS		D			E				B			

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

6: Reed St. & Chris Columbus Blvd.

Movement	SBT	SBR
Lane Configurations		
Ideal Flow (vphpl)	1900	1900
Lane Width	10	12
Total Lost time (s)	4.0	
Lane Util. Factor	0.91	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	4657	
Flt Permitted	1.00	
Satd. Flow (perm)	4657	
Volume (vph)	1821	233
Peak-hour factor, PHF	0.94	0.78
Adj. Flow (vph)	1937	299
RTOR Reduction (vph)	19	0
Lane Group Flow (vph)	2217	0
Heavy Vehicles (%)	2%	1%
Turn Type		
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	55.0	
Effective Green, g (s)	56.0	
Actuated g/C Ratio	0.51	
Clearance Time (s)	5.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2371	
v/s Ratio Prot	c0.48	
v/s Ratio Perm		
v/c Ratio	0.94	
Uniform Delay, d1	25.3	
Progression Factor	0.94	
Incremental Delay, d2	7.8	
Delay (s)	31.7	
Level of Service	C	
Approach Delay (s)	31.6	
Approach LOS	C	

Intersection Summary

6: Reed St. & Chris Columbus Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	13	12	12	13	12	10	10	11	12	10	10
Storage Length (ft)	0		0	0		0		100		0		150
Storage Lanes	1		1	1		0		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50	50		50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0		0	0
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Right Turn on Red			Yes			Yes				Yes		
Link Speed (mph)		30			30				30			
Link Distance (ft)		625			893				453			
Travel Time (s)		14.2			20.3				10.3			
Volume (vph)	194	40	163	46	29	68	18	212	1398	20	2	100
Peak Hour Factor	0.87	0.83	1.00	0.70	0.50	0.65	0.92	0.92	0.80	0.47	0.69	0.69
Heavy Vehicles (%)	2%	1%	0%	2%	0%	0%	3%	3%	2%	0%	2%	2%
Turn Type	Split		Prot	Split			Prot	Prot			Prot	Prot
Protected Phases	3	3	3	7	7		1	1	6		5	5
Permitted Phases												
Detector Phases	3	3	3	7	7		1	1	6		5	5
Minimum Initial (s)	10.0	10.0	10.0	5.0	5.0		7.0	7.0	35.0		7.0	7.0
Minimum Split (s)	16.0	16.0	16.0	11.0	11.0		12.0	12.0	40.0		12.0	12.0
Total Split (s)	16.0	16.0	16.0	12.0	12.0	0.0	22.0	22.0	60.0	0.0	22.0	22.0
Total Split (%)	14.5%	14.5%	14.5%	10.9%	10.9%	0.0%	20.0%	20.0%	54.5%	0.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0
Lead/Lag							Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None		None	None	C-Min		None	None

Intersection Summary

Area Type: Other

Cycle Length: 110

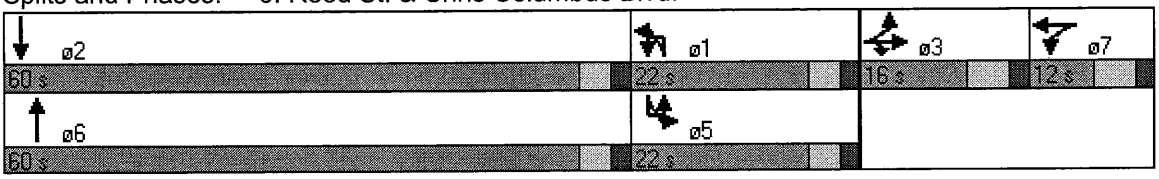
Actuated Cycle Length: 110

Offset: 80 (73%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 6: Reed St. & Chris Columbus Blvd.



6: Reed St. & Chris Columbus Blvd.

Lane Group	SBT	SBR
Lane Configurations	↑↑↑	
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	10	12
Storage Length (ft)		0
Storage Lanes		0
Total Lost Time (s)	4.0	4.0
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)		9
Right Turn on Red		Yes
Link Speed (mph)	30	
Link Distance (ft)	487	
Travel Time (s)	11.1	
Volume (vph)	1821	233
Peak Hour Factor	0.94	0.78
Heavy Vehicles (%)	2%	1%
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phases	2	
Minimum Initial (s)	35.0	
Minimum Split (s)	40.0	
Total Split (s)	60.0	0.0
Total Split (%)	54.5%	0.0%
Yellow Time (s)	3.0	
All-Red Time (s)	2.0	
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	

Intersection Summary

7: Dickinson St. & Chris Columbus Blvd.

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		0.95				0.88		0.91		0.97	0.95	
Frt		0.93				0.85		0.99		1.00	1.00	
Flt Protected		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		3284				2787		5047		3433	3539	
Flt Permitted		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		3284				2787		5047		3433	3539	
Volume (vph)	31	290	280	0	0	145	0	1471	85	238	1810	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.85	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	315	304	0	0	158	0	1731	92	259	1967	0
RTOR Reduction (vph)	0	14	0	0	0	138	0	5	0	0	0	0
Lane Group Flow (vph)	0	639	0	0	0	20	0	1818	0	259	1967	0
Turn Type	Split					Over				Prot		
Protected Phases	4	4				1		2		1	6	
Permitted Phases												
Actuated Green, G (s)		24.7				11.6		56.7		11.6	74.3	
Effective Green, g (s)		26.7				13.6		57.7		13.6	75.3	
Actuated g/C Ratio		0.24				0.12		0.52		0.12	0.68	
Clearance Time (s)		6.0				6.0		5.0		6.0	5.0	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		797				345		2647		424	2423	
v/s Ratio Prot		c0.19				0.01		0.36		0.08	c0.56	
v/s Ratio Perm												
v/c Ratio		0.80				0.06		0.69		0.61	0.81	
Uniform Delay, d1		39.2				42.5		19.4		45.7	12.3	
Progression Factor		1.00				1.00		0.27		0.67	0.19	
Incremental Delay, d2		5.8				0.1		1.0		1.2	1.4	
Delay (s)		45.0				42.6		6.3		32.0	3.8	
Level of Service		D				D		A		C	A	
Approach Delay (s)		45.0			42.6			6.3			7.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

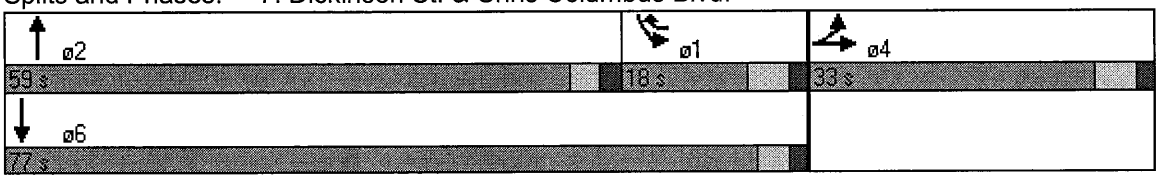
7: Dickinson St. & Chris Columbus Blvd.

Lane Group	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	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50				50		50		50	50	
Trailing Detector (ft)	0	0				0		0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		611			184			450			453	
Travel Time (s)		13.9			4.2			10.2			10.3	
Volume (vph)	31	290	280	0	0	145	0	1471	85	238	1810	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.85	0.92	0.92	0.92	0.92
Turn Type	Split					Over				Prot		
Protected Phases	4	4				1		2		1	6	
Permitted Phases												
Detector Phases	4	4				1		2		1	6	
Minimum Initial (s)	10.0	10.0				7.0		35.0		7.0	35.0	
Minimum Split (s)	16.0	16.0				13.0		40.0		13.0	40.0	
Total Split (s)	33.0	33.0	0.0	0.0	0.0	18.0	0.0	59.0	0.0	18.0	77.0	0.0
Total Split (%)	30.0%	30.0%	0.0%	0.0%	0.0%	16.4%	0.0%	53.6%	0.0%	16.4%	70.0%	0.0%
Yellow Time (s)	4.0	4.0				4.0		3.0		4.0	3.0	
All-Red Time (s)	2.0	2.0				2.0		2.0		2.0	2.0	
Lead/Lag						Lag		Lead		Lag		
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None				None		C-Min		None	C-Min	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 81 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 7: Dickinson St. & Chris Columbus Blvd.



8: Tasker St. & Chris Columbus Blvd.

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	
Lane Util. Factor		0.95			1.00	0.88		0.91		1.00	0.95	
Frt		0.94			1.00	0.85		0.98		1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		3292			1796	2682		4975		1805	3549	
Flt Permitted		0.99			0.97	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		3292			1796	2682		4975		1805	3549	
Volume (vph)	93	116	124	197	115	211	0	1251	165	79	1926	88
Peak-hour factor, PHF	0.91	0.83	0.78	0.61	0.77	0.94	0.75	0.88	0.58	0.92	0.94	0.82
Adj. Flow (vph)	102	140	159	323	149	224	0	1422	284	86	2049	107
RTOR Reduction (vph)	0	43	0	0	0	137	0	28	0	0	3	0
Lane Group Flow (vph)	0	358	0	0	472	87	0	1678	0	86	2153	0
Heavy Vehicles (%)	1%	0%	4%	2%	3%	6%	1%	2%	0%	0%	1%	0%
Turn Type	Split			Split		pt+ov				Prot		
Protected Phases	4	4		8	8	8 1		2		1	6	
Permitted Phases												
Actuated Green, G (s)		14.0			22.0	30.8		43.2		8.8	57.0	
Effective Green, g (s)		16.0			24.0	33.8		44.2		9.8	58.0	
Actuated g/C Ratio		0.15			0.22	0.31		0.40		0.09	0.53	
Clearance Time (s)		6.0			6.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		479			392	824		1999		161	1871	
v/s Ratio Prot		c0.11			c0.26	0.03		0.34		0.05	c0.61	
v/s Ratio Perm												
v/c Ratio		0.75			1.20	0.11		0.84		0.53	1.15	
Uniform Delay, d1		45.1			43.0	27.3		29.7		47.9	26.0	
Progression Factor		1.00			1.00	1.00		1.00		0.87	0.69	
Incremental Delay, d2		6.3			113.7	0.1		4.3		1.9	71.6	
Delay (s)		51.4			156.7	27.3		34.0		43.6	89.5	
Level of Service		D			F	C		C		D	F	
Approach Delay (s)		51.4			115.1			34.0			87.8	
Approach LOS		D			F			C			F	

Intersection Summary				
HCM Average Control Delay	70.5	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.10			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	94.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

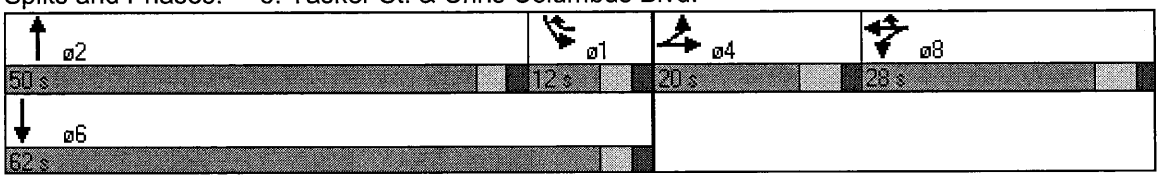
8: Tasker St. & Chris Columbus Blvd.

Lane Group	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	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50		50	50	
Trailing Detector (ft)	0	0		0	0	0		0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			820			229			450	
Travel Time (s)		13.6			18.6			5.2			10.2	
Volume (vph)	93	116	124	197	115	211	0	1251	165	79	1926	88
Peak Hour Factor	0.91	0.83	0.78	0.61	0.77	0.94	0.75	0.88	0.58	0.92	0.94	0.82
Heavy Vehicles (%)	1%	0%	4%	2%	3%	6%	1%	2%	0%	0%	1%	0%
Turn Type	Split			Split		pt+ov				Prot		
Protected Phases	4	4		8	8	8 1		2		1	6	
Permitted Phases												
Detector Phases	4	4		8	8	8 1		2		1	6	
Minimum Initial (s)	14.0	14.0		10.0	10.0			30.0		4.0	30.0	
Minimum Split (s)	20.0	20.0		16.0	16.0			35.0		9.0	35.0	
Total Split (s)	20.0	20.0	0.0	28.0	28.0	40.0	0.0	50.0	0.0	12.0	62.0	0.0
Total Split (%)	18.2%	18.2%	0.0%	25.5%	25.5%	36.4%	0.0%	45.5%	0.0%	10.9%	56.4%	0.0%
Yellow Time (s)	4.0	4.0		4.0	4.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Recall Mode	None	None		None	None			C-Min		None	C-Min	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 83 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 8: Tasker St. & Chris Columbus Blvd.



9: Morris St. & Chris Columbus Blvd.

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
Lane Util. Factor			1.00	0.91	0.91	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	5085	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			1770	5085	5085	1583
Volume (vph)	0	0	145	1416	1748	499
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	158	1539	1900	542
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	158	1539	1900	542
Turn Type			Prot			Free
Protected Phases			5	2	6	
Permitted Phases						Free
Actuated Green, G (s)			35.0	110.0	65.0	110.0
Effective Green, g (s)			36.0	110.0	66.0	110.0
Actuated g/C Ratio			0.33	1.00	0.60	1.00
Clearance Time (s)			5.0	5.0	5.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			579	5085	3051	1583
v/s Ratio Prot			0.09	0.30	c0.37	
v/s Ratio Perm						c0.34
v/c Ratio			0.27	0.30	0.62	0.34
Uniform Delay, d1			27.3	0.0	14.0	0.0
Progression Factor			1.00	1.00	0.34	1.00
Incremental Delay, d2			0.3	0.2	0.1	0.1
Delay (s)			27.6	0.2	4.9	0.1
Level of Service			C	A	A	A
Approach Delay (s)	0.0			2.7	3.8	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

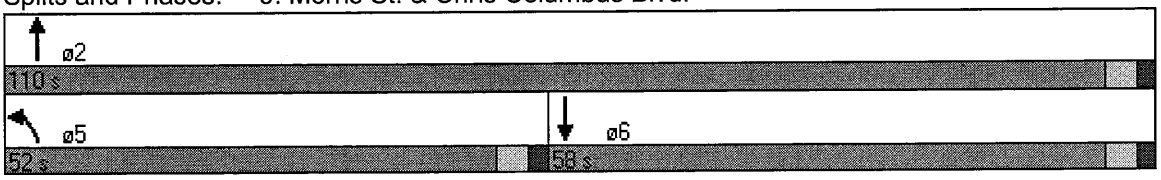
9: Morris St. & Chris Columbus Blvd.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	130			100
Storage Lanes	0	0	1			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)			50	50	50	50
Trailing Detector (ft)			0	0	0	0
Turning Speed (mph)	15	9	15			9
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	197			135	229	
Travel Time (s)	4.5			3.1	5.2	
Volume (vph)	0	0	145	1416	1748	499
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Turn Type			Prot			Free
Protected Phases			5	2	6	
Permitted Phases						Free
Detector Phases			5	2	6	
Minimum Initial (s)			35.0	35.0	35.0	
Minimum Split (s)			40.0	40.0	40.0	
Total Split (s)	0.0	0.0	52.0	110.0	58.0	0.0
Total Split (%)	0.0%	0.0%	47.3%	100.0%	52.7%	0.0%
Yellow Time (s)			3.0	3.0	3.0	
All-Red Time (s)			2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode			None	C-Min	C-Min	

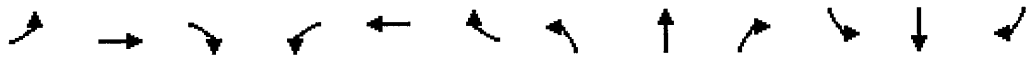
Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 95 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 9: Morris St. & Chris Columbus Blvd.



10: Morris St & Water St.

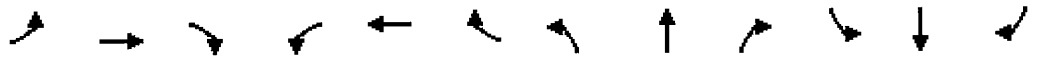


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	566	78	76	701	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	615	85	83	762	0	0	0	0

Direction, Lane #	WB 1	NB 1
Volume Total (vph)	700	845
Volume Left (vph)	0	83
Volume Right (vph)	85	0
Hadj (s)	-0.04	0.05
Departure Headway (s)	5.7	5.8
Degree Utilization, x	1.11	1.37
Capacity (veh/h)	632	622
Control Delay (s)	94.0	193.1
Approach Delay (s)	94.0	193.1
Approach LOS	F	F

Intersection Summary			
Delay	148.2		
HCM Level of Service	F		
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

10: Morris St & Water St.



Lane Group	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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		59			197			103			95	
Travel Time (s)		1.3			4.5			2.3			2.2	
Volume (vph)	0	0	0	0	566	78	76	701	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

RESUMES

Jeffrey L. Greene, P.E.
H. Richard Orth, P.E.

JEFFREY L. GREENE, P.E., P.T.O.E.
Principal

EDUCATION

Bachelor of Science in Civil Engineering, University of Pittsburgh 1969
Master of Civil Engineering, Villanova University 1975

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer - Pennsylvania, New Jersey, Florida and Delaware
Professional Traffic Operations Engineer

MEMBERSHIPS

Fellow, Institute of Transportation Engineers
Member, American Society of Highway Engineers

PUBLICATIONS

Traffic Management Plan for the Reconstruction of the Schuylkill Expressway, presented to the Transportation Research Board at the Annual Meeting, January 1984, co-authored with Robert M. Rodgers, P.E.

Planning and Needs Studies Handbook, published by the Pennsylvania Department of Transportation, 1992.

Pennsylvania's Traffic Calming Handbook, published by the Pennsylvania Department of Transportation, 2001.

Development Impact Assessment Handbook, published by the Urban Land Institute, 1994, co-authored with David Listogen and Robert M. Rodgers.

Managing Transportation in Your Community, published by the New Jersey Department of Tranpsortation,1989, co-authored with Carter Van Dyke and Robert M. Rodgers.

EXPERIENCE

Mr. Greene's experience includes preparation of needs and alternatives analyses, the preparation of major investment studies, congestion management analyses, traffic management plans, master traffic plans for communities and transportation corridors, parking demand analyses, and traffic impact analyses.

Examples of assignments directed by Mr. Greene for which he was in responsible charge include the following:

Prepared the Transportation Master Plan for Bryn Eyre at New Morgan, Berks County, Pennsylvania, a new Urbanist community projected to include a population of 30,000 residents and over five million square feet of commercial, residential and industrial space. The

transportation plan includes an access management component, a grid network of streets including a new PA Route 10 Boulevard and a new interchange to I-176 connecting to an second arterial roadway.
Assisted the New York State Department of Environmental Conservation review the traffic implications of the proposed Sterling Forest Development, proposed to contain some 13,170 housing units and over 8,000,000 square feet of industrial/office/commercial development on 17,500 acres of land 40 miles northwest of New York City. Continues to serve as traffic consultant to the Town of Tuxedo, New York.

Serves as Township Traffic Engineer for Tredyffrin and Uwchlan Townships in Chester County since 1986. Prepared the Traffic Impact Fee Ordinance study for Uwchlan Township and the Master Traffic Plan for Tredyffrin Township that led to the assessment of traffic improvement fees as an increase in property tax assessments.

Prepared the Traffic Impact Assessment Study for Spring Township in Berks County, PA and Upper Deerfield Township, Cumberland County, NJ. Prepared the traffic impact fee assessment for the Route 66 Corridor in Monmouth County fore the New Jersey Department of Transportation.

Prepared the Long Range Transportation Plans for the Erie Pennsylvania Metropolitan Planning Organization and the Lackawanna and Luzerne County Pennsylvania Metropolitan Planning Organization. Directed the construction of travel projection models for Erie County and Centre County, Pennsylvania

Directed an open end Planning and Needs Contract for the Pennsylvania Department of Transportation that included the conduct of traffic engineering analyses of corridors across Pennsylvania to determine transportation needs. The studies typically included the conduct of origin and destination surveys, detailed traffic data collection, population and employment projections, travel projection modeling, environmental overviews and a public involvement process. Corridors analyzed as part of this contract include US Route 219 in Cambria and Clearfield Counties, US Route 22 in Lehigh and Northampton Counties, PA Route 21 in Fayette and Greene Counties, and the Marshall's Creek area in Pike and Monroe Counties. In addition,

Directed a Local Assistance Traffic Planning Contract for the New Jersey Department of Transportation that included traffic planning and engineering assignments throughout the State. Included in the contract was the performance of a needs and alternatives analysis and the development of an Access Management Plan for NJ Route 72 in Ocean County, NJ, the development of a strategic improvement plan for US Route 9 also in Ocean County, the performance of a planning and needs analysis of NJ Route 27 in Middlesex and Somerset Counties, NJ, and the development of a traffic signal master plan for NJ Route 31 and US Route 130 in Mercer, Middlesex and Somerset Counties, NJ.

Prepared the Needs Analysis and Environmental Overview for the I-99 Expressway Project in Centre County, PA for the Pennsylvania Department of Transportation, District 2-0. This assignment included the development of a travel projection model and the conduct of an origin-destination survey in which 50,000 motorists were questioned. Prepared the Project Needs Analysis for the Central Susquehanna Valley Thruway project for the Pennsylvania Department

of Transportation, District 3-0 and a traffic engineering analysis that included a SIMTRAFFIC and CORSIM analysis of a 60-mile roadway system.

Prepared a Congestion Management Analysis for the City of Harrisburg, PA. This assignment includes assessing the operation of the existing street system, the pedestrian "space", the operation of public transit, parking management practices and the potential for employee trip reduction strategies.

Developed an Implementation Plan for the Delaware River Port Authority for the conversion of the toll collection system to round trip tolls for the Ben Franklin and the Walt Whitman Bridges in Philadelphia, PA.

Developed the Transportation Master Plan for the Expressway Corridor in Atlantic City, NJ. This corridor included an ambitious development program, a Convention Center, several major hotel developments and recreational facilities.

H. RICHARD ORTH, PE
Senior Consultant

EDUCATION

Bachelor of Civil Engineering, Villanova University
Master of Civil Engineering, Villanova University
Certificate in Highway Traffic, Bureau of Highway Traffic, Yale University

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer in Pennsylvania, Delaware, Maryland and New Jersey
Registered Traffic Engineer in California
Registered Professional Planner in New Jersey

EXPERIENCE

As a co-founder of the firm in 1977, Mr. Orth has been responsible for a number of transportation planning, traffic engineering and parking demand analyses for various projects and proposals in the City of Philadelphia. He has directed the firm's recent traffic planning efforts for the proposed high-rise apartments at the World Trade Square Residence at Old City Harbor on Columbus Boulevard. Other Center City assignments which have been directed by Mr. Orth include:

- traffic planning and parking studies for a new baseball park (in Center City and in South Philadelphia)
- the "Center City Circulation Study" for the City Planning Commission
- the "Traffic, Transit and Pedestrian Study of Market Street East"
- the "Chestnut Street Transitway Management Study"
- "Transportation Analysis of the Convention Center and Market East Quadrant"
- a study of traffic access, public transit, and pedestrian needs for the Avenue of the Arts
- evaluation of access requirements, traffic impacts, and parking needs for various proposed development scenarios at Penns Landing and for other riverfront projects including the conversion of Piers 3 and 5 to residential condominiums, Dave and Buster's restaurant/entertainment complex, and the Dockside luxury apartments

- analysis of parking needs in various Center City neighborhoods including Queen Village and Market Street East

Mr. Orth has also directed transportation planning and traffic engineering studies for the development around Logan Square (including the Four Seasons Hotel and One and Two Logan Square), Liberty Place One and Two, and the Gallery at Market East. He has also served as traffic engineering/transportation planning consultant to several institutional clients in the City including Temple University, Drexel University, Hahnemann Hospital, and the University of Pennsylvania Medical Center.

PHILADELPHIA BACKGROUND AND EXPERIENCE
of
Orth-Rodgers & Associates Inc.

GENERAL BACKGROUND and EXPERIENCE

Orth-Rodgers & Associates, Inc. (ORA) has been providing professional traffic engineering, transportation planning, and highway engineering services to both public and private sector clients since 1977. Headquartered in Center City Philadelphia, the firm also has branch offices in West Trenton, NJ, in Malvern and Mechanicsburg, PA, Tampa, FL and Las Vegas, NV. The staff includes a total of about 130 people with diverse background and experience in all areas of traffic, highway and site engineering, and transportation planning.

The firm has substantial experience in the conduct of a variety of transportation planning, traffic engineering and parking studies for numerous projects and clients in the City of Philadelphia. We have successfully completed a number of assignments for various departments/agencies of the City of Philadelphia including the Department of Streets, the City Planning Commission, the Department of Public Property, the Department of Commerce, the Philadelphia Parking Authority, and the Philadelphia Industrial Development Corporation (PIDC).

Orth-Rodgers has been responsible for transportation planning and traffic engineering efforts relative to various development projects and proposals at Penns Landing over the past 20 years. Our clients on these assignments have included the Penns Landing Corporation and different private developers. Our most recent work for Penns Landing included development and evaluation of access schemes, analysis of parking needs, and examination of traffic impacts associated with the proposed Family Entertainment Center (by the Simon Property Group). Orth-Rodgers has also been responsible for traffic planning and evaluation of parking needs for several other developments along the Philadelphia riverfront including the conversion of Piers 3 and 5 to residential condominiums, Dave and Busters restaurant/entertainment complex, the Hyatt Hotel at Penns Landing, and the Dockside luxury apartments.

Other projects/assignments in the City involving a primary or key role of the firm include:

- "Center City Circulation Study" (for the City Planning Commission)
- "Traffic, Transit and Pedestrian Study of Market Street East" (for the City Planning Commission)
- Transportation analysis for the Philadelphia Naval Yard Reuse Study" (for the City Planning Commission)
- "Transportation Analysis of the Convention Center and the Market East Quadrant" (for the Department of Commerce)
- Traffic planning and parking studies for a new baseball park at Center City and South Philadelphia sites (for the Philadelphia Phillies)
- "Chestnut Street Transitway Management Study" (for the Department of Public Property)
- Transportation analysis for the General Management Plan for Independence National Historical Park (for the National Park Service)
- Design of a New Traffic Signal System for Center City (for the Department of Streets)
- "Getting to the Show Ontime" report documenting recommended traffic, parking, pedestrian and public transit actions to improve access to the venues and activities along the Avenue of the Arts (for the Avenue of the Arts, Inc.)
- Parking and access study of the Philadelphia Museum of Art (for the Pennsylvania Horticultural Society)
- Transportation analysis for "Completing the Parkway" (for the Central Philadelphia Development Corporation)
- Evaluation of traffic impact of possible riverboat gaming along the Delaware River (for the Philadelphia Regional Port Authority)
- Traffic impact analyses for numerous parking garages in Center City for purposes of zoning approvals.