8.

Signalized Analysis

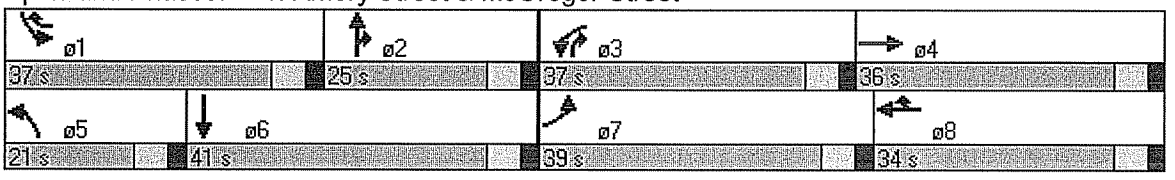
- 2012 Existing
- 2035 No Build
- 2035 Build Alternatives

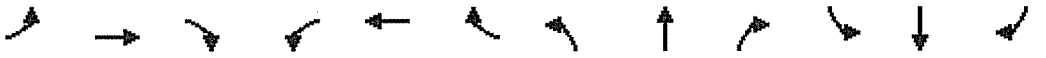
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	285	520	315	305	200	90	155	205	345	335
Lane Group Flow (vph)	320	736	389	377	247	98	168	223	379	516
Turn Type	Prot		Prot		pt+ov	Prot		pt+ov	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2 3	1	6
Permitted Phases										
Detector Phases	7	4	3	8	8 1	5	2	2 3	1	6
Minimum Initial (s)	5.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0
Minimum Split (s)	16.0	25.0	16.0	25.0		16.0	25.0		16.0	25.0
Total Split (s)	39.0	36.0	37.0	34.0	71.0	21.0	25.0	62.0	37.0	41.0
Total Split (%)	28.9%	26.7%	27.4%	25.2%	52.6%	15.6%	18.5%	45.9%	27.4%	30.4%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		None	None		None	None
v/c Ratio	0.87	0.98	0.96	0.47	0.28	0.58	0.44	0.35	0.97	0.61
Control Delay	71.4	76.0	85.1	45.0	3.5	68.9	56.2	17.2	87.6	41.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.4	76.0	85.1	45.0	3.5	68.9	56.2	17.2	87.6	41.8
Queue Length 50th (ft)	253	318	326	147	4	79	70	75	319	186
Queue Length 95th (ft)	#414	#470	#467	184	33	143	107	140	#549	251
Internal Link Dist (ft)		274		2003			988			680
Turn Bay Length (ft)	300		280		280	200		200	105	
Base Capacity (vph)	390	750	404	805	874	197	479	662	390	883
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.98	0.96	0.47	0.28	0.50	0.35	0.34	0.97	0.58

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 130.3
Natural Cycle: 135
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Amory Street & McGregor Street





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
Lane Width	10	11	16	12	12	12	11	11	12	11	12	13
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1486	2984		1593	3185	1425	1540	3079	1425	1540	3048	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1486	2984		1593	3185	1425	1540	3079	1425	1540	3048	
Volume (vph)	285	520	135	315	305	200	90	155	205	345	335	135
Peak-hour factor, PHF	0.89	0.89	0.89	0.81	0.81	0.81	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	320	584	152	389	377	247	98	168	223	379	368	148
RTOR Reduction (vph)	0	17	0	0	0	109	0	0	51	0	32	0
Lane Group Flow (vph)	320	719	0	389	377	138	98	168	172	379	484	0
Turn Type	Prot			Prot		pt+ov	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2 3	1	6	
Permitted Phases												
Actuated Green, G (s)	30.1	30.0		31.0	30.9	67.9	12.4	14.3	51.3	31.0	32.9	
Effective Green, g (s)	32.1	32.0		33.0	32.9	69.9	14.4	16.3	53.3	33.0	34.9	
Actuated g/C Ratio	0.25	0.25		0.25	0.25	0.54	0.11	0.13	0.41	0.25	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	366	733		403	804	764	170	385	583	390	816	
v/s Ratio Prot	0.22	c0.24		c0.24	0.12	0.10	0.06	0.05	0.12	c0.25	c0.16	
v/s Ratio Perm												
v/c Ratio	0.87	0.98		0.97	0.47	0.18	0.58	0.44	0.29	0.97	0.59	
Uniform Delay, d1	47.2	48.8		48.1	41.3	15.5	55.1	52.7	25.9	48.2	41.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	20.0	28.3		35.5	0.4	0.1	4.7	0.8	0.3	37.9	1.2	
Delay (s)	67.2	77.1		83.6	41.7	15.6	59.7	53.5	26.1	86.1	42.7	
Level of Service	E	E		F	D	B	E	D	C	F	D	
Approach Delay (s)		74.1			51.4			42.3			61.1	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	59.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

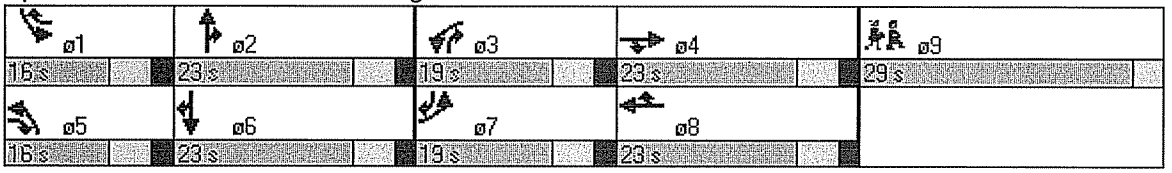
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	445	260	165	420	100	95	170	65	90	190	105
Lane Group Flow (vph)	188	478	280	174	442	105	114	205	78	98	207	114
Turn Type	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	16.0	22.0		16.0	22.0		16.0	22.0		16.0	22.0	
Total Split (s)	19.0	23.0	39.0	19.0	23.0	39.0	16.0	23.0	42.0	16.0	23.0	42.0
Total Split (%)	17.3%	20.9%	35.5%	17.3%	20.9%	35.5%	14.5%	20.9%	38.2%	14.5%	20.9%	38.2%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio	0.62	0.65	0.36	0.61	0.62	0.18	0.51	0.30	0.14	0.48	0.40	0.21
Control Delay	43.1	34.7	3.3	43.7	34.2	3.8	44.5	31.8	5.9	43.8	33.7	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	34.7	3.3	43.7	34.2	3.8	44.5	31.8	5.9	43.8	33.7	5.5
Queue Length 50th (ft)	79	101	0	73	93	0	48	45	0	41	45	0
Queue Length 95th (ft)	#253	#261	34	#238	#237	22	#139	96	27	#132	106	39
Internal Link Dist (ft)		2003			436			365			2475	
Turn Bay Length (ft)	275		275	150		225	150		130	120		70
Base Capacity (vph)	326	791	810	304	764	610	241	793	588	227	683	587
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.60	0.35	0.57	0.58	0.17	0.47	0.26	0.13	0.43	0.30	0.19

Intersection Summary

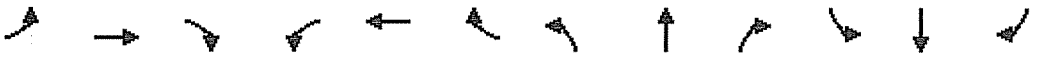
Cycle Length: 110
Actuated Cycle Length: 78.2
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: West Bridge Street & Elm Street



Lane Group	ø9
Lane Configurations	
Volume (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phases	
Minimum Initial (s)	1.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	26%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



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
Lane Width	13	12	13	11	11	13	12	12	10	11	10	10
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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1662	3217	1487	1555	3110	1301	1533	3065	1120	1510	2916	1141
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1662	3217	1487	1555	3110	1301	1533	3065	1120	1510	2916	1141
Volume (vph)	175	445	260	165	420	100	95	170	65	90	190	105
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.83	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	188	478	280	174	442	105	114	205	78	98	207	114
RTOR Reduction (vph)	0	0	180	0	0	70	0	0	44	0	0	67
Lane Group Flow (vph)	188	478	100	174	442	35	114	205	34	98	207	47
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	6%	6%	6%	4%	4%	4%
Parking (#/hr)						5			5			5
Turn Type	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Actuated Green, G (s)	12.3	15.8	25.0	12.2	15.7	23.1	9.2	15.3	33.5	7.4	13.5	31.8
Effective Green, g (s)	14.3	17.8	29.0	14.2	17.7	27.1	11.2	17.3	35.5	9.4	15.5	33.8
Actuated g/C Ratio	0.18	0.22	0.36	0.17	0.22	0.33	0.14	0.21	0.44	0.12	0.19	0.42
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	292	703	530	271	676	433	211	651	488	174	555	474
v/s Ratio Prot	c0.11	c0.15	0.07	0.11	0.14	0.03	c0.07	0.07	0.03	0.06	c0.07	0.04
v/s Ratio Perm												
v/c Ratio	0.64	0.68	0.19	0.64	0.65	0.08	0.54	0.31	0.07	0.56	0.37	0.10
Uniform Delay, d1	31.2	29.2	18.1	31.2	29.1	18.6	32.7	27.0	13.3	34.1	28.7	14.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	2.6	0.2	5.1	2.3	0.1	2.8	0.3	0.1	4.1	0.4	0.1
Delay (s)	36.0	31.8	18.3	36.4	31.3	18.7	35.5	27.3	13.4	38.2	29.1	14.6
Level of Service	D	C	B	D	C	B	D	C	B	D	C	B
Approach Delay (s)		28.6			30.7			26.9			27.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	18.7
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

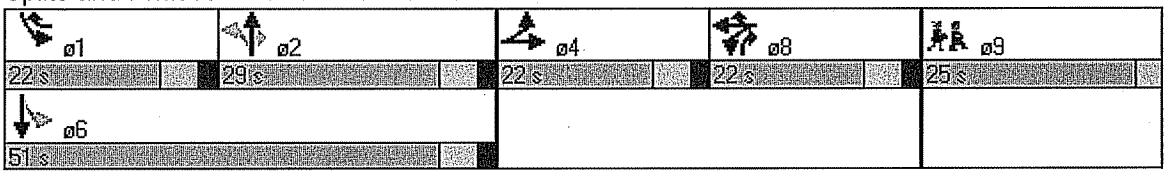
c Critical Lane Group

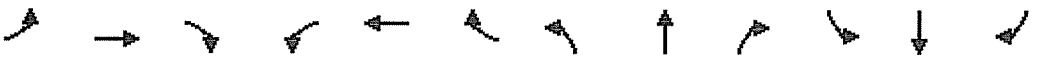
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	ø9
Lane Configurations										
Volume (vph)	115	200	50	420	10	330	315	310	295	
Lane Group Flow (vph)	210	138	137	462	0	390	362	365	353	
Turn Type		Split		pt+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	8	8	8 1		2	8	1	6	9
Permitted Phases					2		2	6		
Detector Phases	4	8	8	8 1	2	2	8	1	6	
Minimum Initial (s)	5.0	10.0	10.0		10.0	10.0	10.0	5.0	10.0	1.0
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0	22.0	16.0	22.0	25.0
Total Split (s)	22.0	22.0	22.0	44.0	29.0	29.0	22.0	22.0	51.0	25.0
Total Split (%)	18.3%	18.3%	18.3%	36.7%	24.2%	24.2%	18.3%	18.3%	42.5%	21%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	0.0
Lead/Lag					Lag	Lag		Lead		
Lead-Lag Optimize?										
Recall Mode	None	None	None		None	None	None	None	None	None
v/c Ratio	0.70	0.52	0.55	0.50		0.90	0.42	0.92	0.43	
Control Delay	51.0	46.6	47.8	3.7		61.3	2.9	55.6	20.2	
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	51.0	46.6	47.8	3.7		61.3	2.9	55.6	20.2	
Queue Length 50th (ft)	113	78	77	0		227	0	166	130	
Queue Length 95th (ft)	188	177	177	47		#514	34	#431	277	
Internal Link Dist (ft)	176		315			277			1565	
Turn Bay Length (ft)							340	205		
Base Capacity (vph)	327	289	277	928		434	874	397	827	
Starvation Cap Reductn	0	0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0	0	0		0	0	0	0	
Storage Cap Reductn	0	0	0	0		0	0	0	0	
Reduced v/c Ratio	0.64	0.48	0.49	0.50		0.90	0.41	0.92	0.43	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.4
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Granite Street & Main Street





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
Lane Width	14	14	14	13	11	16	12	12	14	14	12	12
Total Lost time (s)		4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		0.95	0.95	1.00		1.00	1.00	1.00	1.00	
Frt		0.97		1.00	1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1718		1563	1495	1615		1674	1520	1699	1672	
Flt Permitted		1.00		0.95	0.97	1.00		0.99	1.00	0.17	1.00	
Satd. Flow (perm)		1718		1563	1495	1615		1652	1520	296	1672	
Volume (vph)	10	115	30	200	50	420	10	330	315	310	295	5
Peak-hour factor, PHF	0.74	0.74	0.74	0.91	0.91	0.91	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	14	155	41	220	55	462	11	379	362	365	347	6
RTOR Reduction (vph)	0	8	0	0	0	301	0	0	209	0	1	0
Lane Group Flow (vph)	0	202	0	138	137	161	0	390	153	365	352	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split			Split		pt+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	4		8	8	8 1		2	8	1	6	
Permitted Phases							2		2	6		
Actuated Green, G (s)		14.4		14.2	14.2	30.4		23.4	37.6	45.6	45.6	
Effective Green, g (s)		16.4		16.2	16.2	34.4		25.4	41.6	47.6	47.6	
Actuated g/C Ratio		0.17		0.16	0.16	0.35		0.26	0.42	0.48	0.48	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		286		257	246	563		426	641	402	807	
v/s Ratio Prot		c0.12		0.09	c0.09	0.10			0.04	c0.17	0.21	
v/s Ratio Perm								0.24	0.06	c0.27		
v/c Ratio		0.71		0.54	0.56	0.29		0.92	0.24	0.91	0.44	
Uniform Delay, d1		38.8		37.8	37.9	23.2		35.6	18.3	23.8	16.7	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		7.8		2.2	2.7	0.3		24.0	0.2	23.6	0.4	
Delay (s)		46.6		39.9	40.6	23.5		59.6	18.5	47.4	17.1	
Level of Service		D		D	D	C		E	B	D	B	
Approach Delay (s)		46.6			29.8			39.8			32.5	
Approach LOS		D			C			D			C	

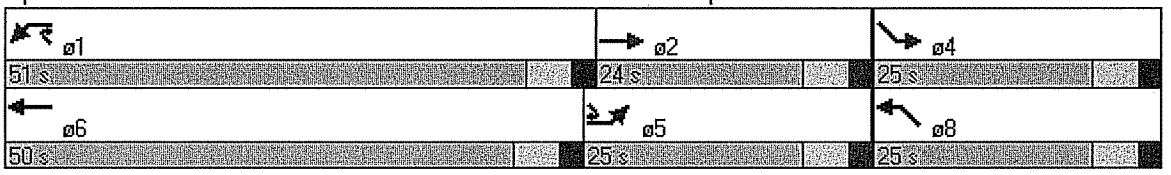
Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	18.4
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	SEL	SER2	NWL	NWR2
Lane Configurations										
Volume (vph)	100	465	370	455	375	65	230	130	430	970
Lane Group Flow (vph)	112	522	416	506	417	72	267	151	518	1054
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		4	5	8	1
Permitted Phases			Free			Free				
Detector Phases	5	2		1	6		4	5	8	1
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	22.0		25.0	22.0		25.0	25.0	25.0	25.0
Total Split (s)	25.0	24.0	0.0	51.0	50.0	0.0	25.0	25.0	25.0	51.0
Total Split (%)	25.0%	24.0%	0.0%	51.0%	50.0%	0.0%	25.0%	25.0%	25.0%	51.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0
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			Lag		Lead
Lead-Lag Optimize?										
Recall Mode	None	None		None	None		None	None	None	None
v/c Ratio	0.09	0.80	0.26	0.38	0.47	0.05	0.39	0.14	0.74	0.85
Control Delay	14.7	46.6	0.4	17.7	36.3	0.1	34.3	2.9	42.2	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	46.6	0.4	17.7	36.3	0.1	34.3	2.9	42.2	25.8
Queue Length 50th (ft)	18	169	0	102	136	0	75	0	160	260
Queue Length 95th (ft)	35	#249	0	140	182	0	108	16	197	364
Internal Link Dist (ft)		241			733					
Turn Bay Length (ft)			125	475		25	350	625	350	625
Base Capacity (vph)	1302	693	1631	1471	1343	1391	762	1133	770	1332
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.75	0.26	0.34	0.31	0.05	0.35	0.13	0.67	0.79

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 90.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Granite Street & Exit 5 NB On Ramp



Movement	EBL	EBT	EBR2	WBL	WBT	WBR2	SEL	SER2	NWL	NWR2
Lane Configurations										
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	11	11	11	14	11	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.88	0.97	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3016	3110	1631	3016	3110	1391	3296	2424	3328	2508
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3016	3110	1631	3016	3110	1391	3296	2424	3328	2508
Volume (vph)	100	465	370	455	375	65	230	130	430	970
Peak-hour factor, PHF	0.89	0.89	0.89	0.90	0.90	0.90	0.86	0.86	0.83	0.92
Adj. Flow (vph)	112	522	416	506	417	72	267	151	518	1054
RTOR Reduction (vph)	0	0	0	0	0	0	0	93	0	120
Lane Group Flow (vph)	112	522	416	506	417	72	267	58	518	934
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	1%	2%
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		4	5	8	1
Permitted Phases			Free			Free				
Actuated Green, G (s)	33.2	18.6	91.6	38.1	23.5	91.6	16.9	33.2	16.9	38.1
Effective Green, g (s)	35.2	20.6	91.6	40.1	25.5	91.6	18.9	35.2	18.9	40.1
Actuated g/C Ratio	0.38	0.22	1.00	0.44	0.28	1.00	0.21	0.38	0.21	0.44
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1159	699	1631	1320	866	1391	680	931	687	1098
v/s Ratio Prot	0.04	c0.17		0.17	0.13		0.08	0.02	c0.16	c0.37
v/s Ratio Perm			0.26			0.05				
v/c Ratio	0.10	0.75	0.26	0.38	0.48	0.05	0.39	0.06	0.75	0.85
Uniform Delay, d1	18.0	33.1	0.0	17.4	27.5	0.0	31.4	17.8	34.2	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	4.4	0.4	0.2	0.4	0.1	0.4	0.0	4.7	6.5
Delay (s)	18.1	37.4	0.4	17.6	28.0	0.1	31.8	17.8	38.9	29.5
Level of Service	B	D	A	B	C	A	C	B	D	C
Approach Delay (s)		20.7			20.7					
Approach LOS		C			C					

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	ø9
Lane Configurations										
Volume (vph)	545	900	75	610	50	30	25	45	235	
Lane Group Flow (vph)	592	1217	82	723	54	66	27	49	255	
Turn Type	Prot		Prot		Split		Split		pt+ov	
Protected Phases	5	2	1	6	4	4	7	7	7 5	9
Permitted Phases										
Detector Phases	5	2	1	6	4	4	7	7	7 5	
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0		1.0
Minimum Split (s)	16.0	22.0	16.0	22.0	22.0	22.0	16.0	16.0		28.0
Total Split (s)	28.0	38.0	16.0	26.0	22.0	22.0	16.0	16.0	44.0	28.0
Total Split (%)	23.3%	31.7%	13.3%	21.7%	18.3%	18.3%	13.3%	13.3%	36.7%	23%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		0.0
Lead/Lag	Lead	Lead	Lag	Lag						
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	None		None
v/c Ratio	0.71	0.94	0.42	0.71	0.28	0.17	0.16	0.26	0.21	
Control Delay	39.7	44.8	50.3	38.7	46.5	26.2	46.3	47.4	2.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	39.7	44.8	50.3	38.7	46.5	26.2	46.3	47.4	2.4	
Queue Length 50th (ft)	137	307	38	116	26	7	13	23	0	
Queue Length 95th (ft)	#345	#775	113	#259	78	33	48	75	18	
Internal Link Dist (ft)		733		479		420		391		
Turn Bay Length (ft)	275		85		110		190		105	
Base Capacity (vph)	862	1295	225	1136	304	589	212	231	1231	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.69	0.94	0.36	0.64	0.18	0.11	0.13	0.21	0.21	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 88.4

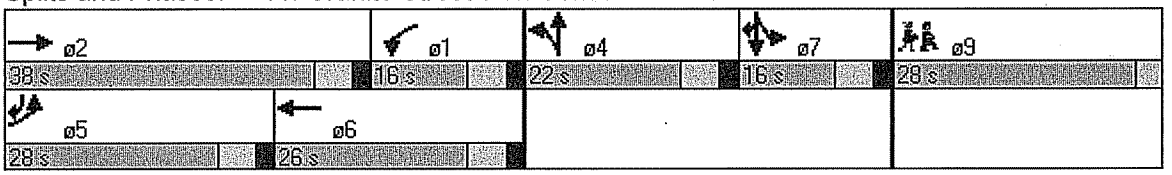
Natural Cycle: 135

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Granite Street & N. Commercial Street



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
Lane Width	11	11	12	13	11	12	12	12	12	10	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.91		1.00	0.95		1.00	1.00	0.88
Frt	1.00	0.97		1.00	0.99		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	2987	2988		1646	4369		1593	2946		1486	1621	2424
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2987	2988		1646	4369		1593	2946		1486	1621	2424
Volume (vph)	545	900	220	75	610	55	50	30	30	25	45	235
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)	592	978	239	82	663	60	54	33	33	27	49	255
RTOR Reduction (vph)	0	15	0	0	8	0	0	30	0	0	0	160
Lane Group Flow (vph)	592	1202	0	82	715	0	54	36	0	27	49	95
Turn Type	Prot			Prot			Split			Split		pt+ov
Protected Phases	5	2		1	6		4	4		7	7	7 5
Permitted Phases												
Actuated Green, G (s)	22.3	35.7		7.0	20.4		6.9	6.9		8.1	8.1	30.4
Effective Green, g (s)	24.3	37.7		9.0	22.4		8.9	8.9		10.1	10.1	34.4
Actuated g/C Ratio	0.26	0.41		0.10	0.24		0.10	0.10		0.11	0.11	0.37
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	786	1220		160	1060		154	284		163	177	903
v/s Ratio Prot	0.20	c0.40		0.05	c0.16		c0.03	0.01		0.02	c0.03	0.04
v/s Ratio Perm												
v/c Ratio	0.75	0.99		0.51	0.67		0.35	0.13		0.17	0.28	0.11
Uniform Delay, d1	31.2	27.0		39.6	31.6		39.0	38.1		37.3	37.7	18.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.1	22.1		2.8	1.7		1.4	0.2		0.5	0.9	0.1
Delay (s)	35.4	49.1		42.3	33.4		40.4	38.4		37.8	38.6	19.0
Level of Service	D	D		D	C		D	D		D	D	B
Approach Delay (s)		44.6			34.3			39.3			23.4	
Approach LOS		D			C			D			C	

Intersection Summary					
HCM Average Control Delay	39.4	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.73				
Actuated Cycle Length (s)	92.3	Sum of lost time (s)		22.6	
Intersection Capacity Utilization	59.8%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	WBT	NBL
Lane Configurations		
Volume (vph)	1025	790
Lane Group Flow (vph)	1114	888
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phases	1	2
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	22.0	22.0
Total Split (s)	49.0	41.0
Total Split (%)	54.4%	45.6%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?		
Recall Mode	None	None
v/c Ratio	0.68	0.66
Control Delay	15.6	18.5
Queue Delay	0.0	0.0
Total Delay	15.6	18.5
Queue Length 50th (ft)	149	123
Queue Length 95th (ft)	298	255
Internal Link Dist (ft)	162	189
Turn Bay Length (ft)		
Base Capacity (vph)	2103	1790
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.53	0.50

Intersection Summary

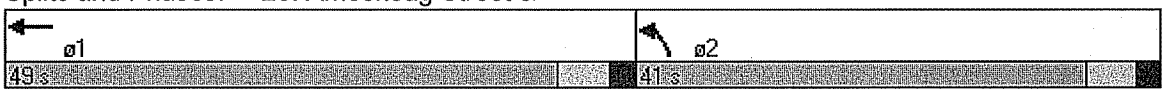
Cycle Length: 90

Actuated Cycle Length: 59.8

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Splits and Phases: 26: Amoskeag Street &



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	
Lane Util. Factor				0.95	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				3539	3467	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				3539	3467	
Volume (vph)	0	0	0	1025	790	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.89	0.89
Adj. Flow (vph)	0	0	0	1114	888	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1114	888	0
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Turn Type						
Protected Phases				1	2	
Permitted Phases						
Actuated Green, G (s)				25.4	21.1	
Effective Green, g (s)				27.4	23.1	
Actuated g/C Ratio				0.47	0.39	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1658	1369	
v/s Ratio Prot				c0.31	c0.26	
v/s Ratio Perm						
v/c Ratio				0.67	0.65	
Uniform Delay, d1				12.1	14.4	
Progression Factor				1.00	1.00	
Incremental Delay, d2				1.1	1.1	
Delay (s)				13.1	15.5	
Level of Service				B	B	
Approach Delay (s)	0.0			13.1	15.5	
Approach LOS	A			B	B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	139.7%	ICU Level of Service	H
Analysis Period (min)	15		

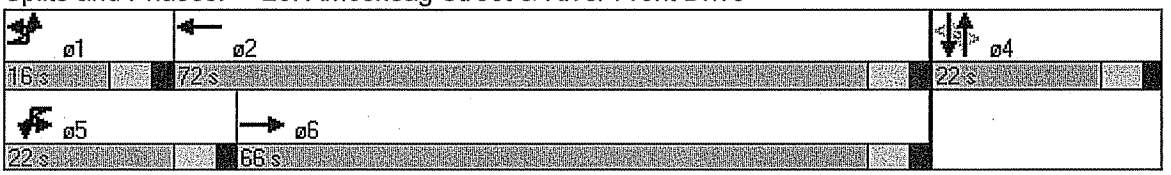
c Critical Lane Group

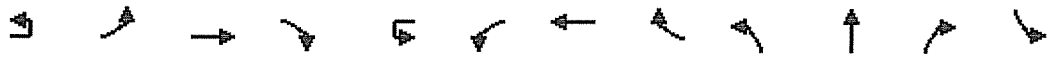
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	25	1875	5	985	10	0	25	0
Lane Group Flow (vph)	35	2212	7	1116	0	32	0	70
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	16.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	16.0	66.0	22.0	72.0	22.0	22.0	22.0	22.0
Total Split (%)	14.5%	60.0%	20.0%	65.5%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
v/c Ratio	0.19	0.75	0.05	0.42		0.15		0.31
Control Delay	37.6	9.5	40.2	7.6		23.8		24.4
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	37.6	9.5	40.2	7.6		23.8		24.4
Queue Length 50th (ft)	16	224	3	140		7		16
Queue Length 95th (ft)	46	618	18	231		21		41
Internal Link Dist (ft)		118		729		196		139
Turn Bay Length (ft)	100		100					
Base Capacity (vph)	231	2951	303	2819		358		358
Starvation Cap Reductn	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.15	0.75	0.02	0.40		0.09		0.20

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 79.9
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

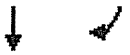
Splits and Phases: 28: Amoskeag Street & River Front Drive





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.93		
Flt Protected		0.95	1.00			0.95	1.00			0.98		
Satd. Flow (prot)		1668	3692			1668	3682			1959		
Flt Permitted		0.95	1.00			0.95	1.00			0.84		
Satd. Flow (perm)		1668	3692			1668	3682			1687		
Volume (vph)	5	25	1875	5	1	5	985	20	10	0	10	25
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.61	0.61	0.61	0.71
Adj. Flow (vph)	6	29	2206	6	1	6	1094	22	16	0	16	35
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	14	0	0
Lane Group Flow (vph)	0	35	2212	0	0	7	1115	0	0	18	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	3%
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		4.7	60.9			1.2	57.4			6.2		
Effective Green, g (s)		6.7	62.9			3.2	59.4			8.2		
Actuated g/C Ratio		0.08	0.73			0.04	0.69			0.10		
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)		129	2691			62	2534			160		
v/s Ratio Prot		c0.02	c0.60			0.00	0.30					
v/s Ratio Perm										0.01		
v/c Ratio		0.27	0.82			0.11	0.44			0.11		
Uniform Delay, d1		37.5	7.9			40.2	6.0			35.7		
Progression Factor		1.00	1.00			1.00	1.00			1.00		
Incremental Delay, d2		1.1	2.1			0.8	0.1			0.3		
Delay (s)		38.6	10.1			41.0	6.1			36.0		
Level of Service		D	B			D	A			D		
Approach Delay (s)			10.5				6.4			36.0		
Approach LOS			B				A			D		

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations	↕	
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.93	
Flt Protected	0.98	
Satd. Flow (prot)	1902	
Flt Permitted	0.83	
Satd. Flow (perm)	1609	
Volume (vph)	0	25
Peak-hour factor, PHF	0.71	0.71
Adj. Flow (vph)	0	35
RTOR Reduction (vph)	32	0
Lane Group Flow (vph)	38	0
Heavy Vehicles (%)	3%	3%
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.2	
Effective Green, g (s)	8.2	
Actuated g/C Ratio	0.10	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	153	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.25	
Uniform Delay, d1	36.2	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	37.1	
Level of Service	D	
Approach Delay (s)	37.1	
Approach LOS	D	

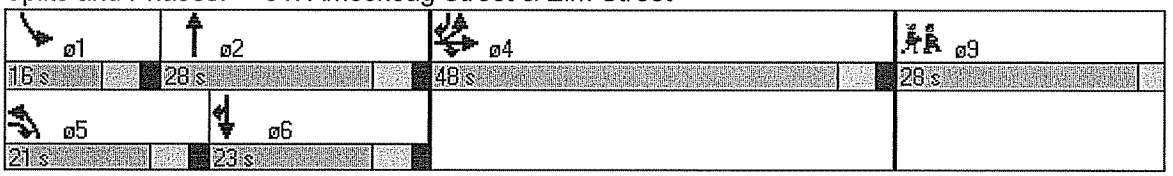
Intersection Summary

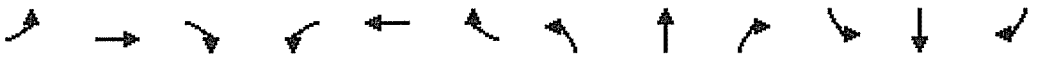
Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø9
Lane Configurations									
Volume (vph)	520	275	475	220	180	10	255	575	
Lane Group Flow (vph)	634	335	579	256	244	11	277	625	
Turn Type	Split		pt+ov	Prot		Prot		pt+ov	
Protected Phases	4	4	4 5	5	2	1	6	6 4	9
Permitted Phases									
Detector Phases	4	4	4 5	5	2	1	6	6 4	
Minimum Initial (s)	10.0	10.0		5.0	10.0	5.0	10.0		1.0
Minimum Split (s)	22.0	22.0		16.0	22.0	16.0	22.0		28.0
Total Split (s)	48.0	48.0	69.0	21.0	28.0	16.0	23.0	71.0	28.0
Total Split (%)	40.0%	40.0%	57.5%	17.5%	23.3%	13.3%	19.2%	59.2%	23%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0		0.0
Lead/Lag				Lead	Lag	Lead	Lag		
Lead-Lag Optimize?									
Recall Mode	None	None		None	None	None	None		None
v/c Ratio	0.87	0.42	0.48	0.88	0.21	0.09	0.52	0.50	
Control Delay	38.6	21.2	2.0	70.6	22.8	49.4	40.8	2.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	38.6	21.2	2.0	70.6	22.8	49.4	40.8	2.4	
Queue Length 50th (ft)	297	116	0	142	41	6	74	0	
Queue Length 95th (ft)	#678	263	14	#373	113	27	152	50	
Internal Link Dist (ft)		741			2475		476		
Turn Bay Length (ft)	265		400			175		150	
Base Capacity (vph)	732	797	1205	290	1172	173	612	1257	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.87	0.42	0.48	0.88	0.21	0.06	0.45	0.50	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 94.9
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Amoskeag Street & Elm Street





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
Lane Width	11	12	13	12	12	12	12	12	14	11	11	14
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1555	1693	1487				1593	3117		1555	3110	1535
Flt Permitted	0.95	1.00	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1555	1693	1487				1593	3117		1555	3110	1535
Volume (vph)	520	275	475	0	0	0	220	180	30	10	255	575
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	634	335	579	0	0	0	256	209	35	11	277	625
RTOR Reduction (vph)	0	0	229	0	0	0	0	9	0	0	0	197
Lane Group Flow (vph)	634	335	350	0	0	0	256	235	0	11	277	428
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Parking (#/hr)									0			
Turn Type	Split		pt+ov				Prot			Prot		pt+ov
Protected Phases	4	4	4 5				5	2		1	6	6 4
Permitted Phases												
Actuated Green, G (s)	42.7	42.7	57.9				15.2	33.4		1.3	19.5	68.2
Effective Green, g (s)	44.7	44.7	61.9				17.2	35.4		3.3	21.5	70.2
Actuated g/C Ratio	0.44	0.44	0.60				0.17	0.35		0.03	0.21	0.69
Clearance Time (s)	6.0	6.0					6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	679	739	899				268	1078		50	653	1052
v/s Ratio Prot	c0.41	0.20	0.24				c0.16	0.08		0.01	0.09	c0.28
v/s Ratio Perm												
v/c Ratio	0.93	0.45	0.39				0.96	0.22		0.22	0.42	0.41
Uniform Delay, d1	27.4	20.3	10.5				42.2	23.7		48.3	35.1	7.0
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.9	0.4	0.3				42.4	0.1		2.2	0.4	0.3
Delay (s)	47.3	20.7	10.8				84.7	23.8		50.5	35.5	7.3
Level of Service	D	C	B				F	C		D	D	A
Approach Delay (s)		27.9			0.0			55.0			16.4	
Approach LOS		C			A			D			B	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	102.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

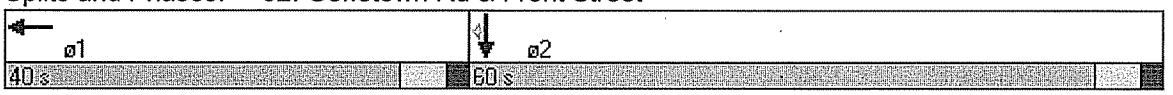
c Critical Lane Group

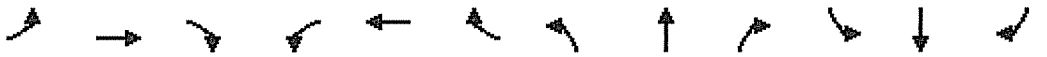
Lane Group	EBR	WBT	WBR	SBT	SBR
Lane Configurations					
Volume (vph)	1075	335	215	590	145
Lane Group Flow (vph)	1194	364	234	656	161
Turn Type	Free		Free		Perm
Protected Phases		1		2	
Permitted Phases	Free		Free		2
Detector Phases		1		2	2
Minimum Initial (s)		10.0		10.0	10.0
Minimum Split (s)		22.0		22.0	22.0
Total Split (s)	0.0	40.0	0.0	60.0	60.0
Total Split (%)	0.0%	40.0%	0.0%	60.0%	60.0%
Yellow Time (s)		4.0		4.0	4.0
All-Red Time (s)		2.0		2.0	2.0
Lead/Lag		Lead		Lag	Lag
Lead-Lag Optimize?					
Recall Mode		None		None	None
v/c Ratio	0.65	0.52	0.13	0.70	0.19
Control Delay	1.8	18.6	0.2	14.7	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	1.8	18.6	0.2	14.7	4.0
Queue Length 50th (ft)	0	76	0	118	7
Queue Length 95th (ft)	0	220	0	306	39
Internal Link Dist (ft)		63		1730	
Turn Bay Length (ft)					100
Base Capacity (vph)	1844	1106	1777	1324	1156
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.65	0.33	0.13	0.50	0.14

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 50.6
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 32: Goffstown Rd & Front Street





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
Lane Width	16	16	16	16	16	16	12	12	12	13	13	13
Total Lost time (s)			4.0		4.0	4.0					4.0	4.0
Lane Util. Factor			1.00		1.00	1.00					1.00	1.00
Frt			0.86		1.00	0.85					1.00	0.85
Flt Protected			1.00		1.00	1.00					1.00	1.00
Satd. Flow (prot)			1844		2091	1777					1906	1620
Flt Permitted			1.00		1.00	1.00					1.00	1.00
Satd. Flow (perm)			1844		2091	1777					1906	1620
Volume (vph)	0	0	1075	0	335	215	0	0	0	0	590	145
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	0	1194	0	364	234	0	0	0	0	656	161
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	0	1194	0	364	234	0	0	0	0	656	111
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type			Free			Free						Perm
Protected Phases					1						2	
Permitted Phases			Free			Free						2
Actuated Green, G (s)			49.4		14.8	49.4					22.6	22.6
Effective Green, g (s)			49.4		16.8	49.4					24.6	24.6
Actuated g/C Ratio			1.00		0.34	1.00					0.50	0.50
Clearance Time (s)					6.0						6.0	6.0
Vehicle Extension (s)					3.0						3.0	3.0
Lane Grp Cap (vph)			1844		711	1777					949	807
v/s Ratio Prot					0.17						0.34	
v/s Ratio Perm			c0.65			0.13						0.07
v/c Ratio			0.65		0.51	0.13					0.69	0.14
Uniform Delay, d1			0.0		13.0	0.0					9.5	6.7
Progression Factor			1.00		1.00	1.00					1.00	1.00
Incremental Delay, d2			1.8		0.6	0.2					2.2	0.1
Delay (s)			1.8		13.6	0.2					11.7	6.8
Level of Service			A		B	A					B	A
Approach Delay (s)		1.8			8.4			0.0			10.7	
Approach LOS		A			A			A			B	

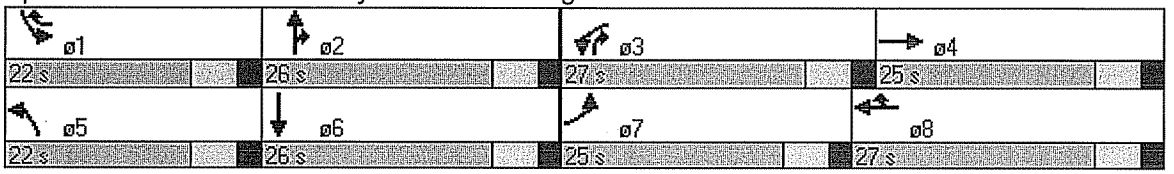
Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	0.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

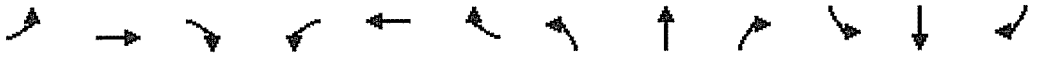
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	235	390	300	575	365	220	375	310	215	265
Lane Group Flow (vph)	250	606	326	625	397	253	431	356	242	405
Turn Type	Prot		Prot		pt+ov	Prot		pt+ov	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2 3	1	6
Permitted Phases										
Detector Phases	7	4	3	8	8 1	5	2	2 3	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	16.0	25.0	16.0	25.0		16.0	25.0		16.0	25.0
Total Split (s)	25.0	25.0	27.0	27.0	49.0	22.0	26.0	53.0	22.0	26.0
Total Split (%)	25.0%	25.0%	27.0%	27.0%	49.0%	22.0%	26.0%	53.0%	22.0%	26.0%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		None	None		None	None
v/c Ratio	0.81	0.88	0.87	0.81	0.53	0.88	0.67	0.47	0.85	0.61
Control Delay	58.5	49.1	61.1	44.7	14.2	69.8	41.1	12.6	65.9	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	49.1	61.1	44.7	14.2	69.8	41.1	12.6	65.9	34.8
Queue Length 50th (ft)	152	177	200	200	104	159	131	88	150	106
Queue Length 95th (ft)	#277	#280	#357	#288	195	#290	176	152	#281	155
Internal Link Dist (ft)		274		2003			1004			661
Turn Bay Length (ft)	300		280		280	200		200	105	
Base Capacity (vph)	327	705	389	786	763	294	703	779	296	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.86	0.84	0.80	0.52	0.86	0.61	0.46	0.82	0.55

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 95.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Amory Street & McGregor Street





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
Lane Width	10	11	16	12	12	12	11	11	12	11	12	13
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1501	2963		1624	3249	1454	1555	3110	1439	1570	3120	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1501	2963		1624	3249	1454	1555	3110	1439	1570	3120	
Volume (vph)	235	390	180	300	575	365	220	375	310	215	265	95
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	250	415	191	326	625	397	253	431	356	242	298	107
RTOR Reduction (vph)	0	53	0	0	0	83	0	0	67	0	38	0
Lane Group Flow (vph)	250	553	0	326	625	314	253	431	289	242	367	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot			Prot		pt+ov	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2 3	1	6	
Permitted Phases												
Actuated Green, G (s)	17.5	18.3		19.9	20.7	42.0	15.7	17.6	43.5	15.3	17.2	
Effective Green, g (s)	19.5	20.3		21.9	22.7	44.0	17.7	19.6	45.5	17.3	19.2	
Actuated g/C Ratio	0.21	0.21		0.23	0.24	0.46	0.19	0.21	0.48	0.18	0.20	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	308	632		374	776	673	289	641	688	286	630	
v/s Ratio Prot	0.17	0.19		c0.20	c0.19	0.22	c0.16	c0.14	0.20	0.15	0.12	
v/s Ratio Perm												
v/c Ratio	0.81	0.87		0.87	0.81	0.47	0.88	0.67	0.42	0.85	0.58	
Uniform Delay, d1	36.0	36.2		35.2	34.1	17.5	37.6	34.8	16.2	37.6	34.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.9	12.8		19.4	6.1	0.5	24.2	2.8	0.4	20.0	1.4	
Delay (s)	51.0	49.0		54.6	40.2	18.0	61.8	37.6	16.6	57.6	35.7	
Level of Service	D	D		D	D	B	E	D	B	E	D	
Approach Delay (s)		49.5			37.2			36.3			43.9	
Approach LOS		D			D			D			D	

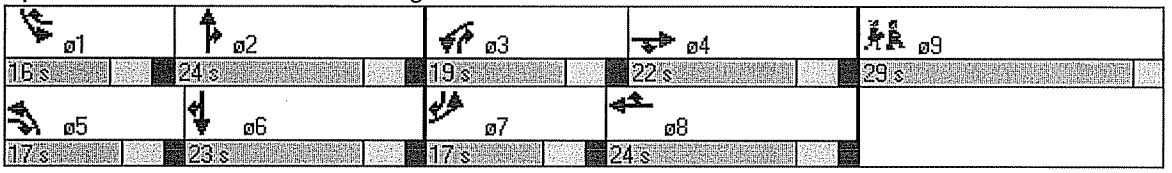
Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	95.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	435	155	150	565	130	180	315	105	140	270	105
Lane Group Flow (vph)	191	448	160	156	589	135	191	335	112	152	293	114
Turn Type	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	16.0	22.0		16.0	22.0		16.0	22.0		16.0	22.0	
Total Split (s)	17.0	22.0	39.0	19.0	24.0	40.0	17.0	24.0	43.0	16.0	23.0	40.0
Total Split (%)	15.5%	20.0%	35.5%	17.3%	21.8%	36.4%	15.5%	21.8%	39.1%	14.5%	20.9%	36.4%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio	0.71	0.58	0.21	0.60	0.76	0.21	0.74	0.54	0.21	0.66	0.55	0.22
Control Delay	51.8	34.1	3.2	45.0	38.6	3.5	54.0	35.1	5.2	51.7	36.5	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	34.1	3.2	45.0	38.6	3.5	54.0	35.1	5.2	51.7	36.5	5.7
Queue Length 50th (ft)	86	100	0	67	134	0	87	75	0	69	66	0
Queue Length 95th (ft)	#281	#247	27	#208	#350	25	#286	163	38	#231	147	40
Internal Link Dist (ft)		2003			436			365			2475	
Turn Bay Length (ft)	275		275	150		225	150		130	120		70
Base Capacity (vph)	268	777	750	283	771	646	259	752	589	229	660	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.58	0.21	0.55	0.76	0.21	0.74	0.45	0.19	0.66	0.44	0.21

Intersection Summary

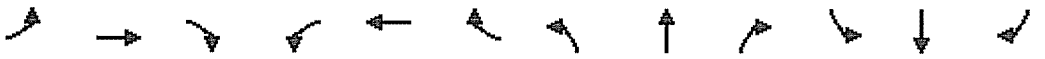
Cycle Length: 110
Actuated Cycle Length: 82.6
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: West Bridge Street & Elm Street



Lane Group	ø9
Lane Configurations	
Volume (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phases	
Minimum Initial (s)	1.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	26%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



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
Lane Width	13	12	13	11	11	13	12	12	10	11	10	10
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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1662	3217	1487	1555	3110	1301	1608	3217	1175	1540	2973	1164
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1662	3217	1487	1555	3110	1301	1608	3217	1175	1540	2973	1164
Volume (vph)	185	435	155	150	565	130	180	315	105	140	270	105
Peak-hour factor, PHF	0.97	0.97	0.97	0.96	0.96	0.96	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	191	448	160	156	589	135	191	335	112	152	293	114
RTOR Reduction (vph)	0	0	97	0	0	83	0	0	68	0	0	71
Lane Group Flow (vph)	191	448	63	156	589	52	191	335	44	152	293	43
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Parking (#/hr)						5			5			5
Turn Type	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Actuated Green, G (s)	11.3	17.9	29.2	11.8	18.4	28.6	11.3	13.8	31.6	10.2	12.7	30.0
Effective Green, g (s)	13.3	19.9	33.2	13.8	20.4	32.6	13.3	15.8	33.6	12.2	14.7	32.0
Actuated g/C Ratio	0.16	0.24	0.39	0.16	0.24	0.39	0.16	0.19	0.40	0.14	0.17	0.38
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	261	757	584	254	750	501	253	601	467	222	517	440
v/s Ratio Prot	c0.11	0.14	0.04	0.10	c0.19	0.04	c0.12	c0.10	0.04	0.10	0.10	0.04
v/s Ratio Perm												
v/c Ratio	0.73	0.59	0.11	0.61	0.79	0.10	0.75	0.56	0.10	0.68	0.57	0.10
Uniform Delay, d1	34.0	28.7	16.3	32.9	30.1	16.6	34.1	31.2	16.0	34.4	32.0	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	1.2	0.1	4.4	5.4	0.1	12.1	1.1	0.1	8.4	1.4	0.1
Delay (s)	44.1	30.0	16.4	37.3	35.5	16.7	46.1	32.4	16.1	42.8	33.5	17.1
Level of Service	D	C	B	D	D	B	D	C	B	D	C	B
Approach Delay (s)		30.6			32.9			33.6			32.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	14.9
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

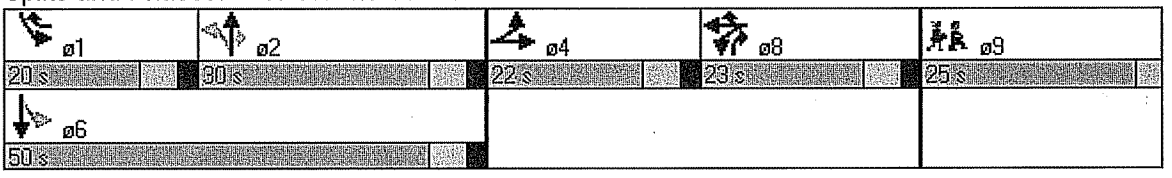
c Critical Lane Group

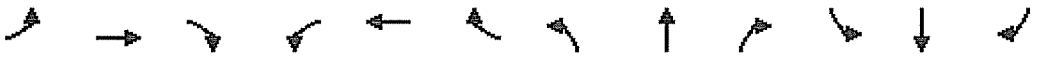
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	ø9
Lane Configurations										
Volume (vph)	70	490	75	525	10	360	280	315	445	
Lane Group Flow (vph)	158	288	283	530	0	394	298	342	489	
Turn Type		Split		pt+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	8	8	8 1		2	8	1	6	9
Permitted Phases					2		2	6		
Detector Phases	4	8	8	8 1	2	2	8	1	6	
Minimum Initial (s)	5.0	5.0	5.0		10.0	10.0	5.0	5.0	10.0	1.0
Minimum Split (s)	22.0	11.0	11.0		22.0	22.0	11.0	16.0	22.0	25.0
Total Split (s)	22.0	23.0	23.0	43.0	30.0	30.0	23.0	20.0	50.0	25.0
Total Split (%)	18.3%	19.2%	19.2%	35.8%	25.0%	25.0%	19.2%	16.7%	41.7%	21%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	0.0
Lead/Lag					Lag	Lag		Lead		
Lead-Lag Optimize?										
Recall Mode	None	None	None		None	None	None	None	None	None
v/c Ratio	0.58	0.90	0.93	0.54		0.86	0.33	0.93	0.59	
Control Delay	45.4	71.0	78.0	3.8		54.3	2.4	58.1	24.0	
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	45.4	71.0	78.0	3.8		54.3	2.4	58.1	24.0	
Queue Length 50th (ft)	78	171	170	0		214	0	144	189	
Queue Length 95th (ft)	129	#455	#455	51		#534	35	#451	452	
Internal Link Dist (ft)	176		315			277			1555	
Turn Bay Length (ft)							340	205		
Base Capacity (vph)	329	319	303	981		459	891	369	827	
Starvation Cap Reductn	0	0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0	0	0		0	0	0	0	
Storage Cap Reductn	0	0	0	0		0	0	0	0	
Reduced v/c Ratio	0.48	0.90	0.93	0.54		0.86	0.33	0.93	0.59	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.2
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Granite Street & Main Street





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
Lane Width	14	14	14	13	11	16	12	12	14	14	12	12
Total Lost time (s)		4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		0.95	0.95	1.00		1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	0.96	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1749		1595	1515	1647		1708	1550	1733	1707	
Flt Permitted		1.00		0.95	0.96	1.00		0.98	1.00	0.18	1.00	
Satd. Flow (perm)		1749		1595	1515	1647		1679	1550	324	1707	
Volume (vph)	10	70	30	490	75	525	10	360	280	315	445	5
Peak-hour factor, PHF	0.69	0.69	0.69	0.99	0.99	0.99	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	14	101	43	495	76	530	11	383	298	342	484	5
RTOR Reduction (vph)	0	11	0	0	0	340	0	0	160	0	1	0
Lane Group Flow (vph)	0	147	0	288	283	190	0	394	138	342	488	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Split			Split		pt+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	4		8	8	8 1		2	8	1	6	
Permitted Phases							2		2	6		
Actuated Green, G (s)		12.3		17.2	17.2	31.4		24.4	41.6	44.6	44.6	
Effective Green, g (s)		14.3		19.2	19.2	35.4		26.4	45.6	46.6	46.6	
Actuated g/C Ratio		0.15		0.19	0.19	0.36		0.27	0.46	0.47	0.47	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		254		311	295	592		450	718	385	808	
v/s Ratio Prot		c0.08		0.18	c0.19	0.12			0.04	c0.15	0.29	
v/s Ratio Perm								0.23	0.05	c0.27		
v/c Ratio		0.58		0.93	0.96	0.32		0.88	0.19	0.89	0.60	
Uniform Delay, d1		39.3		39.0	39.3	22.9		34.5	15.6	21.3	19.2	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.2		32.1	40.9	0.3		17.1	0.1	21.1	1.3	
Delay (s)		42.5		71.1	80.2	23.2		51.6	15.7	42.4	20.4	
Level of Service		D		E	F	C		D	B	D	C	
Approach Delay (s)		42.5			50.4			36.1			29.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	40.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.4
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	SEL	SER2	NWL	NWR2
Lane Configurations										
Volume (vph)	115	520	320	1190	725	255	145	140	475	720
Lane Group Flow (vph)	128	578	356	1266	771	271	165	159	552	837
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		4	5	8	1
Permitted Phases			Free			Free				
Detector Phases	5	2		1	6		4	5	8	1
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	22.0		25.0	22.0		25.0	25.0	25.0	25.0
Total Split (s)	25.0	26.0	0.0	49.0	50.0	0.0	25.0	25.0	25.0	49.0
Total Split (%)	25.0%	26.0%	0.0%	49.0%	50.0%	0.0%	25.0%	25.0%	25.0%	49.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0
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			Lag		Lead
Lead-Lag Optimize?										
Recall Mode	None	None		None	None		None	None	None	None
v/c Ratio	0.11	0.85	0.22	0.92	0.85	0.19	0.24	0.17	0.80	0.68
Control Delay	21.7	49.9	0.3	37.2	42.2	0.3	33.8	22.4	47.4	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	49.9	0.3	37.2	42.2	0.3	33.8	22.4	47.4	25.0
Queue Length 50th (ft)	26	186	0	380	248	0	45	36	173	234
Queue Length 95th (ft)	52	#272	0	#529	283	0	72	69	221	290
Internal Link Dist (ft)		241			733					
Turn Bay Length (ft)			125	475		25	350	625	350	625
Base Capacity (vph)	1161	700	1647	1391	1252	1405	708	933	708	1234
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.83	0.22	0.91	0.62	0.19	0.23	0.17	0.78	0.68

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 98.1

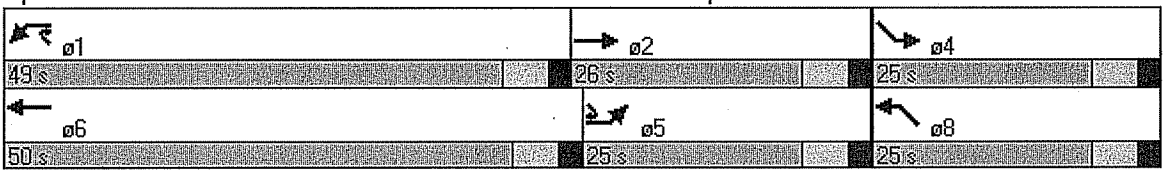
Natural Cycle: 90

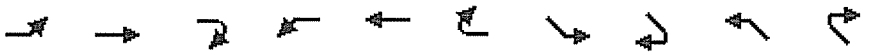
Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: Granite Street & Exit 5 NB On Ramp





Movement	EBL	EBT	EBR2	WBL	WBT	WBR2	SEL	SER2	NWL	NWR2
Lane Configurations										
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	11	11	11	14	11	14	14
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.88	0.97	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3046	3141	1647	3046	3141	1405	3328	2448	3328	2702
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3046	3141	1647	3046	3141	1405	3328	2448	3328	2702
Volume (vph)	115	520	320	1190	725	255	145	140	475	720
Peak-hour factor, PHF	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.86	0.86
Adj. Flow (vph)	128	578	356	1266	771	271	165	159	552	837
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	578	356	1266	771	271	165	159	552	837
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		4	5	8	1
Permitted Phases			Free			Free				
Actuated Green, G (s)	35.4	19.3	98.0	42.5	26.4	98.0	18.2	35.4	18.2	42.5
Effective Green, g (s)	37.4	21.3	98.0	44.5	28.4	98.0	20.2	37.4	20.2	44.5
Actuated g/C Ratio	0.38	0.22	1.00	0.45	0.29	1.00	0.21	0.38	0.21	0.45
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1162	683	1647	1383	910	1405	686	934	686	1227
v/s Ratio Prot	0.04	c0.18		c0.42	0.25		0.05	0.06	c0.17	0.31
v/s Ratio Perm			0.22			0.19				
v/c Ratio	0.11	0.85	0.22	0.92	0.85	0.19	0.24	0.17	0.80	0.68
Uniform Delay, d1	19.6	36.8	0.0	25.0	32.8	0.0	32.5	20.0	37.0	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	9.5	0.3	9.6	7.4	0.3	0.2	0.1	6.8	1.6
Delay (s)	19.6	46.3	0.3	34.6	40.1	0.3	32.7	20.1	43.8	22.7
Level of Service	B	D	A	C	D	A	C	C	D	C
Approach Delay (s)		27.6			32.4					
Approach LOS		C			C					

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	ø9
Lane Configurations										
Volume (vph)	420	890	45	1290	185	40	80	45	695	
Lane Group Flow (vph)	477	1096	54	1600	265	157	89	50	772	
Turn Type	Prot		Prot		Prot		Prot		pt+ov	
Protected Phases	5	2	1	6	8	4	3	7	7 5	9
Permitted Phases										
Detector Phases	5	2	1	6	8	4	3	7	7 5	
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0		1.0
Minimum Split (s)	16.0	22.0	16.0	22.0	16.0	22.0	16.0	16.0		28.0
Total Split (s)	19.0	38.0	16.0	35.0	22.0	22.0	16.0	16.0	35.0	28.0
Total Split (%)	15.8%	31.7%	13.3%	29.2%	18.3%	18.3%	13.3%	13.3%	29.2%	23%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		0.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag		
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	None		None
v/c Ratio	1.05	0.86	0.33	1.16	0.90	0.28	0.40	0.30	0.62	
Control Delay	99.4	39.6	52.6	111.9	76.7	20.1	48.1	51.0	3.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.4	39.6	52.6	111.9	76.7	20.1	48.1	51.0	3.9	
Queue Length 50th (ft)	142	315	28	~373	148	15	45	27	0	
Queue Length 95th (ft)	#336	#672	77	#647	#268	33	119	78	34	
Internal Link Dist (ft)		733		479		420		391		
Turn Bay Length (ft)	275		85		110		190		105	
Base Capacity (vph)	454	1274	186	1384	294	666	231	194	1262	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.05	0.86	0.29	1.16	0.90	0.24	0.39	0.26	0.61	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 101.7

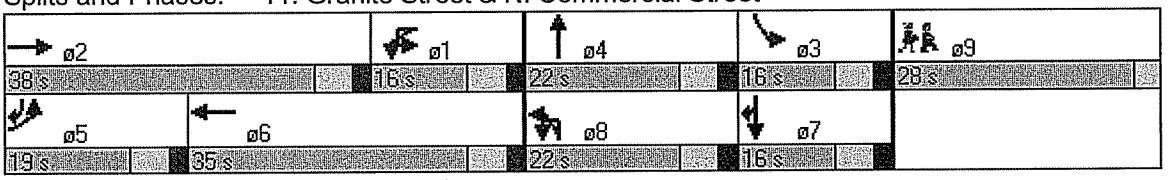
Natural Cycle: 145

Control Type: Actuated-Uncoordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

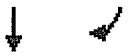
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Granite Street & N. Commercial Street



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	13	11	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	0.97	0.95			1.00	0.91			1.00	0.95		1.00
Frt	1.00	0.99			1.00	0.99			1.00	0.90		1.00
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00		0.95
Satd. Flow (prot)	3016	3073			1662	4434			1624	2939		1501
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00		0.95
Satd. Flow (perm)	3016	3073			1662	4434			1624	2939		1501
Volume (vph)	420	890	75	1	45	1290	70	1	185	40	70	80
Peak-hour factor, PHF	0.88	0.88	0.88	0.85	0.85	0.85	0.85	0.70	0.70	0.70	0.70	0.90
Adj. Flow (vph)	477	1011	85	1	53	1518	82	1	264	57	100	89
RTOR Reduction (vph)	0	4	0	0	0	5	0	0	0	85	0	0
Lane Group Flow (vph)	477	1092	0	0	54	1595	0	0	265	72	0	89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	1%
Turn Type	Prot			Prot	Prot			Prot	Prot			Prot
Protected Phases	5	2		1	1	6		8	8	4		3
Permitted Phases												
Actuated Green, G (s)	13.3	40.0			5.6	32.3			16.3	14.5		11.7
Effective Green, g (s)	15.3	42.0			7.6	34.3			18.3	16.5		13.7
Actuated g/C Ratio	0.14	0.39			0.07	0.32			0.17	0.15		0.13
Clearance Time (s)	6.0	6.0			6.0	6.0			6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)	430	1203			118	1417			277	452		192
v/s Ratio Prot	c0.16	0.36			0.03	c0.36			c0.16	0.02		c0.06
v/s Ratio Perm												
v/c Ratio	1.11	0.91			0.46	1.13			0.96	0.16		0.46
Uniform Delay, d1	46.0	30.8			47.9	36.5			44.1	39.4		43.4
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	76.5	10.0			2.8	66.3			41.9	0.2		1.8
Delay (s)	122.5	40.8			50.7	102.8			86.0	39.6		45.2
Level of Service	F	D			D	F			F	D		D
Approach Delay (s)		65.6				101.1				68.7		
Approach LOS		E				F				E		

Intersection Summary			
HCM Average Control Delay	72.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	107.3	Sum of lost time (s)	23.5
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations	↑	↱↱
Ideal Flow (vphpl)	1900	1900
Lane Width	11	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	0.88
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1637	2448
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1637	2448
Volume (vph)	45	695
Peak-hour factor, PHF	0.90	0.90
Adj. Flow (vph)	50	772
RTOR Reduction (vph)	0	576
Lane Group Flow (vph)	50	196
Heavy Vehicles (%)	1%	1%
Turn Type		pt+ov
Protected Phases	7	7 5
Permitted Phases		
Actuated Green, G (s)	9.9	23.2
Effective Green, g (s)	11.9	27.2
Actuated g/C Ratio	0.11	0.25
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	182	621
v/s Ratio Prot	0.03	0.08
v/s Ratio Perm		
v/c Ratio	0.27	0.32
Uniform Delay, d1	43.7	32.5
Progression Factor	1.00	1.00
Incremental Delay, d2	0.8	0.3
Delay (s)	44.6	32.8
Level of Service	D	C
Approach Delay (s)	34.6	
Approach LOS	C	

Intersection Summary

Lane Group	WBT	NBL
Lane Configurations	↑↑↑	↰↰
Volume (vph)	1670	1140
Lane Group Flow (vph)	1777	1253
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phases	1	2
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	22.0	22.0
Total Split (s)	45.0	35.0
Total Split (%)	56.3%	43.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?		
Recall Mode	None	None
v/c Ratio	0.96	0.92
Control Delay	33.4	36.4
Queue Delay	3.6	1.9
Total Delay	37.0	38.3
Queue Length 50th (ft)	422	300
Queue Length 95th (ft)	#607	#436
Internal Link Dist (ft)	168	200
Turn Bay Length (ft)		
Base Capacity (vph)	1850	1357
Starvation Cap Reductn	0	0
Spillback Cap Reductn	50	39
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.99	0.95

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

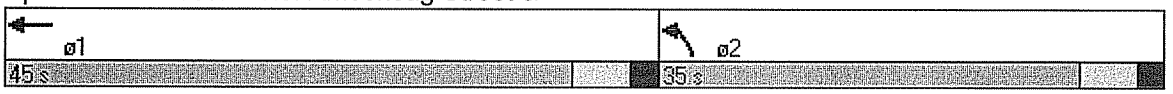
Natural Cycle: 80

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 26: Amoskeag Street &



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↰↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	
Lane Util. Factor				0.95	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				3610	3502	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				3610	3502	
Volume (vph)	0	0	0	1670	1140	0
Peak-hour factor, PHF	0.92	0.92	0.94	0.94	0.91	0.91
Adj. Flow (vph)	0	0	0	1777	1253	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1777	1253	0
Heavy Vehicles (%)	2%	2%	0%	0%	0%	0%
Turn Type						
Protected Phases				1	2	
Permitted Phases						
Actuated Green, G (s)				39.0	29.0	
Effective Green, g (s)				41.0	31.0	
Actuated g/C Ratio				0.51	0.39	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1850	1357	
v/s Ratio Prot				c0.49	c0.36	
v/s Ratio Perm						
v/c Ratio				0.96	0.92	
Uniform Delay, d1				18.7	23.4	
Progression Factor				1.00	1.00	
Incremental Delay, d2				12.9	10.6	
Delay (s)				31.6	34.0	
Level of Service				C	C	
Approach Delay (s)	0.0			31.6	34.0	
Approach LOS	A			C	C	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	139.0%	ICU Level of Service	H
Analysis Period (min)	15		

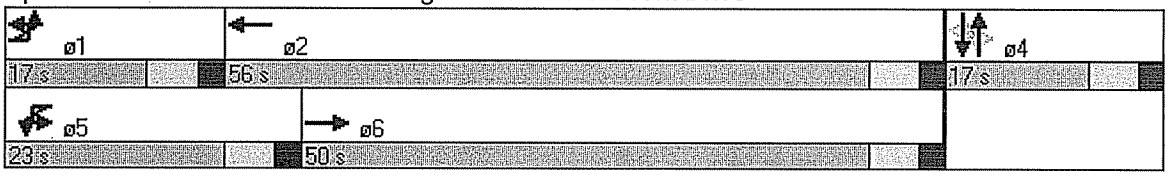
c Critical Lane Group

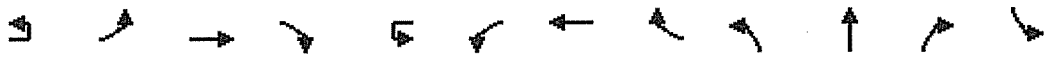
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	30	1180	5	1620	10	0	20	0
Lane Group Flow (vph)	40	1347	10	1744	0	30	0	93
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	22.0	22.0	22.0	16.0	16.0	16.0	16.0
Total Split (s)	17.0	50.0	23.0	56.0	17.0	17.0	17.0	17.0
Total Split (%)	18.9%	55.6%	25.6%	62.2%	18.9%	18.9%	18.9%	18.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
v/c Ratio	0.14	0.43	0.04	0.62		0.10		0.27
Control Delay	33.9	4.7	38.4	10.5		26.9		17.9
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	33.9	4.7	38.4	10.5		26.9		17.9
Queue Length 50th (ft)	18	83	4	287		9		14
Queue Length 95th (ft)	49	264	21	471		17		31
Internal Link Dist (ft)		110		738		196		139
Turn Bay Length (ft)	100		100					
Base Capacity (vph)	377	3116	472	2852		393		438
Starvation Cap Reductn	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.11	0.43	0.02	0.61		0.08		0.21

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 59.1
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

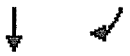
Splits and Phases: 28: Amoskeag Street & River Front Drive





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.96		
Flt Protected		0.95	1.00			0.95	1.00			0.97		
Satd. Flow (prot)		1685	3728			1685	3724			1990		
Flt Permitted		0.95	1.00			0.95	1.00			0.80		
Satd. Flow (perm)		1685	3728			1685	3724			1641		
Volume (vph)	5	30	1180	5	5	5	1620	20	10	0	5	20
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.94	0.94	0.94	0.94	0.50	0.50	0.50	0.64
Adj. Flow (vph)	6	34	1341	6	5	5	1723	21	20	0	10	31
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	9	0	0
Lane Group Flow (vph)	0	40	1347	0	0	10	1743	0	0	21	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		3.6	42.1			0.9	39.4			3.7		
Effective Green, g (s)		5.6	44.1			2.9	41.4			5.7		
Actuated g/C Ratio		0.09	0.68			0.04	0.64			0.09		
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)		146	2541			76	2383			145		
v/s Ratio Prot		c0.02	c0.36			0.01	c0.47					
v/s Ratio Perm										0.01		
v/c Ratio		0.27	0.53			0.13	0.73			0.14		
Uniform Delay, d1		27.6	5.1			29.7	7.9			27.2		
Progression Factor		1.00	1.00			1.00	1.00			1.00		
Incremental Delay, d2		1.0	0.2			0.8	1.2			0.5		
Delay (s)		28.7	5.3			30.5	9.1			27.7		
Level of Service		C	A			C	A			C		
Approach Delay (s)			6.0				9.2			27.7		
Approach LOS			A				A			C		

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations	↕	
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.91	
Flt Protected	0.98	
Satd. Flow (prot)	1927	
Flt Permitted	0.88	
Satd. Flow (perm)	1719	
Volume (vph)	0	40
Peak-hour factor, PHF	0.64	0.64
Adj. Flow (vph)	0	62
RTOR Reduction (vph)	57	0
Lane Group Flow (vph)	36	0
Heavy Vehicles (%)	0%	0%
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	3.7	
Effective Green, g (s)	5.7	
Actuated g/C Ratio	0.09	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	151	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.24	
Uniform Delay, d1	27.5	
Progression Factor	1.00	
Incremental Delay, d2	0.8	
Delay (s)	28.3	
Level of Service	C	
Approach Delay (s)	28.3	
Approach LOS	C	

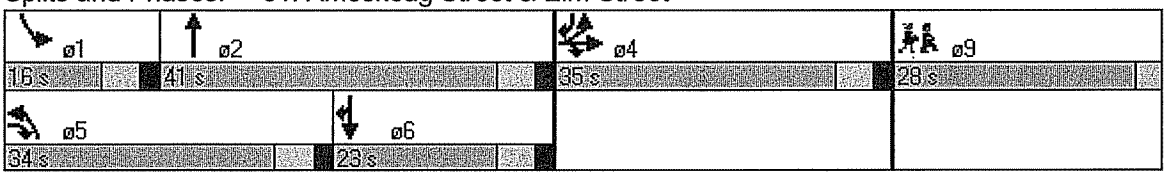
Intersection Summary

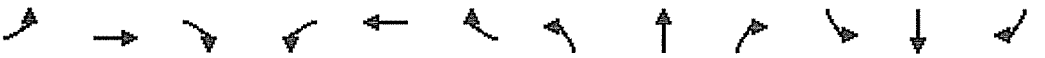
Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø9
Lane Configurations									
Volume (vph)	465	265	265	440	300	25	265	555	
Lane Group Flow (vph)	500	285	285	500	415	28	298	624	
Turn Type	Split		pt+ov	Prot		Prot		pt+ov	
Protected Phases	4	4	4 5	5	2	1	6	6 4	9
Permitted Phases									
Detector Phases	4	4	4 5	5	2	1	6	6 4	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0		1.0
Minimum Split (s)	16.0	16.0		16.0	22.0	16.0	22.0		28.0
Total Split (s)	35.0	35.0	69.0	34.0	41.0	16.0	23.0	58.0	28.0
Total Split (%)	29.2%	29.2%	57.5%	28.3%	34.2%	13.3%	19.2%	48.3%	23%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0		0.0
Lead/Lag				Lead	Lag	Lead	Lag		
Lead-Lag Optimize?									
Recall Mode	None	None		None	None	None	None		None
v/c Ratio	0.96	0.50	0.25	0.96	0.27	0.20	0.55	0.55	
Control Delay	64.6	31.9	1.4	64.9	17.9	47.9	41.3	3.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	64.6	31.9	1.4	64.9	17.9	47.9	41.3	3.6	
Queue Length 50th (ft)	273	127	0	274	54	15	80	2	
Queue Length 95th (ft)	#690	294	21	#667	170	50	161	64	
Internal Link Dist (ft)		737			2475		476		
Turn Bay Length (ft)	265		400			175		150	
Base Capacity (vph)	521	567	1123	521	1526	181	619	1138	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.96	0.50	0.25	0.96	0.27	0.15	0.48	0.55	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Amoskeag Street & Elm Street





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
Lane Width	11	12	13	12	12	12	12	12	14	11	11	14
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1570	1710	1502				1624	3162		1570	3141	1550
Flt Permitted	0.95	1.00	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1570	1710	1502				1624	3162		1570	3141	1550
Volume (vph)	465	265	265	0	0	0	440	300	65	25	265	555
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	500	285	285	0	0	0	500	341	74	28	298	624
RTOR Reduction (vph)	0	0	111	0	0	0	0	12	0	0	0	276
Lane Group Flow (vph)	500	285	174	0	0	0	500	403	0	28	298	348
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Parking (#/hr)									1			
Turn Type	Split		pt+ov				Prot			Prot		pt+ov
Protected Phases	4	4	4 5				5	2		1	6	6 4
Permitted Phases												
Actuated Green, G (s)	29.5	29.5	57.9				28.4	43.5		3.2	18.3	53.8
Effective Green, g (s)	31.5	31.5	61.9				30.4	45.5		5.2	20.3	55.8
Actuated g/C Ratio	0.31	0.31	0.61				0.30	0.45		0.05	0.20	0.55
Clearance Time (s)	6.0	6.0					6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	489	532	919				488	1422		81	630	855
v/s Ratio Prot	c0.32	0.17	0.12				c0.31	0.13		0.02	c0.09	0.22
v/s Ratio Perm												
v/c Ratio	1.02	0.54	0.19				1.02	0.28		0.35	0.47	0.41
Uniform Delay, d1	34.8	28.8	8.6				35.4	17.6		46.4	35.7	13.1
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	46.5	1.0	0.1				47.1	0.1		2.6	0.6	0.3
Delay (s)	81.4	29.8	8.7				82.5	17.7		48.9	36.3	13.4
Level of Service	F	C	A				F	B		D	D	B
Approach Delay (s)		48.3			0.0			53.1			21.7	
Approach LOS		D			A			D			C	

Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

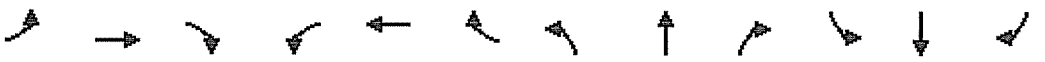
c Critical Lane Group

Lane Group	EBR	WBT	WBR	SBT	SBR
Lane Configurations					
Volume (vph)	495	815	485	405	175
Lane Group Flow (vph)	576	876	522	460	199
Turn Type	Free		Free		Perm
Protected Phases		1		2	
Permitted Phases	Free		Free		2
Detector Phases		1		2	2
Minimum Initial (s)		10.0		10.0	10.0
Minimum Split (s)		22.0		22.0	22.0
Total Split (s)	0.0	67.0	0.0	43.0	43.0
Total Split (%)	0.0%	60.9%	0.0%	39.1%	39.1%
Yellow Time (s)		4.0		4.0	4.0
All-Red Time (s)		2.0		2.0	2.0
Lead/Lag		Lead		Lag	Lag
Lead-Lag Optimize?					
Recall Mode		None		None	None
v/c Ratio	0.31	0.80	0.29	0.68	0.31
Control Delay	0.4	20.4	0.4	27.5	11.3
Queue Delay	0.0	0.3	0.0	0.0	0.0
Total Delay	0.4	20.7	0.4	27.5	11.3
Queue Length 50th (ft)	0	262	0	154	24
Queue Length 95th (ft)	0	579	0	376	94
Internal Link Dist (ft)		59		1741	
Turn Bay Length (ft)					100
Base Capacity (vph)	1863	1425	1812	943	858
Starvation Cap Reductn	0	130	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.68	0.29	0.49	0.23

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 68.9
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 32: Goffstown Road & Front Street



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
Lane Width	16	16	16	16	16	16	12	12	12	13	13	13
Total Lost time (s)			4.0		4.0	4.0					4.0	4.0
Lane Util. Factor			1.00		1.00	1.00					1.00	1.00
Frt			0.86		1.00	0.85					1.00	0.85
Flt Protected			1.00		1.00	1.00					1.00	1.00
Satd. Flow (prot)			1863		2132	1812					1944	1652
Flt Permitted			1.00		1.00	1.00					1.00	1.00
Satd. Flow (perm)			1863		2132	1812					1944	1652
Volume (vph)	0	0	495	0	815	485	0	0	0	0	405	175
Peak-hour factor, PHF	0.86	0.86	0.86	0.93	0.93	0.93	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	0	576	0	876	522	0	0	0	0	460	199
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	71
Lane Group Flow (vph)	0	0	576	0	876	522	0	0	0	0	460	128
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type			Free			Free						Perm
Protected Phases					1						2	
Permitted Phases			Free			Free						2
Actuated Green, G (s)			66.8		33.1	66.8					21.7	21.7
Effective Green, g (s)			66.8		35.1	66.8					23.7	23.7
Actuated g/C Ratio			1.00		0.53	1.00					0.35	0.35
Clearance Time (s)					6.0						6.0	6.0
Vehicle Extension (s)					3.0						3.0	3.0
Lane Grp Cap (vph)			1863		1120	1812					690	586
v/s Ratio Prot					c0.41						c0.24	
v/s Ratio Perm			0.31			0.29						0.08
v/c Ratio			0.31		0.78	0.29					0.67	0.22
Uniform Delay, d1			0.0		12.8	0.0					18.2	15.1
Progression Factor			1.00		1.00	1.00					1.00	1.00
Incremental Delay, d2			0.4		3.6	0.4					2.4	0.2
Delay (s)			0.4		16.4	0.4					20.7	15.3
Level of Service			A		B	A					C	B
Approach Delay (s)		0.4			10.4			0.0			19.0	
Approach LOS		A			B			A			B	

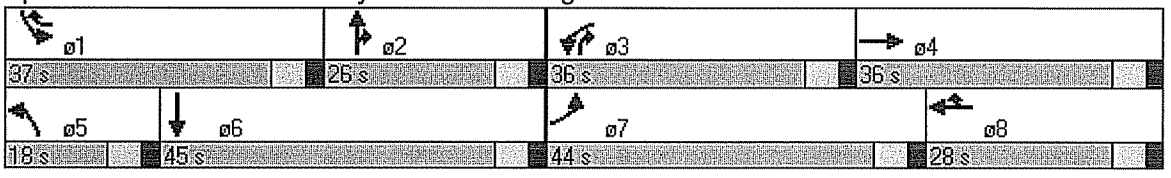
Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

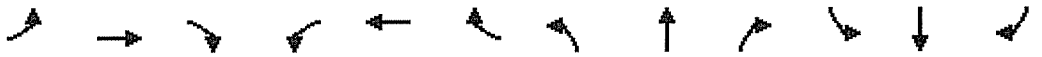
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	360	655	445	385	260	115	195	335	435	420
Lane Group Flow (vph)	379	868	468	405	274	121	205	353	458	621
Turn Type	Prot		Prot		pt+ov	Prot		pt+ov	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2 3	1	6
Permitted Phases										
Detector Phases	7	4	3	8	8 1	5	2	2 3	1	6
Minimum Initial (s)	5.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0
Minimum Split (s)	16.0	25.0	16.0	25.0		16.0	25.0		16.0	25.0
Total Split (s)	44.0	36.0	36.0	28.0	65.0	18.0	26.0	62.0	37.0	45.0
Total Split (%)	32.6%	26.7%	26.7%	20.7%	48.1%	13.3%	19.3%	45.9%	27.4%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		None	None		None	None
v/c Ratio	0.91	1.19	1.23	0.65	0.35	0.78	0.42	0.55	1.21	0.65
Control Delay	72.3	142.2	168.0	56.4	7.5	89.6	53.8	27.7	160.2	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.3	142.2	168.0	56.4	7.5	89.6	53.8	27.7	160.2	41.2
Queue Length 50th (ft)	314	~477	~508	177	33	105	85	192	~491	231
Queue Length 95th (ft)	#491	#612	#725	237	95	#206	127	293	#706	298
Internal Link Dist (ft)		274		2003			988			680
Turn Bay Length (ft)	300		280		280	200		200	105	
Base Capacity (vph)	436	729	380	621	780	160	502	644	378	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.19	1.23	0.65	0.35	0.76	0.41	0.55	1.21	0.65

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 134.3
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Amory Street & McGregor Street





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
Lane Width	10	11	16	12	12	12	11	11	12	11	12	13
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1486	2984		1593	3185	1425	1540	3079	1425	1540	3048	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1486	2984		1593	3185	1425	1540	3079	1425	1540	3048	
Volume (vph)	360	655	170	445	385	260	115	195	335	435	420	170
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	379	689	179	468	405	274	121	205	353	458	442	179
RTOR Reduction (vph)	0	18	0	0	0	110	0	0	32	0	32	0
Lane Group Flow (vph)	379	850	0	468	405	164	121	205	321	458	589	0
Turn Type	Prot			Prot		pt+ov	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2 3	1	6	
Permitted Phases												
Actuated Green, G (s)	35.8	30.0		30.0	24.2	61.2	11.6	19.3	55.3	31.0	38.7	
Effective Green, g (s)	37.8	32.0		32.0	26.2	63.2	13.6	21.3	57.3	33.0	40.7	
Actuated g/C Ratio	0.28	0.24		0.24	0.20	0.47	0.10	0.16	0.43	0.25	0.30	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	418	711		380	621	671	156	488	608	378	924	
v/s Ratio Prot	0.25	c0.29		c0.29	0.13	0.12	0.08	0.07	0.23	c0.30	c0.19	
v/s Ratio Perm												
v/c Ratio	0.91	1.20		1.23	0.65	0.25	0.78	0.42	0.53	1.21	0.64	
Uniform Delay, d1	46.5	51.2		51.2	49.8	21.3	58.9	50.9	28.5	50.7	40.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	22.8	101.7		125.2	2.5	0.2	21.1	0.6	0.8	117.4	1.5	
Delay (s)	69.3	152.8		176.3	52.3	21.5	79.9	51.5	29.3	168.0	41.9	
Level of Service	E	F		F	D	C	E	D	C	F	D	
Approach Delay (s)		127.5			95.5			45.0			95.4	
Approach LOS		F			F			D			F	

Intersection Summary				
HCM Average Control Delay	96.8	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.09			
Actuated Cycle Length (s)	134.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	102.0%	ICU Level of Service	G	
Analysis Period (min)	15			

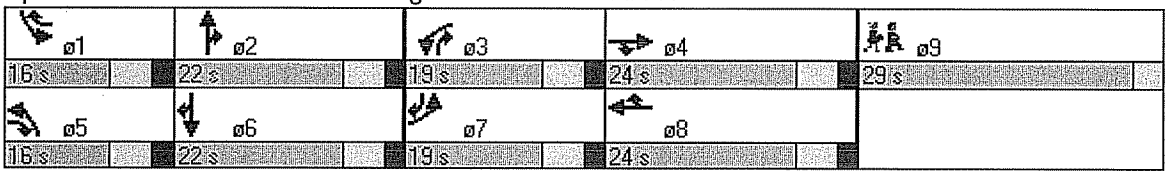
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	560	325	205	530	125	120	215	80	115	240	130
Lane Group Flow (vph)	232	589	342	216	558	132	126	226	84	121	253	137
Turn Type	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	16.0	22.0		16.0	22.0		16.0	22.0		16.0	22.0	
Total Split (s)	19.0	24.0	40.0	19.0	24.0	40.0	16.0	22.0	41.0	16.0	22.0	41.0
Total Split (%)	17.3%	21.8%	36.4%	17.3%	21.8%	36.4%	14.5%	20.0%	37.3%	14.5%	20.0%	37.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio	0.75	0.74	0.41	0.75	0.72	0.21	0.58	0.42	0.17	0.57	0.50	0.25
Control Delay	51.2	37.4	3.3	52.0	37.1	3.5	48.2	34.8	6.0	47.9	36.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	37.4	3.3	52.0	37.1	3.5	48.2	34.8	6.0	47.9	36.2	5.3
Queue Length 50th (ft)	105	134	0	97	126	0	56	51	0	54	57	0
Queue Length 95th (ft)	#331	#343	36	#314	#325	24	#185	116	34	#178	130	43
Internal Link Dist (ft)		2003			436			365			2475	
Turn Bay Length (ft)	275		275	150		225	150		130	120		70
Base Capacity (vph)	309	797	840	289	770	640	226	650	536	223	618	575
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.74	0.41	0.75	0.72	0.21	0.56	0.35	0.16	0.54	0.41	0.24

Intersection Summary

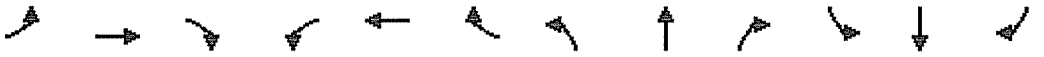
Cycle Length: 110
Actuated Cycle Length: 82.6
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: West Bridge Street & Elm Street



Lane Group	ø9
Lane Configurations	
Volume (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phases	
Minimum Initial (s)	1.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	26%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



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
Lane Width	13	12	13	11	11	13	12	12	10	11	10	10
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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1662	3217	1487	1555	3110	1301	1533	3065	1120	1510	2916	1141
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1662	3217	1487	1555	3110	1301	1533	3065	1120	1510	2916	1141
Volume (vph)	220	560	325	205	530	125	120	215	80	115	240	130
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	589	342	216	558	132	126	226	84	121	253	137
RTOR Reduction (vph)	0	0	213	0	0	82	0	0	51	0	0	82
Lane Group Flow (vph)	232	589	129	216	558	50	126	226	33	121	253	55
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	6%	6%	6%	4%	4%	4%
Parking (#/hr)						5			5			5
Turn Type	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Actuated Green, G (s)	13.3	18.4	28.0	13.3	18.4	28.0	9.6	12.4	31.7	9.6	12.4	31.7
Effective Green, g (s)	15.3	20.4	32.0	15.3	20.4	32.0	11.6	14.4	33.7	11.6	14.4	33.7
Actuated g/C Ratio	0.18	0.24	0.38	0.18	0.24	0.38	0.14	0.17	0.40	0.14	0.17	0.40
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	301	776	562	281	750	492	210	522	446	207	496	455
v/s Ratio Prot	c0.14	c0.18	0.09	0.14	0.18	0.04	c0.08	0.07	0.03	0.08	c0.09	0.05
v/s Ratio Perm												
v/c Ratio	0.77	0.76	0.23	0.77	0.74	0.10	0.60	0.43	0.08	0.58	0.51	0.12
Uniform Delay, d1	33.0	29.8	17.9	33.0	29.7	17.0	34.3	31.4	15.8	34.2	31.9	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.5	4.3	0.2	11.9	4.0	0.1	4.8	0.6	0.1	4.2	0.9	0.1
Delay (s)	44.5	34.1	18.1	44.9	33.7	17.1	39.1	32.0	15.9	38.4	32.8	16.2
Level of Service	D	C	B	D	C	B	D	C	B	D	C	B
Approach Delay (s)		31.5			33.9			30.9			29.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	22.9
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	ø9
Lane Configurations										
Volume (vph)	145	250	65	530	15	415	395	390	370	
Lane Group Flow (vph)	211	167	164	558	0	453	416	411	394	
Turn Type		Split		pt+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	8	8	8 1		2	8	1	6	9
Permitted Phases					2		2	6		
Detector Phases	4	8	8	8 1	2	2	8	1	6	
Minimum Initial (s)	5.0	10.0	10.0		10.0	10.0	10.0	5.0	10.0	1.0
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0	22.0	16.0	22.0	25.0
Total Split (s)	22.0	22.0	22.0	43.0	30.0	30.0	22.0	21.0	51.0	25.0
Total Split (%)	18.3%	18.3%	18.3%	35.8%	25.0%	25.0%	18.3%	17.5%	42.5%	21%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	0.0
Lead/Lag					Lag	Lag		Lead		
Lead-Lag Optimize?										
Recall Mode	None	None	None		None	None	None	None	None	None
v/c Ratio	0.70	0.62	0.63	0.58		1.02	0.46	1.09	0.48	
Control Delay	51.6	49.9	51.2	4.2		85.4	2.9	101.6	21.4	
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	51.6	49.9	51.2	4.2		85.4	2.9	101.6	21.4	
Queue Length 50th (ft)	113	96	95	0		~278	0	~231	150	
Queue Length 95th (ft)	#274	#231	#233	52		#642	41	#570	342	
Internal Link Dist (ft)	176		315			277			1565	
Turn Bay Length (ft)							340	205		
Base Capacity (vph)	323	289	276	975		444	915	376	821	
Starvation Cap Reductn	0	0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0	0	0		0	0	0	0	
Storage Cap Reductn	0	0	0	0		0	0	0	0	
Reduced v/c Ratio	0.65	0.58	0.59	0.57		1.02	0.45	1.09	0.48	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 97.1

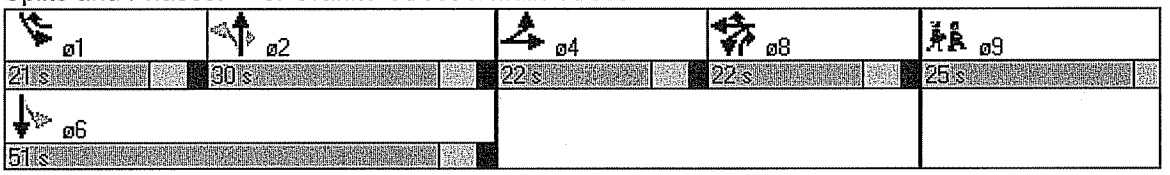
Natural Cycle: 140

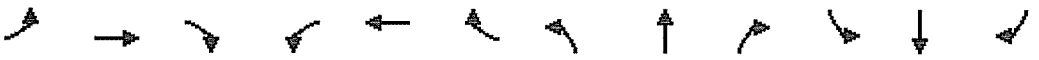
Control Type: Actuated-Uncoordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Granite Street & Main Street





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
Lane Width	14	14	14	13	11	16	12	12	14	14	12	12
Total Lost time (s)		4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		0.95	0.95	1.00		1.00	1.00	1.00	1.00	
Frt		0.97		1.00	1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1717		1563	1496	1615		1674	1520	1699	1673	
Flt Permitted		1.00		0.95	0.97	1.00		0.98	1.00	0.13	1.00	
Satd. Flow (perm)		1717		1563	1496	1615		1640	1520	235	1673	
Volume (vph)	15	145	40	250	65	530	15	415	395	390	370	5
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	153	42	263	68	558	16	437	416	411	389	5
RTOR Reduction (vph)	0	8	0	0	0	367	0	0	235	0	1	0
Lane Group Flow (vph)	0	203	0	167	164	191	0	453	181	411	393	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split			Split		pt+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	4		8	8	8 1		2	8	1	6	
Permitted Phases							2		2	6		
Actuated Green, G (s)		14.5		14.8	14.8	30.0		24.4	39.2	45.6	45.6	
Effective Green, g (s)		16.5		16.8	16.8	34.0		26.4	43.2	47.6	47.6	
Actuated g/C Ratio		0.17		0.17	0.17	0.34		0.27	0.44	0.48	0.48	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		285		264	253	553		436	661	366	802	
v/s Ratio Prot		c0.12		0.11	c0.11	0.12			0.05	c0.19	0.24	
v/s Ratio Perm								0.28	0.07	c0.34		
v/c Ratio		0.71		0.63	0.65	0.35		1.04	0.27	1.12	0.49	
Uniform Delay, d1		39.2		38.4	38.5	24.4		36.4	18.0	28.6	17.6	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		8.2		4.9	5.6	0.4		53.6	0.2	84.7	0.5	
Delay (s)		47.4		43.3	44.1	24.7		90.0	18.2	113.3	18.1	
Level of Service		D		D	D	C		F	B	F	B	
Approach Delay (s)		47.4			31.8			55.6			66.7	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM Average Control Delay	50.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	99.3	Sum of lost time (s)	18.4
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	SEL	SER2	NWL	NWR2
Lane Configurations										
Volume (vph)	125	585	465	575	470	85	290	165	540	1220
Lane Group Flow (vph)	132	616	489	605	495	89	305	174	568	1284
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		4	5	8	1
Permitted Phases			Free			Free				
Detector Phases	5	2		1	6		4	5	8	1
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	22.0		25.0	22.0		25.0	25.0	25.0	25.0
Total Split (s)	25.0	26.0	0.0	49.0	50.0	0.0	25.0	25.0	25.0	49.0
Total Split (%)	25.0%	26.0%	0.0%	49.0%	50.0%	0.0%	25.0%	25.0%	25.0%	49.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0
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			Lag		Lead
Lead-Lag Optimize?										
Recall Mode	None	None		None	None		None	None	None	None
v/c Ratio	0.09	0.90	0.30	0.44	0.81	0.06	0.45	0.14	0.83	1.05
Control Delay	15.3	55.6	0.5	20.1	49.4	0.1	36.9	2.9	49.2	64.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	55.6	0.5	20.1	49.4	0.1	36.9	2.9	49.2	64.3
Queue Length 50th (ft)	22	202	0	132	162	0	87	0	178	~476
Queue Length 95th (ft)	43	#304	0	179	206	0	128	21	#256	#623
Internal Link Dist (ft)		241			733					
Turn Bay Length (ft)			125	475		25	350	625	350	625
Base Capacity (vph)	1438	687	1631	1364	1136	1391	692	1247	699	1224
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.90	0.30	0.44	0.44	0.06	0.44	0.14	0.81	1.05

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 99.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

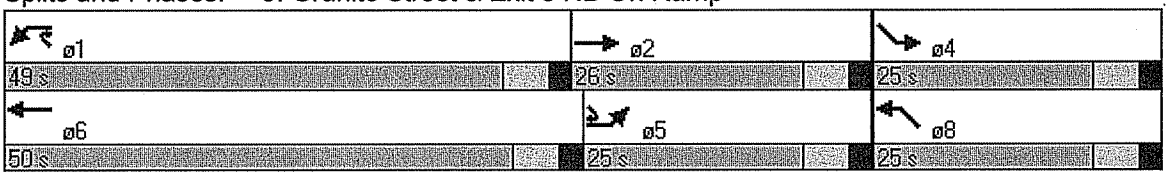
~ Volume exceeds capacity, queue is theoretically infinite.

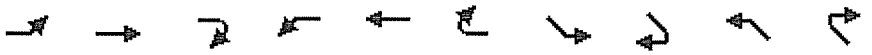
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: Granite Street & Exit 5 NB On Ramp





Movement	EBL	EBT	EBR2	WBL	WBT	WBR2	SEL	SER2	NWL	NWR2
Lane Configurations										
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	11	11	11	14	11	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.88	0.97	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3016	3110	1631	3016	3110	1391	3296	2424	3328	2508
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3016	3110	1631	3016	3110	1391	3296	2424	3328	2508
Volume (vph)	125	585	465	575	470	85	290	165	540	1220
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	132	616	489	605	495	89	305	174	568	1284
RTOR Reduction (vph)	0	0	0	0	0	0	0	91	0	90
Lane Group Flow (vph)	132	616	489	605	495	89	305	83	568	1194
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	1%	2%
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		4	5	8	1
Permitted Phases			Free			Free				
Actuated Green, G (s)	45.4	19.9	99.5	43.0	17.5	99.5	18.6	45.4	18.6	43.0
Effective Green, g (s)	47.4	21.9	99.5	45.0	19.5	99.5	20.6	47.4	20.6	45.0
Actuated g/C Ratio	0.48	0.22	1.00	0.45	0.20	1.00	0.21	0.48	0.21	0.45
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1437	685	1631	1364	609	1391	682	1155	689	1134
v/s Ratio Prot	0.04	c0.20		0.20	0.16		0.09	0.03	c0.17	c0.48
v/s Ratio Perm			0.30			0.06				
v/c Ratio	0.09	0.90	0.30	0.44	0.81	0.06	0.45	0.07	0.82	1.05
Uniform Delay, d1	14.3	37.7	0.0	18.7	38.3	0.0	34.5	14.1	37.7	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	14.6	0.5	0.2	8.1	0.1	0.5	0.0	7.9	41.9
Delay (s)	14.3	52.3	0.5	18.9	46.4	0.1	34.9	14.1	45.7	69.1
Level of Service	B	D	A	B	D	A	C	B	D	E
Approach Delay (s)		27.8			28.9					
Approach LOS		C			C					

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	ø9
Lane Configurations										
Volume (vph)	685	1130	95	770	65	40	30	55	295	
Lane Group Flow (vph)	721	1478	100	885	68	84	32	58	311	
Turn Type	Prot		Prot		Split		Split		pt+ov	
Protected Phases	5	2	1	6	4	4	7	7	7 5	9
Permitted Phases										
Detector Phases	5	2	1	6	4	4	7	7	7 5	
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0		1.0
Minimum Split (s)	16.0	22.0	16.0	22.0	22.0	22.0	16.0	16.0		28.0
Total Split (s)	22.0	38.0	16.0	32.0	22.0	22.0	16.0	16.0	38.0	28.0
Total Split (%)	18.3%	31.7%	13.3%	26.7%	18.3%	18.3%	13.3%	13.3%	31.7%	23%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		0.0
Lead/Lag	Lead	Lead	Lag	Lag						
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	None		None
v/c Ratio	1.10	1.15	0.51	0.71	0.34	0.21	0.18	0.31	0.28	
Control Delay	101.7	107.4	53.8	34.9	47.1	25.6	47.2	48.9	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	101.7	107.4	53.8	34.9	47.1	25.6	47.2	48.9	2.9	
Queue Length 50th (ft)	~225	~496	48	136	33	10	15	28	0	
Queue Length 95th (ft)	#526	#1013	#141	290	94	39	55	86	23	
Internal Link Dist (ft)		733		479		420		391		
Turn Bay Length (ft)	275		85		110		190		105	
Base Capacity (vph)	658	1282	222	1397	303	594	210	229	1128	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.10	1.15	0.45	0.63	0.22	0.14	0.15	0.25	0.28	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 89.6

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

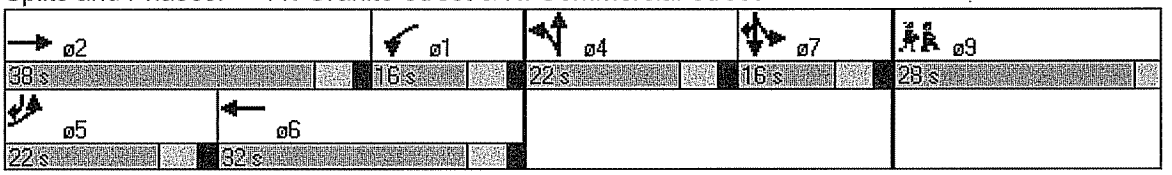
~ Volume exceeds capacity, queue is theoretically infinite.

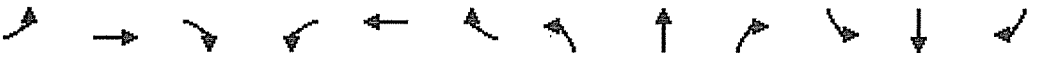
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Granite Street & N. Commercial Street





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
Lane Width	11	11	12	13	11	12	12	12	12	10	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.91		1.00	0.95		1.00	1.00	0.88
Frt	1.00	0.97		1.00	0.99		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	2987	2989		1646	4369		1593	2946		1486	1621	2424
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2987	2989		1646	4369		1593	2946		1486	1621	2424
Volume (vph)	685	1130	275	95	770	70	65	40	40	30	55	295
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	721	1189	289	100	811	74	68	42	42	32	58	311
RTOR Reduction (vph)	0	15	0	0	8	0	0	38	0	0	0	212
Lane Group Flow (vph)	721	1463	0	100	877	0	68	46	0	32	58	99
Turn Type	Prot			Prot			Split			Split		pt+ov
Protected Phases	5	2		1	6		4	4		7	7	7 5
Permitted Phases												
Actuated Green, G (s)	17.5	35.8		7.1	25.4		7.6	7.6		8.3	8.3	25.8
Effective Green, g (s)	19.5	37.8		9.1	27.4		9.6	9.6		10.3	10.3	29.8
Actuated g/C Ratio	0.21	0.40		0.10	0.29		0.10	0.10		0.11	0.11	0.32
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	624	1210		160	1282		164	303		164	179	773
v/s Ratio Prot	0.24	c0.49		0.06	c0.20		c0.04	0.02		0.02	c0.04	0.04
v/s Ratio Perm												
v/c Ratio	1.16	1.21		0.62	0.68		0.41	0.15		0.20	0.32	0.13
Uniform Delay, d1	37.0	27.8		40.5	29.2		39.3	38.2		37.8	38.3	22.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	87.2	102.1		7.4	1.5		1.7	0.2		0.6	1.1	0.1
Delay (s)	124.1	129.9		47.9	30.7		41.0	38.4		38.4	39.4	22.7
Level of Service	F	F		D	C		D	D		D	D	C
Approach Delay (s)		128.0			32.4			39.6			26.3	
Approach LOS		F			C			D			C	

Intersection Summary				
HCM Average Control Delay	88.3	HCM Level of Service	F	
HCM Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	22.6	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			

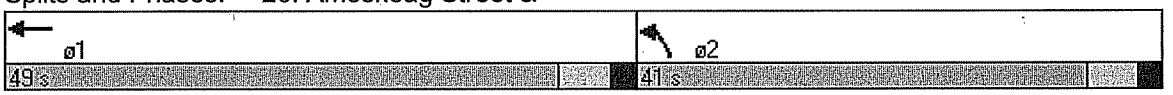
c Critical Lane Group

Lane Group	WBT	NBL
Lane Configurations	↑↑	↰↑
Volume (vph)	1285	995
Lane Group Flow (vph)	1353	1047
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phases	1	2
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	22.0	22.0
Total Split (s)	49.0	41.0
Total Split (%)	54.4%	45.6%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?		
Recall Mode	None	None
v/c Ratio	0.79	0.76
Control Delay	20.4	24.3
Queue Delay	0.0	0.0
Total Delay	20.4	24.3
Queue Length 50th (ft)	287	233
Queue Length 95th (ft)	398	327
Internal Link Dist (ft)	162	189
Turn Bay Length (ft)		
Base Capacity (vph)	1938	1598
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.70	0.66

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 74.6
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 26: Amoskeag Street &



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↰↰	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	
Lane Util. Factor				0.95	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				3539	3467	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				3539	3467	
Volume (vph)	0	0	0	1285	995	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	1353	1047	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1353	1047	0
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Turn Type						
Protected Phases				1	2	
Permitted Phases						
Actuated Green, G (s)				34.1	27.6	
Effective Green, g (s)				36.1	29.6	
Actuated g/C Ratio				0.49	0.40	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1733	1392	
v/s Ratio Prot				c0.38	c0.30	
v/s Ratio Perm						
v/c Ratio				0.78	0.75	
Uniform Delay, d1				15.5	18.9	
Progression Factor				1.00	1.00	
Incremental Delay, d2				2.4	2.3	
Delay (s)				17.9	21.2	
Level of Service				B	C	
Approach Delay (s)	0.0			17.9	21.2	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	173.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	30	2360	5	1240	15	0	30	0
Lane Group Flow (vph)	37	2489	6	1331	0	32	0	64
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	16.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	16.0	66.0	22.0	72.0	22.0	22.0	22.0	22.0
Total Split (%)	14.5%	60.0%	20.0%	65.5%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
v/c Ratio	0.20	0.84	0.04	0.50		0.15		0.29
Control Delay	37.6	12.2	39.8	8.4		23.9		24.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	37.6	12.2	39.8	8.4		23.9		24.2
Queue Length 50th (ft)	17	306	3	182		7		15
Queue Length 95th (ft)	50	#1003	16	294		35		56
Internal Link Dist (ft)		118		729		196		139
Turn Bay Length (ft)	100		100					
Base Capacity (vph)	231	2958	304	2823		359		357
Starvation Cap Reductn	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.16	0.84	0.02	0.47		0.09		0.18

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 79.7

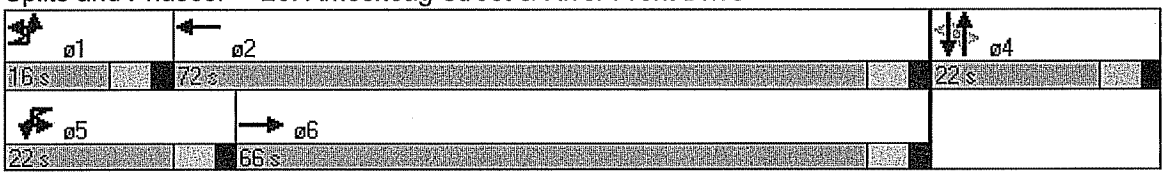
Natural Cycle: 140

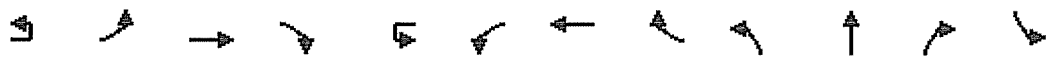
Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 28: Amoskeag Street & River Front Drive





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.93		
Flt Protected		0.95	1.00			0.95	1.00			0.98		
Satd. Flow (prot)		1668	3692			1668	3683			1959		
Flt Permitted		0.95	1.00			0.95	1.00			0.85		
Satd. Flow (perm)		1668	3692			1668	3683			1714		
Volume (vph)	5	30	2360	5	1	5	1240	25	15	0	15	30
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	32	2484	5	1	5	1305	26	16	0	16	32
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	15	0	0
Lane Group Flow (vph)	0	37	2489	0	0	6	1330	0	0	17	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	3%
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		4.7	60.8			1.1	57.2			6.0		
Effective Green, g (s)		6.7	62.8			3.1	59.2			8.0		
Actuated g/C Ratio		0.08	0.73			0.04	0.69			0.09		
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)		130	2699			60	2538			160		
v/s Ratio Prot		c0.02	c0.67			0.00	0.36					
v/s Ratio Perm										0.01		
v/c Ratio		0.28	0.92			0.10	0.52			0.11		
Uniform Delay, d1		37.3	9.5			40.1	6.5			35.7		
Progression Factor		1.00	1.00			1.00	1.00			1.00		
Incremental Delay, d2		1.2	5.9			0.7	0.2			0.3		
Delay (s)		38.5	15.4			40.8	6.7			36.0		
Level of Service		D	B			D	A			D		
Approach Delay (s)			15.8				6.8			36.0		
Approach LOS			B				A			D		

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations	↕	
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.93	
Flt Protected	0.98	
Satd. Flow (prot)	1902	
Flt Permitted	0.83	
Satd. Flow (perm)	1609	
Volume (vph)	0	30
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	0	32
RTOR Reduction (vph)	29	0
Lane Group Flow (vph)	35	0
Heavy Vehicles (%)	3%	3%
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.0	
Effective Green, g (s)	8.0	
Actuated g/C Ratio	0.09	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	150	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.23	
Uniform Delay, d1	36.1	
Progression Factor	1.00	
Incremental Delay, d2	0.8	
Delay (s)	36.9	
Level of Service	D	
Approach Delay (s)	36.9	
Approach LOS	D	

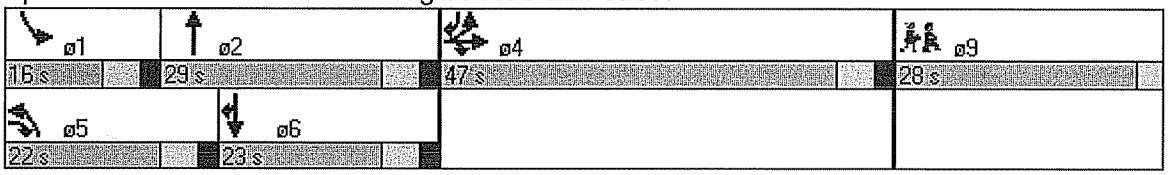
Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø9
Lane Configurations									
Volume (vph)	655	345	595	275	225	15	320	725	
Lane Group Flow (vph)	689	363	626	289	279	16	337	763	
Turn Type	Split		pt+ov	Prot		Prot		pt+ov	
Protected Phases	4	4	4 5	5	2	1	6	6 4	9
Permitted Phases									
Detector Phases	4	4	4 5	5	2	1	6	6 4	
Minimum Initial (s)	10.0	10.0		5.0	10.0	5.0	10.0		1.0
Minimum Split (s)	22.0	22.0		16.0	22.0	16.0	22.0		28.0
Total Split (s)	47.0	47.0	69.0	22.0	29.0	16.0	23.0	70.0	28.0
Total Split (%)	39.2%	39.2%	57.5%	18.3%	24.2%	13.3%	19.2%	58.3%	23%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0		0.0
Lead/Lag				Lead	Lag	Lead	Lag		
Lead-Lag Optimize?									
Recall Mode	None	None		None	None	None	None		None
v/c Ratio	0.98	0.47	0.52	0.95	0.23	0.13	0.59	0.59	
Control Delay	56.9	23.2	2.2	82.5	22.4	49.7	42.1	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	56.9	23.2	2.2	82.5	22.4	49.7	42.1	2.9	
Queue Length 50th (ft)	369	138	0	167	47	9	92	0	
Queue Length 95th (ft)	#894	332	28	#449	135	35	183	55	
Internal Link Dist (ft)		741			2475		476		
Turn Bay Length (ft)	265		400			175		150	
Base Capacity (vph)	706	768	1211	303	1224	172	612	1291	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.98	0.47	0.52	0.95	0.23	0.09	0.55	0.59	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Amoskeag Street & Elm Street



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
Lane Width	11	12	13	12	12	12	12	12	14	11	11	14
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1555	1693	1487				1593	3113		1555	3110	1535
Flt Permitted	0.95	1.00	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1555	1693	1487				1593	3113		1555	3110	1535
Volume (vph)	655	345	595	0	0	0	275	225	40	15	320	725
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	689	363	626	0	0	0	289	237	42	16	337	763
RTOR Reduction (vph)	0	0	252	0	0	0	0	10	0	0	0	245
Lane Group Flow (vph)	689	363	374	0	0	0	289	269	0	16	337	518
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Parking (#/hr)									0			
Turn Type	Split		pt+ov				Prot			Prot		pt+ov
Protected Phases	4	4	4 5				5	2		1	6	6 4
Permitted Phases												
Actuated Green, G (s)	41.6	41.6	57.8				16.2	35.5		1.4	20.7	68.3
Effective Green, g (s)	43.6	43.6	61.8				18.2	37.5		3.4	22.7	70.3
Actuated g/C Ratio	0.42	0.42	0.60				0.18	0.36		0.03	0.22	0.68
Clearance Time (s)	6.0	6.0					6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	655	713	888				280	1128		51	682	1043
v/s Ratio Prot	c0.44	0.21	0.25				c0.18	0.09		0.01	0.11	c0.34
v/s Ratio Perm												
v/c Ratio	1.05	0.51	0.42				1.03	0.24		0.31	0.49	0.50
Uniform Delay, d1	30.0	22.1	11.2				42.6	23.0		48.9	35.4	8.0
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	49.6	0.6	0.3				62.4	0.1		3.5	0.6	0.4
Delay (s)	79.5	22.6	11.5				105.0	23.1		52.4	35.9	8.4
Level of Service	E	C	B				F	C		D	D	A
Approach Delay (s)		41.9			0.0			64.8			17.4	
Approach LOS		D			A			E			B	

Intersection Summary			
HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBR	WBT	WBR	SBT	SBR
Lane Configurations					
Volume (vph)	1350	420	270	740	180
Lane Group Flow (vph)	1421	442	284	779	189
Turn Type	Free		Free		Perm
Protected Phases		1		2	
Permitted Phases	Free		Free		2
Detector Phases		1		2	2
Minimum Initial (s)		10.0		10.0	10.0
Minimum Split (s)		22.0		22.0	22.0
Total Split (s)	0.0	38.0	0.0	62.0	62.0
Total Split (%)	0.0%	38.0%	0.0%	62.0%	62.0%
Yellow Time (s)		4.0		4.0	4.0
All-Red Time (s)		2.0		2.0	2.0
Lead/Lag		Lead		Lag	Lag
Lead-Lag Optimize?					
Recall Mode		None		None	None
v/c Ratio	0.77	0.63	0.16	0.79	0.21
Control Delay	3.2	25.1	0.2	19.0	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.2	25.1	0.2	19.0	4.8
Queue Length 50th (ft)	0	131	0	197	13
Queue Length 95th (ft)	0	339	0	473	54
Internal Link Dist (ft)		63		1730	
Turn Bay Length (ft)					100
Base Capacity (vph)	1844	972	1777	1278	1120
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.45	0.16	0.61	0.17

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 63.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 32: Goffstown Rd & Front Street

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
Lane Width	16	16	16	16	16	16	12	12	12	13	13	13
Total Lost time (s)			4.0		4.0	4.0					4.0	4.0
Lane Util. Factor			1.00		1.00	1.00					1.00	1.00
Frt			0.86		1.00	0.85					1.00	0.85
Flt Protected			1.00		1.00	1.00					1.00	1.00
Satd. Flow (prot)			1844		2091	1777					1906	1620
Flt Permitted			1.00		1.00	1.00					1.00	1.00
Satd. Flow (perm)			1844		2091	1777					1906	1620
Volume (vph)	0	0	1350	0	420	270	0	0	0	0	740	180
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	1421	0	442	284	0	0	0	0	779	189
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	49
Lane Group Flow (vph)	0	0	1421	0	442	284	0	0	0	0	779	140
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type			Free			Free						Perm
Protected Phases					1						2	
Permitted Phases			Free			Free						2
Actuated Green, G (s)			61.5		18.9	61.5					30.6	30.6
Effective Green, g (s)			61.5		20.9	61.5					32.6	32.6
Actuated g/C Ratio			1.00		0.34	1.00					0.53	0.53
Clearance Time (s)					6.0						6.0	6.0
Vehicle Extension (s)					3.0						3.0	3.0
Lane Grp Cap (vph)			1844		711	1777					1010	859
v/s Ratio Prot					0.21						0.41	
v/s Ratio Perm			c0.77			0.16						0.09
v/c Ratio			0.77		0.62	0.16					0.77	0.16
Uniform Delay, d1			0.0		17.0	0.0					11.5	7.4
Progression Factor			1.00		1.00	1.00					1.00	1.00
Incremental Delay, d2			3.2		1.7	0.2					3.7	0.1
Delay (s)			3.2		18.7	0.2					15.2	7.5
Level of Service			A		B	A					B	A
Approach Delay (s)		3.2			11.5			0.0			13.7	
Approach LOS		A			B			A			B	

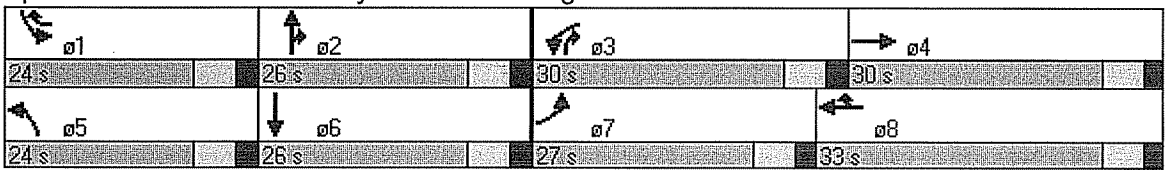
Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	0.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

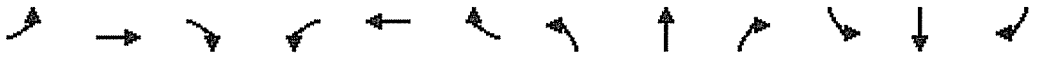
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	295	490	375	725	460	275	470	390	270	335
Lane Group Flow (vph)	311	753	395	763	484	289	495	411	284	479
Turn Type	Prot		Prot		pt+ov	Prot		pt+ov	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2 3	1	6
Permitted Phases										
Detector Phases	7	4	3	8	8 1	5	2	2 3	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	16.0	25.0	16.0	25.0		16.0	25.0		16.0	25.0
Total Split (s)	27.0	30.0	30.0	33.0	57.0	24.0	26.0	56.0	24.0	26.0
Total Split (%)	24.5%	27.3%	27.3%	30.0%	51.8%	21.8%	23.6%	50.9%	21.8%	23.6%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		None	None		None	None
v/c Ratio	0.98	1.00	1.02	0.89	0.64	1.01	0.82	0.57	0.99	0.75
Control Delay	91.1	71.6	93.8	52.1	21.2	102.8	54.1	19.4	96.6	45.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.1	71.6	93.8	52.1	21.2	102.8	54.1	19.4	96.6	45.8
Queue Length 50th (ft)	221	~263	~299	273	199	~217	176	155	202	153
Queue Length 95th (ft)	#401	#397	#489	#382	317	#387	#250	254	#378	214
Internal Link Dist (ft)		274		2003			1004			661
Turn Bay Length (ft)	300		280		280	200		200	105	
Base Capacity (vph)	316	753	386	862	755	285	622	729	287	657
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	1.00	1.02	0.89	0.64	1.01	0.80	0.56	0.99	0.73

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 109.3
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Amory Street & McGregor Street





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
Lane Width	10	11	16	12	12	12	11	11	12	11	12	13
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1501	2963		1624	3249	1454	1555	3110	1439	1570	3121	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1501	2963		1624	3249	1454	1555	3110	1439	1570	3121	
Volume (vph)	295	490	225	375	725	460	275	470	390	270	335	120
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	311	516	237	395	763	484	289	495	411	284	353	126
RTOR Reduction (vph)	0	49	0	0	0	50	0	0	49	0	33	0
Lane Group Flow (vph)	311	704	0	395	763	434	289	495	362	284	446	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot			Prot		pt+ov	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2 3	1	6	
Permitted Phases												
Actuated Green, G (s)	21.0	24.0		24.0	27.0	51.0	18.0	19.3	49.3	18.0	19.3	
Effective Green, g (s)	23.0	26.0		26.0	29.0	53.0	20.0	21.3	51.3	20.0	21.3	
Actuated g/C Ratio	0.21	0.24		0.24	0.27	0.48	0.18	0.19	0.47	0.18	0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	316	705		386	862	705	285	606	675	287	608	
v/s Ratio Prot	0.21	c0.24		c0.24	c0.23	0.30	c0.19	c0.16	0.25	0.18	0.14	
v/s Ratio Perm												
v/c Ratio	0.98	1.00		1.02	0.89	0.61	1.01	0.82	0.54	0.99	0.73	
Uniform Delay, d1	43.0	41.6		41.6	38.6	20.7	44.6	42.1	20.6	44.5	41.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	46.0	33.4		51.9	10.8	1.6	56.9	8.4	0.8	49.7	4.6	
Delay (s)	89.0	75.0		93.5	49.3	22.3	101.6	50.5	21.4	94.2	45.9	
Level of Service	F	E		F	D	C	F	D	C	F	D	
Approach Delay (s)		79.1			52.0			52.8			63.9	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	60.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	545	195	190	710	165	225	395	130	175	340	130
Lane Group Flow (vph)	247	574	205	200	747	174	237	416	137	184	358	137
Turn Type	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	16.0	22.0		16.0	22.0		16.0	22.0		16.0	22.0	
Total Split (s)	20.0	29.0	48.0	20.0	29.0	48.0	19.0	23.0	43.0	19.0	23.0	43.0
Total Split (%)	16.7%	24.2%	40.0%	16.7%	24.2%	40.0%	15.8%	19.2%	35.8%	15.8%	19.2%	35.8%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio	0.88	0.67	0.26	0.76	0.90	0.25	0.93	0.69	0.25	0.75	0.64	0.25
Control Delay	70.6	37.7	2.9	59.0	51.0	3.2	82.3	44.3	5.6	60.2	43.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	37.7	2.9	59.0	51.0	3.2	82.3	44.3	5.6	60.2	43.3	7.0
Queue Length 50th (ft)	139	153	0	110	215	0	135	115	0	102	98	5
Queue Length 95th (ft)	#386	#318	29	#307	#483	28	#383	#242	45	#288	#198	55
Internal Link Dist (ft)		2003			436			365			2475	
Turn Bay Length (ft)	275		275	150		225	150		130	120		70
Base Capacity (vph)	282	854	796	264	826	693	256	639	560	246	591	547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.67	0.26	0.76	0.90	0.25	0.93	0.65	0.24	0.75	0.61	0.25

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 95.5

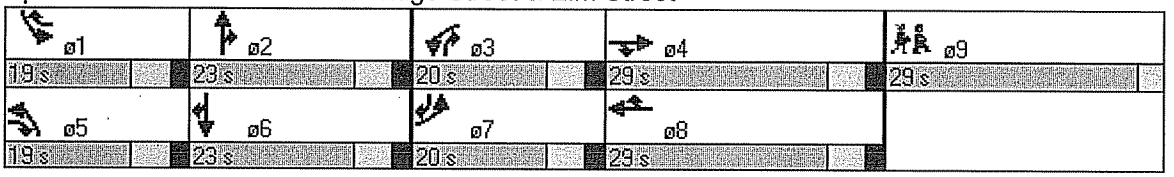
Natural Cycle: 135

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

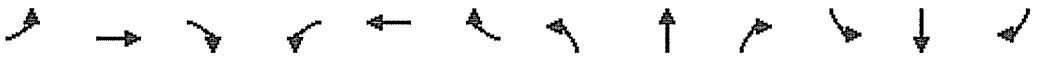
Queue shown is maximum after two cycles.

Splits and Phases: 2: West Bridge Street & Elm Street



Lane Group	ø9
Lane Configurations	
Volume (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phases	
Minimum Initial (s)	1.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	24%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



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
Lane Width	13	12	13	11	11	13	12	12	10	11	10	10
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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1662	3217	1487	1555	3110	1301	1608	3217	1175	1540	2973	1164
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1662	3217	1487	1555	3110	1301	1608	3217	1175	1540	2973	1164
Volume (vph)	235	545	195	190	710	165	225	395	130	175	340	130
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	247	574	205	200	747	174	237	416	137	184	358	137
RTOR Reduction (vph)	0	0	120	0	0	102	0	0	84	0	0	75
Lane Group Flow (vph)	247	574	85	200	747	72	237	416	53	184	358	62
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Parking (#/hr)						5			5			5
Turn Type	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Actuated Green, G (s)	14.2	23.3	36.5	14.2	23.3	36.5	13.2	15.8	36.0	13.2	15.8	36.0
Effective Green, g (s)	16.2	25.3	40.5	16.2	25.3	40.5	15.2	17.8	38.0	15.2	17.8	38.0
Actuated g/C Ratio	0.17	0.26	0.41	0.17	0.26	0.41	0.16	0.18	0.39	0.16	0.18	0.39
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	834	617	258	806	540	250	587	457	240	542	453
v/s Ratio Prot	c0.15	0.18	0.06	0.13	c0.24	0.06	c0.15	c0.13	0.05	0.12	0.12	0.05
v/s Ratio Perm												
v/c Ratio	0.89	0.69	0.14	0.78	0.93	0.13	0.95	0.71	0.12	0.77	0.66	0.14
Uniform Delay, d1	39.9	32.6	17.7	39.0	35.2	17.7	40.8	37.5	19.1	39.5	37.1	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.5	2.4	0.1	13.5	16.4	0.1	42.3	3.9	0.1	13.6	3.0	0.1
Delay (s)	68.4	35.0	17.8	52.5	51.7	17.8	83.1	41.4	19.2	53.1	40.1	19.4
Level of Service	E	C	B	D	D	B	F	D	B	D	D	B
Approach Delay (s)		39.6			46.6			50.0			39.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	23.1
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	ø9
Lane Configurations										
Volume (vph)	90	615	95	660	15	455	350	395	560	
Lane Group Flow (vph)	153	377	370	695	0	495	368	416	594	
Turn Type		Split		pt+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	8	8	8 1		2	8	1	6	9
Permitted Phases					2		2	6		
Detector Phases	4	8	8	8 1	2	2	8	1	6	
Minimum Initial (s)	5.0	5.0	5.0		10.0	10.0	5.0	5.0	10.0	1.0
Minimum Split (s)	22.0	11.0	11.0		22.0	22.0	11.0	16.0	22.0	25.0
Total Split (s)	22.0	21.0	21.0	41.0	32.0	32.0	21.0	20.0	52.0	25.0
Total Split (%)	18.3%	17.5%	17.5%	34.2%	26.7%	26.7%	17.5%	16.7%	43.3%	21%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	0.0
Lead/Lag					Lag	Lag		Lead		
Lead-Lag Optimize?										
Recall Mode	None	None	None		None	None	None	None	None	None
v/c Ratio	0.57	1.32	1.37	0.68		1.04	0.40	1.13	0.69	
Control Delay	44.9	199.7	218.6	6.3		88.4	2.5	112.4	25.6	
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	44.9	199.7	218.6	6.3		88.4	2.5	112.4	25.6	
Queue Length 50th (ft)	75	~293	~293	19		~289	0	~224	238	
Queue Length 95th (ft)	172	#646	#642	93		#698	38	#585	#622	
Internal Link Dist (ft)	176		315			277			1555	
Turn Bay Length (ft)							340	205		
Base Capacity (vph)	329	286	271	1028		474	929	369	865	
Starvation Cap Reductn	0	0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0	0	0		0	0	0	0	
Storage Cap Reductn	0	0	0	0		0	0	0	0	
Reduced v/c Ratio	0.47	1.32	1.37	0.68		1.04	0.40	1.13	0.69	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 96

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

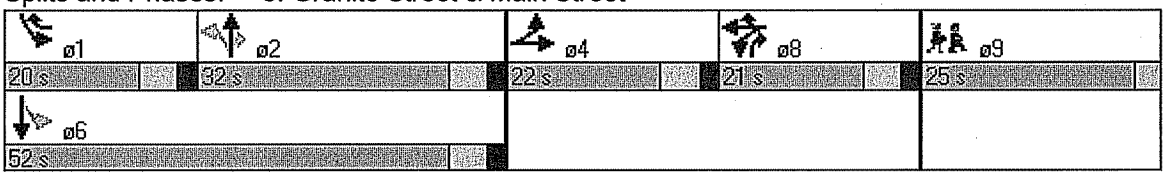
~ Volume exceeds capacity, queue is theoretically infinite.

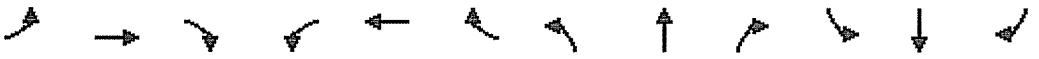
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Granite Street & Main Street





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
Lane Width	14	14	14	13	11	16	12	12	14	14	12	12
Total Lost time (s)		4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		0.95	0.95	1.00		1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	0.96	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1747		1595	1515	1647		1707	1550	1733	1708	
Flt Permitted		0.99		0.95	0.96	1.00		0.97	1.00	0.12	1.00	
Satd. Flow (perm)		1747		1595	1515	1647		1663	1550	225	1708	
Volume (vph)	15	90	40	615	95	660	15	455	350	395	560	5
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	95	42	647	100	695	16	479	368	416	589	5
RTOR Reduction (vph)	0	11	0	0	0	424	0	0	197	0	0	0
Lane Group Flow (vph)	0	142	0	377	370	271	0	495	171	416	594	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Split			Split		pt+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	4		8	8	8 1		2	8	1	6	
Permitted Phases							2		2	6		
Actuated Green, G (s)		12.1		15.2	15.2	29.4		26.4	41.6	46.6	46.6	
Effective Green, g (s)		14.1		17.2	17.2	33.4		28.4	45.6	48.6	48.6	
Actuated g/C Ratio		0.14		0.17	0.17	0.34		0.29	0.46	0.49	0.49	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		251		279	265	560		480	719	360	844	
v/s Ratio Prot		c0.08		0.24	c0.24	0.16			0.04	c0.19	0.35	
v/s Ratio Perm								0.30	0.07	c0.38		
v/c Ratio		0.57		1.35	1.40	0.48		1.03	0.24	1.16	0.70	
Uniform Delay, d1		39.2		40.6	40.6	25.6		35.0	15.9	28.5	19.3	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.9		179.9	199.7	0.7		49.3	0.2	96.8	2.7	
Delay (s)		42.1		220.4	240.2	26.3		84.3	16.0	125.4	22.0	
Level of Service		D		F	F	C		F	B	F	C	
Approach Delay (s)		42.1			131.9			55.2			64.6	
Approach LOS		D			F			E			E	

Intersection Summary			
HCM Average Control Delay	89.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	18.4
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	SEL	SER2	NWL	NWR2
Lane Configurations										
Volume (vph)	145	655	405	1495	915	320	185	175	600	905
Lane Group Flow (vph)	153	689	426	1574	963	337	195	184	632	953
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		4	5	8	1
Permitted Phases			Free			Free				
Detector Phases	5	2		1	6		4	5	8	1
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	22.0		25.0	22.0		25.0	25.0	25.0	25.0
Total Split (s)	25.0	27.0	0.0	58.0	60.0	0.0	25.0	25.0	25.0	58.0
Total Split (%)	22.7%	24.5%	0.0%	52.7%	54.5%	0.0%	22.7%	22.7%	22.7%	52.7%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0
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			Lag		Lead
Lead-Lag Optimize?										
Recall Mode	None	None		None	None		None	None	None	None
v/c Ratio	0.14	1.05	0.26	1.05	0.93	0.24	0.31	0.20	1.00	0.72
Control Delay	25.6	91.2	0.4	67.0	50.9	0.4	39.8	26.5	79.7	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	91.2	0.4	67.0	50.9	0.4	39.8	26.5	79.7	25.9
Queue Length 50th (ft)	36	~279	0	~627	348	0	61	48	231	290
Queue Length 95th (ft)	70	#398	0	#762	366	0	95	92	#352	377
Internal Link Dist (ft)		241			733					
Turn Bay Length (ft)			125	475		25	350	625	350	625
Base Capacity (vph)	1131	657	1647	1495	1359	1405	635	909	635	1326
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	1.05	0.26	1.05	0.71	0.24	0.31	0.20	1.00	0.72

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

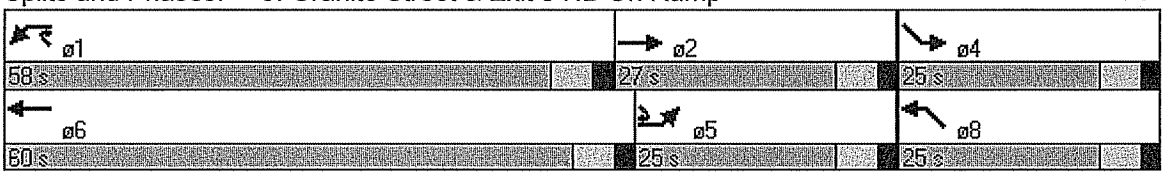
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: Granite Street & Exit 5 NB On Ramp



Movement	EBL	EBT	EBR2	WBL	WBT	WBR2	SEL	SER2	NWL	NWR2
Lane Configurations										
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	11	11	11	14	11	14	14
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.88	0.97	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3046	3141	1647	3046	3141	1405	3328	2448	3328	2702
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3046	3141	1647	3046	3141	1405	3328	2448	3328	2702
Volume (vph)	145	655	405	1495	915	320	185	175	600	905
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	153	689	426	1574	963	337	195	184	632	953
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	153	689	426	1574	963	337	195	184	632	953
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		4	5	8	1
Permitted Phases			Free			Free				
Actuated Green, G (s)	38.8	21.0	110.0	52.0	34.2	110.0	19.0	38.8	19.0	52.0
Effective Green, g (s)	40.8	23.0	110.0	54.0	36.2	110.0	21.0	40.8	21.0	54.0
Actuated g/C Ratio	0.37	0.21	1.00	0.49	0.33	1.00	0.19	0.37	0.19	0.49
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1130	657	1647	1495	1034	1405	635	908	635	1326
v/s Ratio Prot	0.05	c0.22		c0.52	0.31		0.06	0.08	c0.19	0.35
v/s Ratio Perm			0.26			0.24				
v/c Ratio	0.14	1.05	0.26	1.05	0.93	0.24	0.31	0.20	1.00	0.72
Uniform Delay, d1	22.9	43.5	0.0	28.0	35.7	0.0	38.2	23.5	44.5	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	48.5	0.4	38.6	14.3	0.4	0.3	0.1	34.3	1.9
Delay (s)	23.0	92.0	0.4	66.6	50.0	0.4	38.5	23.6	78.7	23.9
Level of Service	C	F	A	E	D	A	D	C	E	C
Approach Delay (s)		52.9			53.3					
Approach LOS		D			D					

Intersection Summary			
HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	ø9
Lane Configurations										
Volume (vph)	530	1120	55	1620	235	50	100	55	875	
Lane Group Flow (vph)	558	1279	59	1800	248	148	105	58	921	
Turn Type	Prot		Prot		Prot		Prot		pt+ov	
Protected Phases	5	2	1	6	8	4	3	7	7 5	9
Permitted Phases										
Detector Phases	5	2	1	6	8	4	3	7	7 5	
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0		1.0
Minimum Split (s)	16.0	22.0	16.0	22.0	16.0	22.0	16.0	16.0		28.0
Total Split (s)	20.0	38.0	16.0	34.0	22.0	22.0	16.0	16.0	36.0	28.0
Total Split (%)	16.7%	31.7%	13.3%	28.3%	18.3%	18.3%	13.3%	13.3%	30.0%	23%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		0.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag		
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	None		None
v/c Ratio	1.16	1.11	0.33	1.35	0.85	0.26	0.46	0.32	0.71	
Control Delay	133.0	93.7	51.4	195.1	69.7	20.1	49.3	51.3	6.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	133.0	93.7	51.4	195.1	69.7	20.1	49.3	51.3	6.6	
Queue Length 50th (ft)	~186	~456	31	~483	138	14	53	31	22	
Queue Length 95th (ft)	#409	#856	88	#837	#369	53	135	87	63	
Internal Link Dist (ft)		733		479		420		391		
Turn Bay Length (ft)	275		85		110		190		105	
Base Capacity (vph)	481	1156	192	1329	291	664	237	194	1310	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.16	1.11	0.31	1.35	0.85	0.22	0.44	0.30	0.70	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 102.3

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

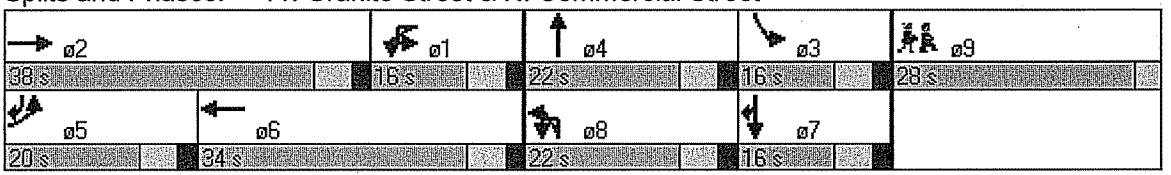
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Granite Street & N. Commercial Street



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	13	11	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	0.97	0.95			1.00	0.91			1.00	0.95		1.00
Frt	1.00	0.99			1.00	0.99			1.00	0.90		1.00
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00		0.95
Satd. Flow (prot)	3016	3073			1662	4433			1624	2936		1501
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00		0.95
Satd. Flow (perm)	3016	3073			1662	4433			1624	2936		1501
Volume (vph)	530	1120	95	1	55	1620	90	1	235	50	90	100
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	558	1179	100	1	58	1705	95	1	247	53	95	105
RTOR Reduction (vph)	0	4	0	0	0	5	0	0	0	80	0	0
Lane Group Flow (vph)	558	1275	0	0	59	1795	0	0	248	68	0	105
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	1%
Turn Type	Prot			Prot	Prot			Prot	Prot			Prot
Protected Phases	5	2		1	1	6		8	8	4		3
Permitted Phases												
Actuated Green, G (s)	14.3	36.3			7.9	29.9			16.3	14.7		12.2
Effective Green, g (s)	16.3	38.3			9.9	31.9			18.3	16.7		14.2
Actuated g/C Ratio	0.15	0.36			0.09	0.30			0.17	0.16		0.13
Clearance Time (s)	6.0	6.0			6.0	6.0			6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)	461	1104			154	1327			279	460		200
v/s Ratio Prot	0.18	c0.41			0.04	c0.40			c0.15	0.02		c0.07
v/s Ratio Perm												
v/c Ratio	1.21	1.15			0.38	1.35			0.89	0.15		0.52
Uniform Delay, d1	45.2	34.2			45.5	37.4			43.2	38.8		43.1
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	113.4	80.1			1.6	163.8			27.1	0.1		2.5
Delay (s)	158.6	114.2			47.1	201.1			70.2	39.0		45.5
Level of Service	F	F			D	F			E	D		D
Approach Delay (s)		127.7				196.2				58.5		
Approach LOS		F				F				E		

Intersection Summary			
HCM Average Control Delay	127.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	106.6	Sum of lost time (s)	23.5
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Ideal Flow (vphpl)	1900	1900
Lane Width	11	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	0.88
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1637	2448
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1637	2448
Volume (vph)	55	875
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	58	921
RTOR Reduction (vph)	0	596
Lane Group Flow (vph)	58	325
Heavy Vehicles (%)	1%	1%
Turn Type		pt+ov
Protected Phases	7	7 5
Permitted Phases		
Actuated Green, G (s)	10.6	24.9
Effective Green, g (s)	12.6	28.9
Actuated g/C Ratio	0.12	0.27
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	193	664
v/s Ratio Prot	0.04	0.13
v/s Ratio Perm		
v/c Ratio	0.30	0.49
Uniform Delay, d1	43.0	32.6
Progression Factor	1.00	1.00
Incremental Delay, d2	0.9	0.6
Delay (s)	43.9	33.2
Level of Service	D	C
Approach Delay (s)	35.0	
Approach LOS	C	

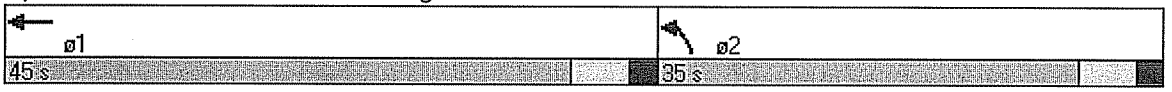
Intersection Summary

Lane Group	WBT	NBL
Lane Configurations		
Volume (vph)	2100	1435
Lane Group Flow (vph)	2211	1511
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phases	1	2
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	22.0	22.0
Total Split (s)	45.0	35.0
Total Split (%)	56.3%	43.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?		
Recall Mode	None	None
v/c Ratio	1.20	1.11
Control Delay	115.3	87.5
Queue Delay	26.0	33.3
Total Delay	141.3	120.8
Queue Length 50th (ft)	~714	~453
Queue Length 95th (ft)	#851	#581
Internal Link Dist (ft)	168	200
Turn Bay Length (ft)		
Base Capacity (vph)	1850	1357
Starvation Cap Reductn	0	0
Spillback Cap Reductn	86	87
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.25	1.19

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 26: Amoskeag Street &



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↰↰	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	
Lane Util. Factor				0.95	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				3610	3502	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				3610	3502	
Volume (vph)	0	0	0	2100	1435	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	2211	1511	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2211	1511	0
Heavy Vehicles (%)	2%	2%	0%	0%	0%	0%
Turn Type						
Protected Phases				1	2	
Permitted Phases						
Actuated Green, G (s)				39.0	29.0	
Effective Green, g (s)				41.0	31.0	
Actuated g/C Ratio				0.51	0.39	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1850	1357	
v/s Ratio Prot				c0.61	c0.43	
v/s Ratio Perm						
v/c Ratio				1.20	1.11	
Uniform Delay, d1				19.5	24.5	
Progression Factor				1.00	1.00	
Incremental Delay, d2				93.4	61.8	
Delay (s)				112.9	86.3	
Level of Service				F	F	
Approach Delay (s)	0.0			112.9	86.3	
Approach LOS	A			F	F	

Intersection Summary			
HCM Average Control Delay	102.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	172.4%	ICU Level of Service	H
Analysis Period (min)	15		

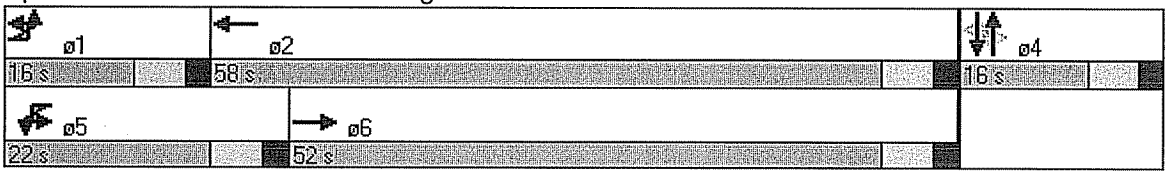
c Critical Lane Group

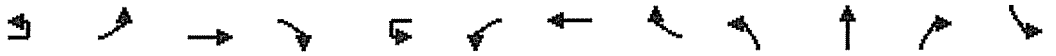
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	40	1485	5	2030	15	0	25	0
Lane Group Flow (vph)	47	1568	10	2163	0	21	0	79
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	22.0	22.0	22.0	16.0	16.0	16.0	16.0
Total Split (s)	16.0	52.0	22.0	58.0	16.0	16.0	16.0	16.0
Total Split (%)	17.8%	57.8%	24.4%	64.4%	17.8%	17.8%	17.8%	17.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
v/c Ratio	0.21	0.53	0.06	0.80		0.09		0.29
Control Delay	37.0	5.6	39.8	15.2		30.2		19.3
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	37.0	5.6	39.8	15.2		30.2		19.3
Queue Length 50th (ft)	23	106	5	460		8		13
Queue Length 95th (ft)	57	337	21	#797		29		54
Internal Link Dist (ft)		110		738		196		139
Turn Bay Length (ft)	100		100					
Base Capacity (vph)	271	2977	355	2708		293		333
Starvation Cap Reductn	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.17	0.53	0.03	0.80		0.07		0.24

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 71.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

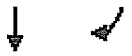
Splits and Phases: 28: Amoskeag Street & River Front Drive





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.97		
Flt Protected		0.95	1.00			0.95	1.00			0.96		
Satd. Flow (prot)		1685	3729			1685	3724			2008		
Flt Permitted		0.95	1.00			0.95	1.00			0.77		
Satd. Flow (perm)		1685	3729			1685	3724			1596		
Volume (vph)	5	40	1485	5	5	5	2030	25	15	0	5	25
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	42	1563	5	5	5	2137	26	16	0	5	26
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	5	0	0
Lane Group Flow (vph)	0	47	1568	0	0	10	2162	0	0	16	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		4.4	53.3			1.1	50.0			5.3		
Effective Green, g (s)		6.4	55.3			3.1	52.0			7.3		
Actuated g/C Ratio		0.08	0.71			0.04	0.67			0.09		
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)		139	2654			67	2492			150		
v/s Ratio Prot		c0.03	c0.42			0.01	c0.58					
v/s Ratio Perm										0.01		
v/c Ratio		0.34	0.59			0.15	0.87			0.11		
Uniform Delay, d1		33.7	5.6			36.0	10.1			32.2		
Progression Factor		1.00	1.00			1.00	1.00			1.00		
Incremental Delay, d2		1.4	0.4			1.0	3.5			0.3		
Delay (s)		35.1	5.9			37.1	13.6			32.6		
Level of Service		D	A			D	B			C		
Approach Delay (s)			6.8				13.7			32.6		
Approach LOS			A				B			C		

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations	↕	
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.91	
Flt Protected	0.98	
Satd. Flow (prot)	1927	
Flt Permitted	0.88	
Satd. Flow (perm)	1727	
Volume (vph)	0	50
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	0	53
RTOR Reduction (vph)	48	0
Lane Group Flow (vph)	31	0
Heavy Vehicles (%)	0%	0%
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	5.3	
Effective Green, g (s)	7.3	
Actuated g/C Ratio	0.09	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	162	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.19	
Uniform Delay, d1	32.5	
Progression Factor	1.00	
Incremental Delay, d2	0.6	
Delay (s)	33.1	
Level of Service	C	
Approach Delay (s)	33.1	
Approach LOS	C	

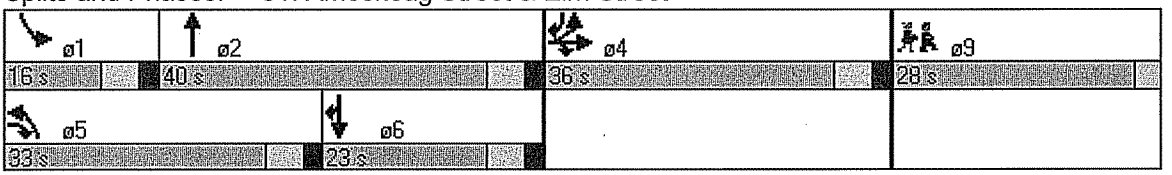
Intersection Summary

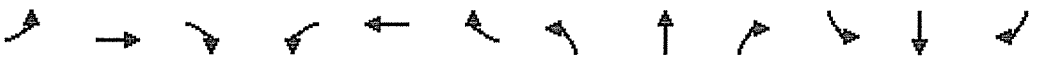
Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø9
Lane Configurations									
Volume (vph)	585	335	335	555	375	30	335	700	
Lane Group Flow (vph)	616	353	353	584	479	32	353	737	
Turn Type	Split		pt+ov	Prot		Prot		pt+ov	
Protected Phases	4	4	4 5	5	2	1	6	6 4	9
Permitted Phases									
Detector Phases	4	4	4 5	5	2	1	6	6 4	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0		1.0
Minimum Split (s)	16.0	16.0		16.0	22.0	16.0	22.0		28.0
Total Split (s)	36.0	36.0	69.0	33.0	40.0	16.0	23.0	59.0	28.0
Total Split (%)	30.0%	30.0%	57.5%	27.5%	33.3%	13.3%	19.2%	49.2%	23%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0		0.0
Lead/Lag				Lead	Lag	Lead	Lag		
Lead-Lag Optimize?									
Recall Mode	None	None		None	None	None	None		None
v/c Ratio	1.16	0.61	0.31	1.18	0.34	0.22	0.61	0.65	
Control Delay	124.4	34.5	1.5	131.6	20.7	47.2	42.4	6.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	124.4	34.5	1.5	131.6	20.7	47.2	42.4	6.1	
Queue Length 50th (ft)	~419	167	0	~401	92	17	97	29	
Queue Length 95th (ft)	#881	#390	23	#847	206	56	192	200	
Internal Link Dist (ft)		737			2475		476		
Turn Bay Length (ft)	265		400			175		150	
Base Capacity (vph)	529	576	1132	496	1421	183	619	1147	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.16	0.61	0.31	1.18	0.34	0.17	0.57	0.64	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.2
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Amoskeag Street & Elm Street





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
Lane Width	11	12	13	12	12	12	12	12	14	11	11	14
Total Lost time (s)	4.0	4.0	4.0				4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1570	1710	1502				1624	3164		1570	3141	1550
Flt Permitted	0.95	1.00	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1570	1710	1502				1624	3164		1570	3141	1550
Volume (vph)	585	335	335	0	0	0	555	375	80	30	335	700
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	616	353	353	0	0	0	584	395	84	32	353	737
RTOR Reduction (vph)	0	0	137	0	0	0	0	12	0	0	0	269
Lane Group Flow (vph)	616	353	216	0	0	0	584	467	0	32	353	468
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Parking (#/hr)									1			
Turn Type	Split		pt+ov				Prot			Prot		pt+ov
Protected Phases	4	4	4 5				5	2		1	6	6 4
Permitted Phases												
Actuated Green, G (s)	30.4	30.4	57.8				27.4	40.8		4.9	18.3	54.7
Effective Green, g (s)	32.4	32.4	61.8				29.4	42.8		6.9	20.3	56.7
Actuated g/C Ratio	0.32	0.32	0.61				0.29	0.42		0.07	0.20	0.56
Clearance Time (s)	6.0	6.0					6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	503	548	918				472	1339		107	631	869
v/s Ratio Prot	c0.39	0.21	0.14				c0.36	0.15		0.02	0.11	c0.30
v/s Ratio Perm												
v/c Ratio	1.22	0.64	0.24				1.24	0.35		0.30	0.56	0.54
Uniform Delay, d1	34.4	29.4	8.9				35.8	19.7		44.8	36.4	14.0
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	117.8	2.6	0.1				123.9	0.2		1.6	1.1	0.6
Delay (s)	152.2	32.0	9.1				159.8	19.9		46.4	37.5	14.6
Level of Service	F	C	A				F	B		D	D	B
Approach Delay (s)		81.9			0.0			96.7			22.7	
Approach LOS		F			A			F			C	

Intersection Summary			
HCM Average Control Delay	67.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	101.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBR	WBT	WBR	SBT	SBR
Lane Configurations					
Volume (vph)	625	1025	610	510	220
Lane Group Flow (vph)	658	1079	642	537	232
Turn Type	Free		Free		Perm
Protected Phases		1		2	
Permitted Phases	Free		Free		2
Detector Phases		1		2	2
Minimum Initial (s)		10.0		10.0	10.0
Minimum Split (s)		22.0		22.0	22.0
Total Split (s)	0.0	68.0	0.0	42.0	42.0
Total Split (%)	0.0%	61.8%	0.0%	38.2%	38.2%
Yellow Time (s)		4.0		4.0	4.0
All-Red Time (s)		2.0		2.0	2.0
Lead/Lag		Lead		Lag	Lag
Lead-Lag Optimize?					
Recall Mode		None		None	None
v/c Ratio	0.35	0.90	0.35	0.82	0.37
Control Delay	0.5	29.4	0.5	41.3	17.4
Queue Delay	0.0	19.6	0.0	0.0	0.0
Total Delay	0.5	49.1	0.5	41.3	17.4
Queue Length 50th (ft)	0	607	0	340	70
Queue Length 95th (ft)	0	#853	0	#489	137
Internal Link Dist (ft)		59		1741	
Turn Bay Length (ft)					100
Base Capacity (vph)	1863	1336	1812	778	717
Starvation Cap Reductn	0	281	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	1.02	0.35	0.69	0.32

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 91.1

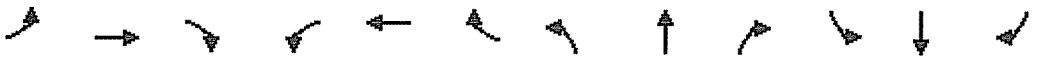
Natural Cycle: 65

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 32: Goffstown Road & Front Street



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
Lane Width	16	16	16	16	16	16	12	12	12	13	13	13
Total Lost time (s)			4.0		4.0	4.0					4.0	4.0
Lane Util. Factor			1.00		1.00	1.00					1.00	1.00
Frt			0.86		1.00	0.85					1.00	0.85
Flt Protected			1.00		1.00	1.00					1.00	1.00
Satd. Flow (prot)			1863		2132	1812					1944	1652
Flt Permitted			1.00		1.00	1.00					1.00	1.00
Satd. Flow (perm)			1863		2132	1812					1944	1652
Volume (vph)	0	0	625	0	1025	610	0	0	0	0	510	220
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	658	0	1079	642	0	0	0	0	537	232
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	61
Lane Group Flow (vph)	0	0	658	0	1079	642	0	0	0	0	537	171
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type			Free			Free						Perm
Protected Phases					1						2	
Permitted Phases			Free			Free						2
Actuated Green, G (s)			89.6		49.1	89.6					28.5	28.5
Effective Green, g (s)			89.6		51.1	89.6					30.5	30.5
Actuated g/C Ratio			1.00		0.57	1.00					0.34	0.34
Clearance Time (s)					6.0						6.0	6.0
Vehicle Extension (s)					3.0						3.0	3.0
Lane Grp Cap (vph)			1863		1216	1812					662	562
v/s Ratio Prot					c0.51						c0.28	
v/s Ratio Perm			0.35			0.35						0.10
v/c Ratio			0.35		0.89	0.35					0.81	0.30
Uniform Delay, d1			0.0		16.7	0.0					26.9	21.7
Progression Factor			1.00		1.00	1.00					1.00	1.00
Incremental Delay, d2			0.5		8.1	0.5					7.5	0.3
Delay (s)			0.5		24.9	0.5					34.4	22.0
Level of Service			A		C	A					C	C
Approach Delay (s)		0.5			15.8			0.0			30.7	
Approach LOS		A			B			A			C	

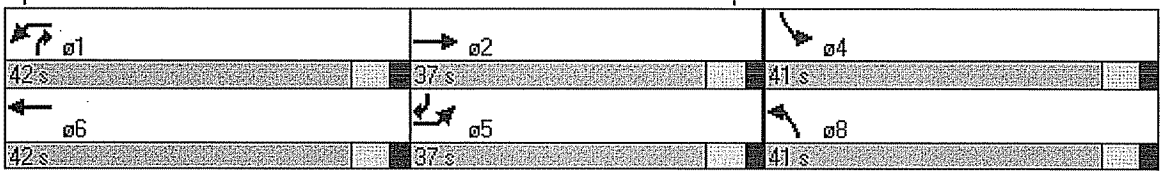
Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

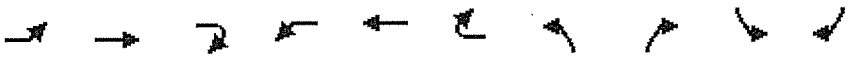
Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Volume (vph)	310	660	550	775	60	525	600	600	840	260
Lane Group Flow (vph)	326	695	579	816	63	553	632	632	884	274
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		8	1	4	5
Permitted Phases			Free			Free				
Detector Phases	5	2		1	6		8	1	4	5
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	22.0		23.0	22.0		23.0	23.0	23.0	23.0
Total Split (s)	37.0	37.0	0.0	42.0	42.0	0.0	41.0	42.0	41.0	37.0
Total Split (%)	30.8%	30.8%	0.0%	35.0%	35.0%	0.0%	34.2%	35.0%	34.2%	30.8%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0
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
Lead-Lag Optimize?										
Recall Mode	None	C-Max		None	C-Max		None	None	None	None
v/c Ratio	0.35	0.64	0.37	0.81	0.05	0.35	0.62	0.74	0.87	0.63
Control Delay	36.1	39.9	0.7	48.1	31.2	0.6	39.3	40.3	50.3	45.7
Queue Delay	0.0	121.3	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	161.2	0.7	49.7	31.2	0.6	39.3	40.3	50.3	45.7
Queue Length 50th (ft)	104	252	0	300	20	0	213	227	328	187
Queue Length 95th (ft)	146	326	0	398	38	0	275	297	409	282
Internal Link Dist (ft)		417			373					
Turn Bay Length (ft)	175		125	350		50				
Base Capacity (vph)	944	1094	1583	1087	1165	1583	1059	917	1059	435
Starvation Cap Reductn	0	0	0	130	0	0	0	0	0	0
Spillback Cap Reductn	0	543	0	0	0	0	0	7	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	1.26	0.37	0.85	0.05	0.35	0.60	0.69	0.83	0.63

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 67 (56%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 2: Goffstown Road & Exit 6 NB On Ramp





Movement	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Ideal Flow (vphpl)	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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.88	0.97	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	2787	3433	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	2787	3433	1583
Volume (vph)	310	660	550	775	60	525	600	600	840	260
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	326	695	579	816	63	553	632	632	884	274
RTOR Reduction (vph)	0	0	0	0	0	0	0	36	0	0
Lane Group Flow (vph)	326	695	579	816	63	553	632	596	884	274
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		8	1	4	5
Permitted Phases			Free			Free				
Actuated Green, G (s)	31.0	35.1	120.0	33.4	37.5	120.0	33.5	33.4	33.5	31.0
Effective Green, g (s)	33.0	37.1	120.0	35.4	39.5	120.0	35.5	35.4	35.5	33.0
Actuated g/C Ratio	0.28	0.31	1.00	0.30	0.33	1.00	0.30	0.30	0.30	0.28
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	944	1094	1583	1013	1165	1583	1016	822	1016	435
v/s Ratio Prot	0.09	c0.20		c0.24	0.02		0.18	0.21	c0.26	0.17
v/s Ratio Perm			c0.37			0.35				
v/c Ratio	0.35	0.64	0.37	0.81	0.05	0.35	0.62	0.73	0.87	0.63
Uniform Delay, d1	34.8	35.6	0.0	39.1	27.5	0.0	36.5	37.9	40.1	38.1
Progression Factor	1.00	1.00	1.00	1.07	1.09	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	2.8	0.7	4.4	0.1	0.6	1.2	3.2	8.2	2.9
Delay (s)	35.1	38.5	0.7	46.3	30.2	0.6	37.7	41.1	48.3	41.0
Level of Service	D	D	A	D	C	A	D	D	D	D
Approach Delay (s)		24.1			27.9					
Approach LOS		C			C					

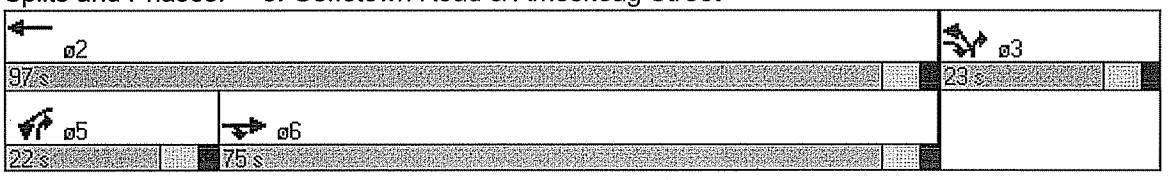
Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

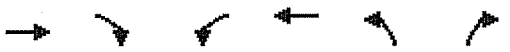
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1810	290	150	1135	225	650
Lane Group Flow (vph)	1905	305	158	1195	237	684
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Detector Phases	6	6 3	5	2	3	3 5
Minimum Initial (s)	10.0		10.0	10.0	4.0	
Minimum Split (s)	23.0		22.0	23.0	23.0	
Total Split (s)	75.0	98.0	22.0	97.0	23.0	45.0
Total Split (%)	62.5%	81.7%	18.3%	80.8%	19.2%	37.5%
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?						
Recall Mode	C-Max		None	C-Max	None	
v/c Ratio	0.88	0.23	0.35	0.44	0.44	0.75
Control Delay	20.6	0.5	61.7	3.7	48.5	40.8
Queue Delay	17.0	0.5	0.0	0.1	0.8	0.8
Total Delay	37.6	1.0	61.7	3.7	49.3	41.5
Queue Length 50th (ft)	501	1	67	76	86	255
Queue Length 95th (ft)	612	m8	104	89	127	328
Internal Link Dist (ft)	373			293	489	
Turn Bay Length (ft)		250	175		400	400
Base Capacity (vph)	2165	1326	515	2743	544	967
Starvation Cap Reductn	308	621	0	307	0	0
Spillback Cap Reductn	109	0	0	11	114	87
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.43	0.31	0.49	0.55	0.78

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 32 (27%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Goffstown Road & Amoskeag Street





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787
Volume (vph)	1810	290	150	1135	225	650
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1905	305	158	1195	237	684
RTOR Reduction (vph)	0	54	0	0	0	16
Lane Group Flow (vph)	1905	251	158	1195	237	668
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Actuated Green, G (s)	71.4	94.4	13.6	91.0	17.0	36.6
Effective Green, g (s)	73.4	96.4	15.6	93.0	19.0	38.6
Actuated g/C Ratio	0.61	0.80	0.13	0.78	0.16	0.32
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)	2165	1272	446	2743	544	896
v/s Ratio Prot	c0.54	0.16	0.05	0.34	0.07	c0.24
v/s Ratio Perm						
v/c Ratio	0.88	0.20	0.35	0.44	0.44	0.75
Uniform Delay, d1	19.6	2.8	47.6	4.6	45.7	36.3
Progression Factor	0.81	0.57	1.27	0.69	1.00	1.00
Incremental Delay, d2	3.6	0.0	0.4	0.5	0.6	3.4
Delay (s)	19.5	1.6	60.8	3.6	46.2	39.7
Level of Service	B	A	E	A	D	D
Approach Delay (s)	17.1			10.3	41.4	
Approach LOS	B			B	D	

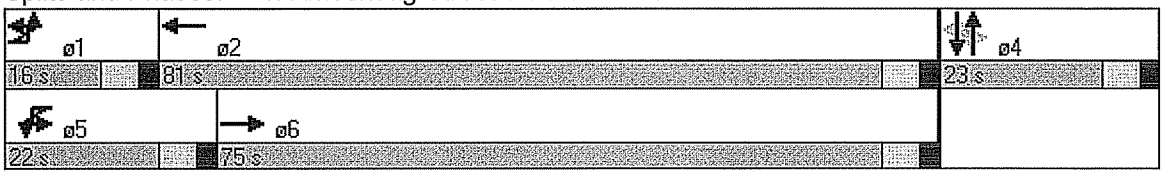
Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	30	2420	5	1235	15	1	30	1
Lane Group Flow (vph)	37	2552	5	1326	0	33	0	65
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	23.0	22.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	16.0	75.0	22.0	81.0	23.0	23.0	23.0	23.0
Total Split (%)	13.3%	62.5%	18.3%	67.5%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.27	0.83	0.05	0.46		0.19		0.35
Control Delay	52.5	7.2	53.2	7.1		32.0		33.2
Queue Delay	0.0	0.6	0.0	0.0		0.0		0.0
Total Delay	52.5	7.8	53.2	7.1		32.0		33.2
Queue Length 50th (ft)	27	258	4	195		12		24
Queue Length 95th (ft)	m33	#1254	17	340		42		64
Internal Link Dist (ft)		293		667		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	165	3090	248	2885		284		294
Starvation Cap Reductn	0	203	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.22	0.88	0.02	0.46		0.12		0.22

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 39 (33%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amoskeag Street & River Front Drive



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	13	12	16	16	16	16	16
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	1.00		1.00	1.00			0.93			0.93
Flt Protected		0.95	1.00		0.95	1.00			0.98			0.98
Satd. Flow (prot)		1652	3656		1652	3646			1926			1923
Flt Permitted		0.95	1.00		0.95	1.00			0.83			0.87
Satd. Flow (perm)		1652	3656		1652	3646			1630			1713
Volume (vph)	5	30	2420	5	5	1235	25	15	1	15	30	1
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	32	2547	5	5	1300	26	16	1	16	32	1
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	15	0	0	29
Lane Group Flow (vph)	0	37	2552	0	5	1325	0	0	18	0	0	36
Turn Type	Prot	Prot			Prot			Perm			Perm	
Protected Phases	1	1	6		5	2			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		5.4	92.6		1.4	88.6			8.0			8.0
Effective Green, g (s)		7.4	94.6		3.4	90.6			10.0			10.0
Actuated g/C Ratio		0.06	0.79		0.03	0.76			0.08			0.08
Clearance Time (s)		6.0	6.0		6.0	6.0			6.0			6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)		102	2882		47	2753			136			143
v/s Ratio Prot		c0.02	c0.70		0.00	0.36						
v/s Ratio Perm									0.01			c0.02
v/c Ratio		0.36	0.89		0.11	0.48			0.13			0.25
Uniform Delay, d1		54.0	8.9		56.8	5.7			51.0			51.5
Progression Factor		0.98	0.56		1.00	1.00			1.00			1.00
Incremental Delay, d2		1.1	2.3		1.0	0.6			0.5			0.9
Delay (s)		53.9	7.3		57.8	6.3			51.4			52.4
Level of Service		D	A		E	A			D			D
Approach Delay (s)			8.0			6.5			51.4			52.4
Approach LOS			A			A			D			D

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

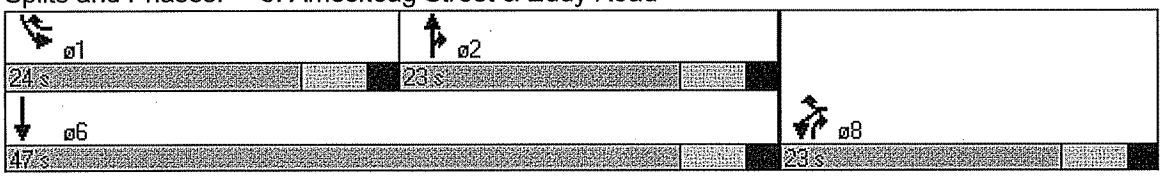
Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width	16
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	30
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	32
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
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	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	380	60	100	450	425	425
Lane Group Flow (vph)	400	63	105	474	447	447
Turn Type		pt+ov		pt+ov	Prot	
Protected Phases	8	8 1	2	2 8	1	6
Permitted Phases						
Detector Phases	8	8 1	2	2 8	1	6
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	23.0		23.0		10.0	23.0
Total Split (s)	23.0	47.0	23.0	46.0	24.0	47.0
Total Split (%)	32.9%	67.1%	32.9%	65.7%	34.3%	67.1%
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?						
Recall Mode	None		Min		None	Min
v/c Ratio	0.81	0.06	0.24	0.49	0.85	0.40
Control Delay	38.0	1.8	21.9	7.3	40.4	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	1.8	21.9	7.3	40.4	8.3
Queue Length 50th (ft)	150	0	35	65	170	86
Queue Length 95th (ft)	#304	12	71	126	#342	138
Internal Link Dist (ft)	464		431			754
Turn Bay Length (ft)				200	400	
Base Capacity (vph)	518	1052	522	1017	547	1162
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.06	0.20	0.47	0.82	0.38

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 64.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Amoskeag Street & Eddy Road



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Volume (vph)	380	60	100	450	425	425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	400	63	105	474	447	447
RTOR Reduction (vph)	0	23	0	59	0	0
Lane Group Flow (vph)	400	40	105	415	447	447
Turn Type		pt+ov		pt+ov	Prot	
Protected Phases	8	8 1	2	2 8	1	6
Permitted Phases						
Actuated Green, G (s)	15.9	39.0	13.1	35.0	17.1	36.2
Effective Green, g (s)	17.9	41.0	15.1	37.0	19.1	38.2
Actuated g/C Ratio	0.28	0.64	0.24	0.58	0.30	0.60
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)	494	1013	439	914	527	1110
v/s Ratio Prot	c0.23	0.03	0.06	c0.26	c0.25	0.24
v/s Ratio Perm						
v/c Ratio	0.81	0.04	0.24	0.45	0.85	0.40
Uniform Delay, d1	21.5	4.3	19.8	7.8	21.1	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.5	0.0	0.3	0.4	12.1	0.2
Delay (s)	31.0	4.3	20.1	8.1	33.2	7.1
Level of Service	C	A	C	A	C	A
Approach Delay (s)	27.4		10.3			20.2
Approach LOS	C		B			C

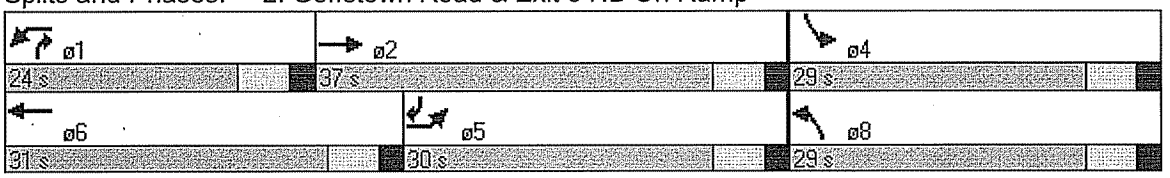
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

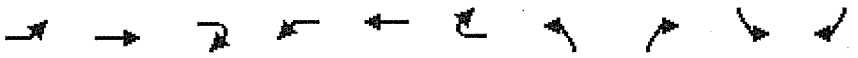
Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Volume (vph)	450	175	235	400	655	900	665	685	280	260
Lane Group Flow (vph)	474	184	247	421	689	947	700	721	295	274
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		8	1	4	5
Permitted Phases			Free			Free				
Detector Phases	5	2		1	6		8	1	4	5
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	22.0		23.0	22.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0	37.0	0.0	24.0	31.0	0.0	29.0	24.0	29.0	30.0
Total Split (%)	33.3%	41.1%	0.0%	26.7%	34.4%	0.0%	32.2%	26.7%	32.2%	33.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0
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
Lead-Lag Optimize?										
Recall Mode	None	C-Max		None	C-Max		None	None	None	None
v/c Ratio	0.48	0.13	0.16	0.60	0.61	0.60	0.78	0.63	0.33	0.60
Control Delay	28.4	18.3	0.2	33.8	26.9	1.5	37.8	5.2	27.7	34.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	18.3	0.2	33.8	26.9	1.5	37.8	5.2	27.8	34.0
Queue Length 50th (ft)	114	35	0	112	177	0	185	0	68	134
Queue Length 95th (ft)	160	59	0	161	224	6	249	48	103	217
Internal Link Dist (ft)		417			373					
Turn Bay Length (ft)	175		125	350		50				
Base Capacity (vph)	992	1427	1583	763	1126	1583	954	1180	954	457
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	7	35	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.13	0.16	0.55	0.61	0.60	0.73	0.61	0.32	0.60

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 28 (31%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 2: Goffstown Road & Exit 6 NB On Ramp





Movement	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Ideal Flow (vphpl)	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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.88	0.97	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	2787	3433	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	2787	3433	1583
Volume (vph)	450	175	235	400	655	900	665	685	280	260
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	474	184	247	421	689	947	700	721	295	274
RTOR Reduction (vph)	0	0	0	0	0	0	0	574	0	0
Lane Group Flow (vph)	474	184	247	421	689	947	700	147	295	274
Turn Type	Prot		Free	Prot		Free	Prot	custom	Prot	custom
Protected Phases	5	2		1	6		8	1	4	5
Permitted Phases			Free			Free				
Actuated Green, G (s)	24.0	34.3	90.0	16.3	26.6	90.0	21.4	16.3	21.4	24.0
Effective Green, g (s)	26.0	36.3	90.0	18.3	28.6	90.0	23.4	18.3	23.4	26.0
Actuated g/C Ratio	0.29	0.40	1.00	0.20	0.32	1.00	0.26	0.20	0.26	0.29
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	992	1427	1583	698	1125	1583	893	567	893	457
v/s Ratio Prot	0.14	0.05		0.12	0.19		c0.20	0.05	0.09	0.17
v/s Ratio Perm			0.16			c0.60				
v/c Ratio	0.48	0.13	0.16	0.60	0.61	0.60	0.78	0.26	0.33	0.60
Uniform Delay, d1	26.4	16.9	0.0	32.6	26.0	0.0	30.9	30.1	27.0	27.5
Progression Factor	1.00	1.00	1.00	0.95	0.93	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2	0.2	1.1	1.9	1.3	4.6	0.2	0.2	2.1
Delay (s)	26.8	17.1	0.2	32.2	26.2	1.3	35.5	30.4	27.2	29.6
Level of Service	C	B	A	C	C	A	D	C	C	C
Approach Delay (s)		17.5			15.9					
Approach LOS		B			B					

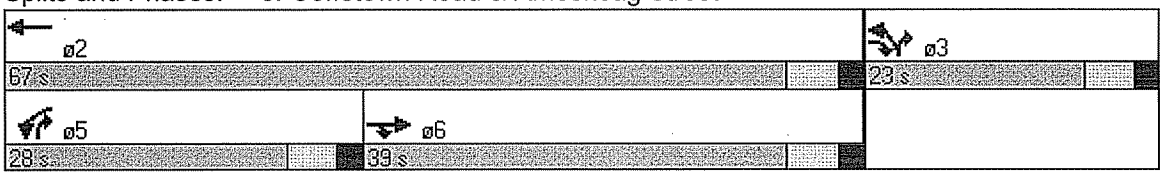
Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	980	160	600	1500	455	570
Lane Group Flow (vph)	1032	168	632	1579	479	600
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Detector Phases	6	6 3	5	2	3	3 5
Minimum Initial (s)	10.0		10.0	10.0	4.0	
Minimum Split (s)	23.0		22.0	23.0	23.0	
Total Split (s)	39.0	62.0	28.0	67.0	23.0	51.0
Total Split (%)	43.3%	68.9%	31.1%	74.4%	25.6%	56.7%
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?						
Recall Mode	C-Max		None	C-Max	None	
v/c Ratio	0.72	0.16	0.73	0.64	0.66	0.42
Control Delay	21.8	4.3	43.2	5.7	35.8	9.0
Queue Delay	0.3	0.0	0.2	0.6	0.0	0.0
Total Delay	22.1	4.3	43.4	6.3	35.8	9.0
Queue Length 50th (ft)	204	24	167	68	106	57
Queue Length 95th (ft)	273	m40	m250	141	m146	m84
Internal Link Dist (ft)	373			293	489	
Turn Bay Length (ft)		250	175		400	400
Base Capacity (vph)	1427	1058	915	2477	725	1481
Starvation Cap Reductn	86	0	27	458	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.16	0.71	0.78	0.66	0.41

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 88 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Goffstown Road & Amoskeag Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787
Volume (vph)	980	160	600	1500	455	570
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1032	168	632	1579	479	600
RTOR Reduction (vph)	0	15	0	0	0	26
Lane Group Flow (vph)	1032	153	632	1579	479	574
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Actuated Green, G (s)	34.3	57.3	20.7	61.0	17.0	43.7
Effective Green, g (s)	36.3	59.3	22.7	63.0	19.0	45.7
Actuated g/C Ratio	0.40	0.66	0.25	0.70	0.21	0.51
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)	1427	1043	866	2477	725	1415
v/s Ratio Prot	c0.29	0.10	c0.18	0.45	c0.14	0.21
v/s Ratio Perm						
v/c Ratio	0.72	0.15	0.73	0.64	0.66	0.41
Uniform Delay, d1	22.6	5.8	30.8	7.3	32.5	13.7
Progression Factor	0.81	0.87	1.30	0.66	0.99	0.68
Incremental Delay, d2	2.9	0.1	1.8	0.7	1.5	0.1
Delay (s)	21.2	5.1	41.9	5.6	33.7	9.5
Level of Service	C	A	D	A	C	A
Approach Delay (s)	18.9			15.9	20.2	
Approach LOS	B			B	C	

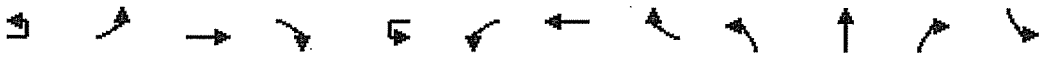
Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	40	1500	5	2030	15	1	25	1
Lane Group Flow (vph)	47	1584	10	2163	0	22	0	80
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	23.0	22.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	16.0	45.0	22.0	51.0	23.0	23.0	23.0	23.0
Total Split (%)	17.8%	50.0%	24.4%	56.7%	25.6%	25.6%	25.6%	25.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.26	0.54	0.07	0.81		0.11		0.31
Control Delay	36.1	4.6	38.2	16.9		28.4		18.4
Queue Delay	0.0	0.1	0.0	0.0		0.0		0.0
Total Delay	36.1	4.7	38.2	16.9		28.4		18.4
Queue Length 50th (ft)	25	88	5	479		9		14
Queue Length 95th (ft)	m46	248	21	#905		28		49
Internal Link Dist (ft)		293		667		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	220	2919	330	2656		360		413
Starvation Cap Reductn	0	385	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.21	0.63	0.03	0.81		0.06		0.19

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

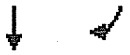
Splits and Phases: 4: Amoskeag Street & River Front Drive



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.97		
Flt Protected		0.95	1.00			0.95	1.00			0.96		
Satd. Flow (prot)		1652	3655			1652	3651			1975		
Flt Permitted		0.95	1.00			0.95	1.00			0.78		
Satd. Flow (perm)		1652	3655			1652	3651			1588		
Volume (vph)	5	40	1500	5	5	5	2030	25	15	1	5	25
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	42	1579	5	5	5	2137	26	16	1	5	26
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	4	0	0
Lane Group Flow (vph)	0	47	1584	0	0	10	2162	0	0	18	0	0
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		5.4	63.0			1.5	59.1			7.5		
Effective Green, g (s)		7.4	65.0			3.5	61.1			9.5		
Actuated g/C Ratio		0.08	0.72			0.04	0.68			0.11		
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)		136	2640			64	2479			168		
v/s Ratio Prot		c0.03	c0.43			0.01	c0.59					
v/s Ratio Perm										0.01		
v/c Ratio		0.35	0.60			0.16	0.87			0.10		
Uniform Delay, d1		39.0	6.1			41.8	11.4			36.4		
Progression Factor		0.92	0.64			1.00	1.00			1.00		
Incremental Delay, d2		1.2	0.8			1.1	4.6			0.3		
Delay (s)		37.1	4.7			43.0	16.0			36.7		
Level of Service		D	A			D	B			D		
Approach Delay (s)			5.7				16.1			36.7		
Approach LOS			A				B			D		

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.91	
Flt Protected	0.98	
Satd. Flow (prot)	1892	
Flt Permitted	0.88	
Satd. Flow (perm)	1697	
Volume (vph)	1	50
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	1	53
RTOR Reduction (vph)	47	0
Lane Group Flow (vph)	33	0
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.5	
Effective Green, g (s)	9.5	
Actuated g/C Ratio	0.11	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	179	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.18	
Uniform Delay, d1	36.7	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	37.2	
Level of Service	D	
Approach Delay (s)	37.2	
Approach LOS	D	

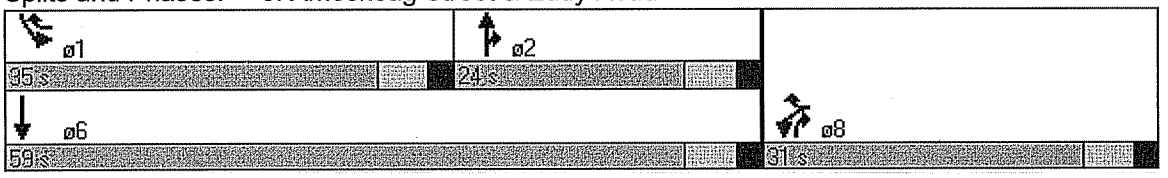
Intersection Summary

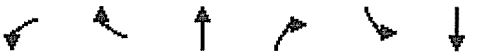
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	430	330	175	525	500	230
Lane Group Flow (vph)	453	347	184	553	526	242
Turn Type		pt+ov		pt+ov	Prot	
Protected Phases	8	8 1	2	2 8	1	6
Permitted Phases						
Detector Phases	8	8 1	2	2 8	1	6
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	23.0		23.0		10.0	23.0
Total Split (s)	31.0	66.0	24.0	55.0	35.0	59.0
Total Split (%)	34.4%	73.3%	26.7%	61.1%	38.9%	65.6%
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?						
Recall Mode	None		C-Min		None	C-Min
v/c Ratio	0.82	0.29	0.44	0.56	0.90	0.22
Control Delay	28.7	0.6	34.1	11.3	49.0	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	0.6	34.1	11.3	49.0	8.7
Queue Length 50th (ft)	88	0	91	134	276	56
Queue Length 95th (ft)	#372	m0	155	229	#459	91
Internal Link Dist (ft)	464		431			754
Turn Bay Length (ft)				200	400	
Base Capacity (vph)	553	1214	417	981	610	1139
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.29	0.44	0.56	0.86	0.21

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 35 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Amoskeag Street & Eddy Road





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Volume (vph)	430	330	175	525	500	230
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	453	347	184	553	526	242
RTOR Reduction (vph)	0	109	0	61	0	0
Lane Group Flow (vph)	453	238	184	492	526	242
Turn Type		pt+ov		pt+ov	Prot	
Protected Phases	8	8 1	2	2 8	1	6
Permitted Phases						
Actuated Green, G (s)	26.1	59.8	18.2	50.3	27.7	51.9
Effective Green, g (s)	28.1	61.8	20.2	52.3	29.7	53.9
Actuated g/C Ratio	0.31	0.69	0.22	0.58	0.33	0.60
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)	553	1087	418	920	584	1116
v/s Ratio Prot	c0.26	0.15	0.10	c0.31	c0.30	0.13
v/s Ratio Perm						
v/c Ratio	0.82	0.22	0.44	0.53	0.90	0.22
Uniform Delay, d1	28.6	5.2	30.0	11.5	28.7	8.3
Progression Factor	0.57	0.13	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	0.1	3.3	0.6	17.0	0.4
Delay (s)	23.7	0.8	33.4	12.1	45.8	8.8
Level of Service	C	A	C	B	D	A
Approach Delay (s)	13.8		17.4			34.1
Approach LOS	B		B			C

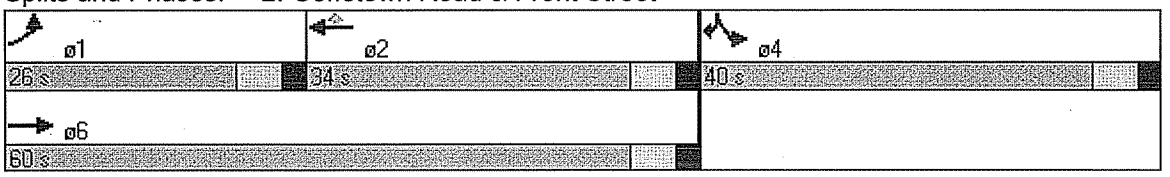
Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

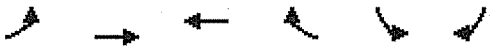
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	1295	690	225	780	70
Lane Group Flow (vph)	79	1363	726	237	821	74
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Detector Phases	1	6	2	2	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	26.0	60.0	34.0	34.0	40.0	40.0
Total Split (%)	26.0%	60.0%	34.0%	34.0%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.39	0.63	0.43	0.27	0.77	0.14
Control Delay	45.6	14.7	6.9	1.1	36.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	14.7	6.9	1.1	36.5	6.0
Queue Length 50th (ft)	47	274	58	2	240	0
Queue Length 95th (ft)	90	385	m133	m2	290	29
Internal Link Dist (ft)		213	370		636	
Turn Bay Length (ft)	100			150	300	300
Base Capacity (vph)	389	2162	1694	874	1236	617
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.63	0.43	0.27	0.66	0.12

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 87 (87%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Goffstown Road & Front Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583
Volume (vph)	75	1295	690	225	780	70
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	1363	726	237	821	74
RTOR Reduction (vph)	0	0	0	119	0	51
Lane Group Flow (vph)	79	1363	726	118	821	23
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Actuated Green, G (s)	8.4	59.1	44.7	44.7	28.9	28.9
Effective Green, g (s)	10.4	61.1	46.7	46.7	30.9	30.9
Actuated g/C Ratio	0.10	0.61	0.47	0.47	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	184	2162	1653	739	1061	489
v/s Ratio Prot	0.04	c0.39	0.21		c0.24	0.01
v/s Ratio Perm				0.07		
v/c Ratio	0.43	0.63	0.44	0.16	0.77	0.05
Uniform Delay, d1	42.0	12.3	17.9	15.4	31.4	24.2
Progression Factor	1.00	1.00	0.32	0.13	1.00	1.00
Incremental Delay, d2	1.6	1.4	0.7	0.4	3.6	0.0
Delay (s)	43.6	13.7	6.4	2.4	35.0	24.3
Level of Service	D	B	A	A	C	C
Approach Delay (s)		15.4	5.4		34.1	
Approach LOS		B	A		C	

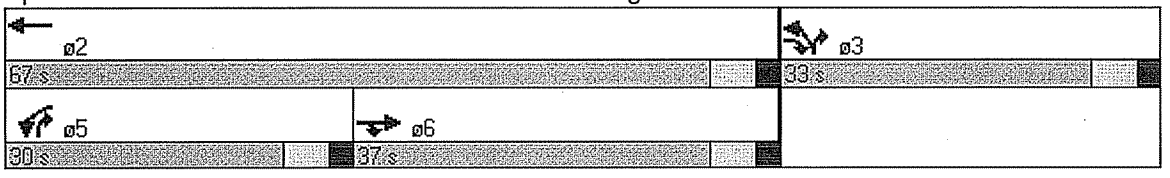
Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1020	1055	790	495	785	1440
Lane Group Flow (vph)	1074	1111	832	521	826	1516
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Detector Phases	6	6 3	5	2	3	3 5
Minimum Initial (s)	10.0		10.0	10.0	4.0	
Minimum Split (s)	23.0		22.0	23.0	23.0	
Total Split (s)	37.0	70.0	30.0	67.0	33.0	63.0
Total Split (%)	37.0%	70.0%	30.0%	67.0%	33.0%	63.0%
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?						
Recall Mode	C-Max		None	C-Max	None	
v/c Ratio	0.92	0.60	0.93	0.23	0.83	0.92
Control Delay	41.0	9.8	58.8	10.6	38.4	17.7
Queue Delay	1.2	0.0	24.0	0.0	0.0	10.8
Total Delay	42.2	9.8	82.8	10.6	38.4	28.6
Queue Length 50th (ft)	291	147	295	67	239	311
Queue Length 95th (ft)	#469	252	#400	164	m269	m447
Internal Link Dist (ft)	122			293	543	
Turn Bay Length (ft)			175		350	350
Base Capacity (vph)	1168	1848	893	2230	996	1653
Starvation Cap Reductn	0	0	97	0	0	21
Spillback Cap Reductn	23	0	0	0	0	146
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.60	1.05	0.23	0.83	1.01

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 25 (25%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Goffstown Road & Amoskeag Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.88	0.97	0.95	0.97	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	2787	3433	3539	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	2787	3433	3539	3433	2787
Volume (vph)	1020	1055	790	495	785	1440
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1074	1111	832	521	826	1516
RTOR Reduction (vph)	0	8	0	0	0	9
Lane Group Flow (vph)	1074	1103	832	521	826	1507
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Actuated Green, G (s)	31.0	64.0	24.0	61.0	27.0	57.0
Effective Green, g (s)	33.0	66.0	26.0	63.0	29.0	59.0
Actuated g/C Ratio	0.33	0.66	0.26	0.63	0.29	0.59
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)	1168	1839	893	2230	996	1644
v/s Ratio Prot	c0.30	0.40	0.24	0.15	0.24	c0.54
v/s Ratio Perm						
v/c Ratio	0.92	0.60	0.93	0.23	0.83	0.92
Uniform Delay, d1	32.2	9.6	36.1	8.0	33.2	18.3
Progression Factor	0.94	0.91	1.17	1.29	1.01	0.62
Incremental Delay, d2	9.9	0.4	14.8	0.2	3.2	4.8
Delay (s)	40.2	9.1	56.9	10.5	36.7	16.1
Level of Service	D	A	E	B	D	B
Approach Delay (s)	24.4			39.1	23.4	
Approach LOS	C			D	C	

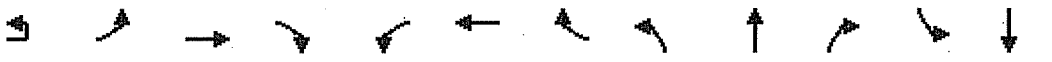
Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	30	2420	5	1235	15	0	30	0
Lane Group Flow (vph)	37	2552	5	1326	0	32	0	64
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	23.0	22.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	16.0	55.0	22.0	61.0	23.0	23.0	23.0	23.0
Total Split (%)	16.0%	55.0%	22.0%	61.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.23	0.85	0.04	0.48		0.16		0.30
Control Delay	44.0	10.8	43.0	8.4		25.5		26.4
Queue Delay	0.0	9.4	0.0	0.1		1.4		3.4
Total Delay	44.0	20.2	43.0	8.5		26.9		29.8
Queue Length 50th (ft)	23	280	3	188		10		19
Queue Length 95th (ft)	m25	#1162	14	351		34		54
Internal Link Dist (ft)		293		667		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	198	2989	297	2751		339		347
Starvation Cap Reductn	0	444	0	0		0		0
Spillback Cap Reductn	0	0	0	332		216		215
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.19	1.00	0.02	0.55		0.26		0.48

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amoskeag Street & River Front Drive



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	13	12	16	16	16	16	16
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	1.00		1.00	1.00			0.93			0.93
Flt Protected		0.95	1.00		0.95	1.00			0.98			0.98
Satd. Flow (prot)		1652	3656		1652	3646			1921			1921
Flt Permitted		0.95	1.00		0.95	1.00			0.86			0.83
Satd. Flow (perm)		1652	3656		1652	3646			1683			1637
Volume (vph)	5	30	2420	5	5	1235	25	15	0	15	30	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	32	2547	5	5	1300	26	16	0	16	32	0
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	14	0	0	29
Lane Group Flow (vph)	0	37	2552	0	5	1325	0	0	18	0	0	35
Turn Type	Prot	Prot			Prot			Perm			Perm	
Protected Phases	1	1	6		5	2			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		5.3	73.0		1.3	69.0			7.7			7.7
Effective Green, g (s)		7.3	75.0		3.3	71.0			9.7			9.7
Actuated g/C Ratio		0.07	0.75		0.03	0.71			0.10			0.10
Clearance Time (s)		6.0	6.0		6.0	6.0			6.0			6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)		121	2742		55	2589			163			159
v/s Ratio Prot		c0.02	c0.70		0.00	0.36						
v/s Ratio Perm									0.01			c0.02
v/c Ratio		0.31	0.93		0.09	0.51			0.11			0.22
Uniform Delay, d1		43.9	10.3		46.9	6.6			41.2			41.7
Progression Factor		1.04	0.93		1.00	1.00			1.00			1.00
Incremental Delay, d2		0.6	3.1		0.7	0.7			0.3			0.7
Delay (s)		46.1	12.7		47.6	7.3			41.5			42.4
Level of Service		D	B		D	A			D			D
Approach Delay (s)			13.1			7.5			41.5			42.4
Approach LOS			B			A			D			D

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width	16
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	30
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	32
RTOR Reduction (vph)	0
Lane Group Flow (vph)	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	

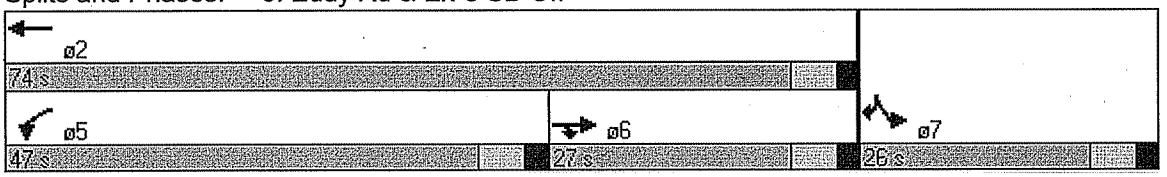
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Volume (vph)	525	510	1300	400	675	425
Lane Group Flow (vph)	553	537	1368	421	711	447
Turn Type		Prot	Prot		Prot	custom
Protected Phases	6	6	5	2	7	7
Permitted Phases						7
Detector Phases	6	6	5	2	7	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	23.0	23.0	10.0	23.0	10.0	10.0
Total Split (s)	27.0	27.0	47.0	74.0	26.0	26.0
Total Split (%)	27.0%	27.0%	47.0%	74.0%	26.0%	26.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Min	C-Min	None	C-Max	None	None
v/c Ratio	0.68	0.83	0.93	0.32	0.94	0.64
Control Delay	40.0	24.0	11.6	0.3	60.5	8.0
Queue Delay	0.0	0.0	3.1	0.0	2.1	0.0
Total Delay	40.0	24.0	14.8	0.3	62.7	8.0
Queue Length 50th (ft)	170	104	54	1	231	0
Queue Length 95th (ft)	229	#293	m59	m1	#343	85
Internal Link Dist (ft)	1101			460		
Turn Bay Length (ft)		200			400	
Base Capacity (vph)	814	647	1476	1304	755	697
Starvation Cap Reductn	0	0	59	0	0	0
Spillback Cap Reductn	0	0	0	0	14	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.83	0.97	0.32	0.96	0.64

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 44 (44%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Eddy Rd & Ex-6 SB Off



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	0.97	1.00					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1583	3433	1863					3433		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1583	3433	1863					3433		1583
Volume (vph)	0	525	510	1300	400	0	0	0	0	675	0	425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	553	537	1368	421	0	0	0	0	711	0	447
RTOR Reduction (vph)	0	0	283	0	0	0	0	0	0	0	0	349
Lane Group Flow (vph)	0	553	254	1368	421	0	0	0	0	711	0	98
Turn Type			Prot	Prot						Prot		custom
Protected Phases		6	6	5	2					7		7
Permitted Phases												7
Actuated Green, G (s)		21.0	21.0	41.0	68.0					20.0		20.0
Effective Green, g (s)		23.0	23.0	43.0	70.0					22.0		22.0
Actuated g/C Ratio		0.23	0.23	0.43	0.70					0.22		0.22
Clearance Time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		814	364	1476	1304					755		348
v/s Ratio Prot		0.16	c0.16	c0.40	0.23					c0.21		0.06
v/s Ratio Perm												
v/c Ratio		0.68	0.70	0.93	0.32					0.94		0.28
Uniform Delay, d1		35.1	35.3	27.0	5.8					38.4		32.4
Progression Factor		1.00	1.00	0.19	0.01					1.00		1.00
Incremental Delay, d2		4.5	10.6	4.4	0.2					19.8		0.4
Delay (s)		39.7	46.0	9.6	0.3					58.2		32.9
Level of Service		D	D	A	A					E		C
Approach Delay (s)		42.8			7.4			0.0			48.4	
Approach LOS		D			A			A			D	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Volume (vph)	150	1050	1675	170	25	1175
Lane Group Flow (vph)	158	1105	1763	179	26	1237
Turn Type	Prot			Prot	Prot	custom
Protected Phases	1	6	2	2	3	3
Permitted Phases						
Detector Phases	1	6	2	2	3	3
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	23.0	23.0	10.0	10.0
Total Split (s)	14.0	55.0	41.0	41.0	45.0	45.0
Total Split (%)	14.0%	55.0%	41.0%	41.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Min	C-Min	None	None
v/c Ratio	0.89	0.61	0.94	0.27	0.04	1.03
Control Delay	79.5	11.1	33.9	9.0	18.0	60.7
Queue Delay	0.0	1.9	0.0	0.0	0.0	0.6
Total Delay	79.5	12.9	33.9	9.0	18.0	61.3
Queue Length 50th (ft)	104	176	328	20	10	~456
Queue Length 95th (ft)	m#143	m283	m#433	m44	26	#602
Internal Link Dist (ft)		460	543			
Turn Bay Length (ft)				150	500	700
Base Capacity (vph)	177	1805	1881	656	726	1205
Starvation Cap Reductn	0	510	0	0	0	0
Spillback Cap Reductn	0	94	0	0	0	2
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.85	0.94	0.27	0.04	1.03

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 3 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 90

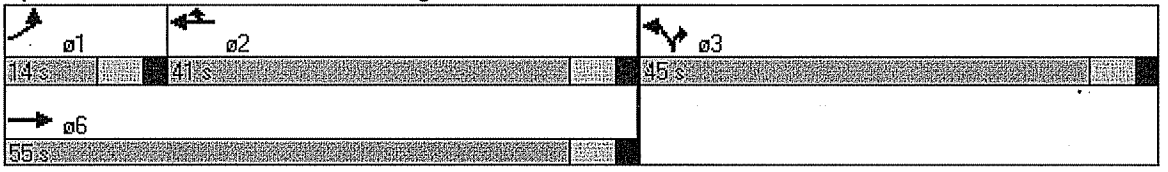
Control Type: Actuated-Coordinated

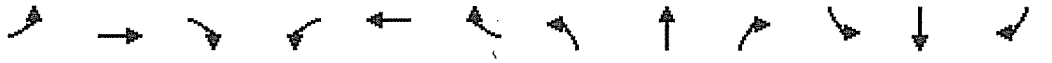
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Amoskeag Street & Ex-6 NB On





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	1.00	0.95			0.91	1.00	1.00		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1770	3539			5085	1583	1770		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	3539			5085	1583	1770		2787			
Volume (vph)	150	1050	0	0	1675	170	25	0	1175	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	1105	0	0	1763	179	26	0	1237	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	70	0	0	63	0	0	0
Lane Group Flow (vph)	158	1105	0	0	1763	109	26	0	1174	0	0	0
Turn Type	Prot					Prot	Prot		custom			
Protected Phases	1	6			2	2	3		3			
Permitted Phases												
Actuated Green, G (s)	8.0	49.0			35.0	35.0	39.0		39.0			
Effective Green, g (s)	10.0	51.0			37.0	37.0	41.0		41.0			
Actuated g/C Ratio	0.10	0.51			0.37	0.37	0.41		0.41			
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	177	1805			1881	586	726		1143			
v/s Ratio Prot	c0.09	0.31			c0.35	0.07	0.01		c0.42			
v/s Ratio Perm												
v/c Ratio	0.89	0.61			0.94	0.19	0.04		1.03			
Uniform Delay, d1	44.5	17.5			30.4	21.3	17.7		29.5			
Progression Factor	1.12	0.58			0.85	0.92	1.00		1.00			
Incremental Delay, d2	24.6	0.8			7.4	0.5	0.0		33.9			
Delay (s)	74.6	10.9			33.2	20.0	17.7		63.4			
Level of Service	E	B			C	C	B		E			
Approach Delay (s)		18.9			32.0			62.4			0.0	
Approach LOS		B			C			E			A	

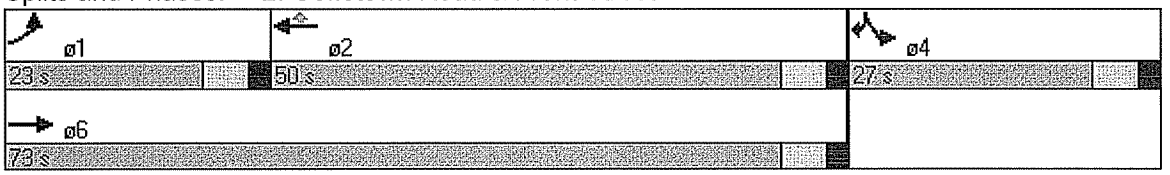
Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	65	595	1320	565	630	100
Lane Group Flow (vph)	68	626	1389	595	663	105
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Detector Phases	1	6	2	2	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	73.0	50.0	50.0	27.0	27.0
Total Split (%)	23.0%	73.0%	50.0%	50.0%	27.0%	27.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.35	0.25	0.69	0.56	0.86	0.24
Control Delay	45.3	6.0	15.6	5.8	49.3	7.8
Queue Delay	0.0	0.0	0.2	0.1	0.0	0.0
Total Delay	45.3	6.0	15.9	5.8	49.3	7.8
Queue Length 50th (ft)	41	69	242	71	208	0
Queue Length 95th (ft)	80	92	423	m146	#295	42
Internal Link Dist (ft)		213	370		636	
Turn Bay Length (ft)	100			150	300	300
Base Capacity (vph)	336	2458	2008	1063	790	445
Starvation Cap Reductn	0	0	134	37	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.25	0.74	0.58	0.84	0.24

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 98 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Goffstown Road & Front Street



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583
Volume (vph)	65	595	1320	565	630	100
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	626	1389	595	663	105
RTOR Reduction (vph)	0	0	0	169	0	81
Lane Group Flow (vph)	68	626	1389	426	663	24
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Actuated Green, G (s)	7.9	67.4	53.5	53.5	20.6	20.6
Effective Green, g (s)	9.9	69.4	55.5	55.5	22.6	22.6
Actuated g/C Ratio	0.10	0.69	0.56	0.56	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	175	2456	1964	879	776	358
v/s Ratio Prot	c0.04	0.18	c0.39		c0.19	0.01
v/s Ratio Perm				0.27		
v/c Ratio	0.39	0.25	0.71	0.48	0.85	0.07
Uniform Delay, d1	42.2	5.7	16.3	13.5	37.1	30.4
Progression Factor	1.00	1.00	0.85	0.84	1.00	1.00
Incremental Delay, d2	1.4	0.3	1.2	1.0	9.1	0.1
Delay (s)	43.6	5.9	15.0	12.5	46.2	30.5
Level of Service	D	A	B	B	D	C
Approach Delay (s)		9.6	14.3		44.1	
Approach LOS		A	B		D	

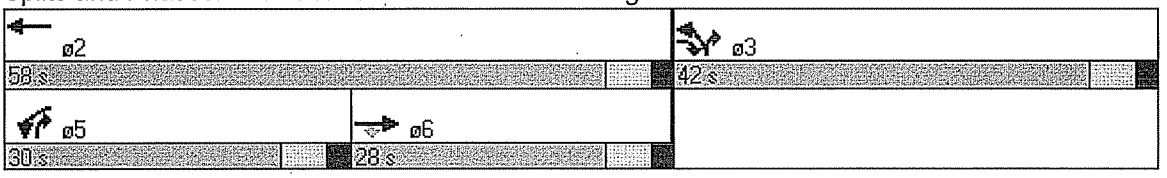
Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

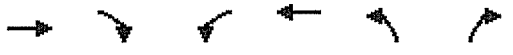
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	510	715	590	1510	990	1040
Lane Group Flow (vph)	537	753	621	1589	1042	1095
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6				
Detector Phases	6	3	5	2	3	3 5
Minimum Initial (s)	10.0	4.0	10.0	10.0	4.0	
Minimum Split (s)	23.0	23.0	22.0	23.0	23.0	
Total Split (s)	28.0	42.0	30.0	58.0	42.0	72.0
Total Split (%)	28.0%	42.0%	30.0%	58.0%	42.0%	72.0%
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	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Max	None	None	C-Max	None	
v/c Ratio	0.63	0.40	0.70	0.83	0.80	0.57
Control Delay	44.5	7.3	37.3	13.4	27.9	4.3
Queue Delay	0.0	0.0	0.6	6.8	0.0	0.2
Total Delay	44.5	7.3	37.9	20.2	27.9	4.5
Queue Length 50th (ft)	180	79	150	269	261	64
Queue Length 95th (ft)	m225	m106	208	101	m287	m72
Internal Link Dist (ft)	122			293	543	
Turn Bay Length (ft)			175		350	350
Base Capacity (vph)	858	1873	893	1911	1305	1926
Starvation Cap Reductn	0	0	69	287	0	0
Spillback Cap Reductn	0	0	0	0	0	221
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.40	0.75	0.98	0.80	0.64

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 97 (97%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Goffstown Road & Amoskeag Street





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.88	0.97	0.95	0.97	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	2787	3433	3539	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	2787	3433	3539	3433	2787
Volume (vph)	510	715	590	1510	990	1040
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	537	753	621	1589	1042	1095
RTOR Reduction (vph)	0	29	0	0	0	31
Lane Group Flow (vph)	537	724	621	1589	1042	1064
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6				
Actuated Green, G (s)	22.3	58.3	23.7	52.0	36.0	65.7
Effective Green, g (s)	24.3	62.3	25.7	54.0	38.0	67.7
Actuated g/C Ratio	0.24	0.62	0.26	0.54	0.38	0.68
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)	860	1848	882	1911	1305	1887
v/s Ratio Prot	0.15	0.15	0.18	c0.45	c0.30	0.38
v/s Ratio Perm		0.11				
v/c Ratio	0.62	0.39	0.70	0.83	0.80	0.56
Uniform Delay, d1	33.8	9.4	33.7	19.2	27.6	8.4
Progression Factor	1.21	0.97	1.01	0.54	0.89	0.47
Incremental Delay, d2	2.9	0.1	1.6	2.8	2.0	0.2
Delay (s)	43.9	9.2	35.7	13.1	26.5	4.2
Level of Service	D	A	D	B	C	A
Approach Delay (s)	23.7			19.5	15.1	
Approach LOS	C			B	B	

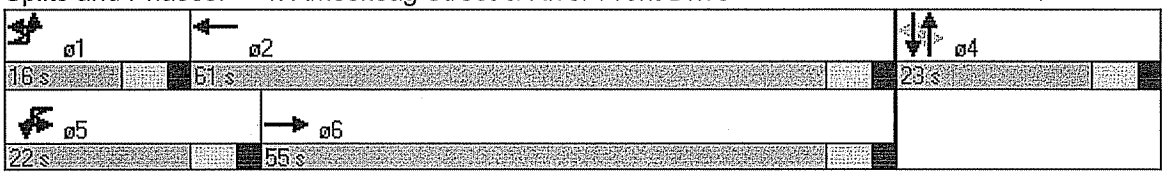
Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

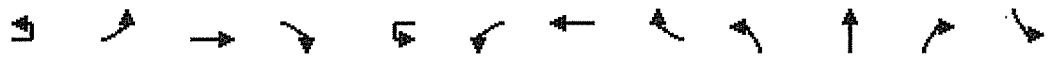
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	40	1500	5	2030	15	0	25	0
Lane Group Flow (vph)	47	1584	10	2163	0	21	0	79
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	23.0	22.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	16.0	55.0	22.0	61.0	23.0	23.0	23.0	23.0
Total Split (%)	16.0%	55.0%	22.0%	61.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.29	0.53	0.08	0.79		0.12		0.34
Control Delay	40.3	5.5	43.4	15.1		32.4		20.6
Queue Delay	0.0	0.2	0.0	0.3		0.0		0.0
Total Delay	40.3	5.7	43.4	15.4		32.4		20.6
Queue Length 50th (ft)	25	12	6	484		10		16
Queue Length 95th (ft)	m46	406	22	#930		29		54
Internal Link Dist (ft)		293		667		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	198	2989	297	2750		320		375
Starvation Cap Reductn	0	517	0	0		0		0
Spillback Cap Reductn	0	0	0	161		0		2
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.24	0.64	0.03	0.84		0.07		0.21

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 96 (96%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amoskeag Street & River Front Drive

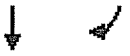




Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.97		
Flt Protected		0.95	1.00			0.95	1.00			0.96		
Satd. Flow (prot)		1652	3655			1652	3651			1968		
Flt Permitted		0.95	1.00			0.95	1.00			0.73		
Satd. Flow (perm)		1652	3655			1652	3651			1500		
Volume (vph)	5	40	1500	5	5	5	2030	25	15	0	5	25
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	42	1579	5	5	5	2137	26	16	0	5	26
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	5	0	0
Lane Group Flow (vph)	0	47	1584	0	0	10	2162	0	0	16	0	0
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		5.5	72.9			1.5	68.9			7.6		
Effective Green, g (s)		7.5	74.9			3.5	70.9			9.6		
Actuated g/C Ratio		0.08	0.75			0.04	0.71			0.10		
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)		124	2738			58	2589			144		
v/s Ratio Prot		c0.03	c0.43			0.01	c0.59					
v/s Ratio Perm										0.01		
v/c Ratio		0.38	0.58			0.17	0.84			0.11		
Uniform Delay, d1		44.0	5.6			46.8	10.4			41.3		
Progression Factor		0.89	0.88			1.00	1.00			1.00		
Incremental Delay, d2		1.6	0.7			1.4	3.4			0.4		
Delay (s)		40.8	5.6			48.3	13.8			41.7		
Level of Service		D	A			D	B			D		
Approach Delay (s)			6.6				13.9			41.7		
Approach LOS			A				B			D		

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



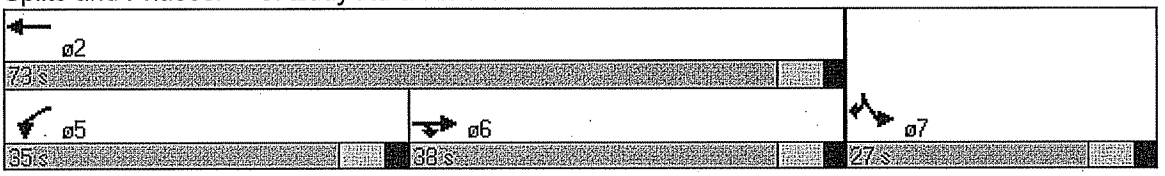
Movement	SBT	SBR
Lane Configurations		
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.91	
Flt Protected	0.98	
Satd. Flow (prot)	1889	
Flt Permitted	0.88	
Satd. Flow (perm)	1693	
Volume (vph)	0	50
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	0	53
RTOR Reduction (vph)	48	0
Lane Group Flow (vph)	31	0
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.6	
Effective Green, g (s)	9.6	
Actuated g/C Ratio	0.10	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	163	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.19	
Uniform Delay, d1	41.6	
Progression Factor	1.00	
Incremental Delay, d2	0.6	
Delay (s)	42.2	
Level of Service	D	
Approach Delay (s)	42.2	
Approach LOS	D	
Intersection Summary		

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Volume (vph)	675	445	610	435	280	250
Lane Group Flow (vph)	711	468	642	458	295	263
Turn Type		Prot	Prot		Prot	custom
Protected Phases	6	6	5	2	7	7
Permitted Phases						7
Detector Phases	6	6	5	2	7	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	23.0	23.0	10.0	23.0	10.0	10.0
Total Split (s)	38.0	38.0	35.0	73.0	27.0	27.0
Total Split (%)	38.0%	38.0%	35.0%	73.0%	27.0%	27.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Min	C-Min	None	C-Max	None	None
v/c Ratio	0.54	0.53	0.54	0.32	0.54	0.56
Control Delay	26.8	4.5	2.9	4.3	42.1	9.4
Queue Delay	0.0	0.0	0.0	1.4	0.0	0.0
Total Delay	26.8	4.5	2.9	5.7	42.1	9.4
Queue Length 50th (ft)	195	0	2	0	90	0
Queue Length 95th (ft)	245	64	m2	m364	126	66
Internal Link Dist (ft)	1101			460		
Turn Bay Length (ft)		200			400	
Base Capacity (vph)	1318	883	1198	1418	790	567
Starvation Cap Reductn	0	0	0	734	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.53	0.54	0.67	0.37	0.46

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 45 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Eddy Rd & Ex-6 SB Off



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	0.97	1.00					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1583	3433	1863					3433		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1583	3433	1863					3433		1583
Volume (vph)	0	675	445	610	435	0	0	0	0	280	0	250
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	711	468	642	458	0	0	0	0	295	0	263
RTOR Reduction (vph)	0	0	294	0	0	0	0	0	0	0	0	221
Lane Group Flow (vph)	0	711	174	642	458	0	0	0	0	295	0	42
Turn Type			Prot	Prot						Prot		custom
Protected Phases		6	6	5	2					7		7
Permitted Phases												7
Actuated Green, G (s)		35.2	35.2	32.9	74.1					13.9		13.9
Effective Green, g (s)		37.2	37.2	34.9	76.1					15.9		15.9
Actuated g/C Ratio		0.37	0.37	0.35	0.76					0.16		0.16
Clearance Time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		1317	589	1198	1418					546		252
v/s Ratio Prot		c0.20	0.11	c0.19	0.25					c0.09		0.03
v/s Ratio Perm												
v/c Ratio		0.54	0.30	0.54	0.32					0.54		0.17
Uniform Delay, d1		24.7	22.2	26.1	3.8					38.7		36.3
Progression Factor		1.00	1.00	0.08	0.94					1.00		1.00
Incremental Delay, d2		1.6	1.3	0.2	0.3					1.1		0.3
Delay (s)		26.3	23.4	2.2	3.9					39.8		36.6
Level of Service		C	C	A	A					D		D
Approach Delay (s)		25.1			2.9			0.0			38.3	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Volume (vph)	250	705	1020	285	25	1325
Lane Group Flow (vph)	263	742	1074	300	26	1395
Turn Type	Prot			Prot	Prot	custom
Protected Phases	1	6	2	2	3	3
Permitted Phases						
Detector Phases	1	6	2	2	3	3
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	23.0	23.0	10.0	10.0
Total Split (s)	23.0	51.0	28.0	28.0	49.0	49.0
Total Split (%)	23.0%	51.0%	28.0%	28.0%	49.0%	49.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Min	C-Min	None	None
v/c Ratio	0.81	0.45	0.86	0.52	0.03	1.01
Control Delay	49.6	6.9	33.3	6.2	15.6	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	6.9	33.3	6.2	15.6	49.5
Queue Length 50th (ft)	168	137	223	18	9	~443
Queue Length 95th (ft)	#288	191	#279	36	24	#629
Internal Link Dist (ft)		460	543			
Turn Bay Length (ft)				150	500	700
Base Capacity (vph)	336	1663	1255	581	797	1386
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.45	0.86	0.52	0.03	1.01

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 80 (80%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

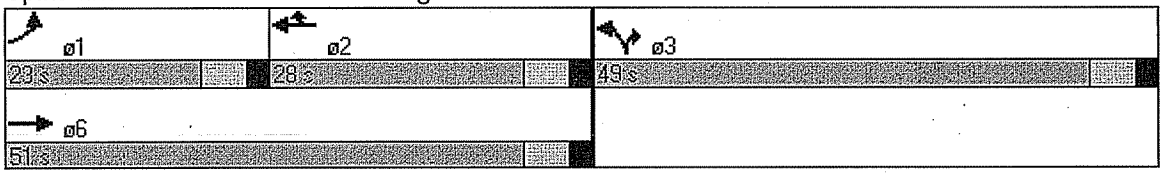
Natural Cycle: 80

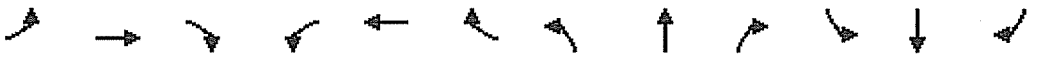
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 25: Amoskeag Street & Ex-6 NB On





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	1.00	0.95			0.91	1.00	1.00		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1770	3539			5085	1583	1770		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	3539			5085	1583	1770		2787			
Volume (vph)	250	705	0	0	1020	285	25	0	1325	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	263	742	0	0	1074	300	26	0	1395	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	191	0	0	132	0	0	0
Lane Group Flow (vph)	263	742	0	0	1074	109	26	0	1263	0	0	0
Turn Type	Prot					Prot	Prot		custom			
Protected Phases	1	6			2	2	3		3			
Permitted Phases												
Actuated Green, G (s)	16.3	45.0			22.7	22.7	43.0		43.0			
Effective Green, g (s)	18.3	47.0			24.7	24.7	45.0		45.0			
Actuated g/C Ratio	0.18	0.47			0.25	0.25	0.45		0.45			
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	324	1663			1256	391	797		1254			
v/s Ratio Prot	c0.15	0.21			c0.21	0.07	0.01		c0.45			
v/s Ratio Perm												
v/c Ratio	0.81	0.45			0.86	0.28	0.03		1.01			
Uniform Delay, d1	39.2	17.8			35.9	30.5	15.4		27.5			
Progression Factor	0.80	0.34			0.72	0.48	1.00		1.00			
Incremental Delay, d2	12.4	0.7			6.6	1.5	0.0		27.2			
Delay (s)	43.9	6.8			32.4	16.2	15.4		54.7			
Level of Service	D	A			C	B	B		D			
Approach Delay (s)		16.5			28.9			54.0			0.0	
Approach LOS		B			C			D			A	

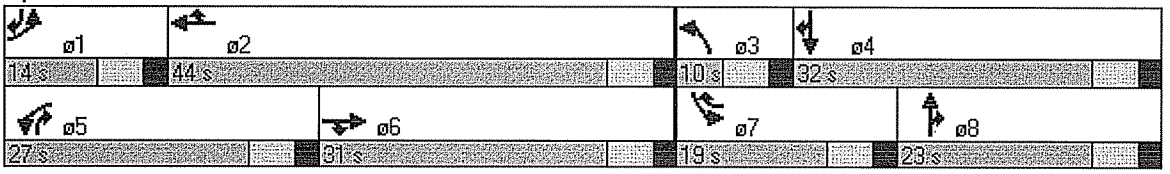
Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

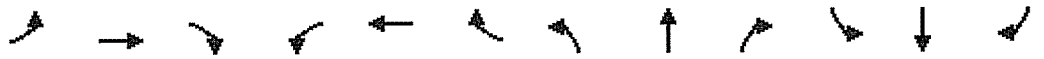
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	635	660	770	650	180	40	45	1115	510	270	70
Lane Group Flow (vph)	79	840	523	811	684	189	42	47	1174	537	284	74
Turn Type	Prot		Prot	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	1	6	6	5	2	2 7	3	8	8 5	7	4	4 1
Permitted Phases												
Detector Phases	1	6	6	5	2	2 7	3	8	8 5	7	4	4 1
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0		10.0	23.0		10.0	23.0	
Total Split (s)	14.0	31.0	31.0	27.0	44.0	63.0	10.0	23.0	50.0	19.0	32.0	46.0
Total Split (%)	14.0%	31.0%	31.0%	27.0%	44.0%	63.0%	10.0%	23.0%	50.0%	19.0%	32.0%	46.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
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	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
v/c Ratio	0.47	0.93	0.90	1.03	0.45	0.18	0.40	0.13	0.89	1.04	0.48	0.10
Control Delay	52.1	51.5	37.4	76.7	28.0	3.5	56.6	34.9	33.9	93.6	31.9	4.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	7.6	39.5	0.0	0.0
Total Delay	52.1	51.7	37.4	76.7	28.0	3.5	56.6	34.9	41.6	133.1	31.9	4.6
Queue Length 50th (ft)	48	278	187	~291	177	14	26	25	363	~192	154	0
Queue Length 95th (ft)	96	#403	#416	#413	m237	m26	61	57	#522	#296	238	26
Internal Link Dist (ft)		213			370			800			636	
Turn Bay Length (ft)	200		200	400		200	200		600	300		200
Base Capacity (vph)	177	908	583	790	1515	1050	106	354	1313	515	596	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	2	0	0	0	0	0	0	119	46	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.93	0.90	1.03	0.45	0.18	0.40	0.13	0.98	1.14	0.48	0.10

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 24 (24%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Goffstown Road & Front Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	0.97	0.95	1.00	1.00	1.00	0.88	0.97	1.00	1.00
Frt	1.00	0.97	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3286	1441	3433	3539	1583	1770	1863	2787	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3286	1441	3433	3539	1583	1770	1863	2787	3433	1863	1583
Volume (vph)	75	635	660	770	650	180	40	45	1115	510	270	70
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	668	695	811	684	189	42	47	1174	537	284	74
RTOR Reduction (vph)	0	22	200	0	0	79	0	0	29	0	0	41
Lane Group Flow (vph)	79	818	323	811	684	110	42	47	1145	537	284	33
Turn Type	Prot		Prot	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	1	6	6	5	2	2 7	3	8	8 5	7	4	4 1
Permitted Phases												
Actuated Green, G (s)	6.4	22.6	22.6	21.0	37.2	56.2	2.4	19.4	46.4	13.0	30.0	42.4
Effective Green, g (s)	8.4	24.6	24.6	23.0	39.2	58.2	4.4	21.4	48.4	15.0	32.0	44.4
Actuated g/C Ratio	0.08	0.25	0.25	0.23	0.39	0.58	0.04	0.21	0.48	0.15	0.32	0.44
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	149	808	354	790	1387	921	78	399	1349	515	596	703
v/s Ratio Prot	0.04	c0.25	0.22	c0.24	0.19	0.07	0.02	0.03	c0.41	c0.16	0.15	0.02
v/s Ratio Perm												
v/c Ratio	0.53	1.01	0.91	1.03	0.49	0.12	0.54	0.12	0.85	1.04	0.48	0.05
Uniform Delay, d1	43.9	37.7	36.7	38.5	22.9	9.4	46.8	31.7	22.6	42.5	27.3	15.8
Progression Factor	1.00	1.00	1.00	1.06	1.27	2.28	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	34.8	30.1	35.9	1.0	0.0	7.0	0.1	5.2	51.2	0.6	0.0
Delay (s)	47.5	72.5	66.8	76.7	30.2	21.5	53.8	31.8	27.8	93.7	27.9	15.8
Level of Service	D	E	E	E	C	C	D	C	C	F	C	B
Approach Delay (s)		69.1			51.6			28.8			66.4	
Approach LOS		E			D			C			E	

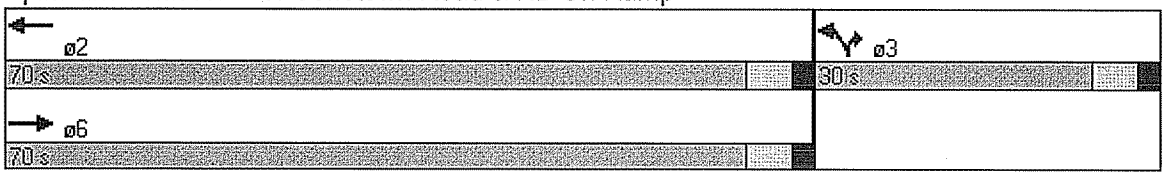
Intersection Summary			
HCM Average Control Delay	53.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR2	WBT	WBR	NBL	NBR
Lane Configurations						
Volume (vph)	1940	320	920	365	680	520
Lane Group Flow (vph)	2042	337	968	384	716	547
Turn Type		Free		Free	Prot	custom
Protected Phases	6		2		3	3
Permitted Phases		Free		Free		
Detector Phases	6		2		3	3
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	23.0		23.0		10.0	10.0
Total Split (s)	70.0	0.0	70.0	0.0	30.0	30.0
Total Split (%)	70.0%	0.0%	70.0%	0.0%	30.0%	30.0%
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						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Min		None	None
v/c Ratio	0.87	0.21	0.41	0.24	0.82	0.75
Control Delay	13.8	0.1	3.2	0.3	43.8	39.7
Queue Delay	31.5	0.0	0.0	0.0	0.0	1.3
Total Delay	45.3	0.1	3.2	0.3	43.8	41.0
Queue Length 50th (ft)	453	0	10	0	220	172
Queue Length 95th (ft)	m537	m0	13	0	289	239
Internal Link Dist (ft)	370		495			
Turn Bay Length (ft)		200		200	400	400
Base Capacity (vph)	2354	1583	2354	1583	893	745
Starvation Cap Reductn	435	0	0	0	0	0
Spillback Cap Reductn	168	0	0	0	0	70
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.21	0.41	0.24	0.80	0.81

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 1 (1%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Goffstown Road & NB On Ramp



Movement	EBT	EBR2	WBT	WBR	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.88
Frt	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3539	1583	3433	2787
Flt Permitted	1.00	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3539	1583	3433	2787
Volume (vph)	1940	320	920	365	680	520
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2042	337	968	384	716	547
RTOR Reduction (vph)	0	0	0	0	0	21
Lane Group Flow (vph)	2042	337	968	384	716	526
Turn Type		Free		Free	Prot	custom
Protected Phases	6		2		3	3
Permitted Phases		Free		Free		
Actuated Green, G (s)	64.5	100.0	64.5	100.0	23.5	23.5
Effective Green, g (s)	66.5	100.0	66.5	100.0	25.5	25.5
Actuated g/C Ratio	0.66	1.00	0.66	1.00	0.26	0.26
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)	2353	1583	2353	1583	875	711
v/s Ratio Prot	c0.58		0.27		c0.21	0.19
v/s Ratio Perm		0.21		0.24		
v/c Ratio	0.87	0.21	0.41	0.24	0.82	0.74
Uniform Delay, d1	13.3	0.0	7.7	0.0	35.1	34.2
Progression Factor	0.86	1.00	0.34	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	0.5	0.3	6.0	4.1
Delay (s)	13.1	0.1	3.1	0.3	41.1	38.4
Level of Service	B	A	A	A	D	D
Approach Delay (s)	11.3		2.3			
Approach LOS	B		A			

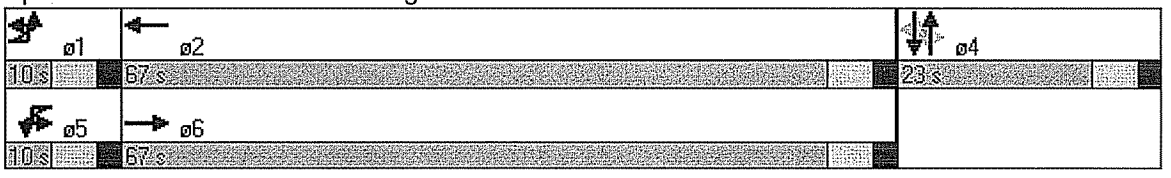
Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

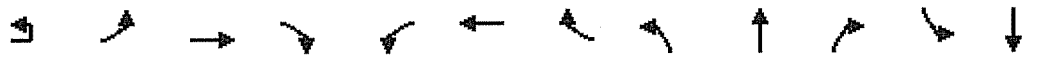
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	30	2420	5	1235	15	0	30	0
Lane Group Flow (vph)	37	2552	5	1326	0	32	0	64
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	10.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	10.0	67.0	10.0	67.0	23.0	23.0	23.0	23.0
Total Split (%)	10.0%	67.0%	10.0%	67.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.26	0.85	0.04	0.47		0.16		0.30
Control Delay	43.6	10.4	44.4	7.4		25.5		26.4
Queue Delay	0.0	0.6	0.0	0.0		0.0		0.0
Total Delay	43.6	11.0	44.4	7.4		25.5		26.4
Queue Length 50th (ft)	23	229	3	189		10		19
Queue Length 95th (ft)	m29	#1117	15	293		34		54
Internal Link Dist (ft)		495		711		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	141	3009	121	2792		339		347
Starvation Cap Reductn	0	160	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.26	0.90	0.04	0.47		0.09		0.18

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 88 (88%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amoskeage Street & River Front Drive





Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	13	12	16	16	16	16	16
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	1.00		1.00	1.00			0.93			0.93
Flt Protected		0.95	1.00		0.95	1.00			0.98			0.98
Satd. Flow (prot)		1652	3656		1652	3646			1921			1921
Flt Permitted		0.95	1.00		0.95	1.00			0.86			0.83
Satd. Flow (perm)		1652	3656		1652	3646			1683			1637
Volume (vph)	5	30	2420	5	5	1235	25	15	0	15	30	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	32	2547	5	5	1300	26	16	0	16	32	0
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	14	0	0	29
Lane Group Flow (vph)	0	37	2552	0	5	1325	0	0	18	0	0	35
Turn Type	Prot	Prot			Prot			Perm			Perm	
Protected Phases	1	1	6		5	2			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		4.1	73.5		0.8	70.2			7.7			7.7
Effective Green, g (s)		6.1	75.5		2.8	72.2			9.7			9.7
Actuated g/C Ratio		0.06	0.76		0.03	0.72			0.10			0.10
Clearance Time (s)		6.0	6.0		6.0	6.0			6.0			6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)		101	2760		46	2632			163			159
v/s Ratio Prot		c0.02	c0.70		0.00	0.36						
v/s Ratio Perm									0.01			c0.02
v/c Ratio		0.37	0.92		0.11	0.50			0.11			0.22
Uniform Delay, d1		45.1	9.9		47.4	6.1			41.2			41.7
Progression Factor		0.94	0.89		1.00	1.00			1.00			1.00
Incremental Delay, d2		1.2	3.7		1.0	0.7			0.3			0.7
Delay (s)		43.8	12.5		48.4	6.8			41.5			42.4
Level of Service		D	B		D	A			D			D
Approach Delay (s)			13.0			6.9			41.5			42.4
Approach LOS			B			A			D			D

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width	16
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	30
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	32
RTOR Reduction (vph)	0
Lane Group Flow (vph)	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	

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Configurations						
Volume (vph)	425	675	525	510	400	1300
Lane Group Flow (vph)	447	711	553	537	421	1368
Turn Type	Prot	custom		Free		Free
Protected Phases	7	7	2		6	
Permitted Phases				Free		Free
Detector Phases	7	7	2		6	
Minimum Initial (s)	4.0	4.0	4.0		4.0	
Minimum Split (s)	23.0	23.0	23.0		23.0	
Total Split (s)	32.0	32.0	28.0	0.0	28.0	0.0
Total Split (%)	53.3%	53.3%	46.7%	0.0%	46.7%	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						
Lead-Lag Optimize?						
Recall Mode	None	None	Min		Min	
v/c Ratio	0.55	0.87	0.77	0.34	0.58	0.86
Control Delay	14.2	24.0	23.8	0.6	17.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	24.0	23.8	0.6	17.6	7.9
Queue Length 50th (ft)	108	162	164	0	114	0
Queue Length 95th (ft)	183	#376	#286	0	191	#56
Internal Link Dist (ft)			544		684	
Turn Bay Length (ft)				300		
Base Capacity (vph)	876	874	795	1583	795	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.81	0.70	0.34	0.53	0.86

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 53.8

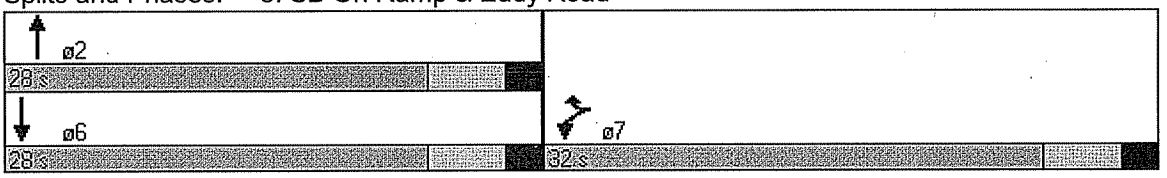
Natural Cycle: 60

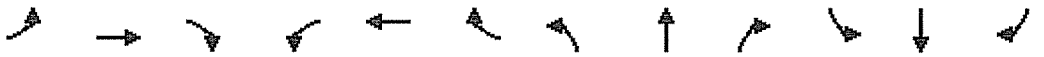
Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: SB On Ramp & Eddy Road





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				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				1770		1583		1863	1583		1863	1583
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				1770		1583		1863	1583		1863	1583
Volume (vph)	0	0	0	425	0	675	0	525	510	0	400	1300
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	447	0	711	0	553	537	0	421	1368
RTOR Reduction (vph)	0	0	0	0	0	96	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	447	0	615	0	553	537	0	421	1368
Turn Type				Prot		custom			Free			Free
Protected Phases				7		7		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				22.5		22.5		18.7	53.2		18.7	53.2
Effective Green, g (s)				24.5		24.5		20.7	53.2		20.7	53.2
Actuated g/C Ratio				0.46		0.46		0.39	1.00		0.39	1.00
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)				815		729		725	1583		725	1583
v/s Ratio Prot				0.25		0.39		0.30			0.23	
v/s Ratio Perm									0.34			c0.86
v/c Ratio				0.55		0.84		0.76	0.34		0.58	0.86
Uniform Delay, d1				10.4		12.7		14.1	0.0		12.8	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.8		8.8		4.8	0.6		1.2	6.5
Delay (s)				11.1		21.5		18.9	0.6		14.0	6.5
Level of Service				B		C		B	A		B	A
Approach Delay (s)		0.0			17.5			9.9			8.3	
Approach LOS		A			B			A			A	

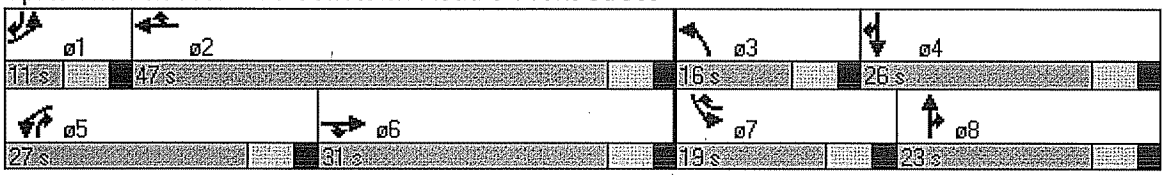
Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	0.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	305	280	520	1190	540	130	25	800	385	245	100
Lane Group Flow (vph)	68	385	231	547	1253	568	137	26	842	405	258	105
Turn Type	Prot		Prot	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	1	6	6	5	2	2 7	3	8	8 5	7	4	4 1
Permitted Phases												
Detector Phases	1	6	6	5	2	2 7	3	8	8 5	7	4	4 1
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0		10.0	23.0		10.0	23.0	
Total Split (s)	11.0	31.0	31.0	27.0	47.0	66.0	16.0	23.0	50.0	19.0	26.0	37.0
Total Split (%)	11.0%	31.0%	31.0%	27.0%	47.0%	66.0%	16.0%	23.0%	50.0%	19.0%	26.0%	37.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
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	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
v/c Ratio	0.55	0.40	0.40	0.74	0.82	0.47	0.67	0.07	0.60	0.79	0.62	0.18
Control Delay	62.2	29.3	6.2	39.4	26.9	4.4	58.5	29.8	13.4	53.1	42.6	10.4
Queue Delay	0.0	0.0	0.0	0.0	9.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.2	29.3	6.2	39.4	36.5	4.8	58.5	29.8	13.4	53.1	42.6	10.4
Queue Length 50th (ft)	43	104	0	177	326	60	79	14	153	129	150	15
Queue Length 95th (ft)	#96	151	62	222	433	100	#160	m20	155	#196	235	52
Internal Link Dist (ft)		213			370			800			636	
Turn Bay Length (ft)	200		200	400		200	200		600	300		200
Base Capacity (vph)	124	951	574	790	1522	1197	212	354	1447	515	417	575
Starvation Cap Reductn	0	0	0	0	253	259	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.40	0.40	0.69	0.99	0.61	0.65	0.07	0.58	0.79	0.62	0.18

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 34 (34%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Goffstown Road & Front Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	0.97	0.95	1.00	1.00	1.00	0.88	0.97	1.00	1.00
Frt	1.00	0.98	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3306	1441	3433	3539	1583	1770	1863	2787	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3306	1441	3433	3539	1583	1770	1863	2787	3433	1863	1583
Volume (vph)	65	305	280	520	1190	540	130	25	800	385	245	100
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	321	295	547	1253	568	137	26	842	405	258	105
RTOR Reduction (vph)	0	15	166	0	0	216	0	0	169	0	0	47
Lane Group Flow (vph)	68	370	65	547	1253	352	137	26	673	405	258	58
Turn Type	Prot		Prot	Prot		pt+ov	Prot		pt+ov	Prot		pt+ov
Protected Phases	1	6	6	5	2	2 7	3	8	8 5	7	4	4 1
Permitted Phases												
Actuated Green, G (s)	5.0	26.3	26.3	19.7	41.0	60.0	9.6	17.0	42.7	13.0	20.4	31.4
Effective Green, g (s)	7.0	28.3	28.3	21.7	43.0	62.0	11.6	19.0	44.7	15.0	22.4	33.4
Actuated g/C Ratio	0.07	0.28	0.28	0.22	0.43	0.62	0.12	0.19	0.45	0.15	0.22	0.33
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	124	936	408	745	1522	981	205	354	1246	515	417	529
v/s Ratio Prot	0.04	0.11	0.05	c0.16	c0.35	0.22	0.08	0.01	0.24	c0.12	c0.14	0.04
v/s Ratio Perm												
v/c Ratio	0.55	0.40	0.16	0.73	0.82	0.36	0.67	0.07	0.54	0.79	0.62	0.11
Uniform Delay, d1	45.0	28.9	26.9	36.5	25.1	9.3	42.4	33.3	20.2	41.0	35.0	23.0
Progression Factor	1.00	1.00	1.00	0.96	0.92	4.49	1.05	0.87	0.94	1.00	1.00	1.00
Incremental Delay, d2	4.9	1.3	0.8	2.5	3.5	0.1	6.8	0.1	0.4	7.8	2.7	0.1
Delay (s)	49.9	30.2	27.8	37.7	26.5	41.8	51.2	29.2	19.4	48.7	37.7	23.1
Level of Service	D	C	C	D	C	D	D	C	B	D	D	C
Approach Delay (s)		31.3			32.8			24.0			41.5	
Approach LOS		C			C			C			D	

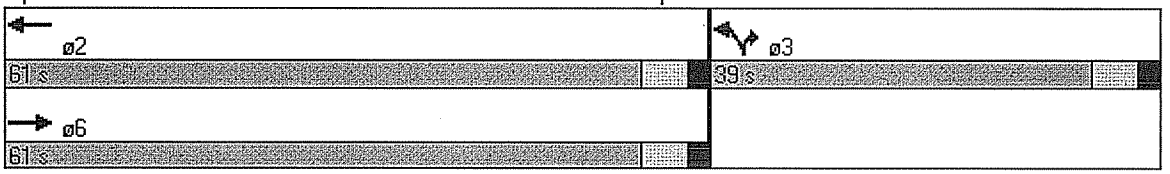
Intersection Summary				
HCM Average Control Delay	32.1	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	69.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

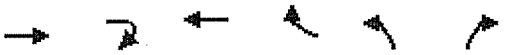
Lane Group	EBT	EBR2	WBT	WBR	NBL	NBR
Lane Configurations						
Volume (vph)	955	535	1485	615	765	585
Lane Group Flow (vph)	1005	563	1563	647	805	616
Turn Type		Free		Free	Prot	custom
Protected Phases	6		2		3	3
Permitted Phases		Free		Free		
Detector Phases	6		2		3	3
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	23.0		23.0		10.0	10.0
Total Split (s)	61.0	0.0	61.0	0.0	39.0	39.0
Total Split (%)	61.0%	0.0%	61.0%	0.0%	39.0%	39.0%
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						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Min		None	None
v/c Ratio	0.47	0.36	0.73	0.41	0.74	0.61
Control Delay	8.1	0.5	6.0	0.5	34.5	21.9
Queue Delay	0.3	0.0	0.4	0.0	0.2	0.0
Total Delay	8.5	0.5	6.5	0.5	34.8	21.9
Queue Length 50th (ft)	116	0	200	0	227	125
Queue Length 95th (ft)	136	m0	78	m0	288	184
Internal Link Dist (ft)	370		495			
Turn Bay Length (ft)		200		200	400	400
Base Capacity (vph)	2130	1583	2130	1583	1202	1096
Starvation Cap Reductn	515	0	183	0	0	0
Spillback Cap Reductn	0	0	0	0	59	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.36	0.80	0.41	0.70	0.56

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Goffstown Road & NB On Ramp





Movement	EBT	EBR2	WBT	WBR	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.88
Frt	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3539	1583	3433	2787
Flt Permitted	1.00	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3539	1583	3433	2787
Volume (vph)	955	535	1485	615	765	585
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1005	563	1563	647	805	616
RTOR Reduction (vph)	0	0	0	0	0	127
Lane Group Flow (vph)	1005	563	1563	647	805	489
Turn Type		Free		Free	Prot	custom
Protected Phases	6		2		3	3
Permitted Phases		Free		Free		
Actuated Green, G (s)	58.2	100.0	58.2	100.0	29.8	29.8
Effective Green, g (s)	60.2	100.0	60.2	100.0	31.8	31.8
Actuated g/C Ratio	0.60	1.00	0.60	1.00	0.32	0.32
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)	2130	1583	2130	1583	1092	886
v/s Ratio Prot	0.28		c0.44		c0.23	0.18
v/s Ratio Perm		0.36		0.41		
v/c Ratio	0.47	0.36	0.73	0.41	0.74	0.55
Uniform Delay, d1	11.1	0.0	14.2	0.0	30.4	28.2
Progression Factor	0.64	1.00	0.30	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5	1.4	0.5	2.6	0.7
Delay (s)	7.7	0.5	5.6	0.5	33.0	29.0
Level of Service	A	A	A	A	C	C
Approach Delay (s)	5.1		4.1			
Approach LOS	A		A			

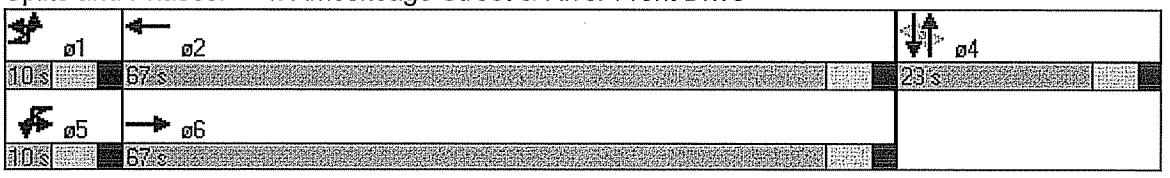
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

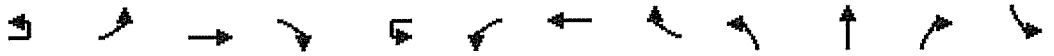
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	40	1490	5	2030	15	0	25	0
Lane Group Flow (vph)	47	1573	10	2163	0	21	0	79
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	10.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	10.0	67.0	10.0	67.0	23.0	23.0	23.0	23.0
Total Split (%)	10.0%	67.0%	10.0%	67.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.32	0.52	0.08	0.80		0.12		0.34
Control Delay	52.2	4.5	45.2	15.3		32.4		20.6
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	52.2	4.5	45.2	15.3		32.4		20.6
Queue Length 50th (ft)	31	86	6	488		10		16
Queue Length 95th (ft)	m61	321	23	#850		29		54
Internal Link Dist (ft)		495		711		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	147	3014	122	2695		320		375
Starvation Cap Reductn	0	198	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.32	0.56	0.08	0.80		0.07		0.21

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 87 (87%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amoskeage Street & River Front Drive





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.97		
Flt Protected		0.95	1.00			0.95	1.00			0.96		
Satd. Flow (prot)		1652	3655			1652	3651			1968		
Flt Permitted		0.95	1.00			0.95	1.00			0.73		
Satd. Flow (perm)		1652	3655			1652	3651			1500		
Volume (vph)	5	40	1490	5	5	5	2030	25	15	0	5	25
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	42	1568	5	5	5	2137	26	16	0	5	26
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	5	0	0
Lane Group Flow (vph)	0	47	1573	0	0	10	2162	0	0	16	0	0
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		5.8	73.6			0.8	68.6			7.6		
Effective Green, g (s)		7.8	75.6			2.8	70.6			9.6		
Actuated g/C Ratio		0.08	0.76			0.03	0.71			0.10		
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)		129	2763			46	2578			144		
v/s Ratio Prot		c0.03	c0.43			0.01	c0.59					
v/s Ratio Perm										0.01		
v/c Ratio		0.36	0.57			0.22	0.84			0.11		
Uniform Delay, d1		43.7	5.2			47.5	10.6			41.3		
Progression Factor		1.08	0.80			1.00	1.00			1.00		
Incremental Delay, d2		1.5	0.7			2.4	3.5			0.4		
Delay (s)		49.0	4.9			49.9	14.1			41.7		
Level of Service		D	A			D	B			D		
Approach Delay (s)			6.2				14.2			41.7		
Approach LOS			A				B			D		

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations	↕	
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.91	
Flt Protected	0.98	
Satd. Flow (prot)	1889	
Flt Permitted	0.88	
Satd. Flow (perm)	1693	
Volume (vph)	0	50
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	0	53
RTOR Reduction (vph)	48	0
Lane Group Flow (vph)	31	0
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.6	
Effective Green, g (s)	9.6	
Actuated g/C Ratio	0.10	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	163	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.19	
Uniform Delay, d1	41.6	
Progression Factor	1.00	
Incremental Delay, d2	0.6	
Delay (s)	42.2	
Level of Service	D	
Approach Delay (s)	42.2	
Approach LOS	D	

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Configurations						
Volume (vph)	250	280	675	445	435	610
Lane Group Flow (vph)	263	295	711	468	458	642
Turn Type	Prot	custom		Free		Free
Protected Phases	7	7	2		6	
Permitted Phases				Free		Free
Detector Phases	7	7	2		6	
Minimum Initial (s)	4.0	4.0	4.0		4.0	
Minimum Split (s)	23.0	23.0	23.0		23.0	
Total Split (s)	36.0	36.0	64.0	0.0	64.0	0.0
Total Split (%)	36.0%	36.0%	64.0%	0.0%	64.0%	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						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min		C-Min	
v/c Ratio	0.69	0.57	0.54	0.30	0.35	0.41
Control Delay	45.2	12.3	9.9	0.5	2.7	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	12.3	9.9	0.5	2.7	2.1
Queue Length 50th (ft)	156	33	185	0	19	55
Queue Length 95th (ft)	220	102	355	0	120	59
Internal Link Dist (ft)			544		684	
Turn Bay Length (ft)				300		
Base Capacity (vph)	566	664	1313	1583	1313	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.44	0.54	0.30	0.35	0.41

Intersection Summary

Cycle Length: 100

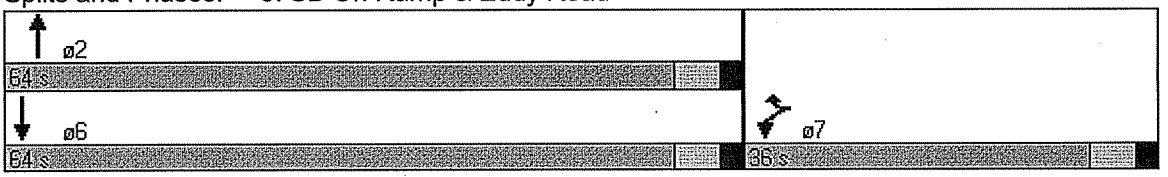
Actuated Cycle Length: 100

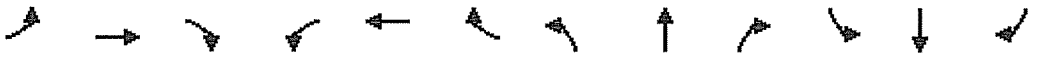
Offset: 76 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: SB On Ramp & Eddy Road





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				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				1770		1583		1863	1583		1863	1583
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				1770		1583		1863	1583		1863	1583
Volume (vph)	0	0	0	250	0	280	0	675	445	0	435	610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	263	0	295	0	711	468	0	458	642
RTOR Reduction (vph)	0	0	0	0	0	182	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	263	0	113	0	711	468	0	458	642
Turn Type				Prot		custom			Free			Free
Protected Phases				7		7		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				19.5		19.5		68.5	100.0		68.5	100.0
Effective Green, g (s)				21.5		21.5		70.5	100.0		70.5	100.0
Actuated g/C Ratio				0.22		0.22		0.70	1.00		0.70	1.00
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)				381		340		1313	1583		1313	1583
v/s Ratio Prot				c0.15		0.07		c0.38			0.25	
v/s Ratio Perm									0.30			0.41
v/c Ratio				0.69		0.33		0.54	0.30		0.35	0.41
Uniform Delay, d1				36.2		33.2		7.0	0.0		5.8	0.0
Progression Factor				1.00		1.00		1.00	1.00		0.31	1.00
Incremental Delay, d2				5.3		0.6		1.6	0.5		0.6	0.6
Delay (s)				41.5		33.8		8.6	0.5		2.4	0.6
Level of Service				D		C		A	A		A	A
Approach Delay (s)		0.0			37.4			5.4			1.3	
Approach LOS		A			D			A			A	

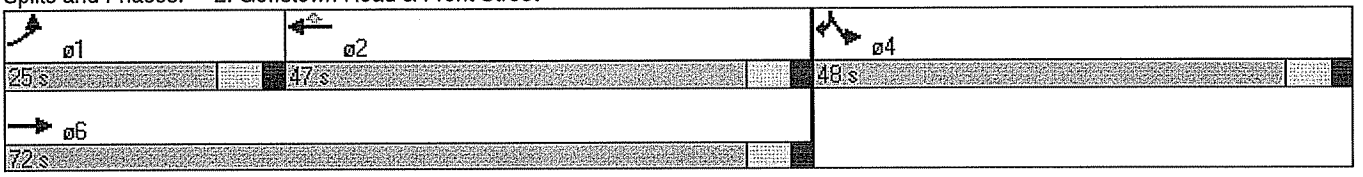
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

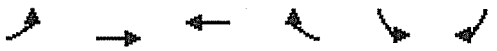
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	1295	690	225	780	70
Lane Group Flow (vph)	79	1363	726	237	821	74
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	72.0	47.0	47.0	48.0	48.0
Total Split (%)	20.8%	60.0%	39.2%	39.2%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	None
v/c Ratio	0.42	0.62	0.41	0.26	0.77	0.14
Control Delay	56.3	16.3	15.7	1.5	42.4	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	16.3	15.7	1.5	42.4	6.4
Queue Length 50th (ft)	58	321	97	1	294	0
Queue Length 95th (ft)	105	454	336	11	338	32
Internal Link Dist (ft)		213	342		629	
Turn Bay Length (ft)	100				300	300
Base Capacity (vph)	310	2205	1785	916	1261	628
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.62	0.41	0.26	0.65	0.12

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 81 (68%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 2: Goffstown Road & Front Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	1295	690	225	780	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	1363	726	237	821	74
RTOR Reduction (vph)	0	0	0	120	0	51
Lane Group Flow (vph)	79	1363	726	117	821	23
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Actuated Green, G (s)	9.4	72.7	57.3	57.3	35.3	35.3
Effective Green, g (s)	11.4	74.7	59.3	59.3	37.3	37.3
Actuated g/C Ratio	0.10	0.62	0.49	0.49	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	2203	1749	782	1067	492
v/s Ratio Prot	0.04	c0.39	0.21		c0.24	0.01
v/s Ratio Perm				0.07		
v/c Ratio	0.47	0.62	0.42	0.15	0.77	0.05
Uniform Delay, d1	51.4	13.9	19.3	16.6	37.5	28.9
Progression Factor	1.00	1.00	0.72	0.31	1.00	1.00
Incremental Delay, d2	2.1	1.3	0.7	0.4	3.4	0.0
Delay (s)	53.5	15.2	14.6	5.5	40.9	29.0
Level of Service	D	B	B	A	D	C
Approach Delay (s)		17.3	12.3		39.9	
Approach LOS		B	B		D	

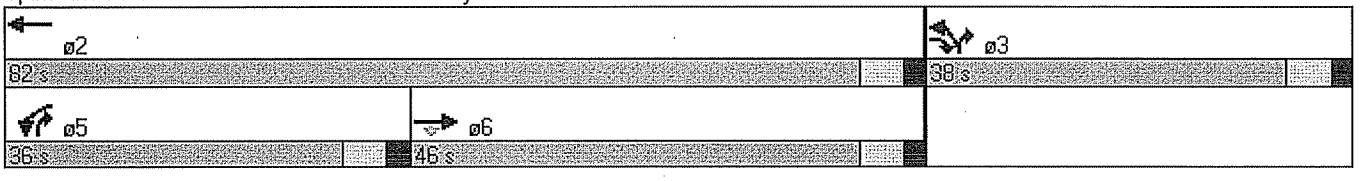
Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1020	1055	790	495	785	1440
Lane Group Flow (vph)	1074	1111	832	521	826	1516
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6				
Detector Phase	6	3	5	2	3	3 5
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	10.0	5.0	
Minimum Split (s)	23.0	23.0	16.0	23.0	23.0	
Total Split (s)	46.0	38.0	36.0	82.0	38.0	74.0
Total Split (%)	38.3%	31.7%	30.0%	68.3%	31.7%	61.7%
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min	None	None	C-Min	None	
v/c Ratio	0.92	0.61	0.97	0.16	0.61	0.95
Control Delay	49.7	11.4	66.9	6.7	39.0	35.2
Queue Delay	0.0	0.0	6.3	0.0	0.0	53.8
Total Delay	49.7	11.4	73.2	6.7	39.0	89.0
Queue Length 50th (ft)	410	125	294	26	181	678
Queue Length 95th (ft)	#542	335	#445	34	227	#832
Internal Link Dist (ft)	352			342	582	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1180	1819	858	3221	1354	1602
Starvation Cap Reductn	0	0	27	0	0	123
Spillback Cap Reductn	0	2	0	0	0	252
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.61	1.00	0.16	0.61	1.12

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 1 (1%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Goffstown Road & Eddy Rd



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1020	1055	790	495	785	1440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	0.88	0.97	0.91	0.94	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	2787	3433	5085	4990	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	2787	3433	5085	4990	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1074	1111	832	521	826	1516
RTOR Reduction (vph)	0	8	0	0	0	10
Lane Group Flow (vph)	1074	1103	832	521	826	1506
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6				
Actuated Green, G (s)	39.4	72.0	30.0	75.4	32.6	68.6
Effective Green, g (s)	39.4	72.0	30.0	75.4	32.6	68.6
Actuated g/C Ratio	0.33	0.60	0.25	0.63	0.27	0.57
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)	1162	1812	858	3195	1356	1593
v/s Ratio Prot	c0.30	0.17	0.24	0.10	0.17	c0.54
v/s Ratio Perm		0.23				
v/c Ratio	0.92	0.61	0.97	0.16	0.61	0.95
Uniform Delay, d1	38.9	15.1	44.5	9.2	38.1	24.0
Progression Factor	0.99	0.84	0.98	0.72	0.97	1.03
Incremental Delay, d2	11.1	0.5	21.9	0.1	0.6	9.2
Delay (s)	49.5	13.2	65.6	6.8	37.6	33.9
Level of Service	D	B	E	A	D	C
Approach Delay (s)	31.0			43.0	35.2	
Approach LOS	C			D	D	

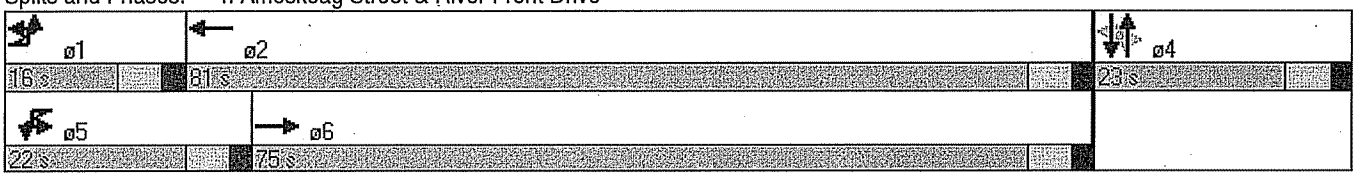
Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	30	2420	5	1235	15	0	30	0
Lane Group Flow (vph)	37	2552	5	1326	0	21	0	64
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phase	1	6	5	2	4	4	4	4
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	23.0	22.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	16.0	75.0	22.0	81.0	23.0	23.0	23.0	23.0
Total Split (%)	13.3%	62.5%	18.3%	67.5%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
v/c Ratio	0.27	0.83	0.05	0.46		0.14		0.35
Control Delay	53.2	7.5	53.0	7.2		41.0		33.1
Queue Delay	0.0	3.5	0.0	0.0		0.0		0.0
Total Delay	53.2	11.0	53.0	7.2		41.0		33.1
Queue Length 50th (ft)	27	181	4	196		12		24
Queue Length 95th (ft)	m29	m#1249	17	340		35		63
Internal Link Dist (ft)		342		667		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	165	3090	248	2884		249		286
Starvation Cap Reductn	0	443	0	0		0		0
Spillback Cap Reductn	0	0	0	95		0		1
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.22	0.96	0.02	0.48		0.08		0.22

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 7 (6%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amoskeag Street & River Front Drive



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	5	30	2420	5	5	1235	25	15	0	5	30	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	13	12	16	16	16	16	16
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	1.00		1.00	1.00			0.97			0.93
Flt Protected		0.95	1.00		0.95	1.00			0.96			0.98
Satd. Flow (prot)		1652	3656		1652	3646			1968			1921
Flt Permitted		0.95	1.00		0.95	1.00			0.76			0.83
Satd. Flow (perm)		1652	3656		1652	3646			1546			1636
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	32	2547	5	5	1300	26	16	0	5	32	0
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	5	0	0	29
Lane Group Flow (vph)	0	37	2552	0	5	1325	0	0	16	0	0	35
Turn Type	Prot	Prot			Prot			Perm			Perm	
Protected Phases	1	1	6		5	2			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		5.5	92.6		1.4	88.5			8.0			8.0
Effective Green, g (s)		7.5	94.6		3.4	90.5			10.0			10.0
Actuated g/C Ratio		0.06	0.79		0.03	0.75			0.08			0.08
Clearance Time (s)		6.0	6.0		6.0	6.0			6.0			6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)		103	2882		47	2750			129			136
v/s Ratio Prot		c0.02	c0.70		0.00	0.36						
v/s Ratio Perm									0.01			c0.02
v/c Ratio		0.36	0.89		0.11	0.48			0.13			0.25
Uniform Delay, d1		53.9	8.9		56.8	5.7			51.0			51.5
Progression Factor		1.01	0.66		1.00	1.00			1.00			1.00
Incremental Delay, d2		0.8	1.7		1.0	0.6			0.4			1.0
Delay (s)		55.0	7.6		57.8	6.3			51.4			52.5
Level of Service		E	A		E	A			D			D
Approach Delay (s)			8.3			6.5			51.4			52.5
Approach LOS			A			A			D			D

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	30
Ideal Flow (vphpl)	1900
Lane Width	16
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	32
RTOR Reduction (vph)	0
Lane Group Flow (vph)	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	

Lane Group	NBT	NBR	SBT	SBR	SER	NWR
Lane Configurations						
Volume (vph)	525	510	400	1300	425	675
Lane Group Flow (vph)	553	537	1105	684	447	711
Turn Type		Perm		Free	custom	custom
Protected Phases	2		1		2	1
Permitted Phases		2		Free		
Detector Phase	2	2	1		2	1
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	23.0		23.0	23.0
Total Split (s)	29.0	29.0	31.0	0.0	29.0	31.0
Total Split (%)	48.3%	48.3%	51.7%	0.0%	48.3%	51.7%
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
Lost Time Adjust (s)	-2.0	0.0	-2.0	0.0	-2.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	4.0	6.0
Lead/Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?			Yes			Yes
Recall Mode	C-Min	C-Min	None		C-Min	None
v/c Ratio	0.35	0.56	0.65	0.47	0.62	0.66
Control Delay	12.3	4.0	15.2	4.7	18.4	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	4.0	15.2	4.7	18.4	18.1
Queue Length 50th (ft)	69	0	326	79	125	109
Queue Length 95th (ft)	104	53	390	195	216	164
Internal Link Dist (ft)	472		375			
Turn Bay Length (ft)		150				
Base Capacity (vph)	1574	967	1760	1441	716	1161
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.56	0.63	0.47	0.62	0.61

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 2:NBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 5: Eddy Rd & Ex-6 SB Ramp

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	525	510	0	400	1300	0	0	425	0	0	675
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	6.0		4.0	4.0			4.0			6.0
Lane Util. Factor		0.95	1.00		0.91	0.91			1.00			0.88
Frt		1.00	0.85		0.91	0.85			0.86			0.85
Flt Protected		1.00	1.00		1.00	1.00			1.00			1.00
Satd. Flow (prot)		3539	1583		3075	1441			1611			2787
Flt Permitted		1.00	1.00		1.00	1.00			1.00			1.00
Satd. Flow (perm)		3539	1583		3075	1441			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	553	537	0	421	1368	0	0	447	0	0	711
RTOR Reduction (vph)	0	0	316	0	396	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	553	221	0	709	684	0	0	447	0	0	711
Turn Type			Perm			Free			custom			custom
Protected Phases		2			1				2			1
Permitted Phases			2			Free						
Actuated Green, G (s)		24.7	24.7		23.3	60.0			24.7			23.3
Effective Green, g (s)		26.7	24.7		25.3	60.0			26.7			23.3
Actuated g/C Ratio		0.44	0.41		0.42	1.00			0.44			0.39
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)		1575	652		1297	1441			717			1082
v/s Ratio Prot		0.16			0.23				c0.28			c0.26
v/s Ratio Perm			0.14			0.47						
v/c Ratio		0.35	0.34		0.55	0.47			0.62			0.66
Uniform Delay, d1		11.0	12.1		13.0	0.0			12.8			15.1
Progression Factor		1.00	1.00		3.04	1.00			1.00			1.00
Incremental Delay, d2		0.6	1.4		0.3	0.8			4.1			1.5
Delay (s)		11.6	13.5		40.0	0.8			16.8			16.5
Level of Service		B	B		D	A			B			B
Approach Delay (s)		12.5			25.0			16.8			16.5	
Approach LOS		B			C			B			B	

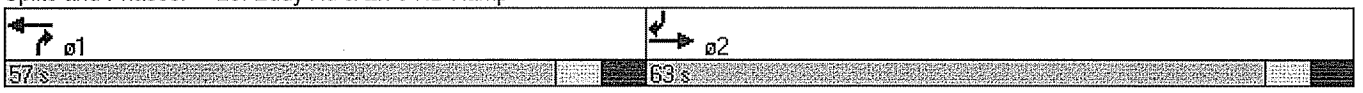
Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	NBR	SBR
Lane Configurations	↑↑↑↱	↑↑↑↱	↱↱	↱
Volume (vph)	1050	1675	1175	25
Lane Group Flow (vph)	1263	1942	1237	26
Turn Type			custom	custom
Protected Phases	2	1	1	2
Permitted Phases				
Detector Phase	2	1	1	2
Switch Phase				
Minimum Initial (s)	10.0	4.0	4.0	10.0
Minimum Split (s)	18.0	25.0	25.0	18.0
Total Split (s)	63.0	57.0	57.0	63.0
Total Split (%)	52.5%	47.5%	47.5%	52.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0
Lead/Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?				
Recall Mode	C-Min	None	None	C-Min
v/c Ratio	0.76	0.72	0.81	0.05
Control Delay	33.4	15.7	27.4	25.3
Queue Delay	0.1	0.3	0.0	0.0
Total Delay	33.5	16.0	27.4	25.3
Queue Length 50th (ft)	279	296	405	14
Queue Length 95th (ft)	299	m477	#639	32
Internal Link Dist (ft)	375	582		
Turn Bay Length (ft)				
Base Capacity (vph)	2302	2705	1534	738
Starvation Cap Reductn	184	234	0	0
Spillback Cap Reductn	86	0	1	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.60	0.79	0.81	0.04

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Eddy Rd & Ex-6 NB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1050	150	0	1675	170	0	0	1175	0	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0			8.0				8.0			8.0
Lane Util. Factor		0.91			0.91				0.88			1.00
Frt		0.98			0.99				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		4990			5015				2787			1611
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		4990			5015				2787			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1105	158	0	1763	179	0	0	1237	0	0	26
RTOR Reduction (vph)	0	19	0	0	8	0	0	0	35	0	0	0
Lane Group Flow (vph)	0	1244	0	0	1934	0	0	0	1202	0	0	26
Turn Type									custom			custom
Protected Phases		2			1				1			2
Permitted Phases												
Actuated Green, G (s)		39.5			64.5				64.5			39.5
Effective Green, g (s)		39.5			64.5				64.5			39.5
Actuated g/C Ratio		0.33			0.54				0.54			0.33
Clearance Time (s)		8.0			8.0				8.0			8.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1643			2696				1498			530
v/s Ratio Prot		c0.25			0.39				c0.43			0.02
v/s Ratio Perm												
v/c Ratio		0.76			0.72				0.80			0.05
Uniform Delay, d1		36.0			20.9				22.6			27.4
Progression Factor		0.88			0.67				1.00			1.00
Incremental Delay, d2		2.9			0.6				3.2			0.2
Delay (s)		34.4			14.6				25.8			27.6
Level of Service		C			B				C			C
Approach Delay (s)		34.4			14.6			25.8			27.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	65	595	1320	565	630	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	626	1389	595	663	126
RTOR Reduction (vph)	0	0	0	268	0	97
Lane Group Flow (vph)	68	626	1389	327	663	29
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Actuated Green, G (s)	8.1	67.1	53.0	53.0	20.9	20.9
Effective Green, g (s)	10.1	69.1	55.0	55.0	22.9	22.9
Actuated g/C Ratio	0.10	0.69	0.55	0.55	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	179	2445	1946	871	786	363
v/s Ratio Prot	c0.04	0.18	c0.39		c0.19	0.02
v/s Ratio Perm				0.21		
v/c Ratio	0.38	0.26	0.71	0.38	0.84	0.08
Uniform Delay, d1	42.0	5.8	16.7	12.8	36.8	30.3
Progression Factor	1.00	1.00	0.79	1.87	1.00	1.00
Incremental Delay, d2	1.3	0.3	1.9	1.0	8.2	0.1
Delay (s)	43.4	6.1	15.0	24.9	45.1	30.4
Level of Service	D	A	B	C	D	C
Approach Delay (s)		9.7	18.0		42.7	
Approach LOS		A	B		D	

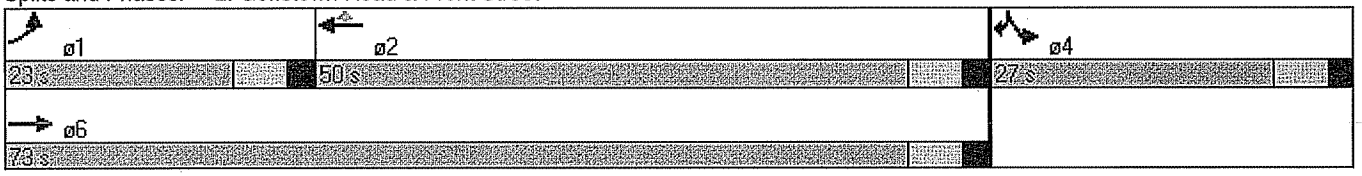
Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	65	595	1320	565	630	120
Lane Group Flow (vph)	68	626	1389	595	663	126
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	73.0	50.0	50.0	27.0	27.0
Total Split (%)	23.0%	73.0%	50.0%	50.0%	27.0%	27.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	None
v/c Ratio	0.34	0.26	0.70	0.52	0.84	0.27
Control Delay	44.9	6.2	15.5	3.8	47.9	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	6.2	15.5	3.8	47.9	7.5
Queue Length 50th (ft)	41	69	293	47	208	0
Queue Length 95th (ft)	80	92	413	39	#295	45
Internal Link Dist (ft)		213	342		629	
Turn Bay Length (ft)	100				300	300
Base Capacity (vph)	336	2455	1989	1151	800	465
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.25	0.70	0.52	0.83	0.27

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 47 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Goffstown Road & Front Street

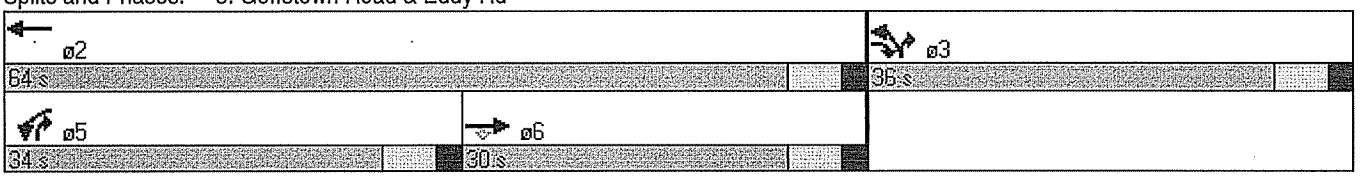


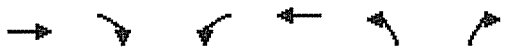
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	510	715	590	1510	990	1040
Lane Group Flow (vph)	537	753	621	1589	1042	1095
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6				
Detector Phase	6	3	5	2	3	3 5
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	10.0	5.0	
Minimum Split (s)	23.0	23.0	16.0	23.0	23.0	
Total Split (s)	30.0	36.0	34.0	64.0	36.0	70.0
Total Split (%)	30.0%	36.0%	34.0%	64.0%	36.0%	70.0%
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min	None	None	C-Min	None	
v/c Ratio	0.64	0.42	0.70	0.56	0.64	0.60
Control Delay	28.3	7.1	37.1	8.1	29.1	9.1
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.2
Total Delay	28.3	7.1	37.1	8.5	29.1	9.3
Queue Length 50th (ft)	156	158	139	75	210	212
Queue Length 95th (ft)	m180	m201	190	53	247	243
Internal Link Dist (ft)	352			342	582	
Turn Bay Length (ft)			200			
Base Capacity (vph)	885	1773	961	2949	1625	1887
Starvation Cap Reductn	0	0	0	694	0	0
Spillback Cap Reductn	0	0	0	0	0	212
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.42	0.65	0.70	0.64	0.65

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 5 (5%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Goffstown Road & Eddy Rd





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	510	715	590	1510	990	1040
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	0.88	0.97	0.91	0.94	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	2787	3433	5085	4990	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	2787	3433	5085	4990	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	537	753	621	1589	1042	1095
RTOR Reduction (vph)	0	43	0	0	0	34
Lane Group Flow (vph)	537	710	621	1589	1042	1061
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6				
Actuated Green, G (s)	23.7	56.3	25.7	55.4	32.6	64.3
Effective Green, g (s)	23.7	56.3	25.7	55.4	32.6	64.3
Actuated g/C Ratio	0.24	0.56	0.26	0.55	0.33	0.64
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	1736	882	2817	1627	1792
v/s Ratio Prot	c0.15	0.13	c0.18	0.31	0.21	c0.38
v/s Ratio Perm		0.12				
v/c Ratio	0.64	0.41	0.70	0.56	0.64	0.59
Uniform Delay, d1	34.3	12.4	33.7	14.5	28.7	10.3
Progression Factor	0.72	0.75	1.02	0.53	0.96	0.88
Incremental Delay, d2	3.2	0.1	1.6	0.5	0.5	0.3
Delay (s)	27.8	9.4	35.9	8.1	27.9	9.4
Level of Service	C	A	D	A	C	A
Approach Delay (s)	17.1			15.9	18.4	
Approach LOS	B			B	B	

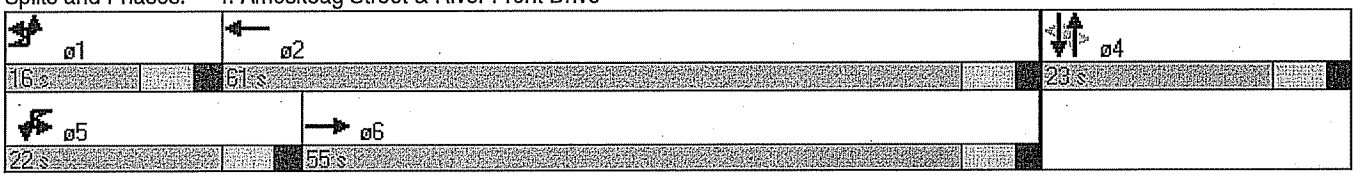
Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

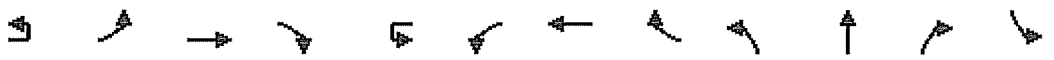
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	40	1500	5	2030	15	0	25	0
Lane Group Flow (vph)	47	1584	10	2163	0	21	0	79
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phase	1	6	5	2	4	4	4	4
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	23.0	22.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	16.0	55.0	22.0	61.0	23.0	23.0	23.0	23.0
Total Split (%)	16.0%	55.0%	22.0%	61.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
v/c Ratio	0.28	0.53	0.07	0.79		0.13		0.34
Control Delay	42.2	6.5	43.1	15.2		32.8		20.8
Queue Delay	0.0	0.2	0.0	0.0		0.0		0.0
Total Delay	42.2	6.7	43.1	15.2		32.8		20.8
Queue Length 50th (ft)	27	63	6	486		10		16
Queue Length 95th (ft)	m44	456	22	#930		29		54
Internal Link Dist (ft)		342		667		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	198	2987	297	2747		289		365
Starvation Cap Reductn	0	561	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.24	0.65	0.03	0.79		0.07		0.22

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 99 (99%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amoskeag Street & River Front Drive

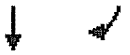




Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	5	40	1500	5	5	5	2030	25	15	0	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.97		
Flt Protected		0.95	1.00			0.95	1.00			0.96		
Satd. Flow (prot)		1652	3655			1652	3651			1968		
Flt Permitted		0.95	1.00			0.95	1.00			0.73		
Satd. Flow (perm)		1652	3655			1652	3651			1500		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	42	1579	5	5	5	2137	26	16	0	5	26
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	5	0	0
Lane Group Flow (vph)	0	47	1584	0	0	10	2162	0	0	16	0	0
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		5.5	72.9			1.5	68.9			7.6		
Effective Green, g (s)		7.5	74.9			3.5	70.9			9.6		
Actuated g/C Ratio		0.08	0.75			0.04	0.71			0.10		
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)		124	2738			58	2589			144		
v/s Ratio Prot		c0.03	c0.43			0.01	c0.59					
v/s Ratio Perm										0.01		
v/c Ratio		0.38	0.58			0.17	0.84			0.11		
Uniform Delay, d1		44.0	5.6			46.8	10.4			41.3		
Progression Factor		0.94	1.06			1.00	1.00			1.00		
Incremental Delay, d2		1.6	0.7			1.4	3.4			0.4		
Delay (s)		43.0	6.6			48.3	13.8			41.7		
Level of Service		D	A			D	B			D		
Approach Delay (s)			7.7				13.9			41.7		
Approach LOS			A				B			D		

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Volume (vph)	0	50
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.91	
Flt Protected	0.98	
Satd. Flow (prot)	1889	
Flt Permitted	0.88	
Satd. Flow (perm)	1693	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	0	53
RTOR Reduction (vph)	48	0
Lane Group Flow (vph)	31	0
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.6	
Effective Green, g (s)	9.6	
Actuated g/C Ratio	0.10	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	163	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.19	
Uniform Delay, d1	41.6	
Progression Factor	1.00	
Incremental Delay, d2	0.6	
Delay (s)	42.2	
Level of Service	D	
Approach Delay (s)	42.2	
Approach LOS	D	

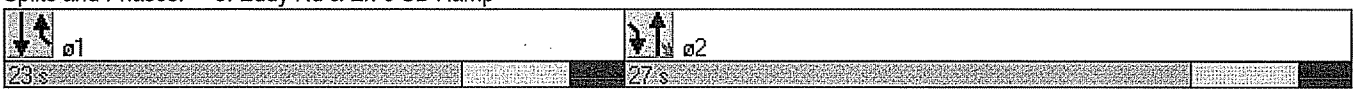
Intersection Summary

Lane Group	NBT	NBR	SBT	SBR	SER	NWR
Lane Configurations						
Volume (vph)	675	445	435	610	250	280
Lane Group Flow (vph)	711	468	760	340	263	295
Turn Type		Perm		Free	custom	custom
Protected Phases	2		1		2	1
Permitted Phases		2		Free		
Detector Phase	2	2	1		2	1
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	23.0		23.0	23.0
Total Split (s)	27.0	27.0	23.0	0.0	27.0	23.0
Total Split (%)	54.0%	54.0%	46.0%	0.0%	54.0%	46.0%
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
Lost Time Adjust (s)	-2.0	0.0	-2.0	0.0	-2.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	4.0	6.0
Lead/Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?			Yes			Yes
Recall Mode	C-Min	C-Min	None		C-Min	None
v/c Ratio	0.39	0.47	0.62	0.24	0.31	0.38
Control Delay	8.8	3.0	10.0	0.3	9.3	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	3.0	10.0	0.3	9.3	15.0
Queue Length 50th (ft)	63	0	90	0	43	36
Queue Length 95th (ft)	103	42	107	0	88	62
Internal Link Dist (ft)	476		375			
Turn Bay Length (ft)		150				
Base Capacity (vph)	1835	1001	1398	1441	835	948
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.47	0.54	0.24	0.31	0.31

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 18 (36%), Referenced to phase 2:NBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 5: Eddy Rd & Ex-6 SB Ramp



Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	675	445	0	435	610	0	0	250	0	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	6.0		4.0	4.0			4.0			6.0
Lane Util. Factor		0.95	1.00		0.91	0.91			1.00			0.88
Frt		1.00	0.85		0.94	0.85			0.86			0.85
Flt Protected		1.00	1.00		1.00	1.00			1.00			1.00
Satd. Flow (prot)		3539	1583		3188	1441			1611			2787
Flt Permitted		1.00	1.00		1.00	1.00			1.00			1.00
Satd. Flow (perm)		3539	1583		3188	1441			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	711	468	0	458	642	0	0	263	0	0	295
RTOR Reduction (vph)	0	0	244	0	205	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	711	224	0	555	340	0	0	263	0	0	295
Turn Type			Perm			Free			custom			custom
Protected Phases		2			1				2			1
Permitted Phases			2			Free						
Actuated Green, G (s)		23.9	23.9		14.1	50.0			23.9			14.1
Effective Green, g (s)		25.9	23.9		16.1	50.0			25.9			14.1
Actuated g/C Ratio		0.52	0.48		0.32	1.00			0.52			0.28
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)		1833	757		1027	1441			834			786
v/s Ratio Prot		c0.20			c0.17				0.16			0.11
v/s Ratio Perm			0.14			0.24						
v/c Ratio		0.39	0.30		0.54	0.24			0.32			0.38
Uniform Delay, d1		7.3	7.9		13.9	0.0			6.9			14.4
Progression Factor		1.00	1.00		0.99	1.00			1.00			1.00
Incremental Delay, d2		0.6	1.0		0.5	0.3			1.0			0.3
Delay (s)		7.9	8.9		14.3	0.3			7.9			14.7
Level of Service		A	A		B	A			A			B
Approach Delay (s)		8.3			10.0			7.9			14.7	
Approach LOS		A			B			A			B	

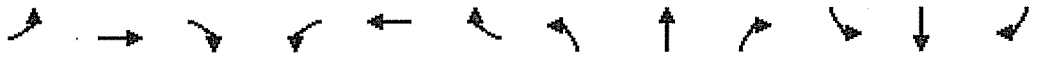
Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	NBR	SBR
Lane Configurations				
Volume (vph)	705	1020	1325	25
Lane Group Flow (vph)	1005	1374	1395	26
Turn Type			custom	custom
Protected Phases	2	1	1	2
Permitted Phases				
Detector Phase	2	1	1	2
Switch Phase				
Minimum Initial (s)	10.0	4.0	4.0	10.0
Minimum Split (s)	18.0	25.0	25.0	18.0
Total Split (s)	34.0	66.0	66.0	34.0
Total Split (%)	34.0%	66.0%	66.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0
Lead/Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?				
Recall Mode	C-Min	None	None	C-Min
v/c Ratio	0.75	0.47	0.86	0.06
Control Delay	35.7	3.9	23.7	28.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.7	3.9	23.7	28.6
Queue Length 50th (ft)	172	18	383	13
Queue Length 95th (ft)	258	19	510	34
Internal Link Dist (ft)	375	582		
Turn Bay Length (ft)				
Base Capacity (vph)	1360	2923	1645	428
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.47	0.85	0.06

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 25: Eddy Rd & Ex-6 NB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	705	250	0	1020	285	0	0	1325	0	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0			8.0				8.0			8.0
Lane Util. Factor		0.91			0.91				0.88			1.00
Frt		0.96			0.97				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		4886			4919				2787			1611
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		4886			4919				2787			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	742	263	0	1074	300	0	0	1395	0	0	26
RTOR Reduction (vph)	0	64	0	0	51	0	0	0	17	0	0	0
Lane Group Flow (vph)	0	941	0	0	1323	0	0	0	1378	0	0	26
Turn Type									custom			custom
Protected Phases		2			1				1			2
Permitted Phases												
Actuated Green, G (s)		26.1			57.9				57.9			26.1
Effective Green, g (s)		26.1			57.9				57.9			26.1
Actuated g/C Ratio		0.26			0.58				0.58			0.26
Clearance Time (s)		8.0			8.0				8.0			8.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1275			2848				1614			420
v/s Ratio Prot		c0.19			0.27				c0.49			0.02
v/s Ratio Perm												
v/c Ratio		0.74			0.46				0.85			0.06
Uniform Delay, d1		33.8			12.1				17.5			27.8
Progression Factor		1.02			0.31				1.00			1.00
Incremental Delay, d2		3.7			0.1				4.6			0.3
Delay (s)		38.2			3.8				22.2			28.0
Level of Service		D			A				C			C
Approach Delay (s)		38.2			3.8			22.2			28.0	
Approach LOS		D			A			C			C	

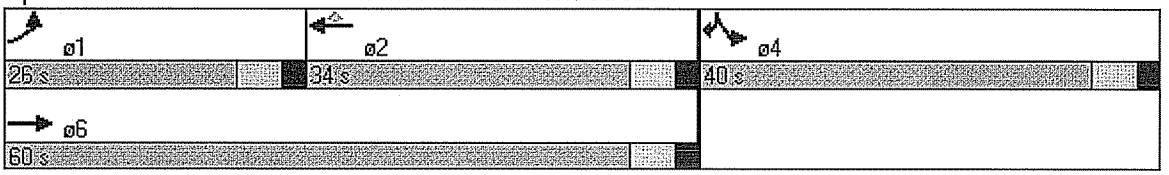
Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

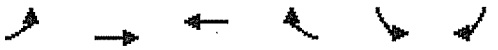
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	1295	690	225	780	70
Lane Group Flow (vph)	79	1363	726	237	821	74
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Detector Phases	1	6	2	2	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	26.0	60.0	34.0	34.0	40.0	40.0
Total Split (%)	26.0%	60.0%	34.0%	34.0%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	None
v/c Ratio	0.39	0.63	0.43	0.27	0.77	0.14
Control Delay	45.6	14.7	7.3	1.1	36.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	14.7	7.3	1.1	36.5	6.0
Queue Length 50th (ft)	47	274	57	2	240	0
Queue Length 95th (ft)	90	385	m132	m2	290	29
Internal Link Dist (ft)		213	370		636	
Turn Bay Length (ft)	100			150	300	300
Base Capacity (vph)	389	2162	1694	874	1236	617
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.63	0.43	0.27	0.66	0.12

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 86 (86%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Goffstown Road & Front Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583
Volume (vph)	75	1295	690	225	780	70
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	1363	726	237	821	74
RTOR Reduction (vph)	0	0	0	119	0	51
Lane Group Flow (vph)	79	1363	726	118	821	23
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Actuated Green, G (s)	8.4	59.1	44.7	44.7	28.9	28.9
Effective Green, g (s)	10.4	61.1	46.7	46.7	30.9	30.9
Actuated g/C Ratio	0.10	0.61	0.47	0.47	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	184	2162	1653	739	1061	489
v/s Ratio Prot	0.04	c0.39	0.21		c0.24	0.01
v/s Ratio Perm				0.07		
v/c Ratio	0.43	0.63	0.44	0.16	0.77	0.05
Uniform Delay, d1	42.0	12.3	17.9	15.4	31.4	24.2
Progression Factor	1.00	1.00	0.34	0.14	1.00	1.00
Incremental Delay, d2	1.6	1.4	0.7	0.4	3.6	0.0
Delay (s)	43.6	13.7	6.8	2.5	35.0	24.3
Level of Service	D	B	A	A	C	C
Approach Delay (s)		15.4	5.8		34.1	
Approach LOS		B	A		C	

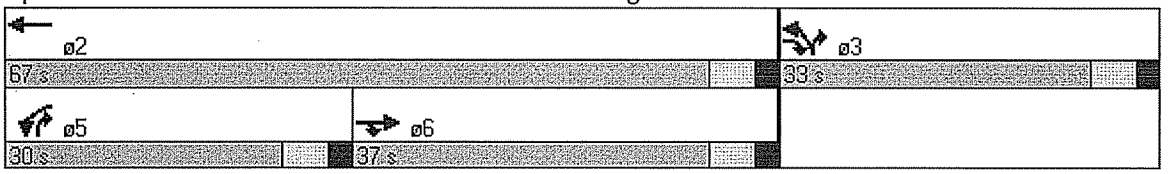
Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

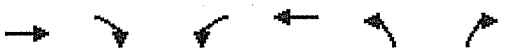
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1020	1055	790	495	785	1440
Lane Group Flow (vph)	1074	1111	832	521	826	1516
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Detector Phases	6	6 3	5	2	3	3 5
Minimum Initial (s)	10.0		10.0	10.0	4.0	
Minimum Split (s)	23.0		22.0	23.0	23.0	
Total Split (s)	37.0	70.0	30.0	67.0	33.0	63.0
Total Split (%)	37.0%	70.0%	30.0%	67.0%	33.0%	63.0%
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?						
Recall Mode	C-Min		None	C-Min	None	
v/c Ratio	0.92	0.60	0.93	0.23	0.83	0.92
Control Delay	42.0	9.5	58.8	10.6	41.7	28.5
Queue Delay	1.2	0.0	24.0	0.0	0.0	17.4
Total Delay	43.3	9.5	82.8	10.6	41.7	45.9
Queue Length 50th (ft)	292	134	295	67	253	451
Queue Length 95th (ft)	#469	251	#400	164	#329	#667
Internal Link Dist (ft)	122			293	543	
Turn Bay Length (ft)			175		350	350
Base Capacity (vph)	1168	1826	893	2230	997	1654
Starvation Cap Reductn	0	0	97	0	0	0
Spillback Cap Reductn	23	0	0	0	0	179
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.61	1.05	0.23	0.83	1.03

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 25 (25%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Goffstown Road & Amoskeag Street





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.88	0.97	0.95	0.97	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	2787	3433	3539	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	2787	3433	3539	3433	2787
Volume (vph)	1020	1055	790	495	785	1440
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1074	1111	832	521	826	1516
RTOR Reduction (vph)	0	8	0	0	0	9
Lane Group Flow (vph)	1074	1103	832	521	826	1507
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Actuated Green, G (s)	31.0	64.0	24.0	61.0	27.0	57.0
Effective Green, g (s)	33.0	66.0	26.0	63.0	29.0	59.0
Actuated g/C Ratio	0.33	0.66	0.26	0.63	0.29	0.59
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)	1168	1839	893	2230	996	1644
v/s Ratio Prot	c0.30	0.40	0.24	0.15	0.24	c0.54
v/s Ratio Perm						
v/c Ratio	0.92	0.60	0.93	0.23	0.83	0.92
Uniform Delay, d1	32.2	9.6	36.1	8.0	33.2	18.3
Progression Factor	0.97	0.88	1.17	1.28	1.00	1.00
Incremental Delay, d2	9.9	0.4	14.8	0.2	5.8	8.4
Delay (s)	41.2	8.8	56.9	10.5	39.0	26.7
Level of Service	D	A	E	B	D	C
Approach Delay (s)	24.7			39.0	31.1	
Approach LOS	C			D	C	

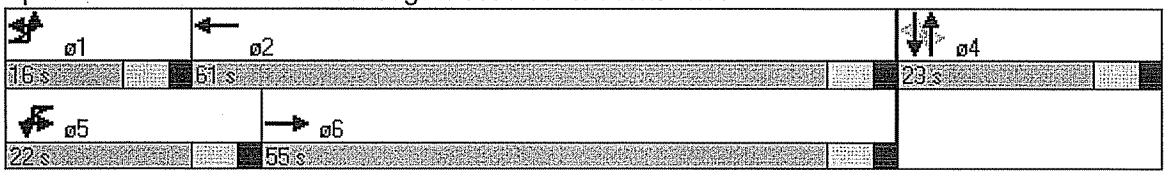
Intersection Summary				
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	30	2420	5	1235	15	0	30	0
Lane Group Flow (vph)	37	2552	5	1326	0	32	0	64
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	23.0	22.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	16.0	55.0	22.0	61.0	23.0	23.0	23.0	23.0
Total Split (%)	16.0%	55.0%	22.0%	61.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
v/c Ratio	0.23	0.85	0.04	0.48		0.16		0.30
Control Delay	43.2	11.2	43.0	8.4		25.5		26.4
Queue Delay	0.0	9.4	0.0	0.1		1.4		3.4
Total Delay	43.2	20.5	43.0	8.5		26.9		29.8
Queue Length 50th (ft)	22	302	3	188		10		19
Queue Length 95th (ft)	m25	#1161	14	351		34		54
Internal Link Dist (ft)		293		667		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	198	2989	297	2751		339		347
Starvation Cap Reductn	0	444	0	0		0		0
Spillback Cap Reductn	0	0	0	332		216		215
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.19	1.00	0.02	0.55		0.26		0.48

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amoskeag Street & River Front Drive



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	13	12	16	16	16	16	16
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	1.00		1.00	1.00			0.93			0.93
Flt Protected		0.95	1.00		0.95	1.00			0.98			0.98
Satd. Flow (prot)		1652	3656		1652	3646			1921			1921
Flt Permitted		0.95	1.00		0.95	1.00			0.86			0.83
Satd. Flow (perm)		1652	3656		1652	3646			1683			1637
Volume (vph)	5	30	2420	5	5	1235	25	15	0	15	30	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	32	2547	5	5	1300	26	16	0	16	32	0
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	14	0	0	29
Lane Group Flow (vph)	0	37	2552	0	5	1325	0	0	18	0	0	35
Turn Type	Prot	Prot			Prot			Perm			Perm	
Protected Phases	1	1	6		5	2			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		5.3	73.0		1.3	69.0			7.7			7.7
Effective Green, g (s)		7.3	75.0		3.3	71.0			9.7			9.7
Actuated g/C Ratio		0.07	0.75		0.03	0.71			0.10			0.10
Clearance Time (s)		6.0	6.0		6.0	6.0			6.0			6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)		121	2742		55	2589			163			159
v/s Ratio Prot		c0.02	c0.70		0.00	0.36						
v/s Ratio Perm									0.01			c0.02
v/c Ratio		0.31	0.93		0.09	0.51			0.11			0.22
Uniform Delay, d1		43.9	10.3		46.9	6.6			41.2			41.7
Progression Factor		1.02	0.98		1.00	1.00			1.00			1.00
Incremental Delay, d2		0.6	3.1		0.7	0.7			0.3			0.7
Delay (s)		45.2	13.2		47.6	7.3			41.5			42.4
Level of Service		D	B		D	A			D			D
Approach Delay (s)			13.7			7.5			41.5			42.4
Approach LOS			B			A			D			D

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

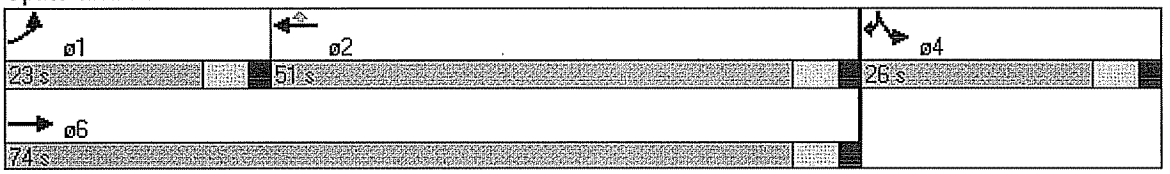
Movement	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width	16
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	30
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	32
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
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	

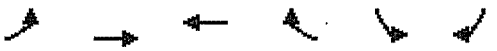
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	85	740	1490	565	630	120
Lane Group Flow (vph)	89	779	1568	595	663	126
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Detector Phases	1	6	2	2	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	74.0	51.0	51.0	26.0	26.0
Total Split (%)	23.0%	74.0%	51.0%	51.0%	26.0%	26.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	None
v/c Ratio	0.41	0.31	0.79	0.57	0.88	0.28
Control Delay	45.7	6.1	18.6	7.0	52.7	7.7
Queue Delay	0.0	0.0	0.4	0.1	0.0	0.0
Total Delay	45.7	6.1	19.0	7.1	52.7	7.7
Queue Length 50th (ft)	53	87	308	79	211	0
Queue Length 95th (ft)	98	114	m537	m137	#307	46
Internal Link Dist (ft)		213	370		636	
Turn Bay Length (ft)	100			150	300	300
Base Capacity (vph)	336	2481	1996	1042	755	447
Starvation Cap Reductn	0	0	112	32	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.31	0.83	0.59	0.88	0.28

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Goffstown Road & Front Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583
Volume (vph)	85	740	1490	565	630	120
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	779	1568	595	663	126
RTOR Reduction (vph)	0	0	0	154	0	98
Lane Group Flow (vph)	89	779	1568	441	663	28
Turn Type	Prot			Perm		Prot
Protected Phases	1	6	2		4	4
Permitted Phases				2		
Actuated Green, G (s)	8.9	68.1	53.2	53.2	19.9	19.9
Effective Green, g (s)	10.9	70.1	55.2	55.2	21.9	21.9
Actuated g/C Ratio	0.11	0.70	0.55	0.55	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	193	2481	1954	874	752	347
v/s Ratio Prot	c0.05	0.22	c0.44		c0.19	0.02
v/s Ratio Perm				0.28		
v/c Ratio	0.46	0.31	0.80	0.50	0.88	0.08
Uniform Delay, d1	41.8	5.7	18.0	13.9	37.8	31.0
Progression Factor	1.00	1.00	0.86	0.86	1.00	1.00
Incremental Delay, d2	1.7	0.3	2.2	1.3	11.8	0.1
Delay (s)	43.5	6.1	17.8	13.3	49.6	31.1
Level of Service	D	A	B	B	D	C
Approach Delay (s)		9.9	16.5		46.6	
Approach LOS		A	B		D	

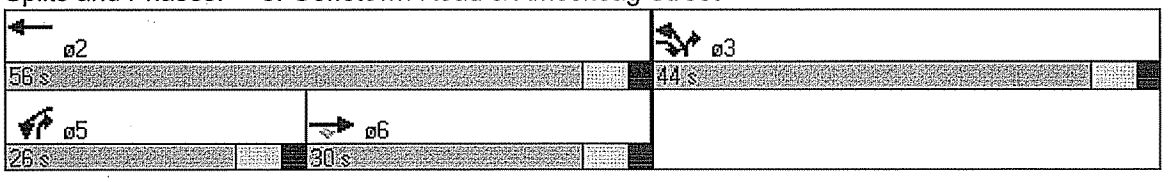
Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

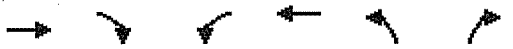
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	585	715	590	1510	990	1040
Lane Group Flow (vph)	616	753	621	1589	1042	1095
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6				
Detector Phases	6	3	5	2	3	3 5
Minimum Initial (s)	10.0	4.0	10.0	10.0	4.0	
Minimum Split (s)	23.0	23.0	22.0	23.0	23.0	
Total Split (s)	30.0	44.0	26.0	56.0	44.0	70.0
Total Split (%)	30.0%	44.0%	26.0%	56.0%	44.0%	70.0%
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	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min	None	None	C-Min	None	
v/c Ratio	0.71	0.38	0.82	0.89	0.73	0.57
Control Delay	42.9	6.9	46.0	18.7	28.6	9.6
Queue Delay	0.0	0.0	0.0	13.7	0.0	0.2
Total Delay	42.9	6.9	46.0	32.4	28.6	9.8
Queue Length 50th (ft)	205	88	170	313	289	182
Queue Length 95th (ft)	m252	m113	#255	123	368	242
Internal Link Dist (ft)	122			293	543	
Turn Bay Length (ft)			175		350	350
Base Capacity (vph)	920	1964	755	1840	1429	1910
Starvation Cap Reductn	0	0	0	270	0	0
Spillback Cap Reductn	0	0	0	98	0	237
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.38	0.82	1.01	0.73	0.65

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 96 (96%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Goffstown Road & Amoskeag Street





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.88	0.97	0.95	0.97	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	2787	3433	3539	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	2787	3433	3539	3433	2787
Volume (vph)	585	715	590	1510	990	1040
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	616	753	621	1589	1042	1095
RTOR Reduction (vph)	0	14	0	0	0	26
Lane Group Flow (vph)	616	739	621	1589	1042	1069
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6				
Actuated Green, G (s)	22.4	62.0	20.0	48.4	39.6	65.6
Effective Green, g (s)	24.4	66.0	22.0	50.4	41.6	67.6
Actuated g/C Ratio	0.24	0.66	0.22	0.50	0.42	0.68
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)	864	1951	755	1784	1428	1884
v/s Ratio Prot	0.17	0.16	0.18	c0.45	c0.30	0.38
v/s Ratio Perm		0.11				
v/c Ratio	0.71	0.38	0.82	0.89	0.73	0.57
Uniform Delay, d1	34.6	7.7	37.1	22.3	24.5	8.5
Progression Factor	1.12	1.10	1.05	0.61	1.00	1.00
Incremental Delay, d2	4.1	0.1	4.6	4.6	1.9	0.4
Delay (s)	43.0	8.6	43.7	18.3	26.4	8.9
Level of Service	D	A	D	B	C	A
Approach Delay (s)	24.1			25.5	17.4	
Approach LOS	C			C	B	

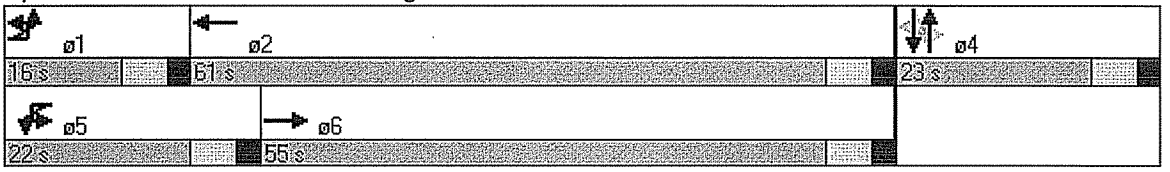
Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	40	1575	5	2030	15	0	25	0
Lane Group Flow (vph)	47	1663	10	2163	0	21	0	79
Turn Type	Prot		Prot		Perm		Perm	
Protected Phases	1	6	5	2		4		4
Permitted Phases					4		4	
Detector Phases	1	6	5	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	16.0	23.0	22.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	16.0	55.0	22.0	61.0	23.0	23.0	23.0	23.0
Total Split (%)	16.0%	55.0%	22.0%	61.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
v/c Ratio	0.29	0.56	0.08	0.79		0.12		0.34
Control Delay	38.9	5.7	43.4	15.1		32.4		20.6
Queue Delay	0.0	0.2	0.0	0.5		0.0		0.0
Total Delay	38.9	5.9	43.4	15.6		32.4		20.6
Queue Length 50th (ft)	25	25	6	484		10		16
Queue Length 95th (ft)	m43	425	22	#930		29		54
Internal Link Dist (ft)		293		667		196		139
Turn Bay Length (ft)	50		100					
Base Capacity (vph)	198	2989	297	2750		320		375
Starvation Cap Reductn	0	488	0	0		0		0
Spillback Cap Reductn	0	0	0	215		0		2
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.24	0.66	0.03	0.85		0.07		0.21

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 97 (97%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

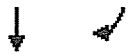
Splits and Phases: 4: Amoskeag Street & River Front Drive



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	13	12	10	10	13	12	16	16	16	16
Total Lost time (s)		4.0	4.0			4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95			1.00		
Frt		1.00	1.00			1.00	1.00			0.97		
Flt Protected		0.95	1.00			0.95	1.00			0.96		
Satd. Flow (prot)		1652	3656			1652	3651			1968		
Flt Permitted		0.95	1.00			0.95	1.00			0.73		
Satd. Flow (perm)		1652	3656			1652	3651			1500		
Volume (vph)	5	40	1575	5	5	5	2030	25	15	0	5	25
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	42	1658	5	5	5	2137	26	16	0	5	26
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	5	0	0
Lane Group Flow (vph)	0	47	1663	0	0	10	2162	0	0	16	0	0
Turn Type	Prot	Prot			Prot	Prot			Perm			Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases									4			4
Actuated Green, G (s)		5.5	72.9			1.5	68.9			7.6		
Effective Green, g (s)		7.5	74.9			3.5	70.9			9.6		
Actuated g/C Ratio		0.08	0.75			0.04	0.71			0.10		
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)		124	2738			58	2589			144		
v/s Ratio Prot		c0.03	c0.45			0.01	c0.59					
v/s Ratio Perm										0.01		
v/c Ratio		0.38	0.61			0.17	0.84			0.11		
Uniform Delay, d1		44.0	5.8			46.8	10.4			41.3		
Progression Factor		0.86	0.87			1.00	1.00			1.00		
Incremental Delay, d2		1.5	0.8			1.4	3.4			0.4		
Delay (s)		39.4	5.8			48.3	13.8			41.7		
Level of Service		D	A			D	B			D		
Approach Delay (s)			6.8				13.9			41.7		
Approach LOS			A				B			D		

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations	↕	
Ideal Flow (vphpl)	1900	1900
Lane Width	16	16
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.91	
Flt Protected	0.98	
Satd. Flow (prot)	1889	
Flt Permitted	0.88	
Satd. Flow (perm)	1693	
Volume (vph)	0	50
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	0	53
RTOR Reduction (vph)	48	0
Lane Group Flow (vph)	31	0
Turn Type		
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.6	
Effective Green, g (s)	9.6	
Actuated g/C Ratio	0.10	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	163	
v/s Ratio Prot		
v/s Ratio Perm	c0.02	
v/c Ratio	0.19	
Uniform Delay, d1	41.6	
Progression Factor	1.00	
Incremental Delay, d2	0.6	
Delay (s)	42.2	
Level of Service	D	
Approach Delay (s)	42.2	
Approach LOS	D	

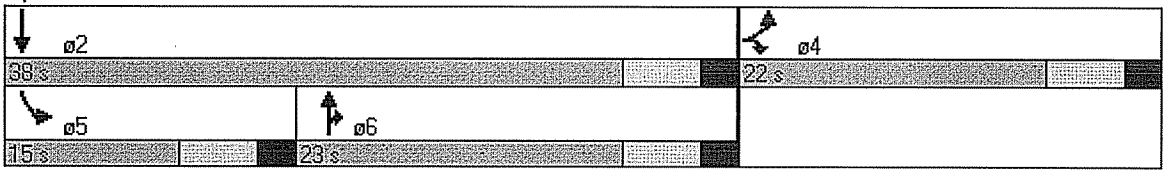
Intersection Summary

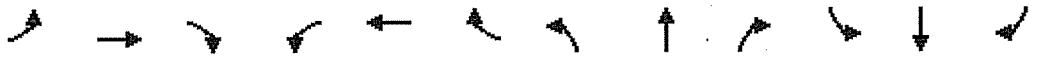
Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	25	235	180	290	735	555
Lane Group Flow (vph)	26	247	189	305	774	584
Turn Type	Prot	custom		Prot	Prot	
Protected Phases	4	4	6	6	5	2
Permitted Phases						
Detector Phases	4	4	6	6	5	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	23.0	23.0	10.0	23.0
Total Split (s)	22.0	22.0	23.0	23.0	15.0	38.0
Total Split (%)	36.7%	36.7%	38.3%	38.3%	25.0%	63.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	None	C-Min
v/c Ratio	0.09	0.54	0.45	0.52	0.54	0.44
Control Delay	20.9	8.2	22.6	5.8	11.3	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	20.9	8.2	22.6	5.8	11.3	3.3
Queue Length 50th (ft)	8	0	60	0	32	1
Queue Length 95th (ft)	24	48	97	46	#221	214
Internal Link Dist (ft)			785			339
Turn Bay Length (ft)	200			200	400	
Base Capacity (vph)	531	648	590	710	1435	1322
Starvation Cap Reductn	0	0	0	0	0	312
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.38	0.32	0.43	0.54	0.58

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 24 (40%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ex 7 SB Off & Front Street





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	1.00		1.00					1.00	1.00	0.97	1.00	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770		1583					1863	1583	3433	1863	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770		1583					1863	1583	3433	1863	
Volume (vph)	25	0	235	0	0	0	0	180	290	735	555	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	0	247	0	0	0	0	189	305	774	584	0
RTOR Reduction (vph)	0	0	208	0	0	0	0	0	236	0	0	0
Lane Group Flow (vph)	26	0	39	0	0	0	0	189	69	774	584	0
Turn Type	Prot		custom						Prot	Prot		
Protected Phases	4		4					6	6	5	2	
Permitted Phases												
Actuated Green, G (s)	7.4		7.4					11.5	11.5	23.1	40.6	
Effective Green, g (s)	9.4		9.4					13.5	13.5	25.1	42.6	
Actuated g/C Ratio	0.16		0.16					0.22	0.22	0.42	0.71	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	277		248					419	356	1436	1323	
v/s Ratio Prot	0.01		c0.02					0.10	0.04	c0.23	c0.31	
v/s Ratio Perm												
v/c Ratio	0.09		0.16					0.45	0.19	0.54	0.44	
Uniform Delay, d1	21.7		21.9					20.1	18.8	13.1	3.7	
Progression Factor	1.00		1.00					1.00	1.00	0.53	0.46	
Incremental Delay, d2	0.1		0.3					3.5	1.2	0.3	0.9	
Delay (s)	21.8		22.2					23.5	20.0	7.3	2.6	
Level of Service	C		C					C	C	A	A	
Approach Delay (s)		22.1			0.0			21.4			5.3	
Approach LOS		C			A			C			A	

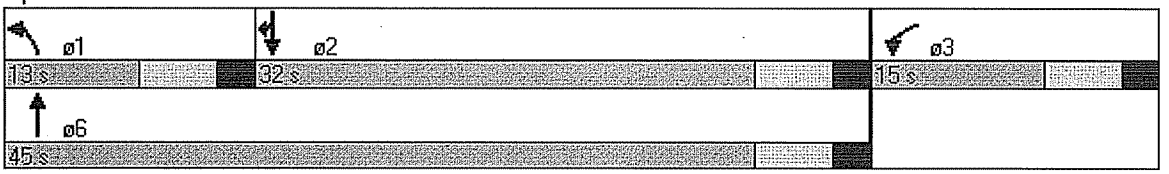
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

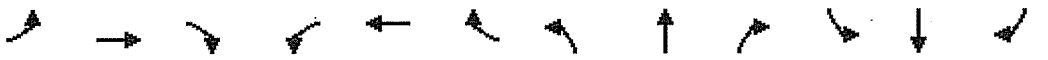
Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	170	800	130	75	1120	25
Lane Group Flow (vph)	179	842	137	79	1179	26
Turn Type	Prot	Free	Prot			Prot
Protected Phases	3		1	6	2	2
Permitted Phases		Free				
Detector Phases	3		1	6	2	2
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	10.0		10.0	23.0	23.0	23.0
Total Split (s)	15.0	0.0	13.0	45.0	32.0	32.0
Total Split (%)	25.0%	0.0%	21.7%	75.0%	53.3%	53.3%
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?						
Recall Mode	None		None	C-Min	C-Min	C-Min
v/c Ratio	0.58	0.53	0.50	0.06	0.59	0.03
Control Delay	30.6	1.3	16.8	0.1	13.2	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	1.3	16.8	0.1	13.2	4.5
Queue Length 50th (ft)	59	0	10	0	168	0
Queue Length 95th (ft)	114	0	28	0	235	11
Internal Link Dist (ft)				339	373	
Turn Bay Length (ft)	200					100
Base Capacity (vph)	328	1583	277	1391	2029	918
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.53	0.49	0.06	0.58	0.03

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 56 (93%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ex7 NB On & Front Street





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				1.00		1.00	1.00	1.00			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1583	1770	1863			3539	1583
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1770		1583	1770	1863			3539	1583
Volume (vph)	0	0	0	170	0	800	130	75	0	0	1120	25
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	179	0	842	137	79	0	0	1179	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	179	0	842	137	79	0	0	1179	14
Turn Type				Prot		Free	Prot					Prot
Protected Phases				3			1	6			2	2
Permitted Phases						Free						
Actuated Green, G (s)				7.3		60.0	6.0	40.7			28.7	28.7
Effective Green, g (s)				9.3		60.0	8.0	42.7			30.7	30.7
Actuated g/C Ratio				0.16		1.00	0.13	0.71			0.51	0.51
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)				274		1583	236	1326			1811	810
v/s Ratio Prot				0.10			0.08	0.04			c0.33	0.01
v/s Ratio Perm						c0.53						
v/c Ratio				0.65		0.53	0.58	0.06			0.65	0.02
Uniform Delay, d1				23.8		0.0	24.4	2.6			10.7	7.2
Progression Factor				1.00		1.00	0.45	0.01			1.00	1.00
Incremental Delay, d2				5.5		1.3	3.4	0.1			1.8	0.0
Delay (s)				29.3		1.3	14.3	0.1			12.6	7.3
Level of Service				C		A	B	A			B	A
Approach Delay (s)		0.0			6.2			9.1			12.4	
Approach LOS		A			A			A			B	

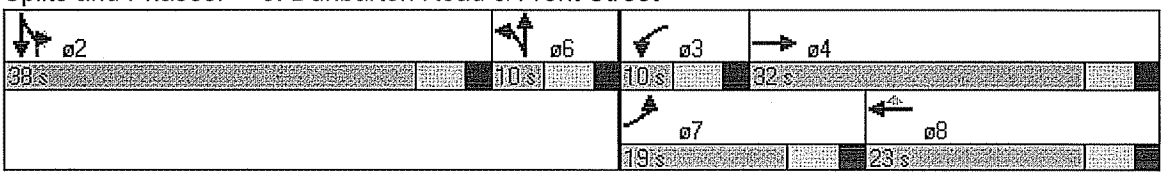
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

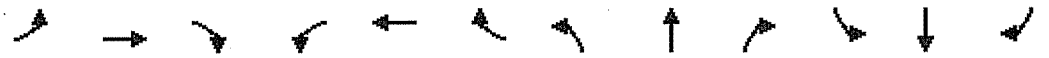
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	265	450	10	150	125	80	30	630	20
Lane Group Flow (vph)	279	479	11	158	132	95	32	663	168
Turn Type	Prot		Prot		Perm		custom	Split	
Protected Phases	7	4	3	8		6		2	2
Permitted Phases					8		2		
Detector Phases	7	4	3	8	8	6	2	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	23.0
Total Split (s)	19.0	32.0	10.0	23.0	23.0	10.0	38.0	38.0	38.0
Total Split (%)	21.1%	35.6%	11.1%	25.6%	25.6%	11.1%	42.2%	42.2%	42.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
v/c Ratio	0.90	0.70	0.10	0.51	0.35	0.73	0.05	0.94	0.23
Control Delay	67.6	30.6	43.1	38.1	8.6	72.1	6.7	49.0	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	30.6	43.1	38.1	8.6	72.1	6.7	49.0	5.3
Queue Length 50th (ft)	148	206	6	78	0	51	0	334	7
Queue Length 95th (ft)	#311	#415	23	136	46	#137	18	#602	48
Internal Link Dist (ft)		1257		372		315			785
Turn Bay Length (ft)	400		150		150		100	500	
Base Capacity (vph)	311	684	114	393	438	130	651	706	734
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.70	0.10	0.40	0.30	0.73	0.05	0.94	0.23

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 85.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Dunbarton Road & Front Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1860		1770	1863	1583		1852	1583	1770	1618	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1860		1770	1863	1583		1852	1583	1770	1618	
Volume (vph)	265	450	5	10	150	125	10	80	30	630	20	140
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	279	474	5	11	158	132	11	84	32	663	21	147
RTOR Reduction (vph)	0	1	0	0	0	104	0	0	20	0	92	0
Lane Group Flow (vph)	279	478	0	11	158	28	0	95	12	663	76	0
Turn Type	Prot			Prot		Perm	Split		custom	Split		
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases						8			2			
Actuated Green, G (s)	13.0	29.4		0.8	17.2	17.2		4.0	32.0	32.0	32.0	
Effective Green, g (s)	15.0	31.4		2.8	19.2	19.2		6.0	34.0	34.0	34.0	
Actuated g/C Ratio	0.17	0.35		0.03	0.21	0.21		0.07	0.38	0.38	0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	294	647		55	397	337		123	597	667	610	
v/s Ratio Prot	c0.16	c0.26		0.01	0.08			c0.05		c0.37	0.05	
v/s Ratio Perm						0.02			0.01			
v/c Ratio	0.95	0.74		0.20	0.40	0.08		0.77	0.02	0.99	0.13	
Uniform Delay, d1	37.2	25.8		42.6	30.5	28.4		41.4	17.6	28.0	18.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	38.5	4.4		1.8	0.7	0.1		25.4	0.0	33.1	0.1	
Delay (s)	75.7	30.2		44.4	31.2	28.6		66.8	17.7	61.1	18.5	
Level of Service	E	C		D	C	C		E	B	E	B	
Approach Delay (s)		47.0			30.5			54.4			52.5	
Approach LOS		D			C			D			D	

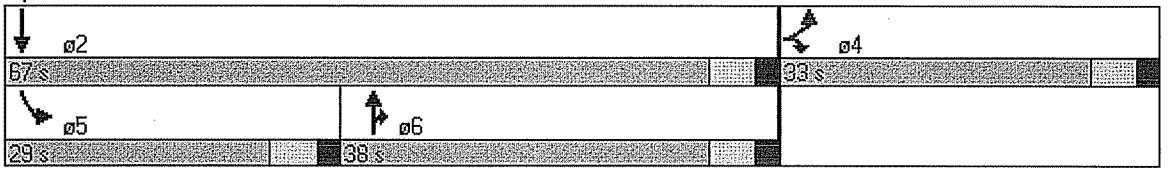
Intersection Summary			
HCM Average Control Delay	47.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

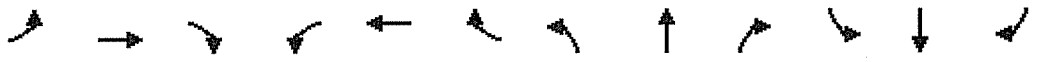
Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	25	350	385	150	500	750
Lane Group Flow (vph)	26	368	405	158	526	789
Turn Type	Prot	custom		Prot	Prot	
Protected Phases	4	4	6	6	5	2
Permitted Phases						
Detector Phases	4	4	6	6	5	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	23.0	23.0	10.0	23.0
Total Split (s)	33.0	33.0	38.0	38.0	29.0	67.0
Total Split (%)	33.0%	33.0%	38.0%	38.0%	29.0%	67.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	None	C-Min
v/c Ratio	0.08	0.80	0.47	0.19	0.64	0.57
Control Delay	30.3	28.4	14.6	0.9	29.4	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	30.3	28.4	14.6	0.9	29.4	3.9
Queue Length 50th (ft)	14	96	95	0	83	30
Queue Length 95th (ft)	32	178	m306	m0	137	34
Internal Link Dist (ft)			785			339
Turn Bay Length (ft)	200			200	400	
Base Capacity (vph)	513	610	857	814	882	1375
Starvation Cap Reductn	0	0	0	0	0	182
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.60	0.47	0.19	0.60	0.66

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 14 (14%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Ex 7 SB Off & Front Street





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	1.00		1.00					1.00	1.00	0.97	1.00	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770		1583					1863	1583	3433	1863	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770		1583					1863	1583	3433	1863	
Volume (vph)	25	0	350	0	0	0	0	385	150	500	750	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	0	368	0	0	0	0	405	158	526	789	0
RTOR Reduction (vph)	0	0	173	0	0	0	0	0	85	0	0	0
Lane Group Flow (vph)	26	0	195	0	0	0	0	405	73	526	789	0
Turn Type	Prot		custom						Prot	Prot		
Protected Phases	4		4					6	6	5	2	
Permitted Phases												
Actuated Green, G (s)	16.2		16.2					44.0	44.0	21.8	71.8	
Effective Green, g (s)	18.2		18.2					46.0	46.0	23.8	73.8	
Actuated g/C Ratio	0.18		0.18					0.46	0.46	0.24	0.74	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	322		288					857	728	817	1375	
v/s Ratio Prot	0.01		c0.12					0.22	0.05	c0.15	c0.42	
v/s Ratio Perm												
v/c Ratio	0.08		0.68					0.47	0.10	0.64	0.57	
Uniform Delay, d1	34.0		38.1					18.6	15.3	34.3	6.0	
Progression Factor	1.00		1.00					0.61	0.15	0.77	0.27	
Incremental Delay, d2	0.1		6.1					1.2	0.2	1.4	1.4	
Delay (s)	34.1		44.3					12.6	2.4	27.7	3.0	
Level of Service	C		D					B	A	C	A	
Approach Delay (s)		43.6			0.0			9.7			12.9	
Approach LOS		D			A			A			B	

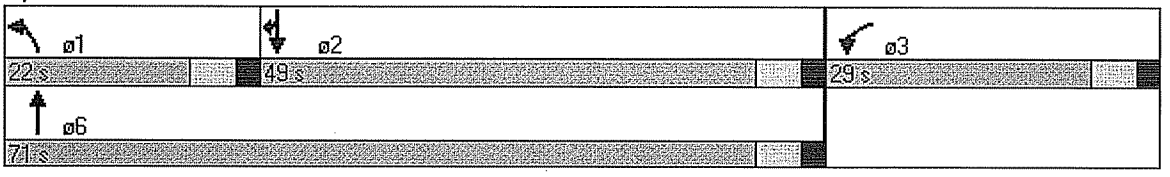
Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

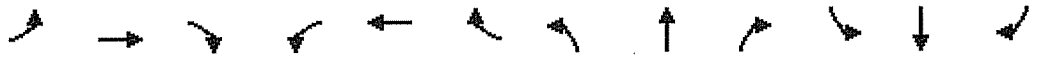
Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	200	1100	110	300	1050	50
Lane Group Flow (vph)	211	1158	116	316	1105	53
Turn Type	Prot	Free	Prot			Prot
Protected Phases	3		1	6	2	2
Permitted Phases		Free				
Detector Phases	3		1	6	2	2
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	10.0		10.0	23.0	23.0	23.0
Total Split (s)	29.0	0.0	22.0	71.0	49.0	49.0
Total Split (%)	29.0%	0.0%	22.0%	71.0%	49.0%	49.0%
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?						
Recall Mode	None		None	C-Min	C-Min	C-Min
v/c Ratio	0.64	0.73	0.48	0.23	0.56	0.06
Control Delay	45.9	3.0	29.5	17.1	17.1	7.8
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0
Total Delay	45.9	3.0	29.5	17.9	17.2	7.8
Queue Length 50th (ft)	125	0	73	102	225	6
Queue Length 95th (ft)	186	0	132	303	363	30
Internal Link Dist (ft)				339	377	
Turn Bay Length (ft)	200					100
Base Capacity (vph)	443	1583	319	1366	1971	895
Starvation Cap Reductn	0	0	0	756	0	0
Spillback Cap Reductn	0	0	0	0	27	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.73	0.36	0.52	0.57	0.06

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 88 (88%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ex7 NB On & Front Street





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				1.00		1.00	1.00	1.00			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1583	1770	1863			3539	1583
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1770		1583	1770	1863			3539	1583
Volume (vph)	0	0	0	200	0	1100	110	300	0	0	1050	50
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	211	0	1158	116	316	0	0	1105	53
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	211	0	1158	116	316	0	0	1105	40
Turn Type				Prot		Free	Prot					Prot
Protected Phases				3			1	6			2	2
Permitted Phases						Free						
Actuated Green, G (s)				16.7		100.0	11.7	71.3			53.6	53.6
Effective Green, g (s)				18.7		100.0	13.7	73.3			55.6	55.6
Actuated g/C Ratio				0.19		1.00	0.14	0.73			0.56	0.56
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)				331		1583	242	1366			1968	880
v/s Ratio Prot				0.12			0.07	0.17			0.31	0.03
v/s Ratio Perm						c0.73						
v/c Ratio				0.64		0.73	0.48	0.23			0.56	0.05
Uniform Delay, d1				37.5		0.0	39.9	4.3			14.3	10.1
Progression Factor				1.00		1.00	0.60	3.37			1.00	1.00
Incremental Delay, d2				4.0		3.0	1.4	0.4			1.2	0.1
Delay (s)				41.5		3.0	25.2	14.8			15.5	10.2
Level of Service				D		A	C	B			B	B
Approach Delay (s)		0.0			9.0			17.6			15.3	
Approach LOS		A			A			B			B	

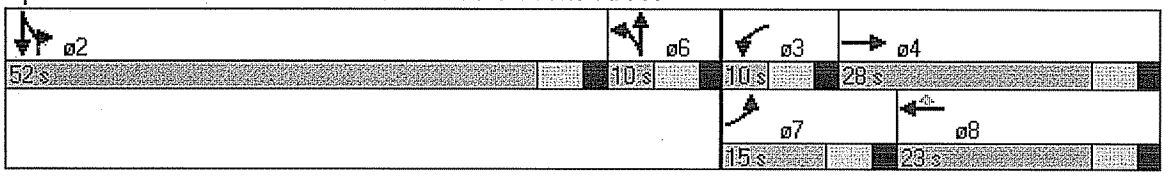
Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

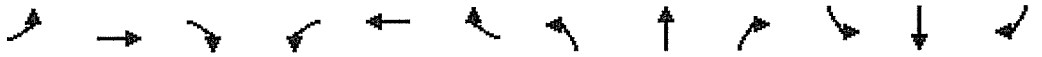
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	170	100	30	100	325	40	20	780	100
Lane Group Flow (vph)	179	116	32	105	342	53	21	821	337
Turn Type	Prot		Prot		Perm		custom	Split	
Protected Phases	7	4	3	8		6		2	2
Permitted Phases					8		2		
Detector Phases	7	4	3	8	8	6	2	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	23.0
Total Split (s)	15.0	28.0	10.0	23.0	23.0	10.0	52.0	52.0	52.0
Total Split (%)	15.0%	28.0%	10.0%	23.0%	23.0%	10.0%	52.0%	52.0%	52.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	Min	C-Min	C-Min	C-Min
v/c Ratio	0.92	0.28	0.30	0.43	0.68	0.46	0.02	0.87	0.35
Control Delay	91.8	33.4	52.8	44.3	11.5	59.0	5.4	33.0	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.8	33.4	52.8	44.3	11.5	59.0	5.4	33.0	9.6
Queue Length 50th (ft)	115	63	20	63	0	33	0	416	84
Queue Length 95th (ft)	#244	106	51	107	77	#75	12	#764	m127
Internal Link Dist (ft)		1257		372		315			785
Turn Bay Length (ft)	400		150		150		100	500	
Base Capacity (vph)	195	453	106	354	578	115	859	949	967
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.26	0.30	0.30	0.59	0.46	0.02	0.87	0.35

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 42 (42%), Referenced to phase 2:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Dunbarton Road & Front Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1836		1770	1863	1583		1844	1583	1770	1670	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1836		1770	1863	1583		1844	1583	1770	1670	
Volume (vph)	170	100	10	30	100	325	10	40	20	780	100	220
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	105	11	32	105	342	11	42	21	821	105	232
RTOR Reduction (vph)	0	4	0	0	0	289	0	0	10	0	75	0
Lane Group Flow (vph)	179	112	0	32	105	53	0	53	11	821	262	0
Turn Type	Prot			Prot		Perm	Split		custom	Split		
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases						8			2			
Actuated Green, G (s)	9.0	20.2		2.4	13.6	13.6		4.2	49.2	49.2	49.2	
Effective Green, g (s)	11.0	22.2		4.4	15.6	15.6		6.2	51.2	51.2	51.2	
Actuated g/C Ratio	0.11	0.22		0.04	0.16	0.16		0.06	0.51	0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	195	408		78	291	247		114	810	906	855	
v/s Ratio Prot	c0.10	0.06		0.02	c0.06			c0.03		c0.46	0.16	
v/s Ratio Perm						0.03			0.01			
v/c Ratio	0.92	0.27		0.41	0.36	0.22		0.46	0.01	0.91	0.31	
Uniform Delay, d1	44.1	32.2		46.5	37.7	36.9		45.3	12.0	22.2	14.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.14	1.17	
Incremental Delay, d2	41.6	0.4		3.5	0.8	0.4		3.0	0.0	11.5	0.7	
Delay (s)	85.6	32.6		50.0	38.5	37.3		48.3	12.0	36.7	17.3	
Level of Service	F	C		D	D	D		D	B	D	B	
Approach Delay (s)		64.8			38.4			38.0			31.1	
Approach LOS		E			D			D			C	

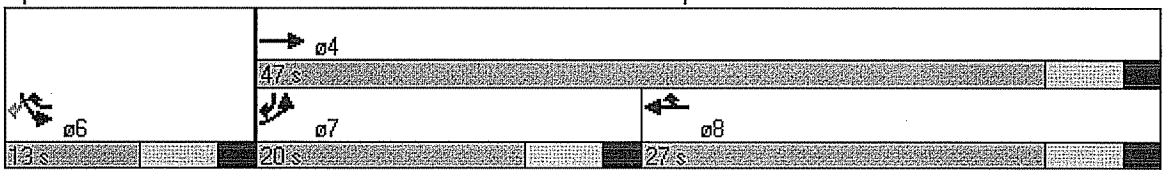
Intersection Summary			
HCM Average Control Delay	38.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	290	400	445	335	125	85
Lane Group Flow (vph)	305	421	468	353	132	89
Turn Type	Prot			pt+ov		pm+ov
Protected Phases	7	4	8	8 6	6	7
Permitted Phases						6
Detector Phases	7	4	8	8 6	6	7
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	12.0	22.0	22.0		12.0	12.0
Total Split (s)	20.0	47.0	27.0	40.0	13.0	20.0
Total Split (%)	33.3%	78.3%	45.0%	66.7%	21.7%	33.3%
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			Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max		Min	None
v/c Ratio	0.69	0.31	0.62	0.33	0.51	0.11
Control Delay	29.5	3.8	10.0	4.7	31.1	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	3.8	10.0	4.7	31.1	2.8
Queue Length 50th (ft)	97	42	122	54	45	0
Queue Length 95th (ft)	#173	70	m173	m58	91	18
Internal Link Dist (ft)		1027	684		170	
Turn Bay Length (ft)	350			300		150
Base Capacity (vph)	472	1341	754	1077	266	806
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.31	0.62	0.33	0.50	0.11

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 36 (60%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: New E-W Road & Exit 7 SB Ramps



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Volume (vph)	290	400	445	335	125	85
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	305	421	468	353	132	89
RTOR Reduction (vph)	0	0	0	94	0	54
Lane Group Flow (vph)	305	421	468	259	132	35
Turn Type	Prot			pt+ov		pm+ov
Protected Phases	7	4	8	8 6	6	7
Permitted Phases						6
Actuated Green, G (s)	12.9	41.2	22.3	35.1	6.8	19.7
Effective Green, g (s)	14.9	43.2	24.3	37.1	8.8	23.7
Actuated g/C Ratio	0.25	0.72	0.40	0.62	0.15	0.39
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)	440	1341	755	979	260	731
v/s Ratio Prot	c0.17	0.23	c0.25	0.16	c0.07	0.01
v/s Ratio Perm						0.01
v/c Ratio	0.69	0.31	0.62	0.26	0.51	0.05
Uniform Delay, d1	20.5	3.0	14.2	5.2	23.6	11.2
Progression Factor	1.00	1.00	0.49	2.10	1.00	1.00
Incremental Delay, d2	4.7	0.6	2.4	0.1	1.6	0.0
Delay (s)	25.2	3.7	9.4	11.0	25.2	11.2
Level of Service	C	A	A	B	C	B
Approach Delay (s)		12.7	10.1		19.5	
Approach LOS		B	B		B	

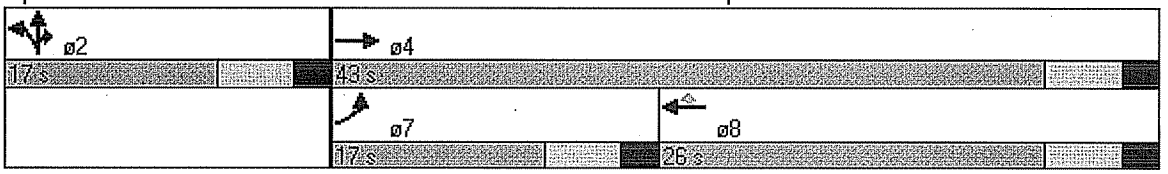
Intersection Summary				
HCM Average Control Delay	12.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	56.4%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

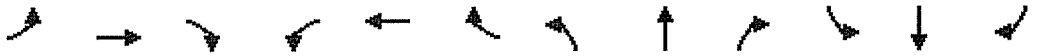
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Volume (vph)	280	245	510	25	1	300
Lane Group Flow (vph)	295	258	537	26	285	316
Turn Type	Prot			Perm		Prot
Protected Phases	7	4	8		2	2
Permitted Phases				8		
Detector Phases	7	4	8	8	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	22.0	22.0	22.0	12.0	12.0
Total Split (s)	17.0	43.0	26.0	26.0	17.0	17.0
Total Split (%)	28.3%	71.7%	43.3%	43.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	Min	Min
v/c Ratio	0.78	0.21	0.77	0.04	0.76	0.54
Control Delay	38.7	6.8	25.7	4.8	37.4	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	6.8	25.7	4.8	37.4	6.8
Queue Length 50th (ft)	107	44	175	1	97	0
Queue Length 95th (ft)	#217	77	#321	m10	#201	55
Internal Link Dist (ft)		684	266		489	
Turn Bay Length (ft)	400			200		200
Base Capacity (vph)	384	1219	697	608	385	591
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.21	0.77	0.04	0.74	0.53

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 5 (8%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: New E-W Road & Exit 7 NB On Ramp





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	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1774	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1583		1774	1583			
Volume (vph)	280	245	0	0	510	25	270	1	300	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	295	258	0	0	537	26	284	1	316	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	249	0	0	0
Lane Group Flow (vph)	295	258	0	0	537	10	0	285	67	0	0	0
Turn Type	Prot					Perm	Split		Prot			
Protected Phases	7	4			8		2	2	2			
Permitted Phases						8						
Actuated Green, G (s)	10.8	37.3			20.5	20.5		10.7	10.7			
Effective Green, g (s)	12.8	39.3			22.5	22.5		12.7	12.7			
Actuated g/C Ratio	0.21	0.65			0.38	0.38		0.21	0.21			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	378	1220			699	594		375	335			
v/s Ratio Prot	c0.17	0.14			c0.29			c0.16	0.04			
v/s Ratio Perm						0.01						
v/c Ratio	0.78	0.21			0.77	0.02		0.76	0.20			
Uniform Delay, d1	22.3	4.1			16.5	11.8		22.2	19.5			
Progression Factor	1.01	1.47			0.96	0.82		1.00	1.00			
Incremental Delay, d2	9.6	0.4			7.8	0.0		8.8	0.3			
Delay (s)	32.0	6.5			23.6	9.7		31.0	19.8			
Level of Service	C	A			C	A		C	B			
Approach Delay (s)		20.1			22.9			25.1			0.0	
Approach LOS		C			C			C			A	

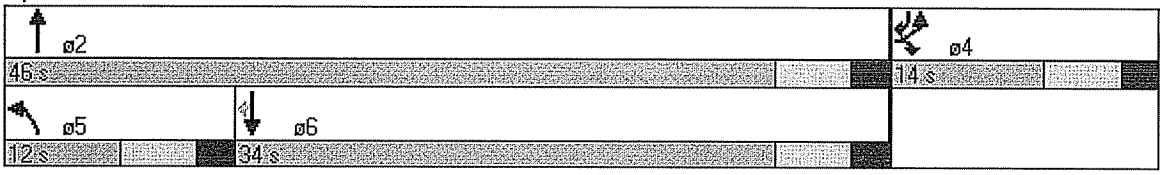
Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	155	160	80	350	620	440
Lane Group Flow (vph)	163	168	84	368	653	463
Turn Type		Prot	Prot			pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases						6
Detector Phases	4	4	5	2	6	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	12.0	12.0	22.0	22.0	12.0
Total Split (s)	14.0	14.0	12.0	46.0	34.0	14.0
Total Split (%)	23.3%	23.3%	20.0%	76.7%	56.7%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	None
v/c Ratio	0.52	0.40	0.35	0.29	0.67	0.35
Control Delay	27.1	6.8	28.2	4.4	15.9	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	6.8	28.2	4.4	15.9	1.0
Queue Length 50th (ft)	50	0	28	48	188	0
Queue Length 95th (ft)	111	33	64	65	279	16
Internal Link Dist (ft)	587			1267	746	
Turn Bay Length (ft)		150	200			300
Base Capacity (vph)	325	427	242	1314	1016	1331
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.39	0.35	0.28	0.64	0.35

Intersection Summary

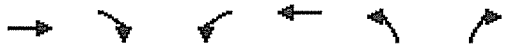
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 56 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: New E-W Road & Front Street



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Volume (vph)	155	160	80	350	620	440
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	163	168	84	368	653	463
RTOR Reduction (vph)	0	138	0	0	0	147
Lane Group Flow (vph)	163	30	84	368	653	316
Turn Type		Prot	Prot			pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	8.7	8.7	5.0	39.3	28.3	37.0
Effective Green, g (s)	10.7	10.7	7.0	41.3	30.3	41.0
Actuated g/C Ratio	0.18	0.18	0.12	0.69	0.50	0.68
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	316	282	207	1282	941	1187
v/s Ratio Prot	c0.09	0.02	c0.05	0.20	c0.35	0.05
v/s Ratio Perm						0.15
v/c Ratio	0.52	0.11	0.41	0.29	0.69	0.27
Uniform Delay, d1	22.3	20.6	24.6	3.6	11.3	3.7
Progression Factor	0.93	0.82	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2	1.3	0.6	4.2	0.1
Delay (s)	22.1	17.0	25.9	4.2	15.5	3.8
Level of Service	C	B	C	A	B	A
Approach Delay (s)	19.5			8.2	10.7	
Approach LOS	B			A	B	

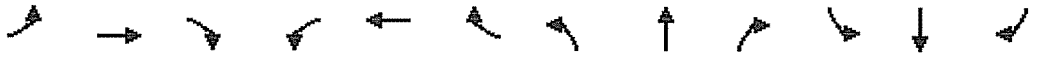
Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	450	45	300	230	50	240
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	474	47	316	242	53	253
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					Raised	
Median storage veh)					0	
Upstream signal (ft)				1107		
pX, platoon unblocked						
vC, conflicting volume			521		1347	474
vC1, stage 1 conf vol					474	
vC2, stage 2 conf vol					874	
vCu, unblocked vol			521		1347	474
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			70		68	57
cM capacity (veh/h)			1045		165	591

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	474	47	316	242	305
Volume Left	0	0	316	0	53
Volume Right	0	47	0	0	253
cSH	1700	1700	1045	1700	714
Volume to Capacity	0.28	0.03	0.30	0.14	0.43
Queue Length 95th (ft)	0	0	32	0	54
Control Delay (s)	0.0	0.0	9.9	0.0	19.2
Lane LOS			A		C
Approach Delay (s)	0.0		5.6		19.2
Approach LOS					C

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		-2%			2%			2%			-8%	
Volume (veh/h)	25	220	300	150	360	10	25	1	45	50	1	150
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	26	232	316	158	379	11	26	1	47	53	1	158
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			6
Median type								Raised			Raised	
Median storage veh)								0			0	
Upstream signal (ft)		346			999							
pX, platoon unblocked												
vC, conflicting volume	389			547			1058	989	232	1008	1300	384
vC1, stage 1 conf vol							284	284		700	700	
vC2, stage 2 conf vol							774	705		308	600	
vCu, unblocked vol	389			547			1058	989	232	1008	1300	384
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			85			82	100	94	74	99	76
cM capacity (veh/h)	1169			1022			144	212	807	200	163	664

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	26	232	316	158	389	75	212
Volume Left	26	0	0	158	0	26	53
Volume Right	0	0	316	0	11	47	158
cSH	1169	1700	1700	1022	1700	401	787
Volume to Capacity	0.02	0.14	0.19	0.15	0.23	0.19	0.27
Queue Length 95th (ft)	2	0	0	14	0	17	27
Control Delay (s)	8.2	0.0	0.0	9.2	0.0	19.0	16.5
Lane LOS	A			A		C	C
Approach Delay (s)	0.4			2.6		19.0	16.5
Approach LOS						C	C

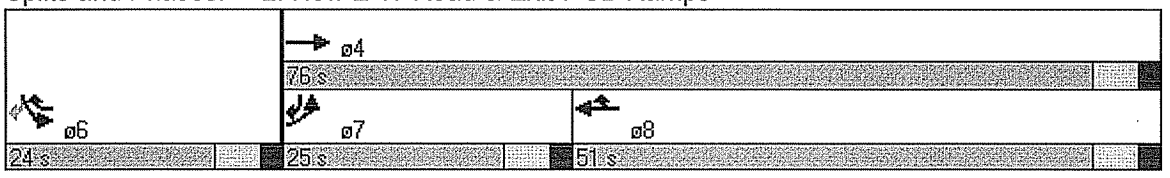
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

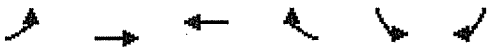
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	150	485	540	200	125	150
Lane Group Flow (vph)	158	511	568	211	132	158
Turn Type	Prot			pt+ov		pm+ov
Protected Phases	7	4	8	8 6	6	7
Permitted Phases						6
Detector Phases	7	4	8	8 6	6	7
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	12.0	22.0	22.0		12.0	12.0
Total Split (s)	25.0	76.0	51.0	75.0	24.0	25.0
Total Split (%)	25.0%	76.0%	51.0%	75.0%	24.0%	25.0%
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			Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max		Min	None
v/c Ratio	0.56	0.35	0.53	0.17	0.52	0.24
Control Delay	45.8	4.6	7.5	0.3	46.2	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	4.6	7.5	0.3	46.2	3.9
Queue Length 50th (ft)	94	80	26	0	79	0
Queue Length 95th (ft)	149	153	m237	m0	131	35
Internal Link Dist (ft)		1027	684		170	
Turn Bay Length (ft)	350			300		150
Base Capacity (vph)	374	1446	1074	1331	354	721
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.35	0.53	0.16	0.37	0.22

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 50 (50%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: New E-W Road & Exit 7 SB Ramps





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Volume (vph)	150	485	540	200	125	150
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	511	568	211	132	158
RTOR Reduction (vph)	0	0	0	50	0	110
Lane Group Flow (vph)	158	511	568	161	132	48
Turn Type	Prot			pt+ov		pm+ov
Protected Phases	7	4	8	8 6	6	7
Permitted Phases						6
Actuated Green, G (s)	13.9	75.6	55.7	74.1	12.4	26.3
Effective Green, g (s)	15.9	77.6	57.7	76.1	14.4	30.3
Actuated g/C Ratio	0.16	0.78	0.58	0.76	0.14	0.30
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)	281	1446	1075	1205	255	543
v/s Ratio Prot	c0.09	0.27	c0.30	0.10	c0.07	0.01
v/s Ratio Perm						0.02
v/c Ratio	0.56	0.35	0.53	0.13	0.52	0.09
Uniform Delay, d1	38.8	3.5	12.9	3.2	39.6	25.0
Progression Factor	1.00	1.00	0.41	0.13	1.00	1.00
Incremental Delay, d2	2.6	0.7	1.3	0.0	1.8	0.1
Delay (s)	41.4	4.1	6.6	0.4	41.4	25.0
Level of Service	D	A	A	A	D	C
Approach Delay (s)		12.9	4.9		32.5	
Approach LOS		B	A		C	

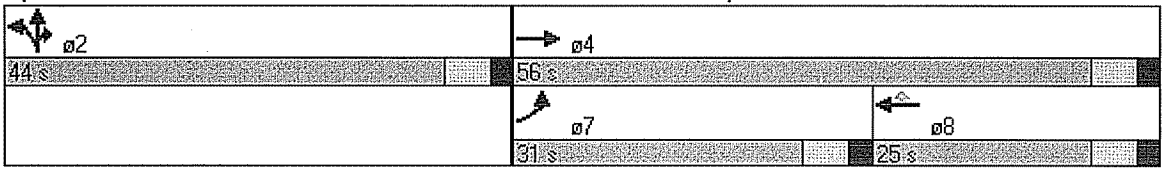
Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

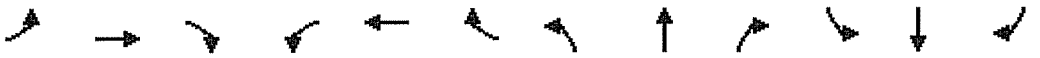
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Volume (vph)	310	300	240	50	1	500
Lane Group Flow (vph)	326	316	253	53	527	526
Turn Type	Prot			Perm		Prot
Protected Phases	7	4	8		2	2
Permitted Phases				8		
Detector Phases	7	4	8	8	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	22.0	22.0	22.0	12.0	12.0
Total Split (s)	31.0	56.0	25.0	25.0	44.0	44.0
Total Split (%)	31.0%	56.0%	25.0%	25.0%	44.0%	44.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	Min	Min
v/c Ratio	0.78	0.30	0.46	0.11	0.84	0.60
Control Delay	51.3	11.1	29.9	5.8	42.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	11.1	29.9	5.8	42.6	5.6
Queue Length 50th (ft)	186	78	144	0	298	11
Queue Length 95th (ft)	263	148	239	m18	413	81
Internal Link Dist (ft)		684	266		489	
Turn Bay Length (ft)	400			200		200
Base Capacity (vph)	478	1057	545	500	709	933
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.30	0.46	0.11	0.74	0.56

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 4 (4%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: New E-W Road & Exit 7 NB On Ramp





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	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1774	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1583		1774	1583			
Volume (vph)	310	300	0	0	240	50	500	1	500	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	326	316	0	0	253	53	526	1	526	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	323	0	0	0
Lane Group Flow (vph)	326	316	0	0	253	16	0	527	203	0	0	0
Turn Type	Prot					Perm	Split		Prot			
Protected Phases	7	4			8		2	2	2			
Permitted Phases						8						
Actuated Green, G (s)	21.5	54.8			27.3	27.3		33.2	33.2			
Effective Green, g (s)	23.5	56.8			29.3	29.3		35.2	35.2			
Actuated g/C Ratio	0.24	0.57			0.29	0.29		0.35	0.35			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	416	1058			546	464		624	557			
v/s Ratio Prot	c0.18	0.17			c0.14			c0.30	0.13			
v/s Ratio Perm						0.01						
v/c Ratio	0.78	0.30			0.46	0.03		0.84	0.36			
Uniform Delay, d1	35.9	11.2			28.9	25.2		29.9	24.1			
Progression Factor	1.08	0.83			0.83	0.56		1.00	1.00			
Incremental Delay, d2	8.8	0.7			2.8	0.1		10.2	0.4			
Delay (s)	47.5	10.1			26.9	14.3		40.1	24.5			
Level of Service	D	B			C	B		D	C			
Approach Delay (s)		29.1			24.8			32.3			0.0	
Approach LOS		C			C			C			A	

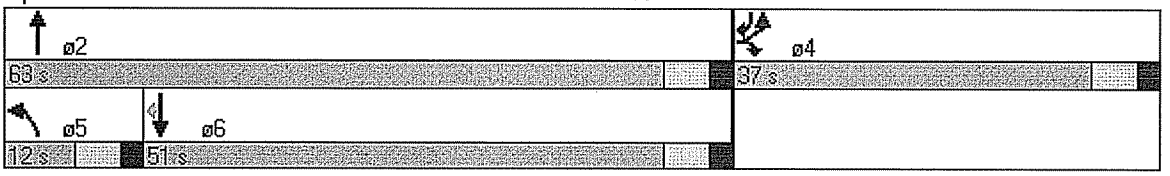
Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	525	150	75	600	800	150
Lane Group Flow (vph)	553	158	79	632	842	158
Turn Type		Prot	Prot			pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases						6
Detector Phases	4	4	5	2	6	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	12.0	12.0	22.0	22.0	12.0
Total Split (s)	37.0	37.0	12.0	63.0	51.0	37.0
Total Split (%)	37.0%	37.0%	12.0%	63.0%	51.0%	37.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	None
v/c Ratio	0.95	0.27	0.56	0.57	0.91	0.11
Control Delay	59.0	9.2	60.1	15.3	40.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	9.2	60.1	15.3	40.5	0.4
Queue Length 50th (ft)	358	23	49	232	502	0
Queue Length 95th (ft)	#550	61	#106	335	#770	7
Internal Link Dist (ft)	587			1267	746	
Turn Bay Length (ft)		150	200			300
Base Capacity (vph)	584	594	142	1101	922	1391
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.27	0.56	0.57	0.91	0.11

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 11 (11%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: New E-W Road & Front Street



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Volume (vph)	525	150	75	600	800	150
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	553	158	79	632	842	158
RTOR Reduction (vph)	0	72	0	0	0	30
Lane Group Flow (vph)	553	86	79	632	842	128
Turn Type		Prot	Prot			pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	30.9	30.9	4.8	57.1	46.3	77.2
Effective Green, g (s)	32.9	32.9	6.8	59.1	48.3	81.2
Actuated g/C Ratio	0.33	0.33	0.07	0.59	0.48	0.81
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	582	521	120	1101	900	1349
v/s Ratio Prot	c0.31	0.05	0.04	c0.34	c0.45	0.03
v/s Ratio Perm						0.05
v/c Ratio	0.95	0.17	0.66	0.57	0.94	0.10
Uniform Delay, d1	32.7	23.8	45.5	12.7	24.4	1.9
Progression Factor	0.98	0.89	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.3	0.1	12.3	2.2	17.9	0.0
Delay (s)	56.3	21.3	57.8	14.8	42.3	1.9
Level of Service	E	C	E	B	D	A
Approach Delay (s)	48.5			19.6	35.9	
Approach LOS	D			B	D	

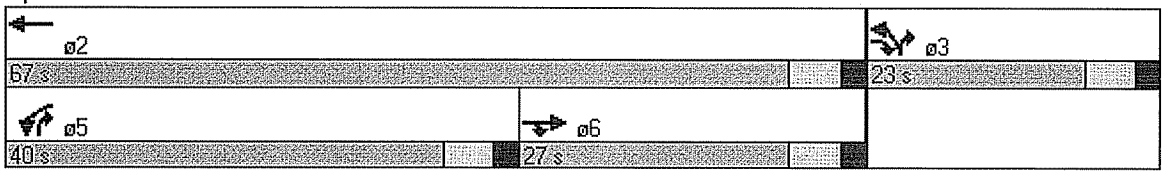
Intersection Summary				
HCM Average Control Delay	34.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	85.3%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	370	45	600	150	50	630
Lane Group Flow (vph)	389	47	632	158	53	663
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Detector Phases	6	6 3	5	2	3	3 5
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	23.0		10.0	23.0	23.0	
Total Split (s)	27.0	50.0	40.0	67.0	23.0	63.0
Total Split (%)	30.0%	55.6%	44.4%	74.4%	25.6%	70.0%
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?						
Recall Mode	C-Max		None	C-Min	Min	
v/c Ratio	0.82	0.06	0.88	0.12	0.15	0.61
Control Delay	47.1	3.7	27.4	1.8	30.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	3.7	27.4	1.8	30.2	9.5
Queue Length 50th (ft)	208	0	112	9	25	144
Queue Length 95th (ft)	#355	16	#521	15	56	242
Internal Link Dist (ft)	2844			1027	1184	
Turn Bay Length (ft)		150	500			150
Base Capacity (vph)	476	832	720	1317	374	1085
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.06	0.88	0.12	0.14	0.61

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Dunbarton Road & New E-W Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	370	45	600	150	50	630
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	389	47	632	158	53	663
RTOR Reduction (vph)	0	23	0	0	0	51
Lane Group Flow (vph)	389	24	632	158	53	612
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Actuated Green, G (s)	21.0	43.4	34.6	61.6	16.4	57.0
Effective Green, g (s)	23.0	45.4	36.6	63.6	18.4	59.0
Actuated g/C Ratio	0.26	0.50	0.41	0.71	0.20	0.66
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)	476	799	720	1317	362	1038
v/s Ratio Prot	c0.21	0.01	c0.36	0.08	0.03	c0.39
v/s Ratio Perm						
v/c Ratio	0.82	0.03	0.88	0.12	0.15	0.59
Uniform Delay, d1	31.5	11.2	24.6	4.2	29.4	8.7
Progression Factor	1.00	1.00	0.50	0.36	1.00	1.00
Incremental Delay, d2	14.4	0.0	10.6	0.2	0.2	0.9
Delay (s)	45.9	11.2	22.9	1.7	29.5	9.6
Level of Service	D	B	C	A	C	A
Approach Delay (s)	42.2			18.7	11.0	
Approach LOS	D			B	B	

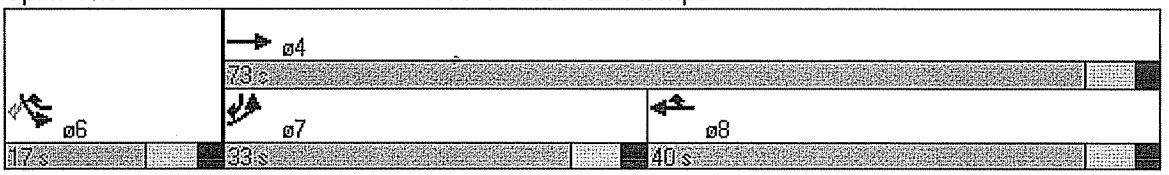
Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

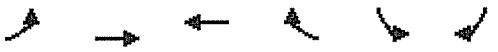
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	340	660	465	335	125	285
Lane Group Flow (vph)	358	695	489	353	132	300
Turn Type	Prot			pt+ov		pm+ov
Protected Phases	7	4	8	8 6	6	7
Permitted Phases						6
Detector Phases	7	4	8	8 6	6	7
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	12.0	22.0	22.0		12.0	12.0
Total Split (s)	33.0	73.0	40.0	57.0	17.0	33.0
Total Split (%)	36.7%	81.1%	44.4%	63.3%	18.9%	36.7%
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			Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max		Min	None
v/c Ratio	0.75	0.48	0.57	0.32	0.56	0.36
Control Delay	41.4	3.0	11.1	5.7	45.7	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	3.0	11.1	5.7	45.7	5.1
Queue Length 50th (ft)	166	60	195	87	70	23
Queue Length 95th (ft)	m233	m107	m227	m98	128	64
Internal Link Dist (ft)		1027	684		170	
Turn Bay Length (ft)	350			300		150
Base Capacity (vph)	570	1448	860	1119	256	903
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.48	0.57	0.32	0.52	0.33

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 81 (90%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: New E-W Road & Exit 7 SB Ramps





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Volume (vph)	340	660	465	335	125	285
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	358	695	489	353	132	300
RTOR Reduction (vph)	0	0	0	92	0	131
Lane Group Flow (vph)	358	695	489	261	132	169
Turn Type	Prot			pt+ov		pm+ov
Protected Phases	7	4	8	8 6	6	7
Permitted Phases						6
Actuated Green, G (s)	22.4	67.9	39.5	55.6	10.1	32.5
Effective Green, g (s)	24.4	69.9	41.5	57.6	12.1	36.5
Actuated g/C Ratio	0.27	0.78	0.46	0.64	0.13	0.41
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)	480	1447	859	1013	238	712
v/s Ratio Prot	c0.20	0.37	c0.26	0.16	c0.07	0.06
v/s Ratio Perm						0.04
v/c Ratio	0.75	0.48	0.57	0.26	0.55	0.24
Uniform Delay, d1	30.0	3.6	17.7	7.0	36.4	17.6
Progression Factor	1.15	0.57	0.50	2.07	1.00	1.00
Incremental Delay, d2	4.5	0.8	1.2	0.1	2.8	0.2
Delay (s)	39.0	2.9	10.0	14.5	39.2	17.8
Level of Service	D	A	B	B	D	B
Approach Delay (s)		15.2	11.9		24.3	
Approach LOS		B	B		C	

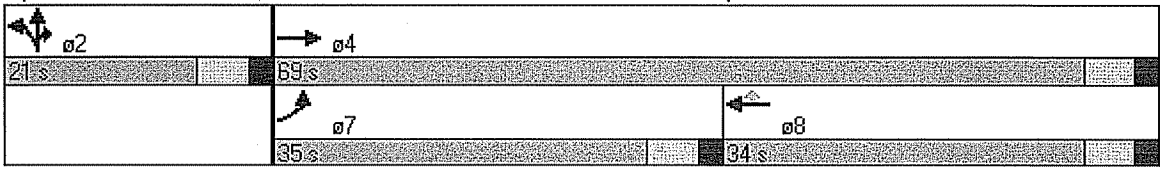
Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Volume (vph)	540	245	510	25	1	300
Lane Group Flow (vph)	568	258	537	26	306	316
Turn Type	Prot			Perm		Prot
Protected Phases	7	4	8		2	2
Permitted Phases				8		
Detector Phases	7	4	8	8	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	22.0	22.0	22.0	12.0	12.0
Total Split (s)	35.0	69.0	34.0	34.0	21.0	21.0
Total Split (%)	38.9%	76.7%	37.8%	37.8%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	Min	Min
v/c Ratio	0.94	0.19	0.86	0.05	0.91	0.57
Control Delay	51.9	4.7	41.7	6.8	69.2	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	4.7	41.7	6.8	69.2	8.4
Queue Length 50th (ft)	312	51	290	0	172	0
Queue Length 95th (ft)	#517	72	#455	m14	#324	70
Internal Link Dist (ft)		684	266		489	
Turn Bay Length (ft)	400			200		200
Base Capacity (vph)	610	1346	626	549	335	555
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.19	0.86	0.05	0.91	0.57

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 37 (41%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: New E-W Road & Exit 7 NB On Ramp



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	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1774	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1583		1774	1583			
Volume (vph)	540	245	0	0	510	25	290	1	300	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	568	258	0	0	537	26	305	1	316	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	256	0	0	0
Lane Group Flow (vph)	568	258	0	0	537	9	0	306	60	0	0	0
Turn Type	Prot					Perm	Split		Prot			
Protected Phases	7	4			8		2	2	2			
Permitted Phases						8						
Actuated Green, G (s)	28.7	63.0			28.3	28.3		15.0	15.0			
Effective Green, g (s)	30.7	65.0			30.3	30.3		17.0	17.0			
Actuated g/C Ratio	0.34	0.72			0.34	0.34		0.19	0.19			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	604	1346			627	533		335	299			
v/s Ratio Prot	c0.32	0.14			c0.29			c0.17	0.04			
v/s Ratio Perm						0.01						
v/c Ratio	0.94	0.19			0.86	0.02		0.91	0.20			
Uniform Delay, d1	28.8	4.0			27.8	19.9		35.8	30.8			
Progression Factor	0.97	1.07			0.94	0.81		1.00	1.00			
Incremental Delay, d2	21.0	0.3			13.9	0.1		28.2	0.3			
Delay (s)	48.9	4.6			40.1	16.2		63.9	31.1			
Level of Service	D	A			D	B		E	C			
Approach Delay (s)		35.1			39.0			47.3			0.0	
Approach LOS		D			D			D			A	

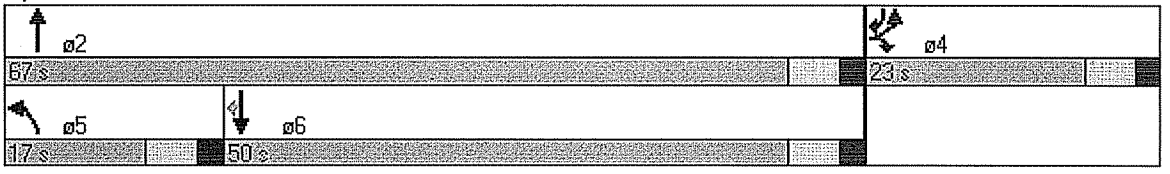
Intersection Summary			
HCM Average Control Delay	40.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	155	160	80	350	620	440
Lane Group Flow (vph)	163	168	84	368	653	463
Turn Type		Prot	Prot			pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases						6
Detector Phases	4	4	5	2	6	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	12.0	12.0	22.0	22.0	12.0
Total Split (s)	23.0	23.0	17.0	67.0	50.0	23.0
Total Split (%)	25.6%	25.6%	18.9%	74.4%	55.6%	25.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	None
v/c Ratio	0.53	0.41	0.39	0.27	0.59	0.33
Control Delay	38.6	9.2	41.0	4.9	16.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	9.2	41.0	4.9	16.5	1.0
Queue Length 50th (ft)	84	8	44	60	240	0
Queue Length 95th (ft)	133	37	87	103	393	18
Internal Link Dist (ft)	587			1267	746	
Turn Bay Length (ft)		150	200			300
Base Capacity (vph)	376	469	256	1376	1113	1406
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.36	0.33	0.27	0.59	0.33

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 53 (59%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: New E-W Road & Front Street



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Volume (vph)	155	160	80	350	620	440
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	163	168	84	368	653	463
RTOR Reduction (vph)	0	139	0	0	0	113
Lane Group Flow (vph)	163	29	84	368	653	350
Turn Type		Prot	Prot			pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	13.6	13.6	7.9	64.4	50.5	64.1
Effective Green, g (s)	15.6	15.6	9.9	66.4	52.5	68.1
Actuated g/C Ratio	0.17	0.17	0.11	0.74	0.58	0.76
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	307	274	195	1374	1087	1268
v/s Ratio Prot	c0.09	0.02	c0.05	0.20	c0.35	0.05
v/s Ratio Perm						0.17
v/c Ratio	0.53	0.11	0.43	0.27	0.60	0.28
Uniform Delay, d1	33.9	31.3	37.4	3.9	12.0	3.4
Progression Factor	0.98	1.22	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.2	1.5	0.5	2.5	0.1
Delay (s)	34.8	38.3	38.9	4.3	14.5	3.5
Level of Service	C	D	D	A	B	A
Approach Delay (s)	36.6			10.8	9.9	
Approach LOS	D			B	A	

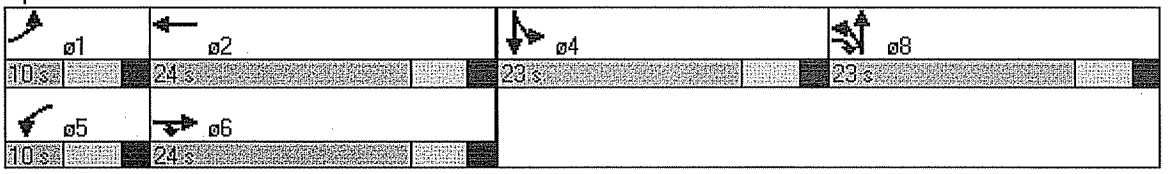
Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	5	300	730	40	250	85	40	10	80
Lane Group Flow (vph)	5	316	768	42	274	89	126	11	89
Turn Type	Prot		pt+ov	Prot		Split		Split	
Protected Phases	1	6	6 8	5	2	8	8	4	4
Permitted Phases									
Detector Phases	1	6	6 8	5	2	8	8	4	4
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0		10.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	10.0	24.0	47.0	10.0	24.0	23.0	23.0	23.0	23.0
Total Split (%)	12.5%	30.0%	58.8%	12.5%	30.0%	28.8%	28.8%	28.8%	28.8%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag		Lead	Lag				
Lead-Lag Optimize?		Yes		Yes					
Recall Mode	None	Min		None	Min	Min	Min	None	None
v/c Ratio	0.03	0.52	0.59	0.20	0.38	0.20	0.26	0.03	0.25
Control Delay	34.4	23.6	3.2	33.9	17.8	23.1	12.0	24.1	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	23.6	3.2	33.9	17.8	23.1	12.0	24.1	24.9
Queue Length 50th (ft)	2	103	10	16	64	30	14	4	30
Queue Length 95th (ft)	13	230	55	52	196	74	59	17	72
Internal Link Dist (ft)		1024			1790		1304		835
Turn Bay Length (ft)	75		300	75		500		75	
Base Capacity (vph)	197	725	1320	205	833	630	651	533	560
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.44	0.58	0.20	0.33	0.14	0.19	0.02	0.16

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 53.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Goffstown Rd & Straw Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.90		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1852		1770	1676		1770	1847	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1852		1770	1676		1770	1847	
Volume (vph)	5	300	730	40	250	10	85	40	80	10	80	5
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	316	768	42	263	11	89	42	84	11	84	5
RTOR Reduction (vph)	0	0	303	0	2	0	0	65	0	0	4	0
Lane Group Flow (vph)	5	316	465	42	272	0	89	61	0	11	85	0
Turn Type	Prot		pt+ov	Prot			Split			Split		
Protected Phases	1	6	6 8	5	2		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	0.5	16.8	28.0	1.8	18.1		11.2	11.2		5.2	5.2	
Effective Green, g (s)	2.5	18.8	32.0	3.8	20.1		13.2	13.2		7.2	7.2	
Actuated g/C Ratio	0.04	0.32	0.54	0.06	0.34		0.22	0.22		0.12	0.12	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	75	594	859	114	631		396	375		216	225	
v/s Ratio Prot	0.00	0.17	c0.29	c0.02	0.15		0.05	0.04		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.07	0.53	0.54	0.37	0.43		0.22	0.16		0.05	0.38	
Uniform Delay, d1	27.1	16.5	8.7	26.4	15.0		18.7	18.4		22.9	23.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.9	0.7	2.0	0.5		0.3	0.2		0.1	1.1	
Delay (s)	27.5	17.4	9.4	28.5	15.5		19.0	18.6		23.0	24.9	
Level of Service	C	B	A	C	B		B	B		C	C	
Approach Delay (s)		11.8			17.2			18.8			24.7	
Approach LOS		B			B			B			C	

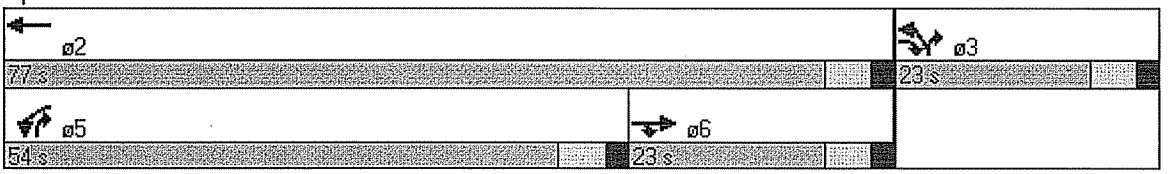
Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	180	50	735	270	75	695
Lane Group Flow (vph)	189	53	774	284	79	732
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Detector Phases	6	6 3	5	2	3	3 5
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	23.0		10.0	23.0	23.0	
Total Split (s)	23.0	46.0	54.0	77.0	23.0	77.0
Total Split (%)	23.0%	46.0%	54.0%	77.0%	23.0%	77.0%
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?						
Recall Mode	C-Max		None	C-Min	Min	
v/c Ratio	0.46	0.07	0.92	0.21	0.24	0.61
Control Delay	39.4	5.3	33.1	4.3	36.7	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	5.3	33.1	4.3	36.7	6.3
Queue Length 50th (ft)	110	0	341	47	43	95
Queue Length 95th (ft)	181	23	#669	74	86	174
Internal Link Dist (ft)	2844			1027	1184	
Turn Bay Length (ft)		150	500			150
Base Capacity (vph)	411	743	885	1368	336	1227
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.07	0.87	0.21	0.24	0.60

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 29 (29%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Dunbarton Road & New E-W Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	180	50	735	270	75	695
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	189	53	774	284	79	732
RTOR Reduction (vph)	0	29	0	0	0	90
Lane Group Flow (vph)	189	24	774	284	79	642
Turn Type		pt+ov	Prot			pt+ov
Protected Phases	6	6 3	5	2	3	3 5
Permitted Phases						
Actuated Green, G (s)	20.1	42.7	45.3	71.4	16.6	67.9
Effective Green, g (s)	22.1	44.7	47.3	73.4	18.6	69.9
Actuated g/C Ratio	0.22	0.45	0.47	0.73	0.19	0.70
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)	412	708	837	1367	329	1107
v/s Ratio Prot	c0.10	0.01	c0.44	0.15	0.04	c0.41
v/s Ratio Perm						
v/c Ratio	0.46	0.03	0.92	0.21	0.24	0.58
Uniform Delay, d1	33.8	15.5	24.7	4.2	34.7	7.6
Progression Factor	1.00	1.00	0.72	0.93	1.00	1.00
Incremental Delay, d2	3.6	0.0	13.2	0.3	0.4	0.7
Delay (s)	37.4	15.5	30.9	4.2	35.1	8.4
Level of Service	D	B	C	A	D	A
Approach Delay (s)	32.6			23.7	11.0	
Approach LOS	C			C	B	

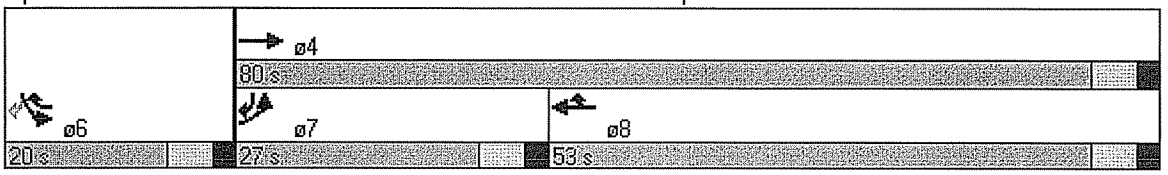
Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	175	700	595	200	125	410
Lane Group Flow (vph)	184	737	626	211	132	432
Turn Type	Prot			pt+ov		pm+ov
Protected Phases	7	4	8	8 6	6	7
Permitted Phases						6
Detector Phases	7	4	8	8 6	6	7
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	12.0	22.0	22.0		12.0	12.0
Total Split (s)	27.0	80.0	53.0	73.0	20.0	27.0
Total Split (%)	27.0%	80.0%	53.0%	73.0%	20.0%	27.0%
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			Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max		Min	None
v/c Ratio	0.60	0.51	0.59	0.17	0.54	0.63
Control Delay	45.6	5.0	3.6	0.2	48.3	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	5.0	3.6	0.2	48.3	16.9
Queue Length 50th (ft)	114	101	9	0	79	115
Queue Length 95th (ft)	175	221	m72	m0	137	191
Internal Link Dist (ft)		1027	684		170	
Turn Bay Length (ft)	350			300		150
Base Capacity (vph)	407	1458	1060	1266	283	767
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.51	0.59	0.17	0.47	0.56

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 68 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: New E-W Road & Exit 7 SB Ramps



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Volume (vph)	175	700	595	200	125	410
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	184	737	626	211	132	432
RTOR Reduction (vph)	0	0	0	54	0	141
Lane Group Flow (vph)	184	737	626	157	132	291
Turn Type	Prot			pt+ov		pm+ov
Protected Phases	7	4	8	8 6	6	7
Permitted Phases						6
Actuated Green, G (s)	15.4	76.2	54.8	72.6	11.8	27.2
Effective Green, g (s)	17.4	78.2	56.8	74.6	13.8	31.2
Actuated g/C Ratio	0.17	0.78	0.57	0.75	0.14	0.31
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)	308	1457	1058	1181	244	557
v/s Ratio Prot	c0.10	0.40	c0.34	0.10	0.07	c0.09
v/s Ratio Perm						0.09
v/c Ratio	0.60	0.51	0.59	0.13	0.54	0.52
Uniform Delay, d1	38.1	3.9	14.1	3.6	40.1	28.3
Progression Factor	1.04	0.92	0.15	0.12	1.00	1.00
Incremental Delay, d2	2.6	1.0	1.2	0.0	2.4	0.9
Delay (s)	42.1	4.6	3.3	0.5	42.6	29.2
Level of Service	D	A	A	A	D	C
Approach Delay (s)		12.1	2.6		32.3	
Approach LOS		B	A		C	

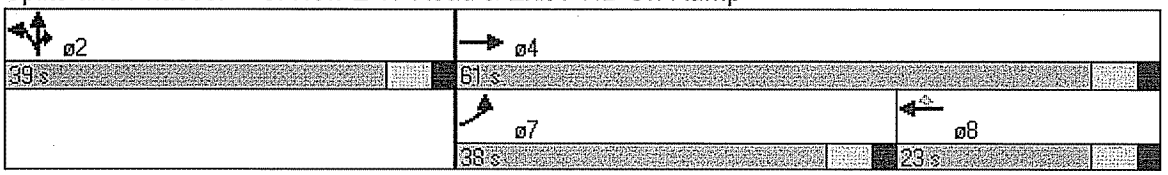
Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Volume (vph)	525	300	240	50	1	500
Lane Group Flow (vph)	553	316	253	53	585	526
Turn Type	Prot			Perm		Prot
Protected Phases	7	4	8		2	2
Permitted Phases				8		
Detector Phases	7	4	8	8	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	22.0	22.0	22.0	12.0	12.0
Total Split (s)	38.0	61.0	23.0	23.0	39.0	39.0
Total Split (%)	38.0%	61.0%	23.0%	23.0%	39.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	Min	Min
v/c Ratio	0.95	0.30	0.67	0.15	0.95	0.62
Control Delay	56.6	11.6	41.6	6.1	58.2	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.6	11.6	41.6	6.1	58.2	8.2
Queue Length 50th (ft)	309	85	157	0	358	34
Queue Length 95th (ft)	#540	160	#259	m19	#576	132
Internal Link Dist (ft)		684	266		489	
Turn Bay Length (ft)	400			200		200
Base Capacity (vph)	602	1065	376	362	621	845
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.30	0.67	0.15	0.94	0.62

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 17 (17%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: New E-W Road & Exit 7 NB On Ramp



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	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1774	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1583		1774	1583			
Volume (vph)	525	300	0	0	240	50	555	1	500	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	553	316	0	0	253	53	584	1	526	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	292	0	0	0
Lane Group Flow (vph)	553	316	0	0	253	11	0	585	234	0	0	0
Turn Type	Prot					Perm	Split		Prot			
Protected Phases	7	4			8		2	2	2			
Permitted Phases						8						
Actuated Green, G (s)	31.0	55.2			18.2	18.2		32.8	32.8			
Effective Green, g (s)	33.0	57.2			20.2	20.2		34.8	34.8			
Actuated g/C Ratio	0.33	0.57			0.20	0.20		0.35	0.35			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	584	1066			376	320		617	551			
v/s Ratio Prot	c0.31	0.17			c0.14			c0.33	0.15			
v/s Ratio Perm						0.01						
v/c Ratio	0.95	0.30			0.67	0.03		0.95	0.42			
Uniform Delay, d1	32.6	11.0			36.8	32.1		31.7	24.9			
Progression Factor	0.96	0.97			0.84	0.53		1.00	1.00			
Incremental Delay, d2	22.4	0.6			9.2	0.2		23.8	0.5			
Delay (s)	53.8	11.3			40.2	17.2		55.6	25.5			
Level of Service	D	B			D	B		E	C			
Approach Delay (s)		38.4			36.2			41.3			0.0	
Approach LOS		D			D			D			A	

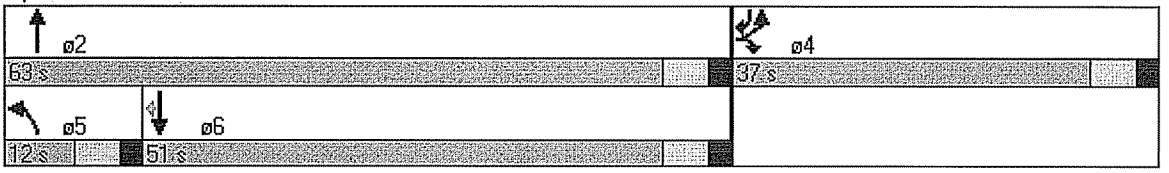
Intersection Summary			
HCM Average Control Delay	39.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	525	150	75	600	800	150
Lane Group Flow (vph)	553	158	79	632	842	158
Turn Type		Prot	Prot			pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases						6
Detector Phases	4	4	5	2	6	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	12.0	12.0	22.0	22.0	12.0
Total Split (s)	37.0	37.0	12.0	63.0	51.0	37.0
Total Split (%)	37.0%	37.0%	12.0%	63.0%	51.0%	37.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	None
v/c Ratio	0.95	0.27	0.56	0.57	0.91	0.11
Control Delay	60.4	10.8	60.1	15.3	40.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	10.8	60.1	15.3	40.5	0.4
Queue Length 50th (ft)	358	17	49	232	502	0
Queue Length 95th (ft)	#554	m60	#106	335	#770	7
Internal Link Dist (ft)	587			1267	746	
Turn Bay Length (ft)		150	200			300
Base Capacity (vph)	584	594	142	1101	922	1391
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.27	0.56	0.57	0.91	0.11

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: New E-W Road & Front Street



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Volume (vph)	525	150	75	600	800	150
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	553	158	79	632	842	158
RTOR Reduction (vph)	0	72	0	0	0	30
Lane Group Flow (vph)	553	86	79	632	842	128
Turn Type		Prot	Prot			pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	30.9	30.9	4.8	57.1	46.3	77.2
Effective Green, g (s)	32.9	32.9	6.8	59.1	48.3	81.2
Actuated g/C Ratio	0.33	0.33	0.07	0.59	0.48	0.81
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	582	521	120	1101	900	1349
v/s Ratio Prot	c0.31	0.05	0.04	c0.34	c0.45	0.03
v/s Ratio Perm						0.05
v/c Ratio	0.95	0.17	0.66	0.57	0.94	0.10
Uniform Delay, d1	32.7	23.8	45.5	12.7	24.4	1.9
Progression Factor	1.03	1.06	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.2	0.1	12.3	2.2	17.9	0.0
Delay (s)	57.9	25.3	57.8	14.8	42.3	1.9
Level of Service	E	C	E	B	D	A
Approach Delay (s)	50.7			19.6	35.9	
Approach LOS	D			B	D	

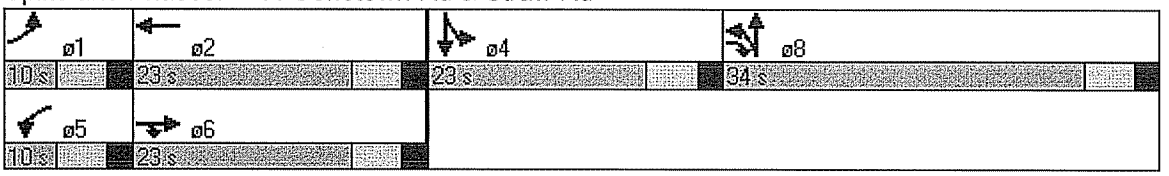
Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

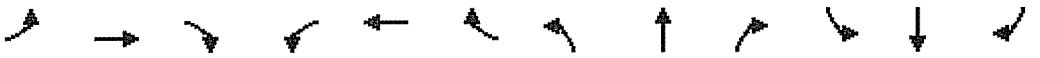
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	5	250	170	75	310	580	100	10	65
Lane Group Flow (vph)	5	263	179	79	337	611	168	11	89
Turn Type	Prot		pt+ov	Prot		Split		Split	
Protected Phases	1	6	6 8	5	2	8	8	4	4
Permitted Phases									
Detector Phases	1	6	6 8	5	2	8	8	4	4
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0		10.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	10.0	23.0	57.0	10.0	23.0	34.0	34.0	23.0	23.0
Total Split (%)	11.1%	25.6%	63.3%	11.1%	25.6%	37.8%	37.8%	25.6%	25.6%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag		Lead	Lag				
Lead-Lag Optimize?		Yes		Yes					
Recall Mode	None	Min		None	Min	Min	Min	None	None
v/c Ratio	0.04	0.63	0.16	0.57	0.61	0.84	0.23	0.04	0.32
Control Delay	40.6	36.9	1.2	56.4	31.1	37.9	16.2	29.9	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	36.9	1.2	56.4	31.1	37.9	16.2	29.9	29.7
Queue Length 50th (ft)	2	121	0	40	133	293	45	5	34
Queue Length 95th (ft)	14	222	17	#114	#334	#581	103	19	75
Internal Link Dist (ft)		1024			1790		1304		835
Turn Bay Length (ft)	75		300	75		500		75	
Base Capacity (vph)	129	463	1118	138	586	725	741	394	412
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.57	0.16	0.57	0.58	0.84	0.23	0.03	0.22

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 76.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Goffstown Rd & Straw Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1854		1770	1758		1770	1797	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1854		1770	1758		1770	1797	
Volume (vph)	5	250	170	75	310	10	580	100	60	10	65	20
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	263	179	79	326	11	611	105	63	11	68	21
RTOR Reduction (vph)	0	0	67	0	1	0	0	22	0	0	14	0
Lane Group Flow (vph)	5	263	112	79	336	0	611	146	0	11	75	0
Turn Type	Prot		pt+ov	Prot			Split			Split		
Protected Phases	1	6	6 8	5	2		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	0.7	18.4	47.6	3.0	20.7		29.2	29.2		7.8	7.8	
Effective Green, g (s)	2.7	20.4	51.6	5.0	22.7		31.2	31.2		9.8	9.8	
Actuated g/C Ratio	0.03	0.25	0.63	0.06	0.28		0.38	0.38		0.12	0.12	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	58	461	991	107	511		670	666		211	214	
v/s Ratio Prot	0.00	0.14	0.07	c0.04	c0.18		c0.35	0.08		0.01	c0.04	
v/s Ratio Perm												
v/c Ratio	0.09	0.57	0.11	0.74	0.66		0.91	0.22		0.05	0.35	
Uniform Delay, d1	38.7	27.2	6.2	38.1	26.4		24.3	17.3		32.2	33.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.7	0.1	23.1	3.0		16.7	0.2		0.1	1.0	
Delay (s)	39.3	28.9	6.2	61.2	29.4		41.0	17.5		32.3	34.4	
Level of Service	D	C	A	E	C		D	B		C	C	
Approach Delay (s)		19.9			35.5			36.0			34.1	
Approach LOS		B			D			D			C	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			