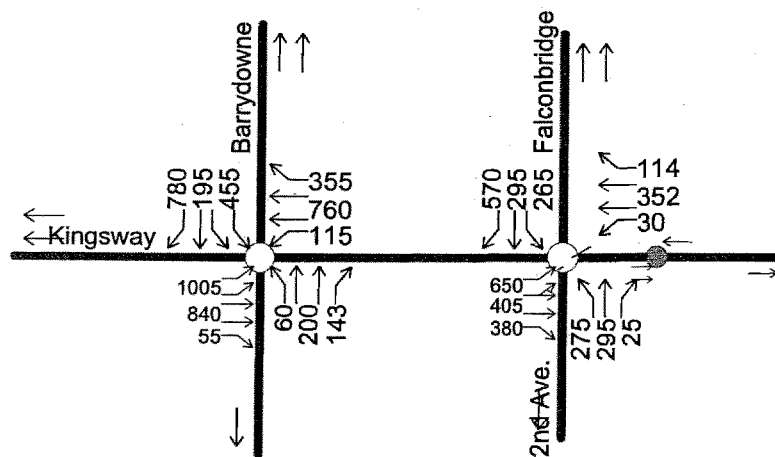
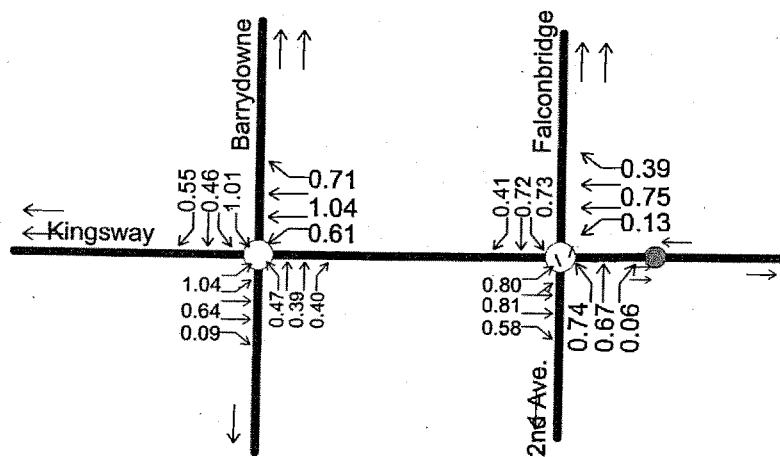

Appendix I

Intersection Capacity Analysis

The Kingsway from Barrydowne Road to Falconbridge Highway





Lanes, Volumes, Timings
3: Kingsway & Barrydowne

March 2003 PM Peak (BA report)
3/3/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		80.0	0.0		0.0	0.0		0.0	0.0		100.0
Storage Lanes	2		1	1		1	1		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3321	3325	1547	1712	3390	1488	1729	3325	1532	3257	1784	1532
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3321	3325	1547	1712	3390	1488	1729	3325	1532	3257	1784	1532
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			60			255			155			690
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		342.9			425.1			280.0			332.0	
Travel Time (s)		25.7			31.9			21.0			24.9	
Volume (vph)	1005	840	55	115	760	355	60	200	143	455	195	780
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	4%	0%	1%	2%	4%	0%	4%	1%	3%	2%	1%
Adj. Flow (vph)	1092	913	60	125	826	386	65	217	155	495	212	848
Lane Group Flow (vph)	1092	913	60	125	826	386	65	217	155	495	212	848
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Detector Phases	7	4	4	3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	
Total Split (s)	42.0	54.0	54.0	20.0	32.0	32.0	14.0	24.0	24.0	22.0	32.0	0.0
Total Split (%)	35.0%	45.0%	45.0%	16.7%	26.7%	26.7%	11.7%	20.0%	20.0%	18.3%	26.7%	0.0%
Maximum Green (s)	36.0	48.0	48.0	14.0	26.0	26.0	8.0	18.0	18.0	16.0	26.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	38.0	51.6	51.6	14.4	28.0	28.0	9.6	20.0	20.0	18.0	30.8	120.0
Actuated g/C Ratio	0.32	0.43	0.43	0.12	0.23	0.23	0.08	0.17	0.17	0.15	0.26	1.00
v/c Ratio	1.04	0.64	0.09	0.61	1.04	0.71	0.47	0.39	0.40	1.01	0.46	0.55
Control Delay	78.4	29.8	5.6	48.7	98.2	35.7	63.0	47.0	10.1	94.5	42.9	1.4
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	78.4	29.8	5.6	48.7	98.2	35.7	63.0	47.0	10.1	94.5	42.9	1.4

Lanes, Volumes, Timings
3: Kingsway & Barrydowne

March 2003 PM Peak (BA report)
3/3/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	C	A	D	F	D	E	D	B	F	D	A
Approach Delay		54.8			75.5			36.3			36.7	
Approach LOS		D			E			D			D	
Queue Length 50th (m)~142.9		89.5	0.0	29.0	~113.1	42.3	14.8	24.2	0.0	~61.9	43.7	0.0
Queue Length 95th (m)#183.1		111.7	8.0	m44.2	#153.0	73.3	29.3	36.3	17.9	#96.4	67.9	0.0
Internal Link Dist (m)		318.9			401.1			256.0			308.0	
Turn Bay Length (m)	100.0		80.0									100.0
Base Capacity (vph)	1052	1428	699	228	791	543	144	554	385	489	458	1532
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	1.04	0.64	0.09	0.55	1.04	0.71	0.45	0.39	0.40	1.01	0.46	0.55

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 53.2

Intersection LOS: D

Intersection Capacity Utilization 85.3%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

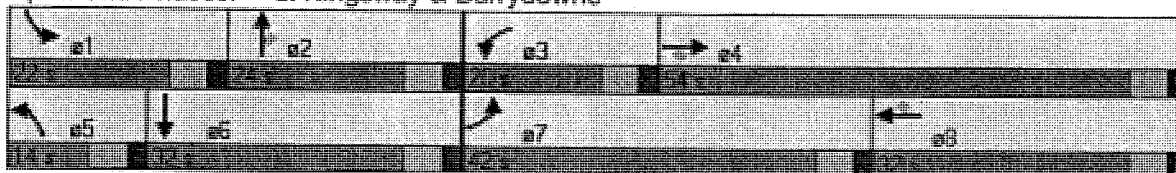
Queue shown is maximum after two cycles.

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: 3: Kingsway & Barrydowne



Lanes, Volumes, Timings
6: Kingsway & Falconbridge

March 2003 PM Peak (BA report)
3/3/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	180.0		60.0	30.0		30.0	0.0		0.0	0.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950	0.979		0.950			0.950			0.950		
Satd. Flow (prot)	1543	3179	1517	1695	3390	1517	1695	1784	1517	1695	1784	1517
Flt Permitted	0.950	0.979		0.950			0.256			0.319		
Satd. Flow (perm)	1543	3179	1517	1695	3390	1517	457	1784	1517	569	1784	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			369			107			27			620
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		425.1			134.0			256.0			318.0	
Travel Time (s)		31.9			10.1			19.2			23.9	
Volume (vph)	650	405	380	30	352	114	275	295	25	265	295	570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	440	413	33	383	124	299	321	27	288	321	620
Lane Group Flow (vph)	370	777	413	33	383	124	299	321	27	288	321	620
Turn Type	Split		Perm	Split		Perm	pm+pt		Perm	pm+pt		Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		Free
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	
Total Split (s)	40.0	40.0	40.0	22.0	22.0	22.0	24.0	36.0	36.0	22.0	34.0	0.0
Total Split (%)	33.3%	33.3%	33.3%	18.3%	18.3%	18.3%	20.0%	30.0%	30.0%	18.3%	28.3%	0.0%
Maximum Green (s)	34.0	34.0	34.0	16.0	16.0	16.0	18.0	30.0	30.0	16.0	28.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	36.0	36.0	36.0	18.0	18.0	18.0	52.0	32.0	32.0	48.0	30.0	120.0
Actuated g/C Ratio	0.30	0.30	0.30	0.15	0.15	0.15	0.43	0.27	0.27	0.40	0.25	1.00
v/c Ratio	0.80	0.81	0.58	0.13	0.75	0.39	0.74	0.67	0.06	0.73	0.72	0.41
Control Delay	66.3	62.5	24.6	45.8	59.1	15.4	34.5	47.5	11.9	34.3	51.6	0.8
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	66.3	62.5	24.6	45.8	59.1	15.4	34.5	47.5	11.9	34.3	51.6	0.8
LOS	E	E	C	D	E	B	C	D	B	C	D	A
Approach Delay		53.4			48.3			40.0			21.9	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	101.9	106.9	45.0	6.8	46.0	3.5	46.0	67.8	0.0	44.0	69.4	0.0
Queue Length 95th (m)	125.1	121.2	66.7	16.3	63.0	20.7	70.3	99.3	7.1	65.9	101.8	0.0
Internal Link Dist (m)		401.1			110.0			232.0			294.0	
Turn Bay Length (m)	180.0		60.0	30.0		30.0						100.0

Lanes, Volumes, Timings
6: Kingsway & Falconbridge

March 2003 PM Peak (BA report)
3/3/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	463	954	713	254	509	319	404	476	424	397	446	1517
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	0.80	0.81	0.58	0.13	0.75	0.39	0.74	0.67	0.06	0.73	0.72	0.41

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 40.8

Intersection LOS: D

Intersection Capacity Utilization 77.2%

ICU Level of Service D

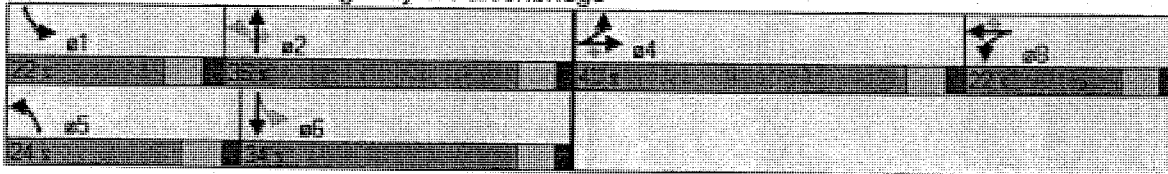
Analysis Period (min) 15

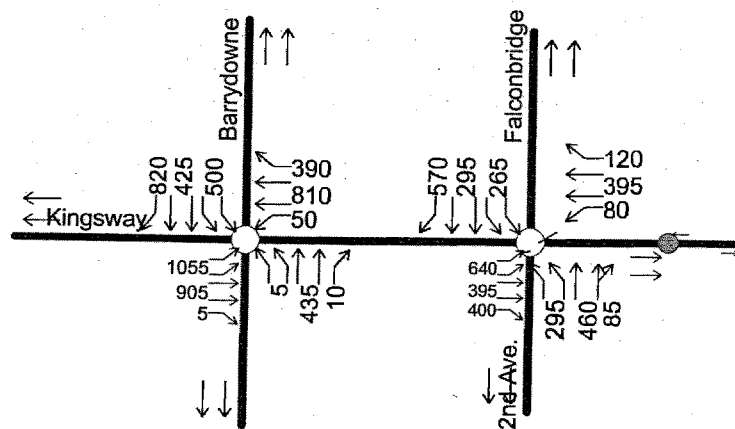
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

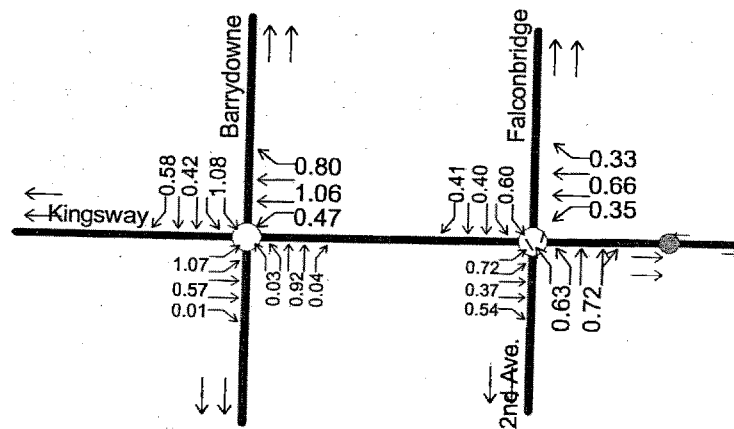
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Kingsway & Falconbridge





Map - COGS TMP Kingsway/Barrydowne to Falconbridge Future PM Peak(BA report recommend lane config)
 Volume to Capacity Ratios
 3/3/2005



Lanes, Volumes, Timings
3: Kingsway & Barrydowne

Future PM Peak(BA report recommend lane config)

3/3/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		80.0	0.0		0.0	60.0		0.0	100.0		150.0
Storage Lanes	2		1	1		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3321	3325	1547	1712	3390	1488	3354	3325	1532	3257	3390	1532
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3321	3325	1547	1712	3390	1488	3354	3325	1532	3257	3390	1532
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			5			214			11			739
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		342.9			425.1			280.0			332.0	
Travel Time (s)		25.7			31.9			21.0			24.9	
Volume (vph)	1055	905	5	50	810	390	5	435	10	500	425	820
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	4%	0%	1%	2%	4%	0%	4%	1%	3%	2%	1%
Adj. Flow (vph)	1147	984	5	54	880	424	5	473	11	543	462	891
Lane Group Flow (vph)	1147	984	5	54	880	424	5	473	11	543	462	891
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Detector Phases	7	4	4	3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	
Total Split (s)	46.0	69.0	69.0	13.0	36.0	36.0	10.0	24.0	24.0	24.0	38.0	0.0
Total Split (%)	35.4%	53.1%	53.1%	10.0%	27.7%	27.7%	7.7%	18.5%	18.5%	18.5%	29.2%	0.0%
Maximum Green (s)	40.0	63.0	63.0	7.0	30.0	30.0	4.0	18.0	18.0	18.0	32.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.0	67.6	67.6	8.8	32.0	32.0	6.0	20.0	20.0	20.0	42.0	130.0
Actuated g/C Ratio	0.32	0.52	0.52	0.07	0.25	0.25	0.05	0.15	0.15	0.15	0.32	1.00
v/c Ratio	1.07	0.57	0.01	0.47	1.06	0.80	0.03	0.92	0.04	1.08	0.42	0.58
Control Delay	90.0	23.5	9.6	51.5	109.1	53.8	59.8	79.1	22.5	115.7	36.6	1.6
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	90.0	23.5	9.6	51.5	109.1	53.8	59.8	79.1	22.5	115.7	36.6	1.6

Lanes, Volumes, Timings
6: Kingsway & Falconbridge

Future PM Peak(BA report recommend lane config)

3/3/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	180.0		40.0	50.0		60.0	60.0		0.0	150.0		100.0
Storage Lanes	2		1	1		1	2		0	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850			0.977			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	3288	3312	0	3288	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3288	3390	1517	1695	3390	1517	3288	3312	0	3288	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			435			130			15			620
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		425.1			203.0			256.0			318.0	
Travel Time (s)		31.9			15.2			19.2			23.9	
Volume (vph)	640	395	400	80	395	120	295	460	85	265	295	570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	696	429	435	87	429	130	321	500	92	288	321	620
Lane Group Flow (vph)	696	429	435	87	429	130	321	592	0	288	321	620
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						Free
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	10.0	22.0		10.0	22.0	
Total Split (s)	42.0	48.0	48.0	23.0	29.0	29.0	24.0	36.0	0.0	23.0	35.0	0.0
Total Split (%)	32.3%	36.9%	36.9%	17.7%	22.3%	22.3%	18.5%	27.7%	0.0%	17.7%	26.9%	0.0%
Maximum Green (s)	36.0	42.0	42.0	17.0	23.0	23.0	18.0	30.0		17.0	29.0	
Yellow Time (s)	4.0	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	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)	38.0	44.0	44.0	19.0	25.0	25.0	20.0	32.0		19.0	31.0	130.0
Actuated g/C Ratio	0.29	0.34	0.34	0.15	0.19	0.19	0.15	0.25		0.15	0.24	1.00
v/c Ratio	0.72	0.37	0.54	0.35	0.66	0.33	0.63	0.72		0.60	0.40	0.41
Control Delay	58.0	29.3	6.9	54.5	54.1	9.6	57.9	49.3		57.7	43.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	58.0	29.3	6.9	54.5	54.1	9.6	57.9	49.3		57.7	43.4	0.8
LOS	E	C	A	D	D	A	E	D		E	D	A
Approach Delay		35.9			45.2			52.3			25.3	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	91.5	32.0	23.7	20.3	54.0	0.0	40.3	71.6		36.0	36.6	0.0
Queue Length 95th (m)	102.3	39.2	30.0	36.8	71.7	16.7	55.6	92.4		50.8	50.6	0.0
Internal Link Dist (m)		401.1			179.0			232.0			294.0	
Turn Bay Length (m)	180.0		40.0	50.0		60.0	60.0			150.0		100.0

Lanes, Volumes, Timings
6: Kingsway & Falconbridge

Future PM Peak(BA report recommend lane config)
3/3/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	961	1147	801	248	652	397	506	827		481	808	1517
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.72	0.37	0.54	0.35	0.66	0.33	0.63	0.72		0.60	0.40	0.41

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 37.7

Intersection LOS: D

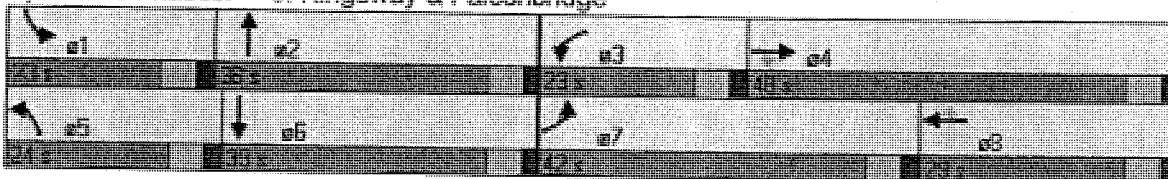
Intersection Capacity Utilization 68.4%

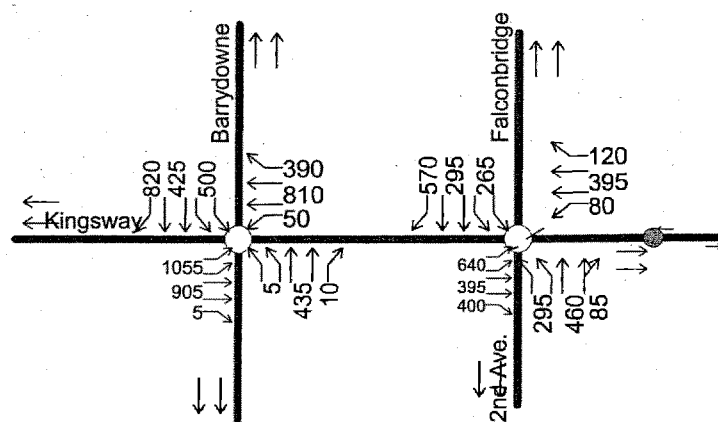
ICU Level of Service C

Analysis Period (min) 15

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

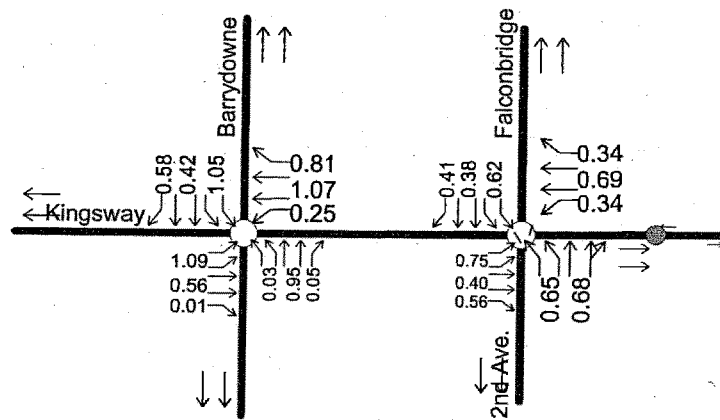
Splits and Phases: 6: Kingsway & Falconbridge





Map - COGS TMP Kingsway/Barrydowne to Falconbridge
Volume to Capacity Ratios

Future PM Peak (120 s cycle)
3/3/2005



Lanes, Volumes, Timings
3: Kingsway & Barrydowne

Future PM Peak (120 s cycle)
3/3/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		80.0	0.0		0.0	60.0		0.0	100.0		150.0
Storage Lanes	2		1	1		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Flt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3321	3325	1547	1712	3390	1488	3354	3325	1532	3257	3390	1532
Flt Permitted	0.950			0.291			0.950			0.950		
Satd. Flow (perm)	3321	3325	1547	524	3390	1488	3354	3325	1532	3257	3390	1532
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			5			219			11			736
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		342.9			425.1			280.0			332.0	
Travel Time (s)		25.7			31.9			21.0			24.9	
Volume (vph)	1055	905	5	50	810	390	5	435	10	500	425	820
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	4%	0%	1%	2%	4%	0%	4%	1%	3%	2%	1%
Adj. Flow (vph)	1147	984	5	54	880	424	5	473	11	543	462	891
Lane Group Flow (vph)	1147	984	5	54	880	424	5	473	11	543	462	891
Turn Type	Prot		Perm	pm+pt		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8			2			Free
Detector Phases	7	4	4	3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	
Total Split (s)	42.0	65.0	65.0	10.0	33.0	33.0	10.0	22.0	22.0	23.0	35.0	0.0
Total Split (%)	35.0%	54.2%	54.2%	8.3%	27.5%	27.5%	8.3%	18.3%	18.3%	19.2%	29.2%	0.0%
Maximum Green (s)	36.0	59.0	59.0	4.0	27.0	27.0	4.0	16.0	16.0	17.0	29.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	38.0	63.0	63.0	35.0	29.0	29.0	6.0	18.0	18.0	19.0	39.0	120.0
Actuated g/C Ratio	0.32	0.52	0.52	0.29	0.24	0.24	0.05	0.15	0.15	0.16	0.32	1.00
v/c Ratio	1.09	0.56	0.01	0.25	1.07	0.81	0.03	0.95	0.05	1.05	0.42	0.58
Control Delay	94.8	21.3	8.6	21.4	108.4	48.4	54.8	80.1	22.0	102.7	33.8	1.6
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	94.8	21.3	8.6	21.4	108.4	48.4	54.8	80.1	22.0	102.7	33.8	1.6

Lanes, Volumes, Timings
3: Kingsway & Barrydowne

Future PM Peak (120 s cycle)
3/3/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	C	A	C	F	D	D	F	C	F	C	A
Approach Delay	60.8				86.2				78.5		38.4	
Approach LOS	E				F				E		D	
Queue Length 50th (m)~156.9	82.2	0.0	8.9	~123.5	61.8	0.6	58.8	0.0	~72.0	43.4	0.0	
Queue Length 95th (m)#197.3	102.1	2.0	m15.1	#163.9	#100.6	2.7	#90.9	5.4	#106.1	65.8	0.0	
Internal Link Dist (m)	318.9				401.1				256.0		308.0	
Turn Bay Length (m)	100.0	80.0				60.0		100.0		150.0		
Base Capacity (vph)	1052	1745	815	212	819	526	168	499	239	516	1102	1532
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	1.09	0.56	0.01	0.25	1.07	0.81	0.03	0.95	0.05	1.05	0.42	0.58

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 60.9

Intersection LOS: E

Intersection Capacity Utilization 96.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

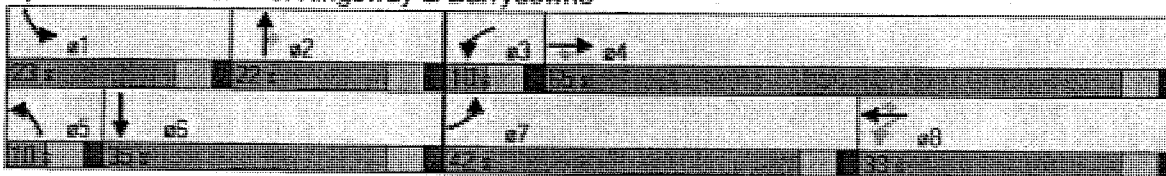
Queue shown is maximum after two cycles.

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: 3: Kingsway & Barrydowne



Lanes, Volumes, Timings
6: Kingsway & Falconbridge

Future PM Peak (120 s cycle)
3/3/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	180.0		40.0	50.0		60.0	60.0		0.0	150.0		100.0
Storage Lanes	2		1	1		1	2		0	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850		0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	3288	3312	0	3288	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3288	3390	1517	1695	3390	1517	3288	3312	0	3288	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			435			130		17				620
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		425.1			203.0			256.0			318.0	
Travel Time (s)		31.9			15.2			19.2			23.9	
Volume (vph)	640	395	400	80	395	120	295	460	85	265	295	570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	696	429	435	87	429	130	321	500	92	288	321	620
Lane Group Flow (vph)	696	429	435	87	429	130	321	592	0	288	321	620
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						Free
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	10.0	22.0		10.0	22.0	
Total Split (s)	38.0	42.0	42.0	22.0	26.0	26.0	22.0	35.0	0.0	21.0	34.0	0.0
Total Split (%)	31.7%	35.0%	35.0%	18.3%	21.7%	21.7%	18.3%	29.2%	0.0%	17.5%	28.3%	0.0%
Maximum Green (s)	32.0	36.0	36.0	16.0	20.0	20.0	16.0	29.0		15.0	28.0	
Yellow Time (s)	4.0	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	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)	34.0	38.0	38.0	18.0	22.0	22.0	18.0	31.0		17.0	30.0	120.0
Actuated g/C Ratio	0.28	0.32	0.32	0.15	0.18	0.18	0.15	0.26		0.14	0.25	1.00
v/c Ratio	0.75	0.40	0.56	0.34	0.69	0.34	0.65	0.68		0.62	0.38	0.41
Control Delay	54.6	28.5	6.7	50.0	52.4	9.7	55.0	43.6		54.9	38.9	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	54.6	28.5	6.7	50.0	52.4	9.7	55.0	43.6		54.9	38.9	0.8
LOS	D	C	A	D	D	A	D	D		D	D	A
Approach Delay		34.1			43.5			47.6			23.4	
Approach LOS		C			D			D			C	
Queue Length 50th (m)	84.0	30.0	21.3	18.6	50.1	0.0	37.1	64.4		33.2	33.1	0.0
Queue Length 95th (m)	m95.5	m37.3	m27.9	34.3	67.6	16.4	52.2	84.1		47.6	46.4	0.0
Internal Link Dist (m)		401.1			179.0			232.0			294.0	
Turn Bay Length (m)	180.0		40.0	50.0		60.0	60.0			150.0		100.0

Lanes, Volumes, Timings
6: Kingsway & Falconbridge

Future PM Peak (120 s cycle)
3/3/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Base Capacity (vph)	932	1074	778	254	622	384	493	858		466	848	1517
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.75	0.40	0.56	0.34	0.69	0.34	0.65	0.68		0.62	0.38	0.41

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 35.3

Intersection LOS: D

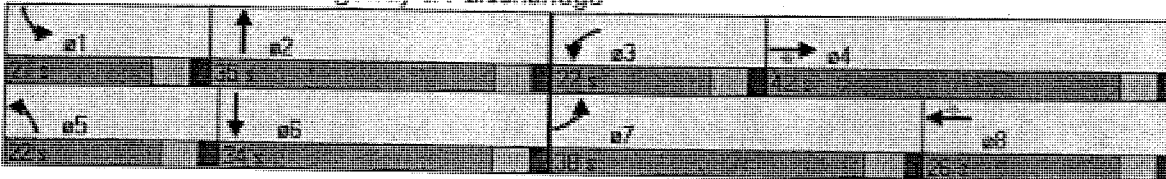
Intersection Capacity Utilization 68.4%

ICU Level of Service C

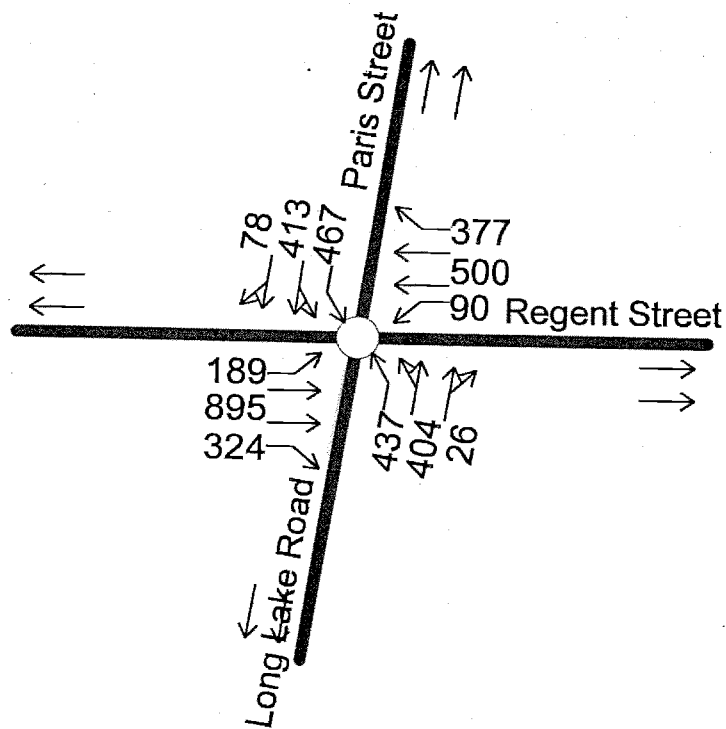
Analysis Period (min) 15

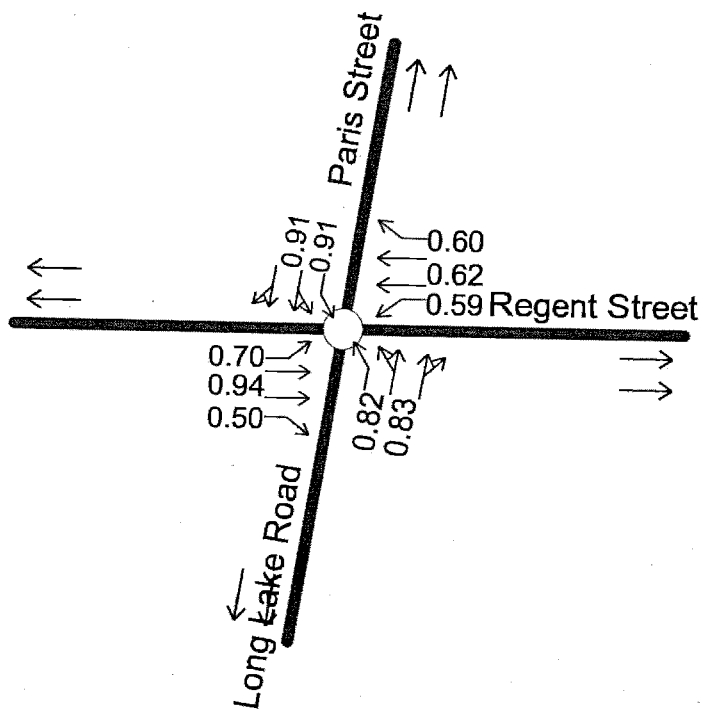
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Kingsway & Falconbridge



Paris Street at Regent Street





Lanes, Volumes, Timings
3: Regent Street & Paris Street

2000 PM Peak Hour
1/24/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		60.0	60.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.91	0.91	0.95	0.91	0.91	0.95
Frt			0.850			0.850		0.993			0.982	
Flt Protected	0.950			0.950			0.950	0.987		0.950	0.988	
Satd. Flow (prot)	1631	3357	1502	1729	3357	1459	1513	3163	0	1528	3143	0
Flt Permitted	0.240			0.143			0.950	0.987		0.950	0.988	
Satd. Flow (perm)	412	3357	1502	260	3357	1459	1513	3163	0	1528	3143	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			352			410		4			12	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		339.2			348.8			330.0			301.7	
Travel Time (s)		25.4			26.2			24.8			22.6	
Volume (vph)	189	895	324	90	500	377	437	404	26	467	413	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	3%	3%	0%	3%	6%	4%	2%	4%	3%	2%	2%
Adj. Flow (vph)	205	973	352	98	543	410	475	439	28	508	449	85
Lane Group Flow (vph)	205	973	352	98	543	410	301	641	0	336	706	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0	22.0	22.0	22.0		22.0	22.0	
Total Split (s)	15.0	37.0	37.0	10.0	32.0	32.0	30.0	30.0	0.0	30.0	30.0	0.0
Total Split (%)	14.0%	34.6%	34.6%	9.3%	29.9%	29.9%	28.0%	28.0%	0.0%	28.0%	28.0%	0.0%
Maximum Green (s)	9.0	31.0	31.0	4.0	26.0	26.0	24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	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	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	43.0	33.0	33.0	34.0	28.0	28.0	26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.40	0.31	0.31	0.32	0.26	0.26	0.24	0.24		0.24	0.24	
v/c Ratio	0.70	0.94	0.50	0.59	0.62	0.60	0.82	0.83		0.91	0.91	
Control Delay	36.9	53.5	5.7	37.4	38.4	7.3	57.4	48.8		68.6	56.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.9	53.5	5.7	37.4	38.4	7.3	57.4	48.8		68.6	56.5	
LOS	D	D	A	D	D	A	E	D		E	E	
Approach Delay		40.3			26.2			51.6			60.4	
Approach LOS		D			C			D			E	
Queue Length 50th (m)	28.7	103.6	0.0	12.7	52.5	0.0	65.3	69.5		74.9	77.8	
Queue Length 95th (m)	#50.8	#143.4	20.0	#25.4	70.4	24.4	#112.9	#97.5		#131.2	#113.4	
Internal Link Dist (m)		315.2			324.8			306.0			277.7	

Lanes, Volumes, Timings
3: Regent Street & Paris Street

2000 PM Peak Hour
1/24/2005

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	40.0			40.0		60.0	60.0			60.0		
Base Capacity (vph)	291	1035	707	165	878	685	368	772		371	773	
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	0.70	0.94	0.50	0.59	0.62	0.60	0.82	0.83		0.91	0.91	

Intersection Summary

Area Type: Other

Cycle Length: 107

Actuated Cycle Length: 107

Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 43.9

Intersection LOS: D

Intersection Capacity Utilization 81.4%

ICU Level of Service D

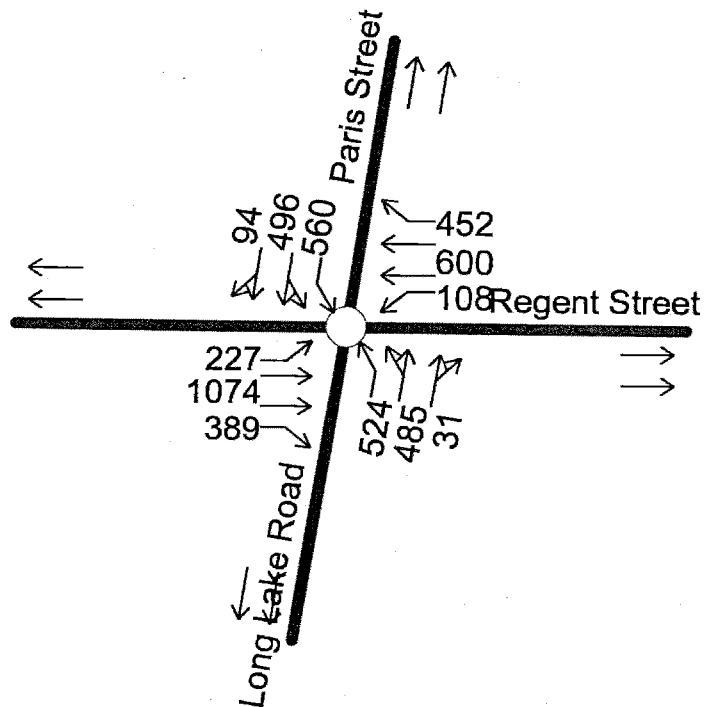
Analysis Period (min) 15

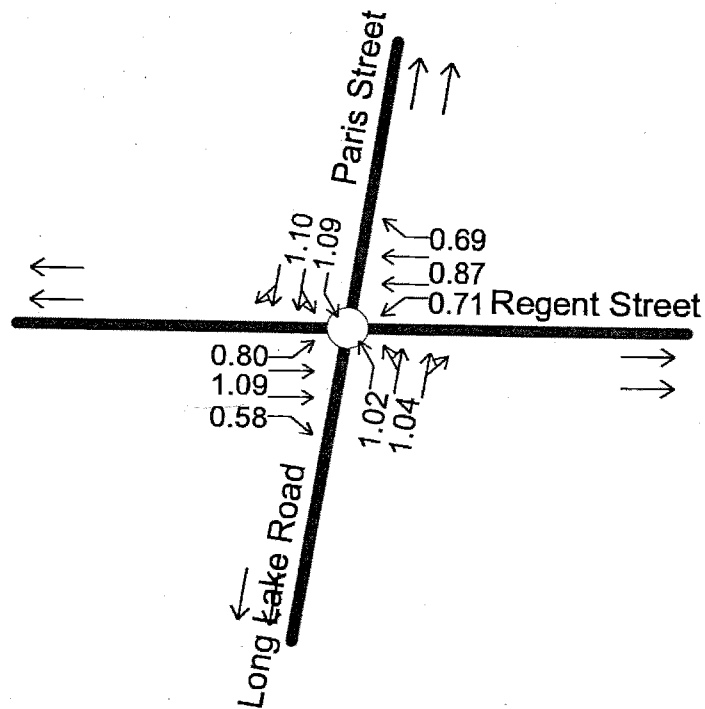
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Regent Street & Paris Street

  02 30 s	  06 30 s	  03 10 s	  04 37 s
		  07 15 s	  08 32 s





Lanes, Volumes, Timings
3: Regent Street & Paris Street

20% growth PM Peak Hour (exist. config)

1/24/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		60.0	60.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.91	0.91	0.95	0.91	0.91	0.95
Frt			0.850			0.850		0.993			0.982	
Flt Protected	0.950			0.950			0.950	0.987		0.950	0.988	
Satd. Flow (prot)	1631	3357	1502	1729	3357	1459	1513	3163	0	1528	3143	0
Flt Permitted	0.143			0.167			0.950	0.987		0.950	0.988	
Satd. Flow (perm)	246	3357	1502	304	3357	1459	1513	3163	0	1528	3143	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			374			492		4			12	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		339.2			348.8			330.0			301.7	
Travel Time (s)		25.4			26.2			24.8			22.6	
Volume (vph)	189	895	324	90	500	377	437	404	26	467	413	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Heavy Vehicles (%)	6%	3%	3%	0%	3%	6%	4%	2%	4%	3%	2%	2%
Adj. Flow (vph)	247	1167	423	117	652	492	570	527	34	609	539	102
Lane Group Flow (vph)	247	1167	423	117	652	492	361	770	0	403	847	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0	22.0	22.0	22.0		22.0	22.0	
Total Split (s)	20.0	38.0	38.0	10.0	28.0	28.0	29.0	29.0	0.0	30.0	30.0	0.0
Total Split (%)	18.7%	35.5%	35.5%	9.3%	26.2%	26.2%	27.1%	27.1%	0.0%	28.0%	28.0%	0.0%
Maximum Green (s)	14.0	32.0	32.0	4.0	22.0	22.0	23.0	23.0		24.0	24.0	
Yellow Time (s)	4.0	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	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	44.0	34.0	34.0	30.0	24.0	24.0	25.0	25.0		26.0	26.0	
Actuated g/C Ratio	0.41	0.32	0.32	0.28	0.22	0.22	0.23	0.23		0.24	0.24	
v/c Ratio	0.80	1.09	0.58	0.71	0.87	0.69	1.02	1.04		1.09	1.10	
Control Delay	45.3	92.2	8.3	47.0	53.3	9.1	94.7	83.7		111.2	100.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.3	92.2	8.3	47.0	53.3	9.1	94.7	83.7		111.2	100.0	
LOS	D	F	A	D	D	A	F	F		F	F	
Approach Delay		66.6			35.5			87.2			103.6	
Approach LOS		E			D			F			F	
Queue Length 50th (m)	35.1	~145.1	7.2	15.1	69.3	0.0	~88.1	~95.1		~103.9	~109.3	
Queue Length 95th (m)	#74.1	#185.6	33.7	#34.7	#98.3	29.9	#148.7	#134.6		#167.5	#149.7	

Lanes, Volumes, Timings
3: Regent Street & Paris Street

20% growth PM Peak Hour (exist. config)

1/24/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)	315.2			324.8			306.0			277.7		
Turn Bay Length (m)	40.0			40.0			60.0			60.0		
Base Capacity (vph)	308	1067	732	165	753	709	354	742		371	773	
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	0.80	1.09	0.58	0.71	0.87	0.69	1.02	1.04		1.09	1.10	

Intersection Summary

Area Type: Other

Cycle Length: 107

Actuated Cycle Length: 107

Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green

Natural Cycle: 120

Control Type: Pretimed

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 72.1

Intersection LOS: E

Intersection Capacity Utilization 95.0%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

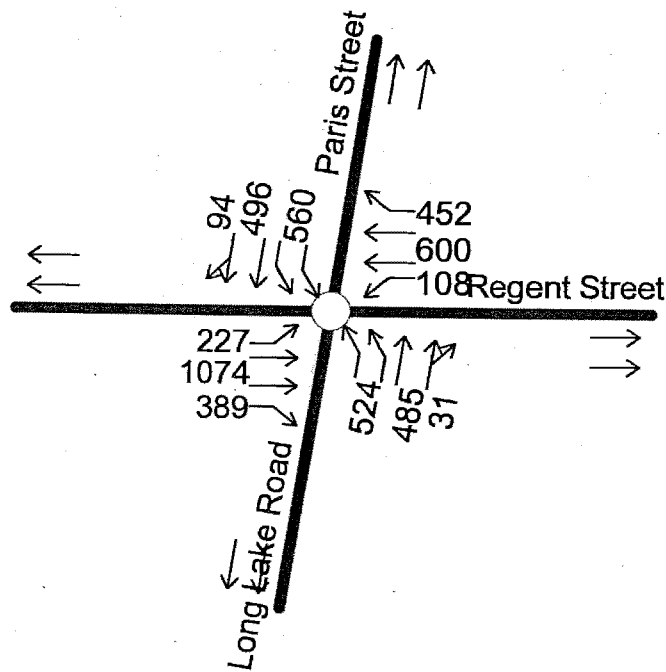
Queue shown is maximum after two cycles.

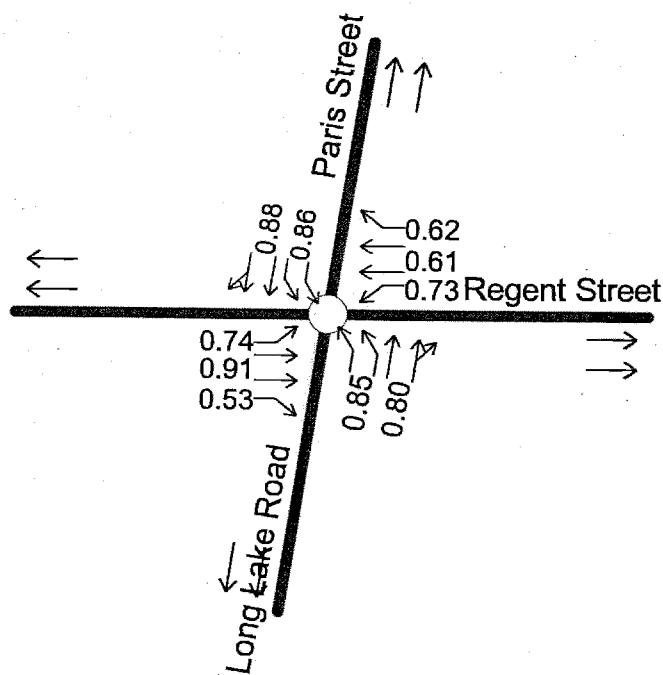
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Regent Street & Paris Street

ø2	ø6	ø3	ø4
29 s	30 s	10 s	38 s
		ø7	ø8
		20 s	28 s





Lanes, Volumes, Timings
3: Regent Street & Paris Street

Future PM Peak Hour with 20% increase
3/2/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		60.0	60.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	2		0	2		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	0.95
Frt			0.850			0.850		0.991			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1631	3357	1502	1729	3357	1459	3225	3356	0	3257	3309	0
Flt Permitted	0.218			0.105			0.950			0.950		
Satd. Flow (perm)	374	3357	1502	191	3357	1459	3225	3356	0	3257	3309	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			369			492		5			17	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		339.2			348.8			330.0			301.7	
Travel Time (s)		25.4			26.2			24.8			22.6	
Volume (vph)	189	895	324	90	500	377	437	404	26	467	413	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Heavy Vehicles (%)	6%	3%	3%	0%	3%	6%	4%	2%	4%	3%	2%	2%
Adj. Flow (vph)	247	1167	423	117	652	492	570	527	34	609	539	102
Lane Group Flow (vph)	247	1167	423	117	652	492	570	561	0	609	641	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0	22.0	22.0	22.0		22.0	22.0	
Total Split (s)	19.0	50.0	50.0	11.0	42.0	42.0	29.0	29.0	0.0	30.0	30.0	0.0
Total Split (%)	15.8%	41.7%	41.7%	9.2%	35.0%	35.0%	24.2%	24.2%	0.0%	25.0%	25.0%	0.0%
Maximum Green (s)	13.0	44.0	44.0	5.0	36.0	36.0	23.0	23.0		24.0	24.0	
Yellow Time (s)	4.0	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	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	57.0	46.0	46.0	45.0	38.0	38.0	25.0	25.0		26.0	26.0	
Actuated g/C Ratio	0.48	0.38	0.38	0.38	0.32	0.32	0.21	0.21		0.22	0.22	
v/c Ratio	0.74	0.91	0.53	0.73	0.61	0.62	0.85	0.80		0.86	0.88	
Control Delay	34.2	46.3	7.0	47.9	37.8	6.5	58.7	54.3		58.9	58.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	34.2	46.3	7.0	47.9	37.8	6.5	58.7	54.3		58.9	58.7	
LOS	C	D	A	D	D	A	E	D		E	E	
Approach Delay		35.6			26.5			56.5			58.8	
Approach LOS		D			C			E			E	
Queue Length 50th (m)	35.0	135.2	8.0	15.1	68.3	0.0	67.0	65.9		71.7	75.5	
Queue Length 95th (m)	#56.4	#176.5	32.8	#40.0	87.8	25.9	#93.7	86.4		#99.7	#105.9	

COGS TMP Paris/Regent (dual lefts on Paris)

Synchro 6 Report

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Page 1

Earth Tech Canada Inc.

Lanes, Volumes, Timings
3: Regent Street & Paris Street

Future PM Peak Hour with 20% increase
3/2/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		315.2			324.8			306.0			277.7	
Turn Bay Length (m)	40.0			40.0		60.0	60.0			60.0		
Base Capacity (vph)	335	1287	803	161	1063	798	672	703		706	730	
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	0.74	0.91	0.53	0.73	0.61	0.62	0.85	0.80		0.86	0.88	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 43.1

Intersection LOS: D

Intersection Capacity Utilization 84.4%

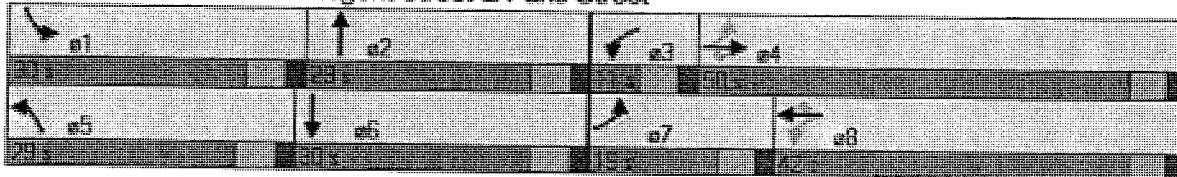
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Regent Street & Paris Street



Paris Street at Ramsey Lake Road

