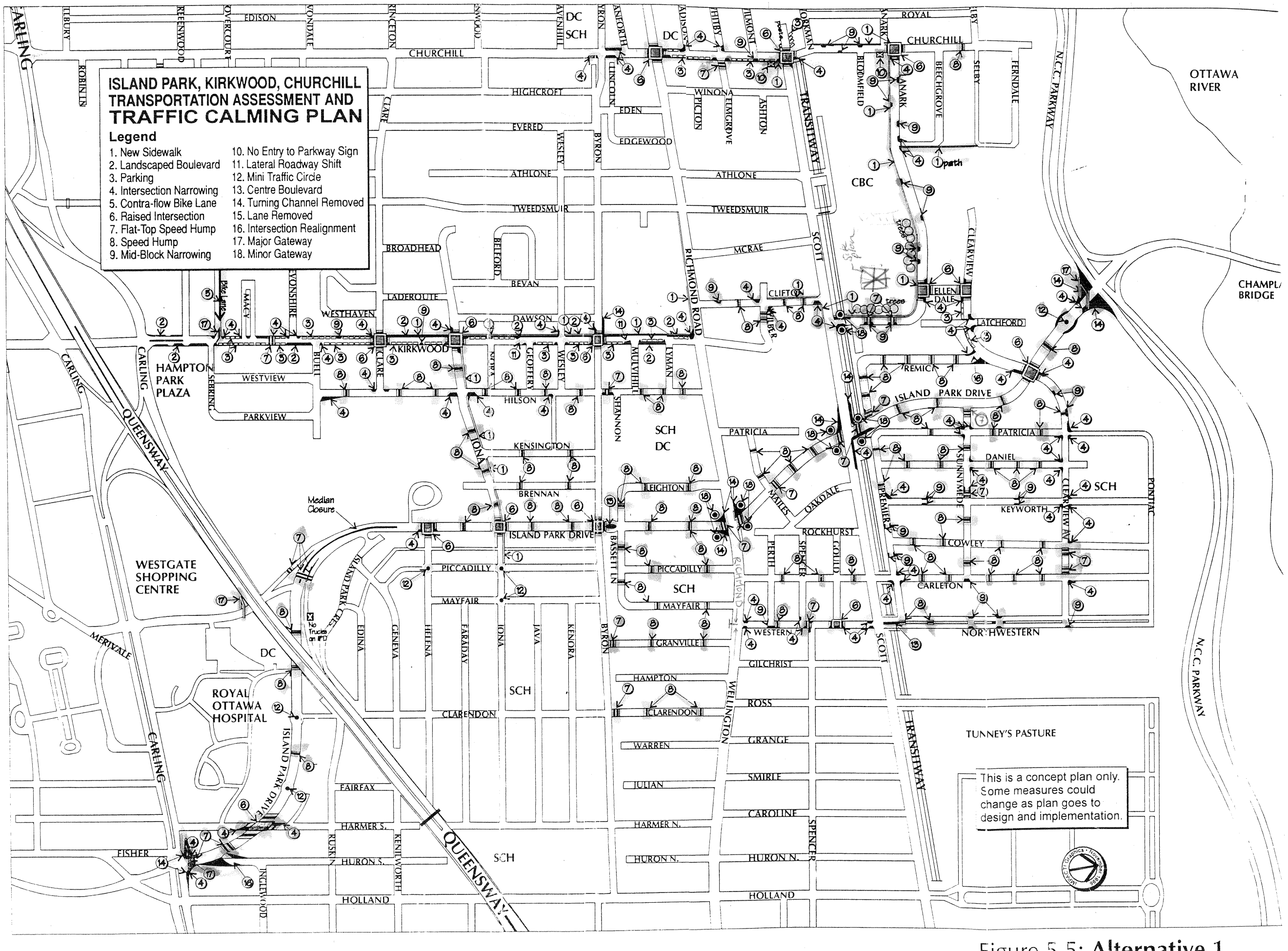
APPENDIX A

Excerpts from 1996 Island Park, Kirkwood and Churchill Area Transportation Assessment and Traffic Calming Plan

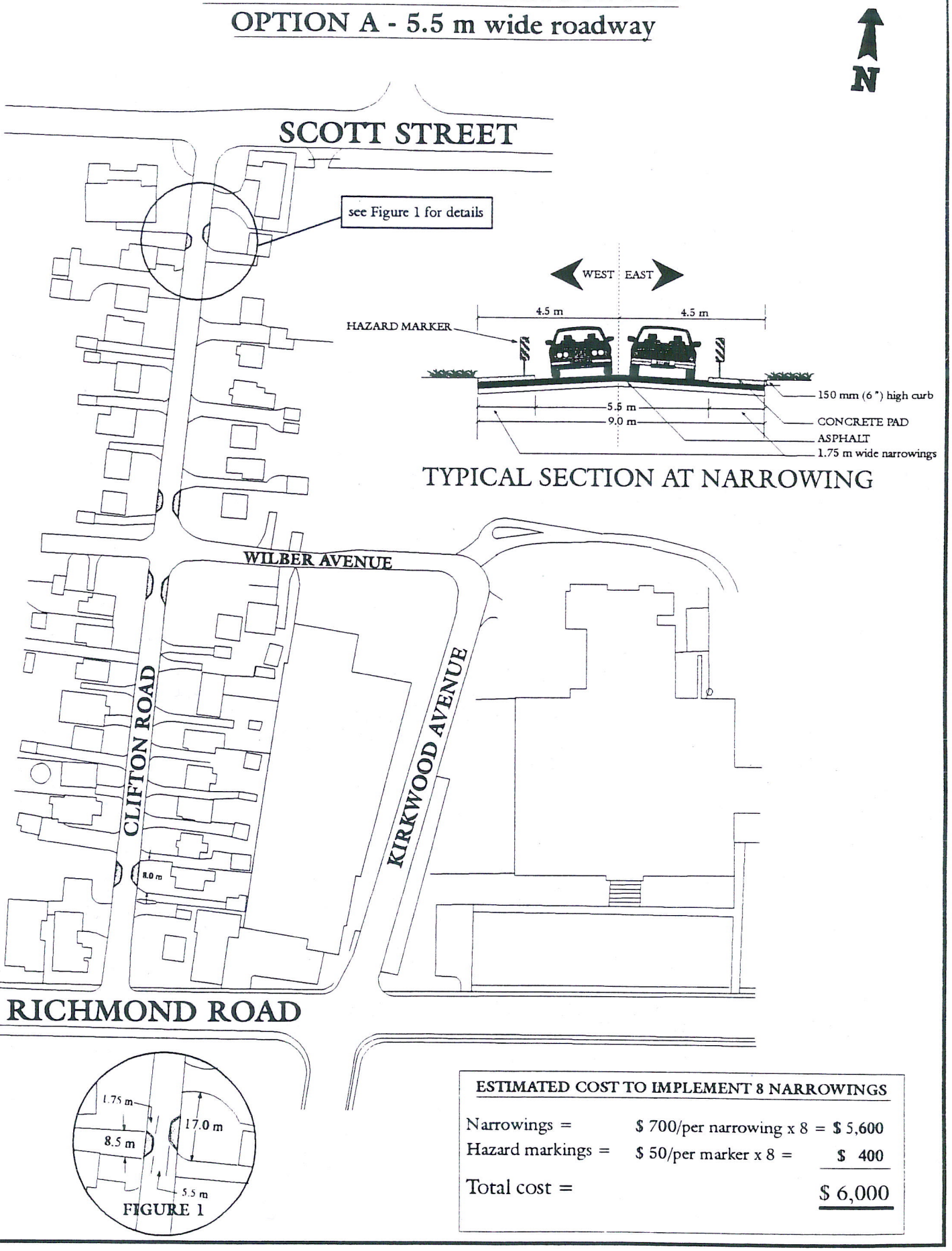


The Basic Traffic Calming Plan

Figure 5.5: **Alternative 1**

FIGURE 6.1

CLIFTON ROAD TRAFFIC STUDY
OPTION A - 5.5 m wide roadway



ESTIMATED COST TO IMPLEMENT 8 NARROWINGS

Narrowings =	$ 700/per narrowing x 8 =	$ 5,600
Hazard markings =	$ 50/per marker x 8 =	$ 400
Total cost =		$ 6,000

v:\tp\student5\corel\clifton1.cdr

APPENDIX B

Photos of Wilber Street, Kirkwood Avenue and Clifton Road

Site Visit – Wednesday, September 21, 2011

Photo 1 – Wilber Street at Kirkwood Avenue looking west

Photo 2 – Wilber Street at Kirkwood Avenue looking south

Photo 3 – On-street parking on Kirkwood Avenue west side, north of Richmond Road

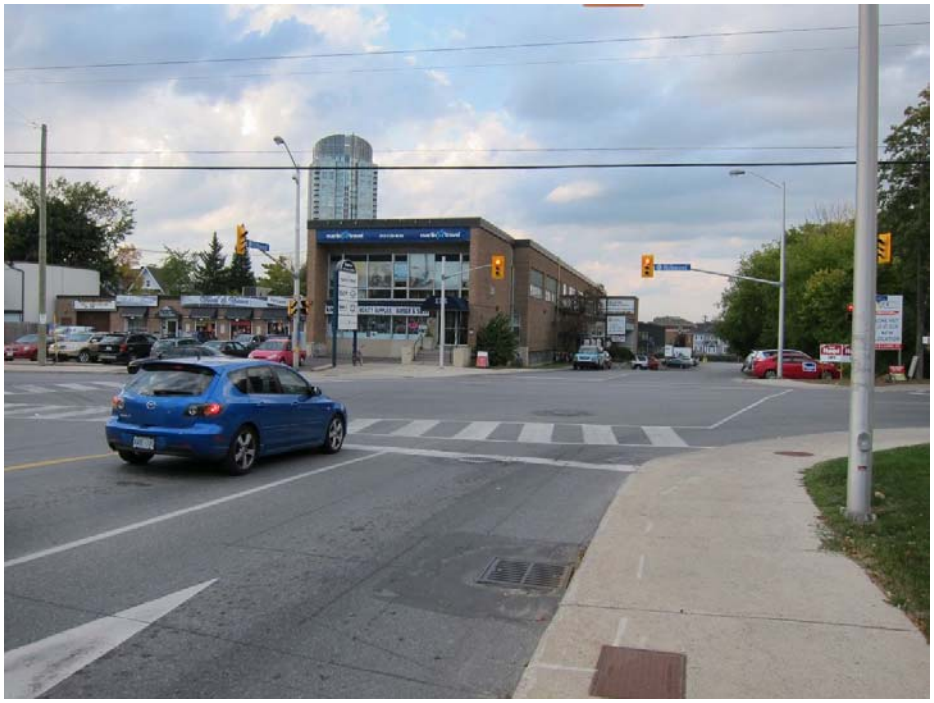


Photo 4 – Kirkwood Avenue at Richmond Road looking north

Photo 5 – Clifton Road north of Richmond Road, looking north

Photo 6 – Clifton Road at Scott Street, looking south

APPENDIX C

Traffic Count Information

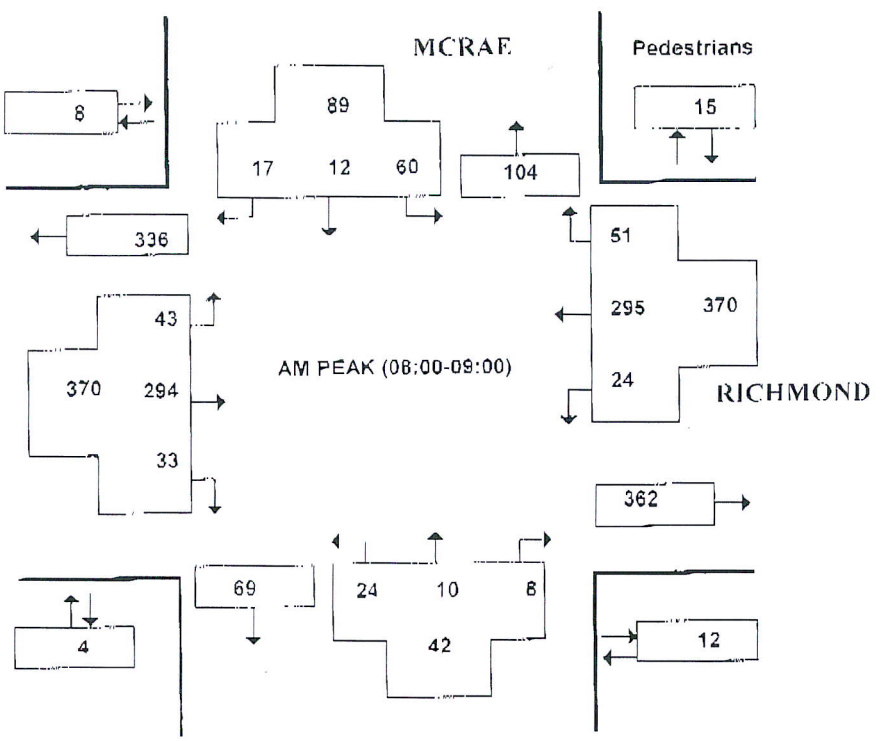
WESTBORO LOBLAWS and RICHMOND RD

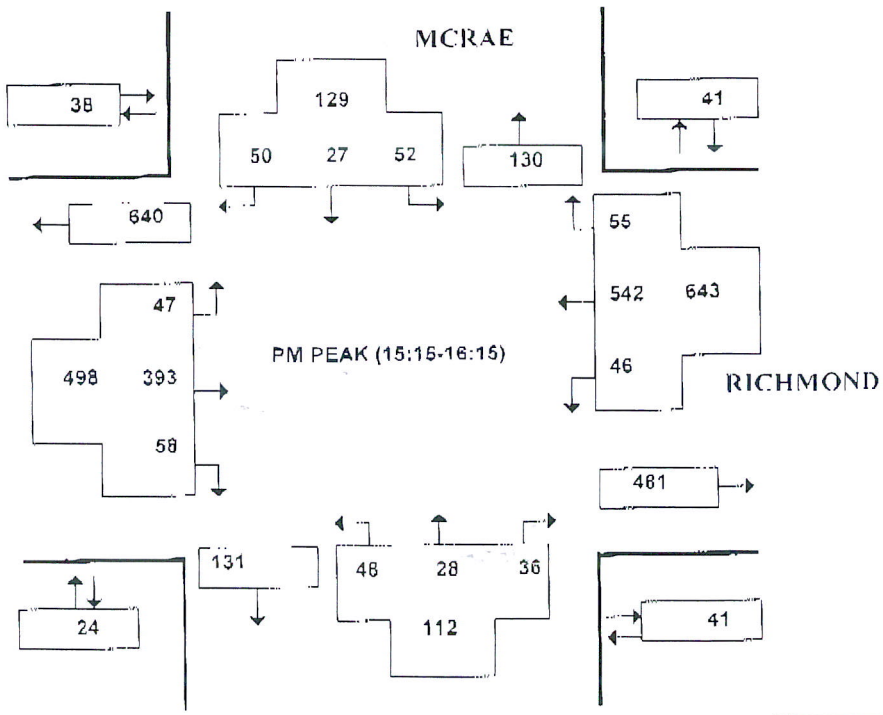
(QLRS Listing MCRAE & RICHMOND)

Survey Date: Friday 14 August 2009
Conditions: dry
Start Time: 0700

Total Observed U-Turns
Northbound: 0 Southbound: 0
Eastbound: 0 Westbound: 0

AADT Factor
Friday in August is 9





Approved by : JM

Printed on : 02/09/2011

Ottawa

Public Works and Services Department

Count ID 2936

CLIFTON RD and SCOTT ST

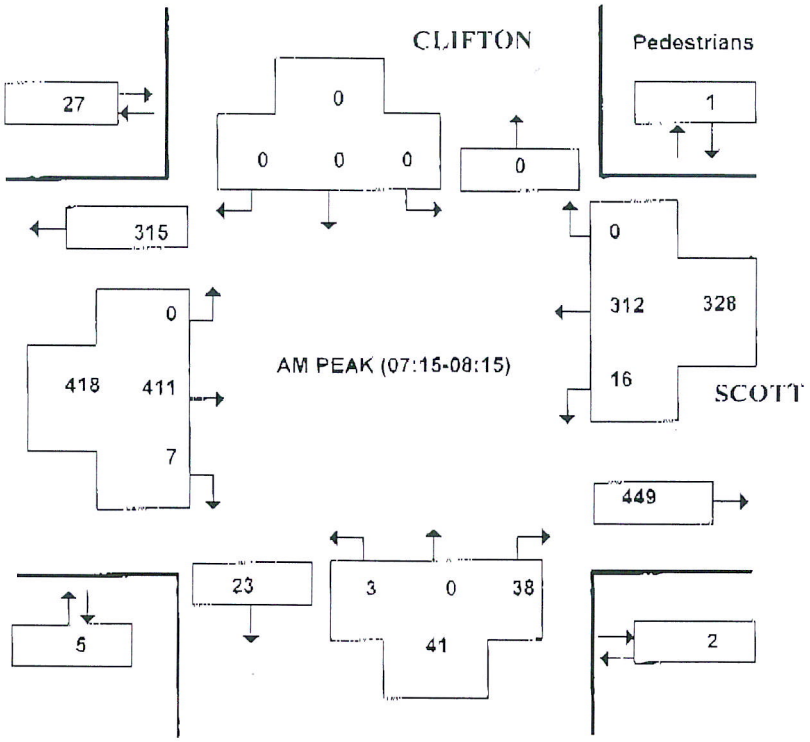
(ULRS Listing CLIFTON & SCOTT)

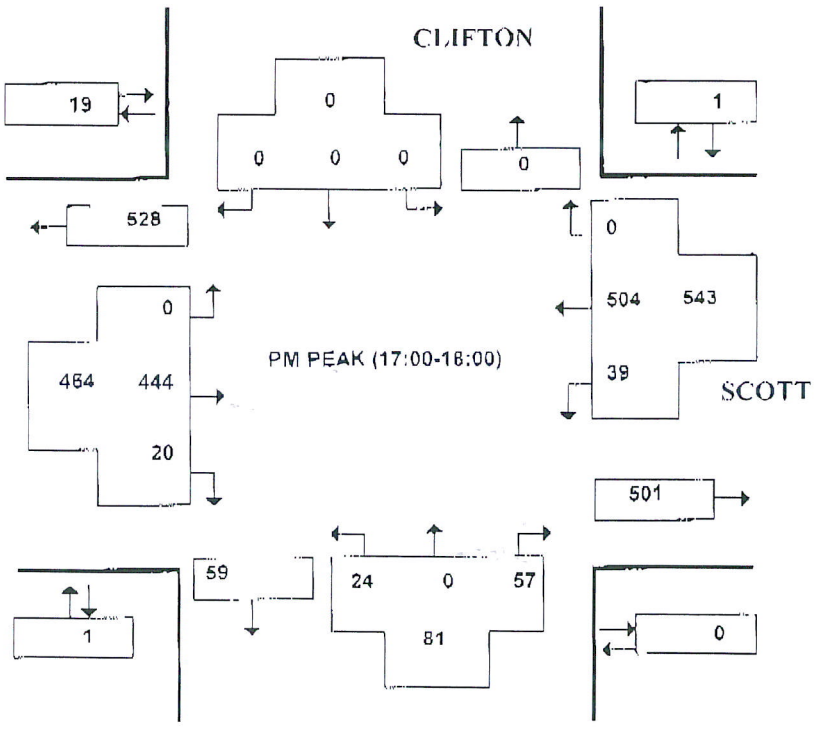
Survey Date: Wednesday 1 June 2011
Conditions: dry
Start Time: 0700

Total Observed U-Turns

Northbound:	0	Southbound:	0
Eastbound:	1	Westbound:	1

AADT Factor
Wednesday in June i
9





Approved by : SC

Printed on : 02/09/2011

Ottawa — *Public Works and Services Department*

Count ID 2722

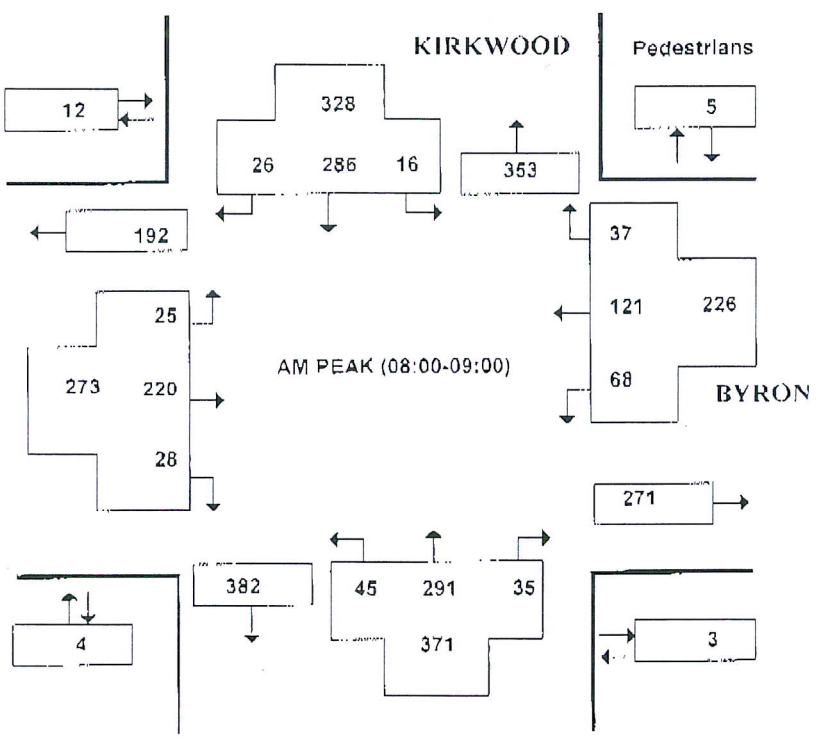
BYRON AVE and KIRKWOOD AVE

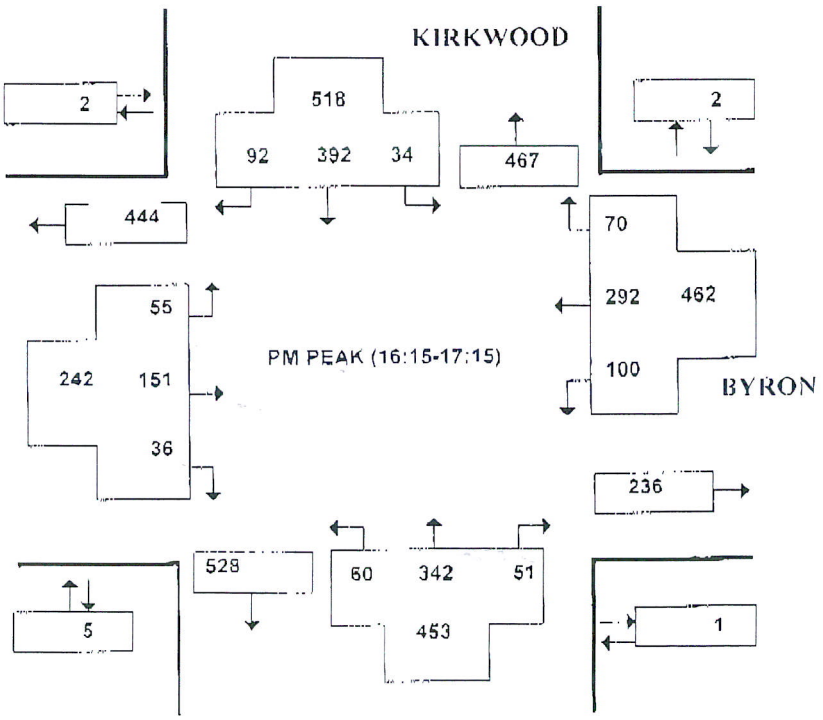
(ULRS Listing BYRON & KIRKWOOD)

Survey Date: Wednesday 25 August 2010
Conditions: Dry
Start Time: 0700

Total Observed U-Turns
Northbound: 0 Southbound: 0
Eastbound: 0 Westbound: 0

AADT Factor
Wednesday in August
9





Approved by : STP

Printed on : 02/09/2011

Ottawa

Public Works and Services Department

Count ID 2869

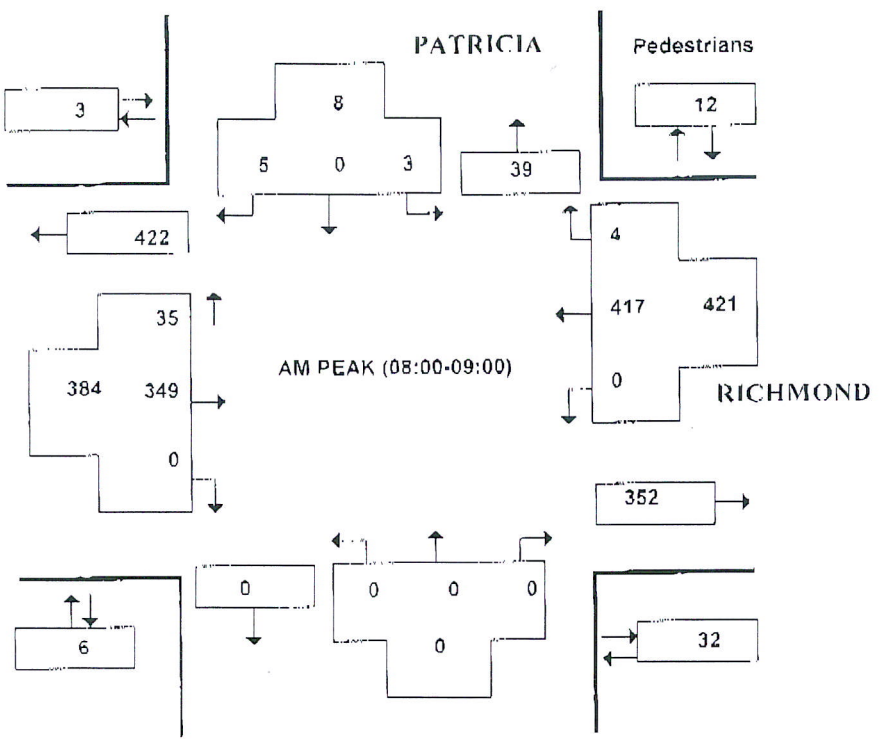
PATRICIA AVE and RICHMOND RD

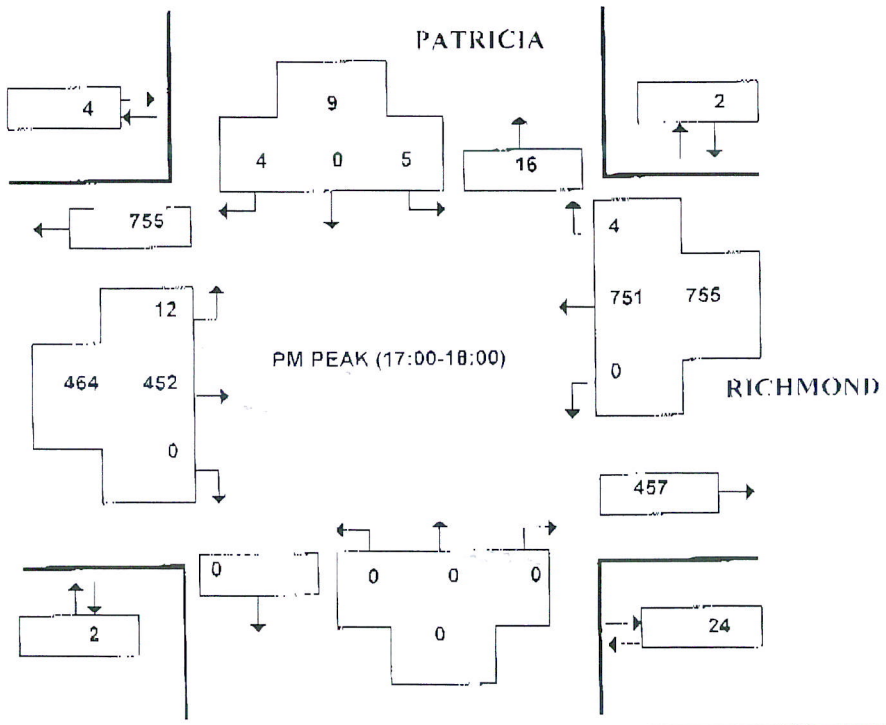
(U RS Listing PATRICIA & RICHMOND)

Survey Date: Tuesday 21 June 2011
Conditions: dry
Start Time: 0700

Total Observed U-Turns
Northbound: 0 Southbound: 0
Eastbound: 5 Westbound: 0

AADT Factor
Tuesday in June is 9





Approved by : AW Construction

Printed on : 02/09/2011

Ottawa

Public Works and Services Department

Count ID 2869

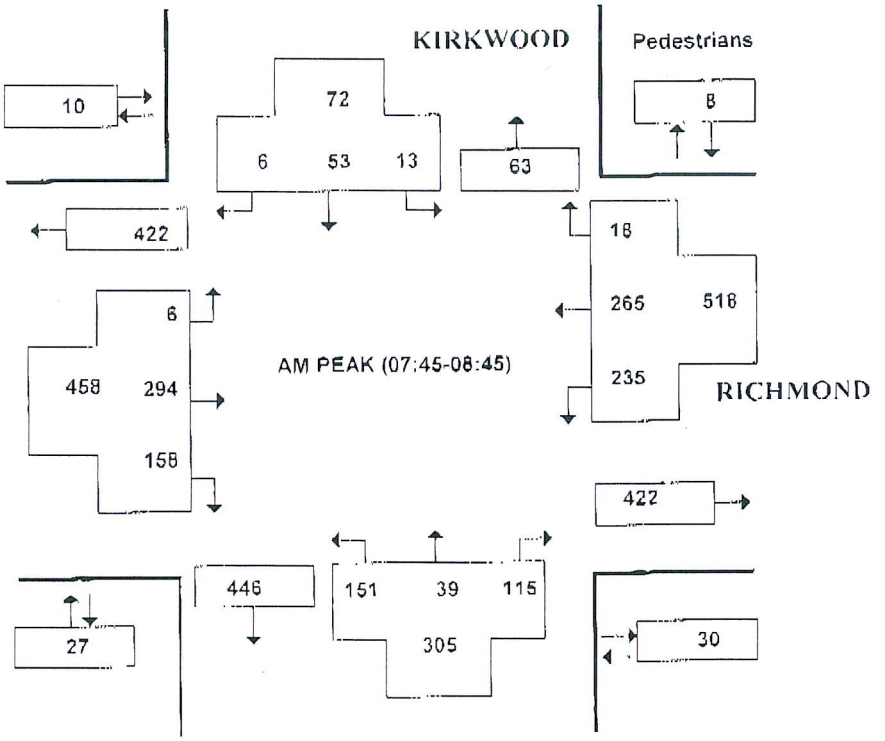
KIRKWOOD AVE and RICHMOND RD

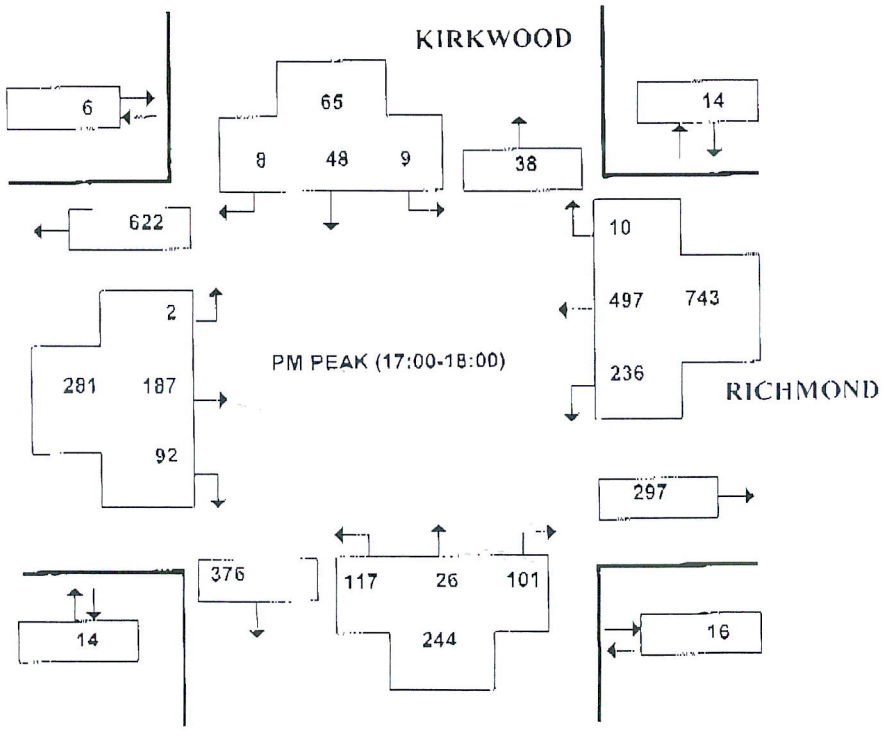
(OURS Listing KIRKWOOD & RICHMOND)

Survey Date: Tuesday 21 June 2011
Conditions: dry
Start Time: 0700

Total Observed U-Turns
Northbound: 0 Southbound: 0
Eastbound: 0 Westbound: 0

AADT Factor
Tuesday in June is
9



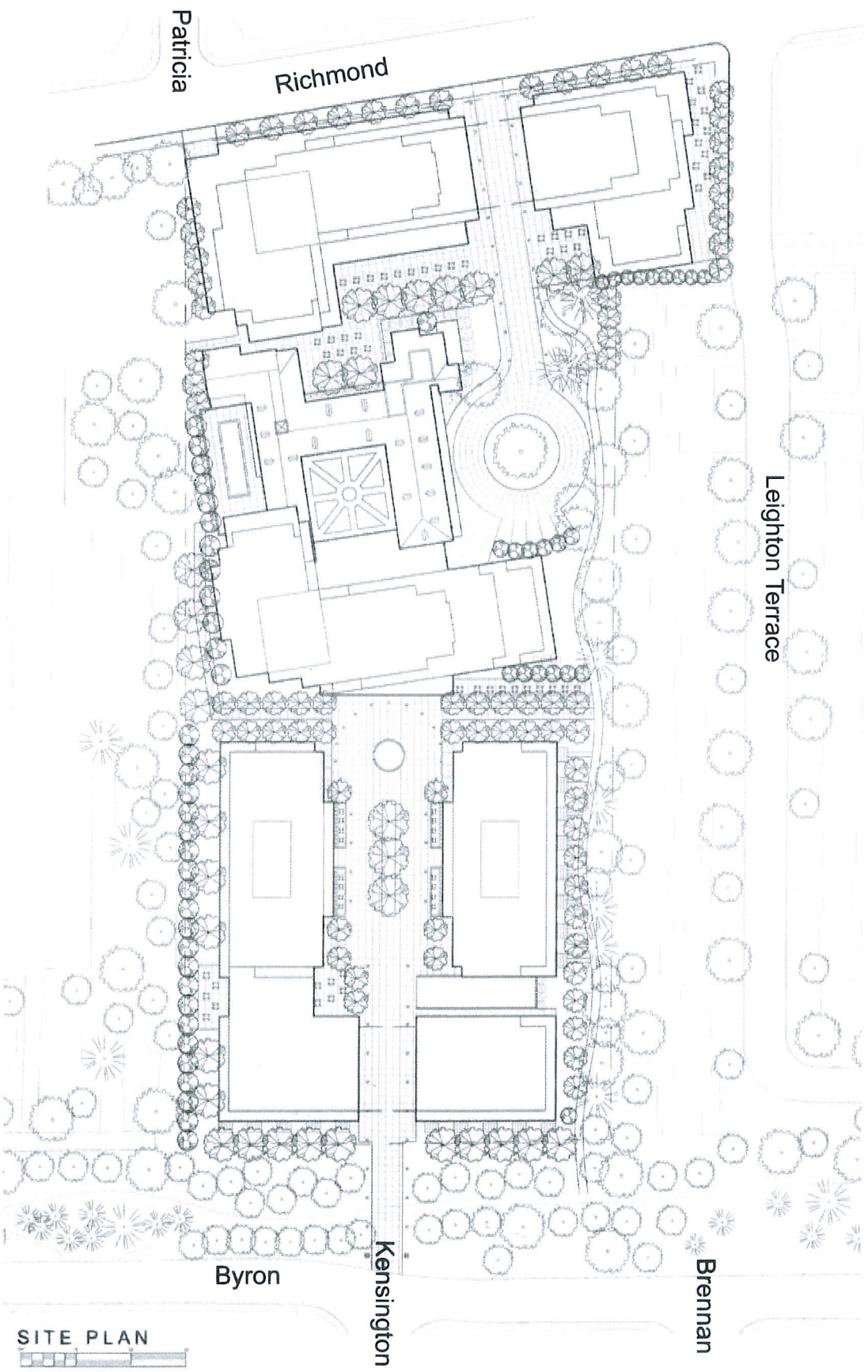


Approved by : AW

Printed on : 02/09/2011

APPENDIX D

Excerpts from 114 Richmond Road CTS/TIS



Delcan
TRANSPORTATION • INFORMATION TECHNOLOGY • WATER

Figure 2: Concept Plan

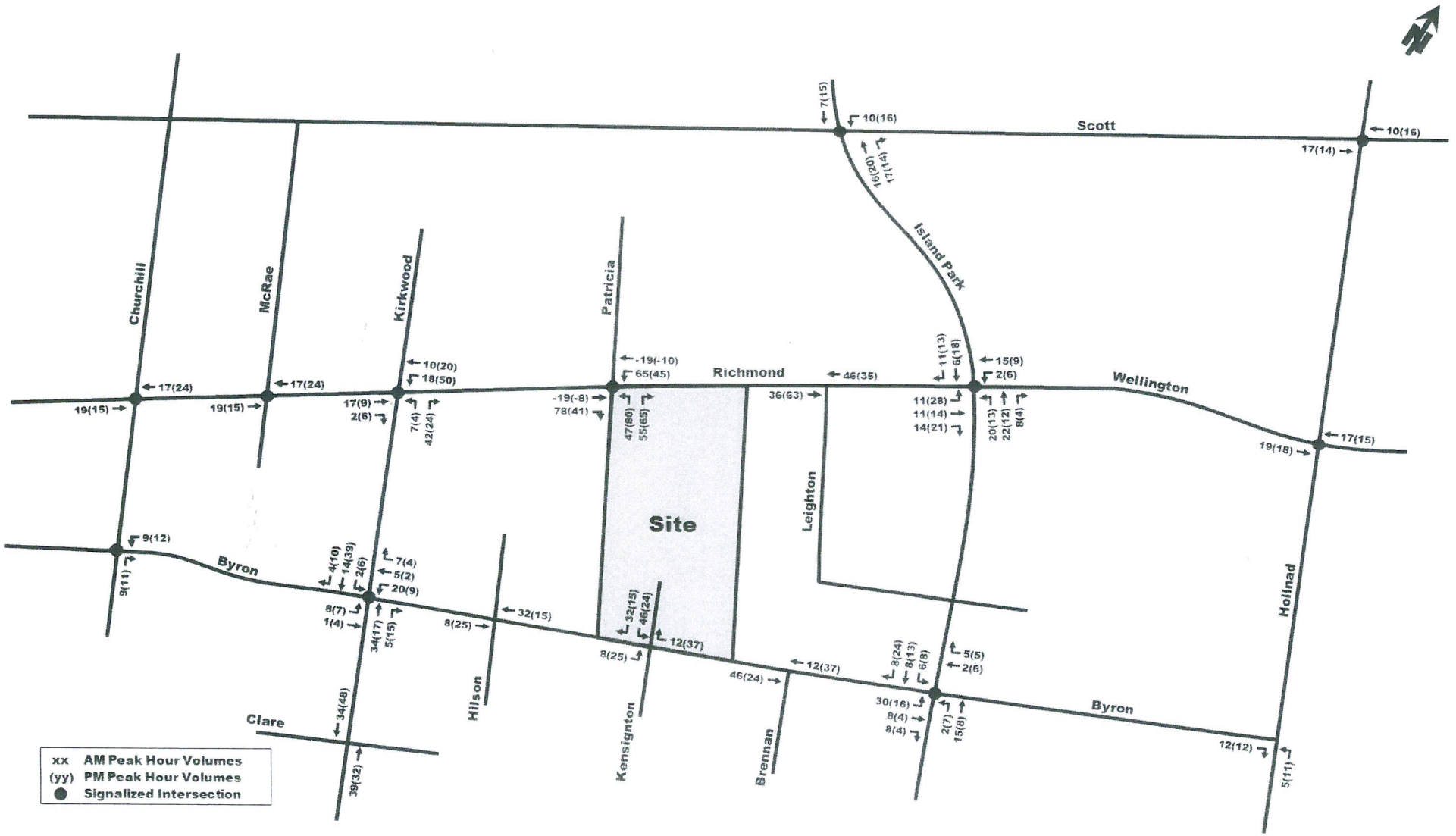


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Figure 5: Site-Generated Peak Hour Traffic Assignment

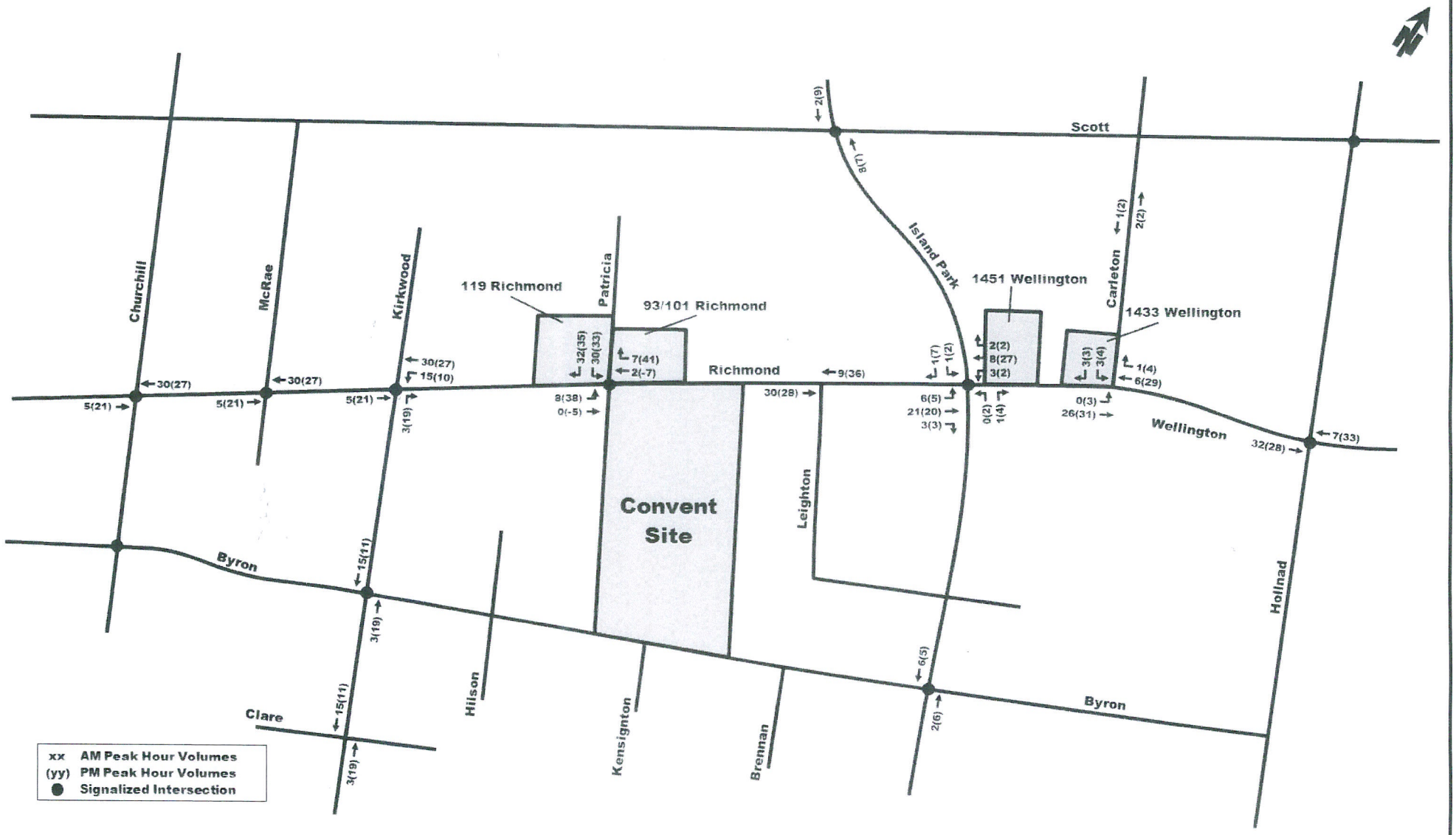


Figure 6: Background Traffic for Development Projects at 1433 and 1451 Wellington Street and 119 and 121 Richmond Road

APPENDIX E1

Intersection Analysis Reports
(Existing Traffic)

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	411	7	16	312	3	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	447	8	17	339	3	41
Pedestrians	5			1	2	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			456		831	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			456		831	454
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	93
cM capacity (veh/h)			1103		332	605

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	454	357	45
Volume Left	0	17	3
Volume Right	8	0	41
cSH	1700	1103	571
Volume to Capacity	0.27	0.02	0.08
Queue Length 95th (m)	0.0	0.4	1.9
Control Delay (s)	0.0	0.6	11.8
Lane LOS		A	B
Approach Delay (s)	0.0	0.6	11.8
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

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)	30.0		0.0	60.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	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	
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.99			0.98	
Frt		0.985			0.978			0.932			0.975	
Flt Protected	0.950			0.950			0.950				0.967	
Satd. Flow (prot)	1658	3217	0	1658	1678	0	1658	1605	0	0	1554	0
Flt Permitted	0.487			0.539			0.725				0.818	
Satd. Flow (perm)	845	3217	0	931	1678	0	1257	1605	0	0	1299	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			20			9			16	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		59.7			61.8			40.8			62.4	
Travel Time (s)		4.3			4.4			2.9			4.5	
Volume (vph)	43	294	33	24	295	51	24	10	8	60	12	17
Confl. Peds. (#/hr)	8		12	12		8	4		15	15		4
Confl. Bikes (#/hr)			14			11						1
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 (%)	2%	3%	4%	2%	2%	10%	2%	2%	2%	10%	2%	2%
Adj. Flow (vph)	47	320	36	26	321	55	26	11	9	65	13	18
Lane Group Flow (vph)	47	356	0	26	376	0	26	20	0	0	96	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		24.5	24.5		24.5	24.5	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	27.0	27.0	0.0	27.0	27.0	0.0
Total Split (%)	64.0%	64.0%	0.0%	64.0%	64.0%	0.0%	36.0%	36.0%	0.0%	36.0%	36.0%	0.0%
Maximum Green (s)	42.0	42.0		42.0	42.0		21.5	21.5		21.5	21.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.7	2.7		2.7	2.7		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	5	5		5	5		1	1		1	1	
Act Effct Green (s)	45.7	45.7		45.7	45.7		16.5	16.5			16.5	
Actuated g/C Ratio	0.79	0.79		0.79	0.79		0.25	0.25			0.25	
v/c Ratio	0.07	0.14		0.04	0.28		0.08	0.05			0.29	
Control Delay	5.6	3.8		5.6	5.1		10.9	8.4			11.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	5.6	3.8		5.6	5.1		10.9	8.4			11.1	
LOS	A	A		A	A		B	A			B	
Approach Delay		4.0			5.2			9.8			11.1	
Approach LOS		A			A			A			B	
90th %ile Green (s)	28.0	28.0		28.0	28.0		19.0	19.0		19.0	19.0	
90th %ile Term Code	Ped	Ped		Ped	Ped		Ped	Ped		Ped	Ped	
70th %ile Green (s)	14.5	14.5		14.5	14.5		10.0	10.0		10.0	10.0	
70th %ile Term Code	Hold	Hold		Gap	Gap		Min	Min		Min	Min	
50th %ile Green (s)	16.3	16.3		16.3	16.3		0.0	0.0		0.0	0.0	
50th %ile Term Code	Dwell	Dwell		Dwell	Dwell		Skip	Skip		Skip	Skip	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
30th %ile Green (s)	44.9	44.9		44.9	44.9		0.0	0.0		0.0	0.0	
30th %ile Term Code	Dwell	Dwell		Dwell	Dwell		Skip	Skip		Skip	Skip	
10th %ile Green (s)	114.0	114.0		114.0	114.0		0.0	0.0		0.0	0.0	
10th %ile Term Code	Dwell	Dwell		Dwell	Dwell		Skip	Skip		Skip	Skip	
Queue Length 50th (m)	0.0	0.0		0.0	0.0		0.3	0.2			0.9	
Queue Length 95th (m)	6.8	15.2		4.3	38.5		6.0	4.3			14.5	
Internal Link Dist (m)		35.7			37.8			16.8			38.4	
Turn Bay Length (m)	30.0			60.0			25.0					
Base Capacity (vph)	727	2770		801	1446		447	577			473	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.06	0.13		0.03	0.26		0.06	0.03			0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 57.5			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 5.5		Intersection LOS: A	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 58.5			
70th %ile Actuated Cycle: 36			
50th %ile Actuated Cycle: 22.3			
30th %ile Actuated Cycle: 50.9			
10th %ile Actuated Cycle: 120			

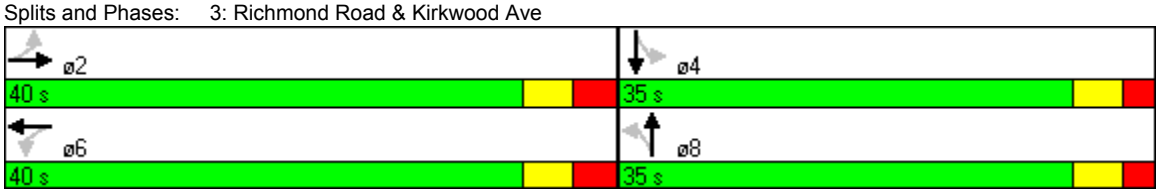
Splits and Phases: 1: Richmond Road & McRae

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
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	
Trailing Detector (m)	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	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99		0.97	0.98			0.99	
Frt		0.948			0.995			0.888			0.988	
Flt Protected		0.999			0.978		0.950				0.991	
Satd. Flow (prot)	0	3017	0	0	3038	0	1580	1435	0	0	1666	0
Flt Permitted		0.947			0.619		0.762				0.950	
Satd. Flow (perm)	0	2860	0	0	1911	0	1227	1435	0	0	1594	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		172			7			125			7	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		76.4			208.6			219.3			90.8	
Travel Time (s)		5.5			15.0			15.8			6.5	
Volume (vph)	6	294	158	235	265	18	151	39	115	13	53	6
Confl. Peds. (#/hr)	10		30	30		10	27		8	8		27
Confl. Bikes (#/hr)			25			8			7			
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 (%)	2%	4%	5%	10%	7%	2%	7%	2%	10%	2%	5%	2%
Adj. Flow (vph)	7	320	172	255	288	20	164	42	125	14	58	7
Lane Group Flow (vph)	0	499	0	0	563	0	164	167	0	0	79	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.3	30.3		30.3	30.3		22.5	22.5		22.5	22.5	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%
Maximum Green (s)	33.7	33.7		33.7	33.7		29.5	29.5		29.5	29.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	15	15		15	15		15	15		15	15	
Act Effct Green (s)		50.8			50.8		16.2	16.2			16.2	
Actuated g/C Ratio		0.68			0.68		0.22	0.22			0.22	
v/c Ratio		0.25			0.43		0.62	0.41			0.23	
Control Delay		3.8			7.5		36.2	10.6			22.4	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		3.8			7.5		36.2	10.6			22.4	
LOS		A			A		D	B			C	
Approach Delay		3.8			7.5			23.3			22.4	
Approach LOS		A			A			C			C	
90th %ile Green (s)	42.2	42.2		42.2	42.2		21.0	21.0		21.0	21.0	
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
70th %ile Green (s)	46.3	46.3		46.3	46.3		16.9	16.9		16.9	16.9	
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
50th %ile Green (s)	49.1	49.1		49.1	49.1		14.1	14.1		14.1	14.1	
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
30th %ile Green (s)	51.7	51.7		51.7	51.7		11.5	11.5		11.5	11.5	
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	53.2	53.2		53.2	53.2		10.0	10.0		10.0	10.0	
10th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Min	Min	
Queue Length 50th (m)		7.2			15.3		21.3	4.9			8.5	
Queue Length 95th (m)		16.7			33.3		35.5	17.5			16.9	
Internal Link Dist (m)		52.4			184.6			195.3			66.8	
Turn Bay Length (m)												
Base Capacity (vph)		1993			1297		507	666			663	
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		0.25			0.43		0.32	0.25			0.12	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 25 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Richmond Road & Kirkwood Ave

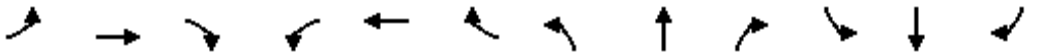


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	15.2	15.2		15.2	15.2		15.2	15.2		15.2	15.2	
Trailing Detector (m)	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	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00						0.98	
Frt					0.999						0.916	
Flt Protected		0.995									0.982	
Satd. Flow (prot)	0	3241	0	0	3280	0	0	1745	0	0	1547	0
Flt Permitted		0.884									0.944	
Satd. Flow (perm)	0	2877	0	0	3280	0	0	1745	0	0	1475	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2						5	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.6			89.9			61.2			74.3	
Travel Time (s)		15.0			6.5			4.4			5.3	
Volume (vph)	35	349	0	0	417	4	0	0	0	3	0	5
Confl. Peds. (#/hr)	12		32	32		3	6		12	12		6
Confl. Bikes (#/hr)			18			2			14			1
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 (%)	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	38	379	0	0	453	4	0	0	0	3	0	5
Lane Group Flow (vph)	0	417	0	0	457	0	0	0	0	0	8	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.2	30.2		30.2	30.2		21.5	21.5		21.5	21.5	
Total Split (s)	73.0	73.0	0.0	73.0	73.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	76.8%	76.8%	0.0%	76.8%	76.8%	0.0%	23.2%	23.2%	0.0%	23.2%	23.2%	0.0%
Maximum Green (s)	67.8	67.8		67.8	67.8		16.5	16.5		16.5	16.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		1.9	1.9		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	5.0	5.0		5.0	5.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	10	10		10	10		5	5		5	5	
Act Effct Green (s)		89.9			89.9						12.7	
Actuated g/C Ratio		0.95			0.95						0.13	
v/c Ratio		0.15			0.15						0.04	
Control Delay		1.3			1.2						25.0	
Queue Delay		0.0			0.0						0.0	
Total Delay		1.3			1.2						25.0	
LOS		A			A						C	
Approach Delay		1.3			1.3						25.0	
Approach LOS		A			A						C	
90th %ile Green (s)	68.3	68.3		68.3	68.3		16.0	16.0		16.0	16.0	
90th %ile Term Code	Coord	Coord		Coord	Coord		Ped	Ped		Ped	Ped	
70th %ile Green (s)	89.8	89.8		89.8	89.8		0.0	0.0		0.0	0.0	
70th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	
50th %ile Green (s)	89.8	89.8		89.8	89.8		0.0	0.0		0.0	0.0	
50th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	
30th %ile Green (s)	89.8	89.8		89.8	89.8		0.0	0.0		0.0	0.0	
30th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	89.8	89.8		89.8	89.8		0.0	0.0		0.0	0.0	
10th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	
Queue Length 50th (m)		0.0			0.0						0.5	
Queue Length 95th (m)		15.1			16.0						4.3	
Internal Link Dist (m)		184.6			65.9			37.2			50.3	
Turn Bay Length (m)												
Base Capacity (vph)		2723			3104						284	
Starvation Cap Reductn		0			0						0	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.15			0.15						0.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 21 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.15			
Intersection Signal Delay: 1.5		Intersection LOS: A	
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Richmond Road & Patricia Ave

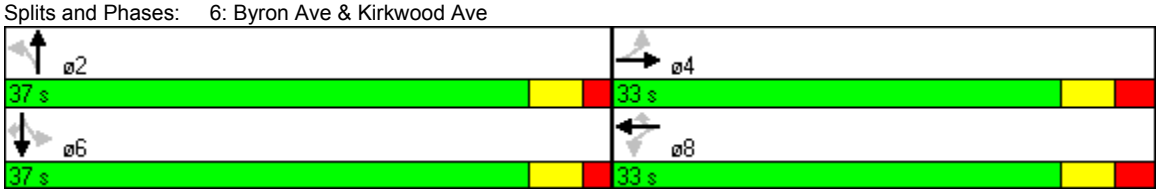


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. 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
Ped Bike Factor		1.00			1.00	0.97		1.00			1.00	0.97
Frt		0.986				0.850		0.987				0.850
Flt Protected		0.995			0.982			0.994			0.997	
Satd. Flow (prot)	0	1705	0	0	1714	1483	0	1682	0	0	1677	1483
Flt Permitted		0.963			0.821			0.928			0.974	
Satd. Flow (perm)	0	1649	0	0	1431	1441	0	1569	0	0	1638	1438
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				40		10				28
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.9			75.7			77.9			219.3	
Travel Time (s)		6.8			5.5			5.6			15.8	
Volume (vph)	25	220	28	68	121	37	45	291	35	16	286	26
Confl. Peds. (#/hr)	12		3	3		12	4		5	5		4
Confl. Bikes (#/hr)			19			12						5
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 (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	6%	2%
Adj. Flow (vph)	27	239	30	74	132	40	49	316	38	17	311	28
Lane Group Flow (vph)	0	296	0	0	206	40	0	403	0	0	328	28
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Detector Phases	4	4		8	8	8	2	2		6	6	6
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	30.8	30.8		30.8	30.8	30.8	25.2	25.2		25.2	25.2	25.2
Total Split (s)	33.0	33.0	0.0	33.0	33.0	33.0	37.0	37.0	0.0	37.0	37.0	37.0
Total Split (%)	47.1%	47.1%	0.0%	47.1%	47.1%	47.1%	52.9%	52.9%	0.0%	52.9%	52.9%	52.9%
Maximum Green (s)	27.2	27.2		27.2	27.2	27.2	31.8	31.8		31.8	31.8	31.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	1.9	1.9		1.9	1.9	1.9
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
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	Max
Walk Time (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	10	10		10	10	10	5	5		5	5	5
Act Effct Green (s)		17.5			17.5	17.5		33.2			33.2	33.2
Actuated g/C Ratio		0.30			0.30	0.30		0.56			0.56	0.56
v/c Ratio		0.59			0.48	0.09		0.45			0.35	0.03
Control Delay		21.9			20.6	5.6		10.6			9.6	3.8
Queue Delay		0.0			0.0	0.0		0.0			0.0	0.0
Total Delay		21.9			20.6	5.6		10.6			9.6	3.8
LOS		C			C	A		B			A	A
Approach Delay		21.9			18.1			10.6			9.1	
Approach LOS		C			B			B			A	
90th %ile Green (s)	25.0	25.0		25.0	25.0	25.0	31.8	31.8		31.8	31.8	31.8
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	MaxR	MaxR		MaxR	MaxR	MaxR
70th %ile Green (s)	18.0	18.0		18.0	18.0	18.0	31.8	31.8		31.8	31.8	31.8
70th %ile Term Code	Gap	Gap		Hold	Hold	Hold	MaxR	MaxR		MaxR	MaxR	MaxR
50th %ile Green (s)	15.0	15.0		15.0	15.0	15.0	31.8	31.8		31.8	31.8	31.8
50th %ile Term Code	Gap	Gap		Hold	Hold	Hold	MaxR	MaxR		MaxR	MaxR	MaxR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
30th %ile Green (s)	12.2	12.2		12.2	12.2	12.2	31.8	31.8		31.8	31.8	31.8
30th %ile Term Code	Gap	Gap		Hold	Hold	Hold	MaxR	MaxR		MaxR	MaxR	MaxR
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	31.8	31.8		31.8	31.8	31.8
10th %ile Term Code	Min	Min		Hold	Hold	Hold	MaxR	MaxR		MaxR	MaxR	MaxR
Queue Length 50th (m)		25.6			17.8	0.0		20.9			16.3	0.0
Queue Length 95th (m)		44.9			33.0	5.0		54.8			42.7	3.4
Internal Link Dist (m)		69.9			51.7			53.9			195.3	
Turn Bay Length (m)						50.0						
Base Capacity (vph)		689			593	620		891			926	825
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			0.35	0.06		0.45			0.35	0.03

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 58.8			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 81.3%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 67.8			
70th %ile Actuated Cycle: 60.8			
50th %ile Actuated Cycle: 57.8			
30th %ile Actuated Cycle: 55			
10th %ile Actuated Cycle: 52.8			

Splits and Phases: 6: Byron Ave & Kirkwood Ave



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	444	20	39	504	24	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	483	22	42	548	26	62
Pedestrians	1			1		
Lane Width (m)	3.5			3.5		
Walking Speed (m/s)	1.2			1.2		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			504		1127	494
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			504		1127	494
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		88	89
cM capacity (veh/h)			1060		217	574

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	504	590	88
Volume Left	0	42	26
Volume Right	22	0	62
cSH	1700	1060	386
Volume to Capacity	0.30	0.04	0.23
Queue Length 95th (m)	0.0	0.9	6.6
Control Delay (s)	0.0	1.1	17.1
Lane LOS		A	C
Approach Delay (s)	0.0	1.1	17.1
Approach LOS			C

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

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)	30.0		0.0	60.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	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	
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.97	0.99		0.96	0.96			0.95	
Frt		0.981			0.986			0.915			0.948	
Flt Protected	0.950			0.950			0.950				0.980	
Satd. Flow (prot)	1658	3218	0	1658	1696	0	1658	1537	0	0	1526	0
Flt Permitted	0.418			0.392			0.644				0.861	
Satd. Flow (perm)	712	3218	0	665	1696	0	1081	1537	0	0	1314	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			12			39			36	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		59.7			61.8			40.8			62.4	
Travel Time (s)		4.3			4.4			2.9			4.5	
Volume (vph)	47	393	58	46	542	55	48	28	36	52	27	50
Confl. Peds. (#/hr)	38		41	41		38	24		41	41		24
Confl. Bikes (#/hr)			2			3						1
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 (%)	2%	2%	2%	2%	2%	10%	2%	2%	2%	10%	2%	2%
Adj. Flow (vph)	51	427	63	50	589	60	52	30	39	57	29	54
Lane Group Flow (vph)	51	490	0	50	649	0	52	69	0	0	140	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		1	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		5.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.0	34.0		11.0	34.0		24.5	24.5		24.5	24.5	
Total Split (s)	44.0	44.0	0.0	15.0	59.0	0.0	26.0	26.0	0.0	26.0	26.0	0.0
Total Split (%)	51.8%	51.8%	0.0%	17.6%	69.4%	0.0%	30.6%	30.6%	0.0%	30.6%	30.6%	0.0%
Maximum Green (s)	38.0	38.0		9.0	53.0		20.5	20.5		20.5	20.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.7	2.7		2.7	2.7		2.2	2.2		2.2	2.2	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0			18.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	5	5			5		1	1		1	1	
Act Effct Green (s)	33.0	33.0		34.5	37.8		14.3	14.3			14.3	
Actuated g/C Ratio	0.61	0.61		0.57	0.70		0.25	0.25			0.25	
v/c Ratio	0.12	0.25		0.10	0.55		0.19	0.17			0.39	
Control Delay	11.7	8.8		6.4	8.5		18.1	10.8			15.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	11.7	8.8		6.4	8.5		18.1	10.8			15.9	
LOS	B	A		A	A		B	B			B	
Approach Delay		9.1			8.3			13.9			15.9	
Approach LOS		A			A			B			B	
90th %ile Green (s)	28.8	28.8		7.6	42.4		19.0	19.0		19.0	19.0	
90th %ile Term Code	Hold	Hold		Gap	Gap		Ped	Ped		Ped	Ped	
70th %ile Green (s)	14.6	14.6		6.5	27.1		11.2	11.2		11.2	11.2	
70th %ile Term Code	Gap	Gap		Gap	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	21.1	21.1		0.0	21.1		10.0	10.0		10.0	10.0	
50th %ile Term Code	Hold	Hold		Skip	Gap		Min	Min		Min	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
30th %ile Green (s)	16.6	16.6		0.0	16.6		0.0	0.0		0.0	0.0	
30th %ile Term Code	Dwell	Dwell		Skip	Dwell		Skip	Skip		Skip	Skip	
10th %ile Green (s)	60.4	60.4		0.0	60.4		10.0	10.0		10.0	10.0	
10th %ile Term Code	Dwell	Dwell		Skip	Dwell		Hold	Hold		Min	Min	
Queue Length 50th (m)	1.6	8.1		1.5	29.3		2.9	1.6			6.0	
Queue Length 95th (m)	11.1	32.5		6.1	79.5		13.5	11.6			25.2	
Internal Link Dist (m)		35.7			37.8			16.8			38.4	
Turn Bay Length (m)	30.0			60.0			25.0					
Base Capacity (vph)	494	2240		548	1321		383	570			489	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.10	0.22		0.09	0.49		0.14	0.12			0.29	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 54
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 9.8 — Intersection LOS: A
Intersection Capacity Utilization 63.5% — ICU Level of Service B
Analysis Period (min) 15
90th %ile Actuated Cycle: 72.9
70th %ile Actuated Cycle: 49.8
50th %ile Actuated Cycle: 42.6
30th %ile Actuated Cycle: 22.6
10th %ile Actuated Cycle: 81.9

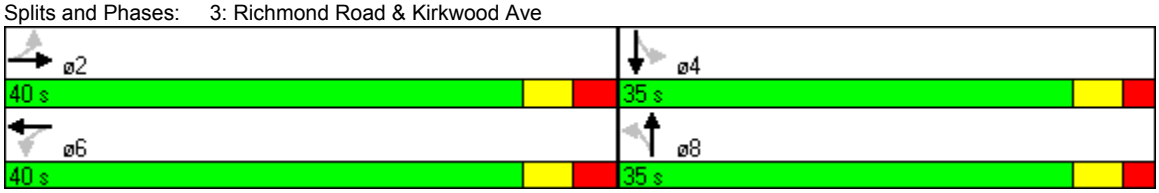
Splits and Phases: 1: Richmond Road & McRae

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
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	
Trailing Detector (m)	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	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		0.98	0.97			0.99	
Frt		0.951			0.998			0.880			0.983	
Flt Protected					0.984		0.950				0.993	
Satd. Flow (prot)	0	3099	0	0	3234	0	1626	1438	0	0	1696	0
Flt Permitted		0.951			0.740		0.711				0.966	
Satd. Flow (perm)	0	2947	0	0	2424	0	1196	1438	0	0	1646	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		100			2			110			9	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		76.4			208.6			219.3			90.8	
Travel Time (s)		5.5			15.0			15.8			6.5	
Volume (vph)	2	187	92	236	497	10	117	26	101	9	48	8
Confl. Peds. (#/hr)	6		16	16		6	14		14	14		14
Confl. Bikes (#/hr)			14			20			7			7
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 (%)	2%	2%	4%	4%	2%	2%	4%	2%	7%	2%	2%	2%
Adj. Flow (vph)	2	203	100	257	540	11	127	28	110	10	52	9
Lane Group Flow (vph)	0	305	0	0	808	0	127	138	0	0	71	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.3	30.3		30.3	30.3		22.5	22.5		22.5	22.5	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%
Maximum Green (s)	33.7	33.7		33.7	33.7		29.5	29.5		29.5	29.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	15	15		15	15		15	15		15	15	
Act Effct Green (s)		52.5			52.5		14.5	14.5			14.5	
Actuated g/C Ratio		0.70			0.70		0.19	0.19			0.19	
v/c Ratio		0.15			0.48		0.55	0.38			0.22	
Control Delay		3.1			6.7		35.9	10.8			23.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		3.1			6.7		35.9	10.8			23.2	
LOS		A			A		D	B			C	
Approach Delay		3.1			6.7			22.8			23.2	
Approach LOS		A			A			C			C	
90th %ile Green (s)	45.0	45.0		45.0	45.0		18.2	18.2		18.2	18.2	
90th %ile Term Code	Coord	Coord		Coord	Coord		Ped	Ped		Hold	Hold	
70th %ile Green (s)	48.6	48.6		48.6	48.6		14.6	14.6		14.6	14.6	
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
50th %ile Green (s)	51.0	51.0		51.0	51.0		12.2	12.2		12.2	12.2	
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
30th %ile Green (s)	53.2	53.2		53.2	53.2		10.0	10.0		10.0	10.0	
30th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Min	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	53.2	53.2		53.2	53.2		10.0	10.0		10.0	10.0	
10th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Min	Min	
Queue Length 50th (m)		3.8			21.1		16.6	3.3			7.5	
Queue Length 95th (m)		9.6			42.3		29.6	15.5			16.1	
Internal Link Dist (m)		52.4			184.6			195.3			66.8	
Turn Bay Length (m)												
Base Capacity (vph)		2093			1697		494	659			686	
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		0.15			0.48		0.26	0.21			0.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 25 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Richmond Road & Kirkwood Ave



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
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	
Trailing Detector (m)	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	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00						0.99	
Frt					0.999						0.940	
Flt Protected		0.999									0.973	
Satd. Flow (prot)	0	3281	0	0	3312	0	0	1745	0	0	1584	0
Flt Permitted		0.932									0.915	
Satd. Flow (perm)	0	3061	0	0	3312	0	0	1745	0	0	1487	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						4	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.6			89.9			61.2			74.3	
Travel Time (s)		15.0			6.5			4.4			5.3	
Volume (vph)	12	452	0	0	751	4	0	0	0	5	0	4
Confl. Peds. (#/hr)	4		24	24		4	2		2	2		2
Confl. Bikes (#/hr)			20						18			2
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 (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	13	491	0	0	816	4	0	0	0	5	0	4
Lane Group Flow (vph)	0	504	0	0	820	0	0	0	0	0	9	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.2	30.2		30.2	30.2		21.5	21.5		21.5	21.5	
Total Split (s)	63.0	63.0	0.0	63.0	63.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	74.1%	74.1%	0.0%	74.1%	74.1%	0.0%	25.9%	25.9%	0.0%	25.9%	25.9%	0.0%
Maximum Green (s)	57.8	57.8		57.8	57.8		16.5	16.5		16.5	16.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		1.9	1.9		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	5.0	5.0		5.0	5.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	10	10		10	10		5	5		5	5	
Act Effct Green (s)		79.9			79.9						12.7	
Actuated g/C Ratio		0.94			0.94						0.15	
v/c Ratio		0.18			0.26						0.04	
Control Delay		1.5			1.7						23.9	
Queue Delay		0.0			0.0						0.0	
Total Delay		1.5			1.7						23.9	
LOS		A			A						C	
Approach Delay		1.5			1.7						23.9	
Approach LOS		A			A						C	
90th %ile Green (s)	58.3	58.3		58.3	58.3		16.0	16.0		16.0	16.0	
90th %ile Term Code	Coord	Coord		Coord	Coord		Ped	Ped		Ped	Ped	
70th %ile Green (s)	79.8	79.8		79.8	79.8		0.0	0.0		0.0	0.0	
70th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	
50th %ile Green (s)	79.8	79.8		79.8	79.8		0.0	0.0		0.0	0.0	
50th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	
30th %ile Green (s)	79.8	79.8		79.8	79.8		0.0	0.0		0.0	0.0	
30th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	79.8	79.8		79.8	79.8		0.0	0.0		0.0	0.0	
10th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	
Queue Length 50th (m)		0.0			0.0						0.7	
Queue Length 95th (m)		18.5			31.6						4.4	
Internal Link Dist (m)		184.6			65.9			37.2			50.3	
Turn Bay Length (m)												
Base Capacity (vph)		2877			3113						318	
Starvation Cap Reductn		0			0						0	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.18			0.26						0.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 51 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 1.7		Intersection LOS: A	
Intersection Capacity Utilization 37.6%		ICU Level of Service A	
Analysis Period (min) 15			

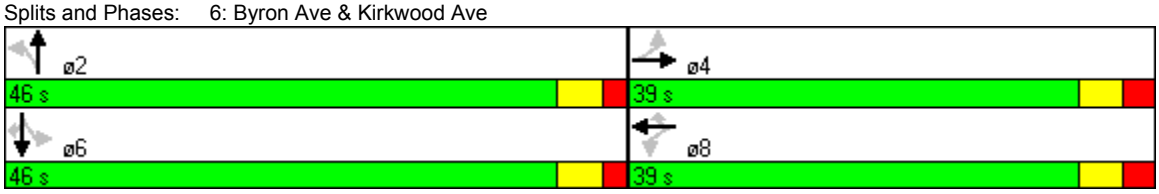
Splits and Phases: 4: Richmond Road & Patricia Ave

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)	0.0		0.0	0.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. 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
Ped Bike Factor		1.00			1.00	0.98		1.00			1.00	0.96
Frt		0.980				0.850		0.985				0.850
Flt Protected		0.989			0.987			0.994			0.996	
Satd. Flow (prot)	0	1684	0	0	1722	1483	0	1679	0	0	1692	1483
Flt Permitted		0.744			0.841			0.860			0.938	
Satd. Flow (perm)	0	1267	0	0	1467	1451	0	1452	0	0	1594	1428
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				76		10				100
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.9			75.7			77.9			219.3	
Travel Time (s)		6.8			5.5			5.6			15.8	
Volume (vph)	55	151	36	100	292	70	60	352	51	34	392	92
Confl. Peds. (#/hr)	2		1	1		2	5		2	2		5
Confl. Bikes (#/hr)			9			14			2			9
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 (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	5%	2%
Adj. Flow (vph)	60	164	39	109	317	76	65	383	55	37	426	100
Lane Group Flow (vph)	0	263	0	0	426	76	0	503	0	0	463	100
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Detector Phases	4	4		8	8	8	2	2		6	6	6
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	30.8	30.8		30.8	30.8	30.8	25.2	25.2		25.2	25.2	25.2
Total Split (s)	39.0	39.0	0.0	39.0	39.0	39.0	46.0	46.0	0.0	46.0	46.0	46.0
Total Split (%)	45.9%	45.9%	0.0%	45.9%	45.9%	45.9%	54.1%	54.1%	0.0%	54.1%	54.1%	54.1%
Maximum Green (s)	33.2	33.2		33.2	33.2	33.2	40.8	40.8		40.8	40.8	40.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	1.9	1.9		1.9	1.9	1.9
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
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	Max
Walk Time (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	10	10		10	10	10	5	5		5	5	5
Act Effct Green (s)		27.9			27.9	27.9		42.3			42.3	42.3
Actuated g/C Ratio		0.36			0.36	0.36		0.54			0.54	0.54
v/c Ratio		0.57			0.81	0.13		0.64			0.54	0.12
Control Delay		24.2			36.0	4.7		18.6			16.1	3.1
Queue Delay		0.0			0.0	0.0		0.0			0.0	0.0
Total Delay		24.2			36.0	4.7		18.6			16.1	3.1
LOS		C			D	A		B			B	A
Approach Delay		24.2			31.3			18.6			13.8	
Approach LOS		C			C			B			B	
90th %ile Green (s)	33.2	33.2		33.2	33.2	33.2	40.8	40.8		40.8	40.8	40.8
90th %ile Term Code	Hold	Hold		Max	Max	Max	MaxR	MaxR		MaxR	MaxR	MaxR
70th %ile Green (s)	33.2	33.2		33.2	33.2	33.2	40.8	40.8		40.8	40.8	40.8
70th %ile Term Code	Hold	Hold		Max	Max	Max	MaxR	MaxR		MaxR	MaxR	MaxR
50th %ile Green (s)	27.7	27.7		27.7	27.7	27.7	40.8	40.8		40.8	40.8	40.8
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	MaxR	MaxR		MaxR	MaxR	MaxR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
30th %ile Green (s)	22.5	22.5		22.5	22.5	22.5	40.8	40.8		40.8	40.8	40.8
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	MaxR	MaxR		MaxR	MaxR	MaxR
10th %ile Green (s)	15.8	15.8		15.8	15.8	15.8	40.8	40.8		40.8	40.8	40.8
10th %ile Term Code	Hold	Hold		Gap	Gap	Gap	MaxR	MaxR		MaxR	MaxR	MaxR
Queue Length 50th (m)		29.2			55.8	0.0		49.9			43.5	0.0
Queue Length 95th (m)		51.0			89.6	7.5		95.2			80.2	7.2
Internal Link Dist (m)		69.9			51.7			53.9			195.3	
Turn Bay Length (m)						50.0						
Base Capacity (vph)		529			604	642		790			862	818
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			0.71	0.12		0.64			0.54	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 78.3			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 99.7%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 85			
70th %ile Actuated Cycle: 85			
50th %ile Actuated Cycle: 79.5			
30th %ile Actuated Cycle: 74.3			
10th %ile Actuated Cycle: 67.6			

Splits and Phases: 6: Byron Ave & Kirkwood Ave



APPENDIX E2

Intersection Analysis Reports
(Total Traffic)

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	411	7	10	312	3	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	447	8	11	339	3	57
Pedestrians	5			1	2	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			456		818	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			456		818	454
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	91
cM capacity (veh/h)			1103		340	605

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	454	350	60
Volume Left	0	11	3
Volume Right	8	0	57
cSH	1700	1103	580
Volume to Capacity	0.27	0.01	0.10
Queue Length 95th (m)	0.0	0.2	2.6
Control Delay (s)	0.0	0.4	11.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.4	11.9
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

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)	30.0		0.0	60.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	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	
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.99			0.98	
Frt		0.986			0.980			0.932			0.975	
Flt Protected	0.950			0.950			0.950				0.967	
Satd. Flow (prot)	1658	3221	0	1658	1684	0	1658	1605	0	0	1554	0
Flt Permitted	0.462			0.528			0.725				0.818	
Satd. Flow (perm)	802	3221	0	913	1684	0	1257	1605	0	0	1299	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			18			9			16	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		59.7			61.8			40.8			62.4	
Travel Time (s)		4.3			4.4			2.9			4.5	
Volume (vph)	43	315	33	24	325	51	24	10	8	60	12	17
Confl. Peds. (#/hr)	8		12	12		8	4		15	15		4
Confl. Bikes (#/hr)			14			11						1
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 (%)	2%	3%	4%	2%	2%	10%	2%	2%	2%	10%	2%	2%
Adj. Flow (vph)	47	342	36	26	353	55	26	11	9	65	13	18
Lane Group Flow (vph)	47	378	0	26	408	0	26	20	0	0	96	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		24.5	24.5		24.5	24.5	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	27.0	27.0	0.0	27.0	27.0	0.0
Total Split (%)	64.0%	64.0%	0.0%	64.0%	64.0%	0.0%	36.0%	36.0%	0.0%	36.0%	36.0%	0.0%
Maximum Green (s)	42.0	42.0		42.0	42.0		21.5	21.5		21.5	21.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.7	2.7		2.7	2.7		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	5	5		5	5		1	1		1	1	
Act Effct Green (s)	41.4	41.4		41.4	41.4		16.6	16.6			16.6	
Actuated g/C Ratio	0.69	0.69		0.69	0.69		0.25	0.25			0.25	
v/c Ratio	0.09	0.17		0.04	0.35		0.08	0.05			0.29	
Control Delay	6.7	5.0		6.5	6.9		11.2	8.7			11.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	6.7	5.0		6.5	6.9		11.2	8.7			11.4	
LOS	A	A		A	A		B	A			B	
Approach Delay		5.2			6.8			10.1			11.4	
Approach LOS		A			A			B			B	
90th %ile Green (s)	28.0	28.0		28.0	28.0		19.0	19.0		19.0	19.0	
90th %ile Term Code	Ped	Ped		Ped	Ped		Ped	Ped		Ped	Ped	
70th %ile Green (s)	15.5	15.5		15.5	15.5		10.0	10.0		10.0	10.0	
70th %ile Term Code	Hold	Hold		Gap	Gap		Min	Min		Min	Min	
50th %ile Green (s)	13.6	13.6		13.6	13.6		10.0	10.0		10.0	10.0	
50th %ile Term Code	Dwell	Dwell		Dwell	Dwell		Hold	Hold		Min	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
30th %ile Green (s)	44.9	44.9		44.9	44.9		0.0	0.0		0.0	0.0	
30th %ile Term Code	Dwell	Dwell		Dwell	Dwell		Skip	Skip		Skip	Skip	
10th %ile Green (s)	114.0	114.0		114.0	114.0		0.0	0.0		0.0	0.0	
10th %ile Term Code	Dwell	Dwell		Dwell	Dwell		Skip	Skip		Skip	Skip	
Queue Length 50th (m)	1.4	5.9		0.8	14.5		1.0	0.4			3.2	
Queue Length 95th (m)	6.8	16.2		4.3	42.8		6.0	4.3			14.5	
Internal Link Dist (m)		35.7			37.8			16.8			38.4	
Turn Bay Length (m)	30.0			60.0			25.0					
Base Capacity (vph)	641	2577		729	1348		452	583			477	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.07	0.15		0.04	0.30		0.06	0.03			0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 60.3			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 6.7		Intersection LOS: A	
Intersection Capacity Utilization 52.7%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 58.5			
70th %ile Actuated Cycle: 37			
50th %ile Actuated Cycle: 35.1			
30th %ile Actuated Cycle: 50.9			
10th %ile Actuated Cycle: 120			

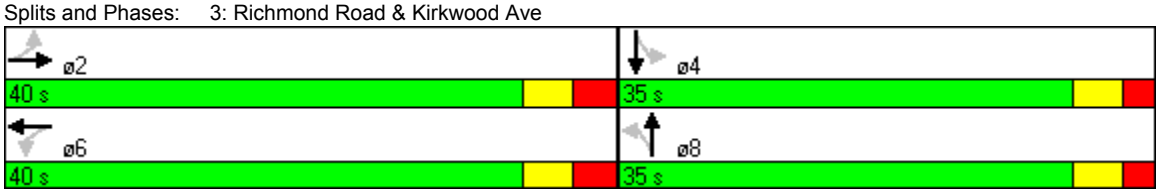
Splits and Phases: 1: Richmond Road & McRae

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
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	
Trailing Detector (m)	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	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99		0.97	0.98			0.99	
Frt		0.950			0.996			0.909			0.978	
Flt Protected					0.978		0.950				0.987	
Satd. Flow (prot)	0	3028	0	0	3040	0	1580	1490	0	0	1644	0
Flt Permitted		0.952			0.611		0.698				0.899	
Satd. Flow (perm)	0	2882	0	0	1888	0	1128	1490	0	0	1494	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		161			5			128			16	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		76.4			208.6			219.3			90.8	
Travel Time (s)		5.5			15.0			15.8			6.5	
Volume (vph)	3	316	160	268	305	15	158	75	118	30	67	19
Confl. Peds. (#/hr)	10		30	30		10	27		8	8		27
Confl. Bikes (#/hr)			25			8			7			
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 (%)	2%	4%	5%	10%	7%	2%	7%	2%	10%	2%	5%	2%
Adj. Flow (vph)	3	343	174	291	332	16	172	82	128	33	73	21
Lane Group Flow (vph)	0	520	0	0	639	0	172	210	0	0	127	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.3	30.3		30.3	30.3		22.5	22.5		22.5	22.5	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%
Maximum Green (s)	33.7	33.7		33.7	33.7		29.5	29.5		29.5	29.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	15	15		15	15		15	15		15	15	
Act Effct Green (s)		49.4			49.4		17.6	17.6			17.6	
Actuated g/C Ratio		0.66			0.66		0.23	0.23			0.23	
v/c Ratio		0.27			0.51		0.65	0.47			0.35	
Control Delay		4.6			9.6		36.5	12.8			21.9	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		4.6			9.6		36.5	12.8			21.9	
LOS		A			A		D	B			C	
Approach Delay		4.6			9.6			23.5			21.9	
Approach LOS		A			A			C			C	
90th %ile Green (s)	39.2	39.2		39.2	39.2		24.0	24.0		24.0	24.0	
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
70th %ile Green (s)	44.6	44.6		44.6	44.6		18.6	18.6		18.6	18.6	
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
50th %ile Green (s)	47.7	47.7		47.7	47.7		15.5	15.5		15.5	15.5	
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
30th %ile Green (s)	50.7	50.7		50.7	50.7		12.5	12.5		12.5	12.5	
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	53.2	53.2		53.2	53.2		10.0	10.0		10.0	10.0	
10th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Min	Min	
Queue Length 50th (m)		8.6			20.2		22.3	9.5			13.2	
Queue Length 95th (m)		20.4			45.3		35.7	22.9			23.0	
Internal Link Dist (m)		52.4			184.6			195.3			66.8	
Turn Bay Length (m)												
Base Capacity (vph)		1953			1245		466	691			627	
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		0.27			0.51		0.37	0.30			0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 25 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 77.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Richmond Road & Kirkwood Ave



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
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	
Trailing Detector (m)	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	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			1.00			0.97			0.98	
Frt		0.975			0.997			0.927			0.929	
Flt Protected		0.995			0.993			0.978			0.977	
Satd. Flow (prot)	0	3124	0	0	3254	0	0	1540	0	0	1564	0
Flt Permitted		0.868			0.817			0.858			0.855	
Satd. Flow (perm)	0	2722	0	0	2666	0	0	1346	0	0	1359	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64			6			55			40	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.6			89.9			61.2			74.3	
Travel Time (s)		15.0			6.5			4.4			5.3	
Volume (vph)	43	347	78	65	397	11	47	0	55	33	0	37
Confl. Peds. (#/hr)	12		32	32		3	6		12	12		6
Confl. Bikes (#/hr)			18			2			14			1
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 (%)	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	377	85	71	432	12	51	0	60	36	0	40
Lane Group Flow (vph)	0	509	0	0	515	0	0	111	0	0	76	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.2	30.2		30.2	30.2		21.5	21.5		21.5	21.5	
Total Split (s)	73.0	73.0	0.0	73.0	73.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	76.8%	76.8%	0.0%	76.8%	76.8%	0.0%	23.2%	23.2%	0.0%	23.2%	23.2%	0.0%
Maximum Green (s)	67.8	67.8		67.8	67.8		16.5	16.5		16.5	16.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		1.9	1.9		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	5.0	5.0		5.0	5.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	10	10		10	10		5	5		5	5	
Act Effct Green (s)		77.9			77.9			13.0			13.0	
Actuated g/C Ratio		0.82			0.82			0.14			0.14	
v/c Ratio		0.23			0.24			0.48			0.34	
Control Delay		2.7			3.1			27.3			24.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		2.7			3.1			27.3			24.3	
LOS		A			A			C			C	
Approach Delay		2.7			3.1			27.3			24.3	
Approach LOS		A			A			C			C	
90th %ile Green (s)	68.3	68.3		68.3	68.3		16.0	16.0		16.0	16.0	
90th %ile Term Code	Coord	Coord		Coord	Coord		Ped	Ped		Ped	Ped	
70th %ile Green (s)	72.6	72.6		72.6	72.6		11.7	11.7		11.7	11.7	
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
50th %ile Green (s)	74.3	74.3		74.3	74.3		10.0	10.0		10.0	10.0	
50th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Min	Min	
30th %ile Green (s)	74.3	74.3		74.3	74.3		10.0	10.0		10.0	10.0	
30th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Min	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	89.8	89.8		89.8	89.8		0.0	0.0		0.0	0.0	
10th %ile Term Code	Coord	Coord		Coord	Coord		Skip	Skip		Skip	Skip	
Queue Length 50th (m)		8.0			9.4			9.6			6.1	
Queue Length 95th (m)		16.6			19.1			24.1			17.8	
Internal Link Dist (m)		184.6			65.9			37.2			50.3	
Turn Bay Length (m)												
Base Capacity (vph)		2242			2186			300			290	
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		0.23			0.24			0.37			0.26	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 21 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.5		Intersection LOS: A	
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

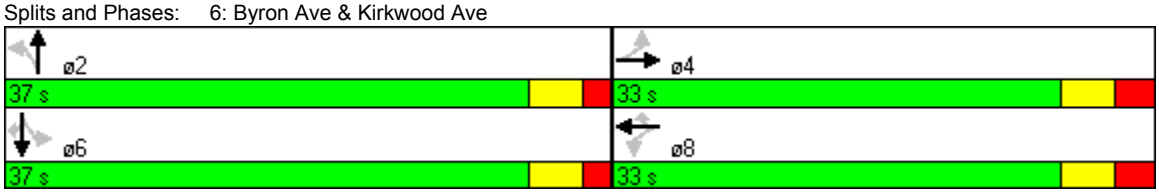
Splits and Phases: 4: Richmond Road & Patricia Ave

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)	0.0		0.0	0.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. 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
Ped Bike Factor		1.00			1.00	0.97		1.00			1.00	0.97
Frt		0.987				0.850		0.987				0.850
Flt Protected		0.994			0.980			0.994			0.997	
Satd. Flow (prot)	0	1705	0	0	1710	1483	0	1681	0	0	1678	1483
Flt Permitted		0.946			0.773			0.928			0.970	
Satd. Flow (perm)	0	1622	0	0	1348	1441	0	1569	0	0	1632	1438
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				48		10				33
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.9			75.7			77.9			219.3	
Travel Time (s)		6.8			5.5			5.6			15.8	
Volume (vph)	33	221	28	88	126	44	45	322	40	18	329	30
Confl. Peds. (#/hr)	12		3	3		12	4		5	5		4
Confl. Bikes (#/hr)			19			12						5
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 (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	6%	2%
Adj. Flow (vph)	36	240	30	96	137	48	49	350	43	20	358	33
Lane Group Flow (vph)	0	306	0	0	233	48	0	442	0	0	378	33
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Detector Phases	4	4		8	8	8	2	2		6	6	6
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	30.8	30.8		30.8	30.8	30.8	25.2	25.2		25.2	25.2	25.2
Total Split (s)	33.0	33.0	0.0	33.0	33.0	33.0	37.0	37.0	0.0	37.0	37.0	37.0
Total Split (%)	47.1%	47.1%	0.0%	47.1%	47.1%	47.1%	52.9%	52.9%	0.0%	52.9%	52.9%	52.9%
Maximum Green (s)	27.2	27.2		27.2	27.2	27.2	31.8	31.8		31.8	31.8	31.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	1.9	1.9		1.9	1.9	1.9
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
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	Max
Walk Time (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	10	10		10	10	10	5	5		5	5	5
Act Effct Green (s)		17.9			17.9	17.9		33.2			33.2	33.2
Actuated g/C Ratio		0.30			0.30	0.30		0.56			0.56	0.56
v/c Ratio		0.62			0.57	0.10		0.50			0.41	0.04
Control Delay		22.5			23.0	5.2		11.5			10.4	3.6
Queue Delay		0.0			0.0	0.0		0.0			0.0	0.0
Total Delay		22.5			23.0	5.2		11.5			10.4	3.6
LOS		C			C	A		B			B	A
Approach Delay		22.5			20.0			11.5			9.9	
Approach LOS		C			B			B			A	
90th %ile Green (s)	25.0	25.0		25.0	25.0	25.0	31.8	31.8		31.8	31.8	31.8
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	MaxR	MaxR		MaxR	MaxR	MaxR
70th %ile Green (s)	18.8	18.8		18.8	18.8	18.8	31.8	31.8		31.8	31.8	31.8
70th %ile Term Code	Gap	Gap		Hold	Hold	Hold	MaxR	MaxR		MaxR	MaxR	MaxR
50th %ile Green (s)	15.6	15.6		15.6	15.6	15.6	31.8	31.8		31.8	31.8	31.8
50th %ile Term Code	Gap	Gap		Hold	Hold	Hold	MaxR	MaxR		MaxR	MaxR	MaxR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
30th %ile Green (s)	12.7	12.7		12.7	12.7	12.7	31.8	31.8		31.8	31.8	31.8
30th %ile Term Code	Gap	Gap		Hold	Hold	Hold	MaxR	MaxR		MaxR	MaxR	MaxR
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	31.8	31.8		31.8	31.8	31.8
10th %ile Term Code	Min	Min		Min	Min	Min	MaxR	MaxR		MaxR	MaxR	MaxR
Queue Length 50th (m)		26.8			20.8	0.0		24.5			20.2	0.0
Queue Length 95th (m)		46.8			38.3	5.4		62.0			50.5	3.8
Internal Link Dist (m)		69.9			51.7			53.9			195.3	
Turn Bay Length (m)						50.0						
Base Capacity (vph)		678			558	625		885			916	822
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			0.42	0.08		0.50			0.41	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 59.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 67.8			
70th %ile Actuated Cycle: 61.6			
50th %ile Actuated Cycle: 58.4			
30th %ile Actuated Cycle: 55.5			
10th %ile Actuated Cycle: 52.8			

Splits and Phases: 6: Byron Ave & Kirkwood Ave



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	444	20	48	504	24	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	483	22	52	548	26	54
Pedestrians	1			1		
Lane Width (m)	3.5			3.5		
Walking Speed (m/s)	1.2			1.2		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			504		1147	494
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			504		1147	494
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		88	91
cM capacity (veh/h)			1060		209	574

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	504	600	80
Volume Left	0	52	26
Volume Right	22	0	54
cSH	1700	1060	367
Volume to Capacity	0.30	0.05	0.22
Queue Length 95th (m)	0.0	1.2	6.3
Control Delay (s)	0.0	1.3	17.6
Lane LOS		A	C
Approach Delay (s)	0.0	1.3	17.6
Approach LOS			C

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

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)	30.0		0.0	60.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	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	
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.97	0.99		0.96	0.96			0.95	
Frt		0.982			0.987			0.915			0.948	
Flt Protected	0.950			0.950			0.950				0.980	
Satd. Flow (prot)	1658	3225	0	1658	1698	0	1658	1537	0	0	1526	0
Flt Permitted	0.410			0.365			0.644				0.861	
Satd. Flow (perm)	699	3225	0	621	1698	0	1081	1537	0	0	1314	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			12			39			36	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		59.7			61.8			40.8			62.4	
Travel Time (s)		4.3			4.4			2.9			4.5	
Volume (vph)	47	438	58	46	561	55	48	28	36	52	27	50
Confl. Peds. (#/hr)	38		41	41		38	24		41	41		24
Confl. Bikes (#/hr)			2			3						1
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 (%)	2%	2%	2%	2%	2%	10%	2%	2%	2%	10%	2%	2%
Adj. Flow (vph)	51	476	63	50	610	60	52	30	39	57	29	54
Lane Group Flow (vph)	51	539	0	50	670	0	52	69	0	0	140	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		1	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		5.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.0	34.0		11.0	34.0		24.5	24.5		24.5	24.5	
Total Split (s)	44.0	44.0	0.0	15.0	59.0	0.0	26.0	26.0	0.0	26.0	26.0	0.0
Total Split (%)	51.8%	51.8%	0.0%	17.6%	69.4%	0.0%	30.6%	30.6%	0.0%	30.6%	30.6%	0.0%
Maximum Green (s)	38.0	38.0		9.0	53.0		20.5	20.5		20.5	20.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.7	2.7		2.7	2.7		2.2	2.2		2.2	2.2	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0			18.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	5	5			5		1	1		1	1	
Act Effct Green (s)	33.9	33.9		35.3	38.5		14.3	14.3			14.3	
Actuated g/C Ratio	0.62	0.62		0.57	0.70		0.25	0.25			0.25	
v/c Ratio	0.12	0.27		0.10	0.56		0.19	0.17			0.40	
Control Delay	11.5	8.8		6.3	8.6		18.8	11.1			16.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	11.5	8.8		6.3	8.6		18.8	11.1			16.4	
LOS	B	A		A	A		B	B			B	
Approach Delay		9.1			8.4			14.4			16.4	
Approach LOS		A			A			B			B	
90th %ile Green (s)	30.7	30.7		7.5	44.2		19.0	19.0		19.0	19.0	
90th %ile Term Code	Hold	Hold		Gap	Gap		Ped	Ped		Ped	Ped	
70th %ile Green (s)	15.5	15.5		6.5	28.0		11.3	11.3		11.3	11.3	
70th %ile Term Code	Gap	Gap		Gap	Gap		Hold	Hold		Gap	Gap	
50th %ile Green (s)	21.8	21.8		0.0	21.8		10.0	10.0		10.0	10.0	
50th %ile Term Code	Hold	Hold		Skip	Gap		Min	Min		Min	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
30th %ile Green (s)	16.6	16.6		0.0	16.6		0.0	0.0		0.0	0.0	
30th %ile Term Code	Dwell	Dwell		Skip	Dwell		Skip	Skip		Skip	Skip	
10th %ile Green (s)	60.8	60.8		0.0	60.8		10.0	10.0		10.0	10.0	
10th %ile Term Code	Dwell	Dwell		Skip	Dwell		Hold	Hold		Min	Min	
Queue Length 50th (m)	1.6	9.2		1.5	30.8		3.0	1.7			6.2	
Queue Length 95th (m)	11.0	36.0		6.1	83.2		13.9	11.9			26.0	
Internal Link Dist (m)		35.7			37.8			16.8			38.4	
Turn Bay Length (m)	30.0			60.0			25.0					
Base Capacity (vph)	485	2244		534	1322		379	564			485	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.11	0.24		0.09	0.51		0.14	0.12			0.29	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 54.7			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 74.7			
70th %ile Actuated Cycle: 50.8			
50th %ile Actuated Cycle: 43.3			
30th %ile Actuated Cycle: 22.6			
10th %ile Actuated Cycle: 82.3			

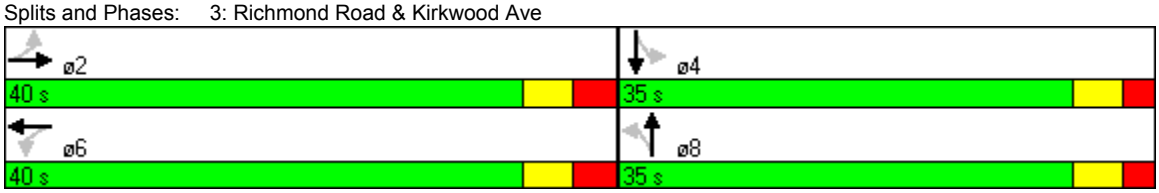
Splits and Phases: 1: Richmond Road & McRae

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
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	
Trailing Detector (m)	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	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		0.98	0.98			1.00	
Frt		0.955			0.996			0.899			0.993	
Flt Protected		0.998			0.983		0.950				0.992	
Satd. Flow (prot)	0	3110	0	0	3220	0	1626	1485	0	0	1716	0
Flt Permitted		0.918			0.710		0.720				0.958	
Satd. Flow (perm)	0	2861	0	0	2319	0	1211	1485	0	0	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		107			6			130			3	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		76.4			208.6			219.3			90.8	
Travel Time (s)		5.5			15.0			15.8			6.5	
Volume (vph)	11	217	98	296	544	26	121	59	120	8	41	3
Confl. Peds. (#/hr)	6		16	16		6	14		14	14		14
Confl. Bikes (#/hr)			14			20			7			7
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 (%)	2%	2%	4%	4%	2%	2%	4%	2%	7%	2%	2%	2%
Adj. Flow (vph)	12	236	107	322	591	28	132	64	130	9	45	3
Lane Group Flow (vph)	0	355	0	0	941	0	132	194	0	0	57	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.3	30.3		30.3	30.3		22.5	22.5		22.5	22.5	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%
Maximum Green (s)	33.7	33.7		33.7	33.7		29.5	29.5		29.5	29.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	15	15		15	15		15	15		15	15	
Act Effct Green (s)		52.3			52.3		14.7	14.7			14.7	
Actuated g/C Ratio		0.70			0.70		0.20	0.20			0.20	
v/c Ratio		0.17			0.58		0.56	0.49			0.17	
Control Delay		3.3			8.2		35.9	13.9			23.9	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		3.3			8.2		35.9	13.9			23.9	
LOS		A			A		D	B			C	
Approach Delay		3.3			8.2			22.8			23.9	
Approach LOS		A			A			C			C	
90th %ile Green (s)	44.7	44.7		44.7	44.7		18.5	18.5		18.5	18.5	
90th %ile Term Code	Coord	Coord		Coord	Coord		Ped	Ped		Hold	Hold	
70th %ile Green (s)	48.4	48.4		48.4	48.4		14.8	14.8		14.8	14.8	
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
50th %ile Green (s)	50.8	50.8		50.8	50.8		12.4	12.4		12.4	12.4	
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
30th %ile Green (s)	53.1	53.1		53.1	53.1		10.1	10.1		10.1	10.1	
30th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Hold	Hold	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	53.2	53.2		53.2	53.2		10.0	10.0		10.0	10.0	
10th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Min	Min	
Queue Length 50th (m)		4.8			27.8		17.2	7.8			6.5	
Queue Length 95th (m)		11.5			56.6		30.5	22.7			14.1	
Internal Link Dist (m)		52.4			184.6			195.3			66.8	
Turn Bay Length (m)												
Base Capacity (vph)		2029			1620		501	690			685	
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		0.17			0.58		0.26	0.28			0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 25 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 69.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Richmond Road & Kirkwood Ave



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
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	
Trailing Detector (m)	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	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			0.98			0.99	
Frt		0.988			0.992			0.939			0.932	
Flt Protected		0.995			0.997			0.973			0.976	
Satd. Flow (prot)	0	3216	0	0	3275	0	0	1570	0	0	1574	0
Flt Permitted		0.807			0.894			0.809			0.822	
Satd. Flow (perm)	0	2608	0	0	2933	0	0	1304	0	0	1324	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			16			44			42	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.6			89.9			61.2			74.3	
Travel Time (s)		15.0			6.5			4.4			5.3	
Volume (vph)	50	438	41	45	750	45	80	0	65	38	0	39
Confl. Peds. (#/hr)	4		24	24		4	2		2	2		2
Confl. Bikes (#/hr)			20						18			2
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 (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	54	476	45	49	815	49	87	0	71	41	0	42
Lane Group Flow (vph)	0	575	0	0	913	0	0	158	0	0	83	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phases	2	2		6	6		8	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.2	30.2		30.2	30.2		21.5	21.5		21.5	21.5	
Total Split (s)	63.0	63.0	0.0	63.0	63.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	74.1%	74.1%	0.0%	74.1%	74.1%	0.0%	25.9%	25.9%	0.0%	25.9%	25.9%	0.0%
Maximum Green (s)	57.8	57.8		57.8	57.8		16.5	16.5		16.5	16.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.9	1.9		1.9	1.9		2.2	2.2		2.2	2.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	5.0	5.0		5.0	5.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	10	10		10	10		5	5		5	5	
Act Effct Green (s)		62.6			62.6			14.4			14.4	
Actuated g/C Ratio		0.74			0.74			0.17			0.17	
v/c Ratio		0.30			0.42			0.61			0.32	
Control Delay		4.4			5.2			33.5			20.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.4			5.2			33.5			20.2	
LOS		A			A			C			C	
Approach Delay		4.4			5.2			33.5			20.2	
Approach LOS		A			A			C			C	
90th %ile Green (s)	57.8	57.8		57.8	57.8		16.5	16.5		16.5	16.5	
90th %ile Term Code	Coord	Coord		Coord	Coord		Max	Max		Hold	Hold	
70th %ile Green (s)	58.7	58.7		58.7	58.7		15.6	15.6		15.6	15.6	
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
50th %ile Green (s)	61.8	61.8		61.8	61.8		12.5	12.5		12.5	12.5	
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Hold	Hold	
30th %ile Green (s)	64.3	64.3		64.3	64.3		10.0	10.0		10.0	10.0	
30th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Min	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	64.3	64.3		64.3	64.3		10.0	10.0		10.0	10.0	
10th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Hold	Hold	
Queue Length 50th (m)		12.4			23.0			17.2			5.8	
Queue Length 95th (m)		22.4			39.1			34.8			17.2	
Internal Link Dist (m)		184.6			65.9			37.2			50.3	
Turn Bay Length (m)												
Base Capacity (vph)		1926			2164			311			313	
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		0.30			0.42			0.51			0.27	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 51 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 8.3		Intersection LOS: A	
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Richmond Road & Patricia Ave

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)	0.0		0.0	0.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (m)	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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Lane Util. 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
Ped Bike Factor		1.00			1.00	0.98		1.00			1.00	0.96
Frt		0.981				0.850		0.983				0.850
Flt Protected		0.988			0.987			0.994			0.996	
Satd. Flow (prot)	0	1684	0	0	1722	1483	0	1675	0	0	1692	1483
Flt Permitted		0.697			0.822			0.812			0.927	
Satd. Flow (perm)	0	1188	0	0	1434	1451	0	1368	0	0	1575	1428
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				80		12				111
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.9			75.7			77.9			219.3	
Travel Time (s)		6.8			5.5			5.6			15.8	
Volume (vph)	62	155	36	109	294	74	60	387	66	40	435	102
Confl. Peds. (#/hr)	2		1	1		2	5		2	2		5
Confl. Bikes (#/hr)			9			14			2			9
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 (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	5%	2%
Adj. Flow (vph)	67	168	39	118	320	80	65	421	72	43	473	111
Lane Group Flow (vph)	0	274	0	0	438	80	0	558	0	0	516	111
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Detector Phases	4	4		8	8	8	2	2		6	6	6
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	30.8	30.8		30.8	30.8	30.8	25.2	25.2		25.2	25.2	25.2
Total Split (s)	39.0	39.0	0.0	39.0	39.0	39.0	46.0	46.0	0.0	46.0	46.0	46.0
Total Split (%)	45.9%	45.9%	0.0%	45.9%	45.9%	45.9%	54.1%	54.1%	0.0%	54.1%	54.1%	54.1%
Maximum Green (s)	33.2	33.2		33.2	33.2	33.2	40.8	40.8		40.8	40.8	40.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	1.9	1.9		1.9	1.9	1.9
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
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	Max
Walk Time (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	10	10		10	10	10	5	5		5	5	5
Act Effct Green (s)		29.0			29.0	29.0		42.3			42.3	42.3
Actuated g/C Ratio		0.37			0.37	0.37		0.53			0.53	0.53
v/c Ratio		0.62			0.84	0.14		0.76			0.62	0.14
Control Delay		26.2			38.0	4.6		24.5			18.3	3.0
Queue Delay		0.0			0.0	0.0		0.0			0.0	0.0
Total Delay		26.2			38.0	4.6		24.5			18.3	3.0
LOS		C			D	A		C			B	A
Approach Delay		26.2			32.9			24.5			15.6	
Approach LOS		C			C			C			B	
90th %ile Green (s)	33.2	33.2		33.2	33.2	33.2	40.8	40.8		40.8	40.8	40.8
90th %ile Term Code	Max	Max		Max	Max	Max	MaxR	MaxR		MaxR	MaxR	MaxR
70th %ile Green (s)	33.2	33.2		33.2	33.2	33.2	40.8	40.8		40.8	40.8	40.8
70th %ile Term Code	Hold	Hold		Max	Max	Max	MaxR	MaxR		MaxR	MaxR	MaxR
50th %ile Green (s)	29.8	29.8		29.8	29.8	29.8	40.8	40.8		40.8	40.8	40.8
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	MaxR	MaxR		MaxR	MaxR	MaxR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
30th %ile Green (s)	24.3	24.3		24.3	24.3	24.3	40.8	40.8		40.8	40.8	40.8
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	MaxR	MaxR		MaxR	MaxR	MaxR
10th %ile Green (s)	17.0	17.0		17.0	17.0	17.0	40.8	40.8		40.8	40.8	40.8
10th %ile Term Code	Hold	Hold		Gap	Gap	Gap	MaxR	MaxR		MaxR	MaxR	MaxR
Queue Length 50th (m)		31.5			58.6	0.0		65.2			54.4	0.0
Queue Length 95th (m)		55.4			#96.5	7.7		#132.4			94.2	7.6
Internal Link Dist (m)		69.9			51.7			53.9			195.3	
Turn Bay Length (m)						50.0						
Base Capacity (vph)		496			590	645		735			839	813
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			0.74	0.12		0.76			0.62	0.14

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 79.3
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 24.1 Intersection LOS: C
Intersection Capacity Utilization 106.6% ICU Level of Service G
Analysis Period (min) 15
90th %ile Actuated Cycle: 85
70th %ile Actuated Cycle: 85
50th %ile Actuated Cycle: 81.6
30th %ile Actuated Cycle: 76.1
10th %ile Actuated Cycle: 68.8
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Byron Ave & Kirkwood Ave