

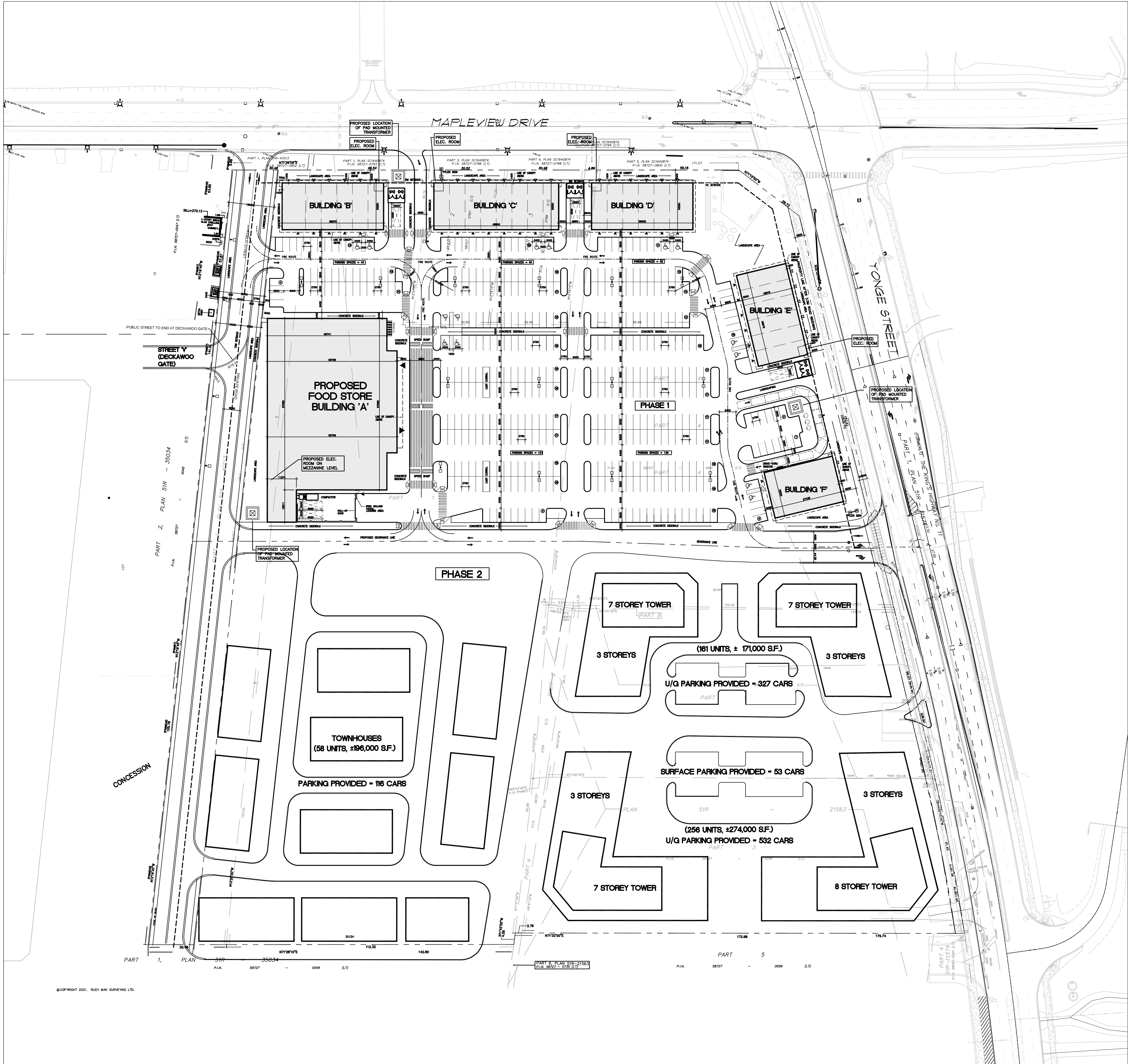
APPENDIX A: Reduced Scale Architectural Plans



IMAGES: S:\2021 Projects\21A130 - Combia REIT Food Store - Yonge St & Mapleview Dr. E. Barrie Design Dwg\location plan.jpg
S:\2021 Projects\21A130 - Combia REIT Food Store - Yonge St & Mapleview Dr. E. Barrie Design Dwg\location plan.jpg

XREFS: HATCH-MAPLEVIEW YONGE-60% (.\\Street Improvement Drawings\Reference\HATCH-MAPLEVIEW YONGE-60%.dwg)
Mapleview plan 1.dwg
Yonge Street Plan 1.dwg
Yonge Street Plan 1.dwg

FILE NAME: S:\2021 Projects\21A130 - Combia REIT Food Store - Yonge St & Mapleview Dr. E. Barrie Design Dwg\SPA Plans & Elev's_Mar 09_22\21A130 - Site Plan_Mar 17_22.dwg



KEY PLAN

SITE STATISTICS

SITE AREA (PHASE 1 LANDS) (+/- 35,267.34 S.M.) (+/- 8.71 acres)
SITE AREA (PHASE 2 LANDS) (+/- 45,557.40 S.M.) (+/- 11.26 acres)
TOTAL SITE AREA (+/- 80,824.74 S.M.) (+/- 19.97 acres)

PROPOSED BUILDING STATISTICS
PHASE 1

BUILDING 'A'	4,024 S.M.	43,314 S.F.
(FOOD STORE, TOTAL AREA INCLUDING 588sqm MEZZANINE)		
BUILDING 'B'	732 S.M.	7,880 S.F.
BUILDING 'C'	905 S.M.	9,742 S.F.
BUILDING 'D'	732 S.M.	7,880 S.F.
BUILDING 'E'	738 S.M.	7,944 S.F.
BUILDING 'F'	505 S.M.	5,436 S.F.
TOTAL GFA	(7,636 S.M.)	82,196 S.F.
SITE COVERAGE		19.98 %

PARKING REQUIRED	(1SPACE / 30 S.M.)
TOTAL PARKING REQUIRED	255 SPACES
PARKING PROVIDED	445 SPACES
BARRIER FREE PARKING REQ'D	9 SPACES
BARRIER FREE SPACES PROVIDED	14 SPACES
BICYCLE PARKING PROVIDED	12 SPACES
EACH BICYCLE SPACE	mm X mm

PAVED AREA	18,615 S.M.
LANDSCAPE AREA	9,604.34 S.M.
LOADING SPACES	
LOADING SPACES PROVIDED	5 LOADING SPACES (3.0m X 9.0m)

PROPOSED BUILDING STATISTICS
PHASE 2

RESIDENTIAL BUILDINGS	445,000.00 S.F.
TOWNHOUSES	196,000.00 S.F.
TOTAL GFA	641,000.00 S.F.
PARKING PROVIDED	
RESIDENTIAL BUILDINGS	912 SPACES
TOWNHOUSES	116 SPACES

ALL DRAWINGS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED ON REQUEST.
THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ARCHITECT.
ALL DIMENSIONS ARE GIVEN IN MILLIMETRES UNLESS OTHERWISE INDICATED.
DO NOT SCALE DRAWINGS.

REVISIONS AND DISTRIBUTION LOG

No.	Date	Note

LEGAL DESCRIPTION

SURVEY INFORMATION SHOWN ON THIS PLAN
TAKEN FROM
PLAN SHOWING TOPOGRAPHICAL SURVEY OF
PART OF LOT 15
CONCESSION 11
CITY OF BARRIE
COUNTY OF SIMCOE

AS PREPARED BY
RUDY MAK SURVEYING LTD.
TEL: (705) 722-3846



CMV GROUP
Architects

Seal:

247 Spadina Avenue, 4th Floor
Toronto, Ontario
M5T 3A9
www.cmvarch.com

T: 416.506.1600 F: 416.506.0956

Project:
PROPOSED RETAIL
DEVELOPMENT

YONGE STREET & MAPLEVIEW DRIVE

BARRIE ONTARIO

Drawing Title:
OVERALL SITE PLAN

Drawn By:	Checked By:	Date Checked:	Project No.
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Date Plotted: Mar 24, 2022 - 4:38pm	Scale:
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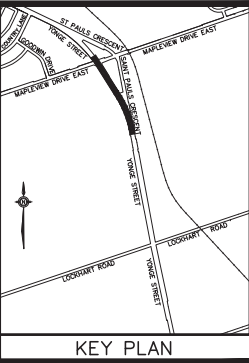
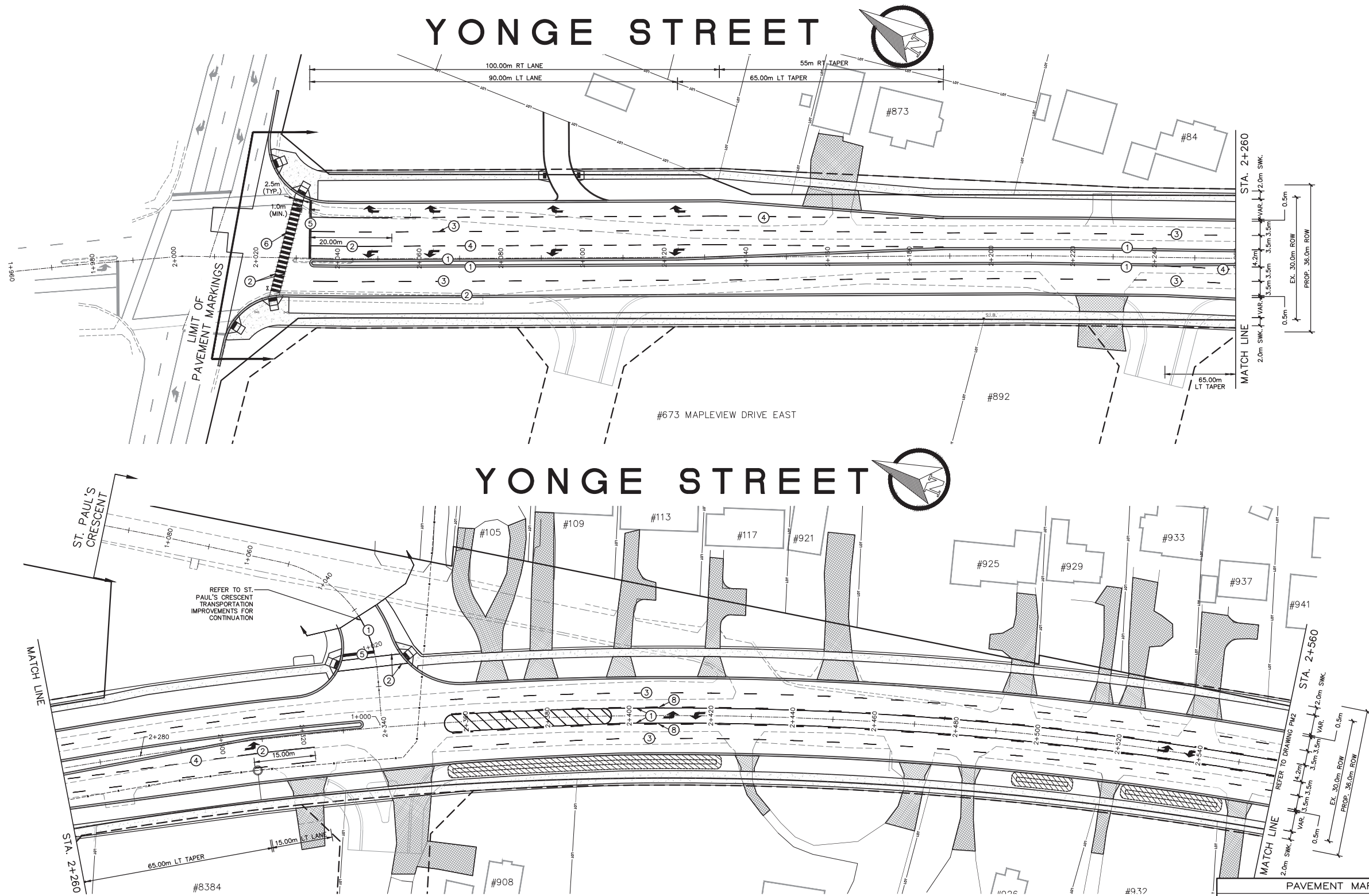
Drawing No.:	Revision No.:
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A101a

APPENDIX B:

Plans for Yonge Street and Mapleview Drive East





YONGE STREET

PAVEMENT MARKINGS LEGEND		
NAME OF LINE	DIMENSION	COLOUR
① SOLID	100mm WIDE	YELLOW
② SOLID	100mm WIDE	WHITE
③ BROKEN	3-6-3 (LENGTH-GAP-LENGTH), 100mm WIDE	WHITE
④ BROKEN	3-3-3 (LENGTH-GAP-LENGTH), 100mm WIDE	WHITE
⑤ SOLID STOP BAR	600mm WIDE	WHITE
⑥ SOLID LADDER BAR	600mm WIDE (600mm APART)	WHITE
⑦ BROKEN	1-1-1 (LENGTH-GAP-LENGTH), 100mm WIDE	WHITE
⑧ BROKEN	3-6-3 (LENGTH-GAP-LENGTH), 100mm WIDE	YELLOW
↔ LANE MARKING SYMBOL	3.0 x 1.35 (AS PER OTM)	WHITE
↔ LANE MARKING SYMBOL	(AS PER OTM)	WHITE

- GENERAL NOTES:**
- ALL STOP BARS AND SYMBOLS TO BE DURABLE PAINT.
 - TEMPORARY PAVEMENT MARKINGS TO BE PLACED ON BASE COURSE ASPHALT FOR STAGING.

GENERAL NOTES
REFER TO CURRENT CITY OF BARRIE STANDARDS FOR APPLICABLE GENERAL NOTES.

BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	30% DRAFT SUBMISSION	02/2018	CJ
2.	30% SUBMISSION	02/2018	CJ
3.	60% DRAFT SUBMISSION	03/2019	TMK
3.	60% SUBMISSION	06/2019	TMK
4.	90% SUBMISSION	10/2019	TMK
5.	100% DRAFT SUBMISSION	04/2020	TMK

CITY OF BARRIE
ACCEPTED
DATE:
DIRECTOR OF ENGINEERING

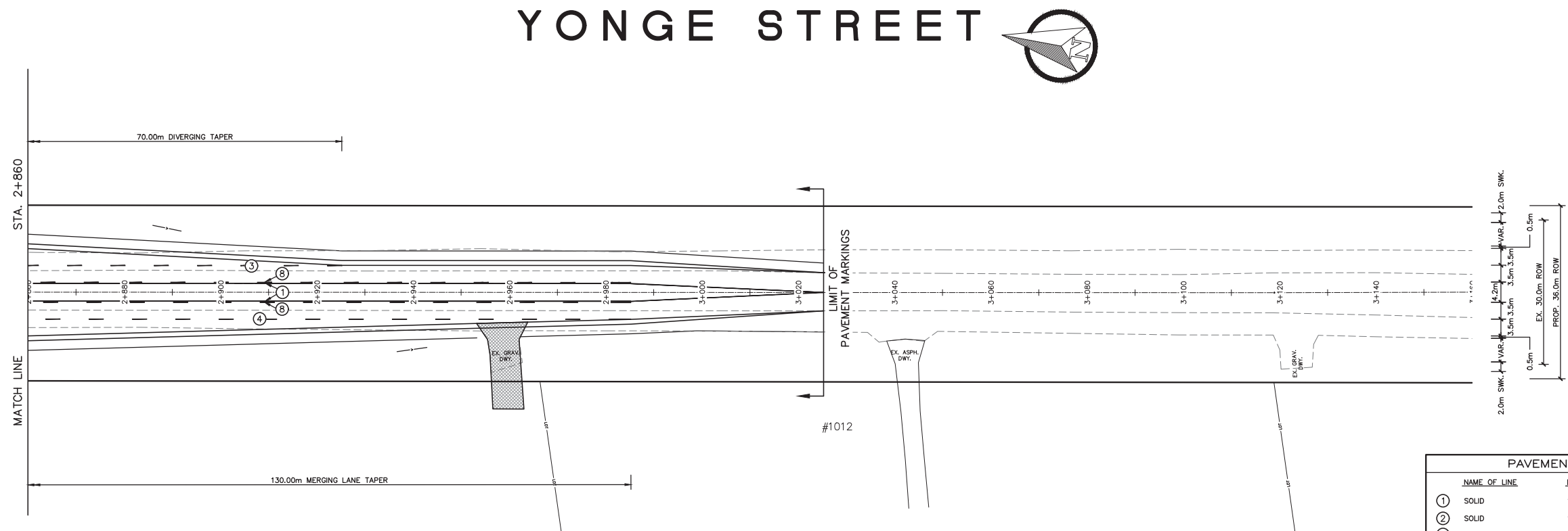
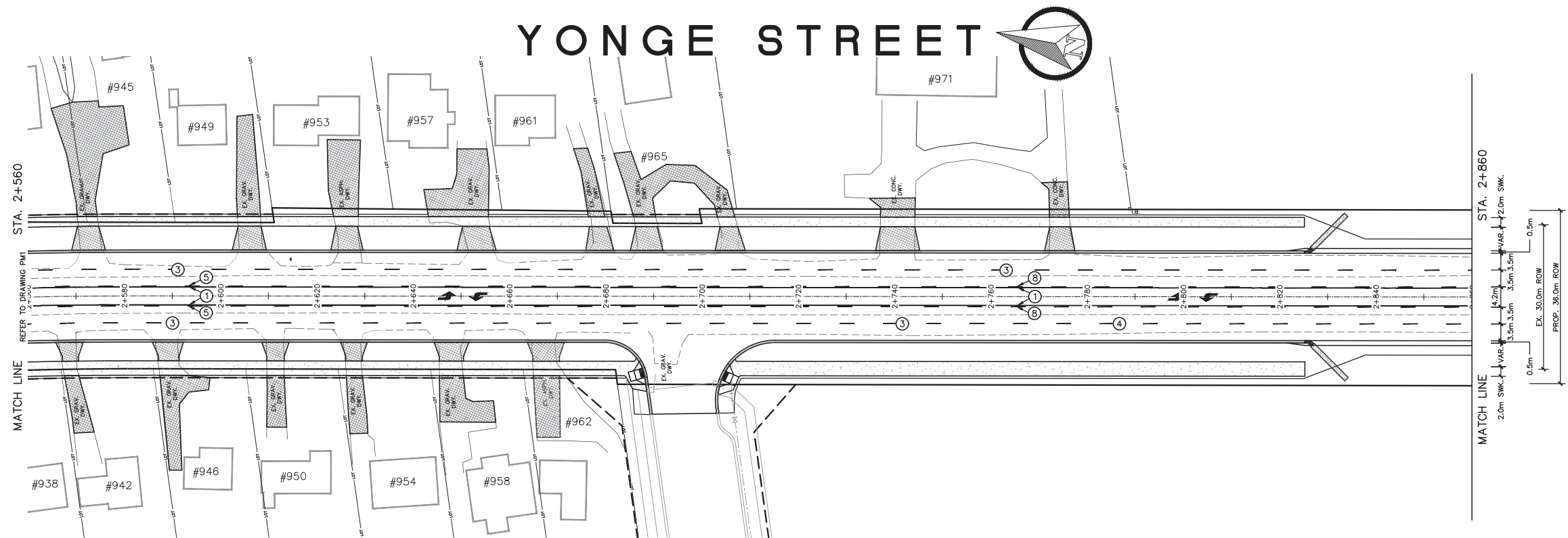
YONGE STREET IMPROVEMENTS

PAVEMENT MARKINGS – YONGE STREET
STA. 1+960 TO 2+560

Barrie
ENGINEERING DEPARTMENT

SCALE HOR. 1:500 VERT. 1:100
DESIGN C.J. DRAWN D.T.E.
REVIEWED C.F.H. DATE 2018.01.16

CONTRACT NO. 20-
SHEET NO. PM1



PAVEMENT MARKINGS LEGEND		
NAME OF LINE	DIMENSION	COLOUR
① SOLID	100mm WIDE	YELLOW
② SOLID	100mm WIDE	WHITE
③ BROKEN	3-6-3 (LENGTH-GAP-LENGTH), 100mm WIDE	WHITE
④ BROKEN	3-3-3 (LENGTH-GAP-LENGTH), 100mm WIDE	WHITE
⑤ SOLID STOP BAR	600mm WIDE	WHITE
⑥ SOLID LADDER BAR	600mm WIDE (600mm APART)	WHITE
⑦ BROKEN	1-1-1 (LENGTH-GAP-LENGTH), 100mm WIDE	WHITE
⑧ BROKEN	3-6-3 (LENGTH-GAP-LENGTH), 100mm WIDE	YELLOW
LANE MARKING SYMBOL	3.0 x 1.35 (AS PER OTM)	WHITE
LANE MARKING SYMBOL	(AS PER OTM)	WHITE

GENERAL NOTES:

- ALL STOP BARS AND SYMBOLS TO BE DURABLE PAINT.
- TEMPORARY PAVEMENT MARKINGS TO BE PLACED ON BASE COURSE ASPHALT FOR STAGING.

GENERAL NOTES

REFER TO CURRENT CITY OF BARRIE STANDARDS FOR APPLICABLE GENERAL NOTES.

BENCH MARKS	

NO.	REVISIONS	DATE	APPROVED
1.	30% DRAFT SUBMISSION	02/2018	CJ
2.	30% SUBMISSION	02/2018	CJ
3.	60% DRAFT SUBMISSION	03/2019	TMK
3.	60% SUBMISSION	06/2019	TMK
4.	90% SUBMISSION	10/2019	TMK
5.	100% DRAFT SUBMISSION	04/2020	TMK

CITY OF BARRIE
ACCEPTED

DATE:

DIRECTOR OF ENGINEERING

YONGE STREET
IMPROVEMENTS

PAVEMENT MARKINGS - YONGE STREET
STA. 2+560 TO 3+160

Barrie
ENGINEERING DEPARTMENT

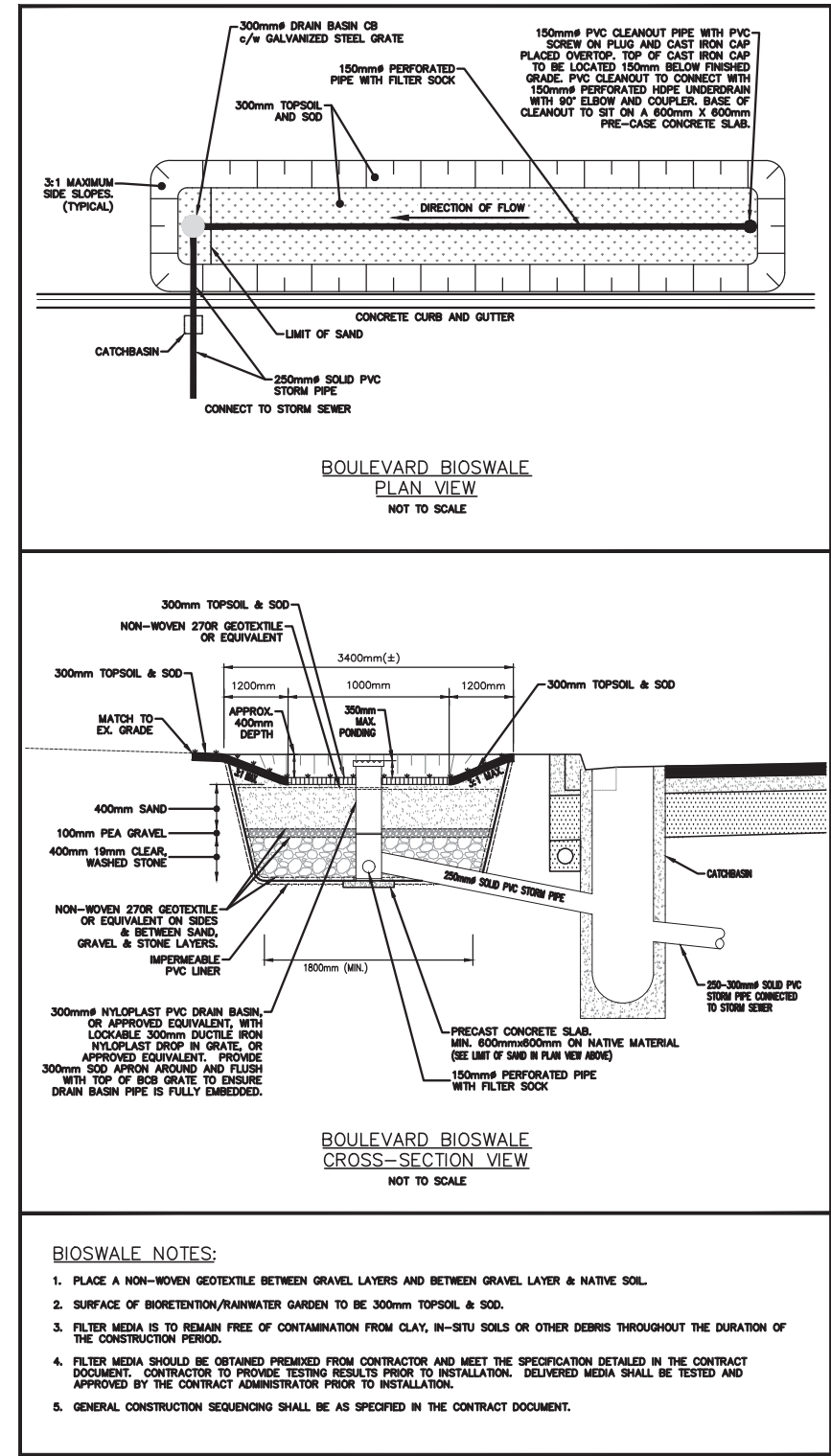
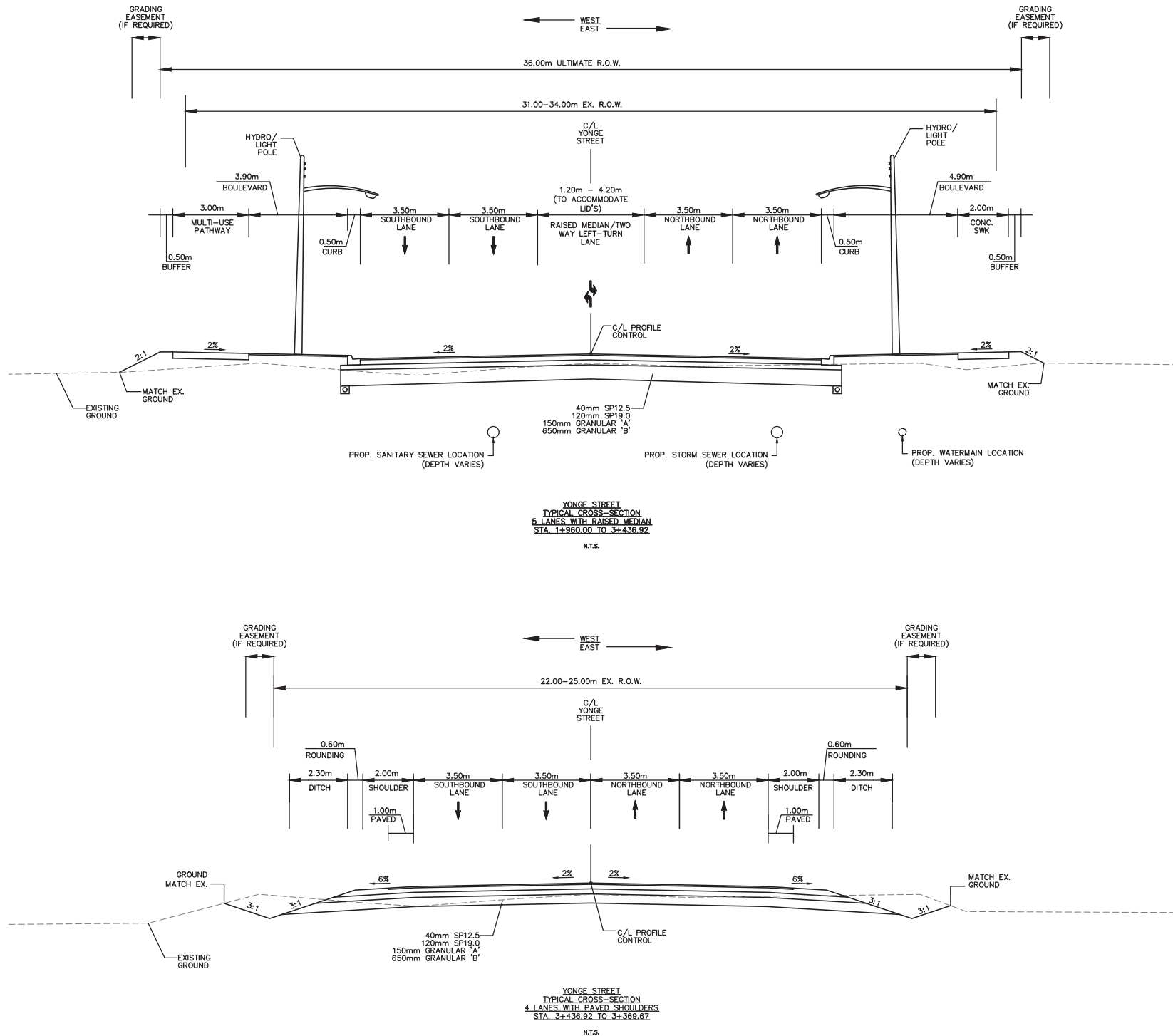
SCALE HOR. 1:500 VERT. 1:100

DESIGN C.J.L. DRAWN D.T.E.

REVIEWED C.F.H. DATE 2018.01.16

CONTRACT NO. 20 -

SHEET NO. PM2



- BIOSWALE NOTES:**
1. PLACE A NON-WOVEN GEOTEXTILE BETWEEN GRAVEL LAYERS AND BETWEEN GRAVEL LAYER & NATIVE SOIL.
 2. SURFACE OF BIORETENTION/RAINWATER GARDEN TO BE 300mm TOPSOIL & SOD.
 3. FILTER MEDIA IS TO REMAIN FREE OF CONTAMINATION FROM CLAY, IN-SITU SOILS OR OTHER DEBRIS THROUGHOUT THE DURATION OF THE CONSTRUCTION PERIOD.
 4. FILTER MEDIA SHOULD BE OBTAINED PREMIXED FROM CONTRACTOR AND MEET THE SPECIFICATION DETAILED IN THE CONTRACT DOCUMENT. CONTRACTOR TO PROVIDE TESTING RESULTS PRIOR TO INSTALLATION. DELIVERED MEDIA SHALL BE TESTED AND APPROVED BY THE CONTRACT ADMINISTRATOR PRIOR TO INSTALLATION.
 5. GENERAL CONSTRUCTION SEQUENCING SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENT.

GENERAL NOTES
REFER TO CURRENT CITY OF BARRIE STANDARDS
FOR APPLICABLE GENERAL NOTES.

BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	30% DRAFT SUBMISSION	02/2018	CJ
2.	30% SUBMISSION	02/2018	CJ
3.	60% DRAFT SUBMISSION	03/2019	TMK
3.	60% SUBMISSION	06/2019	TMK
4.	90% SUBMISSION	10/2019	TMK
5.	100% DRAFT SUBMISSION	04/2020	TMK

CITY OF BARRIE
ACCEPTED
DATE:
DIRECTOR OF ENGINEERING

YONGE STREET
IMPROVEMENTS

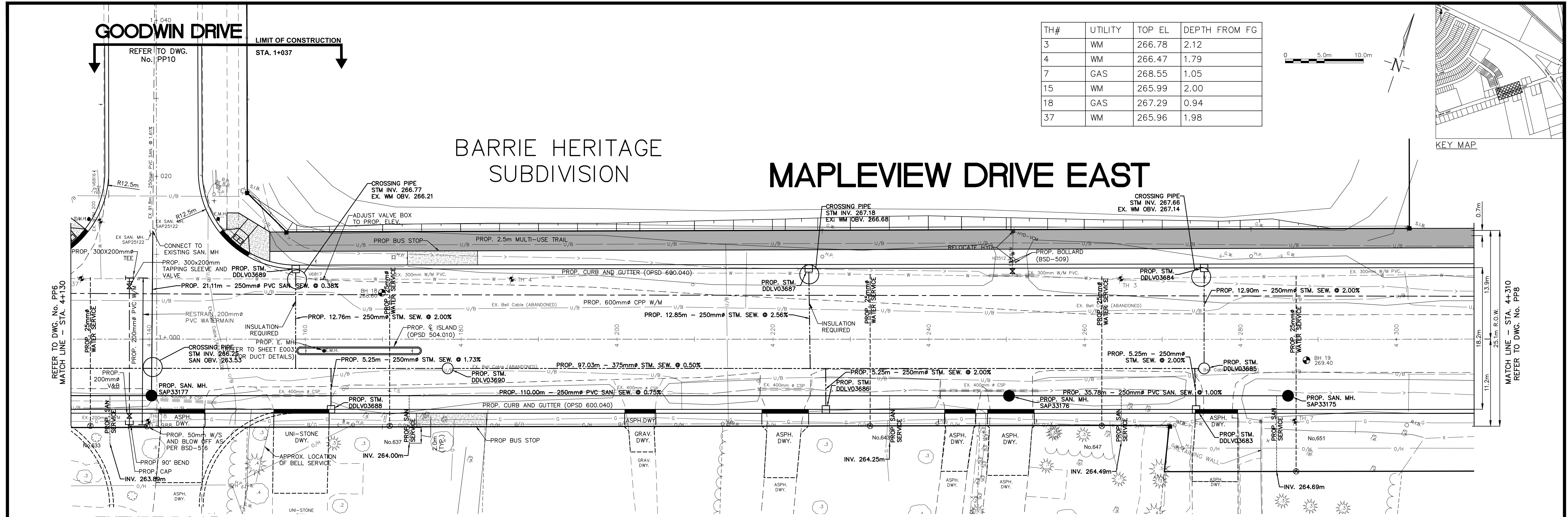
TYPICAL CROSS SECTIONS
& BIOSWALE DETAIL

Barrie

ENGINEERING DEPARTMENT

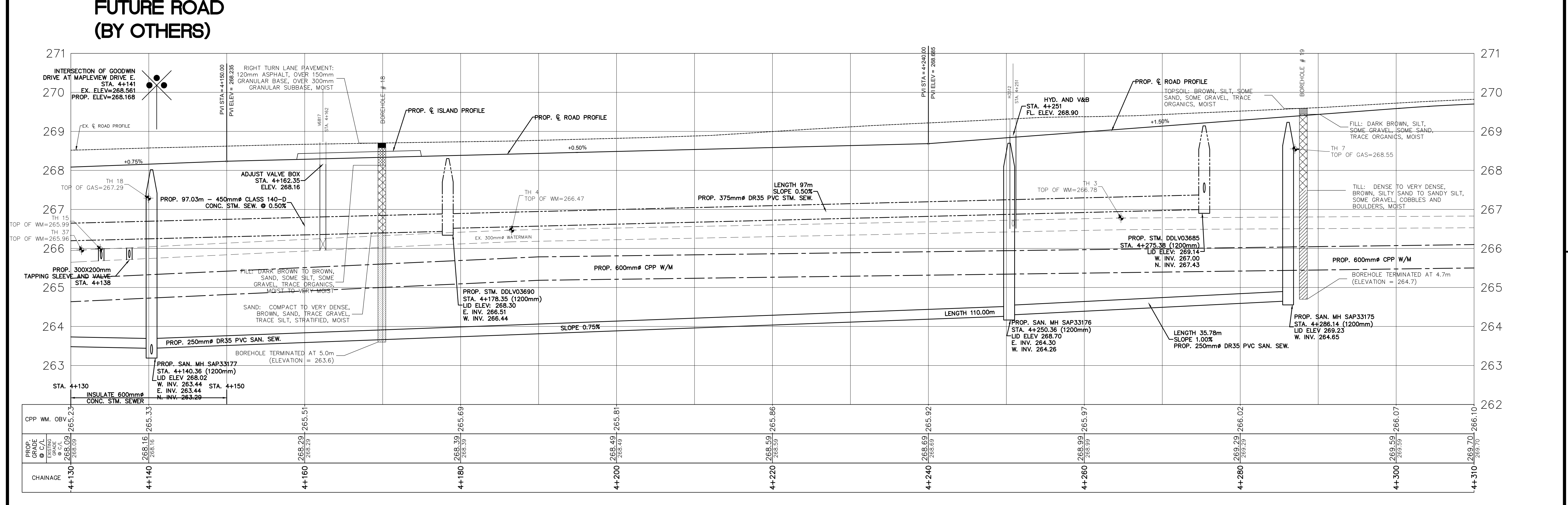
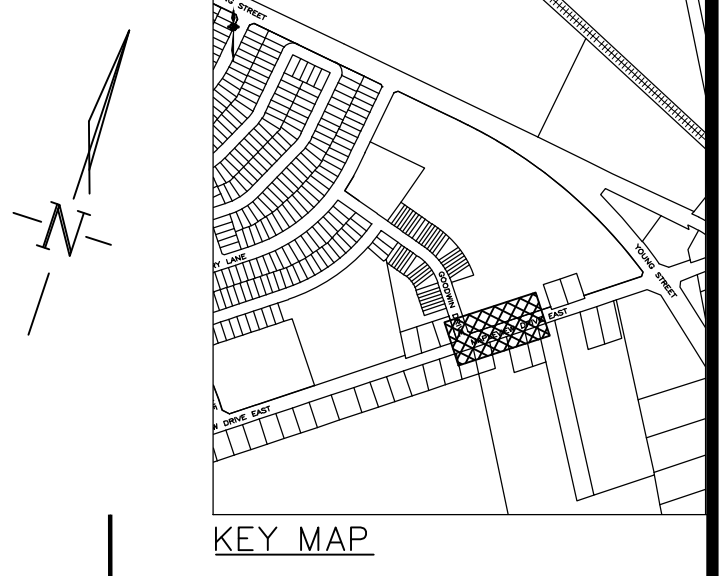
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DESIGN C.J. DRAWN D.J.B.
REVIEWED C.F.H. DATE 2018.01.16

CONTRACT NO. 20-
SHEET NO. D1



TH#	UTILITY	TOP EL	DEPTH FROM FG
3	WM	266.78	2.12
4	WM	266.47	1.79
7	GAS	268.55	1.05
15	WM	265.99	2.00
18	GAS	267.29	0.94
37	WM	265.96	1.98

0 5.0m 10.0m



GENERAL NOTES

REFER TO CURRENT CITY OF BARRIE STANDARDS FOR APPLICABLE GENERAL NOTES.

BENCHMARKS:

MNR No. 01019860407
MNR No. 01019860404
MNR No. 0011931U4605

ELEV. = 263.480m

THE HORIZONTAL MONUMENT IS LOCATED ON THE NORTH SIDE OF MAPLEVUE DRIVE APPROXIMATELY 500m EAST OF HURONIA ROAD. THE HORIZONTAL MONUMENT IS LOCATED ON THE SOUTH SIDE OF MAPLEVUE DRIVE APPROXIMATELY 930m WEST OF YONGE STREET. SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2m WEST OF BELL POLE AND 9.2m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15cm BELOW BRICK.

NO.	REVISIONS	DATE	APPROVED
2	ISSUED FOR 60% REVIEW	14.12.01	
3	ISSUED FOR 90% REVIEW	16.02.26	
3B	REVISED FOR 90% REVIEW	16.03.24	
4	ISSUED FOR 99% REVIEW	18.02.16	
5	ISSUED FOR 100% REVIEW	21.02.05	
6	ISSUED FOR TENDER	21.03.31	

CITY OF BARRIE
APPROVED

DATE:

DIRECTOR OF INFRASTRUCTURE

MAPLEVUE DRIVE
EAST IMPROVEMENTS
COUNTRY LN TO YONGE ST – PHASE 2

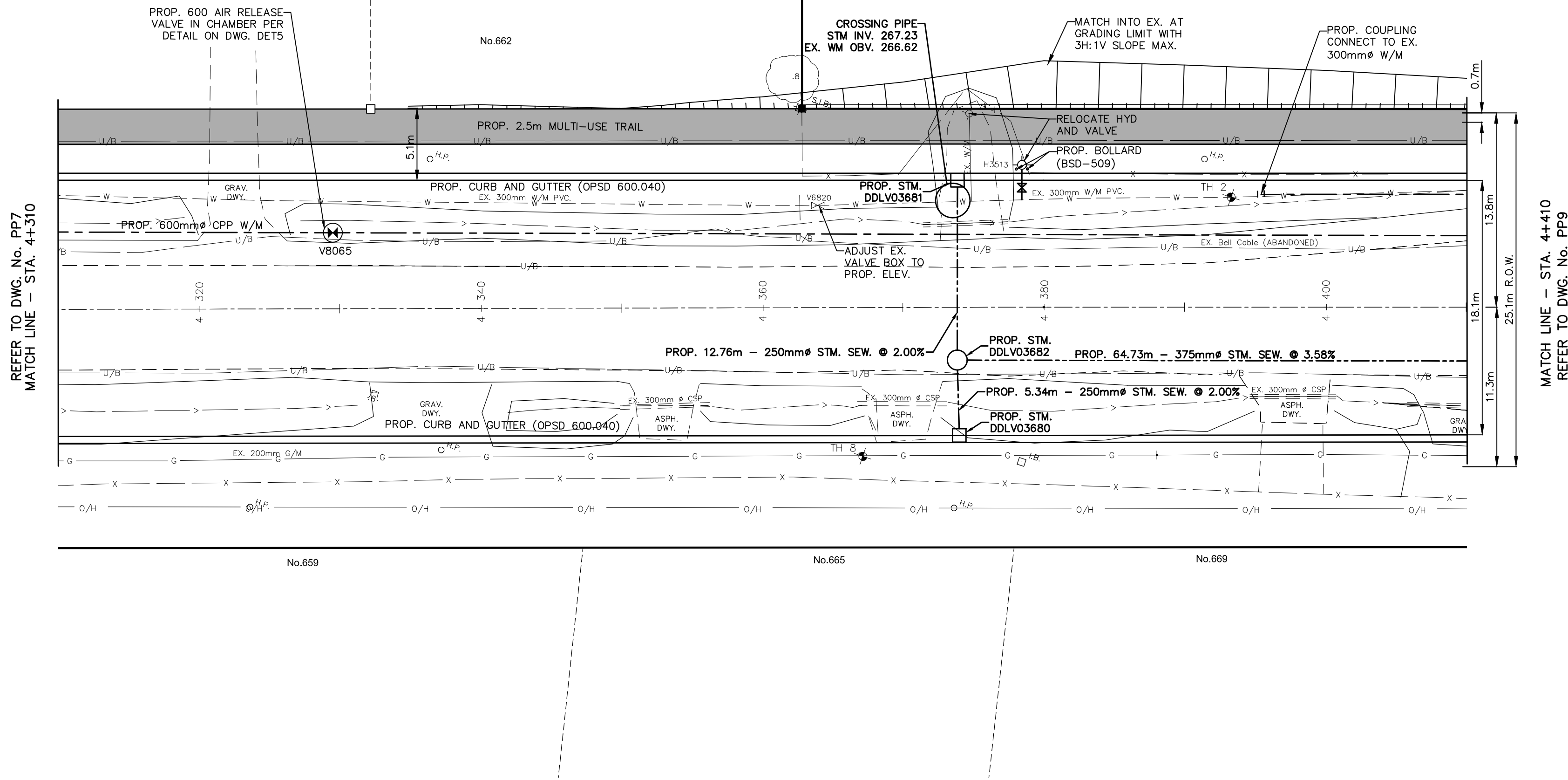
PLAN & PROFILE
STA. 4+130 TO STA 4+310

Barrie
INFRASTRUCTURE DEPARTMENT

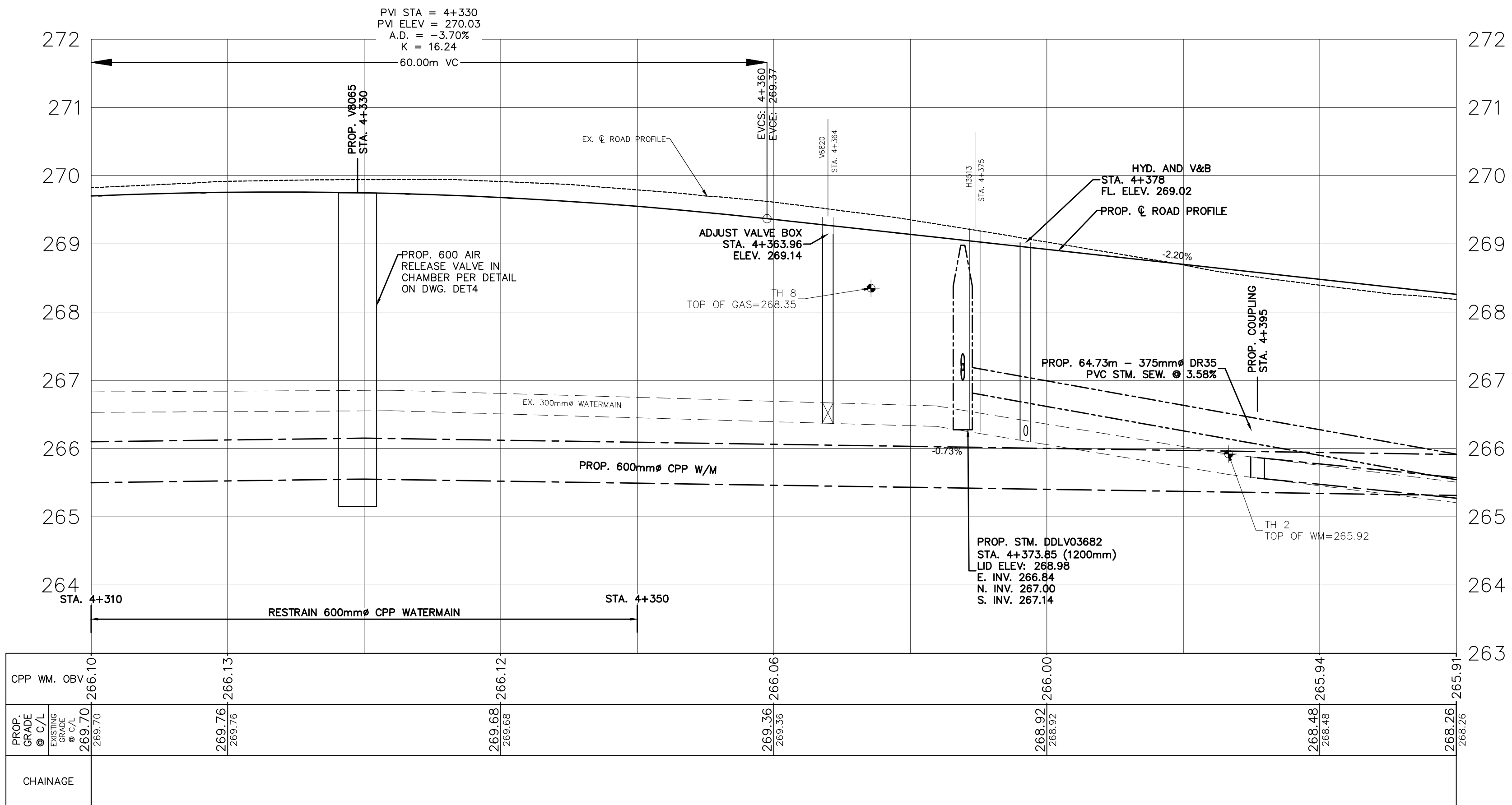
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DESIGN DD DRAWN DP
REVIEWED CAG DATE 14.09.10

CONTRACT NO. 2021-074T
SHEET NO. PP7

MAPLEVIEW DRIVE EAST



TH#	UTILITY	TOP EL	DEPTH FROM FG
2	WM	265.92	2.55
8	GAS	268.35	0.82



GENERAL NOTES
REFER TO CURRENT CITY OF BARRIE STANDARDS FOR APPLICABLE GENERAL NOTES.

BENCHMARKS:
MNR No. 01019860407
MNR No. 01019860404
MNR No. 0011931U4605
ELEV. = 263.480m

THE HORIZONTAL MONUMENT IS LOCATED ON THE NORTH SIDE OF MAPLEVIEW DRIVE APPROXIMATELY 500m EAST OF HURONIA ROAD. THE HORIZONTAL MONUMENT IS LOCATED ON THE SOUTH SIDE OF MAPLEVIEW DRIVE APPROXIMATELY 930m WEST OF YONGE STREET. SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2m WEST OF BELL POLE AND 9.2m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15cm BELOW BRICK.

NO.	REVISIONS	DATE	APPROVED
2	ISSUED FOR 60% REVIEW	14.12.01	
3	ISSUED FOR 90% REVIEW	16.02.06	
3B	REVISED FOR 90% REVIEW	16.03.24	
4	ISSUED FOR 99% REVIEW	18.02.16	
5	ISSUED FOR 100% REVIEW	21.02.05	
6	ISSUED FOR TENDER	21.03.31	



CITY OF BARRIE
APPROVED

DATE:
DIRECTOR OF INFRASTRUCTURE

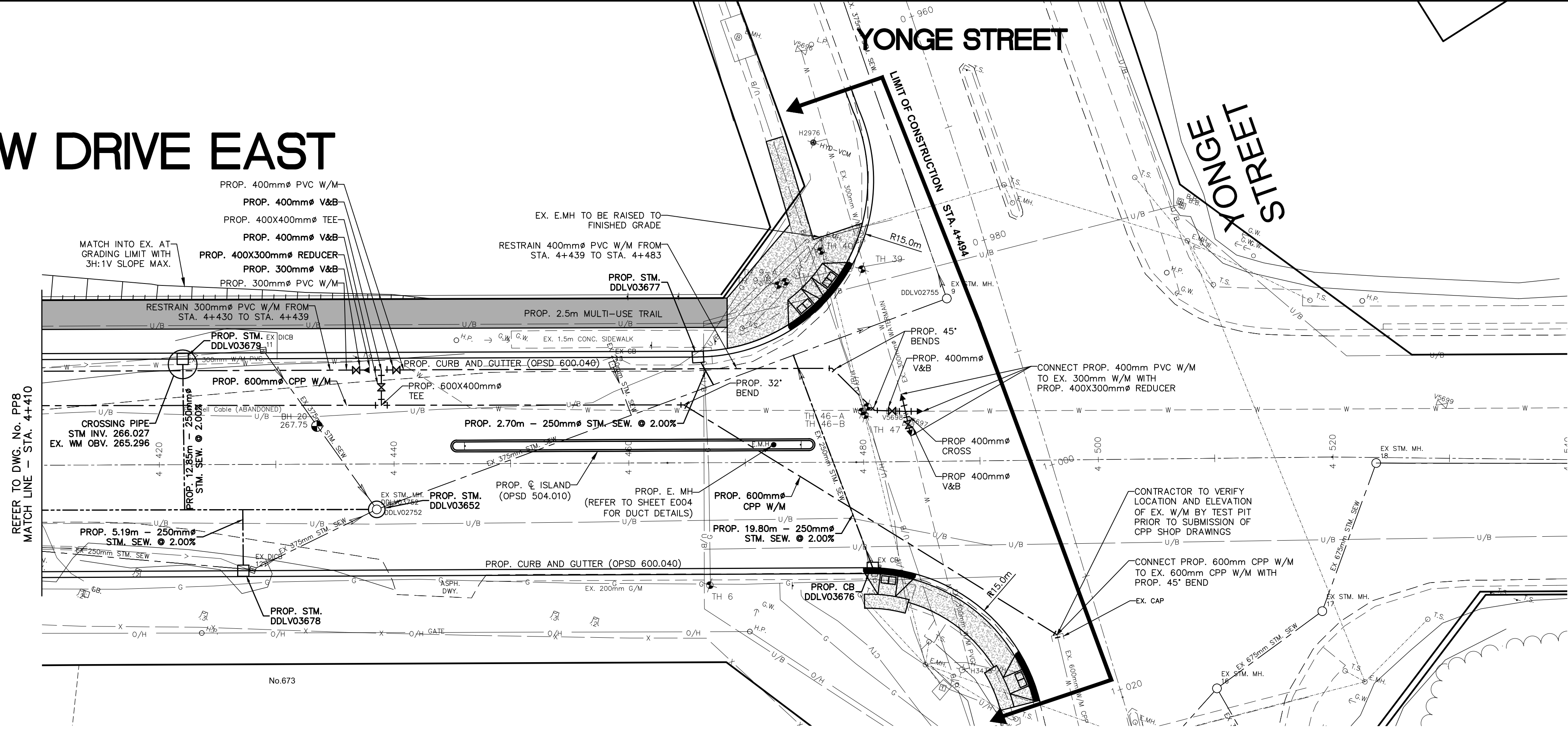
MAPLEVIEW DRIVE
EAST IMPROVEMENTS
COUNTRY LN TO YONGE ST – PHASE 2
PLAN & PROFILE
STA. 4+310 TO STA 4+410

Barrie

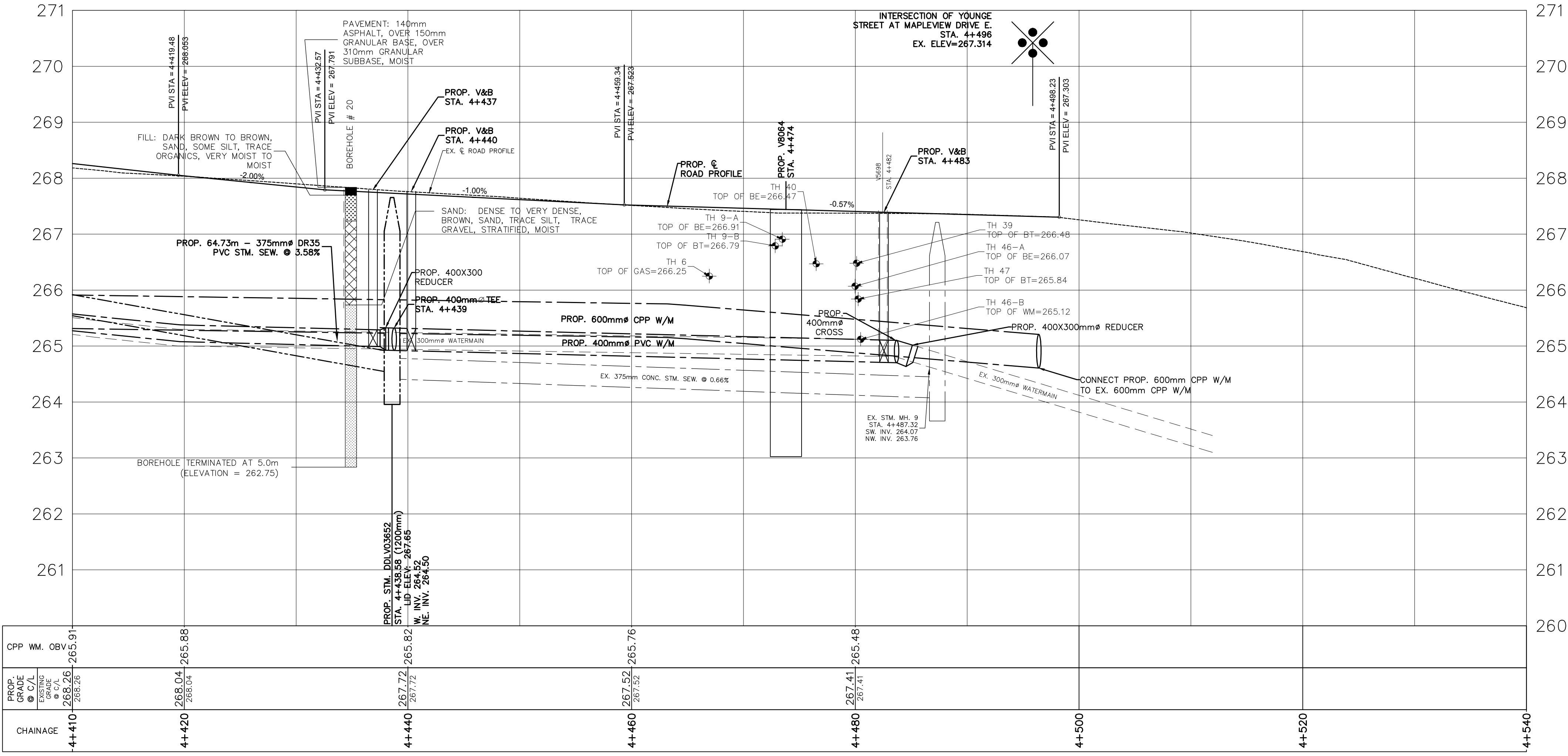
INFRASTRUCTURE DEPARTMENT

SCALE HOR. H 1:250	V 1:50	CONTRACT NO. 2021-074T
DESIGN DD	DRAWN DP	SHEET NO. PP8
REVIEWED CAG	DATE 14.09.10	

MAPLEVIEW DRIVE EAST



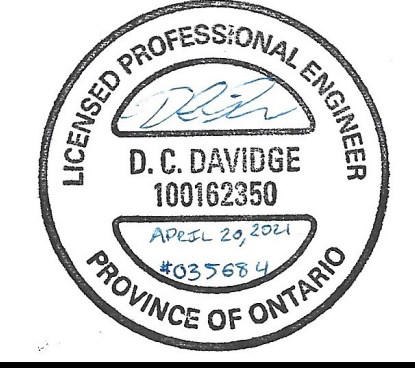
TH#	UTILITY	TOP EL	DEPTH FROM FG
6	GAS	266.25	1.15
9-A	BE	266.91	0.48
9-B	BT	266.79	0.62
39	BT	266.48	0.68
40	BE	266.47	0.86
46-A	BE	266.07	1.29
46-B	WM	265.12	2.25
47	BT	265.84	1.53



GENERAL NOTES
REFER TO CURRENT CITY OF BARRIE STANDARDS FOR APPLICABLE GENERAL NOTES.

BENCHMARKS:
MNR No. 01019860407 THE HORIZONTAL MONUMENT IS LOCATED ON THE NORTH SIDE OF MAPLEVIEW DRIVE APPROXIMATELY 500m EAST OF HURONIA ROAD
MNR No. 01019860404 THE HORIZONTAL MONUMENT IS LOCATED ON THE SOUTH SIDE OF MAPLEVIEW DRIVE APPROXIMATELY 930m WEST OF YONGE STREET
MNR No. 0011931U4605 SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2m WEST OF BELL POLE AND 9.2m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15cm BELOW BRICK.
ELEV. = 263.480m

NO.	REVISIONS	DATE	APPROVED
2	ISSUED FOR 60% REVIEW	14.12.01	
3	ISSUED FOR 90% REVIEW	16.02.06	
3B	REVISED FOR 90% REVIEW	16.03.24	
4	ISSUED FOR 99% REVIEW	18.02.16	
5	ISSUED FOR 100% REVIEW	21.02.05	
6	ISSUED FOR TENDER	21.03.31	



CITY OF BARRIE
APPROVED
DATE:
DIRECTOR OF INFRASTRUCTURE

MAPLEVIEW DRIVE
EAST IMPROVEMENTS
COUNTRY LN TO YONGE ST - PHASE 2
PLAN & PROFILE
STA. 4+410 TO STA 4+500

Barrie
INFRASTRUCTURE DEPARTMENT

SCALE HOR. H 1:250	V 1:50	CONTRACT NO. 2021-074T
DESIGN DD	DRAWN DP	SHEET NO. PP9
REVIEWED CAG	DATE 14.09.10	

APPENDIX C:

Vehicle Manoeuvring Diagrams



Date Plotted: April 6, 2022 Filename: J:\6763-24\BASPR10_March 7, 2022\BA-Sobeys-SPR-R0-6763-24.dwg

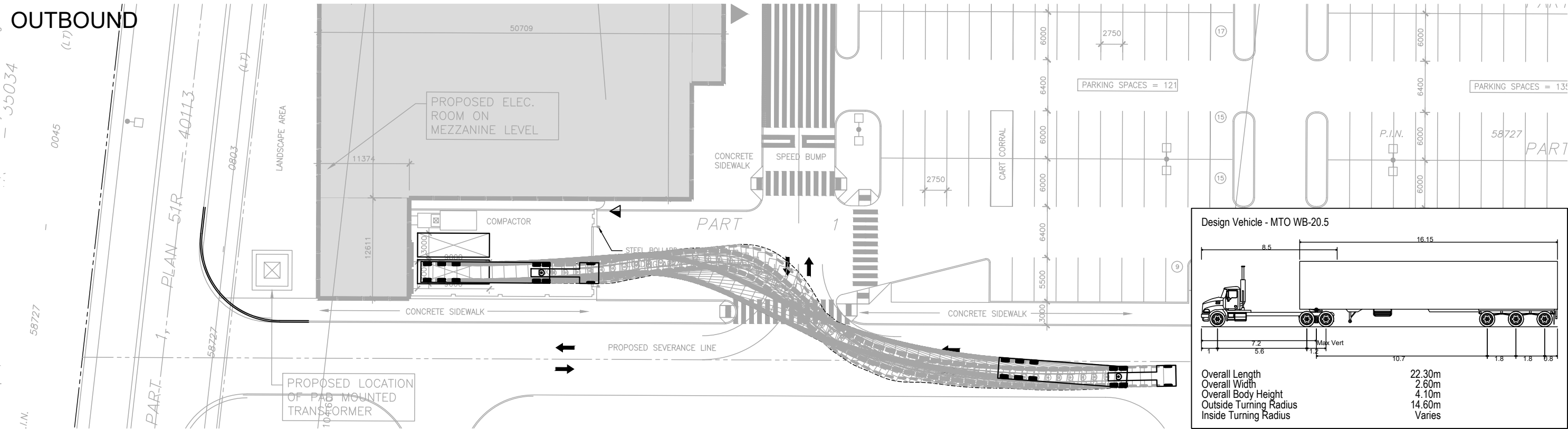
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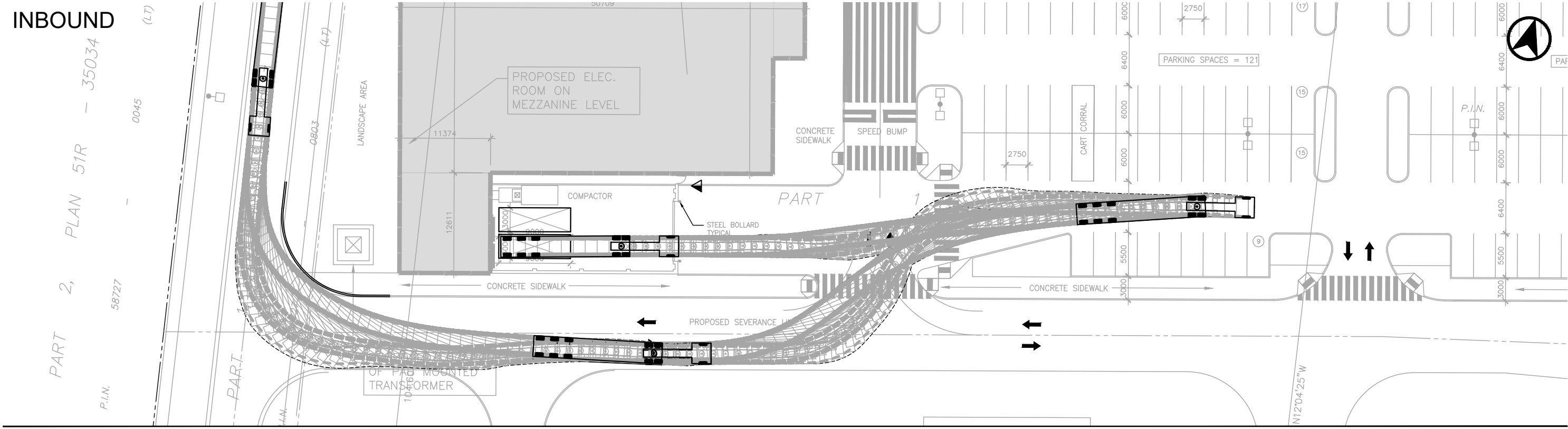
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0045

OUTBOUND



INBOUND



YONGE / MAPLEVIEW
VEHICLE MANOEUVRING DIAGRAM
WB-20.5

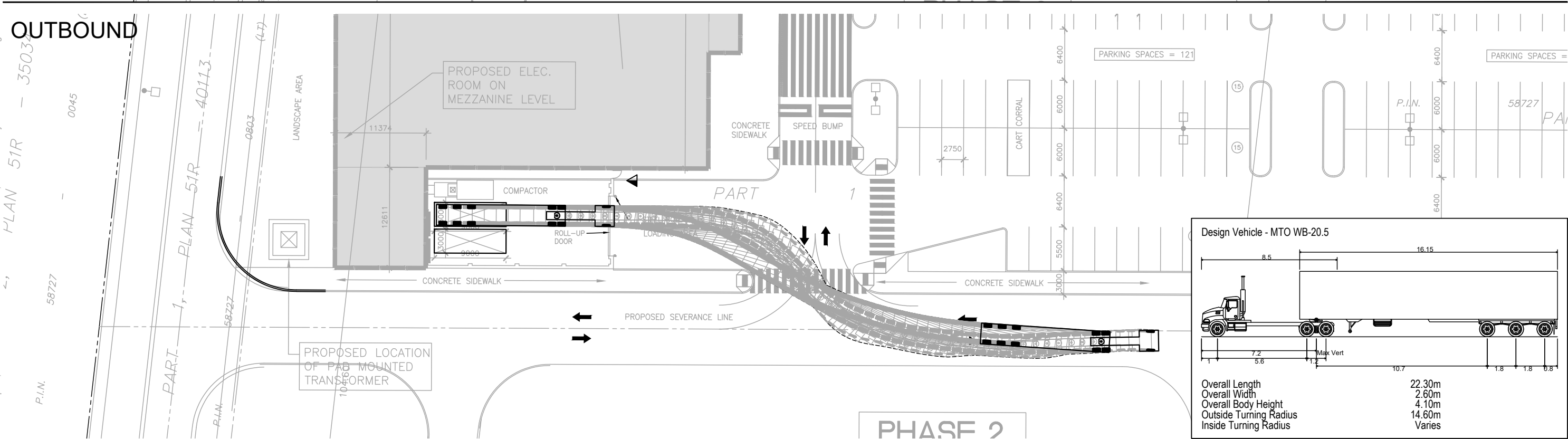
Project: YONGE / MAPLEVIEW
Project No. 6763-24
Date: APRIL 2022
Revised: --

Scale	0 5 10 15 20m
1:500	
Drawing No.	VMD-01

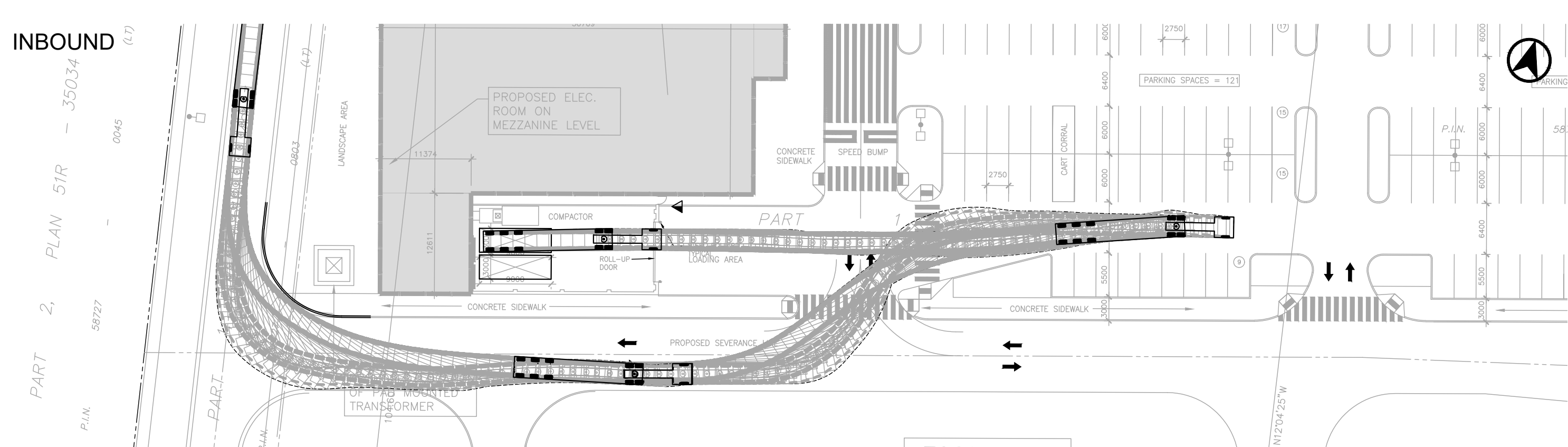
Design Vehicle - MTO WB-20.5	
Overall Length	22.30m
Overall Width	2.60m
Overall Body Height	4.10m
Outside Turning Radius	14.60m
Inside Turning Radius	Varies

Date Plotted: April 6, 2022 Filename: J:\6763-24\BAS\SPR0, March 7, 2022\BA-Sobeys-SPR-R0-6763-24.dwg

OUTBOUND



INBOUND



Design Vehicle - MTO WB-20.5

Overall Length	22.30m
Overall Width	2.60m
Overall Body Height	4.10m
Outside Turning Radius	14.60m
Inside Turning Radius	Varies



YONGE / MAPLEVIEW
VEHICLE MANOEUVRING DIAGRAM
WB-20.5

Project: YONGE / MAPLEVIEW
Project No. 6763-24
Date: APRIL 2022
Revised: --

Scale 1:500

Drawing No. VMD-02

APPENDIX D: Signal Timing Plan Details



Yonge Street & Mapleview Drive – FREE PLAN (NO COORDINATION)

		Vehicular Indications				Pedestrian Indications	
Roadway	Direction	Minimum Green	Maximum Green	Amber	All Red	Walk	Flashing Don't Walk
Yonge Street (main street)	Advanced Northbound Left Turn	7	10	3	1	N/A	N/A
Yonge Street (main street)	Advanced Southbound Left Turn	7	10	3	1	N/A	N/A
Yonge Street (main street)	Northbound	40	40	4	2	22	18
Yonge Street (main street)	Southbound	40	40	4	2	22	18
Mapleview Drive (side street)	Advanced Eastbound Left Turn	7	10	3	1	N/A	N/A
Mapleview Drive (side street)	Advanced Westbound Left Turn	7	10	3	1	N/A	N/A
Mapleview Drive (side street)	Eastbound	12	30	4	2	12	17
Mapleview Drive (side street)	Westbound	12	30	4	2	12	17

NOTE: All times are recorded in seconds, based on full demand.

Yonge Street & Mapleview Drive – AM WEEKDAY PLAN (6:30AM – 9:00AM)

Roadway	Direction	Split Timings (Including Amber + All Red)
Yonge Street (main street)	Advanced Northbound Left Turn	12
Yonge Street (main street)	Advanced Southbound Left Turn	12
Yonge Street (main street)	Northbound	56
Yonge Street (main street)	Southbound	56
Big Bay Point Road (side street)	Advanced Eastbound Left Turn	12
Big Bay Pont Road (side street)	Advanced Westbound Left Turn	12
Big Bay Point Road (side street)	Eastbound	40
Big Bay Point Road (side street)	Westbound	40
Total Cycle Length		120

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

Yonge Street & Mapleview Drive – NOON WEEKDAY PLAN (9:00AM – 3:30PM)

Roadway	Direction	Split Timings (Including Amber + All Red)
Yonge Street (main street)	Advanced Northbound Left Turn 1	12
Yonge Street (main street)	Advanced Southbound Left Turn 5	12
Yonge Street (main street)	Northbound 6	60
Yonge Street (main street)	Southbound 2	60
Big Bay Point Road (side street)	Advanced Eastbound Left Turn 7	12
Big Bay Pont Road (side street)	Advanced Westbound Left Turn 3	12
Big Bay Point Road (side street)	Eastbound 4	36
Big Bay Point Road (side street)	Westbound 8	36
Total Cycle Length		120

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

Yonge Street & Mapleview Drive – PM WEEKDAY PLAN (3:30PM – 6:30PM)

Roadway	Direction	Split Timings (Including Amber + All Red)
Yonge Street (main street)	Advanced Northbound Left Turn	12
Yonge Street (main street)	Advanced Southbound Left Turn	12
Yonge Street (main street)	Northbound	58
Yonge Street (main street)	Southbound	58
Big Bay Point Road (side street)	Advanced Eastbound Left Turn	12
Big Bay Pont Road (side street)	Advanced Westbound Left Turn	12
Big Bay Point Road (side street)	Eastbound	38
Big Bay Point Road (side street)	Westbound	38
Total Cycle Length		120

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

APPENDIX E: Turning Movement Count Data





Turning Movement Count (5 . MAPLEVIEW DR E & GOODWIN DR)

Start Time	N Approach GOODWIN DR						E Approach MAPLEVIEW DR E						S Approach GOODWIN DR						W Approach MAPLEVIEW DR E						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:30:00	4	0	2	0	1	6	1	79	0	0	0	80	0	0	0	0	0	0	0	67	0	0	0	67	153		
07:45:00	4	0	2	0	3	6	0	93	0	0	1	93	0	0	0	0	0	0	0	74	0	0	0	74	173		
08:00:00	2	0	0	0	0	2	1	71	0	0	0	72	0	0	0	0	0	0	0	69	1	0	0	70	144		
08:15:00	3	0	0	0	0	3	1	71	0	0	0	72	1	0	0	0	1	1	0	79	4	0	0	83	159	629	
08:30:00	3	0	1	0	0	4	0	103	0	0	0	103	0	0	0	0	0	0	0	75	1	0	0	76	183	659	
08:45:00	7	0	2	0	0	9	0	84	0	0	0	84	0	0	0	0	0	0	0	62	2	0	0	64	157	643	
09:00:00	3	0	3	0	0	6	0	68	0	0	0	68	0	0	0	0	0	0	0	57	1	0	0	58	132	631	
09:15:00	0	0	0	0	0	0	1	65	0	0	0	66	0	0	0	0	0	0	0	49	0	0	0	49	115	587	
BREAK																											
16:00:00	4	0	2	0	0	6	3	83	0	0	0	86	0	0	0	0	1	0	1	89	5	0	0	95	187		
16:15:00	0	0	2	0	1	2	2	116	0	0	1	118	0	0	0	0	0	0	0	94	3	0	0	97	217		
16:30:00	0	0	0	0	0	0	3	82	0	0	1	85	0	0	0	0	0	0	0	106	5	0	0	111	196		
16:45:00	1	0	1	0	0	2	3	67	0	0	0	70	0	0	0	0	0	0	0	99	8	0	0	107	179	779	
17:00:00	2	0	3	0	0	5	4	77	0	0	0	81	0	0	0	0	0	0	0	124	0	0	0	124	210	802	
17:15:00	1	0	0	0	0	1	4	94	0	0	0	98	0	0	0	0	0	0	0	109	2	0	0	111	210	795	
17:30:00	0	0	1	0	0	1	2	77	0	0	0	79	1	0	0	0	0	1	0	108	3	0	0	111	192	791	
17:45:00	0	0	0	0	1	0	1	78	1	0	1	80	0	0	0	0	0	0	0	92	1	0	0	93	173	785	
Grand Total	34	0	19	0	6	53	26	1308	1	0	4	1335	2	0	0	0	2	2	1	1353	36	0	0	1390	2780	-	
Approach%	64.2%	0%	35.8%	0%		-	1.9%	98%	0.1%	0%		-	100%	0%	0%	0%		-	0.1%	97.3%	2.6%	0%		-	-	-	
Totals %	1.2%	0%	0.7%	0%		1.9%	0.9%	47.1%	0%	0%		48%	0.1%	0%	0%	0%		0.1%	0%	48.7%	1.3%	0%		50%	-	-	
Heavy	3	0	1	0		-	0	43	0	0		-	0	0	0	0		-	0	49	0	0		-	-	-	
Heavy %	8.8%	0%	5.3%	0%		-	0%	3.3%	0%	0%		-	0%	0%	0%	0%		-	0%	3.6%	0%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (-0.04 °C)

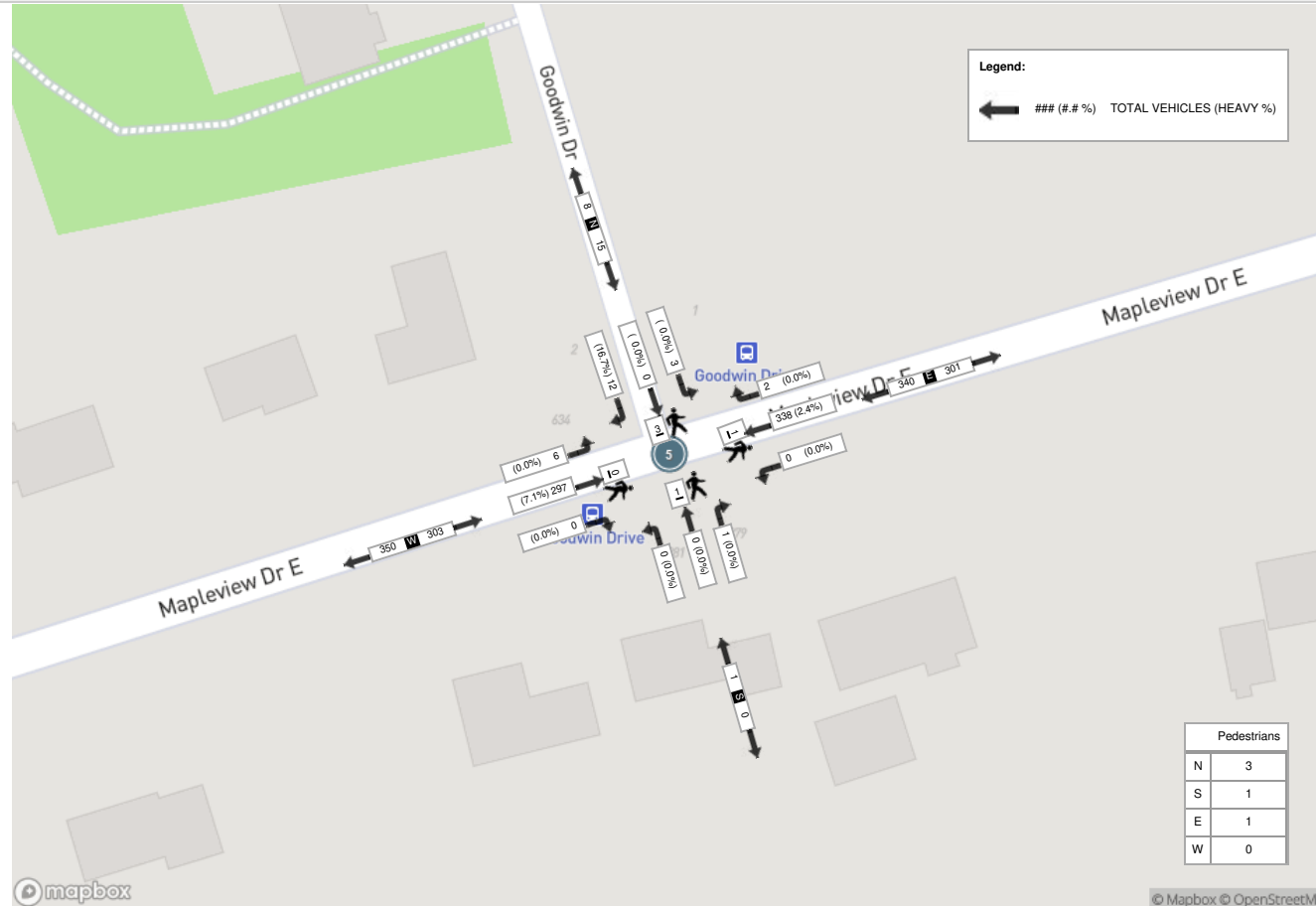
Start Time	N Approach GOODWIN DR						E Approach MAPLEVIEW DR E						S Approach GOODWIN DR						W Approach MAPLEVIEW DR E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	4	0	2	0	3	6	0	93	0	0	1	93	0	0	0	0	0	0	0	74	0	0	0	74	173
08:00:00	2	0	0	0	0	2	1	71	0	0	0	72	0	0	0	0	0	0	0	69	1	0	0	70	144
08:15:00	3	0	0	0	0	3	1	71	0	0	0	72	1	0	0	0	1	1	0	79	4	0	0	83	159
08:30:00	3	0	1	0	0	4	0	103	0	0	0	103	0	0	0	0	0	0	0	75	1	0	0	76	183
Grand Total	12	0	3	0	3	15	2	338	0	0	1	340	1	0	0	0	1	1	0	297	6	0	0	303	659
Approach%	80%	0%	20%	0%		-	0.6%	99.4%	0%	0%		-	100%	0%	0%	0%		-	0%	98%	2%	0%		-	-
Totals %	1.8%	0%	0.5%	0%		2.3%	0.3%	51.3%	0%	0%		51.6%	0.2%	0%	0%	0%		0.2%	0%	45.1%	0.9%	0%		46%	-
PHF	0.75	0	0.38	0		0.63	0.5	0.82	0	0		0.83	0.25	0	0	0		0.25	0	0.94	0.38	0		0.91	-
Heavy	2	0	0	0		2	0	8	0	0		8	0	0	0	0		0	0	21	0	0		21	-
Heavy %	16.7%	0%	0%	0%		13.3%	0%	2.4%	0%	0%		2.4%	0%	0%	0%	0%		0%	0%	7.1%	0%	0%		6.9%	-
Lights	10	0	3	0		13	2	330	0	0		332	1	0	0	0		1	0	276	6	0		282	-
Lights %	83.3%	0%	100%	0%		86.7%	100%	97.6%	0%	0%		97.6%	100%	0%	0%	0%		100%	0%	92.9%	100%	0%		93.1%	-
Single-Unit Trucks	2	0	0	0		2	0	6	0	0		6	0	0	0	0		0	0	14	0	0		14	-
Single-Unit Trucks %	16.7%	0%	0%	0%		13.3%	0%	1.8%	0%	0%		1.8%	0%	0%	0%	0%		0%	0%	4.7%	0%	0%		4.6%	-
Buses	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	-
Buses %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	6	0	0		6	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	2%	0%	0%		2%	-
Pedestrians	-	-	-	-	3	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	60%	-	-	-	-	20%	-	-	-	-	20%	-	-	-	-	-	-	0%	-	-	-



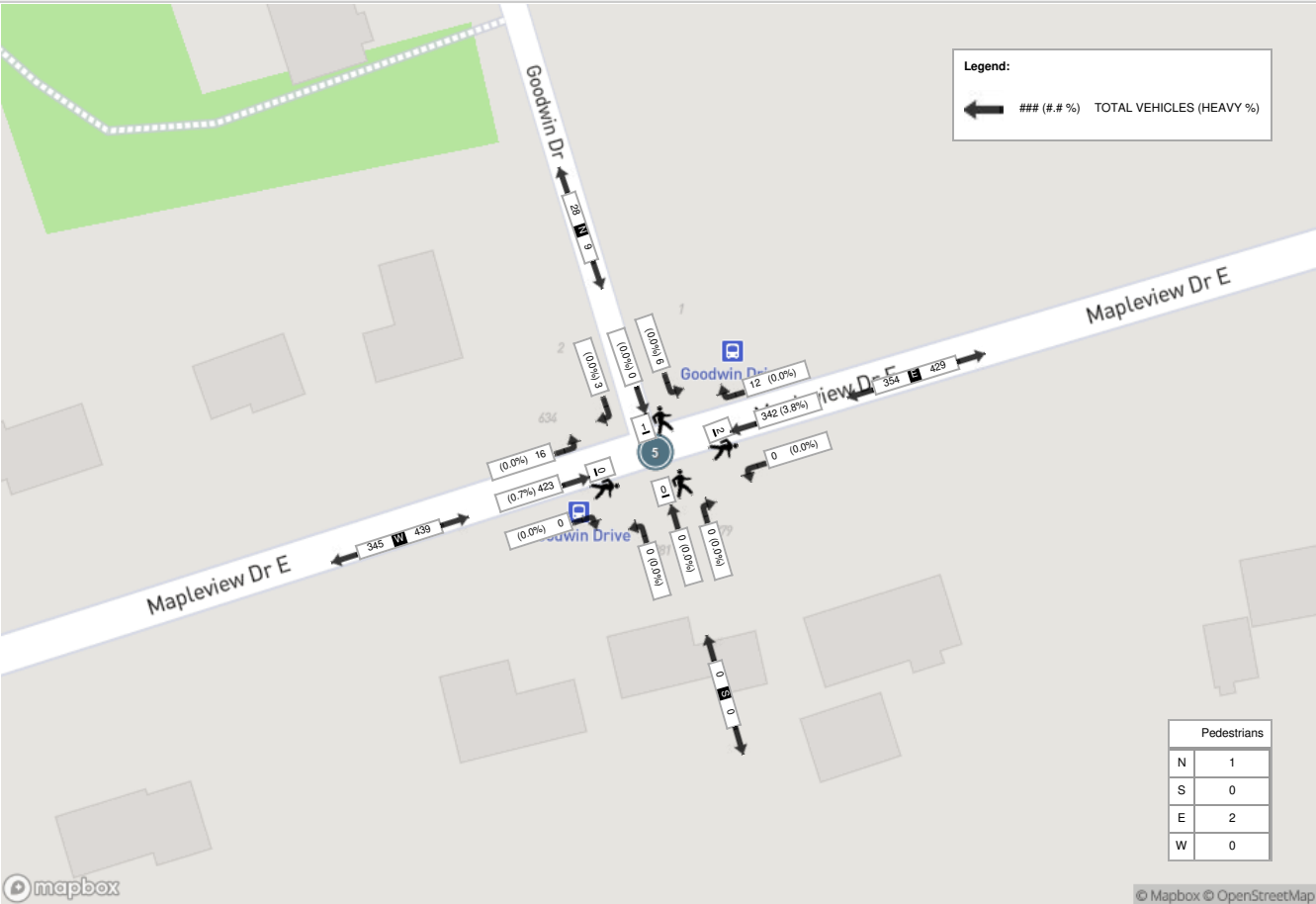
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (0.34 °C)

Start Time	N Approach GOODWIN DR						E Approach MAPLEVIEW DR E						S Approach GOODWIN DR						W Approach MAPLEVIEW DR E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	0	0	2	0	1	2	2	116	0	0	1	118	0	0	0	0	0	0	0	94	3	0	0	97	217
16:30:00	0	0	0	0	0	0	3	82	0	0	1	85	0	0	0	0	0	0	0	106	5	0	0	111	196
16:45:00	1	0	1	0	0	2	3	67	0	0	0	70	0	0	0	0	0	0	0	99	8	0	0	107	179
17:00:00	2	0	3	0	0	5	4	77	0	0	0	81	0	0	0	0	0	0	0	124	0	0	0	124	210
Grand Total	3	0	6	0	1	9	12	342	0	0	2	354	0	0	0	0	0	0	0	423	16	0	0	439	802
Approach%	33.3%	0%	66.7%	0%		-	3.4%	96.6%	0%	0%		-	0%	0%	0%	0%		-	0%	96.4%	3.6%	0%		-	-
Totals %	0.4%	0%	0.7%	0%		1.1%	1.5%	42.6%	0%	0%		44.1%	0%	0%	0%	0%		0%	0%	52.7%	2%	0%		54.7%	-
PHF	0.38	0	0.5	0		0.45	0.75	0.74	0	0		0.75	0	0	0	0		0	0	0.85	0.5	0		0.89	-
Heavy	0	0	0	0		0	0	13	0	0		13	0	0	0	0		0	0	3	0	0		3	-
Heavy %	0%	0%	0%	0%		0%	0%	3.8%	0%	0%		3.7%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	-
Lights	3	0	6	0		9	12	329	0	0		341	0	0	0	0		0	0	420	16	0		436	-
Lights %	100%	0%	100%	0%		100%	100%	96.2%	0%	0%		96.3%	0%	0%	0%	0%		0%	0%	99.3%	100%	0%		99.3%	-
Single-Unit Trucks	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	0	1	0	0		1	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.7%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	-
Buses	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	0	0	0		0	-
Buses %	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	33.3%	-	-	-	-	-	66.7%	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (-0.04 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (0.34 °C)





Turning Movement Count (5 . MAPLEVIEW DR E & GOODWIN DR)

Start Time	N Approach GOODWIN DR						E Approach MAPLEVIEW DR E						S Approach GOODWIN DR						W Approach MAPLEVIEW DR E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
12:00:00	1	0	2	0	0	3	0	97	0	0	0	97	0	0	0	0	0	0	0	82	2	0	0	84	184	
12:15:00	4	0	0	0	0	4	1	75	0	0	0	76	0	0	0	0	0	0	0	90	2	0	0	92	172	
12:30:00	1	0	0	0	0	1	1	86	0	0	0	87	0	0	0	0	0	0	0	83	2	0	0	85	173	
12:45:00	3	0	2	0	0	5	1	92	0	0	0	93	0	0	0	0	0	0	0	78	1	0	0	79	177	706
13:00:00	2	0	1	0	1	3	2	81	0	0	1	83	0	0	0	0	0	0	0	88	1	0	2	89	175	697
13:15:00	3	0	0	0	0	3	0	84	0	0	0	84	0	0	0	0	0	0	0	90	3	0	0	93	180	705
13:30:00	1	0	0	0	0	1	0	97	0	0	1	97	0	0	0	0	0	0	0	84	5	0	0	89	187	719
13:45:00	4	0	2	0	0	6	1	77	0	0	0	78	0	0	0	0	0	0	0	78	1	0	0	79	163	705
14:00:00	0	0	0	0	0	0	1	88	0	0	0	89	0	0	0	0	0	0	0	87	2	0	0	89	178	708
14:15:00	2	0	0	0	0	2	1	73	0	0	0	74	0	0	0	0	0	0	0	74	4	0	0	78	154	682
14:30:00	2	0	1	0	0	3	1	74	0	0	0	75	0	0	0	0	0	0	0	86	1	0	0	87	165	660
14:45:00	1	0	2	0	0	3	1	72	0	0	0	73	0	0	0	0	0	0	0	77	2	0	0	79	155	652
15:00:00	2	0	0	0	0	2	0	87	0	0	0	87	0	0	0	0	0	0	0	88	2	0	0	90	179	653
15:15:00	1	0	0	0	0	1	0	81	0	0	0	81	0	0	0	0	0	0	0	78	3	0	0	81	163	662
15:30:00	2	0	0	0	0	2	2	84	0	0	0	86	0	0	0	0	0	0	0	74	5	0	0	79	167	664
15:45:00	1	0	0	0	1	1	3	88	0	0	1	91	0	0	0	0	0	0	0	93	3	0	0	96	188	697
Grand Total	30	0	10	0	2	40	15	1336	0	0	3	1351	0	0	0	0	0	0	0	1330	39	0	2	1369	2760	-
Approach%	75%	0%	25%	0%		-	1.1%	98.9%	0%	0%		-	0%	0%	0%	0%		-	0%	97.2%	2.8%	0%		-	-	-
Totals %	1.1%	0%	0.4%	0%		1.4%	0.5%	48.4%	0%	0%		48.9%	0%	0%	0%	0%		0%	0%	48.2%	1.4%	0%		49.6%	-	-
Heavy	1	0	0	0		-	1	10	0	0		-	0	0	0	0		-	0	7	0	0		-	-	-
Heavy %	3.3%	0%	0%	0%		-	6.7%	0.7%	0%	0%		-	0%	0%	0%	0%		-	0%	0.5%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast Clouds (-12.14 °C)

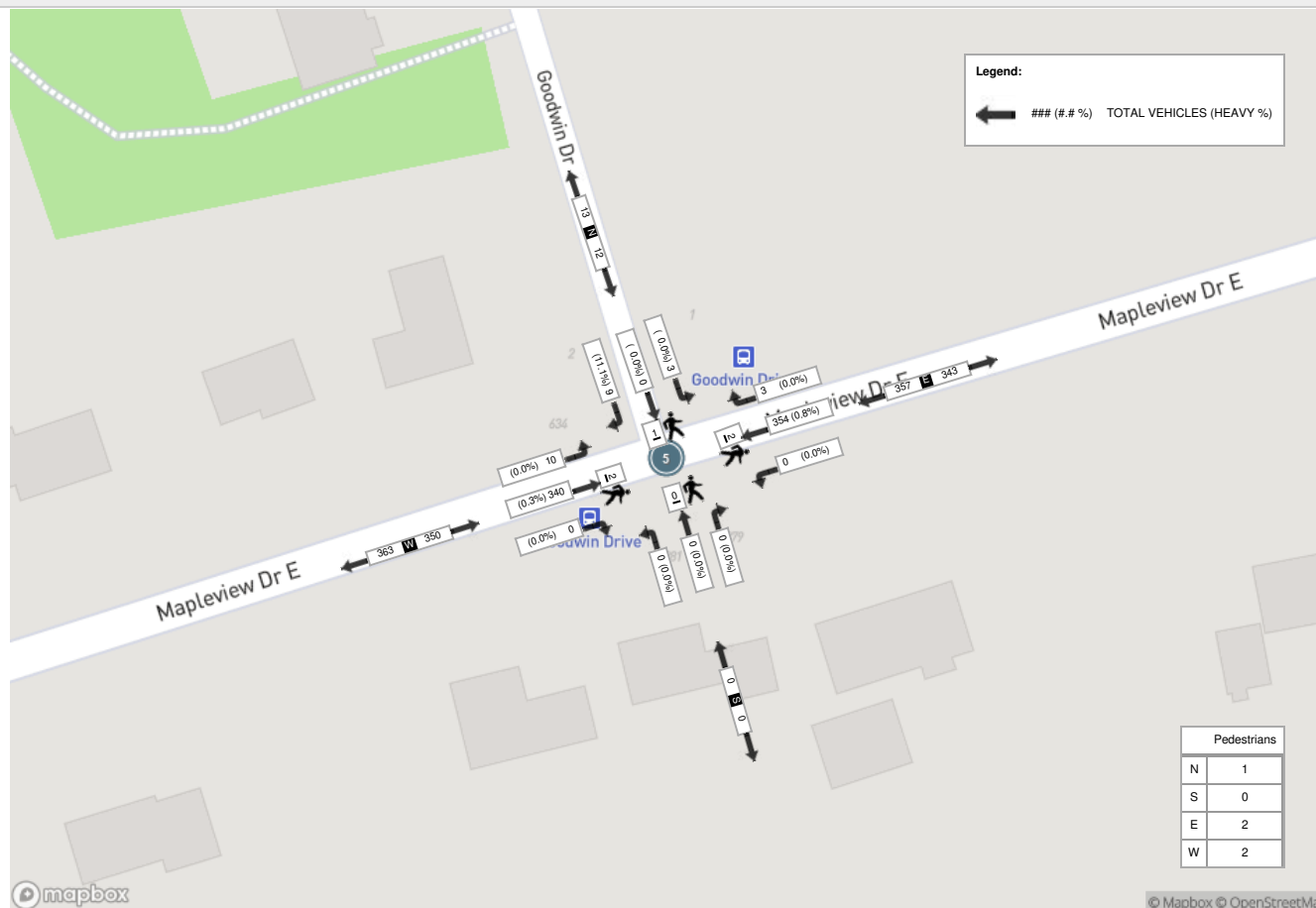
Start Time	N Approach GOODWIN DR						E Approach MAPLEVIEW DR E						S Approach GOODWIN DR						W Approach MAPLEVIEW DR E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
12:45:00	3	0	2	0	0	5	1	92	0	0	0	93	0	0	0	0	0	0	0	78	1	0	0	79	177
13:00:00	2	0	1	0	1	3	2	81	0	0	1	83	0	0	0	0	0	0	0	88	1	0	2	89	175
13:15:00	3	0	0	0	0	3	0	84	0	0	0	84	0	0	0	0	0	0	0	90	3	0	0	93	180
13:30:00	1	0	0	0	0	1	0	97	0	0	1	97	0	0	0	0	0	0	0	84	5	0	0	89	187
Grand Total	9	0	3	0	1	12	3	354	0	0	2	357	0	0	0	0	0	0	0	340	10	0	2	350	719
Approach%	75%	0%	25%	0%		-	0.8%	99.2%	0%	0%		-	0%	0%	0%	0%		-	0%	97.1%	2.9%	0%		-	-
Totals %	1.3%	0%	0.4%	0%		1.7%	0.4%	49.2%	0%	0%		49.7%	0%	0%	0%	0%		0%	0%	47.3%	1.4%	0%		48.7%	-
PHF	0.75	0	0.38	0		0.6	0.38	0.91	0	0		0.92	0	0	0	0		0	0	0.94	0.5	0		0.94	-
Heavy	1	0	0	0		1	0	3	0	0		3	0	0	0	0		0	0	1	0	0		1	-
Heavy %	11.1%	0%	0%	0%		8.3%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	-
Lights	8	0	3	0		11	3	351	0	0		354	0	0	0	0		0	0	339	10	0		349	-
Lights %	88.9%	0%	100%	0%		91.7%	100%	99.2%	0%	0%		99.2%	0%	0%	0%	0%		0%	0%	99.7%	100%	0%		99.7%	-
Single-Unit Trucks	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	1	0	0		1	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	-
Buses	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	11.1%	0%	0%	0%		8.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	1	-	-	-	-	2		-	-	-	-	0		-	-	-	-	2		-	-
Pedestrians%	-	-	-	-	20%	-	-	-	-	40%		-	-	-	-	0%		-	-	-	-	40%		-	-



Turning Movement Count
Location Name: MAPLEVIEW DR E & GOODWIN DR
Date: Sat, Feb 12, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast Clouds (-12.14 °C)





Turning Movement Count (1 . MAPLEVIEW DR E & YONGE ST)

Start Time	N Approach YONGE ST						E Approach MAPLEVIEW DR						S Approach YONGE ST						W Approach MAPLEVIEW DR						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:30:00	10	67	13	0	0	90	18	63	17	0	0	98	6	69	9	0	0	84	9	46	6	0	0	61	333		
07:45:00	9	73	23	0	0	105	27	75	26	0	0	128	6	77	6	0	0	89	6	58	16	0	0	80	402		
08:00:00	5	76	20	0	0	101	29	69	18	0	0	116	8	72	4	0	0	84	8	52	9	0	0	69	370		
08:15:00	8	65	19	0	1	92	20	55	17	0	0	92	7	69	7	0	1	83	10	55	13	0	0	78	345	1450	
08:30:00	14	62	22	0	0	98	23	80	18	0	0	121	4	62	11	0	0	77	4	60	14	0	0	78	374	1491	
08:45:00	13	61	12	0	0	86	15	59	13	0	0	87	4	54	9	0	0	67	13	42	15	0	0	70	310	1399	
09:00:00	6	53	16	0	0	75	19	55	10	0	0	84	7	59	8	0	0	74	7	50	2	0	0	59	292	1321	
09:15:00	10	37	11	0	0	58	14	43	11	0	0	68	4	59	13	0	0	76	9	33	8	0	0	50	252	1228	
BREAK																											
16:00:00	8	74	22	0	0	104	10	62	21	0	0	93	17	96	22	0	0	135	11	75	9	0	0	95	427		
16:15:00	11	93	17	0	0	121	19	76	16	0	0	111	7	89	24	0	0	120	15	64	16	0	0	95	447		
16:30:00	14	102	20	0	0	136	31	53	9	0	0	93	12	85	22	0	0	119	9	82	9	0	0	100	448		
16:45:00	9	83	22	0	0	114	20	42	25	0	0	87	18	102	12	0	0	132	20	76	16	0	0	112	445	1767	
17:00:00	10	75	23	0	0	108	22	58	14	0	0	94	8	76	18	0	0	102	16	92	13	0	0	121	425	1765	
17:15:00	28	112	33	0	1	173	29	59	13	0	0	101	6	77	11	0	0	94	16	84	14	0	0	114	482	1800	
17:30:00	6	58	16	0	0	80	20	48	9	0	0	77	8	70	20	0	0	98	12	77	12	0	0	101	356	1708	
17:45:00	7	58	11	0	0	76	10	58	8	0	0	76	5	73	15	0	0	93	12	71	15	0	0	98	343	1606	
Grand Total	168	1149	300	0	2	1617	326	955	245	0	0	1526	127	1189	211	0	1	1527	177	1017	187	0	0	1381	6051	-	
Approach%	10.4%	71.1%	18.6%	0%		-	21.4%	62.6%	16.1%	0%		-	8.3%	77.9%	13.8%	0%		-	12.8%	73.6%	13.5%	0%		-	-	-	
Totals %	2.8%	19%	5%	0%		26.7%	5.4%	15.8%	4%	0%		25.2%	2.1%	19.6%	3.5%	0%		25.2%	2.9%	16.8%	3.1%	0%		22.8%	-	-	
Heavy	7	27	10	0		-	17	30	17	0		-	8	35	6	0		-	7	35	9	0		-	-	-	
Heavy %	4.2%	2.3%	3.3%	0%		-	5.2%	3.1%	6.9%	0%		-	6.3%	2.9%	2.8%	0%		-	4%	3.4%	4.8%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (-0.04 °C)

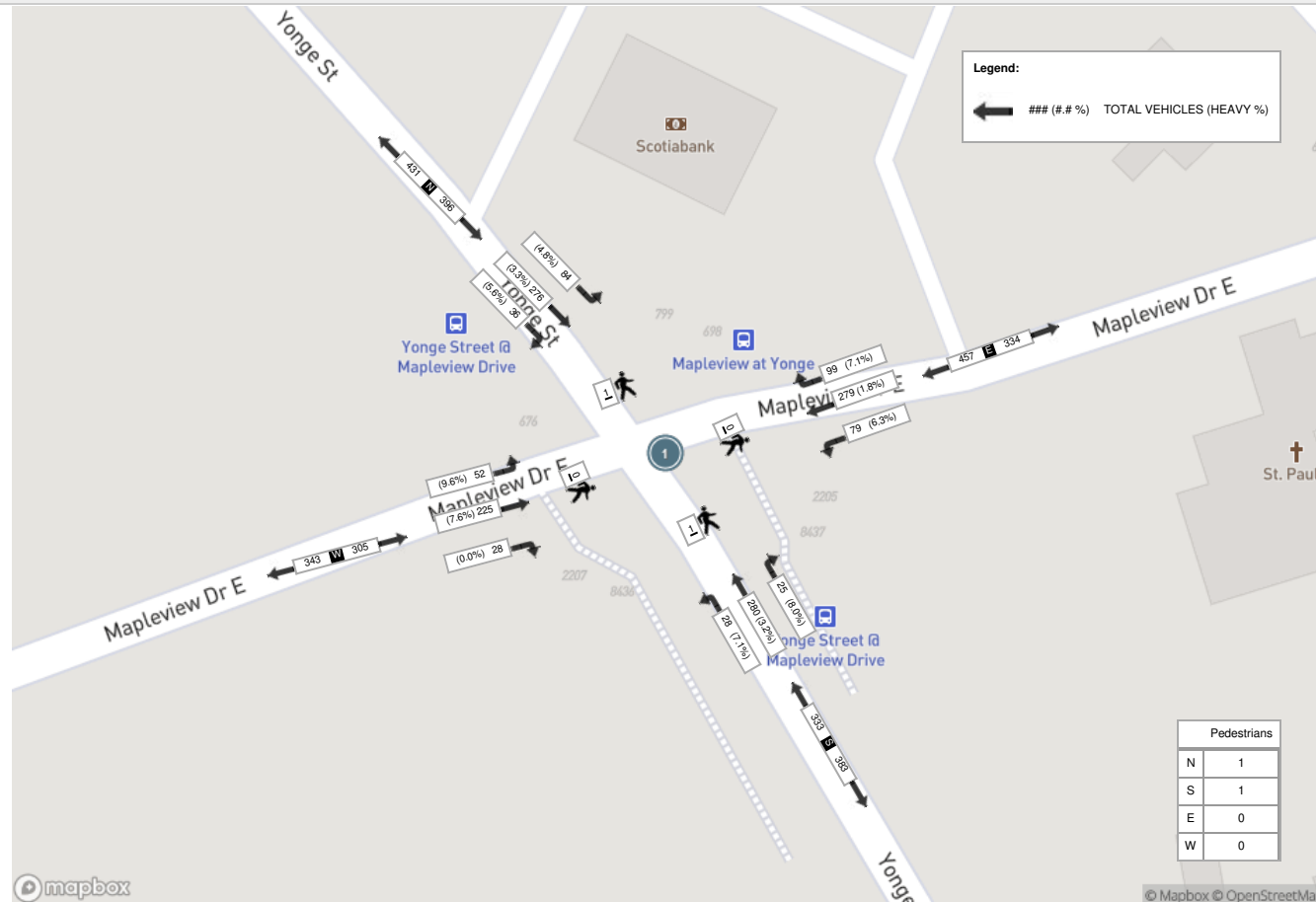
Start Time	N Approach YONGE ST						E Approach MAPLEVIEW DR						S Approach YONGE ST						W Approach MAPLEVIEW DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	9	73	23	0	0	105	27	75	26	0	0	128	6	77	6	0	0	89	6	58	16	0	0	80	402
08:00:00	5	76	20	0	0	101	29	69	18	0	0	116	8	72	4	0	0	84	8	52	9	0	0	69	370
08:15:00	8	65	19	0	1	92	20	55	17	0	0	92	7	69	7	0	1	83	10	55	13	0	0	78	345
08:30:00	14	62	22	0	0	98	23	80	18	0	0	121	4	62	11	0	0	77	4	60	14	0	0	78	374
Grand Total	36	276	84	0	1	396	99	279	79	0	0	457	25	280	28	0	1	333	28	225	52	0	0	305	1491
Approach%	9.1%	69.7%	21.2%	0%		-	21.7%	61.1%	17.3%	0%		-	7.5%	84.1%	8.4%	0%		-	9.2%	73.8%	17%	0%		-	-
Totals %	2.4%	18.5%	5.6%	0%		26.6%	6.6%	18.7%	5.3%	0%		30.7%	1.7%	18.8%	1.9%	0%		22.3%	1.9%	15.1%	3.5%	0%		20.5%	-
PHF	0.64	0.91	0.91	0		0.94	0.85	0.87	0.76	0		0.89	0.78	0.91	0.64	0		0.94	0.7	0.94	0.81	0		0.95	-
Heavy	2	9	4	0		15	7	5	5	0		17	2	9	2	0		13	0	17	5	0		22	-
Heavy %	5.6%	3.3%	4.8%	0%		3.8%	7.1%	1.8%	6.3%	0%		3.7%	8%	3.2%	7.1%	0%		3.9%	0%	7.6%	9.6%	0%		7.2%	-
Lights	34	267	80	0		381	92	274	74	0		440	23	271	26	0		320	28	208	47	0		283	-
Lights %	94.4%	96.7%	95.2%	0%		96.2%	92.9%	98.2%	93.7%	0%		96.3%	92%	96.8%	92.9%	0%		96.1%	100%	92.4%	90.4%	0%		92.8%	-
Single-Unit Trucks	2	6	0	0		8	2	3	5	0		10	2	4	1	0		7	0	13	2	0		15	-
Single-Unit Trucks %	5.6%	2.2%	0%	0%		2%	2%	1.1%	6.3%	0%		2.2%	8%	1.4%	3.6%	0%		2.1%	0%	5.8%	3.8%	0%		4.9%	-
Buses	0	3	4	0		7	5	1	0	0		6	0	2	0	0		2	0	1	0	0		1	-
Buses %	0%	1.1%	4.8%	0%		1.8%	5.1%	0.4%	0%	0%		1.3%	0%	0.7%	0%	0%		0.6%	0%	0.4%	0%	0%		0.3%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	3	1	0		4	0	3	3	0		6	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.2%	0%	1.1%	3.6%	0%		1.2%	0%	1.3%	5.8%	0%		2%	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	50%	-	-	-	-	-	0%	-	-	-	-	-	50%	-	-	-	-	-	0%	-	-



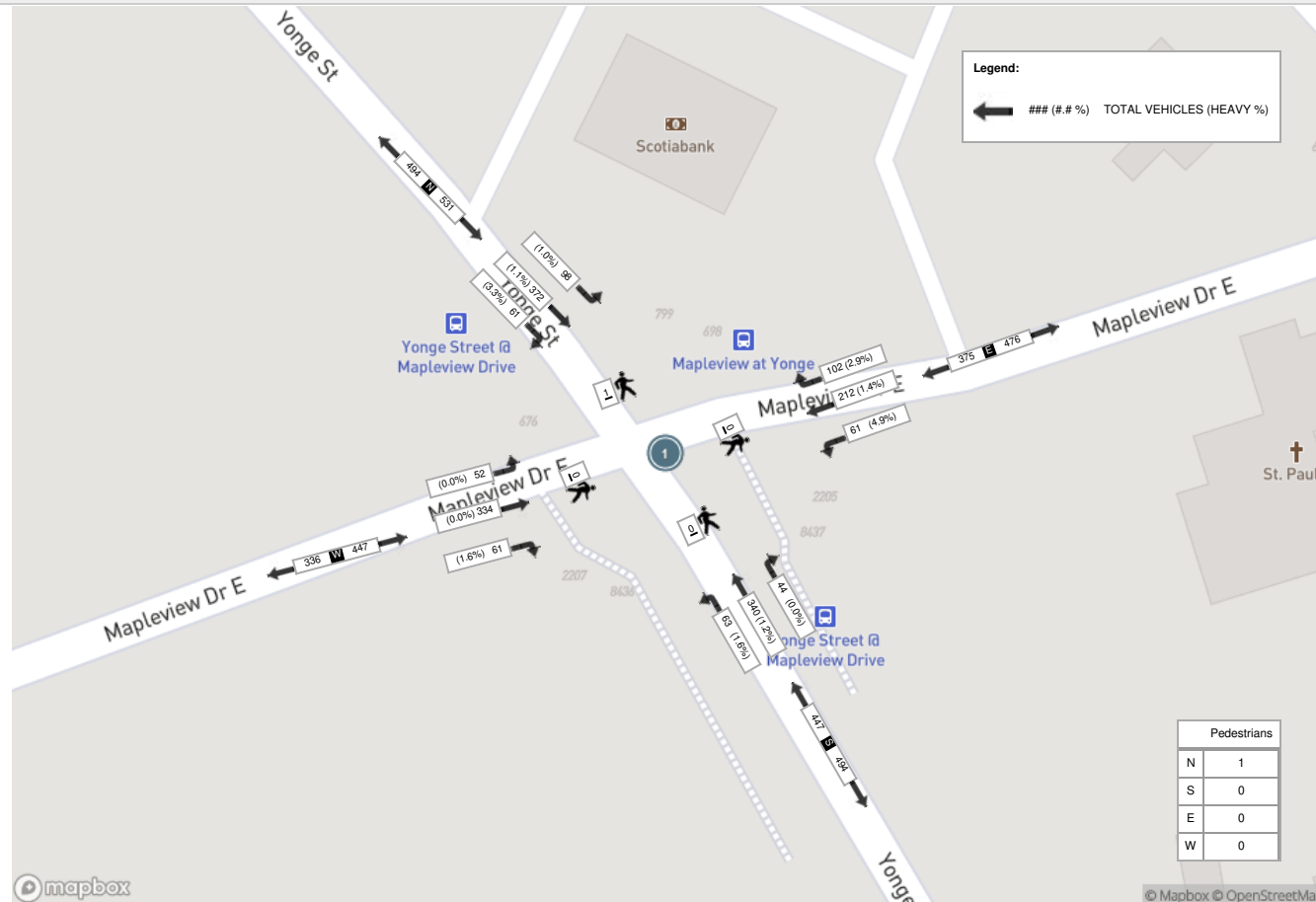
Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (0.34 °C)

Start Time	N Approach YONGE ST						E Approach MAPLEVIEW DR						S Approach YONGE ST						W Approach MAPLEVIEW DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	14	102	20	0	0	136	31	53	9	0	0	93	12	85	22	0	0	119	9	82	9	0	0	100	448
16:45:00	9	83	22	0	0	114	20	42	25	0	0	87	18	102	12	0	0	132	20	76	16	0	0	112	445
17:00:00	10	75	23	0	0	108	22	58	14	0	0	94	8	76	18	0	0	102	16	92	13	0	0	121	425
17:15:00	28	112	33	0	1	173	29	59	13	0	0	101	6	77	11	0	0	94	16	84	14	0	0	114	482
Grand Total	61	372	98	0	1	531	102	212	61	0	0	375	44	340	63	0	0	447	61	334	52	0	0	447	1800
Approach%	11.5%	70.1%	18.5%	0%		-	27.2%	56.5%	16.3%	0%		-	9.8%	76.1%	14.1%	0%		-	13.6%	74.7%	11.6%	0%		-	-
Totals %	3.4%	20.7%	5.4%	0%		29.5%	5.7%	11.8%	3.4%	0%		20.8%	2.4%	18.9%	3.5%	0%		24.8%	3.4%	18.6%	2.9%	0%		24.8%	-
PHF	0.54	0.83	0.74	0		0.77	0.82	0.9	0.61	0		0.93	0.61	0.83	0.72	0		0.85	0.76	0.91	0.81	0		0.92	-
Heavy	2	4	1	0		7	3	3	3	0		9	0	4	1	0		5	1	0	0	0		1	-
Heavy %	3.3%	1.1%	1%	0%		1.3%	2.9%	1.4%	4.9%	0%		2.4%	0%	1.2%	1.6%	0%		1.1%	1.6%	0%	0%	0%		0.2%	-
Lights	59	368	97	0		524	99	209	58	0		366	44	336	62	0		442	60	334	52	0		446	-
Lights %	96.7%	98.9%	99%	0%		98.7%	97.1%	98.6%	95.1%	0%		97.6%	100%	98.8%	98.4%	0%		98.9%	98.4%	100%	100%	0%		99.8%	-
Single-Unit Trucks	1	2	0	0		3	0	2	3	0		5	0	2	1	0		3	0	0	0	0		0	-
Single-Unit Trucks %	1.6%	0.5%	0%	0%		0.6%	0%	0.9%	4.9%	0%		1.3%	0%	0.6%	1.6%	0%		0.7%	0%	0%	0%	0%		0%	-
Buses	0	1	1	0		2	3	0	0	0		3	0	2	0	0		2	0	0	0	0		0	-
Buses %	0%	0.3%	1%	0%		0.4%	2.9%	0%	0%	0%		0.8%	0%	0.6%	0%	0%		0.4%	0%	0%	0%	0%		0%	-
Articulated Trucks	1	1	0	0		2	0	1	0	0		1	0	0	0	0		0	1	0	0	0		1	-
Articulated Trucks %	1.6%	0.3%	0%	0%		0.4%	0%	0.5%	0%	0%		0.3%	0%	0%	0%	0%		0%	1.6%	0%	0%	0%		0.2%	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	100%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (-0.04 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (0.34 °C)





Turning Movement Count (1 . MAPLEVIEW DR E & YONGE ST)

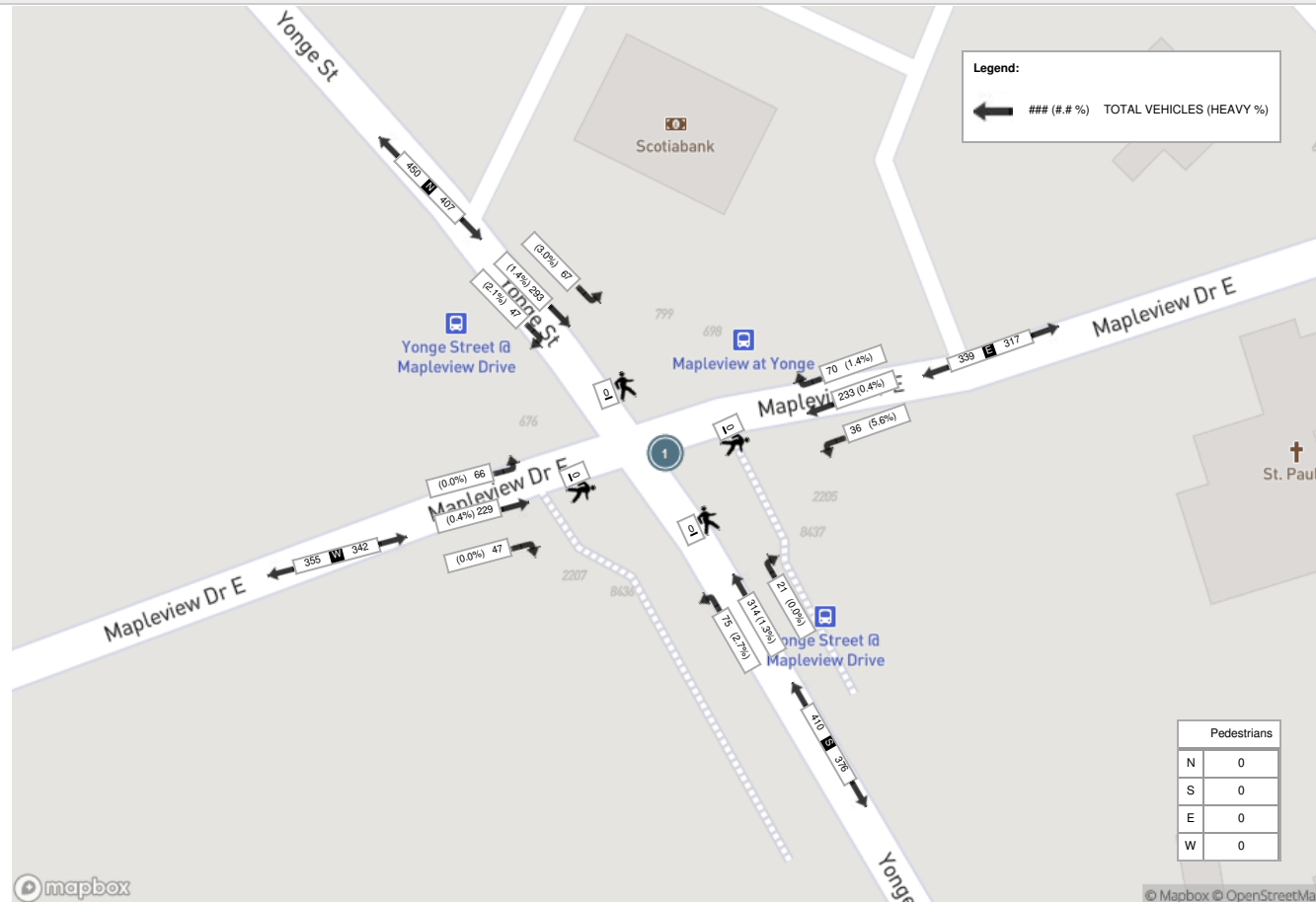
Start Time	N Approach YONGE ST						E Approach MAPLEVIEW DR						S Approach YONGE ST						W Approach MAPLEVIEW DR						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
12:00:00	14	81	15	0	0	110	14	60	10	0	1	84	4	78	20	0	0	102	16	47	11	0	0	74	370	
12:15:00	10	68	12	0	0	90	18	47	17	0	0	82	7	72	18	0	0	97	15	62	17	0	0	94	363	
12:30:00	9	92	11	0	0	112	20	60	11	0	0	91	3	60	17	0	0	80	14	49	18	0	0	81	364	
12:45:00	11	82	11	0	0	104	21	65	10	0	0	96	6	67	18	0	0	91	15	56	15	0	0	86	377	1474
13:00:00	14	65	15	0	0	94	8	57	14	0	0	79	9	73	17	0	0	99	5	62	22	0	0	89	361	1465
13:15:00	9	72	21	0	0	102	18	47	6	0	0	71	3	101	22	0	0	126	15	51	19	0	0	85	384	1486
13:30:00	13	74	20	0	0	107	23	64	6	0	0	93	3	73	18	0	0	94	12	60	10	0	0	82	376	1498
13:45:00	14	84	13	0	0	111	15	53	12	0	0	80	5	57	10	0	0	72	13	49	13	0	0	75	338	1459
14:00:00	15	68	20	0	0	103	15	56	13	0	0	84	6	73	17	0	0	96	11	73	13	0	0	97	380	1478
14:15:00	13	54	13	0	0	80	21	43	15	0	0	79	6	66	18	0	0	90	14	46	8	0	0	68	317	1411
14:30:00	12	57	13	0	0	82	17	51	12	0	0	80	7	64	16	0	0	87	17	61	11	0	0	89	338	1373
14:45:00	12	75	15	0	0	102	19	48	8	0	0	75	13	66	9	0	0	88	15	48	14	0	0	77	342	1377
15:00:00	13	60	17	0	0	90	11	61	9	0	0	81	10	62	15	0	0	87	8	74	10	0	0	92	350	1347
15:15:00	10	64	17	0	0	91	15	61	4	0	0	80	9	68	12	0	0	89	13	56	7	0	0	76	336	1366
15:30:00	16	62	8	0	0	86	13	58	11	0	0	82	6	64	12	0	0	82	9	58	12	1	0	80	330	1358
15:45:00	13	64	12	0	0	89	19	56	5	0	0	80	5	60	19	0	0	84	16	60	11	0	0	87	340	1356
Grand Total	198	1122	233	0	0	1553	267	887	163	0	1	1317	102	1104	258	0	0	1464	208	912	211	1	0	1332	5666	-
Approach%	12.7%	72.2%	15%	0%		-	20.3%	67.4%	12.4%	0%		-	7%	75.4%	17.6%	0%		-	15.6%	68.5%	15.8%	0.1%		-	-	-
Totals %	3.5%	19.8%	4.1%	0%		27.4%	4.7%	15.7%	2.9%	0%		23.2%	1.8%	19.5%	4.6%	0%		25.8%	3.7%	16.1%	3.7%	0%		23.5%	-	-
Heavy	1	10	11	0		-	8	7	4	0		-	2	10	3	0		-	1	6	1	0		-	-	-
Heavy %	0.5%	0.9%	4.7%	0%		-	3%	0.8%	2.5%	0%		-	2%	0.9%	1.2%	0%		-	0.5%	0.7%	0.5%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast Clouds (-12.14 °C)

Start Time	N Approach YONGE ST						E Approach MAPLEVIEW DR						S Approach YONGE ST						W Approach MAPLEVIEW DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
12:45:00	11	82	11	0	0	104	21	65	10	0	0	96	6	67	18	0	0	91	15	56	15	0	0	86	377
13:00:00	14	65	15	0	0	94	8	57	14	0	0	79	9	73	17	0	0	99	5	62	22	0	0	89	361
13:15:00	9	72	21	0	0	102	18	47	6	0	0	71	3	101	22	0	0	126	15	51	19	0	0	85	384
13:30:00	13	74	20	0	0	107	23	64	6	0	0	93	3	73	18	0	0	94	12	60	10	0	0	82	376
Grand Total	47	293	67	0	0	407	70	233	36	0	0	339	21	314	75	0	0	410	47	229	66	0	0	342	1498
Approach%	11.5%	72%	16.5%	0%		-	20.6%	68.7%	10.6%	0%		-	5.1%	76.6%	18.3%	0%		-	13.7%	67%	19.3%	0%		-	-
Totals %	3.1%	19.6%	4.5%	0%		27.2%	4.7%	15.6%	2.4%	0%		22.6%	1.4%	21%	5%	0%		27.4%	3.1%	15.3%	4.4%	0%		22.8%	-
PHF	0.84	0.89	0.8	0		0.95	0.76	0.9	0.64	0		0.88	0.58	0.78	0.85	0		0.81	0.78	0.92	0.75	0		0.96	-
Heavy	1	4	2	0		7	1	1	2	0		4	0	4	2	0		6	0	1	0	0		1	-
Heavy %	2.1%	1.4%	3%	0%		1.7%	1.4%	0.4%	5.6%	0%		1.2%	0%	1.3%	2.7%	0%		1.5%	0%	0.4%	0%	0%		0.3%	-
Lights	46	289	65	0		400	69	232	34	0		335	21	310	73	0		404	47	228	66	0		341	-
Lights %	97.9%	98.6%	97%	0%		98.3%	98.6%	99.6%	94.4%	0%		98.8%	100%	98.7%	97.3%	0%		98.5%	100%	99.6%	100%	0%		99.7%	-
Single-Unit Trucks	1	3	1	0		5	0	1	2	0		3	0	3	2	0		5	0	1	0	0		1	-
Single-Unit Trucks %	2.1%	1%	1.5%	0%		1.2%	0%	0.4%	5.6%	0%		0.9%	0%	1%	2.7%	0%		1.2%	0%	0.4%	0%	0%		0.3%	-
Buses	0	0	1	0		1	1	0	0	0		1	0	1	0	0		1	0	0	0	0		0	-
Buses %	0%	0%	1.5%	0%		0.2%	1.4%	0%	0%	0%		0.3%	0%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast Clouds (-12.14 °C)





Turning Movement Count (2 . MAPLEVIEW DR E & ST PAULS CRES)

Start Time	N Approach ST PAULS CRES						E Approach MAPLEVIEW DR E						S Approach ST PAULS CRES						W Approach MAPLEVIEW DR E						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:30:00	4	2	7	0	0	13	18	93	5	0	0	116	7	0	0	0	0	7	1	63	0	0	0	64	200		
07:45:00	3	0	14	0	0	17	21	128	11	0	0	160	8	0	0	0	0	8	0	83	5	0	0	88	273		
08:00:00	5	0	8	0	0	13	19	109	12	0	0	140	9	2	2	0	0	13	0	72	4	0	0	76	242		
08:15:00	1	1	10	0	1	12	10	92	7	0	0	109	6	1	0	0	1	7	1	79	0	0	0	80	208	923	
08:30:00	2	1	10	0	0	13	22	120	13	0	0	155	12	0	1	0	0	13	1	88	2	0	0	91	272	995	
08:45:00	6	1	12	0	0	19	19	78	7	0	0	104	13	0	0	0	0	13	0	57	1	0	0	58	194	916	
09:00:00	1	1	12	0	0	14	15	86	11	0	0	112	5	2	3	0	0	10	2	70	1	0	0	73	209	883	
09:15:00	0	1	8	0	0	9	10	61	7	0	0	78	6	0	1	0	0	7	0	46	2	0	0	48	142	817	
BREAK																											
16:00:00	1	1	8	0	0	10	11	91	7	0	0	109	17	0	0	0	0	17	2	105	3	0	0	110	246		
16:15:00	4	1	7	0	0	12	8	110	6	0	0	124	23	1	1	0	0	25	1	88	3	0	0	92	253		
16:30:00	1	1	8	0	2	10	9	92	10	0	0	111	28	1	0	0	0	29	2	109	3	0	0	114	264		
16:45:00	4	0	9	0	0	13	8	79	11	0	0	98	21	0	1	0	0	22	2	112	1	0	0	115	248	1011	
17:00:00	3	1	6	0	0	10	8	91	4	0	0	103	19	2	0	0	0	21	1	119	3	0	0	123	257	1022	
17:15:00	1	2	5	0	1	8	17	100	11	0	0	128	31	1	0	0	0	32	2	119	1	0	0	122	290	1059	
17:30:00	3	0	9	0	0	12	5	69	4	0	0	78	28	1	4	0	0	33	2	98	2	0	0	102	225	1020	
17:45:00	0	0	6	0	2	6	4	79	4	0	0	87	20	0	0	0	0	20	0	86	1	0	1	87	200	972	
Grand Total	39	13	139	0	6	191	204	1478	130	0	0	1812	253	11	13	0	1	277	17	1394	32	0	1	1443	3723	-	
Approach%	20.4%	6.8%	72.8%	0%	-	-	11.3%	81.6%	7.2%	0%	-	-	91.3%	4%	4.7%	0%	-	-	1.2%	96.6%	2.2%	0%	-	-	-	-	
Totals %	1%	0.3%	3.7%	0%	-	5.1%	5.5%	39.7%	3.5%	0%	-	48.7%	6.8%	0.3%	0.3%	0%	-	7.4%	0.5%	37.4%	0.9%	0%	-	38.8%	-	-	
Heavy	3	1	4	0	-	-	4	58	1	0	-	-	4	0	1	0	-	-	2	46	4	0	-	-	-	-	
Heavy %	7.7%	7.7%	2.9%	0%	-	-	2%	3.9%	0.8%	0%	-	-	1.6%	0%	7.7%	0%	-	-	11.8%	3.3%	12.5%	0%	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (-0.04 °C)

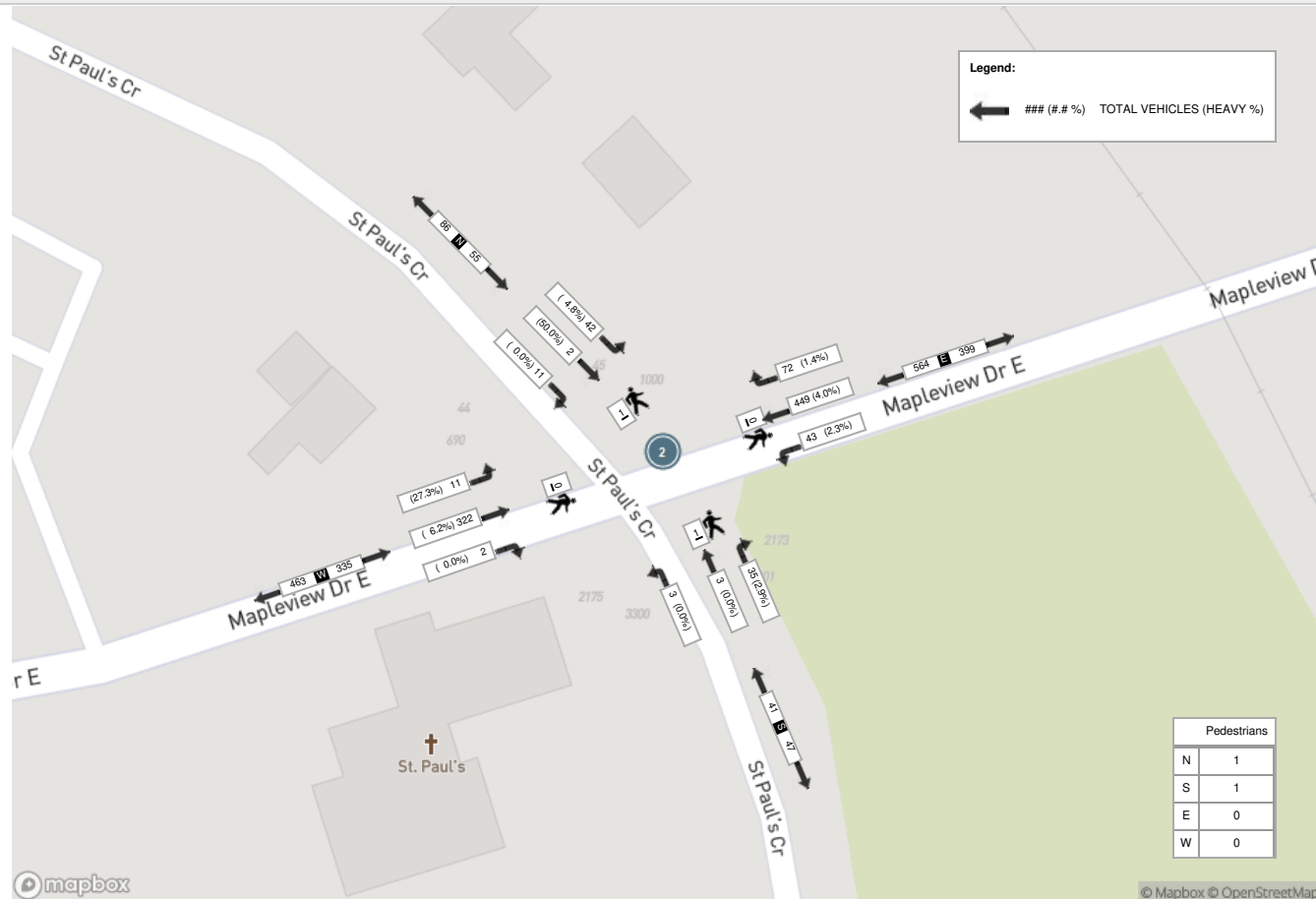
Start Time	N Approach ST PAULS CRES						E Approach MAPLEVIEW DR E						S Approach ST PAULS CRES						W Approach MAPLEVIEW DR E						Int. Total (15 min)	
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total		
07:45:00	3	0	14	0	0	17	21	128	11	0	0	160	8	0	0	0	0	8	0	83	5	0	0	88	273	
08:00:00	5	0	8	0	0	13	19	109	12	0	0	140	9	2	2	0	0	13	0	72	4	0	0	76	242	
08:15:00	1	1	10	0	1	12	10	92	7	0	0	109	6	1	0	0	1	7	1	79	0	0	0	80	208	
08:30:00	2	1	10	0	0	13	22	120	13	0	0	155	12	0	1	0	0	13	1	88	2	0	0	91	272	
Grand Total	11	2	42	0	1	55	72	449	43	0	0	564	35	3	3	0	1	41	2	322	11	0	0	335	995	
Approach%	20%	3.6%	76.4%	0%		-	12.8%	79.6%	7.6%	0%		-	85.4%	7.3%	7.3%	0%		-	0.6%	96.1%	3.3%	0%		-	-	
Totals %	1.1%	0.2%	4.2%	0%		5.5%	7.2%	45.1%	4.3%	0%		56.7%	3.5%	0.3%	0.3%	0%		4.1%	0.2%	32.4%	1.1%	0%		33.7%	-	
PHF	0.55	0.5	0.75	0		0.81	0.82	0.88	0.83	0		0.88	0.73	0.38	0.38	0		0.79	0.5	0.91	0.55	0		0.92	-	
Heavy	0	1	2	0		3	1	18	1	0		20	1	0	0	0		1	0	20	3	0		23	-	
Heavy %	0%	50%	4.8%	0%		5.5%	1.4%	4%	2.3%	0%		3.5%	2.9%	0%	0%	0%		2.4%	0%	6.2%	27.3%	0%		6.9%	-	
Lights	11	1	40	0		52	71	431	42	0		544	34	3	3	0		40	2	302	8	0		312	-	
Lights %	100%	50%	95.2%	0%		94.5%	98.6%	96%	97.7%	0%		96.5%	97.1%	100%	100%	0%		97.6%	100%	93.8%	72.7%	0%		93.1%	-	
Single-Unit Trucks	0	0	2	0		2	0	10	0	0		10	0	0	0	0		0	0	13	2	0		15	-	
Single-Unit Trucks %	0%	0%	4.8%	0%		3.6%	0%	2.2%	0%	0%		1.8%	0%	0%	0%	0%		0%	0%	4%	18.2%	0%		4.5%	-	
Buses	0	1	0	0		1	1	6	1	0		8	1	0	0	0		1	0	4	1	0		5	-	
Buses %	0%	50%	0%	0%		1.8%	1.4%	1.3%	2.3%	0%		1.4%	2.9%	0%	0%	0%		2.4%	0%	1.2%	9.1%	0%		1.5%	-	
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	-	
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	-	
Pedestrians	-	-	-	-	1	-	-	-	-	0		-	-	-	-	1		-	-	-	-	-	0		-	-
Pedestrians%	-	-	-	-	50%	-	-	-	-	0%		-	-	-	-	50%		-	-	-	-	-	0%		-	-



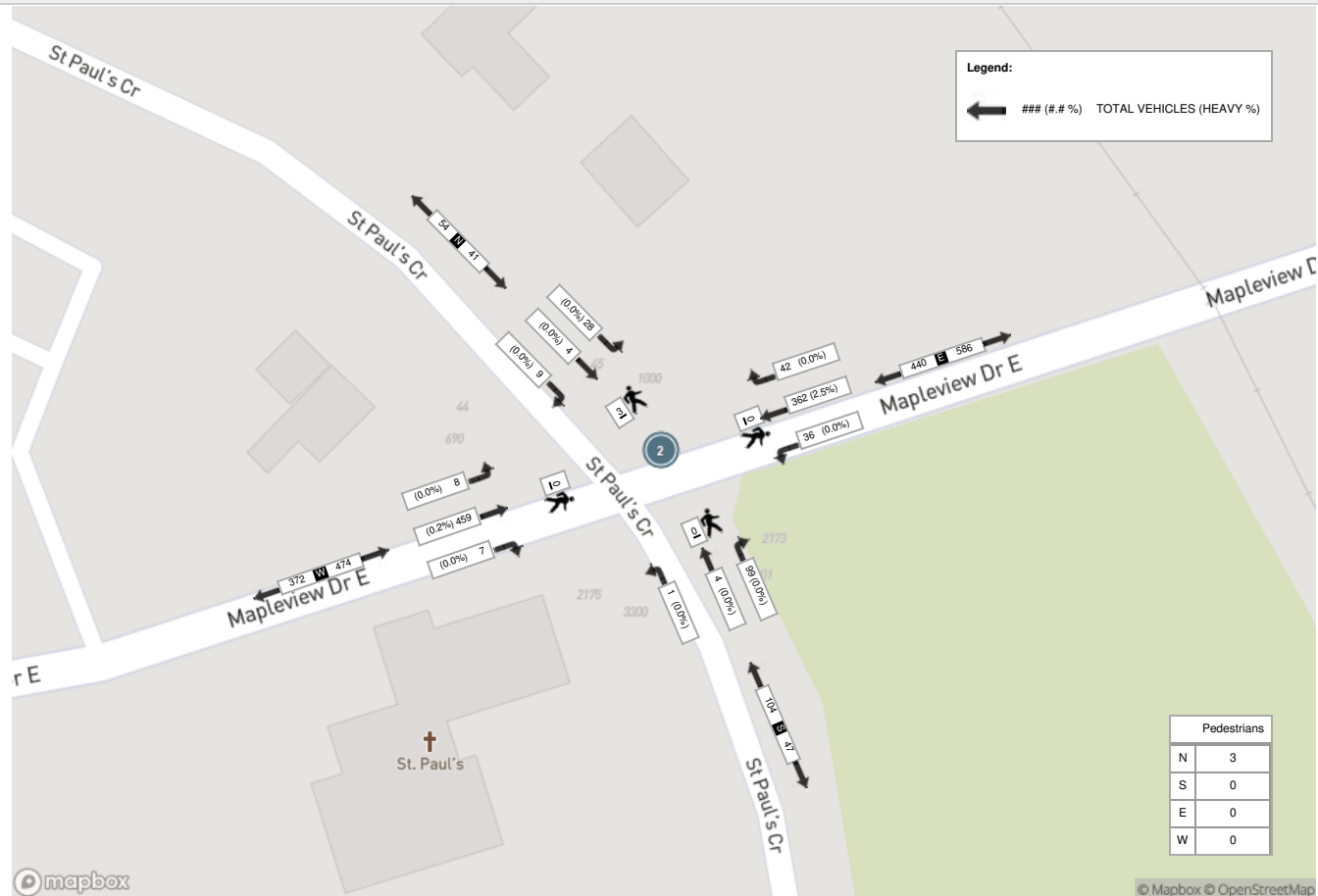
Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (0.34 °C)

Start Time	N Approach ST PAULS CRES						E Approach MAPLEVIEW DR E						S Approach ST PAULS CRES						W Approach MAPLEVIEW DR E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	1	1	8	0	2	10	9	92	10	0	0	111	28	1	0	0	0	29	2	109	3	0	0	114	264
16:45:00	4	0	9	0	0	13	8	79	11	0	0	98	21	0	1	0	0	22	2	112	1	0	0	115	248
17:00:00	3	1	6	0	0	10	8	91	4	0	0	103	19	2	0	0	0	21	1	119	3	0	0	123	257
17:15:00	1	2	5	0	1	8	17	100	11	0	0	128	31	1	0	0	0	32	2	119	1	0	0	122	290
Grand Total	9	4	28	0	3	41	42	362	36	0	0	440	99	4	1	0	0	104	7	459	8	0	0	474	1059
Approach%	22%	9.8%	68.3%	0%		-	9.5%	82.3%	8.2%	0%		-	95.2%	3.8%	1%	0%		-	1.5%	96.8%	1.7%	0%		-	-
Totals %	0.8%	0.4%	2.6%	0%		3.9%	4%	34.2%	3.4%	0%		41.5%	9.3%	0.4%	0.1%	0%		9.8%	0.7%	43.3%	0.8%	0%		44.8%	-
PHF	0.56	0.5	0.78	0		0.79	0.62	0.91	0.82	0		0.86	0.8	0.5	0.25	0		0.81	0.88	0.96	0.67	0		0.96	-
Heavy	0	0	0	0		0	0	9	0	0		9	0	0	0	0		0	0	1	0	0		1	-
Heavy %	0%	0%	0%	0%		0%	0%	2.5%	0%	0%		2%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	-
Lights	9	4	28	0		41	42	353	36	0		431	99	4	1	0		104	7	458	8	0		473	-
Lights %	100%	100%	100%	0%		100%	100%	97.5%	100%	0%		98%	100%	100%	100%	0%		100%	100%	99.8%	100%	0%		99.8%	-
Single-Unit Trucks	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	-
Buses %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	-
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	100%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (-0.04 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (0.34 °C)





Turning Movement Count (2 . MAPLEVIEW DR E & ST PAULS CRES)

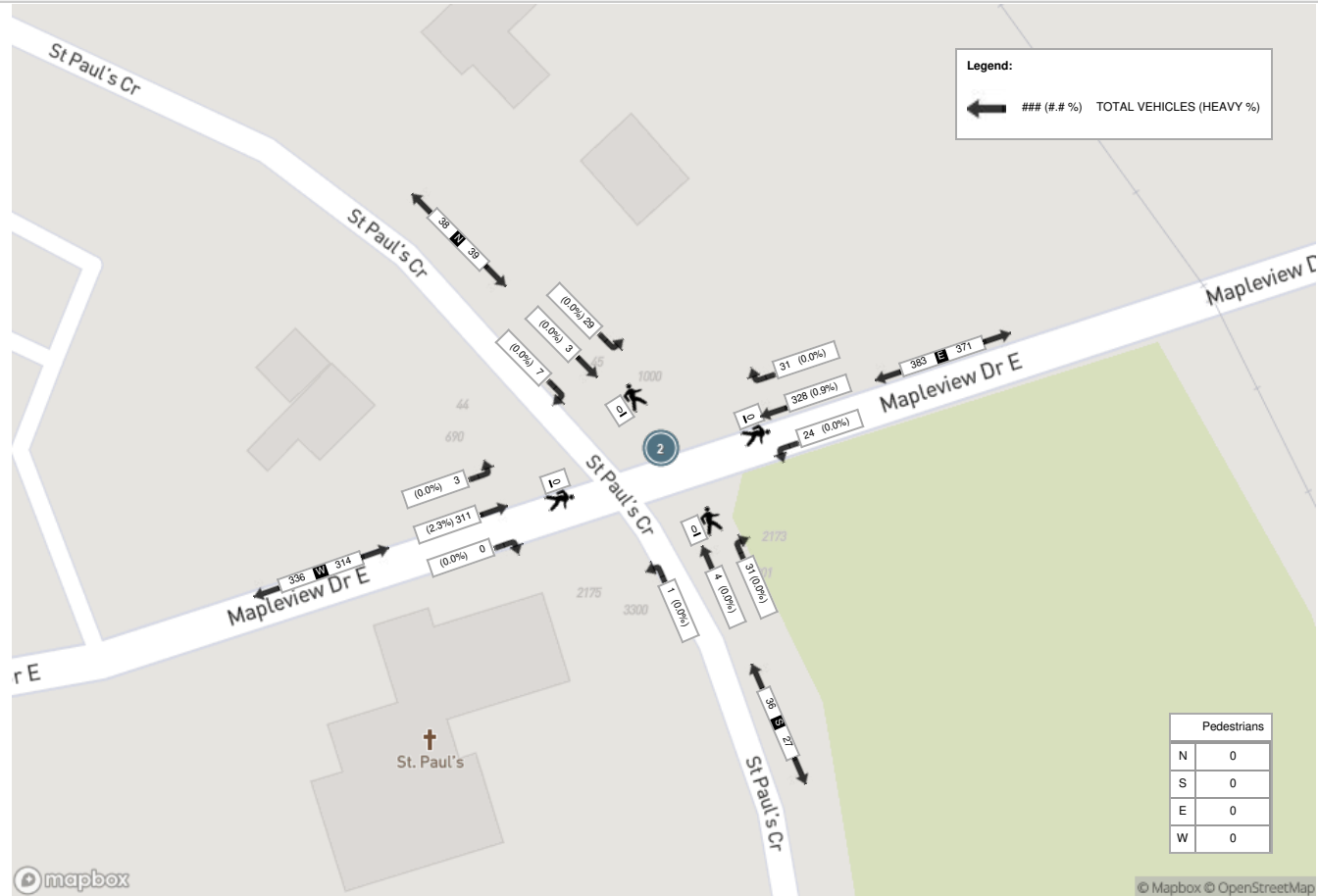
Start Time	N Approach ST PAULS CRES						E Approach MAPLEVIEW DR E						S Approach ST PAULS CRES						W Approach MAPLEVIEW DR E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
12:00:00	6	1	8	0	0	15	8	85	4	0	0	97	9	2	0	0	0	11	1	62	0	0	0	63	186	
12:15:00	2	4	7	0	0	13	5	74	10	0	0	89	10	1	0	0	0	11	1	77	2	1	0	81	194	
12:30:00	3	1	7	0	0	11	4	89	4	0	0	97	5	0	0	0	0	5	0	65	0	0	0	65	178	
12:45:00	4	1	6	0	0	11	5	93	2	0	0	100	5	3	1	0	0	9	0	70	1	0	0	71	191	749
13:00:00	1	0	7	0	0	8	5	75	8	0	0	88	4	2	3	0	0	9	1	83	2	0	0	86	191	754
13:15:00	2	0	4	0	2	6	5	72	4	0	0	81	10	1	0	0	0	11	1	73	2	0	0	76	174	734
13:30:00	2	0	7	0	0	9	13	90	5	0	0	108	8	1	0	0	0	9	0	83	0	0	0	83	209	765
13:45:00	2	0	11	0	0	13	2	79	5	0	0	86	8	1	1	0	0	10	0	66	0	0	0	66	175	749
14:00:00	2	1	5	0	0	8	7	77	6	0	0	90	9	0	0	0	0	9	0	97	1	0	0	98	205	763
14:15:00	1	2	6	0	0	9	9	82	8	0	0	99	6	2	0	0	0	8	0	65	2	0	0	67	183	772
14:30:00	1	1	6	0	0	8	7	78	5	0	0	90	8	0	0	0	0	8	0	79	1	1	0	81	187	750
14:45:00	2	0	7	0	0	9	7	72	5	0	0	84	8	0	1	0	0	9	0	76	0	0	0	76	178	753
15:00:00	1	0	7	0	0	8	10	79	8	0	0	97	8	0	0	0	0	8	0	98	1	0	0	99	212	760
15:15:00	1	1	5	0	0	7	5	76	4	0	0	85	5	0	1	0	0	6	0	77	2	0	0	79	177	754
15:30:00	2	0	7	0	0	9	5	80	6	0	0	91	9	1	0	0	0	10	0	76	0	0	0	76	186	753
15:45:00	5	2	3	0	0	10	4	77	10	0	0	91	11	0	1	0	0	12	0	75	1	0	0	76	189	764
Grand Total	37	14	103	0	2	154	101	1278	94	0	0	1473	123	14	8	0	0	145	4	1222	15	2	0	1243	3015	-
Approach%	24%	9.1%	66.9%	0%		-	6.9%	86.8%	6.4%	0%		-	84.8%	9.7%	5.5%	0%		-	0.3%	98.3%	1.2%	0.2%		-	-	-
Totals %	1.2%	0.5%	3.4%	0%		5.1%	3.3%	42.4%	3.1%	0%		48.9%	4.1%	0.5%	0.3%	0%		4.8%	0.1%	40.5%	0.5%	0.1%		41.2%	-	-
Heavy	1	0	1	0		-	0	18	1	0		-	1	1	1	0		-	0	19	0	0		-	-	-
Heavy %	2.7%	0%	1%	0%		-	0%	1.4%	1.1%	0%		-	0.8%	7.1%	12.5%	0%		-	0%	1.6%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 01:30 PM - 02:30 PM Weather: Overcast Clouds (-12.14 °C)

Start Time	N Approach ST PAULS CRES						E Approach MAPLEVIEW DR E						S Approach ST PAULS CRES						W Approach MAPLEVIEW DR E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
13:30:00	2	0	7	0	0	9	13	90	5	0	0	108	8	1	0	0	0	9	0	83	0	0	0	83	209
13:45:00	2	0	11	0	0	13	2	79	5	0	0	86	8	1	1	0	0	10	0	66	0	0	0	66	175
14:00:00	2	1	5	0	0	8	7	77	6	0	0	90	9	0	0	0	0	9	0	97	1	0	0	98	205
14:15:00	1	2	6	0	0	9	9	82	8	0	0	99	6	2	0	0	0	8	0	65	2	0	0	67	183
Grand Total	7	3	29	0	0	39	31	328	24	0	0	383	31	4	1	0	0	36	0	311	3	0	0	314	772
Approach%	17.9%	7.7%	74.4%	0%		-	8.1%	85.6%	6.3%	0%		-	86.1%	11.1%	2.8%	0%		-	0%	99%	1%	0%		-	-
Totals %	0.9%	0.4%	3.8%	0%		5.1%	4%	42.5%	3.1%	0%		49.6%	4%	0.5%	0.1%	0%		4.7%	0%	40.3%	0.4%	0%		40.7%	-
PHF	0.88	0.38	0.66	0		0.75	0.6	0.91	0.75	0		0.89	0.86	0.5	0.25	0		0.9	0	0.8	0.38	0		0.8	-
Heavy	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	7	0	0		7	-
Heavy %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	2.3%	0%	0%		2.2%	-
Lights	7	3	29	0		39	31	325	24	0		380	31	4	1	0		36	0	304	3	0		307	-
Lights %	100%	100%	100%	0%		100%	100%	99.1%	100%	0%		99.2%	100%	100%	100%	0%		100%	0%	97.7%	100%	0%		97.8%	-
Single-Unit Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	1%	0%	0%		1%	-
Buses	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	-
Buses %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	2	0	0		2	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	-
Pedestrians	-	-	-	-	0	-	-	-	-	0		-	-	-	-	0		-	-	-	-	0		-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-

Peak Hour: 01:30 PM - 02:30 PM Weather: Overcast Clouds (-12.14 °C)





Turning Movement Count (3 . YONGE ST & ST PAULS CRES N)

Start Time	N Approach YONGE ST					E Approach ST PAULS CRES N					S Approach YONGE ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:30:00	83	6	0	0	89	4	0	0	0	4	3	97	0	0	100	193	
07:45:00	104	11	0	0	115	14	0	0	0	14	4	115	0	0	119	248	
08:00:00	100	12	0	0	112	14	2	0	0	16	3	119	0	0	122	250	
08:15:00	85	9	0	0	94	6	2	0	0	8	1	100	0	0	101	203	894
08:30:00	74	9	0	0	83	4	2	0	0	6	2	93	0	0	95	184	885
08:45:00	80	8	0	0	88	6	6	0	1	12	4	84	0	0	88	188	825
09:00:00	71	10	0	0	81	3	2	0	1	5	1	85	0	0	86	172	747
09:15:00	53	11	0	0	64	5	3	0	0	8	2	81	0	0	83	155	699
BREAK																	
16:00:00	103	10	0	0	113	8	1	0	4	9	0	116	0	0	116	238	
16:15:00	119	4	0	0	123	4	1	0	2	5	0	127	0	0	127	255	
16:30:00	131	7	0	0	138	5	0	0	1	5	2	132	0	0	134	277	
16:45:00	114	5	0	0	119	1	0	0	0	1	1	139	0	0	140	260	1030
17:00:00	111	5	0	0	116	9	0	0	0	9	0	108	0	0	108	233	1025
17:15:00	162	4	0	0	166	9	2	0	0	11	0	129	1	0	130	307	1077
17:30:00	82	4	0	0	86	7	1	0	0	8	1	103	0	0	104	198	998
17:45:00	74	9	0	0	83	3	0	0	1	3	0	98	0	0	98	184	922
Grand Total	1546	124	0	0	1670	102	22	0	10	124	24	1726	1	0	1751	3545	-
Approach%	92.6%	7.4%	0%		-	82.3%	17.7%	0%		-	1.4%	98.6%	0.1%		-	-	-
Totals %	43.6%	3.5%	0%		47.1%	2.9%	0.6%	0%		3.5%	0.7%	48.7%	0%		49.4%	-	-
Heavy	43	2	0		-	4	2	0		-	5	55	0		-	-	-
Heavy %	2.8%	1.6%	0%		-	3.9%	9.1%	0%		-	20.8%	3.2%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-0.04 °C)

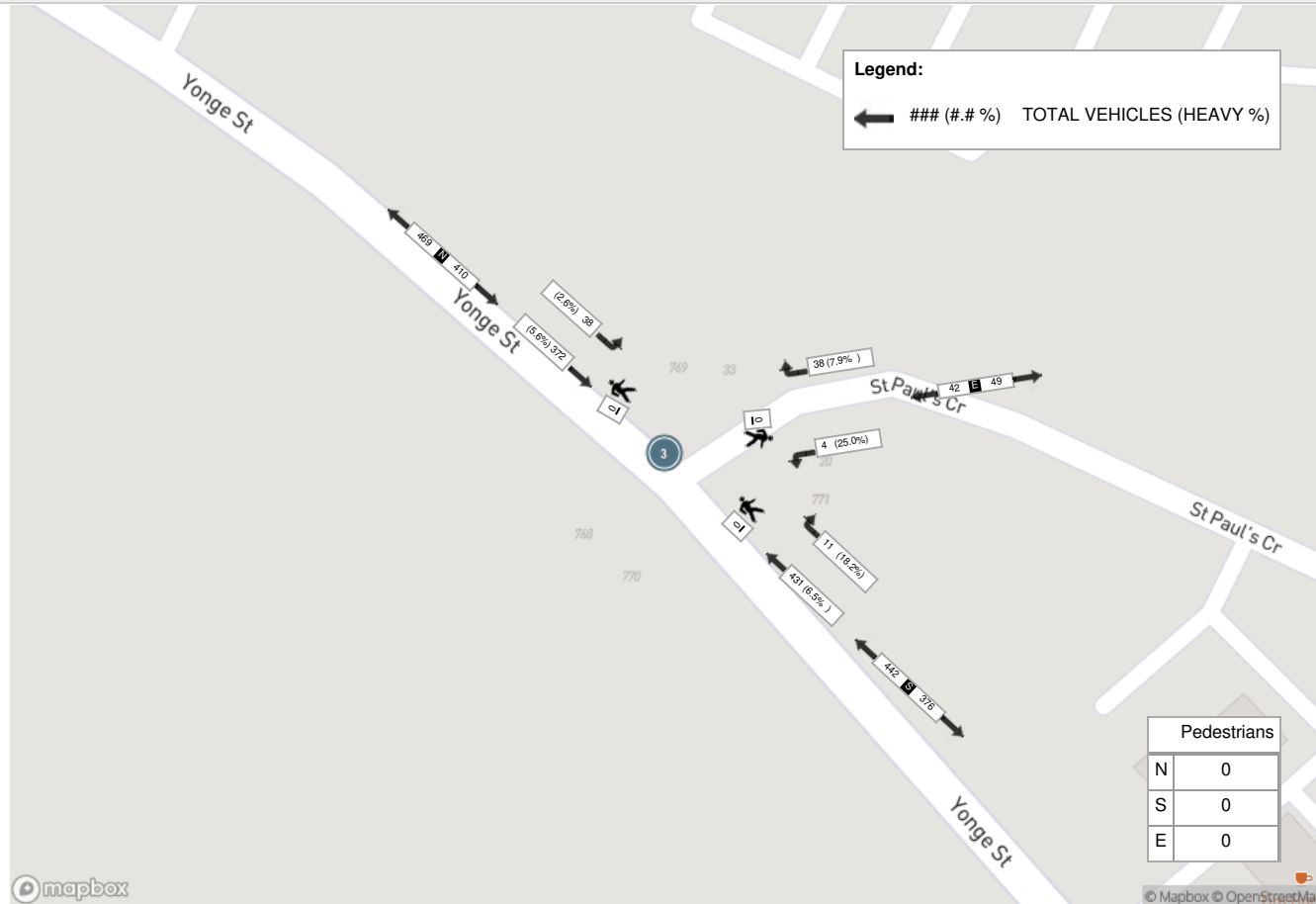
Start Time	N Approach YONGE ST					E Approach ST PAULS CRES N					S Approach YONGE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
07:30:00	83	6	0	0	89	4	0	0	0	4	3	97	0	0	100	193
07:45:00	104	11	0	0	115	14	0	0	0	14	4	115	0	0	119	248
08:00:00	100	12	0	0	112	14	2	0	0	16	3	119	0	0	122	250
08:15:00	85	9	0	0	94	6	2	0	0	8	1	100	0	0	101	203
Grand Total	372	38	0	0	410	38	4	0	0	42	11	431	0	0	442	894
Approach%	90.7%	9.3%	0%		-	90.5%	9.5%	0%		-	2.5%	97.5%	0%		-	-
Totals %	41.6%	4.3%	0%		45.9%	4.3%	0.4%	0%		4.7%	1.2%	48.2%	0%		49.4%	-
PHF	0.89	0.79	0		0.89	0.68	0.5	0		0.66	0.69	0.91	0		0.91	-
Heavy	21	1	0		22	3	1	0		4	2	28	0		30	-
Heavy %	5.6%	2.6%	0%		5.4%	7.9%	25%	0%		9.5%	18.2%	6.5%	0%		6.8%	-
Lights	351	37	0		388	35	3	0		38	9	403	0		412	-
Lights %	94.4%	97.4%	0%		94.6%	92.1%	75%	0%		90.5%	81.8%	93.5%	0%		93.2%	-
Single-Unit Trucks	7	0	0		7	1	1	0		2	2	6	0		8	-
Single-Unit Trucks %	1.9%	0%	0%		1.7%	2.6%	25%	0%		4.8%	18.2%	1.4%	0%		1.8%	-
Buses	14	1	0		15	2	0	0		2	0	17	0		17	-
Buses %	3.8%	2.6%	0%		3.7%	5.3%	0%	0%		4.8%	0%	3.9%	0%		3.8%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	5	0		5	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	1.2%	0%		1.1%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



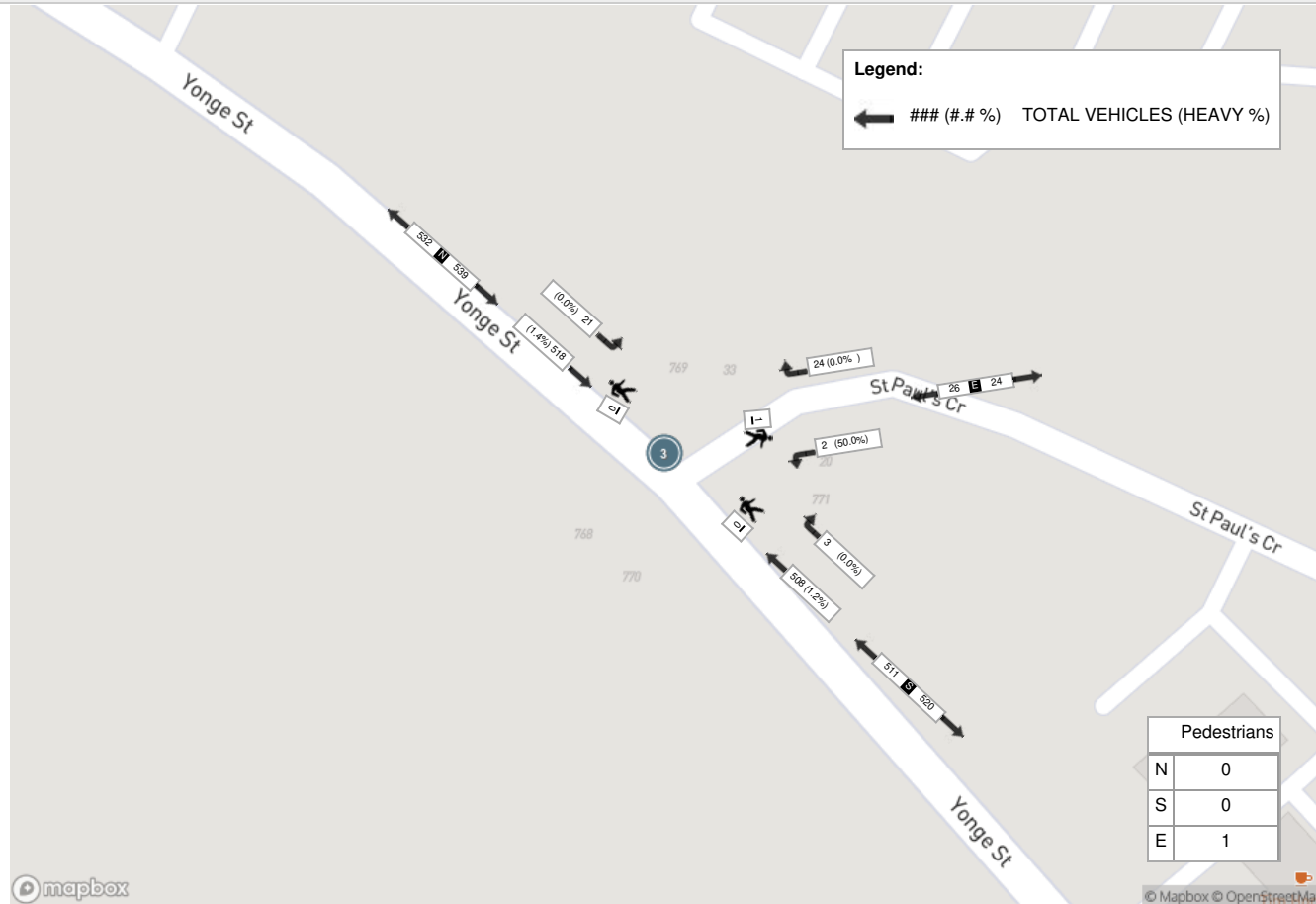
Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (0.34 °C)

Start Time	N Approach YONGE ST					E Approach ST PAULS CRES N					S Approach YONGE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:30:00	131	7	0	0	138	5	0	0	1	5	2	132	0	0	134	277
16:45:00	114	5	0	0	119	1	0	0	0	1	1	139	0	0	140	260
17:00:00	111	5	0	0	116	9	0	0	0	9	0	108	0	0	108	233
17:15:00	162	4	0	0	166	9	2	0	0	11	0	129	1	0	130	307
Grand Total	518	21	0	0	539	24	2	0	1	26	3	508	1	0	512	1077
Approach%	96.1%	3.9%	0%		-	92.3%	7.7%	0%		-	0.6%	99.2%	0.2%		-	-
Totals %	48.1%	1.9%	0%		50%	2.2%	0.2%	0%		2.4%	0.3%	47.2%	0.1%		47.5%	-
PHF	0.8	0.75	0		0.81	0.67	0.25	0		0.59	0.38	0.91	0.25		0.91	-
Heavy	7	0	0		7	0	1	0		1	0	6	0		6	-
Heavy %	1.4%	0%	0%		1.3%	0%	50%	0%		3.8%	0%	1.2%	0%		1.2%	-
Lights	511	21	0		532	24	1	0		25	3	502	1		506	-
Lights %	98.6%	100%	0%		98.7%	100%	50%	0%		96.2%	100%	98.8%	100%		98.8%	-
Single-Unit Trucks	3	0	0		3	0	1	0		1	0	2	0		2	-
Single-Unit Trucks %	0.6%	0%	0%		0.6%	0%	50%	0%		3.8%	0%	0.4%	0%		0.4%	-
Buses	2	0	0		2	0	0	0		0	0	4	0		4	-
Buses %	0.4%	0%	0%		0.4%	0%	0%	0%		0%	0%	0.8%	0%		0.8%	-
Articulated Trucks	2	0	0		2	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0.4%	0%	0%		0.4%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-0.04 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (0.34 °C)





Turning Movement Count (3 . YONGE ST & ST PAULS CRES N)

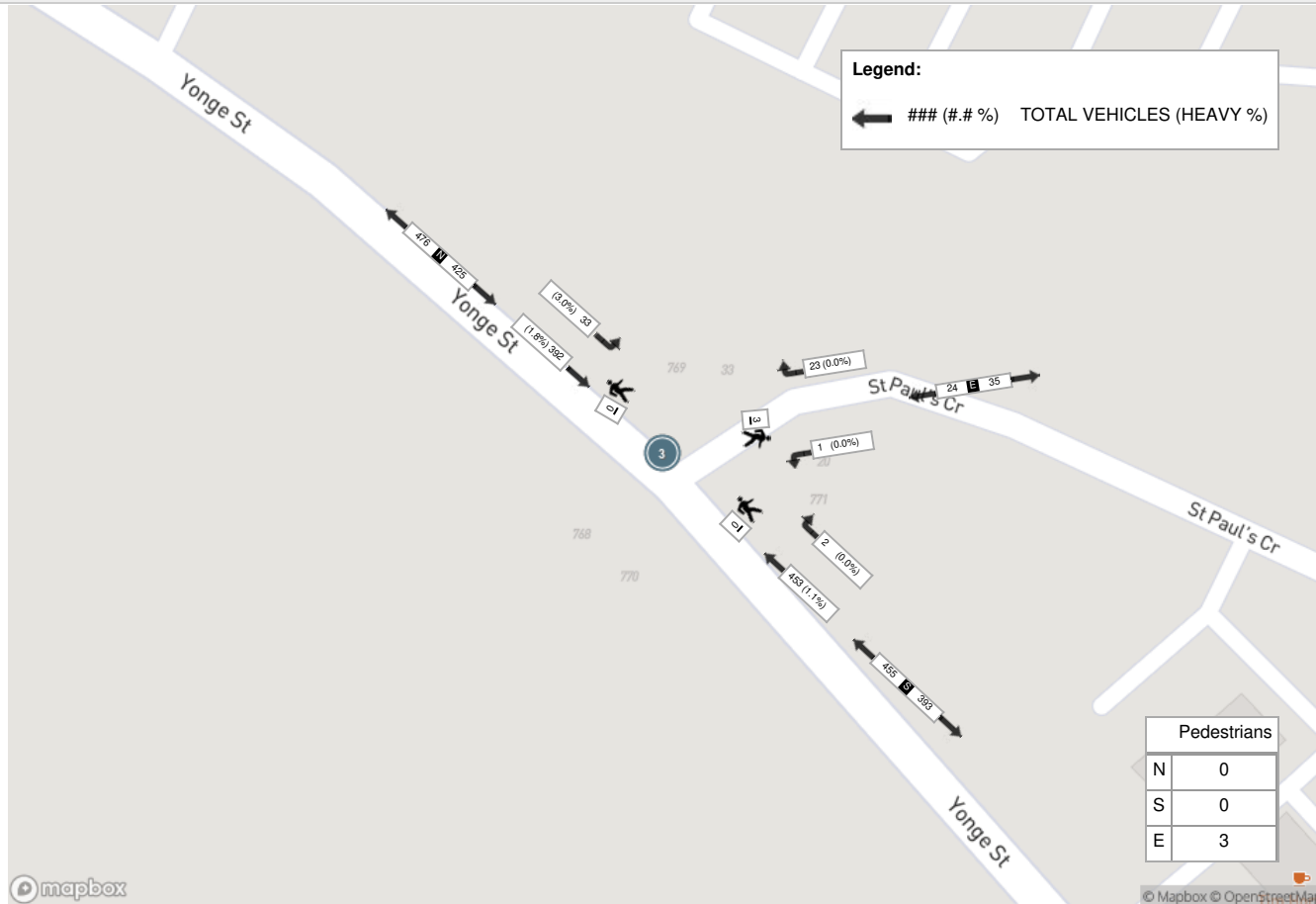
Start Time	N Approach YONGE ST					E Approach ST PAULS CRES N					S Approach YONGE ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
12:00:00	104	10	0	0	114	4	2	0	1	6	1	103	0	0	104	224	
12:15:00	92	11	0	0	103	4	0	0	0	4	1	115	0	0	116	223	
12:30:00	105	11	0	0	116	1	0	0	0	1	3	95	0	0	98	215	
12:45:00	105	10	0	0	115	4	0	0	1	4	1	102	0	0	103	222	884
13:00:00	83	7	0	0	90	7	0	0	0	7	0	107	0	0	107	204	864
13:15:00	104	10	0	0	114	3	1	0	2	4	1	134	0	0	135	253	894
13:30:00	100	6	0	0	106	9	0	0	0	9	0	110	0	0	110	225	904
13:45:00	112	11	0	0	123	3	2	0	0	5	2	83	1	0	86	214	896
14:00:00	94	5	0	0	99	5	2	0	0	7	0	100	0	0	100	206	898
14:15:00	83	9	0	0	92	7	0	0	0	7	0	101	0	0	101	200	845
14:30:00	79	6	0	0	85	1	0	0	1	1	0	94	0	0	94	180	800
14:45:00	97	6	0	0	103	2	0	0	0	2	2	96	0	0	98	203	789
15:00:00	86	5	0	0	91	4	1	0	0	5	0	85	0	0	85	181	764
15:15:00	93	5	0	0	98	4	1	0	0	5	0	92	0	0	92	195	759
15:30:00	89	7	0	0	96	0	0	0	0	0	3	88	0	0	91	187	766
15:45:00	79	5	0	0	84	3	1	0	1	4	2	92	0	0	94	182	745
Grand Total	1505	124	0	0	1629	61	10	0	6	71	16	1597	1	0	1614	3314	-
Approach%	92.4%	7.6%	0%		-	85.9%	14.1%	0%		-	1%	98.9%	0.1%		-	-	-
Totals %	45.4%	3.7%	0%		49.2%	1.8%	0.3%	0%		2.1%	0.5%	48.2%	0%		48.7%	-	-
Heavy	22	2	0		-	0	1	0		-	0	20	0		-	-	-
Heavy %	1.5%	1.6%	0%		-	0%	10%	0%		-	0%	1.3%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast Clouds (-12.14 °C)

Start Time	N Approach YONGE ST					E Approach ST PAULS CRES N					S Approach YONGE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
12:45:00	105	10	0	0	115	4	0	0	1	4	1	102	0	0	103	222
13:00:00	83	7	0	0	90	7	0	0	0	7	0	107	0	0	107	204
13:15:00	104	10	0	0	114	3	1	0	2	4	1	134	0	0	135	253
13:30:00	100	6	0	0	106	9	0	0	0	9	0	110	0	0	110	225
Grand Total	392	33	0	0	425	23	1	0	3	24	2	453	0	0	455	904
Approach%	92.2%	7.8%	0%		-	95.8%	4.2%	0%		-	0.4%	99.6%	0%		-	-
Totals %	43.4%	3.7%	0%		47%	2.5%	0.1%	0%		2.7%	0.2%	50.1%	0%		50.3%	-
PHF	0.93	0.83	0		0.92	0.64	0.25	0		0.67	0.5	0.85	0		0.84	-
Heavy	7	1	0		8	0	0	0		0	0	5	0		5	-
Heavy %	1.8%	3%	0%		1.9%	0%	0%	0%		0%	0%	1.1%	0%		1.1%	-
Lights	385	32	0		417	23	1	0		24	2	448	0		450	-
Lights %	98.2%	97%	0%		98.1%	100%	100%	0%		100%	100%	98.9%	0%		98.9%	-
Single-Unit Trucks	5	1	0		6	0	0	0		0	0	3	0		3	-
Single-Unit Trucks %	1.3%	3%	0%		1.4%	0%	0%	0%		0%	0%	0.7%	0%		0.7%	-
Buses	1	0	0		1	0	0	0		0	0	2	0		2	-
Buses %	0.3%	0%	0%		0.2%	0%	0%	0%		0%	0%	0.4%	0%		0.4%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0.3%	0%	0%		0.2%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-

Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast Clouds (-12.14 °C)





Turning Movement Count (4 . YONGE ST & ST PAULS CRES S)

Start Time	N Approach YONGE ST					E Approach ST PAULS CRES S					S Approach YONGE ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:30:00	92	1	0	0	93	1	7	0	0	8	8	89	0	0	97	198	
07:45:00	99	0	0	0	99	0	11	0	0	11	8	84	0	0	92	202	
08:00:00	104	0	1	0	105	0	10	0	0	10	9	89	0	0	98	213	
08:15:00	92	0	0	0	92	0	11	0	0	11	8	77	0	0	85	188	801
08:30:00	84	0	0	0	84	0	13	0	0	13	9	77	0	0	86	183	786
08:45:00	89	0	0	0	89	0	8	0	0	8	14	68	0	0	82	179	763
09:00:00	63	0	0	0	63	0	14	0	0	14	8	72	0	0	80	157	707
09:15:00	60	0	0	0	60	0	7	0	0	7	6	78	0	0	84	151	670
BREAK																	
16:00:00	104	0	0	0	104	0	5	0	0	5	18	142	0	0	160	269	
16:15:00	118	0	0	0	118	0	9	0	0	9	25	116	0	0	141	268	
16:30:00	121	1	0	0	122	1	11	0	0	12	27	121	0	0	148	282	
16:45:00	126	1	0	0	127	1	11	0	1	12	21	124	0	0	145	284	1103
17:00:00	98	1	0	0	99	0	5	0	0	5	19	98	0	0	117	221	1055
17:15:00	138	2	0	0	140	0	12	0	0	12	33	92	0	0	125	277	1064
17:30:00	83	1	0	0	84	1	4	0	0	5	25	96	0	0	121	210	992
17:45:00	74	0	0	0	74	0	4	0	0	4	19	91	0	0	110	188	896
Grand Total	1545	7	1	0	1553	4	142	0	1	146	257	1514	0	0	1771	3470	-
Approach%	99.5%	0.5%	0.1%		-	2.7%	97.3%	0%		-	14.5%	85.5%	0%		-	-	-
Totals %	44.5%	0.2%	0%		44.8%	0.1%	4.1%	0%		4.2%	7.4%	43.6%	0%		51%	-	-
Heavy	46	0	1		-	1	3	0		-	5	46	0		-	-	-
Heavy %	3%	0%	100%		-	25%	2.1%	0%		-	1.9%	3%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-0.04 °C)

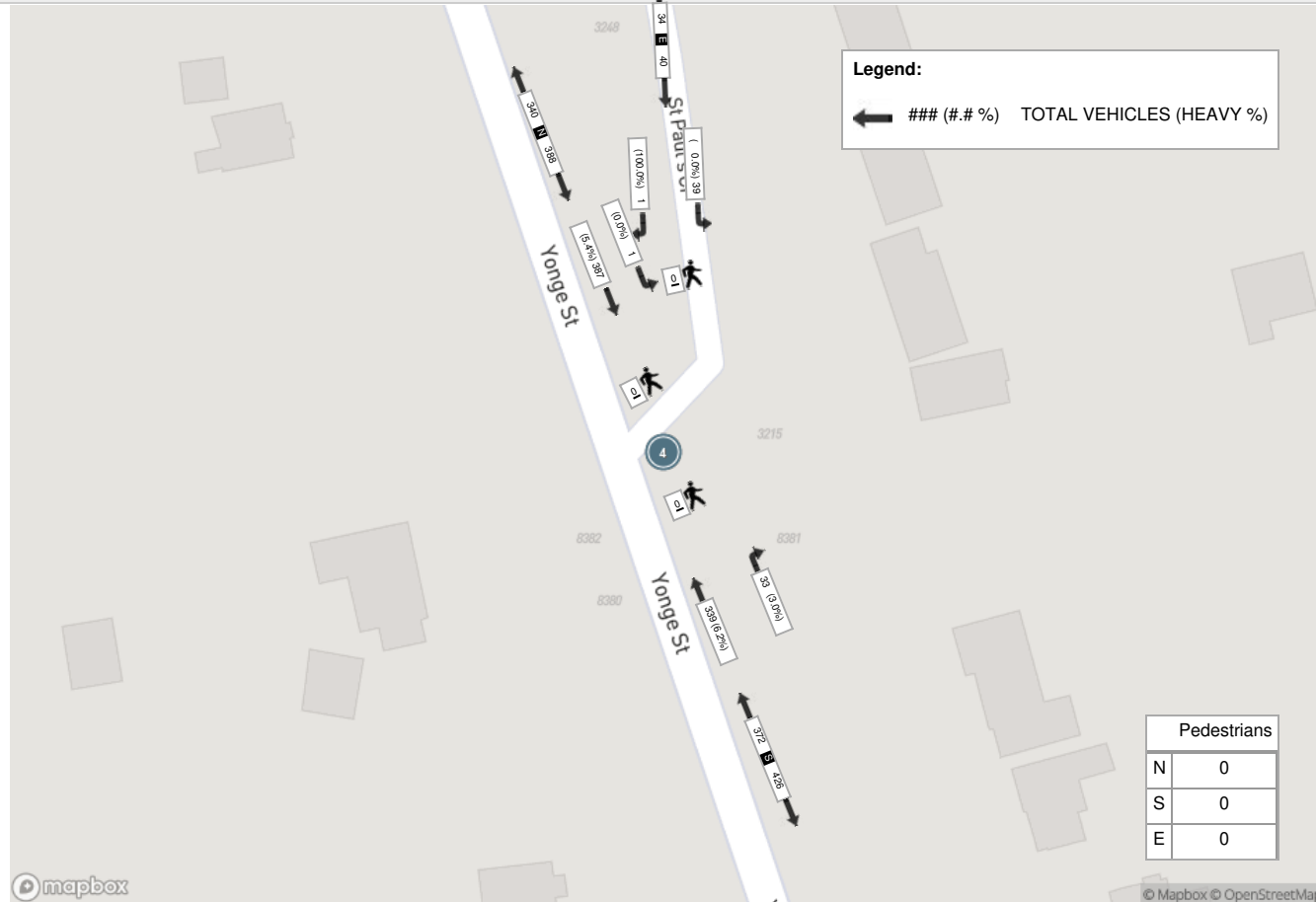
Start Time	N Approach YONGE ST					E Approach ST PAULS CRES S					S Approach YONGE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
07:30:00	92	1	0	0	93	1	7	0	0	8	8	89	0	0	97	198
07:45:00	99	0	0	0	99	0	11	0	0	11	8	84	0	0	92	202
08:00:00	104	0	1	0	105	0	10	0	0	10	9	89	0	0	98	213
08:15:00	92	0	0	0	92	0	11	0	0	11	8	77	0	0	85	188
Grand Total	387	1	1	0	389	1	39	0	0	40	33	339	0	0	372	801
Approach%	99.5%	0.3%	0.3%		-	2.5%	97.5%	0%		-	8.9%	91.1%	0%		-	-
Totals %	48.3%	0.1%	0.1%		48.6%	0.1%	4.9%	0%		5%	4.1%	42.3%	0%		46.4%	-
PHF	0.93	0.25	0.25		0.93	0.25	0.89	0		0.91	0.92	0.95	0		0.95	-
Heavy	21	0	1		22	1	0	0		1	1	21	0		22	-
Heavy %	5.4%	0%	100%		5.7%	100%	0%	0%		2.5%	3%	6.2%	0%		5.9%	-
Lights	366	1	0		367	0	39	0		39	32	318	0		350	-
Lights %	94.6%	100%	0%		94.3%	0%	100%	0%		97.5%	97%	93.8%	0%		94.1%	-
Single-Unit Trucks	10	0	1		11	1	0	0		1	0	6	0		6	-
Single-Unit Trucks %	2.6%	0%	100%		2.8%	100%	0%	0%		2.5%	0%	1.8%	0%		1.6%	-
Buses	10	0	0		10	0	0	0		0	1	12	0		13	-
Buses %	2.6%	0%	0%		2.6%	0%	0%	0%		0%	3%	3.5%	0%		3.5%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	3	0		3	-
Articulated Trucks %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	0.9%	0%		0.8%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



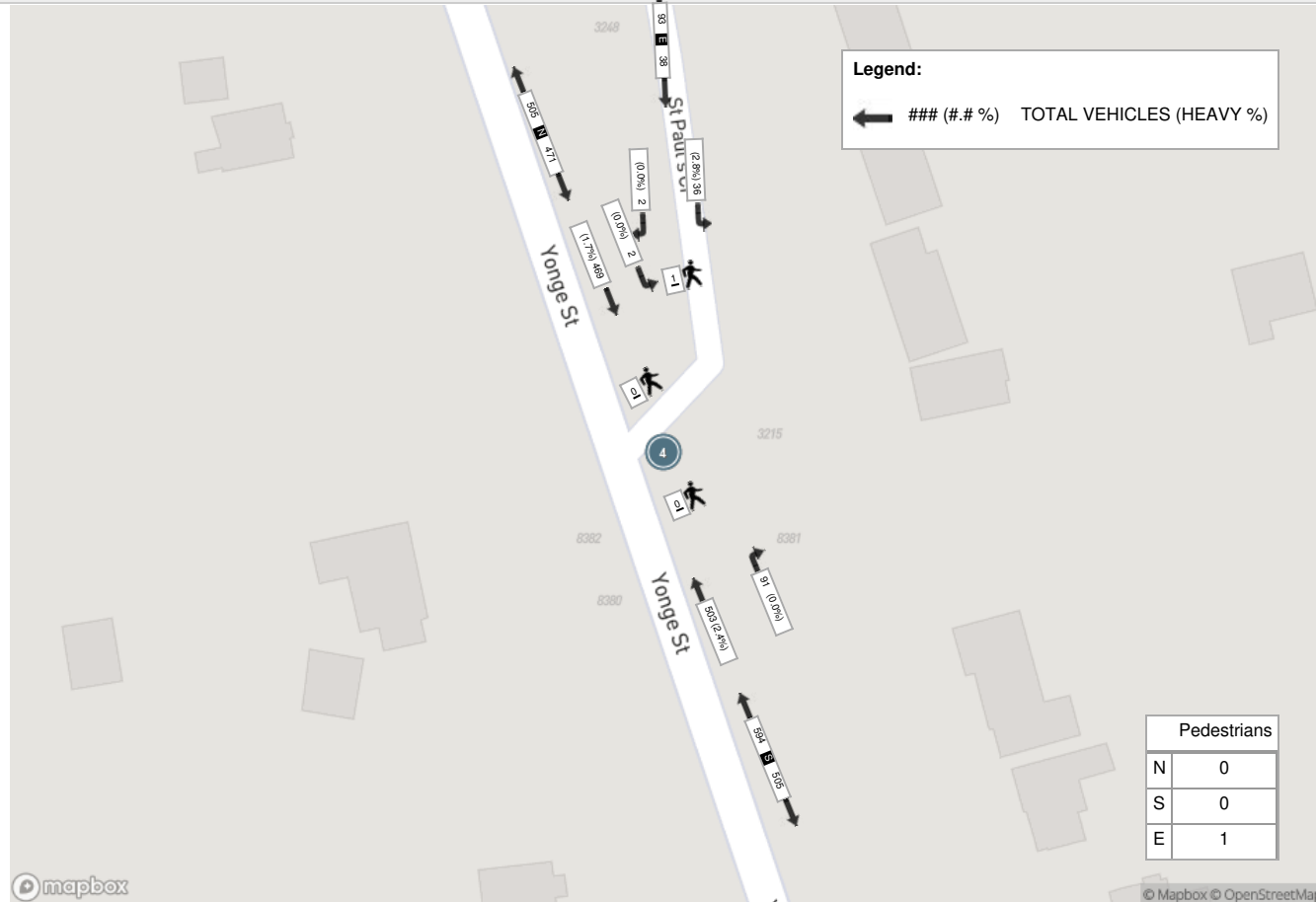
Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (0.34 °C)

Start Time	N Approach YONGE ST					E Approach ST PAULS CRES S					S Approach YONGE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:00:00	104	0	0	0	104	0	5	0	0	5	18	142	0	0	160	269
16:15:00	118	0	0	0	118	0	9	0	0	9	25	116	0	0	141	268
16:30:00	121	1	0	0	122	1	11	0	0	12	27	121	0	0	148	282
16:45:00	126	1	0	0	127	1	11	0	1	12	21	124	0	0	145	284
Grand Total	469	2	0	0	471	2	36	0	1	38	91	503	0	0	594	1103
Approach%	99.6%	0.4%	0%		-	5.3%	94.7%	0%		-	15.3%	84.7%	0%		-	-
Totals %	42.5%	0.2%	0%		42.7%	0.2%	3.3%	0%		3.4%	8.3%	45.6%	0%		53.9%	-
PHF	0.93	0.5	0		0.93	0.5	0.82	0		0.79	0.84	0.89	0		0.93	-
Heavy	8	0	0		8	0	1	0		1	0	12	0		12	-
Heavy %	1.7%	0%	0%		1.7%	0%	2.8%	0%		2.6%	0%	2.4%	0%		2%	-
Lights	461	2	0		463	2	35	0		37	91	491	0		582	-
Lights %	98.3%	100%	0%		98.3%	100%	97.2%	0%		97.4%	100%	97.6%	0%		98%	-
Single-Unit Trucks	5	0	0		5	0	1	0		1	0	6	0		6	-
Single-Unit Trucks %	1.1%	0%	0%		1.1%	0%	2.8%	0%		2.6%	0%	1.2%	0%		1%	-
Buses	2	0	0		2	0	0	0		0	0	6	0		6	-
Buses %	0.4%	0%	0%		0.4%	0%	0%	0%		0%	0%	1.2%	0%		1%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0.2%	0%	0%		0.2%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-0.04 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (0.34 °C)





Turning Movement Count (4 . YONGE ST & ST PAULS CRES S)

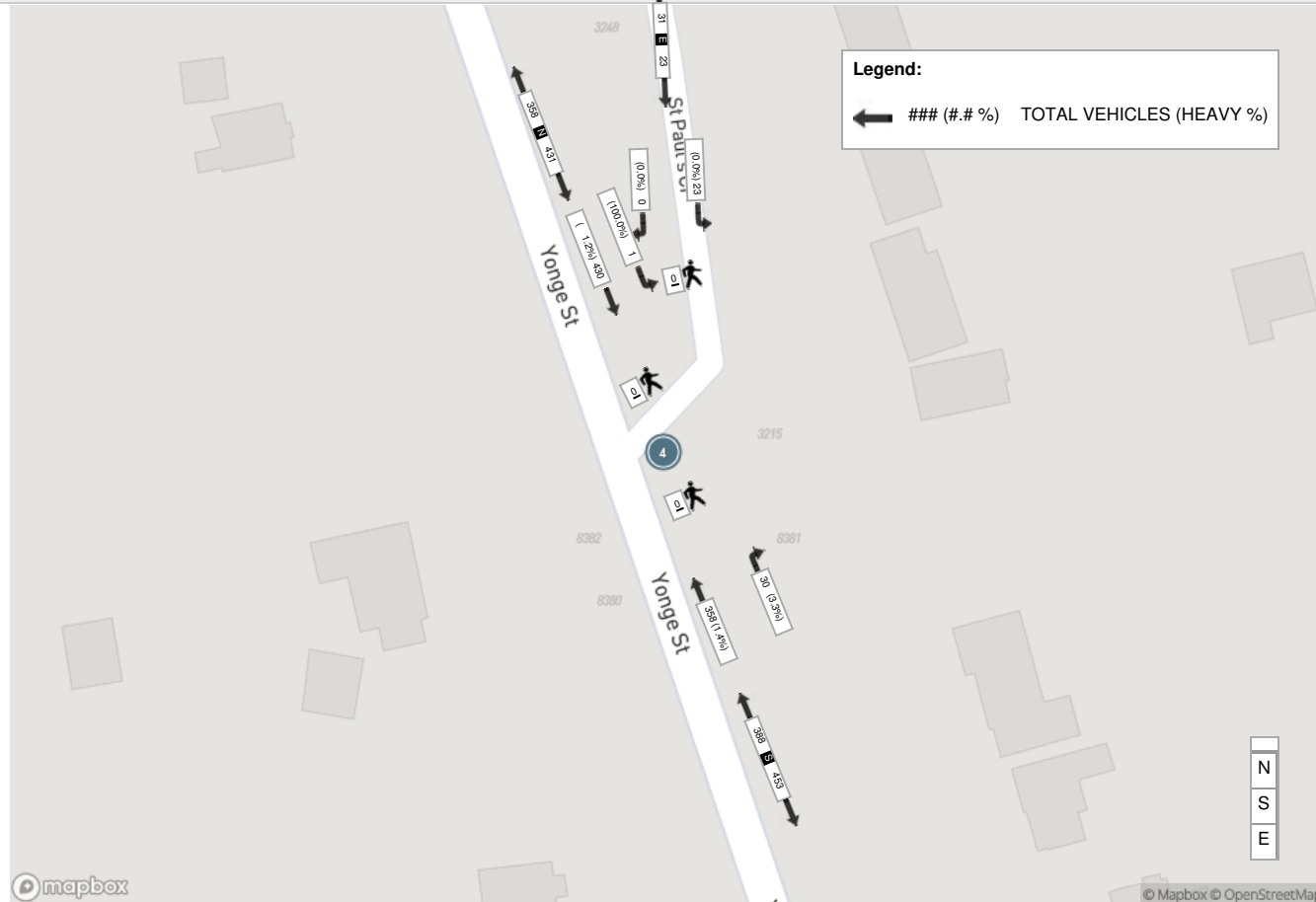
Start Time	N Approach YONGE ST					E Approach ST PAULS CRES S					S Approach YONGE ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
12:00:00	108	1	0	0	109	0	4	0	0	4	8	95	0	0	103	216	
12:15:00	99	0	0	0	99	0	12	0	0	12	10	100	0	0	110	221	
12:30:00	108	0	1	0	109	0	4	0	0	4	7	77	0	0	84	197	
12:45:00	115	0	0	0	115	0	3	0	0	3	5	86	0	0	91	209	843
13:00:00	79	0	0	0	79	0	7	0	0	7	5	111	0	0	116	202	829
13:15:00	94	0	0	0	94	1	5	0	0	6	11	112	0	0	123	223	831
13:30:00	91	0	0	0	91	0	5	0	0	5	9	94	0	0	103	199	833
13:45:00	110	1	0	0	111	0	5	0	0	5	8	70	0	0	78	194	818
14:00:00	85	0	0	0	85	0	4	0	0	4	8	101	0	0	109	198	814
14:15:00	90	0	0	0	90	0	9	0	0	9	8	85	0	0	93	192	783
14:30:00	88	0	0	0	88	0	5	0	0	5	8	94	0	0	102	195	779
14:45:00	91	2	0	0	93	1	5	0	0	6	6	82	0	0	88	187	772
15:00:00	74	0	0	0	74	0	8	0	0	8	8	86	0	0	94	176	750
15:15:00	89	0	0	0	89	0	4	0	0	4	7	92	0	0	99	192	750
15:30:00	73	0	0	0	73	0	7	0	0	7	9	84	0	0	93	173	728
15:45:00	94	0	0	0	94	1	11	0	0	12	10	82	0	0	92	198	739
Grand Total	1488	4	1	0	1493	3	98	0	0	101	127	1451	0	0	1578	3172	-
Approach%	99.7%	0.3%	0.1%		-	3%	97%	0%		-	8%	92%	0%		-	-	-
Totals %	46.9%	0.1%	0%		47.1%	0.1%	3.1%	0%		3.2%	4%	45.7%	0%		49.7%	-	-
Heavy	15	1	0		-	1	0	0		-	1	14	0		-	-	-
Heavy %	1%	25%	0%		-	33.3%	0%	0%		-	0.8%	1%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 12:00 PM - 01:00 PM Weather: Overcast Clouds (-12.14 °C)

Start Time	N Approach YONGE ST					E Approach ST PAULS CRES S					S Approach YONGE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
12:00:00	108	1	0	0	109	0	4	0	0	4	8	95	0	0	103	216
12:15:00	99	0	0	0	99	0	12	0	0	12	10	100	0	0	110	221
12:30:00	108	0	1	0	109	0	4	0	0	4	7	77	0	0	84	197
12:45:00	115	0	0	0	115	0	3	0	0	3	5	86	0	0	91	209
Grand Total	430	1	1	0	432	0	23	0	0	23	30	358	0	0	388	843
Approach%	99.5%	0.2%	0.2%		-	0%	100%	0%		-	7.7%	92.3%	0%		-	-
Totals %	51%	0.1%	0.1%		51.2%	0%	2.7%	0%		2.7%	3.6%	42.5%	0%		46%	-
PHF	0.93	0.25	0.25		0.94	0	0.48	0		0.48	0.75	0.9	0		0.88	-
Heavy	5	1	0		6	0	0	0		0	1	5	0		6	-
Heavy %	1.2%	100%	0%		1.4%	0%	0%	0%		0%	3.3%	1.4%	0%		1.5%	-
Lights	425	0	1		426	0	23	0		23	29	353	0		382	-
Lights %	98.8%	0%	100%		98.6%	0%	100%	0%		100%	96.7%	98.6%	0%		98.5%	-
Single-Unit Trucks	3	1	0		4	0	0	0		0	1	5	0		6	-
Single-Unit Trucks %	0.7%	100%	0%		0.9%	0%	0%	0%		0%	3.3%	1.4%	0%		1.5%	-
Buses	1	0	0		1	0	0	0		0	0	0	0		0	-
Buses %	0.2%	0%	0%		0.2%	0%	0%	0%		0%	0%	0%	0%		0%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0.2%	0%	0%		0.2%	0%	0%	0%		0%	0%	0%	0%		0%	-

Peak Hour: 12:00 PM - 01:00 PM Weather: Overcast Clouds (-12.14 °C)



APPENDIX F:

Transportation Tomorrow Survey (TTS) 2016 Data



Sobeys (Yonge and Mapleview)

6763-24

Retail Vehicular Site Traffic Distribution (AM Peak Hour)

Inbound

4/8/2022

Tue Mar 15 2022 10:16:03 GMT-0400 (Eastern Daylight Time) - Run Time: 3323ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

2006 GTA zone of destination - gta06_dest In 8527, 8528, 8529, 8530, 8531, 8590
and

Start time of trip - start_time In 800-1059

and

Trip purpose of destination - purp_dest In M,

and

Primary travel mode of trip - mode_prime In D,M,P,S,T,U

Trip 2016

Table:

	8527	8528	8529	8590	Total
Barrie	752	383	365	20	1520
Innisfil	75	8	30	41	154
New Tecumseth	75	0	0	0	75
Essa	49	0	0	0	49
Clearview	39	0	0	0	39
Springwater	11	0	0	0	11
Grey	7	0	0	0	7
Wasaga Beach	80	0	0	18	98
Tiny	13	0	0	0	13
Penetanguishene	31	0	0	0	31
Midland	25	0	0	0	25
Tay	47	0	0	0	47
Oro-Medonte	29	0	0	0	29
Ramara	30	0	0	0	30
Orillia	31	0	0	0	31
Shelburne	17	0	0	0	17

Sobeys (Yonge and Mapleview)

6763-24

Retail Vehicular Site Traffic Distribution (PM Peak Hour)

Outbound

4/8/2022

Tue Mar 15 2022 10:18:50 GMT-0400 (Eastern Daylight Time) - Run Time: 2469ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

2006 GTA zone of destination - gta06_dest In 8527, 8528, 8529, 8530, 8531, 8590
and

Start time of trip - start_time In 800-1059

and

Trip purpose of destination - purp_dest In M,

and

Primary travel mode of trip - mode_prime In D,M,P,S,T,U

and

Planning district of origin - pd_orig In 81,

Trip 2016

Table:

	8527	8528	8529	8590	Total
8501	30	11	0	0	41
8504	7	0	0	0	7
8505	15	0	28	0	43
8507	13	0	0	0	13
8509	14	0	0	0	14
8510	22	0	0	0	22
8512	14	0	0	0	14
8513	18	0	0	0	18
8514	14	0	0	0	14
8515	19	0	0	0	19
8516	7	0	0	0	7
8517	103	0	0	0	103
8521	18	15	0	0	33
8522	85	5	0	0	90
8523	207	0	0	0	207
8524	38	0	9	0	47
8525	30	31	0	0	61
8527	30	28	0	0	58
8528	47	73	112	0	232
8529	0	78	106	0	184
8530	11	82	31	0	124
8531	9	18	49	20	96
8532	0	42	31	0	73

Tue Mar 15 2022 10:50:59 GMT-0400 (Eastern Daylight Time) - Run Time: 2519ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

2006 GTA zone of origin - gta06_orig In 8527, 8528, 8529, 8530, 8531, 8590
and

Start time of trip - start_time In 1530-1829

and

Trip purpose of origin - purp_orig In M,

and

Primary travel mode of trip - mode_prime In d,m,p,t,s,u

Trip 2016

Table:

	8527	8528	8529	8530	8590	Total
Barrie	1223	90	563	0	30	1906
Innisfil	59	0	274	9	98	440
Essa	78	0	0	0	0	78
Clearview	10	0	0	0	0	10
Springwater	39	0	0	0	0	39
Kawartha L.	19	0	0	0	0	19
Collingwood	52	0	0	0	0	52
Wasaga Be	78	0	0	0	0	78
Tiny	28	0	0	0	0	28
Severn	54	0	0	0	0	54
Orillia	30	0	0	0	0	30

Tue Mar 15 2022 10:52:51 GMT-0400 (Eastern Daylight Time) - Run Time: 2397ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

2006 GTA zone of origin - gta06_orig In 8527, 8528, 8529, 8530, 8531, 8590
and

Start time of trip - start_time In 1530-1829

and

Trip purpose of origin - purp_orig In M,

and

Primary travel mode of trip - mode_prime In d,m,p,t,s,u

and

Planning district of destination - pd_dest In 81

Trip 2016

Table:

	8527	8528	8529	8590	Total
8501	37	0	7	0	44
8503	14	0	0	0	14
8505	11	0	12	5	28
8506	5	0	0	0	5
8507	77	0	0	0	77
8508	80	0	0	0	80
8509	11	0	0	0	11
8511	6	0	0	0	6
8518	17	0	0	0	17
8521	28	0	0	0	28
8522	221	0	0	0	221
8523	56	0	0	0	56
8524	109	0	0	0	109
8525	0	8	23	0	31
8526	15	41	25	0	81
8527	281	14	126	0	421
8528	5	0	31	0	36
8529	9	23	110	24	166
8530	170	4	168	0	342
8531	29	0	0	0	29
8532	43	0	61	0	104

Sobeys (Yonge and Mapleview)
6763-24
Residential Vehicular Site Traffic Distribution (AM Peak Hour)
Outbound
BA Group - EFS
4/8/2022

			Traffic Volume Allocation				
Zone	Trips	%	NORTH	SOUTH	EAST	WEST	TOTAL
			Yonge	Yonge	Mapleview	Mapleview	
8501	41	2%	50%			50%	100%
8504	7	0%	50%			50%	100%
8505	43	2%	80%			20%	100%
8507	13	1%	20%			80%	100%
8509	14	1%	40%			60%	100%
8510	22	1%	20%			80%	100%
8512	14	1%	20%			80%	100%
8513	18	1%	30%			70%	100%
8514	14	1%	40%			60%	100%
8515	19	1%	50%			50%	100%
8516	7	0%	40%			60%	100%
8517	103	5%	30%			70%	100%
8521	33	2%	50%			50%	100%
8522	90	4%	40%			60%	100%
8523	207	10%	30%			70%	100%
8524	47	2%	50%			50%	100%
8525	61	3%	50%			50%	100%
8527	58	3%	40%			60%	100%
8528	232	11%	80%			20%	100%
8529	184	8%	30%			70%	100%
8530	124	6%			100%		100%
8531	96	4%	50%		20%	30%	100%
8532	73	3%	70%			30%	100%
Innisfil	154	7%		90%	10%		100%
New Tecumseth	75	3%				100%	100%
Essa	49	2%				100%	100%
Clearview	39	2%				100%	100%
Springwater	11	1%				100%	100%
Grey	7	0%				100%	100%
Wasaga Beach	98	5%				100%	100%
Tiny	13	1%				100%	100%
Penetanguishene	31	1%				100%	100%
Midland	25	1%				100%	100%
Tay	47	2%				100%	100%
Oro-Medonte	29	1%				100%	100%
Ramara	30	1%				100%	100%
Orillia	31	1%				100%	100%
Shelburne	17	1%				100%	100%
TOTAL TRIPS	2176	100%					

Rounded Split
Calibrated Split

Route Split Totals				
NORTH	SOUTH	EAST	WEST	TOTAL
Yonge	Yonge	Mapleview	Mapleview	
0.94%	0.00%	0.00%	0.94%	1.9%
0.16%	0.00%	0.00%	0.16%	0.3%
1.58%	0.00%	0.00%	0.40%	2.0%
0.12%	0.00%	0.00%	0.48%	0.6%
0.26%	0.00%	0.00%	0.39%	0.6%
0.20%	0.00%	0.00%	0.81%	1.0%
0.13%	0.00%	0.00%	0.51%	0.6%
0.25%	0.00%	0.00%	0.58%	0.8%
0.26%	0.00%	0.00%	0.39%	0.6%
0.44%	0.00%	0.00%	0.44%	0.9%
0.13%	0.00%	0.00%	0.19%	0.3%
1.42%	0.00%	0.00%	3.31%	4.7%
0.76%	0.00%	0.00%	0.76%	1.5%
1.65%	0.00%	0.00%	2.48%	4.1%
2.85%	0.00%	0.00%	6.66%	9.5%
1.08%	0.00%	0.00%	1.08%	2.2%
1.40%	0.00%	0.00%	1.40%	2.8%
1.07%	0.00%	0.00%	1.60%	2.7%
8.53%	0.00%	0.00%	2.13%	10.7%
2.54%	0.00%	0.00%	5.92%	8.5%
0.00%	0.00%	5.70%	0.00%	5.7%
2.21%	0.00%	0.88%	1.32%	4.4%
2.35%	0.00%	0.00%	1.01%	3.4%
0.00%	6.37%	0.71%	0.00%	7.1%
0.00%	0.00%	0.00%	3.45%	3.4%
0.00%	0.00%	0.00%	2.25%	2.3%
0.00%	0.00%	0.00%	1.79%	1.8%
0.00%	0.00%	0.00%	0.51%	0.5%
0.00%	0.00%	0.00%	0.32%	0.3%
0.00%	0.00%	0.00%	4.50%	4.5%
0.00%	0.00%	0.00%	0.60%	0.6%
0.00%	0.00%	0.00%	1.42%	1.4%
0.00%	0.00%	0.00%	1.15%	1.1%
0.00%	0.00%	0.00%	2.16%	2.2%
0.00%	0.00%	0.00%	1.33%	1.3%
0.00%	0.00%	0.00%	1.38%	1.4%
0.00%	0.00%	0.00%	1.42%	1.4%
0.00%	0.00%	0.00%	0.78%	0.8%
30.3%	6.4%	7.3%	56.0%	100.0%
30%	5%	10%	55%	100%
25%	20%	10%	45%	100%

Sobeys (Yonge and Mapleview)
6763-24
Residential Vehicular Site Traffic Distribution (PM Peak Hour)
Inbound
BA Group - EFS
4/8/2022

			Traffic Volume Allocation				
Zone	Trips	%	NORTH Yonge	SOUTH Yonge	EAST Mapleview	WEST Mapleview	TOTAL
8501	44	2%	70%			30%	100%
8503	14	1%	70%			30%	100%
8505	28	1%	70%			30%	100%
8506	5	0%	80%			20%	100%
8507	77	3%	20%			80%	100%
8508	80	3%	40%			60%	100%
8509	11	0%	20%			80%	100%
8511	6	0%	20%			80%	100%
8518	17	1%	50%			50%	100%
8521	28	1%	60%			40%	100%
8522	221	8%	40%			60%	100%
8523	56	2%				100%	100%
8524	109	4%				100%	100%
8525	31	1%	50%			50%	100%
8526	81	3%	60%			40%	100%
8527	421	15%	20%			80%	100%
8528	36	1%	80%			20%	100%
8529	166	6%	80%			20%	100%
8530	342	13%	10%		90%		100%
8531	29	1%	60%			40%	100%
8532	104	4%	60%			40%	100%
Innisfil	440	16%		100%			100%
Essa	78	3%				100%	100%
Clearview	10	0%				100%	100%
Springwater	39	1%				100%	100%
Kawartha Lakes	19	1%				50%	100%
Collingwood	52	2%				100%	100%
Wasaga Beach	78	3%				100%	100%
Tiny	28	1%				100%	100%
Severn	54	2%				100%	100%
Orillia	30	1%				100%	100%
TOTAL TRIPS	2734	100%					

Rounded Split
Calibrated Split

Route Split Totals				
NORTH Yonge	SOUTH Yonge	EAST Mapleview	WEST Mapleview	TOTAL
1.13%	0.00%	0.00%	0.48%	1.6%
0.36%	0.00%	0.00%	0.15%	0.5%
0.72%	0.00%	0.00%	0.31%	1.0%
0.15%	0.00%	0.00%	0.04%	0.2%
0.56%	0.00%	0.00%	2.25%	2.8%
1.17%	0.00%	0.00%	1.76%	2.9%
0.08%	0.00%	0.00%	0.32%	0.4%
0.04%	0.00%	0.00%	0.18%	0.2%
0.31%	0.00%	0.00%	0.31%	0.6%
0.61%	0.00%	0.00%	0.41%	1.0%
3.23%	0.00%	0.00%	4.85%	8.1%
0.00%	0.00%	0.00%	2.05%	2.0%
0.00%	0.00%	0.00%	3.99%	4.0%
0.57%	0.00%	0.00%	0.57%	1.1%
1.78%	0.00%	0.00%	1.19%	3.0%
3.08%	0.00%	0.00%	12.32%	15.4%
1.05%	0.00%	0.00%	0.26%	1.3%
4.86%	0.00%	0.00%	1.21%	6.1%
1.25%	0.00%	11.26%	0.00%	12.5%
0.64%	0.00%	0.00%	0.42%	1.1%
2.28%	0.00%	0.00%	1.52%	3.8%
0.00%	16.09%	0.00%	0.00%	16.1%
0.00%	0.00%	0.00%	2.85%	2.9%
0.00%	0.00%	0.00%	0.37%	0.4%
0.00%	0.00%	0.00%	1.43%	1.4%
0.00%	0.35%	0.00%	0.35%	0.7%
0.00%	0.00%	0.00%	1.90%	1.9%
0.00%	0.00%	0.00%	2.85%	2.9%
0.00%	0.00%	0.00%	1.02%	1.0%
0.00%	0.00%	0.00%	1.98%	2.0%
0.00%	0.00%	0.00%	1.10%	1.1%
23.9%	16.4%	11.3%	46.4%	100.0%

25%	15%	10%	50%	100%
20%	25%	10%	45%	100%

APPENDIX G:

Synchro 11 Capacity Analysis Results



1: Mapleview Drive E & Goodwin Drive

04/07/2022

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	300	345	0	5	10
Future Volume (Veh/h)	5	300	345	0	5	10
Signal Control	Free		Free		Stop	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	333	383	0	6	11
Pedestrians	1		1		3	
Lane Width (m)			3.6		3.5	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)	353					
pX, platoon unblocked	0.88				0.88	0.88
vC, conflicting volume	386				732	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	229				624	229
tC, single (s)	4.1				6.4	6.4
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	99				98	98
cM capacity (veh/h)	1181				393	679
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	339	383	0	17		
Volume Left	6	0	0	6		
Volume Right	0	0	0	11		
cSH	1181	1700	1700	540		
Volume to Capacity	0.01	0.23	0.00	0.03		
Queue Length 95th (m)	0.1	0.0	0.0	0.7		
Control Delay (s)	0.2	0.0	0.0	11.9		
Lane LOS	A				B	
Approach Delay (s)	0.2	0.0	11.9			
Approach LOS	B					
Intersection Summary						
Average Delay	0.4					
Intersection Capacity Utilization	29.8%			ICU Level of Service		A
Analysis Period (min)	15					

3: Yonge Street & Mapleview Drive E

04/07/2022

[illegible]

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Maplevue Drive E

04/07/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (vph)	50	225	30	80	280	105	30	280	25	85	275	35
Future Volume (vph)	50	225	30	80	280	105	30	280	25	85	275	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Flt Protected	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1637	1795	1576	1684	3614	1473	1668	1865	1493	1716	3476	3476
Flt Permitted	0.55	1.00	1.00	0.40	1.00	1.00	0.55	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	953	1795	1576	715	3614	1473	967	1865	1493	887	3476	3476
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	242	32	86	301	113	32	301	27	91	296	38
RTOR Reduction (vph)	0	0	26	0	0	90	0	0	15	0	7	0
Lane Group Flow (vph)	54	242	6	86	301	23	32	301	12	91	327	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	9%	7%	0%	6%	1%	7%	7%	3%	7%	4%	3%	5%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	NA
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	24.3	18.2	18.2	25.7	18.9	18.9	46.0	42.1	42.1	50.6	44.4	
Effective Green, g (s)	24.3	18.2	18.2	25.7	18.9	18.9	46.0	42.1	42.1	50.6	44.4	
Actuated g/C Ratio	0.26	0.20	0.20	0.28	0.20	0.20	0.49	0.45	0.45	0.54	0.48	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
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	
Lane Grp Cap (vph)	292	350	307	267	732	298	506	841	673	536	1654	
v/s Ratio Prot	0.01	c0.13		c0.02	0.08		0.00	c0.16		c0.01	0.09	
v/s Ratio Perm	0.04		0.00	0.07		0.02	0.03		0.01	0.08		
v/c Ratio	0.18	0.69	0.02	0.32	0.41	0.08	0.06	0.36	0.02	0.17	0.20	
Uniform Delay, d1	26.4	34.9	30.3	26.0	32.4	30.1	12.2	16.8	14.2	10.6	14.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	5.8	0.0	0.7	0.4	0.1	0.1	1.2	0.0	0.2	0.3	
Delay (s)	26.7	40.7	30.4	26.7	32.7	30.2	12.3	17.9	14.2	10.7	14.4	
Level of Service	C	D	C	C	C	C	B	B	B	B	B	
Approach Delay (s)		37.4			31.1			17.2			13.6	
Approach LOS		D			C			B			B	
Intersection Summary												
HCM 2000 Control Delay		24.7			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.42										
Actuated Cycle Length (s)		93.3			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		73.9%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: St Pauls Crescent & Maplevue Drive E

04/07/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↰			↰			↰	
Traffic Volume (veh/h)	10	325	0	45	450	70	5	5	35	40	0	10
Future Volume (Veh/h)	10	325	0	45	450	70	5	5	35	40	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	11	357	0	49	495	77	5	5	38	44	0	11
Pedestrians												
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		141										
pX, platoon unblocked				0.88			0.88	0.88	0.88	0.88	0.88	
vC, conflicting volume	573			358			1022	1051	358	1052	1012	534
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	573			202			957	990	202	991	946	534
tC, single (s)	4.4			4.1			7.1	6.5	6.2	7.1	7.0	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			3.5	4.0	3.3	3.5	4.5	3.3
p0 queue free %	99			96			97	98	95	75	100	98
cM capacity (veh/h)	886			1204			197	207	737	175	181	549
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	368	621	48	55								
Volume Left	11	49	5	44								
Volume Right	0	77	38	11								
cSH	886	1204	475	203								
Volume to Capacity	0.01	0.04	0.10	0.27								
Queue Length 95th (m)	0.3	1.0	2.5	8.0								
Control Delay (s)	0.4	1.1	13.4	29.2								
Lane LOS	A	A	B	D								
Approach Delay (s)	0.4	1.1	13.4	29.2								
Approach LOS		B	D									
Intersection Summary												
Average Delay		2.8										
Intersection Capacity Utilization		64.8%			ICU Level of Service			C				
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/07/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	40	425	10	40	390
Future Volume (Veh/h)	5	40	425	10	40	390
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	6	45	478	11	45	438
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			196			
pX, platoon unblocked						
vC, conflicting volume	792	244			489	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	792	244			489	
tC, single (s)	7.3	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.8	3.4			2.2	
p0 queue free %	98	94			96	
cM capacity (veh/h)	271	741			1070	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	51	319	170	45	219	219
Volume Left	6	0	0	45	0	0
Volume Right	45	0	11	0	0	0
cSH	615	1700	1700	1070	1700	1700
Volume to Capacity	0.08	0.19	0.10	0.04	0.13	0.13
Queue Length 95th (m)	2.1	0.0	0.0	1.0	0.0	0.0
Control Delay (s)	11.4	0.0	0.0	8.5	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	11.4	0.0		0.8		
Approach LOS	B					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			28.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Yonge Street & St Pauls Crescent

04/07/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	0	335	35	0	385
Future Volume (Veh/h)	45	0	335	35	0	385
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	0	364	38	0	418
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	801	383			402	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	801	383			402	
tC, single (s)	6.4	7.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.2			2.2	
p0 queue free %	86	100			100	
cM capacity (veh/h)	356	494			1168	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	49	402	418			
Volume Left	49	0	0			
Volume Right	0	38	0			
cSH	356	1700	1168			
Volume to Capacity	0.14	0.24	0.00			
Queue Length 95th (m)	3.6	0.0	0.0			
Control Delay (s)	16.7	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	16.7	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			30.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/07/2022

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	440	320	15	5	5
Future Volume (Veh/h)	15	440	320	15	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	478	348	16	5	5
Pedestrians			2		1	
Lane Width (m)			3.6		3.5	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			353			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	365				861	349
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol		282			814	264
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				98	99
cM capacity (veh/h)	1203				321	725
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	494	348	16	10		
Volume Left	16	0	0	5		
Volume Right	0	0	16	5		
cSH	1203	1700	1700	445		
Volume to Capacity	0.01	0.20	0.01	0.02		
Queue Length 95th (m)	0.3	0.0	0.0	0.5		
Control Delay (s)	0.4	0.0	0.0	13.3		
Lane LOS	A			B		
Approach Delay (s)	0.4	0.0		13.3		
Approach LOS				B		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		45.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Queues

3: Yonge Street & Mapleview Drive E

04/07/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	360	65	65	226	108	70	366	48	108	463
v/c Ratio	0.13	0.78	0.14	0.25	0.26	0.24	0.13	0.44	0.06	0.21	0.30
Control Delay	20.6	47.8	2.0	22.5	31.0	7.4	13.3	25.2	0.2	13.7	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	47.8	2.0	22.5	31.0	7.4	13.3	25.2	0.2	13.7	20.3
Queue Length 50th (m)	6.6	65.7	0.0	8.1	18.6	0.0	6.1	51.7	0.0	9.6	29.9
Queue Length 95th (m)	14.5	101.4	2.9	16.8	29.6	12.4	14.7	89.4	0.0	20.9	49.4
Internal Link Dist (m)		73.6			60.0			108.7			172.4
Turn Bay Length (m)	35.0		35.0	55.0		35.0	60.0		55.0		
Base Capacity (vph)	459	623	587	290	1176	576	555	823	753	539	1558
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	0.12	0.58	0.11	0.22	0.19	0.19	0.13	0.44	0.06	0.20	0.30
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Maplevue Drive E

04/07/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (vph)	50	335	60	60	210	100	65	340	45	100	370	60
Future Volume (vph)	50	335	60	60	210	100	65	340	45	100	370	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1784	1921	1581	1716	3614	1545	1767	1902	1597	1785	3528	1785
Flt Permitted	0.61	1.00	1.00	0.25	1.00	1.00	0.46	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	1147	1921	1581	447	3614	1545	859	1902	1597	805	3528	1581
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	360	65	65	226	108	70	366	48	108	398	65
RTOR Reduction (vph)	0	0	50	0	0	82	0	0	28	0	11	0
Lane Group Flow (vph)	54	360	15	65	226	26	70	366	20	108	452	0
Confl. Peds. (#/hr)	1				1							
Heavy Vehicles (%)	0%	0%	1%	4%	1%	2%	1%	1%	0%	0%	1%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	NA
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	29.1	23.1	23.1	29.5	23.3	23.3	47.4	41.4	41.4	48.6	42.0	
Effective Green, g (s)	29.1	23.1	23.1	29.5	23.3	23.3	47.4	41.4	41.4	48.6	42.0	
Actuated g/C Ratio	0.30	0.24	0.24	0.30	0.24	0.24	0.49	0.43	0.43	0.50	0.43	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
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	
Lane Grp Cap (vph)	382	456	375	216	865	369	474	809	679	468	1522	
v/s Ratio Prot	0.01	c0.19		c0.02	0.06		0.01	c0.19		c0.02	0.13	
v/s Ratio Perm	0.03		0.01	0.07		0.02	0.06		0.01	0.10		
v/c Ratio	0.14	0.79	0.04	0.30	0.26	0.07	0.15	0.45	0.03	0.23	0.30	
Uniform Delay, d1	24.6	34.8	28.6	25.4	30.0	28.6	13.3	19.9	16.3	13.4	18.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	8.8	0.0	0.8	0.2	0.1	0.1	1.8	0.1	0.3	0.5	
Delay (s)	24.8	43.6	28.6	26.2	30.2	28.7	13.5	21.7	16.3	13.7	18.5	
Level of Service	C	D	C	C	C	C	B	C	B	B	B	
Approach Delay (s)		39.5			29.1			20.0			17.6	
Approach LOS		D			C			B			B	
Intersection Summary												
HCM 2000 Control Delay		26.0			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.52										
Actuated Cycle Length (s)		97.3			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		79.3%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: St Pauls Crescent & Maplevue Drive E

04/07/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↰			↰			↰	
Traffic Volume (veh/h)	10	465	5	35	360	40	0	5	100	30	5	10
Future Volume (Veh/h)	10	465	5	35	360	40	0	5	100	30	5	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	11	511	5	38	396	44	0	5	110	33	5	11
Pedestrians												3
Lane Width (m)												3.7
Walking Speed (m/s)												1.1
Percent Blockage												0
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		141										
pX, platoon unblocked				0.81			0.81	0.81	0.81	0.81	0.81	
vC, conflicting volume	443			516			1043	1054	514	1145	1035	421
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	443			280			933	948	277	1060	924	421
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			100	98	82	74	98	98
cM capacity (veh/h)	1124			1044			186	202	618	127	208	635
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	527	478	115	49								
Volume Left	11	38	0	33								
Volume Right	5	44	110	11								
cSH	1124	1044	567	163								
Volume to Capacity	0.01	0.04	0.20	0.30								
Queue Length 95th (m)	0.2	0.9	5.7	9.0								
Control Delay (s)	0.3	1.1	12.9	36.3								
Lane LOS	A	A	B	E								
Approach Delay (s)	0.3	1.1	12.9	36.3								
Approach LOS		B	E									
Intersection Summary												
Average Delay		3.4										
Intersection Capacity Utilization		55.9%			ICU Level of Service			B				
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis

5: Yonge Street & St Pauls Crescent

04/07/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	0	25	485	5	20	530
Future Volume (Veh/h)	0	25	485	5	20	530
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	28	551	6	23	602
Pedestrians	1					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			196			
pX, platoon unblocked						
vC, conflicting volume	902	280			558	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	902	280			558	
tC, single (s)	7.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3			2.2	
p0 queue free %	100	96			98	
cM capacity (veh/h)	197	723			1022	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	28	367	190	23	301	301
Volume Left	0	0	0	23	0	0
Volume Right	28	0	6	0	0	0
cSH	723	1700	1700	1022	1700	1700
Volume to Capacity	0.04	0.22	0.11	0.02	0.18	0.18
Queue Length 95th (m)	0.9	0.0	0.0	0.5	0.0	0.0
Control Delay (s)	10.2	0.0	0.0	8.6	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	10.2	0.0		0.3		
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			26.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Yonge Street & St Pauls Crescent

04/07/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	40	0	450	100	5	485
Future Volume (Veh/h)	40	0	450	100	5	485
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	43	0	479	106	5	516
Pedestrians	1					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1059	533			586	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1059	533			586	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	100			99	
cM capacity (veh/h)	247	550			998	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	43	585	521			
Volume Left	43	0	5			
Volume Right	0	106	0			
cSH	247	1700	998			
Volume to Capacity	0.17	0.34	0.01			
Queue Length 95th (m)	4.7	0.0	0.1			
Control Delay (s)	22.6	0.0	0.1			
Lane LOS	C		A			
Approach Delay (s)	22.6	0.0	0.1			
Approach LOS	C					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			39.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/07/2022

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	335	350	5	5	10
Future Volume (Veh/h)	10	335	350	5	5	10
Sign Control	Free	Free	Free	Stop	Stop	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	349	365	5	5	10
Pedestrians	2	2	2	2	2	2
Lane Width (m)	3.7	3.6	3.6	3.5	3.5	3.7
Walking Speed (m/s)	1.1	1.1	1.1	1.1	1.1	1.1
Percent Blockage	0	0	0	0	0	0
Right turn flare (veh)						
Median type	None	None				
Median storage (veh)						
Upstream signal (m)			353			
pX, platoon unblocked	0.91			0.91	0.91	
vC, conflicting volume	371			737	368	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264			664	260	
tC, single (s)	4.1			6.4	6.3	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.4	
p0 queue free %	99			99	99	
cM capacity (veh/h)	1197			387	689	
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	359	365	5	15		
Volume Left	10	0	0	5		
Volume Right	0	0	5	10		
cSH	1197	1700	1700	547		
Volume to Capacity	0.01	0.21	0.00	0.03		
Queue Length 95th (m)	0.2	0.0	0.0	0.6		
Control Delay (s)	0.3	0.0	0.0	11.8		
Lane LOS	A			B		
Approach Delay (s)	0.3	0.0		11.8		
Approach LOS				B		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		36.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Queues

3: Yonge Street & Mapleview Drive E

04/07/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	66	235	46	36	240	77	77	321	20	66	347
v/c Ratio	0.18	0.57	0.11	0.11	0.37	0.21	0.12	0.36	0.02	0.11	0.21
Control Delay	22.6	38.9	0.5	22.0	34.6	4.3	9.9	19.1	0.1	9.9	15.9
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	22.6	38.9	0.5	22.0	34.6	4.3	9.9	19.1	0.1	9.9	15.9
Queue Length 50th (m)	8.0	38.6	0.0	4.3	19.7	0.0	5.3	36.0	0.0	4.5	18.0
Queue Length 95th (m)	17.2	64.6	0.0	11.0	32.0	6.1	13.6	67.8	0.0	11.9	32.6
Internal Link Dist (m)		73.6			60.0			108.7			172.4
Turn Bay Length (m)	35.0		35.0	55.0		35.0	60.0		55.0		
Base Capacity (vph)	392	676	632	358	1285	627	667	897	811	637	1670
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	0.17	0.35	0.07	0.10	0.19	0.12	0.12	0.36	0.02	0.10	0.21
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Maplevue Drive E

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	65	230	45	35	235	75	75	315	20	65	295	45
Future Volume (vph)	65	230	45	35	235	75	75	315	20	65	295	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1921	1597	1700	3650	1581	1750	1902	1597	1750	3537	1581
Flt Permitted	0.53	1.00	1.00	0.52	1.00	1.00	0.54	1.00	1.00	0.51	1.00	1.00
Satd. Flow (perm)	1004	1921	1597	924	3650	1581	994	1902	1597	935	3537	1581
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	66	235	46	36	240	77	77	321	20	66	301	46
RTOR Reduction (vph)	0	0	36	0	0	63	0	0	11	0	9	0
Lane Group Flow (vph)	66	235	10	36	240	14	77	321	9	66	338	0
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	2%	1%	0%	2%	1%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	NA
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	24.9	18.6	18.6	20.7	16.5	16.5	47.3	41.3	41.3	46.7	41.0	
Effective Green, g (s)	24.9	18.6	18.6	20.7	16.5	16.5	47.3	41.3	41.3	46.7	41.0	
Actuated g/C Ratio	0.28	0.21	0.21	0.23	0.18	0.18	0.53	0.46	0.46	0.52	0.46	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
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	
Lane Grp Cap (vph)	333	397	330	249	670	290	574	874	734	537	1614	
v/s Ratio Prot	c0.01	c0.12		0.01	0.07		c0.01	c0.17		0.01	0.10	
v/s Ratio Perm	0.04		0.01	0.03		0.01	0.06		0.01	0.06		
v/c Ratio	0.20	0.59	0.03	0.14	0.36	0.05	0.13	0.37	0.01	0.12	0.21	
Uniform Delay, d1	24.4	32.2	28.4	27.2	32.0	30.2	10.5	15.8	13.2	10.9	14.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	2.4	0.0	0.3	0.3	0.1	0.1	1.2	0.0	0.1	0.3	
Delay (s)	24.7	34.5	28.4	27.5	32.4	30.3	10.6	16.9	13.2	11.0	15.0	
Level of Service	C	C	C	C	C	C	B	B	B	B	B	
Approach Delay (s)		31.8			31.4			15.6			14.3	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay		22.6			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.40										
Actuated Cycle Length (s)		89.8			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		73.8%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

4: St Pauls Crescent & Maplevue Drive E

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	5	310	0	20	330	30	5	5	25	25	0	10
Future Volume (Veh/h)	5	310	0	20	330	30	5	5	25	25	0	10
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	337	0	22	359	33	5	5	27	27	0	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	141											
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	392			337			778	783	337	796	766	376
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	392			193			688	694	193	709	676	376
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			98	98	96	91	100	98
cM capacity (veh/h)	1178			1239			313	321	759	293	329	675
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	342	414	37	38								
Volume Left	5	22	5	27								
Volume Right	0	33	27	11								
cSH	1178	1239	551	351								
Volume to Capacity	0.00	0.02	0.07	0.11								
Queue Length 95th (m)	0.1	0.4	1.6	2.7								
Control Delay (s)	0.2	0.6	12.0	16.5								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.2	0.6	12.0	16.5								
Approach LOS		B	C									
Intersection Summary												
Average Delay		1.7										
Intersection Capacity Utilization		44.4%			ICU Level of Service			A				
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/07/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	0	25	455	0	35	405
Future Volume (Veh/h)	0	25	455	0	35	405
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	28	511	0	39	455
Pedestrians	3					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			196			
pX, platoon unblocked						
vC, conflicting volume	820	258			514	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	820	258			514	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			96	
cM capacity (veh/h)	305	744			1045	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	28	341	170	39	228	228
Volume Left	0	0	0	39	0	0
Volume Right	28	0	0	0	0	0
cSH	744	1700	1700	1045	1700	1700
Volume to Capacity	0.04	0.20	0.10	0.04	0.13	0.13
Queue Length 95th (m)	0.9	0.0	0.0	0.9	0.0	0.0
Control Delay (s)	10.0	0.0	0.0	8.6	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	10.0	0.0		0.7		
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			29.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Yonge Street & St Pauls Crescent

04/07/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	20	0	410	30	0	375
Future Volume (Veh/h)	20	0	410	30	0	375
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	22	0	441	32	0	403
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	860	457			473	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	860	457			473	
tC, single (s)	6.4	6.2			5.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			3.1	
p0 queue free %	93	100			100	
cM capacity (veh/h)	329	608			723	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	22	473	403			
Volume Left	22	0	0			
Volume Right	0	32	0			
cSH	329	1700	723			
Volume to Capacity	0.07	0.28	0.00			
Queue Length 95th (m)	1.6	0.0	0.0			
Control Delay (s)	16.7	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	16.7	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			33.4%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

1: Mapleview Drive E & Goodwin Drive

04/07/2022

	↖	→	←	↙	↑	↘	↓
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	550	867	28	45	28	55
v/c Ratio	0.04	0.43	0.65	0.04	0.05	0.04	0.07
Control Delay	11.2	13.9	16.7	9.9	7.3	9.9	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	13.9	16.7	9.9	7.3	9.9	8.4
Queue Length 50th (m)	0.4	20.8	36.2	1.4	1.4	1.4	2.2
Queue Length 95th (m)	2.2	31.0	51.3	5.7	6.6	5.7	8.3
Internal Link Dist (m)		775.4	114.0		70.9		234.1
Turn Bay Length (m)	30.0						
Base Capacity (vph)	397	3411	3579	641	843	632	842
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	0.02	0.16	0.24	0.04	0.05	0.04	0.07
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/07/2022

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	5	495	0	0	780	0	25	25	15	25	40	10
Future Volume (vph)	5	495	0	0	780	0	25	25	15	25	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Flt Protected	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flt Permitted	0.21	1.00			1.00		0.72	1.00		0.73	1.00	
Satd. Flow (prot)	1783	3411			3579		1825	1803		1783	1806	
Satd. Flow (perm)	399	3411			3579		1385	1803		1366	1806	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	550	0	0	867	0	28	28	17	28	44	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	9	0	0	6	0
Lane Group Flow (vph)	6	550	0	0	867	0	28	36	0	28	49	0
Confl. Peds. (#/hr)	3		1	1		3			1	1		
Heavy Vehicles (%)	0%	7%	0%	0%	2%	0%	0%	0%	0%	0%	0%	16%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.7	20.7			20.7		25.6	25.6		25.6	25.6	
Effective Green, g (s)	20.7	20.7			20.7		25.6	25.6		25.6	25.6	
Actuated g/C Ratio	0.37	0.37			0.37		0.46	0.46		0.46	0.46	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	149	1276			1339		641	834		632	836	
v/s Ratio Prot		0.16			0.24			0.02			0.03	
v/s Ratio Perm	0.02						0.02			0.02		
v/c Ratio	0.04	0.43			0.65		0.04	0.04		0.04	0.06	
Uniform Delay, d1	11.0	12.9			14.3		8.1	8.1		8.1	8.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2			1.1		0.1	0.1		0.1	0.1	
Delay (s)	11.1	13.1			15.4		8.3	8.2		8.3	8.3	
Level of Service	B	B			B		A	A		A	A	
Approach Delay (s)		13.1			15.4			8.2			8.3	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay		13.9			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.32										
Actuated Cycle Length (s)		55.3			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		44.1%			ICU Level of Service			A				
Analysis Period (min)		15										
Critical Lane Group												

Queues

3: Yonge Street & Mapleview Drive E

04/07/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	106	435	232	621	227	111	576	51	146	444	56
v/c Ratio	0.43	0.61	0.66	0.71	0.46	0.24	0.41	0.08	0.36	0.31	0.08
Control Delay	25.5	39.1	31.6	40.2	11.3	15.1	24.4	0.2	16.4	22.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	39.1	31.6	40.2	11.3	15.1	24.4	0.2	16.4	22.5	0.4
Queue Length 50th (m)	13.4	40.2	31.9	60.0	7.4	10.8	43.6	0.0	14.5	31.6	0.0
Queue Length 95th (m)	24.4	55.5	50.1	78.3	26.9	22.5	64.5	0.0	28.6	48.3	0.5
Internal Link Dist (m)	113.3		60.0		151.6		172.4				
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	264	971	358	1138	587	455	1403	656	409	1430	678
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	0.40	0.45	0.65	0.55	0.39	0.24	0.41	0.08	0.36	0.31	0.08
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Mapleview Drive E

04/07/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	380	50	230	615	225	110	570	50	145	440	55
Future Volume (vph)	105	380	50	230	615	225	110	570	50	145	440	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Frlb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1637	3372		1684	3614	1473	1668	3544	1493	1716	3544	1521
Flt Permitted	0.26	1.00		0.32	1.00	1.00	0.47	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	453	3372		559	3614	1473	820	3544	1493	648	3544	1521
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	106	384	51	232	621	227	111	576	51	146	444	56
RTOR Reduction (vph)	0	10	0	0	0	137	0	0	31	0	0	33
Lane Group Flow (vph)	106	425	0	232	621	90	111	576	20	146	444	23
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	9%	7%	0%	6%	1%	7%	7%	3%	7%	4%	3%	5%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	30.4	21.3		37.0	24.6	24.6	47.4	40.4	40.4	49.0	41.2	41.2
Effective Green, g (s)	30.4	21.3		37.0	24.6	24.6	47.4	40.4	40.4	49.0	41.2	41.2
Actuated g/C Ratio	0.30	0.21		0.36	0.24	0.24	0.47	0.40	0.40	0.48	0.40	0.40
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	240	704		339	872	355	439	1405	591	393	1432	614
v/s Ratio Prot	0.04	0.13		c0.08	c0.17		0.02	c0.16		c0.03	0.13	
v/s Ratio Perm	0.09			0.16		0.06	0.10		0.01	0.15		0.01
v/c Ratio	0.44	0.60		0.68	0.71	0.25	0.25	0.41	0.03	0.37	0.31	0.04
Uniform Delay, d1	27.2	36.5		24.5	35.4	31.2	15.6	22.2	18.8	15.3	20.7	18.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.5		5.6	2.8	0.4	0.3	0.9	0.1	0.6	0.6	0.1
Delay (s)	28.5	37.9		30.1	38.2	31.6	15.9	23.0	18.9	15.9	21.2	18.5
Level of Service	C	D		C	D	C	B	C	B	B	C	B
Approach Delay (s)	36.1		35.1		21.7		19.8					
Approach LOS	D		D		C		B					
Intersection Summary												
HCM 2000 Control Delay	28.7		HCM 2000 Level of Service		C							
HCM 2000 Volume to Capacity ratio	0.55											
Actuated Cycle Length (s)	101.9		Sum of lost time (s)		20.0							
Intersection Capacity Utilization	83.3%		ICU Level of Service		E							
Analysis Period (min)	15											
c Critical Lane Group												

Queues

4: St Pauls Crescent & Mapleview Drive E

04/07/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	27	598	201	1332	125	135
v/c Ratio	0.26	0.32	0.48	0.70	0.32	0.35
Control Delay	15.2	9.2	14.1	13.3	25.8	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	9.2	14.1	13.3	25.8	22.9
Queue Length 50th (m)	1.8	21.7	15.6	61.2	12.3	11.1
Queue Length 95th (m)	6.6	29.5	30.1	78.9	33.9	33.0
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	181	3305	731	3295	389	384
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.18	0.27	0.40	0.32	0.35
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	25	550	0	185	975	250	90	5	20	120	0	5
Future Volume (vph)	25	550	0	185	975	250	90	5	20	120	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	
Satd. Flow (prot)	1405	3444		1748	3433			1798			1756	
Flt Permitted	0.13	1.00		0.41	1.00			0.71			0.68	
Satd. Flow (perm)	189	3444		763	3433			1326			1255	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	598	0	201	1060	272	98	5	22	130	0	5
RTOR Reduction (vph)	0	0	0	0	31	0	0	6	0	0	21	0
Lane Group Flow (vph)	27	598	0	201	1301	0	0	119	0	0	114	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	27%	6%	0%	2%	3%	1%	0%	0%	2%	4%	50%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	40.5	40.5		40.5	40.5			21.5			21.5	
Effective Green, g (s)	40.5	40.5		40.5	40.5			21.5			21.5	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.29			0.29	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	103	1884		417	1878			385			364	
v/s Ratio Prot		0.17			0.38							
v/s Ratio Perm	0.14			0.26				0.09			0.09	
v/c Ratio	0.26	0.32		0.48	0.69			0.31			0.31	
Uniform Delay, d1	8.9	9.2		10.3	12.2			20.5			20.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.4	0.1		0.9	1.1			2.1			2.2	
Delay (s)	10.2	9.3		11.2	13.3			22.5			22.7	
Level of Service	B	A		B	B			C			C	
Approach Delay (s)		9.3			13.1			22.5			22.7	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay				13.1								
HCM 2000 Volume to Capacity ratio				0.56								
Actuated Cycle Length (s)				74.0						12.0		
Intersection Capacity Utilization				62.2%								
Analysis Period (min)				15								
Critical Lane Group												

Queues

5: Yonge Street & St Pauls Crescent

04/07/2022

	↖	↗	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	141	168	978	130	554
v/c Ratio	0.65	0.46	0.45	0.29	0.21
Control Delay	53.5	9.9	10.4	4.9	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	9.9	10.4	4.9	4.4
Queue Length 50th (m)	25.4	0.0	44.0	4.7	13.8
Queue Length 95th (m)	44.6	16.7	73.3	11.8	25.2
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	394	533	2197	548	2594
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	0.36	0.32	0.45	0.24	0.21
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

5: Yonge Street & St Pauls Crescent

04/07/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	130	155	885	15	120	510
Future Volume (vph)	130	155	885	15	120	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		3.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1428	1493	3429		1750	3476
Flt Permitted	0.95	1.00	1.00		0.24	1.00
Satd. Flow (perm)	1428	1493	3429		449	3476
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	168	962	16	130	554
RTOR Reduction (vph)	0	143	1	0	0	0
Lane Group Flow (vph)	141	25	977	0	130	554
Heavy Vehicles (%)	25%	7%	6%	18%	2%	5%
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	14.8	14.8	62.8		73.2	73.2
Effective Green, g (s)	14.8	14.8	62.8		73.2	73.2
Actuated g/C Ratio	0.15	0.15	0.64		0.75	0.75
Clearance Time (s)	4.0	4.0	6.0		3.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	215	225	2197		433	2596
v/s Ratio Prot	c0.10		c0.29		c0.02	0.16
v/s Ratio Perm		0.02			0.20	
v/c Ratio	0.66	0.11	0.44		0.30	0.21
Uniform Delay, d1	39.2	35.9	8.8		4.2	3.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.0	0.2	0.7		0.4	0.2
Delay (s)	46.2	36.2	9.5		4.6	3.9
Level of Service	D	D	A		A	A
Approach Delay (s)	40.7		9.5			4.1
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			12.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.47			
Actuated Cycle Length (s)			98.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			50.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 7: Yonge Street & St Pauls Crescent

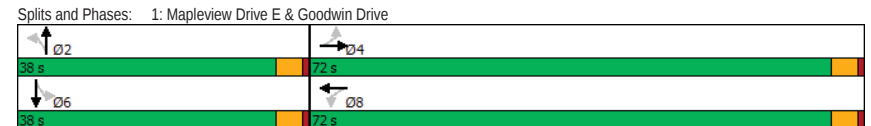
04/07/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	730	20	0	720
Future Volume (Veh/h)	0	0	730	20	0	720
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	793	22	0	783
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1196	408			815	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1196	408			815	
tC, single (s)	6.8	8.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	182	386			821	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	529	286	0	392	392
Volume Left	0	0	0	0	0	0
Volume Right	0	0	22	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.31	0.17	0.00	0.23	0.23
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		24.1%		ICU Level of Service	A	
Analysis Period (min)		15				

Timings 1: Mapleview Drive E & Goodwin Drive

04/08/2022

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	15	730	15	530	50	50	45	75
Future Volume (vph)	15	730	15	530	50	50	45	75
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	72.0	72.0	72.0	72.0	38.0	38.0	38.0	38.0
Total Split (%)	65.5%	65.5%	65.5%	65.5%	34.5%	34.5%	34.5%	34.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	24.1	24.1	24.1	24.1	33.7	33.7	33.7	33.7
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.50	0.50	0.50	0.50
v/c Ratio	0.08	0.69	0.13	0.51	0.08	0.09	0.07	0.10
Control Delay	14.3	20.4	16.6	17.3	10.6	7.8	10.6	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	20.4	16.6	17.3	10.6	7.8	10.6	10.0
LOS	B	C	B	B	B	A	B	A
Approach Delay		20.3		17.3		8.9		10.2
Approach LOS		C		B		A		B
Intersection Summary								
Cycle Length: 110								
Actuated Cycle Length: 66.8								
Natural Cycle: 45								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.69								
Intersection Signal Delay: 17.6				Intersection LOS: B				
Intersection Capacity Utilization 45.9%				ICU Level of Service A				
Analysis Period (min) 15								



Queues

1: Maplevue Drive E & Goodwin Drive

04/08/2022

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	902	16	652	54	87	49	93
v/c Ratio	0.08	0.69	0.13	0.51	0.08	0.09	0.07	0.10
Control Delay	14.3	20.4	16.6	17.3	10.6	7.8	10.6	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	20.4	16.6	17.3	10.6	7.8	10.6	10.0
Queue Length 50th (m)	1.3	47.2	1.3	31.1	3.2	3.5	2.9	5.2
Queue Length 95th (m)	4.8	64.5	5.2	44.2	10.0	11.6	9.3	14.3
Internal Link Dist (m)	775.4		114.0		70.9		234.1	
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	570	3499	326	3403	674	921	661	953
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.26	0.05	0.19	0.08	0.09	0.07	0.10
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Maplevue Drive E & Goodwin Drive

04/08/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	730	100	15	530	70	50	50	30	45	75	10
Future Volume (vph)	15	730	100	15	530	70	50	50	30	45	75	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Flrb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flrb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flt	1.00	0.98		1.00	0.98		1.00	0.94		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1784	3584		1825	3485		1825	1802		1781	1887	
Flt Permitted	0.31	1.00		0.17	1.00		0.70	1.00		0.70	1.00	
Satd. Flow (perm)	584	3584		335	3485		1339	1802		1314	1887	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	793	109	16	576	76	54	54	33	49	82	11
RTOR Reduction (vph)	0	16	0	0	15	0	0	14	0	0	3	0
Lane Group Flow (vph)	16	886	0	16	637	0	54	73	0	49	90	0
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.1	24.1		24.1	24.1		33.7	33.7		33.7	33.7	
Effective Green, g (s)	24.1	24.1		24.1	24.1		33.7	33.7		33.7	33.7	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.50	0.50		0.50	0.50	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	210	1293		120	1257		675	909		662	951	
v/s Ratio Prot		c0.25			0.18			0.04			c0.05	
v/s Ratio Perm	0.03			0.05			0.04			0.04		
v/c Ratio	0.08	0.69		0.13	0.51		0.08	0.08		0.07	0.09	
Uniform Delay, d1	14.0	18.1		14.3	16.7		8.5	8.5		8.5	8.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.5		0.5	0.3		0.2	0.2		0.2	0.2	
Delay (s)	14.2	19.7		14.8	17.0		8.8	8.7		8.7	8.8	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)	19.6			17.0			8.7			8.8		
Approach LOS	B			B			A			A		
Intersection Summary												
HCM 2000 Control Delay	17.0			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.34											
Actuated Cycle Length (s)	66.8			Sum of lost time (s)			9.0					
Intersection Capacity Utilization	45.9%			ICU Level of Service			A					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Site Driveway (West) & Mapleview Drive E

04/08/2022

	→	↖	↗	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖↗			↖↗		↖
Traffic Volume (veh/h)	805	0	0	615	0	0
Future Volume (Veh/h)	805	0	0	615	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	875	0	0	668	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (m)	138			215		
pX, platoon unblocked			0.80		0.85	0.80
vC, conflicting volume			875		1209	438
vC1, stage 1 conf vol					875	
vC2, stage 2 conf vol					334	
vCu, unblocked vol			349		415	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			967		534	869
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	583	292	223	445	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	967	1700	1700	
Volume to Capacity	0.34	0.17	0.00	0.26	0.00	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			25.6%		ICU Level of Service	A
Analysis Period (min)			15			

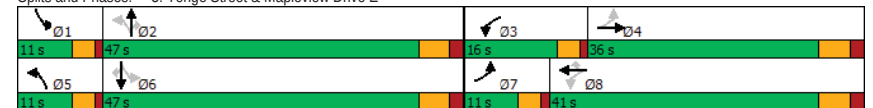
Timings

3: Yonge Street & Mapleview Drive E

04/08/2022

	↖	→	↗	←	↖	↗	↑	↖	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖↗	↖	↖	↖↗	↖
Traffic Volume (vph)	90	605	145	440	215	90	575	150	160	570	85
Future Volume (vph)	90	605	145	440	215	90	575	150	160	570	85
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	7.0	12.0	7.0	12.0	12.0	7.0	40.0	40.0	7.0	40.0	40.0
Minimum Split (s)	11.0	35.0	11.0	35.0	35.0	11.0	46.0	46.0	11.0	46.0	46.0
Total Split (s)	11.0	36.0	16.0	41.0	41.0	11.0	47.0	47.0	11.0	47.0	47.0
Total Split (%)	10.0%	32.7%	14.5%	37.3%	37.3%	10.0%	42.7%	42.7%	10.0%	42.7%	42.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	35.1	26.0	42.1	31.8	31.8	49.1	40.1	40.1	50.0	42.5	42.5
Actuated g/C Ratio	0.34	0.25	0.41	0.31	0.31	0.47	0.39	0.39	0.48	0.41	0.41
v/c Ratio	0.25	0.79	0.58	0.40	0.35	0.22	0.42	0.21	0.42	0.39	0.12
Control Delay	20.6	42.6	28.9	30.0	5.4	15.9	25.1	4.6	18.6	24.1	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	42.6	28.9	30.0	5.4	15.9	25.1	4.6	18.6	24.1	0.6
LOS	C	D	C	C	A	B	C	A	B	C	A
Approach Delay		40.1		23.2			20.3			20.6	
Approach LOS		D		C			C			C	
Intersection Summary											
Cycle Length: 110											
Actuated Cycle Length: 103.6											
Natural Cycle: 105											
Control Type: Semi Act-Uncoord											
Maximum v/c Ratio: 0.79											
Intersection Signal Delay: 26.0							Intersection LOS: C				
Intersection Capacity Utilization 87.1%							ICU Level of Service E				
Analysis Period (min) 15											

Splits and Phases: 3: Yonge Street & Mapleview Drive E



Queues

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	91	722	146	444	217	91	581	152	162	576	86
v/c Ratio	0.25	0.79	0.58	0.40	0.35	0.22	0.42	0.21	0.42	0.39	0.12
Control Delay	20.6	42.6	28.9	30.0	5.4	15.9	25.1	4.6	18.6	24.1	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	42.6	28.9	30.0	5.4	15.9	25.1	4.6	18.6	24.1	0.6
Queue Length 50th (m)	11.2	70.5	18.5	38.2	0.0	9.4	45.7	0.0	17.5	45.3	0.0
Queue Length 95th (m)	20.9	92.3	31.5	52.1	15.8	19.0	63.8	12.7	31.3	63.2	1.1
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	371	1047	276	1224	666	406	1434	725	389	1511	735
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	0.25	0.69	0.53	0.36	0.33	0.22	0.41	0.21	0.42	0.38	0.12
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Mapleview Drive E

04/08/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	90	605	110	145	440	215	90	575	150	160	570	85
Future Volume (vph)	90	605	110	145	440	215	90	575	150	160	570	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1784	3560		1716	3614	1545	1767	3614	1597	1785	3614	1551
Fit Permitted	0.49	1.00		0.15	1.00	1.00	0.38	1.00	1.00	0.35	1.00	1.00
Satd. Flow (perm)	927	3560		262	3614	1545	707	3614	1597	648	3614	1551
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	91	611	111	146	444	217	91	581	152	162	576	86
RTOR Reduction (vph)	0	14	0	0	0	152	0	0	93	0	0	51
Lane Group Flow (vph)	91	708	0	146	444	65	91	581	59	162	576	35
Confl. Peds. (#/hr)	1						1					
Heavy Vehicles (%)	0%	0%	1%	4%	1%	2%	1%	1%	0%	0%	1%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	32.4	26.9		41.3	31.8	31.8	46.6	41.1	41.1	49.6	42.6	42.6
Effective Green, g (s)	32.4	26.9		41.3	31.8	31.8	46.6	41.1	41.1	49.6	42.6	42.6
Actuated g/C Ratio	0.31	0.26		0.39	0.30	0.30	0.44	0.39	0.39	0.47	0.40	0.40
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	329	908		246	1090	466	367	1409	622	380	1460	626
v/s Ratio Prot	0.01	c0.20		c0.06	0.12		0.01	0.16		c0.03	0.16	
v/s Ratio Perm	0.07			0.17		0.04	0.10		0.04	c0.17		0.02
v/c Ratio	0.28	0.78		0.59	0.41	0.14	0.25	0.41	0.10	0.43	0.39	0.06
Uniform Delay, d1	26.6	36.5		23.5	29.3	26.8	17.4	23.4	20.4	16.7	22.3	19.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	4.3		3.8	0.2	0.1	0.4	0.2	0.1	0.8	0.2	0.0
Delay (s)	27.1	40.8		27.3	29.5	27.0	17.8	23.6	20.4	17.5	22.4	19.2
Level of Service	C	D		C	C	C	B	C	C	B	C	B
Approach Delay (s)		39.2			28.4			22.4			21.1	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			27.7		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			105.4		Sum of lost time (s)					20.0		
Intersection Capacity Utilization			87.1%		ICU Level of Service					E		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	885	40	765	30	5	180	5
Future Volume (vph)	25	885	40	765	30	5	180	5
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	59.0	59.0	59.0	59.0	51.0	51.0	51.0	51.0
Total Split (%)	53.6%	53.6%	53.6%	53.6%	46.4%	46.4%	46.4%	46.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	31.4	31.4	31.4	31.4		45.3		45.3
Actuated g/C Ratio	0.35	0.35	0.35	0.35		0.51		0.51
v/c Ratio	0.22	0.75	0.46	0.69		0.20		0.33
Control Delay	24.0	28.9	39.5	27.0		8.5		16.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	24.0	28.9	39.5	27.0		8.5		16.2
LOS	C	C	D	C		A		B
Approach Delay		28.8		27.6		8.5		16.2
Approach LOS		C		C		A		B
Intersection Summary								
Cycle Length: 110								
Actuated Cycle Length: 88.8								
Natural Cycle: 50								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.75								
Intersection Signal Delay: 25.7								
Intersection Capacity Utilization 68.1%								
Analysis Period (min) 15								
Intersection LOS: C								
ICU Level of Service C								

Splits and Phases: 4: St Pauls Crescent & Mapleview Drive E

	Ø2		Ø4
51 s		59 s	
	Ø6		Ø8
51 s		59 s	

Queues

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	27	967	43	865	168	206
v/c Ratio	0.22	0.75	0.46	0.69	0.20	0.33
Control Delay	24.0	28.9	39.5	27.0	8.5	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	28.9	39.5	27.0	8.5	16.2
Queue Length 50th (m)	3.2	74.5	5.5	64.4	7.6	19.1
Queue Length 95th (m)	9.4	94.8	16.6	82.9	22.2	42.6
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	212	2189	158	2137	843	633
Starvation Cap Reductn	0	131	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	0.13	0.47	0.27	0.40	0.20	0.33
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	←	→	↙	↘	←	→	↙	↘	←	→	↙	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↘		↘	↘		↘	↘		↘	↘	
Traffic Volume (vph)	25	885	5	40	765	30	30	5	120	180	5	5
Future Volume (vph)	25	885	5	40	765	30	30	5	120	180	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Flt Protected	1.00	1.00		1.00	1.00			1.00			1.00	
Flt Permitted	0.19	1.00		0.14	1.00			0.92			0.65	
Satd. Flow (perm)	352	3647		262	3557			1581			1241	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	962	5	43	832	33	33	5	130	196	5	5
RTOR Reduction (vph)	0	1	0	0	3	0	0	37	0	0	0	0
Lane Group Flow (vph)	27	966	0	43	862	0	0	131	0	0	206	0
Confl. Peds. (#/hr)	3					3						
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	31.4	31.4		31.4	31.4			45.3			45.3	
Effective Green, g (s)	31.4	31.4		31.4	31.4			45.3			45.3	
Actuated g/C Ratio	0.35	0.35		0.35	0.35			0.51			0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	124	1291		92	1259			807			633	
v/s Ratio Prot		c0.26			0.24							
v/s Ratio Perm	0.08			0.16				0.08			c0.17	
v/c Ratio	0.22	0.75		0.47	0.68			0.16			0.32	
Uniform Delay, d1	20.1	25.2		22.2	24.4			11.6			12.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	2.4		3.7	1.6			0.4			1.4	
Delay (s)	20.9	27.6		25.9	26.0			12.0			14.1	
Level of Service	C	C		C	C			B			B	
Approach Delay (s)		27.4			26.0			12.0			14.1	
Approach LOS		C			C			B			B	

Intersection Summary

HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Timings

5: Yonge Street & St Pauls Crescent

04/08/2022

	↙	↘	↙	↘	↙	↘
Lane Group	WBL	WBR	NBT	SBL	SBT	
Lane Configurations	↘	↘	↘	↘	↘	
Traffic Volume (vph)	50	115	875	85	765	
Future Volume (vph)	50	115	875	85	765	
Turn Type	Prot	Perm	NA	Perm	NA	
Protected Phases	8		2		6	
Permitted Phases		8		6		
Detector Phase	8	8	2	6	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0	24.0	24.0	24.0	
Total Split (s)	33.0	33.0	77.0	77.0	77.0	
Total Split (%)	30.0%	30.0%	70.0%	70.0%	70.0%	
Yellow Time (s)	3.0	3.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Max	Max	Max	
Act Effct Green (s)	9.7	9.7	76.1	76.1	76.1	
Actuated g/C Ratio	0.10	0.10	0.79	0.79	0.79	
v/c Ratio	0.45	0.46	0.33	0.21	0.29	
Control Delay	50.6	12.7	3.3	4.3	3.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.6	12.7	3.3	4.3	3.2	
LOS	D	B	A	A	A	
Approach Delay	24.2		3.3		3.3	
Approach LOS	C		A		A	
Intersection Summary						
Cycle Length: 110						
Actuated Cycle Length: 95.8						
Natural Cycle: 60						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.46						
Intersection Signal Delay: 5.1						
Intersection Capacity Utilization 46.6%						
Analysis Period (min) 15						

Splits and Phases: 5: Yonge Street & St Pauls Crescent



Queues
5: Yonge Street & St Pauls Crescent

04/08/2022

	←	←	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	54	125	956	92	832
v/c Ratio	0.45	0.46	0.33	0.21	0.29
Control Delay	50.6	12.7	3.3	4.3	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	12.7	3.3	4.3	3.2
Queue Length 50th (m)	9.2	0.0	19.5	3.2	16.2
Queue Length 95th (m)	20.2	14.9	33.1	9.3	27.8
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	360	571	2868	436	2871
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	0.22	0.33	0.21	0.29
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	50	115	875	5	85	765
Future Volume (vph)	50	115	875	5	85	765
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1190	1597	3611		1784	3614
Flt Permitted	0.95	1.00	1.00		0.29	1.00
Satd. Flow (perm)	1190	1597	3611		550	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	125	951	5	92	832
RTOR Reduction (vph)	0	112	0	0	0	0
Lane Group Flow (vph)	54	13	956	0	92	832
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	50%	0%	1%	0%	0%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	9.7	9.7	76.1		76.1	76.1
Effective Green, g (s)	9.7	9.7	76.1		76.1	76.1
Actuated g/C Ratio	0.10	0.10	0.79		0.79	0.79
Clearance Time (s)	4.0	4.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	120	161	2868		436	2870
v/s Ratio Prot	c0.05		c0.26			0.23
v/s Ratio Perm		0.01			0.17	
v/c Ratio	0.45	0.08	0.33		0.21	0.29
Uniform Delay, d1	40.5	39.0	2.8		2.4	2.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	0.2	0.3		1.1	0.3
Delay (s)	43.2	39.2	3.1		3.5	2.9
Level of Service	D	D	A		A	A
Approach Delay (s)	40.4		3.1			3.0
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			6.3		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.35			
Actuated Cycle Length (s)			95.8		Sum of lost time (s)	10.0
Intersection Capacity Utilization			46.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 6: Yonge Street & Site Driveway (East)

04/08/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	815	825	0
Future Volume (Veh/h)	0	0	0	815	825	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	886	897	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type				None	None	
Median storage (veh)						
Upstream signal (m)					176	
pX, platoon unblocked	0.89	0.89	0.89			
vC, conflicting volume	1340	448	897			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1137	136	640			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	174	791	838			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	443	443	598	299
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.26	0.26	0.35	0.18
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			26.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 7: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	0	815	50	5	820
Future Volume (Veh/h)	20	0	815	50	5	820
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	21	0	867	53	5	872
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1340	461			921	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1340	461			921	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	100			99	
cM capacity (veh/h)	143	552			749	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	21	578	342	5	436	436
Volume Left	21	0	0	5	0	0
Volume Right	0	0	53	0	0	0
cSH	143	1700	1700	749	1700	1700
Volume to Capacity	0.15	0.34	0.20	0.01	0.26	0.26
Queue Length 95th (m)	3.8	0.0	0.0	0.2	0.0	0.0
Control Delay (s)	34.5	0.0	0.0	9.8	0.0	0.0
Lane LOS	D			A		
Approach Delay (s)	34.5	0.0		0.1		
Approach LOS	D					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			34.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

8: Site Dwy (EBR IN ONLY) & Mapleview Drive E

04/08/2022

	→	↖	↗	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖↗			↖↗		
Traffic Volume (veh/h)	805	0	0	615	0	0
Future Volume (Veh/h)	805	0	0	615	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	875	0	0	668	0	0
Pedestrians				1		
Lane Width (m)				3.7		
Walking Speed (m/s)				1.1		
Percent Blockage				0		
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (m)	215			137		
pX, platoon unblocked			0.81		0.86	0.81
vC, conflicting volume			875		1209	438
vC1, stage 1 conf vol					875	
vC2, stage 2 conf vol					334	
vCu, unblocked vol			387		427	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			950		520	881
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	583	292	334	334		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.34	0.17	0.20	0.20		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			32.6%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

1: Mapleview Drive E & Goodwin Drive

04/07/2022

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	812	16	636	52	83	47	94
v/c Ratio	0.09	0.69	0.13	0.54	0.07	0.08	0.07	0.09
Control Delay	16.3	22.3	18.3	19.6	9.3	6.7	9.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	22.3	18.3	19.6	9.3	6.7	9.3	8.5
Queue Length 50th (m)	1.4	44.5	1.4	32.7	2.9	3.0	2.6	4.7
Queue Length 95th (m)	5.2	61.1	5.5	46.2	9.0	10.2	8.4	13.1
Internal Link Dist (m)		775.4		114.0		70.9		234.1
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	532	3388	350	3390	721	988	712	995
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.24	0.05	0.19	0.07	0.08	0.07	0.09
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	15	680	100	15	545	65	50	50	30	45	75	15
Future Volume (vph)	15	680	100	15	545	65	50	50	30	45	75	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Satd. Flow (prot)	1784	3580		1825	3583		1821	1804		1781	1833	
Satd. Flow (perm)	563	3580		370	3583		1335	1804		1318	1833	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	16	708	104	16	568	68	52	52	31	47	78	16
RTOR Reduction (vph)	0	17	0	0	14	0	0	13	0	0	5	0
Lane Group Flow (vph)	16	795	0	16	622	0	52	70	0	47	89	0
Confl. Peds. (#/hr)	1					1	2		2	2		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4			8			2			6		
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.0	22.0		22.0	22.0		36.7	36.7		36.7	36.7	
Effective Green, g (s)	22.0	22.0		22.0	22.0		36.7	36.7		36.7	36.7	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.54	0.54		0.54	0.54	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	182	1163		120	1164		723	977		714	993	
v/s Ratio Prot	c0.22			0.17			0.04			c0.05		
v/s Ratio Perm	0.03			0.04			0.04			0.04		
v/c Ratio	0.09	0.68		0.13	0.53		0.07	0.07		0.07	0.09	
Uniform Delay, d1	15.9	19.8		16.1	18.7		7.4	7.4		7.4	7.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.7		0.5	0.5		0.2	0.1		0.2	0.2	
Delay (s)	16.1	21.5		16.6	19.1		7.6	7.5		7.5	7.6	
Level of Service	B	C		B	B		A	A		A	A	
Approach Delay (s)	21.4			19.1			7.5			7.6		
Approach LOS	C			B			A			A		
Intersection Summary												
HCM 2000 Control Delay	18.4			HCM 2000 Level of Service	B							
HCM 2000 Volume to Capacity ratio	0.31											
Actuated Cycle Length (s)	67.7			Sum of lost time (s)	9.0							
Intersection Capacity Utilization	44.5%			ICU Level of Service	A							
Analysis Period (min)	15											
c Critical Lane Group												

Queues

3: Yonge Street & Mapleview Drive E

04/07/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	101	662	136	460	202	96	571	131	146	535	76
v/c Ratio	0.28	0.75	0.57	0.48	0.36	0.22	0.39	0.18	0.36	0.35	0.10
Control Delay	21.9	40.1	30.6	34.2	6.3	14.5	23.2	4.6	16.3	22.0	2.1
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	21.9	40.1	30.6	34.2	6.3	14.5	23.2	4.6	16.3	22.0	2.1
Queue Length 50th (m)	12.7	62.2	17.5	41.6	0.0	9.0	41.5	0.0	14.2	38.4	0.0
Queue Length 95th (m)	23.1	81.1	30.1	57.7	16.5	19.7	62.2	11.8	28.4	58.2	4.5
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	390	1173	242	1116	623	444	1462	724	406	1547	732
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	0.26	0.56	0.56	0.41	0.32	0.22	0.39	0.18	0.36	0.35	0.10
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Maplevue Drive E

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	100	555	100	135	455	200	95	565	130	145	530	75
Future Volume (vph)	100	555	100	135	455	200	95	565	130	145	530	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	4.0	4.0	6.0	4.0	6.0	4.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	3567		1700	3650	1581	1750	3614	1597	1750	3614	1566
Flt Permitted	0.40	1.00		0.19	1.00	1.00	0.41	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	748	3567		346	3650	1581	763	3614	1597	661	3614	1566
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	101	561	101	136	460	202	96	571	131	146	535	76
RTOR Reduction (vph)	0	14	0	0	0	150	0	0	78	0	0	44
Lane Group Flow (vph)	101	648	0	136	460	52	96	571	53	146	535	32
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	2%	1%	0%	2%	1%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	33.1	25.6		35.5	26.8	26.8	47.5	42.0	42.0	50.5	43.5	43.5
Effective Green, g (s)	33.1	25.6		35.5	26.8	26.8	47.5	42.0	42.0	50.5	43.5	43.5
Actuated g/C Ratio	0.32	0.25		0.34	0.26	0.26	0.46	0.41	0.41	0.49	0.42	0.42
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	314	883		232	946	410	403	1469	649	396	1521	659
v/s Ratio Prot	0.02	c0.18		c0.05	0.13		0.01	c0.16		c0.02	0.15	
v/s Ratio Perm	0.08			0.15		0.03	0.10		0.03	0.15		0.02
v/c Ratio	0.32	0.73		0.59	0.49	0.13	0.24	0.39	0.08	0.37	0.35	0.05
Uniform Delay, d1	25.4	35.7		25.3	32.4	29.3	16.0	21.6	18.8	15.1	20.3	17.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	3.2		3.7	0.4	0.1	0.3	0.8	0.2	0.6	0.6	0.1
Delay (s)	26.0	38.9		29.1	32.8	29.4	16.3	22.4	19.1	15.7	21.0	17.8
Level of Service	C	D		C	C	C	B	C	B	B	C	B
Approach Delay (s)		37.2			31.3			21.1			19.6	
Approach LOS		D			C			C			B	
Intersection Summary												
HCM 2000 Control Delay		27.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.51										
Actuated Cycle Length (s)		103.3			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		84.0%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Queues

4: St Pauls Crescent & Maplevue Drive E

04/07/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	27	875	33	842	130	201
v/c Ratio	0.22	0.72	0.29	0.68	0.16	0.31
Control Delay	23.7	27.3	27.1	26.1	5.6	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	27.3	27.1	26.1	5.6	12.6
Queue Length 50th (m)	3.0	61.7	3.7	58.2	3.2	14.2
Queue Length 95th (m)	9.3	80.7	11.4	76.3	13.3	33.5
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	250	2456	227	2493	836	644
Starvation Cap Reductn	0	55	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.36	0.15	0.34	0.16	0.31
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/07/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Volume (vph)	25	805	0	30	750	25	35	5	80	180	0	5
Future Volume (vph)	25	805	0	30	750	25	35	5	80	180	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.91			1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	
Satd. Flow (prot)	1785	3579		1785	3633			1722			1826	
Flt Permitted	0.19	1.00		0.18	1.00			0.88			0.64	
Satd. Flow (perm)	364	3579		332	3633			1544			1224	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	875	0	33	815	27	38	5	87	196	0	5
RTOR Reduction (vph)	0	0	0	0	3	0	0	42	0	0	15	0
Lane Group Flow (vph)	27	875	0	33	839	0	0	88	0	0	186	0
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	27.7	27.7		27.7	27.7			42.2			42.2	
Effective Green, g (s)	27.7	27.7		27.7	27.7			42.2			42.2	
Actuated g/C Ratio	0.34	0.34		0.34	0.34			0.52			0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	123	1210		112	1228			795			630	
v/s Ratio Prot		c0.24			0.23							
v/s Ratio Perm	0.07			0.10				0.06			c0.15	
v/c Ratio	0.22	0.72		0.29	0.68			0.11			0.30	
Uniform Delay, d1	19.4	23.7		19.9	23.3			10.2			11.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	2.2		1.5	1.6			0.3			1.2	
Delay (s)	20.3	25.9		21.4	24.9			10.5			12.6	
Level of Service	C	C		C	C			B			B	
Approach Delay (s)		25.7			24.8			10.5			12.6	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay		23.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.46										
Actuated Cycle Length (s)		81.9			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		51.9%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

Queues

5: Yonge Street & St Pauls Crescent

04/07/2022

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	54	125	940	103	761
v/c Ratio	0.36	0.51	0.32	0.23	0.26
Control Delay	49.0	15.2	2.7	3.7	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	15.2	2.7	3.7	2.5
Queue Length 50th (m)	9.9	0.0	17.4	3.3	13.1
Queue Length 95th (m)	21.1	15.9	27.6	9.0	21.3
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	387	444	2956	450	2956
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	0.14	0.28	0.32	0.23	0.26
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/07/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↩	↩	↕	↕	↩	↕
Traffic Volume (vph)	50	115	865	0	95	700
Future Volume (vph)	50	115	865	0	95	700
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Flt Protected	1.00	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1785	1597	3614		1746	3614
Flt Permitted	0.95	1.00	1.00		0.30	1.00
Satd. Flow (perm)	1785	1597	3614		552	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	125	940	0	103	761
RTOR Reduction (vph)	0	115	0	0	0	0
Lane Group Flow (vph)	54	10	940	0	103	761
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	8.5	8.5	83.1		83.1	83.1
Effective Green, g (s)	8.5	8.5	83.1		83.1	83.1
Actuated g/C Ratio	0.08	0.08	0.82		0.82	0.82
Clearance Time (s)	4.0	4.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	149	133	2955		451	2955
v/s Ratio Prot	c0.03		c0.26			0.21
v/s Ratio Perm		0.01			0.19	
v/c Ratio	0.36	0.08	0.32		0.23	0.26
Uniform Delay, d1	44.0	42.9	2.3		2.1	2.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.3	0.3		1.2	0.2
Delay (s)	45.5	43.2	2.6		3.2	2.3
Level of Service	D	D	A		A	A
Approach Delay (s)	43.9		2.6			2.5
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			6.2		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.32			
Actuated Cycle Length (s)			101.6		Sum of lost time (s)	10.0
Intersection Capacity Utilization			46.7%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
7: Yonge Street & St Pauls Crescent

04/07/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↩		↕		↩	↕
Traffic Volume (veh/h)	10	0	790	15	0	765
Future Volume (Veh/h)	10	0	790	15	0	765
Sign Control	Stop		Free		Stop	Free
Grade	0%		0%		0%	0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	0	849	16	0	823
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1268	432			865	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1268	432			865	
tC, single (s)	6.8	6.9			6.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			3.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	163	577			372	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	11	566	299	0	412	412
Volume Left	11	0	0	0	0	0
Volume Right	0	0	16	0	0	0
cSH	163	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.33	0.18	0.00	0.24	0.24
Queue Length 95th (m)	1.6	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	28.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	D					
Approach Delay (s)	28.7	0.0		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			32.3%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

1: Mapleview Drive E & Goodwin Drive

04/07/2022

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	595	878	50	45	28	55
v/c Ratio	0.04	0.46	0.65	0.08	0.05	0.04	0.07
Control Delay	11.0	14.1	16.6	10.4	7.5	10.2	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	14.1	16.6	10.4	7.5	10.2	8.7
Queue Length 50th (m)	0.4	22.6	36.9	2.6	1.4	1.4	2.3
Queue Length 95th (m)	2.2	33.6	51.8	8.9	6.8	5.9	8.5
Internal Link Dist (m)		775.4	114.0		70.9		234.1
Turn Bay Length (m)	30.0						
Base Capacity (vph)	392	3406	3579	637	838	627	836
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	0.02	0.17	0.25	0.08	0.05	0.04	0.07
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/07/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	530	5	0	790	0	45	25	15	25	40	10
Future Volume (vph)	5	530	5	0	790	0	45	25	15	25	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Flt Protected	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flt Permitted	0.21	1.00			1.00		0.72	1.00		0.73	1.00	
Satd. Flow (prot)	1783	3408			3579		1825	1803		1783	1806	
Satd. Flow (perm)	392	3408			3579		1385	1803		1366	1806	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	589	6	0	878	0	50	28	17	28	44	11
RTOR Reduction (vph)	0	1	0	0	0	0	0	9	0	0	6	0
Lane Group Flow (vph)	6	594	0	0	878	0	50	36	0	28	49	0
Confl. Peds. (#/hr)	3		1	1		3			1	1		
Heavy Vehicles (%)	0%	7%	0%	0%	2%	0%	0%	0%	0%	0%	0%	16%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.0	21.0			21.0		25.6	25.6		25.6	25.6	
Effective Green, g (s)	21.0	21.0			21.0		25.6	25.6		25.6	25.6	
Actuated g/C Ratio	0.38	0.38			0.38		0.46	0.46		0.46	0.46	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	148	1287			1351		637	830		628	831	
v/s Ratio Prot		0.17			0.25			0.02			0.03	
v/s Ratio Perm	0.02						0.04			0.02		
v/c Ratio	0.04	0.46			0.65		0.08	0.04		0.04	0.06	
Uniform Delay, d1	10.9	13.0			14.3		8.4	8.3		8.3	8.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.3			1.1		0.2	0.1		0.1	0.1	
Delay (s)	11.0	13.3			15.4		8.6	8.4		8.4	8.5	
Level of Service	B	B			B		A	A		A	A	
Approach Delay (s)		13.3			15.4			8.5			8.4	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay		13.9			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.34										
Actuated Cycle Length (s)		55.6			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		44.3%			ICU Level of Service			A				
Analysis Period (min)		15										
Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Site Driveway (West) & Mapleview Drive E

04/07/2022

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕↕			↕↕		↕
Traffic Volume (veh/h)	510	60	5	780	10	60
Future Volume (Veh/h)	510	60	5	780	10	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	554	65	5	848	11	65
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTLT			TWTLT		
Median storage (veh)	2			2		
Upstream signal (m)	138			215		
pX, platoon unblocked			0.89		0.90	0.89
vC, conflicting volume			619		1020	310
vC1, stage 1 conf vol					586	
vC2, stage 2 conf vol					434	
vCu, unblocked vol			331		256	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	93
cM capacity (veh/h)			1093		636	967
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	369	250	288	565	76	
Volume Left	0	0	5	0	11	
Volume Right	0	65	0	0	65	
cSH	1700	1700	1093	1700	899	
Volume to Capacity	0.22	0.15	0.00	0.33	0.08	
Queue Length 95th (m)	0.0	0.0	0.1	0.0	2.1	
Control Delay (s)	0.0	0.0	0.2	0.0	9.4	
Lane LOS			A		A	
Approach Delay (s)	0.0		0.1		9.4	
Approach LOS					A	
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			Err%	ICU Level of Service	H	
Analysis Period (min)			15			

Queues

3: Yonge Street & Mapleview Drive E

04/07/2022

												
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	126	440	237	626	227	111	571	51	146	465	56	
v/c Ratio	0.50	0.61	0.68	0.71	0.46	0.25	0.41	0.08	0.36	0.33	0.08	
Control Delay	27.6	39.0	32.3	40.3	11.5	15.3	24.5	0.2	16.5	22.8	0.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.6	39.0	32.3	40.3	11.5	15.3	24.5	0.2	16.5	22.8	0.4	
Queue Length 50th (m)	16.1	40.7	32.6	60.6	7.7	10.9	43.3	0.0	14.6	33.5	0.0	
Queue Length 95th (m)	28.3	56.1	51.2	78.9	27.4	22.5	63.8	0.0	28.6	50.6	0.5	
Internal Link Dist (m)		113.3		60.0			151.6			172.4		
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0	
Base Capacity (vph)	263	968	358	1134	584	442	1397	654	409	1424	676	
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	0.48	0.45	0.66	0.55	0.39	0.25	0.41	0.08	0.36	0.33	0.08	
Intersection Summary												

HCM Signalized Intersection Capacity Analysis 3: Yonge Street & Mapleview Drive E

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	125	385	50	235	620	225	110	565	50	145	460	55
Future Volume (vph)	125	385	50	235	620	225	110	565	50	145	460	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt Protected	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flt Permitted	0.26	1.00		0.31	1.00	1.00	0.45	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	444	3373		557	3614	1473	792	3544	1493	652	3544	1521
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	126	389	51	237	626	227	111	571	51	146	465	56
RTOR Reduction (vph)	0	10	0	0	0	135	0	0	31	0	0	33
Lane Group Flow (vph)	126	430	0	237	626	92	111	571	20	146	465	23
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	9%	7%	0%	6%	1%	7%	7%	3%	7%	4%	3%	5%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	30.9	21.6		37.3	24.8	24.8	47.4	40.4	40.4	49.0	41.2	41.2
Effective Green, g (s)	30.9	21.6		37.3	24.8	24.8	47.4	40.4	40.4	49.0	41.2	41.2
Actuated g/C Ratio	0.30	0.21		0.36	0.24	0.24	0.46	0.39	0.39	0.48	0.40	0.40
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	242	712		340	876	357	426	1399	589	393	1427	612
v/s Ratio Prot	0.05	0.13		c0.08	c0.17		0.02	c0.16		c0.03	0.13	
v/s Ratio Perm	0.11			0.17		0.06	0.10		0.01	0.15		0.01
v/c Ratio	0.52	0.60		0.70	0.71	0.26	0.26	0.41	0.03	0.37	0.33	0.04
Uniform Delay, d1	27.4	36.5		24.6	35.5	31.3	15.8	22.3	19.0	15.5	21.0	18.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	1.5		6.1	2.8	0.4	0.3	0.9	0.1	0.6	0.6	0.1
Delay (s)	29.4	37.9		30.7	38.3	31.7	16.2	23.2	19.1	16.1	21.6	18.6
Level of Service	C	D		C	D	C	B	C	B	B	C	B
Approach Delay (s)		36.0			35.3			21.9			20.2	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay		28.9			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		102.3			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		83.7%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

Queues 4: St Pauls Crescent & Mapleview Drive E

04/07/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	27	603	201	1343	125	135
v/c Ratio	0.26	0.32	0.48	0.70	0.32	0.35
Control Delay	15.4	9.2	14.1	13.3	25.9	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	9.2	14.1	13.3	25.9	23.0
Queue Length 50th (m)	1.8	21.9	15.7	62.2	12.4	11.1
Queue Length 95th (m)	6.7	29.8	30.1	80.1	34.1	33.2
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	178	3300	726	3294	387	381
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.18	0.28	0.41	0.32	0.35
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/07/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	555	0	185	985	250	90	5	20	120	0	5
Future Volume (vph)	25	555	0	185	985	250	90	5	20	120	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Flt Protected	1.00	1.00		1.00	1.00			1.00			1.00	
Flt Permitted	0.13	1.00		0.41	1.00			0.71			0.68	
Satd. Flow (perm)	186	3444		758	3434			1327			1255	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	603	0	201	1071	272	98	5	22	130	0	5
RTOR Reduction (vph)	0	0	0	0	31	0	0	6	0	0	21	0
Lane Group Flow (vph)	27	603	0	201	1312	0	0	119	0	0	114	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	27%	6%	0%	2%	3%	1%	0%	0%	2%	4%	50%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	41.0	41.0		41.0	41.0			21.4			21.4	
Effective Green, g (s)	41.0	41.0		41.0	41.0			21.4			21.4	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.29			0.29	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	102	1897		417	1892			381			360	
v/s Ratio Prot		0.18			c0.38							
v/s Ratio Perm	0.14			0.27			0.09				c0.09	
v/c Ratio	0.26	0.32		0.48	0.69		0.31				0.32	
Uniform Delay, d1	8.8	9.1		10.2	12.1		20.7				20.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00				1.00	
Incremental Delay, d2	1.4	0.1		0.9	1.1		2.1				2.3	
Delay (s)	10.2	9.2		11.1	13.3		22.9				23.1	
Level of Service	B	A		B	B		C				C	
Approach Delay (s)		9.2			13.0		22.9				23.1	
Approach LOS		A			B		C				C	
Intersection Summary												
HCM 2000 Control Delay		13.1			HCM 2000 Level of Service		B					
HCM 2000 Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		74.4			Sum of lost time (s)		12.0					
Intersection Capacity Utilization		62.5%			ICU Level of Service		B					
Analysis Period (min)		15										
c Critical Lane Group												

Queues

5: Yonge Street & St Pauls Crescent

04/07/2022

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	141	168	994	130	576
v/c Ratio	0.65	0.46	0.45	0.30	0.22
Control Delay	53.5	9.9	10.5	5.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	9.9	10.5	5.0	4.4
Queue Length 50th (m)	25.4	0.0	45.0	4.7	14.4
Queue Length 95th (m)	44.6	16.7	74.8	11.8	26.2
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	394	533	2197	541	2594
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	0.36	0.32	0.45	0.24	0.22
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/07/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↩	↩	↕	↕	↩	↕
Traffic Volume (vph)	130	155	900	15	120	530
Future Volume (vph)	130	155	900	15	120	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		3.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1428	1493	3429		1750	3476
Flt Permitted	0.95	1.00	1.00		0.24	1.00
Satd. Flow (perm)	1428	1493	3429		439	3476
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	168	978	16	130	576
RTOR Reduction (vph)	0	143	1	0	0	0
Lane Group Flow (vph)	141	25	993	0	130	576
Heavy Vehicles (%)	25%	7%	6%	18%	2%	5%
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	14.8	14.8	62.8		73.2	73.2
Effective Green, g (s)	14.8	14.8	62.8		73.2	73.2
Actuated g/C Ratio	0.15	0.15	0.64		0.75	0.75
Clearance Time (s)	4.0	4.0	6.0		3.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	215	225	2197		426	2596
v/s Ratio Prot	c0.10		c0.29		c0.02	0.17
v/s Ratio Perm		0.02			0.20	
v/c Ratio	0.66	0.11	0.45		0.31	0.22
Uniform Delay, d1	39.2	35.9	8.9		4.3	3.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.0	0.2	0.7		0.4	0.2
Delay (s)	46.2	36.2	9.6		4.7	4.0
Level of Service	D	D	A		A	A
Approach Delay (s)	40.7		9.6			4.1
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay		12.4		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.47				
Actuated Cycle Length (s)		98.0		Sum of lost time (s)	13.0	
Intersection Capacity Utilization		50.9%		ICU Level of Service	A	
Analysis Period (min)		15				

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
6: Yonge Street & Site Driveway (East)

04/07/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↩	↩	↩	↕	↕	↩
Traffic Volume (veh/h)	10	40	35	715	700	45
Future Volume (Veh/h)	10	40	35	715	700	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	43	38	777	761	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type				None	None	
Median storage (veh)						
Upstream signal (m)					176	
pX, platoon unblocked	0.92	0.92	0.92			
vC, conflicting volume	1250	405	810			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1096	177	618			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	94	96			
cM capacity (veh/h)	183	768	881			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	54	38	388	388	507	303
Volume Left	11	38	0	0	0	0
Volume Right	43	0	0	0	0	49
cSH	897	881	1700	1700	1700	1700
Volume to Capacity	0.06	0.04	0.23	0.23	0.30	0.18
Queue Length 95th (m)	1.5	1.0	0.0	0.0	0.0	0.0
Control Delay (s)	13.2	9.3	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	13.2	0.4			0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			37.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Yonge Street & St Pauls Crescent

04/07/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	750	20	0	740
Future Volume (Veh/h)	0	0	750	20	0	740
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	815	22	0	804
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1228	418			837	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1228	418			837	
tC, single (s)	6.8	8.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	173	378			806	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	543	294	0	402	402
Volume Left	0	0	0	0	0	0
Volume Right	0	0	22	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.32	0.17	0.00	0.24	0.24
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		24.7%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
8: Site Dwy (EBR IN ONLY) & Mapleview Drive E

04/07/2022

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	560	10	0	785	0	0
Future Volume (Veh/h)	560	10	0	785	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	609	11	0	853	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (m)	215			137		
pX, platoon unblocked			0.95		0.87	0.95
vC, conflicting volume			620		1041	310
vC1, stage 1 conf vol					614	
vC2, stage 2 conf vol					426	
vCu, unblocked vol			487		471	160
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1016		538	812
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	406	214	426	426		
Volume Left	0	0	0	0		
Volume Right	0	11	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.24	0.13	0.25	0.25		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			25.0%		ICU Level of Service	A
Analysis Period (min)			15			

Timings

1: Mapleview Drive E & Goodwin Drive

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱	↰	↱	↰	↱
Traffic Volume (vph)	15	780	15	550	85	50	45	75
Future Volume (vph)	15	780	15	550	85	50	45	75
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	84.0	84.0	84.0	84.0	46.0	46.0	46.0	46.0
Total Split (%)	64.6%	64.6%	64.6%	64.6%	35.4%	35.4%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	28.6	28.6	28.6	28.6	41.7	41.7	41.7	41.7
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.53	0.53	0.53	0.53
v/c Ratio	0.08	0.74	0.16	0.53	0.13	0.09	0.07	0.09
Control Delay	17.0	25.1	21.1	20.8	11.9	8.8	11.5	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	25.1	21.1	20.8	11.9	8.8	11.5	10.8
LOS	B	C	C	C	B	A	B	B
Approach Delay		25.0		20.8		10.4		11.0
Approach LOS		C		C		B		B
Intersection Summary								
Cycle Length: 130								
Actuated Cycle Length: 79.4								
Natural Cycle: 45								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.74								
Intersection Signal Delay: 21.2								
Intersection Capacity Utilization 47.4%								
Analysis Period (min) 15								
Intersection LOS: C								
ICU Level of Service A								

Splits and Phases: 1: Mapleview Drive E & Goodwin Drive

↰ 02	↱ 04
06 s	84 s
↰ 06	↱ 08
06 s	84 s

Queues

1: Mapleview Drive E & Goodwin Drive

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	962	16	674	92	87	49	93
v/c Ratio	0.08	0.74	0.16	0.53	0.13	0.09	0.07	0.09
Control Delay	17.0	25.1	21.1	20.8	11.9	8.8	11.5	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	25.1	21.1	20.8	11.9	8.8	11.5	10.8
Queue Length 50th (m)	1.6	63.4	1.6	40.0	6.6	4.3	3.4	6.2
Queue Length 95th (m)	5.4	83.0	6.1	54.3	17.2	13.2	10.4	16.1
Internal Link Dist (m)		775.4		114.0		70.9		234.1
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	523	3488	262	3393	703	957	689	993
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.28	0.06	0.20	0.13	0.09	0.07	0.09
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/08/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	15	780	105	15	550	70	85	50	30	45	75	10
Future Volume (vph)	15	780	105	15	550	70	85	50	30	45	75	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flt Permitted	0.29	1.00		0.14	1.00		0.70	1.00		0.70	1.00	
Satd. Flow (perm)	536	3585		269	3487		1339	1802		1313	1887	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	848	114	16	598	76	92	54	33	49	82	11
RTOR Reduction (vph)	0	13	0	0	12	0	0	12	0	0	2	0
Lane Group Flow (vph)	16	949	0	16	662	0	92	75	0	49	91	0
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.6	28.6		28.6	28.6		41.7	41.7		41.7	41.7	
Effective Green, g (s)	28.6	28.6		28.6	28.6		41.7	41.7		41.7	41.7	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.53	0.53		0.53	0.53	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	193	1292		97	1257		704	947		690	992	
v/s Ratio Prot		c0.26			0.19			0.04			0.05	
v/s Ratio Perm	0.03			0.06			c0.07			0.04		
v/c Ratio	0.08	0.73		0.16	0.53		0.13	0.08		0.07	0.09	
Uniform Delay, d1	16.7	22.0		17.2	20.0		9.6	9.3		9.3	9.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.2		0.8	0.4		0.4	0.2		0.2	0.2	
Delay (s)	16.9	24.2		18.0	20.4		10.0	9.5		9.5	9.5	
Level of Service	B	C		B	C		A	A		A	A	
Approach Delay (s)		24.1			20.4			9.7			9.5	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		20.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.38										
Actuated Cycle Length (s)		79.3			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		47.4%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Site Driveway (West) & Mapleview Drive E

04/08/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱	↱	↰	↱	↰	↱
Traffic Volume (veh/h)	775	80	5	615	20	85
Future Volume (Veh/h)	775	80	5	615	20	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	842	87		668	22	92
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (m)	138			215		
pX, platoon unblocked			0.78		0.83	0.78
vC, conflicting volume			929		1230	464
vC1, stage 1 conf vol					886	
vC2, stage 2 conf vol					344	
vCu, unblocked vol			338		340	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	89
cM capacity (veh/h)			948		561	844
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	561	368	228	445	114	
Volume Left	0	0	5	0	22	
Volume Right	0	87	0	0	92	
cSH	1700	1700	948	1700	769	
Volume to Capacity	0.33	0.22	0.01	0.26	0.15	
Queue Length 95th (m)	0.0	0.0	0.1	0.0	3.9	
Control Delay (s)	0.0	0.0	0.2	0.0	10.5	
Lane LOS			A		B	
Approach Delay (s)	0.0		0.1		10.5	
Approach LOS					B	
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			Err%		ICU Level of Service	H
Analysis Period (min)			15			

Timings

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	115	620	155	445	215	90	570	150	160	600	85
Future Volume (vph)	115	620	155	445	215	90	570	150	160	600	85
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	7.0	12.0	7.0	12.0	12.0	7.0	40.0	40.0	7.0	40.0	40.0
Minimum Split (s)	11.0	35.0	11.0	35.0	35.0	11.0	46.0	46.0	11.0	46.0	46.0
Total Split (s)	19.0	45.0	19.0	45.0	45.0	15.0	49.0	49.0	17.0	51.0	51.0
Total Split (%)	14.6%	34.6%	14.6%	34.6%	34.6%	11.5%	37.7%	37.7%	13.1%	39.2%	39.2%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	2.5	0.0	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0
Total Lost Time (s)	6.5	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.5	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	36.5	29.6	39.8	31.2	31.2	46.1	40.4	40.4	50.0	42.3	42.3
Actuated g/C Ratio	0.32	0.26	0.35	0.28	0.28	0.41	0.36	0.36	0.44	0.38	0.38
v/c Ratio	0.36	0.78	0.73	0.45	0.38	0.28	0.44	0.23	0.45	0.45	0.13
Control Delay	24.9	44.0	43.1	35.0	7.2	20.4	30.6	5.7	22.4	29.1	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	44.0	43.1	35.0	7.2	20.4	30.6	5.7	22.4	29.1	5.7
LOS	C	D	D	D	A	C	C	A	C	C	A
Approach Delay		41.4		29.2			24.8			25.5	
Approach LOS		D		C			C			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 112.5

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 30.3

Intersection LOS: C

Intersection Capacity Utilization 92.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Yonge Street & Mapleview Drive E

↩	↩	↩	↩
17 s	49 s	19 s	45 s
↩	↩	↩	↩
15 s	51 s	19 s	45 s

Queues

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	737	157	449	217	91	576	152	162	606	86
v/c Ratio	0.36	0.78	0.73	0.45	0.38	0.28	0.44	0.23	0.45	0.45	0.13
Control Delay	24.9	44.0	43.1	35.0	7.2	20.4	30.6	5.7	22.4	29.1	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	44.0	43.1	35.0	7.2	20.4	30.6	5.7	22.4	29.1	5.7
Queue Length 50th (m)	16.1	77.6	22.4	42.8	2.1	10.5	50.7	0.0	19.4	51.8	0.0
Queue Length 95th (m)	28.2	104.1	38.6	60.5	19.5	23.6	79.1	14.8	38.6	81.6	10.1
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	408	1257	270	1275	677	368	1395	709	400	1460	681
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	0.28	0.59	0.58	0.35	0.32	0.25	0.41	0.21	0.41	0.42	0.13

Intersection Summary

HCM Signalized Intersection Capacity Analysis 3: Yonge Street & Mapleview Drive E

04/08/2022

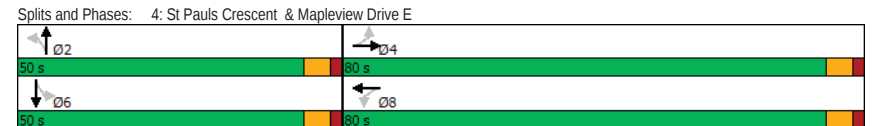
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	115	620	110	155	445	215	90	570	150	160	600	85
Future Volume (vph)	115	620	110	155	445	215	90	570	150	160	600	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.5	6.0		6.5	6.0	6.0	6.5	6.0	6.0	6.5	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1878	3562		1807	3614	1545	1860	3614	1597	1879	3614	1551
Flt Permitted	0.41	1.00		0.14	1.00	1.00	0.34	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	766	3562		252	3614	1545	640	3614	1597	601	3614	1551
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	116	626	111	157	449	217	91	576	152	162	606	86
RTOR Reduction (vph)	0	12	0	0	0	147	0	0	97	0	0	54
Lane Group Flow (vph)	116	725	0	157	449	70	91	576	55	162	606	32
Confl. Peds. (#/hr)	1			1			1					
Heavy Vehicles (%)	0%	0%	1%	4%	1%	2%	1%	1%	0%	0%	1%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	39.6	29.6		42.8	31.2	31.2	49.1	40.4	40.4	53.1	42.4	42.4
Effective Green, g (s)	34.6	29.6		37.8	31.2	31.2	44.1	40.4	40.4	48.1	42.4	42.4
Actuated g/C Ratio	0.31	0.26		0.34	0.28	0.28	0.39	0.36	0.36	0.43	0.38	0.38
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	938		210	1004	429	318	1300	574	350	1364	585
v/s Ratio Prot	0.02	c0.20		c0.06	0.12		0.02	0.16		c0.03	c0.17	
v/s Ratio Perm	0.09			0.19		0.05	0.10		0.03	0.16		0.02
v/c Ratio	0.37	0.77		0.75	0.45	0.16	0.29	0.44	0.10	0.46	0.44	0.06
Uniform Delay, d1	28.8	38.2		29.0	33.4	30.7	22.0	27.4	23.8	20.7	26.1	22.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	4.0		13.5	0.3	0.2	0.5	0.2	0.1	1.0	0.2	0.0
Delay (s)	29.5	42.3		42.5	33.8	30.8	22.5	27.6	23.9	21.7	26.4	22.3
Level of Service	C	D		D	C	C	C	C	C	C	C	C
Approach Delay (s)		40.5			34.7			26.4			25.1	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	112.3	Sum of lost time (s)	25.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Timings 4: St Pauls Crescent & Mapleview Drive E

04/08/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱	↰	↱	↰	↱
Traffic Volume (vph)	25	900	40	780	30	5	180	5
Future Volume (vph)	25	900	40	780	30	5	180	5
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	80.0	80.0	80.0	80.0	50.0	50.0	50.0	50.0
Total Split (%)	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%	38.5%	38.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	31.9	31.9	31.9	31.9		44.2		44.2
Actuated g/C Ratio	0.36	0.36	0.36	0.36		0.50		0.50
v/c Ratio	0.21	0.74	0.46	0.68		0.20		0.33
Control Delay	23.5	28.2	38.4	26.4		6.2		16.5
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	23.5	28.2	38.4	26.4		6.2		16.5
LOS	C	C	D	C		A		B
Approach Delay		28.0		27.0		6.2		16.5
Approach LOS		C		C		A		B
Intersection Summary								
Cycle Length: 130								
Actuated Cycle Length: 88.2								
Natural Cycle: 50								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.74								
Intersection Signal Delay: 25.0								
Intersection Capacity Utilization 68.1%								
Analysis Period (min) 15								



Queues

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	27	983	43	881	168	206
v/c Ratio	0.21	0.74	0.46	0.68	0.20	0.33
Control Delay	23.5	28.2	38.4	26.4	6.2	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	28.2	38.4	26.4	6.2	16.5
Queue Length 50th (m)	3.1	74.6	5.4	64.6	4.7	19.7
Queue Length 95th (m)	9.4	95.2	16.3	83.4	17.4	42.4
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	294	3073	220	2998	848	622
Starvation Cap Reductn	0	150	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	0.09	0.34	0.20	0.29	0.20	0.33
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	25	900	5	40	780	30	30	5	120	180	5	5
Future Volume (vph)	25	900	5	40	780	30	30	5	120	180	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Fltpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Fltpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Fltpb, ped/bikes	1.00	1.00		1.00	0.99			0.90			1.00	
Fltpb, ped/bikes	0.95	1.00		0.95	1.00			0.99			0.95	
Satd. Flow (prot)	1783	3647		1785	3557			1704			1828	
Fltpb, ped/bikes	0.19	1.00		0.14	1.00			0.92			0.65	
Satd. Flow (perm)	349	3647		261	3557			1581			1241	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	978	5	43	848	33	33	5	130	196	5	5
RTOR Reduction (vph)	0	1	0	0	3	0	0	56	0	0	0	0
Lane Group Flow (vph)	27	982	0	43	878	0	0	112	0	0	206	0
Confl. Peds. (#/hr)	3					3						
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	31.9	31.9		31.9	31.9			44.2			44.2	
Effective Green, g (s)	31.9	31.9		31.9	31.9			44.2			44.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36			0.50			0.50	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	126	1320		94	1287			793			622	
v/s Ratio Prot		c0.27			0.25							
v/s Ratio Perm	0.08			0.16				0.07			c0.17	
v/c Ratio	0.21	0.74		0.46	0.68			0.14			0.33	
Uniform Delay, d1	19.4	24.5		21.5	23.8			11.8			13.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	2.3		3.5	1.5			0.4			1.4	
Delay (s)	20.3	26.9		25.0	25.3			12.1			14.5	
Level of Service	C	C		C	C			B			B	
Approach Delay (s)		26.7			25.3			12.1			14.5	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay		24.0			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.50										
Actuated Cycle Length (s)		88.1			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		68.1%			ICU Level of Service			C				
Analysis Period (min)		15										
Critical Lane Group												

Timings

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↖	↗	↕	↖	↗
Traffic Volume (vph)	50	115	895	85	795
Future Volume (vph)	50	115	895	85	795
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		8		6	
Detector Phase	8	8	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	24.0	24.0	24.0
Total Split (s)	26.0	26.0	104.0	104.0	104.0
Total Split (%)	20.0%	20.0%	80.0%	80.0%	80.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	Max	Max	Max
Act Effct Green (s)	10.8	10.8	100.2	100.2	100.2
Actuated g/C Ratio	0.09	0.09	0.83	0.83	0.83
v/c Ratio	0.51	0.49	0.33	0.21	0.29
Control Delay	68.2	15.2	3.0	3.8	2.8
Queue Delay	0.0	0.0	0.3	0.0	0.0
Total Delay	68.2	15.2	3.3	3.8	2.8
LOS	E	B	A	A	A
Approach Delay	31.2		3.3		2.9
Approach LOS	C		A		A

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 121

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 5.5

Intersection LOS: A

Intersection Capacity Utilization 47.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Yonge Street & St Pauls Crescent



Queues

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	54	125	978	92	864
v/c Ratio	0.51	0.49	0.33	0.21	0.29
Control Delay	68.2	15.2	3.0	3.8	2.8
Queue Delay	0.0	0.0	0.3	0.0	0.0
Total Delay	68.2	15.2	3.3	3.8	2.8
Queue Length 50th (m)	12.3	0.0	22.1	3.5	18.7
Queue Length 95th (m)	25.3	17.4	36.5	9.6	31.3
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	216	392	2989	444	2992
Starvation Cap Reductn	0	0	1160	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.32	0.53	0.21	0.29

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/08/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	115	895	5	85	795
Future Volume (vph)	50	115	895	5	85	795
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Flt Protected	1.00	1.00	1.00		1.00	1.00
Flt Permitted	0.95	1.00	1.00		0.29	1.00
Satd. Flow (perm)	1190	1597	3611		537	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	125	973	5	92	864
RTOR Reduction (vph)	0	114	0	0	0	0
Lane Group Flow (vph)	54	11	978	0	92	864
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	50%	0%	1%	0%	0%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	10.8	10.8	100.2		100.2	100.2
Effective Green, g (s)	10.8	10.8	100.2		100.2	100.2
Actuated g/C Ratio	0.09	0.09	0.83		0.83	0.83
Clearance Time (s)	4.0	4.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	106	142	2990		444	2992
v/s Ratio Prot	c0.05		c0.27			0.24
v/s Ratio Perm		0.01			0.17	
v/c Ratio	0.51	0.08	0.33		0.21	0.29
Uniform Delay, d1	52.6	50.5	2.5		2.2	2.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.8	0.2	0.3		1.1	0.2
Delay (s)	56.4	50.8	2.7		3.2	2.6
Level of Service	E	D	A		A	A
Approach Delay (s)	52.5		2.7			2.7
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			6.9		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.34			
Actuated Cycle Length (s)			121.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			47.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
6: Yonge Street & Site Driveway (East)

04/08/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	55	40	795	800	65
Future Volume (Veh/h)	15	55	40	795	800	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	60	43	864	870	71
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type				None	None	
Median storage (veh)						
Upstream signal (m)					176	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	1424	470	941			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1202	116	652			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	93	95			
cM capacity (veh/h)	147	802	816			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	76	43	432	432	580	361
Volume Left	16	43	0	0	0	0
Volume Right	60	0	0	0	0	71
cSH	699	816	1700	1700	1700	1700
Volume to Capacity	0.11	0.05	0.25	0.25	0.34	0.21
Queue Length 95th (m)	2.8	1.3	0.0	0.0	0.0	0.0
Control Delay (s)	14.6	9.7	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	14.6	0.5			0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			40.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Yonge Street & St Pauls Crescent

04/08/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕		↕	↕
Traffic Volume (veh/h)	20	0	835	50	5	850
Future Volume (Veh/h)	20	0	835	50	5	850
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	21	0	888	53	5	904
Pedestrians	1					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type		None			None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1378	472			942	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1378	472			942	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	100			99	
cM capacity (veh/h)	135	544			735	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	21	592	349	5	452	452
Volume Left	21	0	0	5	0	0
Volume Right	0	0	53	0	0	0
cSH	135	1700	1700	735	1700	1700
Volume to Capacity	0.16	0.35	0.21	0.01	0.27	0.27
Queue Length 95th (m)	4.1	0.0	0.0	0.2	0.0	0.0
Control Delay (s)	36.6	0.0	0.0	9.9	0.0	0.0
Lane LOS	E			A		
Approach Delay (s)	36.6	0.0		0.1		
Approach LOS	E					
Intersection Summary						
Average Delay		0.4				
Intersection Capacity Utilization		34.7%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: Site Dwy (EBR IN ONLY) & Mapleview Drive E

04/08/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕	↕		↕		
Traffic Volume (veh/h)	845	15	0	620	0	0
Future Volume (Veh/h)	845	15	0	620	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	918	16	0	674	0	0
Pedestrians				1		
Lane Width (m)				3.7		
Walking Speed (m/s)				1.1		
Percent Blockage				0		
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (m)	215			137		
pX, platoon unblocked			0.81		0.86	0.81
vC, conflicting volume			934		1263	468
vC1, stage 1 conf vol					926	
vC2, stage 2 conf vol					337	
vCu, unblocked vol			439		451	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			901		491	874
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	612	322	337	337		
Volume Left	0	0	0	0		
Volume Right	0	16	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.36	0.19	0.20	0.20		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		34.2%		ICU Level of Service	A	
Analysis Period (min)		15				

1: Mapleview Drive E & Goodwin Drive

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	15	760	15	570	105	50	45	75
Future Volume (vph)	15	760	15	570	105	50	45	75
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	69.0	69.0	69.0	69.0	41.0	41.0	41.0	41.0
Total Split (%)	62.7%	62.7%	62.7%	62.7%	37.3%	37.3%	37.3%	37.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	25.4	25.4	25.4	25.4	36.7	36.7	36.7	36.7
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.52	0.52	0.52	0.52
v/c Ratio	0.08	0.70	0.14	0.51	0.16	0.09	0.07	0.10
Control Delay	15.4	22.0	18.1	18.6	11.5	7.9	10.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	22.0	18.1	18.6	11.5	7.9	10.8	9.9
LOS	B	C	B	B	B	A	B	A
Approach Delay		21.9		18.6		9.9		10.2
Approach LOS		C		B		A		B

Cycle Length: 110	
Actuated Cycle Length: 71.2	
Natural Cycle: 45	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 47.0%	ICU Level of Service A
Analysis Period (min) 15	

1: Mapleview Drive E & Goodwin Drive

[illegible]

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/08/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	15	760	110	15	570	65	105	50	30	45	75	15
Future Volume (vph)	15	760	110	15	570	65	105	50	30	45	75	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flt Permitted	0.30	1.00		0.17	1.00		0.70	1.00		0.70	1.00	
Satd. Flow (perm)	560	3581		319	3586		1335	1804		1318	1833	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	16	792	115	16	594	68	109	52	31	47	78	16
RTOR Reduction (vph)	0	16	0	0	12	0	0	14	0	0	5	0
Lane Group Flow (vph)	16	891	0	16	650	0	109	69	0	47	89	0
Confl. Peds. (#/hr)	1					1	2		2	2		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	25.4	25.4		25.4	25.4		36.7	36.7		36.7	36.7	
Effective Green, g (s)	25.4	25.4		25.4	25.4		36.7	36.7		36.7	36.7	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.52	0.52		0.52	0.52	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	200	1279		113	1281		689	931		680	946	
v/s Ratio Prot		c0.25			0.18			0.04			0.05	
v/s Ratio Perm	0.03			0.05			c0.08			0.04		
v/c Ratio	0.08	0.70		0.14	0.51		0.16	0.07		0.07	0.09	
Uniform Delay, d1	15.1	19.6		15.5	17.9		9.1	8.7		8.6	8.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.7		0.6	0.3		0.5	0.2		0.2	0.2	
Delay (s)	15.3	21.2		16.0	18.3		9.6	8.8		8.8	8.9	
Level of Service	B	C		B	B		A	A		A	A	
Approach Delay (s)		21.1			18.2			9.2			8.9	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM 2000 Control Delay		18.0			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.38										
Actuated Cycle Length (s)		71.1			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		47.0%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Site Driveway (West) & Mapleview Drive E

04/08/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱	↱	↰	↱	↰	↱
Traffic Volume (veh/h)	720	115	15	620	30	105
Future Volume (Veh/h)	720	115	15	620	30	105
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	783	125	16	674	33	114
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (m)	138			215		
pX, platoon unblocked			0.80		0.85	0.80
vC, conflicting volume			908		1214	454
vC1, stage 1 conf vol					846	
vC2, stage 2 conf vol					369	
vCu, unblocked vol			380		344	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			98		94	87
cM capacity (veh/h)			938		563	866
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	522	386	241	449	147	
Volume Left	0	0	16	0	33	
Volume Right	0	125	0	0	114	
cSH	1700	1700	938	1700	773	
Volume to Capacity	0.31	0.23	0.02	0.26	0.19	
Queue Length 95th (m)	0.0	0.0	0.4	0.0	5.3	
Control Delay (s)	0.0	0.0	0.8	0.0	10.8	
Lane LOS			A		B	
Approach Delay (s)	0.0		0.3		10.8	
Approach LOS					B	
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			Err%		ICU Level of Service	H
Analysis Period (min)			15			

Timings

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	135	570	145	465	200	95	565	130	145	580	75
Future Volume (vph)	135	570	145	465	200	95	565	130	145	580	75
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	7.0	12.0	7.0	12.0	12.0	7.0	40.0	40.0	7.0	40.0	40.0
Minimum Split (s)	11.0	35.0	11.0	35.0	35.0	11.0	46.0	46.0	11.0	46.0	46.0
Total Split (s)	15.0	39.0	13.0	37.0	37.0	11.0	47.0	47.0	11.0	47.0	47.0
Total Split (%)	13.6%	35.5%	11.8%	33.6%	33.6%	10.0%	42.7%	42.7%	10.0%	42.7%	42.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	37.0	25.2	34.9	24.2	24.2	50.1	41.1	41.1	51.0	43.5	43.5
Actuated g/C Ratio	0.36	0.25	0.34	0.24	0.24	0.49	0.40	0.40	0.50	0.43	0.43
v/c Ratio	0.40	0.76	0.62	0.54	0.38	0.23	0.39	0.18	0.36	0.38	0.10
Control Delay	23.8	40.4	32.9	36.6	6.6	14.8	23.5	4.6	16.5	22.6	2.1
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	23.8	40.4	32.9	36.6	6.6	14.8	23.5	4.6	16.5	22.6	2.1
LOS	C	D	C	D	A	B	C	A	B	C	A
Approach Delay		37.6		28.6			19.3			19.6	
Approach LOS		D		C			B			B	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 102.1

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 26.3

Intersection LOS: C

Intersection Capacity Utilization 85.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Yonge Street & Mapleview Drive E

01	02	03	04
11 s	47 s	13 s	39 s
05	06	07	08
11 s	47 s	15 s	37 s

Queues

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	136	677	146	470	202	96	571	131	146	586	76
v/c Ratio	0.40	0.76	0.62	0.54	0.38	0.23	0.39	0.18	0.36	0.38	0.10
Control Delay	23.8	40.4	32.9	36.6	6.6	14.8	23.5	4.6	16.5	22.6	2.1
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	23.8	40.4	32.9	36.6	6.6	14.8	23.5	4.6	16.5	22.6	2.1
Queue Length 50th (m)	17.4	63.9	18.9	43.5	0.0	9.1	41.8	0.0	14.3	43.2	0.0
Queue Length 95th (m)	29.8	83.1	32.1	59.0	16.5	19.8	62.4	11.8	28.5	64.3	4.5
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	361	1169	240	1111	621	417	1455	721	405	1539	729
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	0.38	0.58	0.61	0.42	0.33	0.23	0.39	0.18	0.36	0.38	0.10
Intersection Summary											

HCM Signalized Intersection Capacity Analysis 3: Yonge Street & Maplevue Drive E

04/08/2022

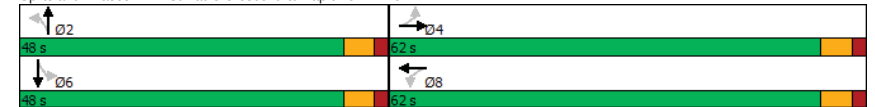
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	135	570	100	145	465	200	95	565	130	145	580	75
Future Volume (vph)	135	570	100	145	465	200	95	565	130	145	580	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	3568		1700	3650	1581	1750	3614	1597	1750	3614	1566
Flt Permitted	0.34	1.00		0.20	1.00	1.00	0.38	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	632	3568		353	3650	1581	703	3614	1597	663	3614	1566
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	136	576	101	146	470	202	96	571	131	146	586	76
RTOR Reduction (vph)	0	14	0	0	0	155	0	0	78	0	0	44
Lane Group Flow (vph)	136	663	0	146	470	47	96	571	53	146	586	32
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	2%	1%	0%	2%	1%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	35.1	25.3		32.9	24.2	24.2	47.5	42.0	42.0	50.5	43.5	43.5
Effective Green, g (s)	35.1	25.3		32.9	24.2	24.2	47.5	42.0	42.0	50.5	43.5	43.5
Actuated g/C Ratio	0.34	0.25		0.32	0.23	0.23	0.46	0.41	0.41	0.49	0.42	0.42
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	325	876		226	857	371	380	1473	651	398	1526	661
v/s Ratio Prot	0.04	c0.19		c0.05	0.13		0.01	0.16		c0.02	c0.16	
v/s Ratio Perm	0.10			0.15		0.03	0.10		0.03	0.15		0.02
v/c Ratio	0.42	0.76		0.65	0.55	0.13	0.25	0.39	0.08	0.37	0.38	0.05
Uniform Delay, d1	24.6	36.0		27.0	34.6	31.1	15.9	21.5	18.7	15.0	20.5	17.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	3.8		6.2	0.7	0.2	0.4	0.8	0.2	0.6	0.7	0.1
Delay (s)	25.4	39.8		33.2	35.3	31.2	16.3	22.2	18.9	15.5	21.2	17.7
Level of Service	C	D		C	D	C	B	C	B	B	C	B
Approach Delay (s)		37.4			33.9			21.0			19.9	
Approach LOS		D			C			C			B	
Intersection Summary												
HCM 2000 Control Delay		28.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.53										
Actuated Cycle Length (s)		103.0			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		85.0%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

Timings 4: St Pauls Crescent & Maplevue Drive E

04/08/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱	↰	↱	↰	↱
Traffic Volume (vph)	25	820	30	770	35	5	180	0
Future Volume (vph)	25	820	30	770	35	5	180	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	62.0	62.0	62.0	62.0	48.0	48.0	48.0	48.0
Total Split (%)	56.4%	56.4%	56.4%	56.4%	43.6%	43.6%	43.6%	43.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	28.3	28.3	28.3	28.3	42.2	42.2	42.2	42.2
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.51	0.51	0.51	0.51
v/c Ratio	0.23	0.73	0.30	0.69	0.16	0.31	0.31	0.31
Control Delay	24.0	27.3	27.3	26.2	5.8	12.9	12.9	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	27.3	27.3	26.2	5.8	12.9	12.9	12.9
LOS	C	C	C	C	A	B	B	B
Approach Delay		27.2		26.2		5.8		12.9
Approach LOS		C		C		A		B
Intersection Summary								
Cycle Length: 110								
Actuated Cycle Length: 82.6								
Natural Cycle: 50								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.73								
Intersection Signal Delay: 24.2								
Intersection Capacity Utilization 51.9%								
Analysis Period (min) 15								

Splits and Phases: 4: St Pauls Crescent & Maplevue Drive E



Queues

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	↗	→	↘	←	↑	↓
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	27	891	33	864	130	201
v/c Ratio	0.23	0.73	0.30	0.69	0.16	0.31
Control Delay	24.0	27.3	27.3	26.2	5.8	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	27.3	27.3	26.2	5.8	12.9
Queue Length 50th (m)	3.0	63.3	3.7	60.2	3.2	14.4
Queue Length 95th (m)	9.2	82.2	11.3	78.4	13.7	34.6
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	237	2438	219	2475	831	640
Starvation Cap Reductn	0	68	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.38	0.15	0.35	0.16	0.31
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	↗	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↙	↗↘		↙	↗↘			↗↘			↗↘			
Traffic Volume (vph)	25	820	0	30	770	25	35	5	80	180	0	5		
Future Volume (vph)	25	820	0	30	770	25	35	5	80	180	0	5		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5		
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0			
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00			
Flt	1.00	1.00		1.00	1.00			0.91			1.00			
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95			
Satd. Flow (prot)	1785	3579		1785	3633			1722			1826			
Flt Permitted	0.19	1.00		0.17	1.00			0.88			0.64			
Satd. Flow (perm)	348	3579		322	3633			1543			1224			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	27	891	0	33	837	27	38	5	87	196	0	5		
RTOR Reduction (vph)	0	0	0	0	3	0	0	42	0	0	15	0		
Lane Group Flow (vph)	27	891	0	33	861	0	0	88	0	0	186	0		
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA			
Protected Phases		4			8			2			6			
Permitted Phases	4			8			2			6				
Actuated Green, G (s)	28.3	28.3		28.3	28.3			42.2			42.2			
Effective Green, g (s)	28.3	28.3		28.3	28.3			42.2			42.2			
Actuated g/C Ratio	0.34	0.34		0.34	0.34			0.51			0.51			
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0			
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0			
Lane Grp Cap (vph)	119	1227		110	1246			789			626			
v/s Ratio Prot		c0.25			0.24									
v/s Ratio Perm	0.08			0.10				0.06			c0.15			
v/c Ratio	0.23	0.73		0.30	0.69			0.11			0.30			
Uniform Delay, d1	19.3	23.7		19.8	23.3			10.4			11.6			
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00			
Incremental Delay, d2	1.0	2.2		1.5	1.7			0.3			1.2			
Delay (s)	20.3	25.9		21.4	25.0			10.7			12.8			
Level of Service	C	C		C	C			B			B			
Approach Delay (s)		25.7			24.9			10.7			12.8			
Approach LOS		C			C			B			B			
Intersection Summary														
HCM 2000 Control Delay		23.3			HCM 2000 Level of Service			C						
HCM 2000 Volume to Capacity ratio		0.47												
Actuated Cycle Length (s)		82.5			Sum of lost time (s)			12.0						
Intersection Capacity Utilization		51.9%			ICU Level of Service			A						
Analysis Period (min)		15												
c Critical Lane Group														

Timings

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↩	↩	↕	↩	↕
Traffic Volume (vph)	50	115	900	95	750
Future Volume (vph)	50	115	900	95	750
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		8		6	
Detector Phase	8	8	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	24.0	24.0	24.0
Total Split (s)	26.0	26.0	84.0	84.0	84.0
Total Split (%)	23.6%	23.6%	76.4%	76.4%	76.4%
Yellow Time (s)	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	Max	Max	Max
Act Effct Green (s)	8.5	8.5	83.1	83.1	83.1
Actuated g/C Ratio	0.08	0.08	0.82	0.82	0.82
v/c Ratio	0.36	0.51	0.33	0.24	0.28
Control Delay	49.0	15.2	2.8	3.9	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	15.2	2.8	3.9	2.6
LOS	D	B	A	A	A
Approach Delay	25.4		2.8		2.7
Approach LOS	C		A		A

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 101.6

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 4.7

Intersection LOS: A

Intersection Capacity Utilization 47.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Yonge Street & St Pauls Crescent



Queues

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	54	125	978	103	815
v/c Ratio	0.36	0.51	0.33	0.24	0.28
Control Delay	49.0	15.2	2.8	3.9	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	15.2	2.8	3.9	2.6
Queue Length 50th (m)	9.9	0.0	18.3	3.4	14.4
Queue Length 95th (m)	21.1	15.9	29.0	9.2	23.2
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	387	444	2956	432	2956
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	0.14	0.28	0.33	0.24	0.28

Intersection Summary

HCM Signalized Intersection Capacity Analysis 5: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	115	900	0	95	750
Future Volume (vph)	50	115	900	0	95	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Flt Protected	1.00	1.00	1.00		1.00	1.00
Flt Permitted	0.95	1.00	1.00		0.29	1.00
Satd. Flow (perm)	1785	1597	3614		529	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	125	978	0	103	815
RTOR Reduction (vph)	0	115	0	0	0	0
Lane Group Flow (vph)	54	10	978	0	103	815
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	8.5	8.5	83.1		83.1	83.1
Effective Green, g (s)	8.5	8.5	83.1		83.1	83.1
Actuated g/C Ratio	0.08	0.08	0.82		0.82	0.82
Clearance Time (s)	4.0	4.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	149	133	2955		432	2955
v/s Ratio Prot	c0.03		c0.27			0.23
v/s Ratio Perm		0.01			0.19	
v/c Ratio	0.36	0.08	0.33		0.24	0.28
Uniform Delay, d1	44.0	42.9	2.3		2.1	2.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.3	0.3		1.3	0.2
Delay (s)	45.5	43.2	2.6		3.4	2.4
Level of Service	D	D	A		A	A
Approach Delay (s)	43.9		2.6			2.5
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			6.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.33			
Actuated Cycle Length (s)			101.6		Sum of lost time (s)	10.0
Intersection Capacity Utilization			47.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 6: Yonge Street & Site Driveway (East)

04/08/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	80	60	765	735	90
Future Volume (Veh/h)	25	80	60	765	735	90
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	87	65	832	799	98
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type				None	None	
Median storage (veh)						
Upstream signal (m)					176	
pX, platoon unblocked	0.89	0.89	0.89			
vC, conflicting volume	1394	448	897			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1200	141	643			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	89	92			
cM capacity (veh/h)	146	787	837			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	114	65	416	416	533	364
Volume Left	27	65	0	0	0	0
Volume Right	87	0	0	0	0	98
cSH	617	837	1700	1700	1700	1700
Volume to Capacity	0.18	0.08	0.24	0.24	0.31	0.21
Queue Length 95th (m)	5.1	1.9	0.0	0.0	0.0	0.0
Control Delay (s)	16.1	9.7	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	16.1	0.7			0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			39.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	0	825	15	0	815
Future Volume (Veh/h)	10	0	825	15	0	815
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	0	887	16	0	876
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None			None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1333	452			903	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1333	452			903	
tC, single (s)	6.8	6.9			6.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			3.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	148	561			354	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	11	591	312	0	438	438
Volume Left	11	0	0	0	0	0
Volume Right	0	0	16	0	0	0
cSH	148	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.35	0.18	0.00	0.26	0.26
Queue Length 95th (m)	1.8	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	31.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	D					
Approach Delay (s)	31.3	0.0		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay		0.2				
Intersection Capacity Utilization		33.3%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
8: Site Dwy (EBR IN ONLY) & Mapleview Drive E

04/08/2022

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	805	20	0	635	0	0
Future Volume (Veh/h)	805	20	0	635	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	875	22	0	690	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (m)	215			137		
pX, platoon unblocked			0.85		0.90	0.85
vC, conflicting volume			897		1231	448
vC1, stage 1 conf vol					886	
vC2, stage 2 conf vol					345	
vCu, unblocked vol			516		487	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			886		473	918
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	583	314	345	345		
Volume Left	0	0	0	0		
Volume Right	0	22	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.34	0.18	0.20	0.20		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		26.2%		ICU Level of Service	A	
Analysis Period (min)		15				

1: Maplevue Drive E & Goodwin Drive

→ ← ↶ ↑ ↷ ↓

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.8	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

02 	04
06 	08

1: Mapleview Drive E & Goodwin Drive

→ ← ↘ ↑ ↙ ↓

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/08/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	0	680	0	0	1205	0	50	50	30	40	75	10
Future Volume (vph)	0	680	0	0	1205	0	50	50	30	40	75	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00				1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00				1.00		1.00	1.00		1.00	1.00	
Flt Protected	1.00				1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3411				3579		1825	1805		1783	1853	
Flt Permitted	1.00				1.00		0.70	1.00		0.70	1.00	
Satd. Flow (perm)	3411				3579		1337	1805		1312	1853	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	756	0	0	1339	0	56	56	33	44	83	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	14	0	0	3	0
Lane Group Flow (vph)	0	756	0	0	1339	0	56	75	0	44	91	0
Confl. Peds. (#/hr)	3		1	1		3			1	1		
Heavy Vehicles (%)	0%	7%	0%	0%	2%	0%	0%	0%	0%	0%	0%	16%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		37.9			37.9		27.8	27.8		27.8	27.8	
Effective Green, g (s)		37.9			37.9		27.8	27.8		27.8	27.8	
Actuated g/C Ratio		0.51			0.51		0.37	0.37		0.37	0.37	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1730			1815		497	671		488	689	
v/s Ratio Prot		0.22			0.37			0.04			0.05	
v/s Ratio Perm							0.04			0.03		
v/c Ratio		0.44			0.74		0.11	0.11		0.09	0.13	
Uniform Delay, d1		11.6			14.5		15.4	15.4		15.2	15.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			1.6		0.5	0.3		0.4	0.4	
Delay (s)		11.8			16.1		15.8	15.7		15.6	15.9	
Level of Service		B			B		B	B		B	B	
Approach Delay (s)		11.8			16.1			15.7			15.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

2031 Future Background AM Peak Hour
BA Group - RD

Synchro 11 Report
Page 3

Timings

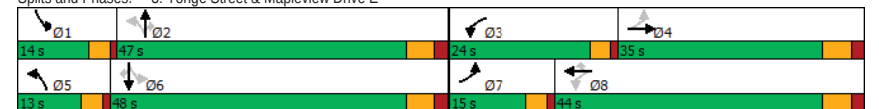
3: Yonge Street & Mapleview Drive E

04/08/2022

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	155	530	325	940	345	190	855	65	200	600	75
Future Volume (vph)	155	530	325	940	345	190	855	65	200	600	75
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	7.0	12.0	7.0	12.0	12.0	7.0	40.0	40.0	7.0	40.0	40.0
Minimum Split (s)	11.0	35.0	11.0	35.0	35.0	11.0	46.0	46.0	11.0	46.0	46.0
Total Split (s)	15.0	35.0	24.0	44.0	44.0	13.0	47.0	47.0	14.0	48.0	48.0
Total Split (%)	12.5%	29.2%	20.0%	36.7%	36.7%	10.8%	39.2%	39.2%	11.7%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	40.6	27.9	53.1	36.5	36.5	52.0	41.0	41.0	54.1	42.1	42.1
Actuated g/C Ratio	0.34	0.24	0.45	0.31	0.31	0.44	0.35	0.35	0.46	0.36	0.36
v/c Ratio	0.75	0.75	0.88	0.85	0.61	0.57	0.70	0.11	0.80	0.48	0.12
Control Delay	47.6	47.8	49.6	46.8	21.9	26.9	37.4	0.4	43.2	31.5	0.5
Queue Delay	0.0	0.0	0.0	6.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	47.8	49.6	53.5	22.0	26.9	37.4	0.4	43.2	31.5	0.5
LOS	D	D	D	D	C	C	D	A	D	C	A
Approach Delay		47.7		46.0			33.4			31.5	
Approach LOS		D		D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.2	
Natural Cycle: 105	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 40.2	Intersection LOS: D
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Yonge Street & Mapleview Drive E



2031 Future Background AM Peak Hour
BA Group - RD

Synchro 11 Report
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Queues

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	157	601	328	949	348	192	864	66	202	606	76
v/c Ratio	0.75	0.75	0.88	0.85	0.61	0.57	0.70	0.11	0.80	0.48	0.12
Control Delay	47.6	47.8	49.6	46.8	21.9	26.9	37.4	0.4	43.2	31.5	0.5
Queue Delay	0.0	0.0	0.0	6.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	47.8	49.6	53.5	22.0	26.9	37.4	0.4	43.2	31.5	0.5
Queue Length 50th (m)	21.6	67.7	50.8	108.7	34.2	26.1	92.6	0.0	27.6	58.4	0.0
Queue Length 95th (m)	#50.1	88.2	#98.0	134.2	65.3	41.4	115.5	0.0	#57.2	75.4	0.6
Internal Link Dist (m)	113.3		60.0		151.6		172.4				
Turn Bay Length (m)	70.0		55.0		35.0		75.0		60.0		30.0
Base Capacity (vph)	214	836	382	1163	590	335	1230	607	254	1262	629
Starvation Cap Reductn	0	0	0	174	11	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	0.73	0.72	0.86	0.96	0.60	0.57	0.70	0.11	0.80	0.48	0.12

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	155	530	65	325	940	345	190	855	65	200	600	75
Future Volume (vph)	155	530	65	325	940	345	190	855	65	200	600	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Frlp, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1638	3375		1684	3614	1473	1668	3544	1493	1716	3544	1521
Flt Permitted	0.14	1.00		0.20	1.00	1.00	0.33	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	247	3375		346	3614	1473	574	3544	1493	295	3544	1521
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	157	535	66	328	949	348	192	864	66	202	606	76
RTOR Reduction (vph)	0	8	0	0	119	0	0	43	0	0	0	49
Lane Group Flow (vph)	157	593	0	328	949	229	192	864	23	202	606	27
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	9%	7%	0%	6%	1%	7%	7%	3%	7%	4%	3%	5%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	38.5	27.9		51.1	36.5	36.5	49.9	41.0	41.0	52.1	42.1	42.1
Effective Green, g (s)	38.5	27.9		51.1	36.5	36.5	49.9	41.0	41.0	52.1	42.1	42.1
Actuated g/C Ratio	0.33	0.24		0.43	0.31	0.31	0.42	0.35	0.35	0.44	0.36	0.36
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	205	797		367	1116	455	324	1230	518	250	1263	542
v/s Ratio Prot	0.07	0.18		c0.15	0.26		0.04	0.24		c0.07	0.17	
v/s Ratio Perm	0.18			c0.24		0.16	0.20		0.02	c0.29		0.02
v/c Ratio	0.77	0.74		0.89	0.85	0.50	0.59	0.70	0.04	0.81	0.48	0.05
Uniform Delay, d1	31.3	41.8		25.8	38.2	33.4	22.7	33.3	25.6	23.8	29.5	24.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.6	3.8		23.0	6.4	0.9	2.9	3.4	0.2	17.2	1.3	0.2
Delay (s)	46.9	45.6		48.8	44.6	34.3	25.6	36.7	25.7	41.0	30.8	25.1
Level of Service	D	D		D	D	C	C	D	C	D	C	C
Approach Delay (s)	45.9			43.2			34.1			32.6		
Approach LOS	D			D			C			C		

Intersection Summary

HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Timings

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	760	320	1495	115	0	200	0
Future Volume (vph)	35	760	320	1495	115	0	200	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	92.0	92.0	92.0	92.0	28.0	28.0	28.0	28.0
Total Split (%)	76.7%	76.7%	76.7%	76.7%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	82.7	82.7	82.7	82.7		22.1		22.1
Actuated g/C Ratio	0.71	0.71	0.71	0.71		0.19		0.19
v/c Ratio	0.78	0.34	0.83	0.86		0.42		0.83
Control Delay	94.3	6.9	32.3	16.5		38.6		73.0
Queue Delay	0.0	0.5	0.0	0.0		0.0		0.0
Total Delay	94.3	7.4	32.3	16.5		38.6		73.0
LOS	F	A	C	B		D		E
Approach Delay		11.2		18.8		38.6		73.0
Approach LOS		B		B		D		E
Intersection Summary								
Cycle Length: 120								
Actuated Cycle Length: 116.8								
Natural Cycle: 90								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.86								
Intersection Signal Delay: 20.9								
Intersection Capacity Utilization 85.1%								
ICU Level of Service E								
Analysis Period (min) 15								

Splits and Phases: 4: St Pauls Crescent & Mapleview Drive E

	Ø2		Ø4
28 s		92 s	
	Ø6		Ø8
28 s		92 s	

Queues

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	826	348	2092	130	217
v/c Ratio	0.78	0.34	0.83	0.86	0.42	0.83
Control Delay	94.3	6.9	32.3	16.5	38.6	73.0
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	94.3	7.4	32.3	16.5	38.6	73.0
Queue Length 50th (m)	4.8	33.8	50.3	160.1	21.5	50.0
Queue Length 95th (m)	#17.2	42.4	#124.0	197.0	40.8	#92.2
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	52	2545	435	2550	311	261
Starvation Cap Reductn	0	1161	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	0.73	0.60	0.80	0.82	0.42	0.83
Intersection Summary						
# 95th percentile volume exceeds capacity, queue may be longer.						
Queue shown is maximum after two cycles.						

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	35	760	0	320	1495	430	115	0	5	200	0	0
Future Volume (vph)	35	760	0	320	1495	430	115	0	5	200	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.95			0.95	
Satd. Flow (prot)	1405	3444		1748	3422			1822			1755	
Flt Permitted	0.05	1.00		0.32	1.00			0.80			0.75	
Satd. Flow (perm)	72	3444		590	3422			1532			1385	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	826	0	348	1625	467	125	0	5	217	0	0
RTOR Reduction (vph)	0	0	0	0	23	0	0	22	0	0	0	0
Lane Group Flow (vph)	38	826	0	348	2069	0	0	108	0	0	217	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	27%	6%	0%	2%	3%	1%	0%	0%	2%	4%	50%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	82.6	82.6		82.6	82.6			22.1			22.1	
Effective Green, g (s)	82.6	82.6		82.6	82.6			22.1			22.1	
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.19			0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	50	2437		417	2422			290			262	
v/s Ratio Prot		0.24			c0.60							
v/s Ratio Perm	0.53			0.59			0.07				c0.16	
v/c Ratio	0.76	0.34		0.83	0.85		0.37				0.83	
Uniform Delay, d1	10.8	6.6		12.2	12.6		41.3				45.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00				1.00	
Incremental Delay, d2	48.9	0.1		13.4	3.2		3.6				25.0	
Delay (s)	59.7	6.6		25.6	15.8		44.9				70.5	
Level of Service	E	A		C	B		D				E	
Approach Delay (s)		9.0			17.2		44.9				70.5	
Approach LOS		A			B		D				E	

Intersection Summary

HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	116.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Timings

5: Yonge Street & St Pauls Crescent

04/08/2022

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↰	↱	↱	↰	↱
Traffic Volume (vph)	255	270	1340	195	620
Future Volume (vph)	255	270	1340	195	620
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	24.0	9.5	24.0
Total Split (s)	34.0	34.0	66.0	20.0	86.0
Total Split (%)	28.3%	28.3%	55.0%	16.7%	71.7%
Yellow Time (s)	3.0	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	6.0	3.0	6.0
Lead/Lag		Lag	Lead		
Lead-Lag Optimize?		Yes	Yes		
Recall Mode	None	None	Max	None	Max
Act Effct Green (s)	26.0	26.0	63.8	83.1	80.1
Actuated g/C Ratio	0.22	0.22	0.55	0.72	0.69
v/c Ratio	0.87	0.55	0.78	0.73	0.28
Control Delay	69.5	11.2	26.0	35.8	7.7
Queue Delay	0.0	0.0	1.7	0.0	0.0
Total Delay	69.5	11.2	27.7	35.8	7.7
LOS	E	B	C	D	A
Approach Delay	39.5		27.7		14.4
Approach LOS	D		C		B

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 116.1	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 74.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Yonge Street & St Pauls Crescent



Queues
5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group					
Lane Group Flow (vph)	277	293	1473	212	674
v/c Ratio	0.87	0.55	0.78	0.73	0.28
Control Delay	69.5	11.2	26.0	35.8	7.7
Queue Delay	0.0	0.0	1.7	0.0	0.0
Total Delay	69.5	11.2	27.7	35.8	7.7
Queue Length 50th (m)	61.0	6.6	144.8	25.5	30.4
Queue Length 95th (m)	#100.7	30.7	187.7	51.6	40.3
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	369	577	1885	341	2398
Starvation Cap Reductn	0	0	241	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.51	0.90	0.62	0.28

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	NBR	SBL	SBT
Movement						
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	255	270	1340	15	195	620
Future Volume (vph)	255	270	1340	15	195	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		3.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1428	1493	3434		1750	3476
Flt Permitted	0.95	1.00	1.00		0.08	1.00
Satd. Flow (perm)	1428	1493	3434		149	3476
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	293	1457	16	212	674
RTOR Reduction (vph)	0	199	0	0	0	0
Lane Group Flow (vph)	277	94	1473	0	212	674
Heavy Vehicles (%)	25%	7%	6%	18%	2%	5%
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	26.0	26.0	63.8		80.1	80.1
Effective Green, g (s)	26.0	26.0	63.8		80.1	80.1
Actuated g/C Ratio	0.22	0.22	0.55		0.69	0.69
Clearance Time (s)	4.0	4.0	6.0		3.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	319	334	1887		286	2398
v/s Ratio Prot	c0.19		c0.43		c0.08	0.19
v/s Ratio Perm		0.06			0.43	
v/c Ratio	0.87	0.28	0.78		0.74	0.28
Uniform Delay, d1	43.4	37.3	20.6		26.8	6.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	21.3	0.5	3.3		9.9	0.3
Delay (s)	64.7	37.8	23.9		36.7	7.2
Level of Service	E	D	C		D	A
Approach Delay (s)	50.8		23.9			14.3
Approach LOS	D		C			B

Intersection Summary

HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	116.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

7: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	0	1110	0	0	990
Future Volume (Veh/h)	10	0	1110	0	0	990
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	1207	0	0	1076
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1745	604			1207	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1745	604			1207	
tC, single (s)	6.8	8.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.3			2.2	
p0 queue free %	86	100			100	
cM capacity (veh/h)	79	264			585	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	11	805	402	0	538	538
Volume Left	11	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	79	1700	1700	1700	1700	1700
Volume to Capacity	0.14	0.47	0.24	0.00	0.32	0.32
Queue Length 95th (m)	3.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	57.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	57.7	0.0		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization		40.7%		ICU Level of Service	A	
Analysis Period (min)		15				

Queues

1: Mapleview Drive E & Goodwin Drive

04/07/2022

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	1321	33	929	109	174	87	179
v/c Ratio	0.08	0.77	0.39	0.56	0.21	0.22	0.17	0.22
Control Delay	13.2	22.4	30.3	17.5	21.1	17.2	20.7	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	22.4	30.3	17.5	21.1	17.2	20.7	19.6
Queue Length 50th (m)	1.5	94.0	3.6	56.5	11.7	15.7	9.2	18.8
Queue Length 95th (m)	4.9	116.7	12.5	71.9	29.4	37.4	24.0	41.8
Internal Link Dist (m)		775.4		114.0		70.9		234.1
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	320	2859	141	2784	508	781	501	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.46	0.23	0.33	0.21	0.22	0.17	0.22
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/07/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	15	1020	195	30	735	120	100	100	60	80	150	15
Future Volume (vph)	15	1020	195	30	735	120	100	100	60	80	150	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.94		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1784	3562		1825	3473		1825	1803		1781	1895	
Flt Permitted	0.21	1.00		0.09	1.00		0.62	1.00		0.63	1.00	
Satd. Flow (perm)	400	3562		177	3473		1197	1803		1179	1895	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1109	212	33	799	130	109	109	65	87	163	16
RTOR Reduction (vph)	0	17	0	0	14	0	0	15	0	0	2	0
Lane Group Flow (vph)	16	1304	0	33	915	0	109	159	0	87	177	0
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.5	43.5		43.5	43.5		38.9	38.9		38.9	38.9	
Effective Green, g (s)	43.5	43.5		43.5	43.5		38.9	38.9		38.9	38.9	
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	190	1695		84	1652		509	767		501	806	
v/s Ratio Prot		c0.37			0.26			0.09			c0.09	
v/s Ratio Perm	0.04			0.19			0.09			0.07		
v/c Ratio	0.08	0.77		0.39	0.55		0.21	0.21		0.17	0.22	
Uniform Delay, d1	13.1	19.8		15.4	17.0		16.6	16.5		16.3	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.2		3.0	0.4		1.0	0.6		0.8	0.6	
Delay (s)	13.3	22.0		18.5	17.4		17.6	17.2		17.0	17.3	
Level of Service	B	C		B	B		B	B		B	B	
Approach Delay (s)		21.9			17.5			17.3			17.2	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay		19.5			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.51										
Actuated Cycle Length (s)		91.4			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		65.1%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Site Driveway (West) & Mapleview Drive E

04/07/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱	↲	↰	↱	↰	↱
Traffic Volume (veh/h)	1160	0	0	885	0	0
Future Volume (Veh/h)	1160	0	0	885	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1261	0	0	962	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (m)	138			215		
pX, platoon unblocked			0.70		0.78	0.70
vC, conflicting volume			1261		1742	630
vC1, stage 1 conf vol					1261	
vC2, stage 2 conf vol					481	
vCu, unblocked vol			528		504	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			728		382	763
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	841	420	321	641	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	728	1700	1700	
Volume to Capacity	0.49	0.25	0.00	0.38	0.00	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			35.4%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

3: Yonge Street & Mapleview Drive E

04/07/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	131	1041	212	677	323	111	818	242	227	773	106
v/c Ratio	0.42	0.95	0.85	0.57	0.49	0.42	0.66	0.35	0.87	0.61	0.17
Control Delay	22.8	56.9	56.8	35.1	12.8	23.0	36.3	5.7	53.6	34.2	6.6
Queue Delay	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	56.9	56.8	35.7	12.9	23.0	36.3	5.7	53.6	34.2	6.6
Queue Length 50th (m)	17.0	122.1	32.4	67.9	16.6	14.3	84.6	1.7	31.3	77.6	0.9
Queue Length 95th (m)	29.5	#166.7	#74.8	88.7	43.4	24.9	105.8	18.7	#63.5	97.6	12.5
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	334	1099	253	1193	659	269	1287	717	261	1317	628
Starvation Cap Reductn	0	0	0	207	34	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	0.39	0.95	0.84	0.69	0.52	0.41	0.64	0.34	0.87	0.59	0.17

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Mapleview Drive E

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	130	875	155	210	670	320	110	810	240	225	765	105
Future Volume (vph)	130	875	155	210	670	320	110	810	240	225	765	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	3562		1716	3614	1545	1767	3614	1597	1785	3614	1551
Flt Permitted	0.28	1.00		0.10	1.00	1.00	0.22	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	523	3562		186	3614	1545	416	3614	1597	339	3614	1551
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	131	884	157	212	677	323	111	818	242	227	773	106
RTOR Reduction (vph)	0	12	0	0	0	149	0	0	152	0	0	65
Lane Group Flow (vph)	131	1029	0	212	677	174	111	818	90	227	773	41
Confl. Peds. (#/hr)	1						1					
Heavy Vehicles (%)	0%	0%	1%	4%	1%	2%	1%	1%	0%	0%	1%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	45.8	36.0		51.6	38.9	38.9	48.0	40.2	40.2	50.4	41.4	41.4
Effective Green, g (s)	45.8	36.0		51.6	38.9	38.9	48.0	40.2	40.2	50.4	41.4	41.4
Actuated g/C Ratio	0.39	0.31		0.44	0.33	0.33	0.41	0.34	0.34	0.43	0.35	0.35
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	308	1087		246	1192	509	258	1232	544	255	1269	544
v/s Ratio Prot	0.04	c0.29		c0.09	0.19		0.03	0.23		c0.07	0.21	
v/s Ratio Perm	0.13			0.28		0.11	0.15		0.06	c0.31		0.03
v/c Ratio	0.43	0.95		0.86	0.57	0.34	0.43	0.66	0.17	0.89	0.61	0.08
Uniform Delay, d1	24.4	40.0		29.9	32.6	29.8	23.3	33.1	27.1	26.2	31.6	25.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	16.0		25.2	0.6	0.4	1.2	1.4	0.1	29.5	0.8	0.1
Delay (s)	25.3	56.0		55.1	33.2	30.2	24.4	34.5	27.3	55.7	32.4	25.6
Level of Service	C	E		E	C	C	C	C	C	E	C	C
Approach Delay (s)		52.6			36.2			32.0			36.5	
Approach LOS		D			D			C			D	

Intersection Summary

HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	117.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Queues

4: St Pauls Crescent & Mapleview Drive E

04/07/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	1413	43	1277	190	359
v/c Ratio	0.51	0.82	0.64	0.76	0.30	0.71
Control Delay	43.5	30.0	67.2	27.5	21.4	38.1
Queue Delay	0.0	4.8	0.0	0.0	0.0	0.0
Total Delay	43.5	34.8	67.2	27.5	21.4	38.1
Queue Length 50th (m)	6.3	135.8	6.9	117.0	23.8	66.4
Queue Length 95th (m)	20.9	163.5	#27.3	141.8	44.4	#115.0
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	99	1996	78	1953	639	505
Starvation Cap Reductn	0	507	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	0.95	0.55	0.65	0.30	0.71

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	40	1300	0	40	1160	15	40	0	135	330	0	0
Future Volume (vph)	40	1300	0	40	1160	15	40	0	135	330	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0				
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00				
Frbp, ped/bikes	1.00	1.00		1.00	1.00			1.00				
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00				
Frt	1.00	1.00		1.00	1.00			0.90				
Flt Protected	0.95	1.00		0.95	1.00			0.99				
Satd. Flow (prot)	1785	3650		1785	3571			1701				
Flt Permitted	0.10	1.00		0.08	1.00			0.86				
Satd. Flow (perm)	181	3650		142	3571			1480				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1413	0	43	1261	16	43	0	147	359	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	16	0	0	0	0
Lane Group Flow (vph)	43	1413	0	43	1276	0	0	174	0	0	359	0
Confl. Peds. (#/hr)	3					3						
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	52.8	52.8		52.8	52.8			47.3			47.3	
Effective Green, g (s)	52.8	52.8		52.8	52.8			47.3			47.3	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.42			0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	85	1719		66	1681			624			505	
v/s Ratio Prot		c0.39			0.36							
v/s Ratio Perm	0.24			0.30				0.12			c0.30	
v/c Ratio	0.51	0.82		0.65	0.76			0.28			0.71	
Uniform Delay, d1	20.6	25.6		22.6	24.4			21.2			26.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.7	3.3		20.7	2.0			1.1			8.2	
Delay (s)	25.3	28.9		43.3	26.4			22.3			35.0	
Level of Service	C	C		D	C			C			C	
Approach Delay (s)		28.8			27.0			22.3			35.0	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay		28.4			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.77										
Actuated Cycle Length (s)		112.1			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		79.8%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

Queues
5: Yonge Street & St Pauls Crescent

04/07/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group					
Lane Group Flow (vph)	109	217	1370	163	1082
v/c Ratio	0.68	0.74	0.49	0.65	0.38
Control Delay	68.0	42.4	5.7	22.0	4.9
Queue Delay	0.0	0.0	0.4	0.0	0.0
Total Delay	68.0	42.4	6.1	22.0	4.9
Queue Length 50th (m)	23.3	27.0	48.1	13.6	33.7
Queue Length 95th (m)	42.0	52.8	76.8	#64.1	54.6
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	228	380	2811	252	2811
Starvation Cap Reductn	0	0	825	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.57	0.69	0.65	0.38

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/07/2022

	WBL	WBR	NBT	NBR	SBL	SBT
Movement						
Lane Configurations	↰	↱	↕		↰	↱
Traffic Volume (vph)	100	200	1260	0	150	995
Future Volume (vph)	100	200	1260	0	150	995
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1190	1597	3614		1784	3614
Flt Permitted	0.95	1.00	1.00		0.17	1.00
Satd. Flow (perm)	1190	1597	3614		326	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	217	1370	0	163	1082
RTOR Reduction (vph)	0	79	0	0	0	0
Lane Group Flow (vph)	109	138	1370	0	163	1082
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	50%	0%	1%	0%	0%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	15.4	15.4	89.1		89.1	89.1
Effective Green, g (s)	15.4	15.4	89.1		89.1	89.1
Actuated g/C Ratio	0.13	0.13	0.78		0.78	0.78
Clearance Time (s)	4.0	4.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	160	214	2812		253	2812
v/s Ratio Prot	c0.09		0.38			0.30
v/s Ratio Perm		0.09			c0.50	
v/c Ratio	0.68	0.65	0.49		0.64	0.38
Uniform Delay, d1	47.2	47.0	4.5		5.6	4.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	11.3	6.5	0.6		12.0	0.4
Delay (s)	58.5	53.5	5.1		17.6	4.4
Level of Service	E	D	A		B	A
Approach Delay (s)	55.2		5.1			6.2
Approach LOS	E		A			A

Intersection Summary

HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	114.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

6: Yonge Street & Site Driveway (East)

04/07/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	1160	1130	0
Future Volume (Veh/h)	0	0	0	1160	1130	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1261	1228	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type				None	None	
Median storage (veh)						
Upstream signal (m)					176	
pX, platoon unblocked	0.82	0.82	0.82			
vC, conflicting volume	1858	614	1228			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1612	99	846			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	78	771	647			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	630	630	819	409
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.37	0.37	0.48	0.24
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			35.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Yonge Street & St Pauls Crescent

04/07/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	0	1160	0	0	1130
Future Volume (Veh/h)	15	0	1160	0	0	1130
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	0	1234	0	0	1202
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1836	618			1235	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1836	618			1235	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	100			100	
cM capacity (veh/h)	67	437			571	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	823	411	0	601	601
Volume Left	16	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	67	1700	1700	1700	1700	1700
Volume to Capacity	0.24	0.48	0.24	0.00	0.35	0.35
Queue Length 95th (m)	6.3	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	74.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	74.6	0.0		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			42.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

8: Site Dwy (EBR IN ONLY) & Mapleview Drive E

04/07/2022

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1160	0	0	885	0	0
Future Volume (Veh/h)	1160	0	0	885	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1261	0	0	962	0	0
Pedestrians				1		
Lane Width (m)				3.7		
Walking Speed (m/s)				1.1		
Percent Blockage				0		
Right turn flare (veh)						
Median type	TWLT			None		
Median storage (veh)	2					
Upstream signal (m)	215			137		
pX, platoon unblocked			0.71		0.79	0.71
vC, conflicting volume			1261		1742	632
vC1, stage 1 conf vol					1261	
vC2, stage 2 conf vol					481	
vCu, unblocked vol			550		519	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			721		376	769
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	841	420	481	481		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.49	0.25	0.28	0.28		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			42.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Queues

1: Mapleview Drive E & Goodwin Drive

04/07/2022

	↖	→	↖	←	↖	↑	↖	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	1266	31	891	104	167	83	172
v/c Ratio	0.08	0.77	0.36	0.54	0.19	0.21	0.16	0.21
Control Delay	14.0	23.1	29.1	18.0	19.2	15.6	19.0	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	23.1	29.1	18.0	19.2	15.6	19.0	17.9
Queue Length 50th (m)	1.5	90.0	3.3	54.1	10.5	14.0	8.3	17.0
Queue Length 95th (m)	5.1	112.5	11.8	69.4	26.6	33.7	21.8	38.0
Internal Link Dist (m)		775.4		114.0		70.9		234.1
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	332	2858	148	2856	537	811	531	830
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.44	0.21	0.31	0.19	0.21	0.16	0.21
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	15	1020	195	30	735	120	100	100	60	80	150	15
Future Volume (vph)	15	1020	195	30	735	120	100	100	60	80	150	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Fipb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.94		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1784	3562		1825	3562		1821	1802		1781	1873	
Flt Permitted	0.22	1.00		0.10	1.00		0.64	1.00		0.64	1.00	
Satd. Flow (perm)	414	3562		187	3562		1218	1802		1202	1873	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	16	1062	203	31	766	125	104	104	62	83	156	16
RTOR Reduction (vph)	0	18	0	0	15	0	0	15	0	0	3	0
Lane Group Flow (vph)	16	1248	0	31	876	0	104	152	0	83	169	0
Confl. Peds. (#/hr)	1					1	2		2	2		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	41.2	41.2		41.2	41.2		39.9	39.9		39.9	39.9	
Effective Green, g (s)	41.2	41.2		41.2	41.2		39.9	39.9		39.9	39.9	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.44	0.44		0.44	0.44	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	189	1628		85	1628		539	798		532	829	
v/s Ratio Prot		c0.35			0.25			0.08			c0.09	
v/s Ratio Perm	0.04			0.17			0.09			0.07		
v/c Ratio	0.08	0.77		0.36	0.54		0.19	0.19		0.16	0.20	
Uniform Delay, d1	13.8	20.4		15.9	17.6		15.3	15.3		15.0	15.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.2		2.6	0.3		0.8	0.5		0.6	0.6	
Delay (s)	14.0	22.7		18.6	17.9		16.1	15.8		15.6	15.9	
Level of Service	B	C		B	B		B	B		B	B	
Approach Delay (s)		22.5			18.0			15.9			15.8	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay		19.7			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.49										
Actuated Cycle Length (s)		90.1			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		66.2%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

Queues

3: Yonge Street & Mapleview Drive E

04/07/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	131	1041	212	677	323	111	818	242	227	773	106
v/c Ratio	0.42	0.96	0.87	0.58	0.49	0.41	0.65	0.34	0.87	0.60	0.17
Control Delay	23.5	60.3	61.5	36.8	13.7	22.4	35.6	5.5	53.7	34.3	6.6
Queue Delay	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	60.3	61.5	37.4	13.9	22.4	35.6	5.5	53.7	34.3	6.6
Queue Length 50th (m)	17.6	125.2	33.5	69.7	18.0	14.3	84.6	1.7	31.4	78.7	0.9
Queue Length 95th (m)	29.8	#168.6	#77.5	91.6	46.0	24.9	105.7	18.5	#63.7	99.1	12.7
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	352	1083	246	1168	654	281	1267	710	261	1282	620
Starvation Cap Reductn	0	0	0	195	35	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	0.37	0.96	0.86	0.70	0.52	0.40	0.65	0.34	0.87	0.60	0.17
Intersection Summary											
# 95th percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximum after two cycles.											

HCM Signalized Intersection Capacity Analysis 3: Yonge Street & Mapleview Drive E

04/07/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	130	875	155	210	670	320	110	810	240	225	765	105
Future Volume (vph)	130	875	155	210	670	320	110	810	240	225	765	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	3568		1700	3650	1581	1750	3614	1597	1750	3614	1566
Flt Permitted	0.27	1.00		0.10	1.00	1.00	0.22	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	500	3568		186	3650	1581	408	3614	1597	350	3614	1566
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	131	884	157	212	677	323	111	818	242	227	773	106
RTOR Reduction (vph)	0	12	0	0	0	148	0	0	150	0	0	65
Lane Group Flow (vph)	131	1029	0	212	677	175	111	818	92	227	773	41
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	2%	1%	0%	2%	1%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	46.4	36.0		51.2	38.4	38.4	50.5	42.0	42.0	51.5	42.5	42.5
Effective Green, g (s)	46.4	36.0		51.2	38.4	38.4	50.5	42.0	42.0	51.5	42.5	42.5
Actuated g/C Ratio	0.39	0.30		0.43	0.32	0.32	0.42	0.35	0.35	0.43	0.35	0.35
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	1072		241	1169	506	267	1267	559	255	1282	555
v/s Ratio Prot	0.04	c0.29		c0.09	0.19		0.03	0.23		c0.07	0.21	
v/s Ratio Perm	0.13			0.28		0.11	0.15		0.06	c0.31		0.03
v/c Ratio	0.43	0.96		0.88	0.58	0.35	0.42	0.65	0.16	0.89	0.60	0.07
Uniform Delay, d1	25.0	41.2		30.9	34.0	31.1	22.7	32.7	26.8	26.8	31.7	25.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	18.4		28.4	0.7	0.4	1.1	2.5	0.6	29.5	2.1	0.3
Delay (s)	25.9	59.5		59.3	34.7	31.5	23.7	35.2	27.4	56.3	33.8	25.9
Level of Service	C	E		E	C	C	C	D	C	E	C	C
Approach Delay (s)		55.8			38.1			32.5			37.7	
Approach LOS		E			D			C			D	
Intersection Summary												
HCM 2000 Control Delay		41.1			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.92										
Actuated Cycle Length (s)		119.8			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		103.2%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Queues 4: St Pauls Crescent & Mapleview Drive E

04/07/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	1413	43	1277	190	359
v/c Ratio	0.49	0.83	0.65	0.74	0.30	0.72
Control Delay	42.4	30.6	68.1	26.7	21.6	38.6
Queue Delay	0.0	7.2	0.0	0.0	0.0	0.0
Total Delay	42.4	37.8	68.1	26.7	21.6	38.6
Queue Length 50th (m)	6.3	137.4	6.9	115.7	24.3	67.8
Queue Length 95th (m)	20.6	166.2	#27.5	139.9	44.3	#115.5
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	100	1946	76	1981	636	501
Starvation Cap Reductn	0	492	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	0.97	0.57	0.64	0.30	0.72
Intersection Summary						
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.						

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Maplevue Drive E

04/07/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Volume (vph)	40	1300	0	40	1160	15	40	0	135	330	0	0
Future Volume (vph)	40	1300	0	40	1160	15	40	0	135	330	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.90			1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	
Satd. Flow (prot)	1785	3579		1785	3643			1701			1825	
Flt Permitted	0.10	1.00		0.07	1.00			0.86			0.62	
Satd. Flow (perm)	185	3579		140	3643			1481			1197	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1413	0	43	1261	16	43	0	147	359	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	16	0	0	0	0
Lane Group Flow (vph)	43	1413	0	43	1276	0	0	174	0	0	359	0
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.5	53.5		53.5	53.5			47.2			47.2	
Effective Green, g (s)	53.5	53.5		53.5	53.5			47.2			47.2	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.42			0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	87	1698		66	1729			620			501	
v/s Ratio Prot		c0.39			0.35							
v/s Ratio Perm	0.23			0.31				0.12			c0.30	
v/c Ratio	0.49	0.83		0.65	0.74			0.28			0.72	
Uniform Delay, d1	20.3	25.7		22.5	23.9			21.6			27.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.4	3.6		20.7	1.7			1.1			8.5	
Delay (s)	24.7	29.4		43.2	25.6			22.7			35.7	
Level of Service	C	C		D	C			C			D	
Approach Delay (s)		29.2			26.2			22.7			35.7	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay		28.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.78										
Actuated Cycle Length (s)		112.7			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		79.8%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Queues

5: Yonge Street & St Pauls Crescent

04/07/2022

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	109	217	1370	163	1082
v/c Ratio	0.48	0.77	0.48	0.65	0.38
Control Delay	52.1	45.1	5.5	22.1	4.7
Queue Delay	0.0	0.0	0.4	0.0	0.0
Total Delay	52.1	45.1	5.9	22.1	4.7
Queue Length 50th (m)	22.5	27.3	45.8	13.1	32.1
Queue Length 95th (m)	39.6	53.0	76.8	#64.7	54.6
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	345	381	2830	252	2830
Starvation Cap Reductn	0	0	830	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.57	0.69	0.65	0.38
Intersection Summary					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					

HCM Signalized Intersection Capacity Analysis 5: Yonge Street & St Pauls Crescent

04/07/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	100	200	1260	0	150	995
Future Volume (vph)	100	200	1260	0	150	995
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Flt Protected	1.00	1.00	1.00		1.00	1.00
Flt Permitted	0.95	1.00	1.00		0.17	1.00
Satd. Flow (perm)	1785	1597	3614		321	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	217	1370	0	163	1082
RTOR Reduction (vph)	0	78	0	0	0	0
Lane Group Flow (vph)	109	139	1370	0	163	1082
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	14.6	14.6	89.1		89.1	89.1
Effective Green, g (s)	14.6	14.6	89.1		89.1	89.1
Actuated g/C Ratio	0.13	0.13	0.78		0.78	0.78
Clearance Time (s)	4.0	4.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	229	205	2832		251	2832
v/s Ratio Prot	0.06		0.38			0.30
v/s Ratio Perm		c0.09			c0.51	
v/c Ratio	0.48	0.68	0.48		0.65	0.38
Uniform Delay, d1	46.0	47.3	4.3		5.4	3.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.6	8.5	0.6		12.3	0.4
Delay (s)	47.6	55.8	4.9		17.7	4.2
Level of Service	D	E	A		B	A
Approach Delay (s)	53.0		4.9			6.0
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			10.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.65			
Actuated Cycle Length (s)			113.7		Sum of lost time (s)	10.0
Intersection Capacity Utilization			62.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 7: Yonge Street & St Pauls Crescent

04/07/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	0	1160	0	0	1130
Future Volume (Veh/h)	15	0	1160	0	0	1130
Sign Control	Stop		Free		Free	Free
Grade	0%		0%		0%	0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	16	0	1247	0	0	1215
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1854	624			1247	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1854	624			1247	
tC, single (s)	6.8	6.9			6.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			3.2	
p0 queue free %	76	100			100	
cM capacity (veh/h)	67	434			225	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	831	416	0	608	608
Volume Left	16	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	67	1700	1700	1700	1700	1700
Volume to Capacity	0.24	0.49	0.24	0.00	0.36	0.36
Queue Length 95th (m)	6.3	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	75.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	75.0	0.0		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			42.1%		ICU Level of Service	A
Analysis Period (min)			15			

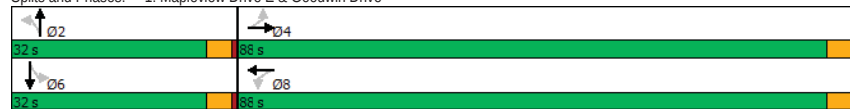
Timings

1: Maplevue Drive E & Goodwin Drive

04/08/2022

	→	←	↖	↑	↗	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔↔	↔↔	↖	↖	↖	↖
Traffic Volume (vph)	715	1215	70	50	40	75
Future Volume (vph)	715	1215	70	50	40	75
Turn Type	NA	NA	Perm	NA	Perm	NA
Protected Phases	4	8		2		6
Permitted Phases			2		6	
Detector Phase	4	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	88.0	88.0	32.0	32.0	32.0	32.0
Total Split (%)	73.3%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Max	Max	Max	Max
Act Effct Green (s)	38.7	38.7	27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.51	0.51	0.37	0.37	0.37	0.37
v/c Ratio	0.46	0.74	0.16	0.13	0.09	0.14
Control Delay	12.3	16.9	20.0	15.3	19.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	16.9	20.0	15.3	19.4	18.4
LOS	B	B	B	B	B	B
Approach Delay	12.3	16.9		17.5		18.7
Approach LOS	B	B		B		B
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 75.6						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.74						
Intersection Signal Delay: 15.6						
Intersection Capacity Utilization 56.1%						
Analysis Period (min) 15						
Intersection LOS: B						
ICU Level of Service B						

Splits and Phases: 1: Maplevue Drive E & Goodwin Drive



Queues

1: Maplevue Drive E & Goodwin Drive

04/08/2022

	→	←	↖	↑	↗	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	800	1350	78	89	44	94
v/c Ratio	0.46	0.74	0.16	0.13	0.09	0.14
Control Delay	12.3	16.9	20.0	15.3	19.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	16.9	20.0	15.3	19.4	18.4
Queue Length 50th (m)	35.3	73.5	7.2	6.0	4.0	8.1
Queue Length 95th (m)	47.1	94.0	20.0	18.2	12.8	21.6
Internal Link Dist (m)	775.4	114.0		70.9		234.1
Turn Bay Length (m)						
Base Capacity (vph)	3376	3544	491	677	481	684
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	0.24	0.38	0.16	0.13	0.09	0.14
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/08/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	0	715	5	0	1215	0	70	50	30	40	75	10
Future Volume (vph)	0	715	5	0	1215	0	70	50	30	40	75	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			1.00		1.00	0.94		1.00	0.98	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3409			3579		1825	1805		1783	1853	
Flt Permitted		1.00			1.00		0.70	1.00		0.70	1.00	
Satd. Flow (perm)		3409			3579		1337	1805		1312	1853	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	794	6	0	1350	0	78	56	33	44	83	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	15	0	0	3	0
Lane Group Flow (vph)	0	800	0	0	1350	0	78	74	0	44	91	0
Confl. Peds. (#/hr)	3		1	1		3			1	1		
Heavy Vehicles (%)	0%	7%	0%	0%	2%	0%	0%	0%	0%	0%	0%	16%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		38.7			38.7		27.8	27.8		27.8	27.8	
Effective Green, g (s)		38.7			38.7		27.8	27.8		27.8	27.8	
Actuated g/C Ratio		0.51			0.51		0.37	0.37		0.37	0.37	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1747			1834		492	664		483	682	
v/s Ratio Prot		0.23			0.38			0.04			0.05	
v/s Ratio Perm							0.06			0.03		
v/c Ratio		0.46			0.74		0.16	0.11		0.09	0.13	
Uniform Delay, d1		11.7			14.4		16.0	15.7		15.6	15.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			1.6		0.7	0.3		0.4	0.4	
Delay (s)		11.9			16.0		16.7	16.1		16.0	16.3	
Level of Service		B			B		B	B		B	B	
Approach Delay (s)		11.9			16.0			16.4			16.2	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay		14.7			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.49										
Actuated Cycle Length (s)		75.5			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		56.1%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Site Driveway (West) & Mapleview Drive E

04/08/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱	↲	↰	↱	↰	↱
Traffic Volume (veh/h)	725	60	5	1205	10	60
Future Volume (Veh/h)	725	60	5	1205	10	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	788	65	5	1310	11	65
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (m)	138			215		
pX, platoon unblocked			0.86		0.82	0.86
vC, conflicting volume			853		1486	426
vC1, stage 1 conf vol					820	
vC2, stage 2 conf vol					665	
vCu, unblocked vol			504		375	9
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	93
cM capacity (veh/h)			909		502	921
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	525	328	442	873	76	
Volume Left	0	0	5	0	11	
Volume Right	0	65	0	0	65	
cSH	1700	1700	909	1700	822	
Volume to Capacity	0.31	0.19	0.01	0.51	0.09	
Queue Length 95th (m)	0.0	0.0	0.1	0.0	2.3	
Control Delay (s)	0.0	0.0	0.2	0.0	9.8	
Lane LOS			A		A	
Approach Delay (s)	0.0		0.1		9.8	
Approach LOS			A		A	
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			Err%		ICU Level of Service	H
Analysis Period (min)			15			

Timings

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	175	535	330	945	345	190	850	65	200	620	75
Future Volume (vph)	175	535	330	945	345	190	850	65	200	620	75
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	7.0	12.0	7.0	12.0	12.0	7.0	40.0	40.0	7.0	40.0	40.0
Minimum Split (s)	11.0	35.0	11.0	35.0	35.0	11.0	46.0	46.0	11.0	46.0	46.0
Total Split (s)	15.0	35.0	24.0	44.0	44.0	13.0	47.0	47.0	14.0	48.0	48.0
Total Split (%)	12.5%	29.2%	20.0%	36.7%	36.7%	10.8%	39.2%	39.2%	11.7%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	41.3	28.3	53.6	36.6	36.6	52.0	41.0	41.0	54.1	42.1	42.1
Actuated g/C Ratio	0.35	0.24	0.45	0.31	0.31	0.44	0.35	0.35	0.46	0.35	0.35
v/c Ratio	0.83	0.75	0.89	0.86	0.61	0.59	0.70	0.11	0.79	0.50	0.12
Control Delay	57.6	47.7	51.2	47.3	22.2	27.8	37.5	0.4	43.0	32.0	0.5
Queue Delay	0.0	0.0	0.0	8.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	47.7	51.2	55.4	22.3	27.8	37.5	0.4	43.0	32.0	0.5
LOS	E	D	D	E	C	C	D	A	D	C	A
Approach Delay		50.0		47.5			33.7			31.8	
Approach LOS		D		D			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 118.7

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 41.3

Intersection LOS: D

Intersection Capacity Utilization 96.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Yonge Street & Mapleview Drive E

Ø1	Ø2	Ø3	Ø4
14 s	47 s	24 s	35 s
Ø5	Ø6	Ø7	Ø8
13 s	46 s	15 s	44 s

Queues

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	177	606	333	955	348	192	859	66	202	626	76
v/c Ratio	0.83	0.75	0.89	0.86	0.61	0.59	0.70	0.11	0.79	0.50	0.12
Control Delay	57.6	47.7	51.2	47.3	22.2	27.8	37.5	0.4	43.0	32.0	0.5
Queue Delay	0.0	0.0	0.0	8.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	47.7	51.2	55.4	22.3	27.8	37.5	0.4	43.0	32.0	0.5
Queue Length 50th (m)	25.3	68.5	51.7	109.6	34.6	26.1	91.9	0.0	27.6	60.8	0.0
Queue Length 95th (m)	#63.2	89.0	#100.8	135.2	65.7	41.4	114.7	0.0	#55.7	78.2	0.6
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	213	833	381	1158	587	325	1224	605	255	1256	626
Starvation Cap Reductn	0	0	0	174	12	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	0.83	0.73	0.87	0.97	0.61	0.59	0.70	0.11	0.79	0.50	0.12

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Yonge Street & Maplevue Drive E

04/08/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	175	535	65	330	945	345	190	850	65	200	620	75
Future Volume (vph)	175	535	65	330	945	345	190	850	65	200	620	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Fipb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1638	3375		1684	3614	1473	1668	3544	1493	1716	3544	1521
Flt Permitted	0.14	1.00		0.19	1.00	1.00	0.31	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	244	3375		344	3614	1473	548	3544	1493	298	3544	1521
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	177	540	66	333	955	348	192	859	66	202	626	76
RTOR Reduction (vph)	0	8	0	0	0	118	0	0	43	0	0	49
Lane Group Flow (vph)	177	598	0	333	955	230	192	859	23	202	626	27
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	9%	7%	0%	6%	1%	7%	7%	3%	7%	4%	3%	5%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	39.3	28.3		51.6	36.6	36.6	50.1	41.1	41.1	52.1	42.1	42.1
Effective Green, g (s)	39.3	28.3		51.6	36.6	36.6	50.1	41.1	41.1	52.1	42.1	42.1
Actuated g/C Ratio	0.33	0.24		0.43	0.31	0.31	0.42	0.35	0.35	0.44	0.35	0.35
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	804		367	1114	454	316	1227	516	250	1256	539
v/s Ratio Prot	0.08	0.18		c0.15	0.26		0.05	0.24		c0.07	0.18	
v/s Ratio Perm	0.20			c0.25		0.16	0.21		0.02	c0.29		0.02
v/c Ratio	0.85	0.74		0.91	0.86	0.51	0.61	0.70	0.04	0.81	0.50	0.05
Uniform Delay, d1	31.6	41.8		26.0	38.6	33.7	23.0	33.5	25.8	24.0	30.0	25.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.8	3.8		25.2	6.7	0.9	3.3	3.3	0.2	17.2	1.4	0.2
Delay (s)	57.3	45.6		51.1	45.3	34.6	26.3	36.8	25.9	41.2	31.4	25.3
Level of Service	E	D		D	D	C	C	D	C	D	C	C
Approach Delay (s)		48.3			44.2			34.4			33.1	
Approach LOS		D			D			C			C	

Intersection Summary

HCM 2000 Control Delay	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	118.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Timings

4: St Pauls Crescent & Maplevue Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	35	765	320	1505	115	0	200	0
Future Volume (vph)	35	765	320	1505	115	0	200	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	92.0	92.0	92.0	92.0	28.0	28.0	28.0	28.0
Total Split (%)	76.7%	76.7%	76.7%	76.7%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0

Lead/Lag

Lead-Lag Optimize?

Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	82.8	82.8	82.8	82.8	22.1	22.1	22.1	22.1
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.19	0.19	0.19	0.19
v/c Ratio	0.78	0.34	0.84	0.86	0.42	0.83	0.83	0.83
Control Delay	94.3	6.9	33.1	16.8	38.6	73.1	73.1	73.1
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.3	7.4	33.1	16.8	38.6	73.1	73.1	73.1
LOS	F	A	C	B	D	E	E	E
Approach Delay		11.2		19.1		38.6		73.1
Approach LOS		B		B		D		E

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 116.9	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 21.1	Intersection LOS: C
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: St Pauls Crescent & Maplevue Drive E

02	04
28 s	92 s
06	08
28 s	92 s

Queues

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	832	348	2103	130	217
v/c Ratio	0.78	0.34	0.84	0.86	0.42	0.83
Control Delay	94.3	6.9	33.1	16.8	38.6	73.1
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	94.3	7.4	33.1	16.8	38.6	73.1
Queue Length 50th (m)	4.8	34.1	50.9	162.1	21.5	50.0
Queue Length 95th (m)	#17.2	42.7	#124.7	199.7	40.8	#92.2
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	52	2542	432	2547	311	261
Starvation Cap Reductn	0	1158	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	0.73	0.60	0.81	0.83	0.42	0.83

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	35	765	0	320	1505	430	115	0	5	200	0	0
Future Volume (vph)	35	765	0	320	1505	430	115	0	5	200	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0				
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00				
Frbp, ped/bikes	1.00	1.00		1.00	0.99			1.00				
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00				
Frt	1.00	1.00		1.00	0.97			0.99				
Flt Protected	0.95	1.00		0.95	1.00			0.95				
Satd. Flow (prot)	1405	3444		1748	3423			1822				
Flt Permitted	0.05	1.00		0.32	1.00			0.80				
Satd. Flow (perm)	71	3444		586	3423			1533				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	832	0	348	1636	467	125	0	5	217	0	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	22	0	0	0	0
Lane Group Flow (vph)	38	832	0	348	2081	0	0	108	0	0	217	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	27%	6%	0%	2%	3%	1%	0%	0%	2%	4%	50%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	82.8	82.8		82.8	82.8			22.1			22.1	
Effective Green, g (s)	82.8	82.8		82.8	82.8			22.1			22.1	
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.19			0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	50	2439		415	2424			289			262	
v/s Ratio Prot		0.24			c0.61							
v/s Ratio Perm	0.53			0.59				0.07			c0.16	
v/c Ratio	0.76	0.34		0.84	0.86			0.37			0.83	
Uniform Delay, d1	10.8	6.6		12.2	12.7			41.4			45.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	48.9	0.1		13.8	3.3			3.7			25.0	
Delay (s)	59.7	6.6		26.0	15.9			45.0			70.6	
Level of Service	E	A		C	B			D			E	
Approach Delay (s)		9.0			17.4			45.0			70.6	
Approach LOS		A			B			D			E	
Intersection Summary												
HCM 2000 Control Delay				19.5				HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio				0.85								
Actuated Cycle Length (s)				116.9				Sum of lost time (s)			12.0	
Intersection Capacity Utilization				85.3%				ICU Level of Service			E	
Analysis Period (min)				15								
Critical Lane Group												

Timings

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Traffic Volume (vph)	255	270	1355	195	640
Future Volume (vph)	255	270	1355	195	640
Turn Type	Prot	Perm	NA	pm+pt	NA
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	24.0	9.5	24.0
Total Split (s)	34.0	34.0	66.0	20.0	86.0
Total Split (%)	28.3%	28.3%	55.0%	16.7%	71.7%
Yellow Time (s)	3.0	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	6.0	3.0	6.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
Act Effect Green (s)	26.0	26.0	63.8	83.1	80.1
Actuated g/C Ratio	0.22	0.22	0.55	0.72	0.69
v/c Ratio	0.87	0.55	0.79	0.74	0.29
Control Delay	69.5	11.3	26.4	37.8	7.8
Queue Delay	0.0	0.0	1.8	0.0	0.0
Total Delay	69.5	11.3	28.2	37.8	7.8
LOS	E	B	C	D	A
Approach Delay	39.6		28.2		14.8
Approach LOS	D		C		B

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 116.1

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 26.3

Intersection LOS: C

Intersection Capacity Utilization 74.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Yonge Street & St Pauls Crescent



Queues

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	277	293	1489	212	696
v/c Ratio	0.87	0.55	0.79	0.74	0.29
Control Delay	69.5	11.3	26.4	37.8	7.8
Queue Delay	0.0	0.0	1.8	0.0	0.0
Total Delay	69.5	11.3	28.2	37.8	7.8
Queue Length 50th (m)	61.0	6.7	147.6	26.6	31.5
Queue Length 95th (m)	#100.7	31.0	191.4	52.8	41.8
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	369	576	1885	337	2398
Starvation Cap Reductn	0	0	239	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.51	0.90	0.63	0.29

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/08/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	255	270	1355	15	195	640
Future Volume (vph)	255	270	1355	15	195	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		3.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1428	1493	3434		1750	3476
Flt Permitted	0.95	1.00	1.00		0.08	1.00
Satd. Flow (perm)	1428	1493	3434		142	3476
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	293	1473	16	212	696
RTOR Reduction (vph)	0	199	0	0	0	0
Lane Group Flow (vph)	277	94	1489	0	212	696
Heavy Vehicles (%)	25%	7%	6%	18%	2%	5%
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	26.0	26.0	63.8		80.1	80.1
Effective Green, g (s)	26.0	26.0	63.8		80.1	80.1
Actuated g/C Ratio	0.22	0.22	0.55		0.69	0.69
Clearance Time (s)	4.0	4.0	6.0		3.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	319	334	1887		282	2398
v/s Ratio Prot	c0.19		c0.43		c0.09	0.20
v/s Ratio Perm		0.06			0.43	
v/c Ratio	0.87	0.28	0.79		0.75	0.29
Uniform Delay, d1	43.4	37.3	20.8		27.9	7.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	21.3	0.5	3.4		10.8	0.3
Delay (s)	64.7	37.8	24.2		38.6	7.3
Level of Service	E	D	C		D	A
Approach Delay (s)	50.8		24.2		14.6	
Approach LOS	D		C		B	
Intersection Summary						
HCM 2000 Control Delay		26.4		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.80				
Actuated Cycle Length (s)		116.1		Sum of lost time (s)		13.0
Intersection Capacity Utilization		74.5%		ICU Level of Service		D
Analysis Period (min)		15				

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
6: Yonge Street & Site Driveway (East)

04/08/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	40	35	1095	970	45
Future Volume (Veh/h)	10	40	35	1095	970	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	43	38	1190	1054	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type				None	None	
Median storage (veh)						
Upstream signal (m)					176	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	1750	552	1103			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1554	168	806			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	94	95			
cM capacity (veh/h)	85	732	704			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	54	38	595	595	703	400
Volume Left	11	38	0	0	0	0
Volume Right	43	0	0	0	0	49
cSH	417	704	1700	1700	1700	1700
Volume to Capacity	0.13	0.05	0.35	0.35	0.41	0.24
Queue Length 95th (m)	3.4	1.3	0.0	0.0	0.0	0.0
Control Delay (s)	19.1	10.4	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	19.1	0.3			0.0	
Approach LOS	C					
Intersection Summary						
Average Delay		0.6				
Intersection Capacity Utilization		40.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
7: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	0	1130	0	0	1010
Future Volume (Veh/h)	10	0	1130	0	0	1010
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	1228	0	0	1098
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1777	614			1228	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1777	614			1228	
tC, single (s)	6.8	8.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.3			2.2	
p0 queue free %	85	100			100	
cM capacity (veh/h)	75	259			575	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	11	819	409	0	549	549
Volume Left	11	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	75	1700	1700	1700	1700	1700
Volume to Capacity	0.15	0.48	0.24	0.00	0.32	0.32
Queue Length 95th (m)	3.7	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	60.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	60.8	0.0		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			41.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
8: Site Dwy (EBR IN ONLY) & Mapleview Drive E

04/08/2022

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	775	10	0	1210	0	0
Future Volume (Veh/h)	775	10	0	1210	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	842	11	0	1315	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (m)	215			137		
pX, platoon unblocked			0.89		0.80	0.89
vC, conflicting volume			853		1505	426
vC1, stage 1 conf vol					848	
vC2, stage 2 conf vol					658	
vCu, unblocked vol			578		509	97
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			879		455	833
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	561	292	658	658		
Volume Left	0	0	0	0		
Volume Right	0	11	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.33	0.17	0.39	0.39		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			36.8%		ICU Level of Service	A
Analysis Period (min)			15			

Timings

1: Mapleview Drive E & Goodwin Drive

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱	↰	↱	↰	↱
Traffic Volume (vph)	15	1070	30	755	135	100	80	150
Future Volume (vph)	15	1070	30	755	135	100	80	150
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	77.0	77.0	77.0	77.0	43.0	43.0	43.0	43.0
Total Split (%)	64.2%	64.2%	64.2%	64.2%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	46.7	46.7	46.7	46.7	39.0	39.0	39.0	39.0
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.41	0.41	0.41	0.41
v/c Ratio	0.08	0.78	0.41	0.55	0.30	0.23	0.18	0.23
Control Delay	12.7	22.3	31.5	17.0	23.8	18.6	22.4	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	22.3	31.5	17.0	23.8	18.6	22.4	21.2
LOS	B	C	C	B	C	B	C	C
Approach Delay		22.2		17.5		21.0		21.6
Approach LOS		C		B		C		C
Intersection Summary								
Cycle Length: 120								
Actuated Cycle Length: 94.8								
Natural Cycle: 55								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.78								
Intersection Signal Delay: 20.5								
Intersection Capacity Utilization 66.6%								
ICU Level of Service C								
Analysis Period (min) 15								

Splits and Phases: 1: Mapleview Drive E & Goodwin Drive

↰	↱
43 s	77 s
↰	↱
43 s	77 s

Queues

1: Mapleview Drive E & Goodwin Drive

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	1380	33	951	147	174	87	179
v/c Ratio	0.08	0.78	0.41	0.55	0.30	0.23	0.18	0.23
Control Delay	12.7	22.3	31.5	17.0	23.8	18.6	22.4	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	22.3	31.5	17.0	23.8	18.6	22.4	21.2
Queue Length 50th (m)	1.5	101.1	3.6	58.5	17.5	16.8	9.8	20.1
Queue Length 95th (m)	4.9	124.3	13.0	73.7	41.0	39.4	25.4	44.1
Internal Link Dist (m)		775.4		114.0		70.9		234.1
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	306	2764	127	2692	486	756	479	781
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.50	0.26	0.35	0.30	0.23	0.18	0.23
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/08/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Volume (vph)	15	1070	200	30	755	120	135	100	60	80	150	15
Future Volume (vph)	15	1070	200	30	755	120	135	100	60	80	150	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.94		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1784	3564		1825	3474		1825	1803		1781	1895	
Flt Permitted	0.21	1.00		0.09	1.00		0.62	1.00		0.62	1.00	
Satd. Flow (perm)	396	3564		165	3474		1185	1803		1168	1895	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1163	217	33	821	130	147	109	65	87	163	16
RTOR Reduction (vph)	0	16	0	0	14	0	0	15	0	0	2	0
Lane Group Flow (vph)	16	1364	0	33	937	0	147	159	0	87	177	0
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	46.7	46.7		46.7	46.7		38.9	38.9		38.9	38.9	
Effective Green, g (s)	46.7	46.7		46.7	46.7		38.9	38.9		38.9	38.9	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.41	0.41		0.41	0.41	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	195	1759		81	1714		487	741		480	779	
v/s Ratio Prot		c0.38			0.27			0.09			0.09	
v/s Ratio Perm	0.04			0.20			c0.12			0.07		
v/c Ratio	0.08	0.78		0.41	0.55		0.30	0.21		0.18	0.23	
Uniform Delay, d1	12.6	19.6		15.2	16.6		18.7	18.0		17.7	18.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.2		3.3	0.4		1.6	0.7		0.8	0.7	
Delay (s)	12.8	21.9		18.5	17.0		20.3	18.6		18.5	18.8	
Level of Service	B	C		B	B		C	B		B	B	
Approach Delay (s)		21.7			17.0			19.4			18.7	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay		19.7			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		94.6			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		66.6%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Site Driveway (West) & Mapleview Drive E

04/08/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱	↰	↰	↱	↰	↱
Traffic Volume (veh/h)	1130	80	5	885	20	85
Future Volume (Veh/h)	1130	80	5	885	20	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1228	87		962	22	92
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (m)	138			215		
pX, platoon unblocked			0.69		0.77	0.69
vC, conflicting volume			1315		1762	658
vC1, stage 1 conf vol					1272	
vC2, stage 2 conf vol					491	
vCu, unblocked vol			559		479	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		94	88
cM capacity (veh/h)			696		389	748
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	819	496	326	641	114	
Volume Left	0	0	5	0	22	
Volume Right	0	87	0	0	92	
cSH	1700	1700	696	1700	635	
Volume to Capacity	0.48	0.29	0.01	0.38	0.18	
Queue Length 95th (m)	0.0	0.0	0.2	0.0	4.9	
Control Delay (s)	0.0	0.0	0.2	0.0	11.9	
Lane LOS			A		B	
Approach Delay (s)	0.0		0.1		11.9	
Approach LOS					B	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			Err%		ICU Level of Service	H
Analysis Period (min)			15			

Timings

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	155	890	220	675	320	110	805	240	225	795	105
Future Volume (vph)	155	890	220	675	320	110	805	240	225	795	105
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	7.0	12.0	7.0	12.0	12.0	7.0	40.0	40.0	7.0	40.0	40.0
Minimum Split (s)	11.0	35.0	11.0	35.0	35.0	11.0	46.0	46.0	11.0	46.0	46.0
Total Split (s)	15.0	42.0	17.0	44.0	44.0	12.0	48.0	48.0	13.0	49.0	49.0
Total Split (%)	12.5%	35.0%	14.2%	36.7%	36.7%	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	48.2	36.0	53.5	38.7	38.7	50.0	40.2	40.2	52.4	41.4	41.4
Actuated g/C Ratio	0.41	0.30	0.45	0.33	0.33	0.42	0.34	0.34	0.44	0.35	0.35
v/c Ratio	0.49	0.96	0.88	0.58	0.49	0.44	0.66	0.35	0.87	0.63	0.17
Control Delay	24.5	59.4	61.9	35.4	13.0	23.7	36.3	5.6	53.2	34.8	6.6
Queue Delay	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	59.4	61.9	36.0	13.1	23.7	36.3	5.6	53.2	34.8	6.6
LOS	C	E	E	D	B	C	D	A	D	C	A
Approach Delay		54.9		34.7			28.7			35.9	
Approach LOS		D		C			C			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 118.1

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 38.7

Intersection LOS: D

Intersection Capacity Utilization 104.2%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Yonge Street & Mapleview Drive E

Ø1	Ø2	Ø3	Ø4
13 s	48 s	17 s	42 s
Ø5	Ø6	Ø7	Ø8
12 s	49 s	15 s	44 s

Queues

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	157	1056	222	682	323	111	813	242	227	803	106
v/c Ratio	0.49	0.96	0.88	0.58	0.49	0.44	0.66	0.35	0.87	0.63	0.17
Control Delay	24.5	59.4	61.9	35.4	13.0	23.7	36.3	5.6	53.2	34.8	6.6
Queue Delay	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	59.4	61.9	36.0	13.1	23.7	36.3	5.6	53.2	34.8	6.6
Queue Length 50th (m)	20.7	124.5	35.3	69.1	17.1	14.3	84.0	1.5	31.3	81.4	0.9
Queue Length 95th (m)	34.4	#169.6	#79.8	89.0	43.7	24.9	105.1	18.5	#62.9	102.3	12.5
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	330	1098	252	1184	655	256	1285	717	262	1315	628
Starvation Cap Reductn	0	0	0	197	30	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	0.48	0.96	0.88	0.69	0.52	0.43	0.63	0.34	0.87	0.61	0.17

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis 3: Yonge Street & Maplevue Drive E

04/08/2022

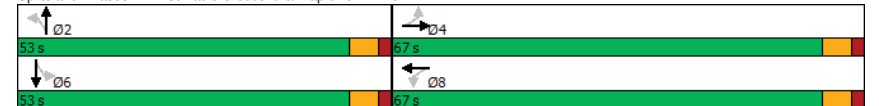
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Volume (vph)	155	890	155	220	675	320	110	805	240	225	795	105
Future Volume (vph)	155	890	155	220	675	320	110	805	240	225	795	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Frb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	3563		1716	3614	1545	1767	3614	1597	1785	3614	1551
Flt Permitted	0.27	1.00		0.10	1.00	1.00	0.21	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	510	3563		187	3614	1545	385	3614	1597	343	3614	1551
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	157	899	157	222	682	323	111	813	242	227	803	106
RTOR Reduction (vph)	0	12	0	0	0	149	0	0	153	0	0	65
Lane Group Flow (vph)	157	1044	0	222	682	174	111	813	89	227	803	41
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	0%	0%	1%	4%	1%	2%	1%	1%	0%	0%	1%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	46.2	36.0		51.6	38.7	38.7	48.0	40.2	40.2	50.4	41.4	41.4
Effective Green, g (s)	46.2	36.0		51.6	38.7	38.7	48.0	40.2	40.2	50.4	41.4	41.4
Actuated g/C Ratio	0.39	0.30		0.44	0.33	0.33	0.41	0.34	0.34	0.43	0.35	0.35
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	1086		248	1184	506	247	1230	543	256	1266	543
v/s Ratio Prot	0.04	c0.29		c0.10	0.19		0.03	0.22		c0.07	0.22	
v/s Ratio Perm	0.15			0.29		0.11	0.15		0.06	c0.31		0.03
v/c Ratio	0.51	0.96		0.90	0.58	0.34	0.45	0.66	0.16	0.89	0.63	0.08
Uniform Delay, d1	24.7	40.4		31.1	32.9	30.1	23.6	33.2	27.2	26.3	32.0	25.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	18.7		30.9	0.7	0.4	1.3	1.3	0.1	28.5	1.0	0.1
Delay (s)	26.0	59.0		62.0	33.6	30.5	24.9	34.5	27.4	54.8	33.1	25.6
Level of Service	C	E		E	C	C	C	C	C	D	C	C
Approach Delay (s)		54.7			37.9			32.1			36.7	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM 2000 Control Delay		40.5			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		118.1			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		104.2%			ICU Level of Service			G				
Analysis Period (min)		15										
c Critical Lane Group												

Timings 4: St Pauls Crescent & Maplevue Drive E

04/08/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱		↱	↰	↱
Traffic Volume (vph)	40	1315	40	1175	40	0	330	0
Future Volume (vph)	40	1315	40	1175	40	0	330	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	67.0	67.0	67.0	67.0	53.0	53.0	53.0	53.0
Total Split (%)	55.8%	55.8%	55.8%	55.8%	44.2%	44.2%	44.2%	44.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	53.2	53.2	53.2	53.2		47.2		47.2
Actuated g/C Ratio	0.47	0.47	0.47	0.47		0.42		0.42
v/c Ratio	0.52	0.83	0.65	0.77		0.30		0.72
Control Delay	46.4	30.3	68.5	27.7		21.5		38.4
Queue Delay	0.0	6.4	0.0	0.0		0.0		0.0
Total Delay	46.4	36.7	68.5	27.7		21.5		38.4
LOS	D	D	E	C		C		D
Approach Delay		37.0		29.0		21.5		38.4
Approach LOS		D		C		C		D
Intersection Summary								
Cycle Length: 120								
Actuated Cycle Length: 112.5								
Natural Cycle: 55								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.83								
Intersection Signal Delay: 33.1								
Intersection Capacity Utilization 80.2%								
Analysis Period (min) 15								

Splits and Phases: 4: St Pauls Crescent & Maplevue Drive E



Queues

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	1429	43	1293	190	359
v/c Ratio	0.52	0.83	0.65	0.77	0.30	0.72
Control Delay	46.4	30.3	68.5	27.7	21.5	38.4
Queue Delay	0.0	6.4	0.0	0.0	0.0	0.0
Total Delay	46.4	36.7	68.5	27.7	21.5	38.4
Queue Length 50th (m)	6.4	138.3	6.9	119.2	24.1	67.2
Queue Length 95th (m)	#23.3	166.4	#27.5	144.5	44.3	#115.5
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	95	1989	76	1946	637	502
Starvation Cap Reductn	0	510	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	0.97	0.57	0.66	0.30	0.72

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	40	1315	0	40	1175	15	40	0	135	330	0	0
Future Volume (vph)	40	1315	0	40	1175	15	40	0	135	330	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.90			1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	
Satd. Flow (prot)	1785	3650		1785	3571			1701			1825	
Flt Permitted	0.09	1.00		0.08	1.00			0.86			0.62	
Satd. Flow (perm)	175	3650		141	3571			1481			1198	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1429	0	43	1277	16	43	0	147	359	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	16	0	0	0	0
Lane Group Flow (vph)	43	1429	0	43	1292	0	0	174	0	0	359	0
Confl. Peds. (#/hr)	3					3						
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.2	53.2		53.2	53.2			47.2			47.2	
Effective Green, g (s)	53.2	53.2		53.2	53.2			47.2			47.2	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.42			0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	82	1727		66	1690			621			503	
v/s Ratio Prot		c0.39			0.36							
v/s Ratio Perm	0.25			0.30				0.12			c0.30	
v/c Ratio	0.52	0.83		0.65	0.76			0.28			0.71	
Uniform Delay, d1	20.7	25.6		22.5	24.4			21.4			27.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.9	3.4		20.7	2.1			1.1			8.4	
Delay (s)	26.7	29.0		43.3	26.6			22.6			35.4	
Level of Service	C	C		D	C			C			D	
Approach Delay (s)		29.0			27.1			22.6			35.4	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay		28.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.77										
Actuated Cycle Length (s)		112.4			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		80.2%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

Timings

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↩	↩	↕	↩	↕
Traffic Volume (vph)	100	200	1280	150	1025
Future Volume (vph)	100	200	1280	150	1025
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		8		6	
Detector Phase	8	8	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	24.0	24.0	24.0
Total Split (s)	26.0	26.0	94.0	94.0	94.0
Total Split (%)	21.7%	21.7%	78.3%	78.3%	78.3%
Yellow Time (s)	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	Max	Max	Max
Act Effect Green (s)	15.4	15.4	89.1	89.1	89.1
Actuated g/C Ratio	0.13	0.13	0.78	0.78	0.78
v/c Ratio	0.68	0.75	0.49	0.66	0.40
Control Delay	68.0	44.1	5.8	23.6	5.0
Queue Delay	0.0	0.0	0.4	0.0	0.0
Total Delay	68.0	44.1	6.2	23.6	5.0
LOS	E	D	A	C	A
Approach Delay	52.1		6.2		7.3
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 114.5

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 11.7

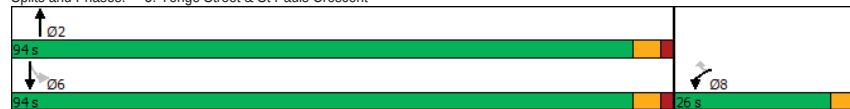
Intersection LOS: B

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Yonge Street & St Pauls Crescent



Queues

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	109	217	1391	163	1114
v/c Ratio	0.68	0.75	0.49	0.66	0.40
Control Delay	68.0	44.1	5.8	23.6	5.0
Queue Delay	0.0	0.0	0.4	0.0	0.0
Total Delay	68.0	44.1	6.2	23.6	5.0
Queue Length 50th (m)	23.3	28.0	49.3	13.9	35.1
Queue Length 95th (m)	42.0	53.8	78.8	#65.6	57.0
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	228	377	2811	246	2811
Starvation Cap Reductn	0	0	817	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.58	0.70	0.66	0.40

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis 5: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	100	200	1280	0	150	1025
Future Volume (vph)	100	200	1280	0	150	1025
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Flt protected	1.00	1.00	1.00		1.00	1.00
Flt permitted	1.00	1.00	1.00		1.00	1.00
Flt protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1190	1597	3614		1784	3614
Flt permitted	0.95	1.00	1.00		0.17	1.00
Satd. Flow (perm)	1190	1597	3614		317	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	217	1391	0	163	1114
RTOR Reduction (vph)	0	75	0	0	0	0
Lane Group Flow (vph)	109	142	1391	0	163	1114
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	50%	0%	1%	0%	0%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	15.4	15.4	89.1		89.1	89.1
Effective Green, g (s)	15.4	15.4	89.1		89.1	89.1
Actuated g/C Ratio	0.13	0.13	0.78		0.78	0.78
Clearance Time (s)	4.0	4.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	160	214	2812		246	2812
v/s Ratio Prot	c0.09		0.38			0.31
v/s Ratio Perm		0.09			c0.51	
v/c Ratio	0.68	0.66	0.49		0.66	0.40
Uniform Delay, d1	47.2	47.1	4.6		5.8	4.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	11.3	7.5	0.6		13.2	0.4
Delay (s)	58.5	54.6	5.2		19.0	4.5
Level of Service	E	D	A		B	A
Approach Delay (s)	55.9		5.2		6.3	
Approach LOS	E		A		A	
Intersection Summary						
HCM 2000 Control Delay			11.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			114.5		Sum of lost time (s)	10.0
Intersection Capacity Utilization			62.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 6: Yonge Street & Site Driveway (East)

04/08/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	55	40	1140	1105	65
Future Volume (Veh/h)	15	55	40	1140	1105	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	60	43	1239	1201	71
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type				None	None	
Median storage (veh)						
Upstream signal (m)					176	
pX, platoon unblocked	0.81	0.81	0.81			
vC, conflicting volume	1942	636	1272			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1699	92	875			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	75	92	93			
cM capacity (veh/h)	63	770	624			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	76	43	620	620	801	471
Volume Left	16	43	0	0	0	0
Volume Right	60	0	0	0	0	71
cSH	299	624	1700	1700	1700	1700
Volume to Capacity	0.25	0.07	0.36	0.36	0.47	0.28
Queue Length 95th (m)	7.5	1.7	0.0	0.0	0.0	0.0
Control Delay (s)	24.9	11.2	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	24.9	0.4			0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			43.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	0	1180	0	0	1160
Future Volume (Veh/h)	15	0	1180	0	0	1160
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	0	1255	0	0	1234
Pedestrians	1					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type		None			None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1873	628			1256	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1873	628			1256	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	100			100	
cM capacity (veh/h)	63	430			560	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	837	418	0	617	617
Volume Left	16	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	63	1700	1700	1700	1700	1700
Volume to Capacity	0.25	0.49	0.25	0.00	0.36	0.36
Queue Length 95th (m)	6.7	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	79.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	79.9	0.0		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay		0.5				
Intersection Capacity Utilization		42.6%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: Site Dwy (EBR IN ONLY) & Mapleview Drive E

04/08/2022

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1200	15	0	890	0	0
Future Volume (Veh/h)	1200	15	0	890	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1304	16	0	967	0	0
Pedestrians				1		
Lane Width (m)				3.7		
Walking Speed (m/s)				1.1		
Percent Blockage				0		
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (m)	215			137		
pX, platoon unblocked			0.71		0.79	0.71
vC, conflicting volume			1320		1796	661
vC1, stage 1 conf vol					1312	
vC2, stage 2 conf vol					484	
vCu, unblocked vol			636		582	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			670		344	770
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	869	451	484	484		
Volume Left	0	0	0	0		
Volume Right	0	16	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.51	0.27	0.28	0.28		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		44.0%		ICU Level of Service	A	
Analysis Period (min)		15				

Timings

1: Mapleview Drive E & Goodwin Drive

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱	↰	↱	↰	↱
Traffic Volume (vph)	15	1100	30	760	155	100	80	150
Future Volume (vph)	15	1100	30	760	155	100	80	150
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	76.0	76.0	76.0	76.0	44.0	44.0	44.0	44.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	46.6	46.6	46.6	46.6	39.9	39.9	39.9	39.9
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.42	0.42	0.42	0.42
v/c Ratio	0.08	0.78	0.39	0.52	0.32	0.22	0.17	0.22
Control Delay	13.0	22.7	30.7	17.0	23.8	18.1	21.9	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	22.7	30.7	17.0	23.8	18.1	21.9	20.7
LOS	B	C	C	B	C	B	C	C
Approach Delay		22.6		17.5		20.9		21.1
Approach LOS		C		B		C		C
Intersection Summary								
Cycle Length: 120								
Actuated Cycle Length: 95.6								
Natural Cycle: 55								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.78								
Intersection Signal Delay: 20.6								
Intersection Capacity Utilization 71.8%								
Analysis Period (min) 15								
Intersection LOS: C								
ICU Level of Service C								

Splits and Phases: 1: Mapleview Drive E & Goodwin Drive

↰ Ø2	↱ Ø4
44 s	76 s
↰ Ø6	↱ Ø8
44 s	76 s

Queues

1: Mapleview Drive E & Goodwin Drive

04/08/2022

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	1360	31	917	161	167	83	172
v/c Ratio	0.08	0.78	0.39	0.52	0.32	0.22	0.17	0.22
Control Delay	13.0	22.7	30.7	17.0	23.8	18.1	21.9	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	22.7	30.7	17.0	23.8	18.1	21.9	20.7
Queue Length 50th (m)	1.5	101.2	3.4	56.5	19.3	15.8	9.3	19.1
Queue Length 95th (m)	4.9	124.4	12.3	71.1	44.5	37.4	24.2	42.4
Internal Link Dist (m)		775.4		114.0		70.9		234.1
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	315	2701	124	2702	500	767	494	784
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.50	0.25	0.34	0.32	0.22	0.17	0.22
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Mapleview Drive E & Goodwin Drive

04/08/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Volume (vph)	15	1100	205	30	760	120	155	100	60	80	150	15
Future Volume (vph)	15	1100	205	30	760	120	155	100	60	80	150	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.7	3.7	3.5	3.7	3.7	3.7	3.5	3.7	3.5
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.94		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1784	3564		1825	3564		1821	1802		1781	1872	
Flt Permitted	0.22	1.00		0.09	1.00		0.63	1.00		0.63	1.00	
Satd. Flow (perm)	416	3564		165	3564		1200	1802		1185	1872	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	16	1146	214	31	792	125	161	104	62	83	156	16
RTOR Reduction (vph)	0	16	0	0	13	0	0	16	0	0	3	0
Lane Group Flow (vph)	16	1344	0	31	904	0	161	151	0	83	169	0
Confl. Peds. (#/hr)	1					1	2		2	2		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	46.6	46.6		46.6	46.6		39.9	39.9		39.9	39.9	
Effective Green, g (s)	46.6	46.6		46.6	46.6		39.9	39.9		39.9	39.9	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.42	0.42		0.42	0.42	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	202	1739		80	1739		501	752		495	782	
v/s Ratio Prot		c0.38			0.25			0.08			0.09	
v/s Ratio Perm	0.04			0.19			c0.13			0.07		
v/c Ratio	0.08	0.77		0.39	0.52		0.32	0.20		0.17	0.22	
Uniform Delay, d1	13.0	20.1		15.4	16.8		18.7	17.7		17.4	17.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.2		3.1	0.3		1.7	0.6		0.7	0.6	
Delay (s)	13.2	22.3		18.5	17.0		20.4	18.3		18.1	18.4	
Level of Service	B	C		B	B		C	B		B	B	
Approach Delay (s)		22.2			17.1			19.3			18.3	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay		19.9			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		95.5			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		71.8%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Site Driveway (West) & Mapleview Drive E

04/08/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱	↰	↰	↱	↰	↱
Traffic Volume (veh/h)	1125	115	15	880	30	105
Future Volume (Veh/h)	1125	115	15	880	30	105
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1223	125	16	957	33	114
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (m)	138			215		
pX, platoon unblocked			0.69		0.77	0.69
vC, conflicting volume			1348		1796	674
vC1, stage 1 conf vol					1286	
vC2, stage 2 conf vol					510	
vCu, unblocked vol			621		519	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			98		91	85
cM capacity (veh/h)			663		375	753
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	815	533	335	638	147	
Volume Left	0	0	16	0	33	
Volume Right	0	125	0	0	114	
cSH	1700	1700	663	1700	614	
Volume to Capacity	0.48	0.31	0.02	0.38	0.24	
Queue Length 95th (m)	0.0	0.0	0.6	0.0	7.1	
Control Delay (s)	0.0	0.0	0.8	0.0	12.7	
Lane LOS			A		B	
Approach Delay (s)	0.0		0.3		12.7	
Approach LOS			B			
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			Err%		ICU Level of Service	H
Analysis Period (min)			15			

Timings

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	165	890	220	680	320	110	810	240	225	815	105
Future Volume (vph)	165	890	220	680	320	110	810	240	225	815	105
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	7.0	12.0	7.0	12.0	12.0	7.0	40.0	40.0	7.0	40.0	40.0
Minimum Split (s)	11.0	35.0	11.0	35.0	35.0	11.0	46.0	46.0	11.0	46.0	46.0
Total Split (s)	17.0	42.0	17.0	42.0	42.0	13.0	48.0	48.0	13.0	48.0	48.0
Total Split (%)	14.2%	35.0%	14.2%	35.0%	35.0%	10.8%	40.0%	40.0%	10.8%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	49.4	36.0	52.4	37.6	37.6	52.5	42.0	42.0	53.5	42.5	42.5
Actuated g/C Ratio	0.41	0.30	0.44	0.31	0.31	0.44	0.35	0.35	0.45	0.35	0.35
v/c Ratio	0.53	0.98	0.90	0.60	0.50	0.44	0.65	0.34	0.87	0.64	0.17
Control Delay	26.0	63.3	66.7	37.9	14.4	23.4	35.7	5.5	54.1	35.4	6.6
Queue Delay	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	63.3	66.7	38.5	14.5	23.4	35.7	5.5	54.1	35.4	6.6
LOS	C	E	E	D	B	C	D	A	D	D	A
Approach Delay		58.2		37.3			28.3			36.4	
Approach LOS		E		D			C			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 40.2

Intersection LOS: D

Intersection Capacity Utilization 104.2%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Yonge Street & Mapleview Drive E

Ø1	Ø2	Ø3	Ø4
13 s	48 s	17 s	42 s
Ø5	Ø6	Ø7	Ø8
13 s	48 s	17 s	42 s

Queues

3: Yonge Street & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	167	1056	222	687	323	111	818	242	227	823	106
v/c Ratio	0.53	0.98	0.90	0.60	0.50	0.44	0.65	0.34	0.87	0.64	0.17
Control Delay	26.0	63.3	66.7	37.9	14.4	23.4	35.7	5.5	54.1	35.4	6.6
Queue Delay	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	63.3	66.7	38.5	14.5	23.4	35.7	5.5	54.1	35.4	6.6
Queue Length 50th (m)	23.0	127.7	36.5	72.5	19.1	14.3	84.6	1.7	31.4	85.3	0.9
Queue Length 95th (m)	37.1	#172.4	#82.3	93.2	47.0	24.9	105.7	18.5	#63.7	106.5	12.7
Internal Link Dist (m)		113.3		60.0			151.6			172.4	
Turn Bay Length (m)	70.0		55.0		35.0	75.0		60.0	60.0		30.0
Base Capacity (vph)	340	1082	246	1143	642	262	1264	709	261	1279	619
Starvation Cap Reductn	0	0	0	168	23	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	0.49	0.98	0.90	0.70	0.52	0.42	0.65	0.34	0.87	0.64	0.17

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis 3: Yonge Street & Maplevue Drive E

04/08/2022

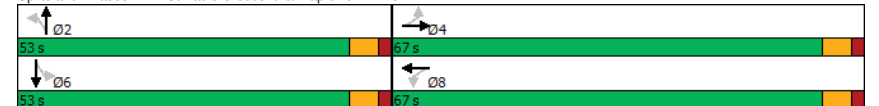
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Volume (vph)	165	890	155	220	680	320	110	810	240	225	815	105
Future Volume (vph)	165	890	155	220	680	320	110	810	240	225	815	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	3569		1700	3650	1581	1750	3614	1597	1750	3614	1566
Flt Permitted	0.25	1.00		0.11	1.00	1.00	0.19	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	466	3569		190	3650	1581	359	3614	1597	349	3614	1566
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	167	899	157	222	687	323	111	818	242	227	823	106
RTOR Reduction (vph)	0	12	0	0	0	147	0	0	150	0	0	65
Lane Group Flow (vph)	167	1044	0	222	687	176	111	818	92	227	823	41
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	2%	1%	0%	2%	1%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	47.4	36.0		50.6	37.6	37.6	50.5	42.0	42.0	51.5	42.5	42.5
Effective Green, g (s)	47.4	36.0		50.6	37.6	37.6	50.5	42.0	42.0	51.5	42.5	42.5
Actuated g/C Ratio	0.39	0.30		0.42	0.31	0.31	0.42	0.35	0.35	0.43	0.35	0.35
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	1070		243	1143	495	249	1264	558	254	1279	554
v/s Ratio Prot	0.05	0.29		0.10	0.19		0.03	0.23		0.07	0.23	
v/s Ratio Perm	0.16			0.28		0.11	0.16		0.06	0.32		0.03
v/c Ratio	0.54	0.98		0.91	0.60	0.36	0.45	0.65	0.16	0.89	0.64	0.07
Uniform Delay, d1	25.2	41.6		32.0	34.9	31.8	23.1	32.8	26.9	26.9	32.4	25.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	21.6		35.2	0.9	0.4	1.3	2.6	0.6	30.1	2.5	0.3
Delay (s)	27.1	63.2		67.1	35.8	32.3	24.4	35.3	27.5	57.1	34.9	26.0
Level of Service	C	E		E	D	C	C	D	C	E	C	C
Approach Delay (s)		58.3			40.5			32.7			38.4	
Approach LOS		E			D			C			D	
Intersection Summary												
HCM 2000 Control Delay		42.6			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		120.0			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		104.2%			ICU Level of Service			G				
Analysis Period (min)		15										
c Critical Lane Group												

Timings 4: St Pauls Crescent & Maplevue Drive E

04/08/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱			↰	↱
Traffic Volume (vph)	40	1315	40	1180	40	0	330	0
Future Volume (vph)	40	1315	40	1180	40	0	330	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	67.0	67.0	67.0	67.0	53.0	53.0	53.0	53.0
Total Split (%)	55.8%	55.8%	55.8%	55.8%	44.2%	44.2%	44.2%	44.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	53.9	53.9	53.9	53.9		47.2		47.2
Actuated g/C Ratio	0.48	0.48	0.48	0.48		0.42		0.42
v/c Ratio	0.52	0.84	0.65	0.75		0.30		0.72
Control Delay	45.9	30.9	69.3	27.0		21.7		39.0
Queue Delay	0.0	10.1	0.0	0.0		0.0		0.0
Total Delay	45.9	41.1	69.3	27.0		21.7		39.0
LOS	D	D	E	C		C		D
Approach Delay		41.2		28.4		21.7		39.0
Approach LOS		D		C		C		D
Intersection Summary								
Cycle Length: 120								
Actuated Cycle Length: 113.2								
Natural Cycle: 60								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.84								
Intersection Signal Delay: 34.7								
Intersection Capacity Utilization 80.2%								
Intersection LOS: C								
ICU Level of Service D								
Analysis Period (min) 15								

Splits and Phases: 4: St Pauls Crescent & Maplevue Drive E



Queues

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	1429	43	1299	190	359
v/c Ratio	0.52	0.84	0.65	0.75	0.30	0.72
Control Delay	45.9	30.9	69.3	27.0	21.7	39.0
Queue Delay	0.0	10.1	0.0	0.0	0.0	0.0
Total Delay	45.9	41.1	69.3	27.0	21.7	39.0
Queue Length 50th (m)	6.4	140.1	7.0	118.7	24.6	68.6
Queue Length 95th (m)	#23.3	169.3	#27.8	143.7	44.3	#119.1
Internal Link Dist (m)		33.1		1090.4	393.6	270.9
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	94	1938	75	1973	634	498
Starvation Cap Reductn	0	495	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.99	0.57	0.66	0.30	0.72

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: St Pauls Crescent & Mapleview Drive E

04/08/2022

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	40	1315	0	40	1180	15	40	0	135	330	0	0
Future Volume (vph)	40	1315	0	40	1180	15	40	0	135	330	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Flt	1.00	1.00		1.00	1.00			0.90			1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	
Satd. Flow (prot)	1785	3579		1785	3643			1701			1825	
Flt Permitted	0.09	1.00		0.07	1.00			0.86			0.62	
Satd. Flow (perm)	175	3579		139	3643			1482			1196	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1429	0	43	1283	16	43	0	147	359	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	16	0	0	0	0
Lane Group Flow (vph)	43	1429	0	43	1298	0	0	174	0	0	359	0
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.9	53.9		53.9	53.9			47.2			47.2	
Effective Green, g (s)	53.9	53.9		53.9	53.9			47.2			47.2	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.42			0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	83	1705		66	1736			618			499	
v/s Ratio Prot		c0.40			0.36							
v/s Ratio Perm	0.25			0.31				0.12			c0.30	
v/c Ratio	0.52	0.84		0.65	0.75			0.28			0.72	
Uniform Delay, d1	20.6	25.8		22.5	24.1			21.8			27.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.4	3.8		20.7	1.8			1.1			8.7	
Delay (s)	25.9	29.6		43.2	25.9			22.9			36.1	
Level of Service	C	C		D	C			C			D	
Approach Delay (s)		29.5			26.4			22.9			36.1	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay		28.6			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.78										
Actuated Cycle Length (s)		113.1			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		80.2%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

Timings

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↩	↩	↕	↩	↕
Traffic Volume (vph)	100	200	1295	150	1045
Future Volume (vph)	100	200	1295	150	1045
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		8		6	
Detector Phase	8	8	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	24.0	24.0	24.0
Total Split (s)	26.0	26.0	94.0	94.0	94.0
Total Split (%)	21.7%	21.7%	78.3%	78.3%	78.3%
Yellow Time (s)	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	Max	Max	Max
Act Effect Green (s)	14.9	14.9	89.1	89.1	89.1
Actuated g/C Ratio	0.13	0.13	0.78	0.78	0.78
v/c Ratio	0.47	0.77	0.50	0.68	0.40
Control Delay	51.7	47.0	5.7	25.7	4.9
Queue Delay	0.0	0.0	0.4	0.0	0.0
Total Delay	51.7	47.0	6.1	25.7	4.9
LOS	D	D	A	C	A
Approach Delay	48.6		6.1		7.5
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 114

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 11.3

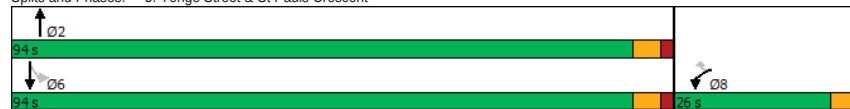
Intersection LOS: B

Intersection Capacity Utilization 63.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Yonge Street & St Pauls Crescent



Queues

5: Yonge Street & St Pauls Crescent

04/08/2022

	WBL	WBR	NBT	SBL	SBT
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	109	217	1408	163	1136
v/c Ratio	0.47	0.77	0.50	0.68	0.40
Control Delay	51.7	47.0	5.7	25.7	4.9
Queue Delay	0.0	0.0	0.4	0.0	0.0
Total Delay	51.7	47.0	6.1	25.7	4.9
Queue Length 50th (m)	22.5	28.7	49.0	14.1	35.2
Queue Length 95th (m)	39.6	54.6	80.3	#67.5	58.4
Internal Link Dist (m)	270.9		172.4		303.6
Turn Bay Length (m)	50.0				
Base Capacity (vph)	344	376	2824	239	2824
Starvation Cap Reductn	0	0	813	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.58	0.70	0.68	0.40

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & St Pauls Crescent

04/08/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↰	↱	↰	↱
Traffic Volume (vph)	100	200	1295	0	150	1045
Future Volume (vph)	100	200	1295	0	150	1045
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.7	3.5	3.5	3.7
Total Lost time (s)	4.0	4.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Flt protected	1.00	1.00	1.00		1.00	1.00
Flt permitted	1.00	1.00	1.00		1.00	1.00
Flt protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1785	1597	3614		1748	3614
Flt permitted	0.95	1.00	1.00		0.17	1.00
Satd. Flow (perm)	1785	1597	3614		305	3614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	217	1408	0	163	1136
RTOR Reduction (vph)	0	73	0	0	0	0
Lane Group Flow (vph)	109	144	1408	0	163	1136
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	14.9	14.9	89.1		89.1	89.1
Effective Green, g (s)	14.9	14.9	89.1		89.1	89.1
Actuated g/C Ratio	0.13	0.13	0.78		0.78	0.78
Clearance Time (s)	4.0	4.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	233	208	2824		238	2824
v/s Ratio Prot	0.06		0.39			0.31
v/s Ratio Perm		c0.09			c0.53	
v/c Ratio	0.47	0.69	0.50		0.68	0.40
Uniform Delay, d1	45.9	47.4	4.5		5.9	4.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	9.5	0.6		14.9	0.4
Delay (s)	47.4	56.9	5.1		20.7	4.4
Level of Service	D	E	A		C	A
Approach Delay (s)	53.7		5.1			6.4
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			10.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			114.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			63.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
6: Yonge Street & Site Driveway (East)

04/08/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↱	↱	↱
Traffic Volume (veh/h)	25	80	60	1135	1100	90
Future Volume (Veh/h)	25	80	60	1135	1100	90
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	87	65	1234	1196	98
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type				None	None	
Median storage (veh)						
Upstream signal (m)					176	
pX, platoon unblocked	0.81	0.81	0.81			
vC, conflicting volume	1992	647	1294			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1752	87	888			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	51	89	89			
cM capacity (veh/h)	55	771	613			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	114	65	617	617	797	497
Volume Left	27	65	0	0	0	0
Volume Right	87	0	0	0	0	98
cSH	233	613	1700	1700	1700	1700
Volume to Capacity	0.49	0.11	0.36	0.36	0.47	0.29
Queue Length 95th (m)	18.7	2.7	0.0	0.0	0.0	0.0
Control Delay (s)	36.5	11.6	0.0	0.0	0.0	0.0
Lane LOS	E	B				
Approach Delay (s)	36.5	0.6			0.0	
Approach LOS	E					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			49.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Yonge Street & St Pauls Crescent

04/08/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	0	1195	0	0	1180
Future Volume (Veh/h)	15	0	1195	0	0	1180
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	16	0	1285	0	0	1269
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1920	642			1285	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1920	642			1285	
tC, single (s)	6.8	6.9			6.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			3.2	
p0 queue free %	74	100			100	
cM capacity (veh/h)	60	421			214	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	857	428	0	634	634
Volume Left	16	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	60	1700	1700	1700	1700	1700
Volume to Capacity	0.26	0.50	0.25	0.00	0.37	0.37
Queue Length 95th (m)	7.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	84.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	84.7	0.0		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay		0.5				
Intersection Capacity Utilization		43.0%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
8: Site Dwy (EBR IN ONLY) & Mapleview Drive E

04/08/2022

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1210	20	0	895	0	0
Future Volume (Veh/h)	1210	20	0	895	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1315	22	0	973	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (m)	215			137		
pX, platoon unblocked			0.72		0.80	0.72
vC, conflicting volume			1337		1812	668
vC1, stage 1 conf vol					1326	
vC2, stage 2 conf vol					486	
vCu, unblocked vol			695		621	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			647		327	782
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	877	460	486	486		
Volume Left	0	0	0	0		
Volume Right	0	22	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.52	0.27	0.29	0.29		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			37.4%		ICU Level of Service	A
Analysis Period (min)			15			

APPENDIX H:

OTM Book 12 - Signal Warrant Justification 7 Details



- e) Pedestrian Grade Separations In cases of very heavy pedestrian and traffic volumes, it may be economically viable to construct pedestrian bridges or tunnels.
4. The priority placed on implementing a new pedestrian crossing device should reflect the proximity and convenience of existing crossings; a higher priority should be placed on crossings where no reasonable alternatives exist within walking distance.

4.10 Justification 7 – Projected Volumes

In some cases, it is desired to determine the future need for traffic signals at an existing or planned intersection. There are two basic scenarios. The first is that the intersection may exist and all that is changing is the addition of one or more developments which will add traffic to the intersection. The second is a development which will require, or be associated with, the construction of one or more new legs at an existing intersection or a completely new intersection or roadway.

The prediction of future traffic demands is based on knowledge of growth in roadway usage, growth of local traffic generators and predicted traffic volumes, obtained from a traffic

impact study, transportation planning study, environmental assessment or other similar evaluation. The preferred approach is that eight-hour volume projections are estimated as part of the engineering study and evaluated against Justifications 1, 2 or 3. It is incumbent upon the road authority to ensure that the calculation methodology is sound and is based on good data, so that there is a high level of confidence in the predicted traffic volumes.

For future development, especially where the intersection or road may not exist, eight-hour volumes may be difficult to obtain or predict with the necessary accuracy. If eight-hour volumes are unavailable or not considered to be of sufficient accuracy, Peak Hour Volumes (PHV) may be estimated as part of the transportation studies and reduced to Average Hourly Volumes (AHV) for comparison with traffic signal justifications for projected volumes.

Table 21 – Justification 7 – Projected Volumes

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Sectional		Entire %
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900			
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170			
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	720	600	900			
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	120	170			

*Note: For "T" intersections, these values should be increased by 50%.

The Average Hourly Volume for a typical day can be estimated from the Peak Hour Volumes using the following relationships:

$$AHV = \frac{PHV}{2} \text{ or } AHV = \frac{amPHV + pmPHV}{4}$$

Alternately, the Average Hourly Volume for the eight highest hours of an average day can be estimated from Annual Average Daily Traffic (AADT) volume using the following relationship:

$$AHV = \frac{AADT}{16}$$

Where:

AHV = Average hourly volume

AADT = Annual average daily traffic

Analysis Using Eight-hour Volumes

If eight-hour projections are available, Justifications 1, 2 or 3 should be used. For the situation of an existing intersection with new development, Justifications 1 or 2 need to be met to 100%, or Justification 3 needs to be met to 80%.

For developments where new intersections or roadways are to be built, there is more uncertainty in the volume projections as the estimate requires projections of background traffic as well as development traffic. For this reason, where new intersection or roadway construction is required, Justifications 1 or 2 must be met to 120%.

Analysis Using Average Hour Volume

In the case that the volume estimates are based on the expansion of peak hour volumes or average daily traffic, the effect on Justifications 1 or 2 of the requirement to meet the warrant for each of eight hours would be lessened by averaging. As well, increased uncertainty is introduced by estimating from as little as one hour of traffic volume. For this reason, the thresholds are raised and, for traffic signals to be considered, Justification 7 as per Table 21 is used but with a 20% increase over the required volumes for an existing intersection and a 50% increase for a future intersection or roadway. For example, under restricted flow and two lanes, the AHV for Part 1A of Justification 7 must be met to $900 \times 1.20 = 1080$ vph.

Note that future volumes may include side street traffic attracted to the new traffic signal since the signal may provide a significant reduction in delay.

Table 22 – Future Development: Volume Expansion Required to Meet Justifications

Roadway Condition	Full Eight-hour Count Estimate Available		AHV Only Available
	Justification 1 or 2	Justification 3	Justification 7
Both Intersecting Roads Exist; Development is Future	100%	80%	120%
One Road, Both Roads and/or Intersection are Future; Development is Future	120%	N/A	150%

STEP 1

	All Approaches	Minor Streets	Major Street	Combined Vehicle and Pedestrian Crossing Artery
amPHV	2195	50	2145	50
pmPHV	2420	70	2350	70
AHV	1153.75	30	1123.75	30

$AHV = (amPHV + pmPHV) / 4$

STEP 2

JUSTIFICATION 7

Justification	Description	Minimum Requirement 1 Lane Highways*		Minimum Requirement 2 or more lanes*		Compliance		Entire %	Warranted?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Sectional			
						Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1154	192%	25%	NO
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	30	25%		
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	720	600	900	1124	187%	25%	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	120	170	30	25%		

*Note: For "T" intersections, these values should be increased by 50%.

Analysis Using Average Hour Volume

For traffic signals to be considered, Justification 7 as per Table 21 is used but with a 20% increase over the required volumes for an existing intersection and a **50% increase for a future intersection** or roadway.

STEP 1

	All Approaches	Minor Streets	Major Street	Combined Vehicle and Pedestrian Crossing Artery
amPHV	1995	70	1925	70
pmPHV	2205	105	2100	105
AHV	1050	43.75	1006.25	43.75

$AHV = (amPHV + pmPHV) / 4$

STEP 2

JUSTIFICATION 7

Justification	Description	Minimum Requirement 1 Lane Highways*		Minimum Requirement 2 or more lanes*		Compliance			Warranted?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Sectional		Entire %	
						Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1050	175%	36%	NO
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	44	36%		
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	720	600	900	1000	166%	36%	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	120	170	44	36%		

*Note: For "T" intersections, these values should be increased by 50%.

Analysis Using Average Hour Volume

For traffic signals to be considered, Justification 7 as per Table 21 is used but with a 20% increase over the required volumes for an existing intersection and a **50% increase for a future intersection** or roadway.

STEP 1

	All Approaches	Minor Streets	Major Street	Combined Vehicle and Pedestrian Crossing Artery
amPHV	2490	105	2385	105
AHV	1245	52.5	1192.5	52.5

AHV = SatPHV/2

STEP 2

JUSTIFICATION 7

Justification	Description	Minimum Requirement 1 Lane Highways*		Minimum Requirement 2 or more lanes*		Compliance			Warranted?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Sectional		Entire %	
						Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1245	208%	44%	NO
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	53	44%		
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	720	600	900	1193	199%	44%	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	120	170	53	44%		

*Note: For "T" intersections, these values should be increased by 50%.

Analysis Using Average Hour Volume

For traffic signals to be considered, Justification 7 as per Table 21 is used but with a 20% increase over the required volumes for an existing intersection and a **50% increase for a future intersection** or roadway.

STEP 1

	All Approaches	Minor Streets	Major Street	Combined Vehicle and Pedestrian Crossing Artery
amPHV	2270	135	2135	135
AHV	1135	67.5	1067.5	67.5

AHV = SatPHV/2

STEP 2

JUSTIFICATION 7

Justification	Description	Minimum Requirement 1 Lane Highways*		Minimum Requirement 2 or more lanes*		Compliance			Warranted?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Sectional		Entire %	
						Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1135	169%	56%	NO
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	68	56%		
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	720	600	900	1088	178%	56%	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	120	170	68	56%		

*Note: For "T" intersections, these values should be increased by 50%.

Analysis Using Average Hour Volume

For traffic signals to be considered, Justification 7 as per Table 21 is used but with a 20% increase over the required volumes for an existing intersection and a **50% increase for a future intersection** or roadway.

APPENDIX I:

Detailed Drive Through Simulation Summary



AM Peak Hour

Sim #	Demand	Queue (veh)				System Time (s)			
		Average	85th	95th	Max	Average	85th	95th	Max
1	107	1.1	2.1	2.9	7.2	37	62.7	72.2	94.1
2	114	1.5	3.3	4.6	7.8	48.7	78.2	107.4	144.1
3	103	0.97	2	2.8	5.5	37	59.2	77.5	111.9
4	116	1.9	3.9	6.3	11.2	60	105.7	147.2	167.5
5	113	1.7	2.9	4.6	6.3	55.1	93.9	138.6	209
6	113	1.9	3.7	6.9	9.6	62.1	103.8	156.9	179.8
7	104	1.2	2.2	4.1	5.5	46.3	73.9	94.2	134.5
8	100	1.2	2.1	3.7	4.6	45.6	69.1	109.5	147.7
9	104	1.4	2.7	4.1	6.2	49.5	75	85.5	104.1
10	108	1.1	2.3	3.1	5.6	40.1	60.8	91.4	154.1
AVG	108.2	1.4	2.7	4.3	7.0	48.1	78.2	108.0	144.7



PM Peak Hour

Sim #	Demand	Queue (veh)				System Time (s)			
		Average	85th	95th	Max	Average	85th	95th	Max
1	62	0.7	1.7	2.3	4.8	40.3	65.1	91.3	130.7
2	68	0.8	1.8	2.9	5.6	42.1	61.1	135.1	159.5
3	71	0.9	1.9	2.6	5.6	47.2	69.9	83.2	102.7
4	74	1	2.4	3.2	5	52.8	80.6	95.5	125.2
5	72	0.9	2.1	3.1	6.4	55.7	93.5	147.6	171.5
6	71	0.8	1.8	2.5	5.6	44	70.9	86.2	109
7	63	1.1	2.3	4	5.6	49.6	75.1	98.2	109.6
8	63	0.8	1.9	2.4	4.8	44.1	69.2	96.8	114
9	67	0.8	2	2.9	5.5	47.8	78.8	106.6	138.9
10	69	0.8	1.8	2.5	4.7	52.8	81.6	106.7	115
AVG	68	0.9	2.0	2.8	5.4	47.6	74.6	104.7	127.6



SAT Peak Hour

Sim #	Demand	Queue (veh)				System Time (s)			
		Average	85th	95th	Max	Average	85th	95th	Max
1	121	3.7	6.2	7.8	9.6	116.5	212.2	243.4	288.3
2	107	4.2	7.2	10.5	15.4	151.3	256.3	302.4	335.3
3	116	2.8	4.6	6	7.8	96.7	177.8	256	274.8
4	113	4.3	7.3	8.9	11.1	142.3	206.7	284.6	373.3
5	111	4	7.4	10.2	12.3	136.2	227.7	259.5	289.5
6	101	5.9	11.4	12.8	15.6	220.7	386.9	461.5	538.6
7	112	5.2	9.3	12.9	16.4	175.4	254.9	296.6	341.6
8	95	3.2	5.9	11	14.4	109.5	196.1	330.6	389.8
9	103	4	7.5	9.4	11.6	149.5	234.3	261.4	324.8
10	101	5.8	10.1	11.3	14.6	218.7	320.9	406.7	484.9
AVG	108	4.3	7.7	10.1	12.9	151.7	247.4	310.3	364.1

