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Transportation Impact Study

PROPOSED MIXED-USE DEVELOPMENT

5061 Stouffville Road
Town of Whitchurch-Stouffville

May 2, 2025
Project Number: NT-23-038

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NextEng Consulting Group Inc

May 2, 2025

Times 4750 Inc.
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Attention: Hashem Ghadaki

Re: Engineering Service – Transportation Impact Study
Proposed Mixed-Use Development
5061 Stouffville Road, Town of Whitchurch-Stouffville
Our Project No. NT-23-038

Nextrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study in support of an Official Plan Amendment Application and Zoning By-law Amendment Application for a proposed mixed-use development at the property of 5061 Stouffville Road in the Town of Whitchurch-Stouffville.

The development will introduce five (5) residential buildings of 19 to 29 storeys, with a total of 1,243 dwelling units. A one-storey day care building of 1,116sqm will also be provided.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS CONSULTING ENGINEERS

Prepared by:

John Nhan, P.Eng.
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Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
Transportation Impact Study	May 2, 2025	First submission OPA/ZBA.

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1. PROPOSED DEVELOPMENT 1
1.2. STUDY METHODOLOGY 3
1.3. STUDY AREA 3
2.0 EXISTING TRANSPORTATION CONDITIONS 4
2.1. ROAD NETWORK 4
2.2. EXISTING TRANSIT FACILITIES 5
2.3. ACTIVE TRANSPORTATION NETWORK 6
2.4. TRANSIT MODE ASSESSMENT 7
2.5. PEDESTRIAN MODE ASSESSMENT 8
2.6. CYCLING MODE ASSESSMENT 8
2.7. TRAFFIC DATA COLLECTION 9
2.8. EXISTING INTERSECTION CAPACITY ANALYSIS 9
3.0 FUTURE BACKGROUND TRAFFIC CONDITIONS 12
3.1. FUTURE ROAD IMPROVEMENTS 12
3.2. CORRIDOR GROWTH 12
3.3. BACKGROUND DEVELOPMENTS 13
3.4. 2029 FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS 15
3.5. 2034 FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS 18
4.0 SITE TRAFFIC 21
4.1. TRAVEL MODE SHARE 21
4.2. SITE TRIP GENERATION 21
4.3. NON-AUTO TRIP GENERATION 21
4.4. TRIP DISTRIBUTION AND ASSIGNMENT 22
5.0 FUTURE TOTAL TRAFFIC CONDITIONS 26
5.1. PROPOSED ROAD IMPROVEMENTS OF THE SUBJECT DEVELOPMENT 26
5.2. 2029 FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS 27
5.3. 2034 FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS 30
5.4. MITIGATION MEASURES – 2034 FUTURE TOTAL CONDITION 33
5.4.1. MCCOWAN ROAD AND STOUFFVILLE ROAD 33

5.4.2. STREET 'A' AND STOUFFVILLE ROAD 34
5.4.3. HIGHWAY 48 AND STOUFFVILLE ROAD 35
5.4.4. HIGHWAY 48 AND HOOVER PARK DRIVE 35

6.0 SITE PLAN REVIEW **37**

6.1. VEHICULAR SITE CIRCULATION **37**

6.2. LOADING SPACE REVIEW **37**

7.0 PARKING REVIEW **38**

7.1. PROPOSED PARKING PROVISION **38**

7.2. VEHICULAR PARKING REVIEW – ZONING BY-LAW 2010-001-ZO **38**

7.3. BARRIER-FREE PARKING SPACE REVIEW **39**

7.4. BICYCLE PARKING REVIEW **39**

8.0 TRANSPORTATION DEMAND MANAGEMENT (TDM) **40**

8.1. TDM MEASURES **40**

9.0 CONCLUSIONS AND RECOMMENDATIONS **41**

LIST OF TABLES

Table 1-1: Summary of Building Site Statistics 1
Table 2-1: Existing Transit Level of Service Assessment 8
Table 2-2: Existing Pedestrian Level of Service Assessment 8
Table 2-3: Existing Cycling Level of Service Assessment 9
Table 2-4: Summary of TMC Data Collection 9
Table 2-5: Existing Intersection Capacity Analysis 11
Table 3-1: Corridor Growth Rates 12
Table 3-2: Summary of Background Developments 13
Table 3-3: 2029 Future Background Intersection Capacity Analysis Results 15
Table 3-4: 2034 Future Background Intersection Capacity Analysis Results 18

Table 4-1: Travel Mode Share 21
Table 4-2: Vehicular Site Trip Generation 21
Table 4-3: Non-Auto Site Trip Generation 22
Table 4-4: Residential Directional Trip Distribution 22
Table 4-5: Day Care Directional Trip Distribution 22
Table 5-1: 2029 Future Total Intersection Capacity Analysis 27
Table 5-2: 2034 Future Total Intersection Capacity Analysis 30
Table 5-3: 2034 Future Total Results of Mitigation Measures – McCowan Road and Stouffville Road 33
Table 5-4: 2034 Future Total Results of Mitigation Measures – Street A and Stouffville Road 34
Table 5-5: 2034 Future Total Results of Mitigation Measures – Highway 48 and Stouffville Road 35
Table 5-6: 2034 Future Total Results of Mitigation Measures – Highway 48 and Hoover Park Drive 36
Table 7-1: Summary of Zoning By-law Vehicular Parking Requirements 38
Table 7-6: Summary of Barrier-Free Parking Requirements 39
Table 7-7: Summary of Bicycle Parking Requirements from City of Markham Zoning By-law 2024-19 39
Table 8-1: TDM Measures for the Proposed Development 40

LIST OF FIGURES

Figure 1-1: Subject Site Location 1
Figure 1-2: Architectural Site Plan 2
Figure 1-3: Context Plan 2
Figure 2-1: Study Area Intersection Lane Configuration 4
Figure 2-2: Existing Transit Facilities 5
Figure 2-3: Active Transportation Network 7
Figure 2-4: Existing Traffic Volumes 10
Figure 3-1: Background Development Traffic Volumes 14
Figure 3-2: 2029 Future Background Traffic Volumes 17
Figure 3-3: 2034 Future Background Traffic Volumes 19
Figure 4-1: Residential Site Traffic Volumes 23
Figure 4-2: Day Care Site Traffic Volumes 24
Figure 4-3: Total Site Traffic Volumes 25
Figure 5-1: Functional Plan – Proposed Right-Of-Ways Within 5061 Stouffville Road Lands 26
Figure 5-2: 2029 Future Total Traffic Volumes 29
Figure 5-3: 2034 Future Total Traffic Volumes 32

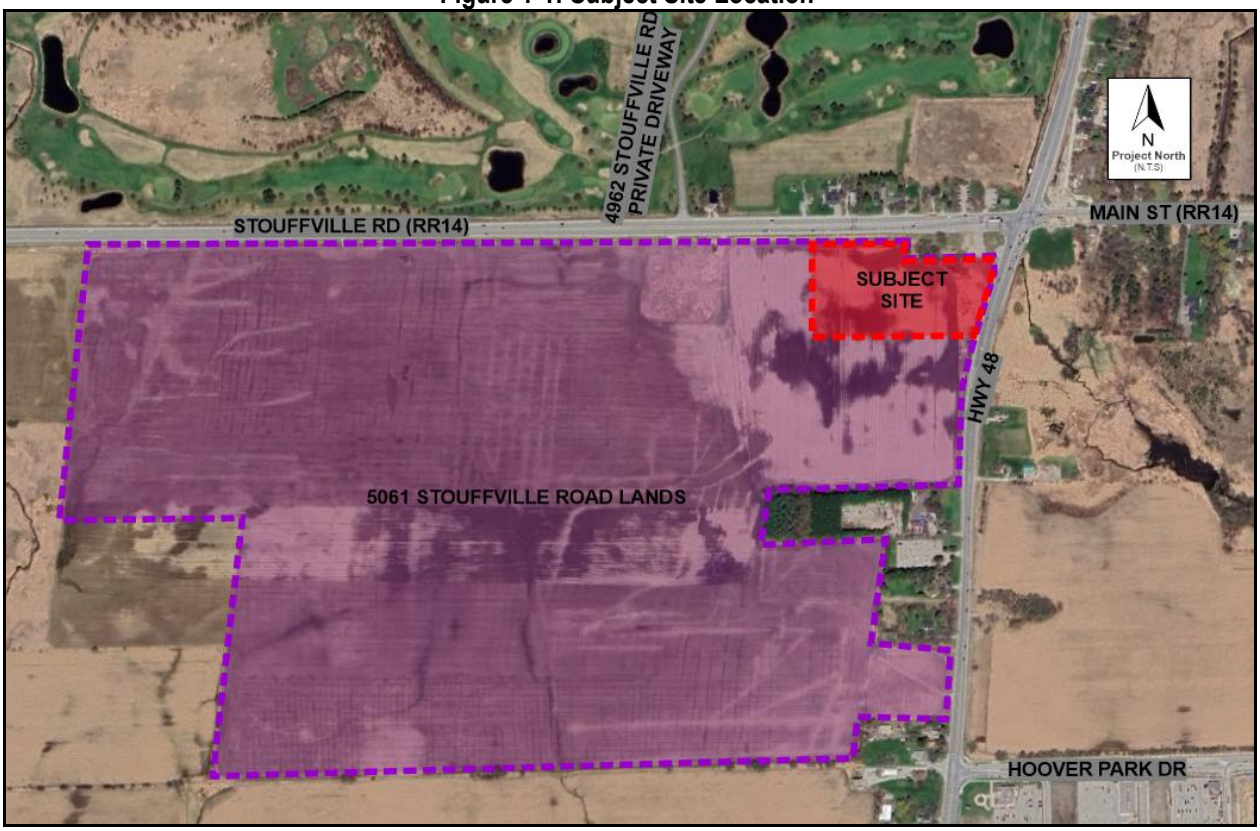
APPENDICES

Appendix A – Architectural Plans
Appendix B – TIS Terms of Reference
Appendix C – Traffic Data and Background Documents
Appendix D – Synchro and SimTraffic Reports
Appendix E – TTS Data
Appendix F – Functional Plan Drawings
Appendix G – Traffic Signal Warrant
Appendix H – Vehicle Movement Diagrams

1.0 INTRODUCTION

Nextrans Consulting Engineers ("Nextrans"), a Division of NextEng Consulting Group Inc., has been retained by Times 4750 Inc. (the "client") to undertake this Transportation Impact Study (TIS) in support of Official Plan Amendment and Zoning By-law Amendment Applications for a proposed mixed-use development located at the lands within the northeast part of the property of 5061 Stouffville Road (northeast part known as the "subject site") in the Town of Whitchurch-Stouffville. The subject site location is provided in **Figure 1-1**.

Figure 1-1: Subject Site Location



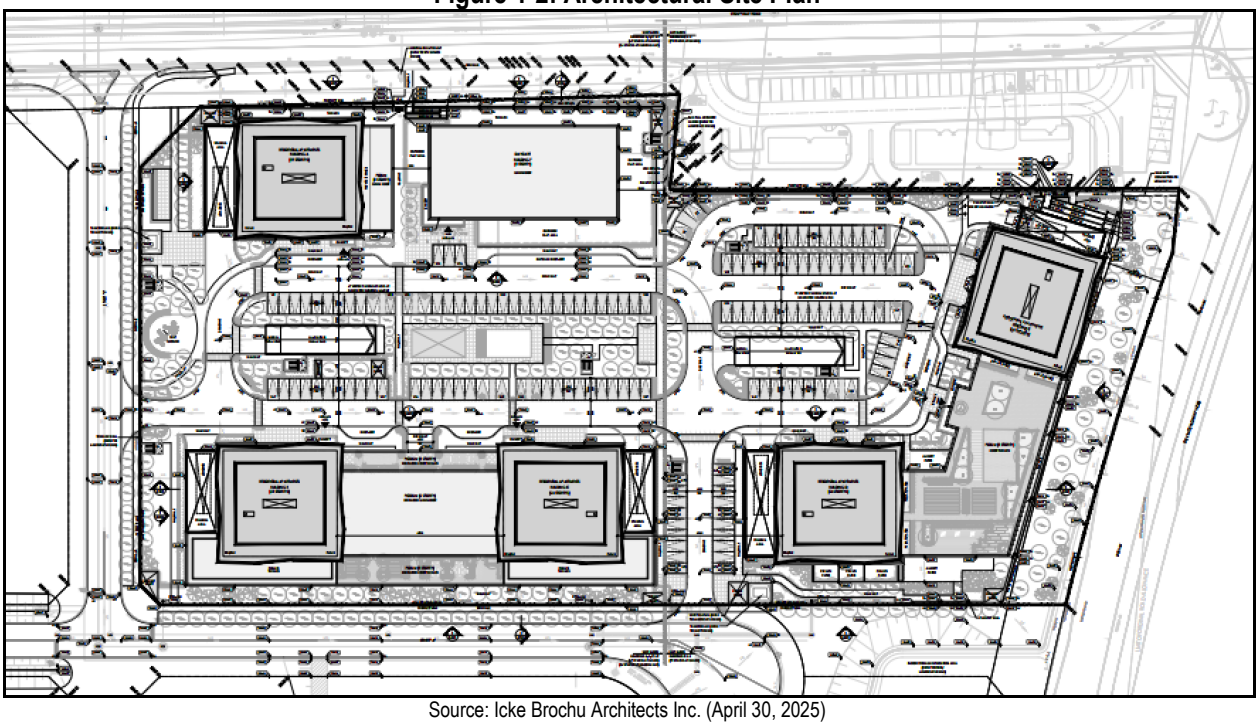
1.1. PROPOSED DEVELOPMENT

The subject site is vacant land. The development will introduce five (5) residential buildings (Buildings A to E) of 19 to 29 storeys with a total of 1,243 dwelling units and a one-storey day care building (Building F) with 1,116sqm (12,013sqft) of GFA. Two (2) new public streets will be provided adjacent to the subject site as part of the proposed development. **Table 1-1** summarizes the site statistics. **Figure 1-2** illustrates the architectural site plan. **Figure 1-3** illustrates the context plan including the proposed public streets. The reduced architectural plans are enclosed in **Appendix A**.

Table 1-1: Summary of Building Site Statistics

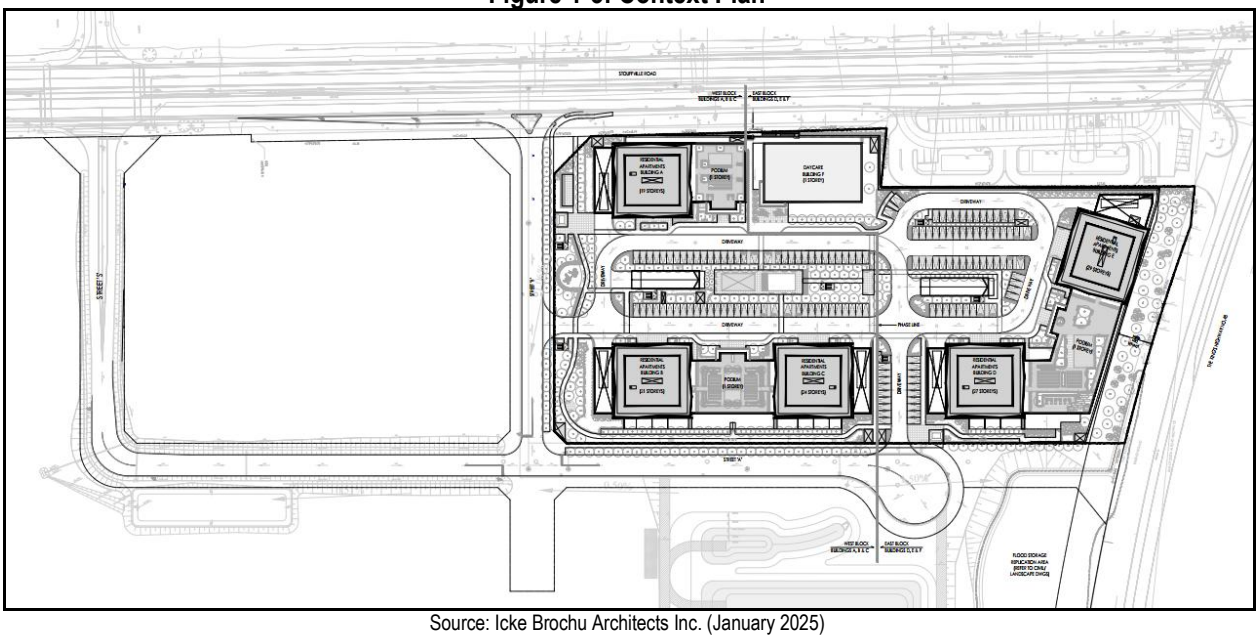
Building	Storeys	Dwelling Units	Commercial GFA	Loading Space	Vehicular Parking
A (Condo)	19	197	-	1 Large Loading Space	1,865 spaces (1,553 residential; 312 visitor including 20 shared visitor/ day care spaces)
B (Condo)	21	218	-	1 Large Loading Space	
C (Condo)	24	251	-	1 Large Loading Space	
D (Rental)	26	272	-	1 Large Loading Space	
E (Rental)	29	305	-	1 Large Loading Space	
F (Day Care)	1	-	1,116sqm (12,013sqft)	Shared with Building A	
Total	**-**	**1,243**	**1,116sqm (12,013sqft)**	**5 Large Loading Spaces**	**1,865 spaces**

Figure 1-2: Architectural Site Plan



Source: Icke Brochu Architects Inc. (April 30, 2025)

Figure 1-3: Context Plan



Source: Icke Brochu Architects Inc. (January 2025)

Building A will provide a one-storey podium. Buildings B and C will be connected by a one-storey podium. Buildings D and E will be connected by a one-storey podium.

The proposed development will introduce two public streets adjacent to the subject site, including a generally east-west Street "A" and a north-south Street "B". Street A will connect to Stouffville Road as the south intersection leg opposite to the private driveway for 4962 Stouffville Road (Spring Lakes Golf Club). The Street A and Stouffville Road intersection is proposed as a full moves signalized intersection. Street B will connect to Stouffville Road and will be restricted to right-in/right-out movements. Vehicular access to the subject site will be provided by two full moves driveways along Street A and Street B, for access to Stouffville Road.

A vehicular parking provision of 1,865 parking spaces, including 1,553 resident spaces and 312 visitor spaces (of which 20 visitor spaces will be shared with day care use) will be provided within surface and underground parking levels. A bicycle parking provision of 311 spaces will be provided (201 long-term spaces, 110 short-term spaces). Five (5) Type 'G' loading spaces will be provided for waste collection and loading activities, including one (1) loading space per tower. Building A will share its loading space with the day care building (Building F).

1.2. STUDY METHODOLOGY

The study adheres to the York Region Transportation Mobility Plan Guidelines 2016. Traffic operations for the intersection study area were assessed for the existing, future background, and future total conditions during the weekday AM and PM peak hours. Synchro 10 was used for intersection capacity analysis based on Highway Capacity Manual (HCM) 2000 methodology for signalized and unsignalized intersections. SimTraffic was used for queueing analysis.

A TIS Terms of Reference was confirmed with Town of Whitchurch-Stouffville ("Town") and York Region ("Region") transportation staff. The Terms of Reference and transportation staff comments are enclosed (see **Appendix B**).

1.3. STUDY AREA

The intersection study area was determined by assessing the size of the proposed development and the transportation impact that is anticipated from the proposed development.

The study area includes the following intersections.

- Stouffville Road and McCowan Road (Signalized)
- Stouffville Road and 4962 Stouffville Road Private Driveway / Proposed Street A (Existing Unsignalized)
- Stouffville Road and Proposed Street B (Proposed Unsignalized)
- Stouffville Road / Main Street and Hwy 48 (Signalized)
- Hoover Park Drive and Hwy 48 (Signalized)
- Proposed Street A and Proposed Street B (Unsignalized)
- Proposed Street B and Site Driveway Access (Unsignalized)
- Proposed Street A and Site Driveway Access (Unsignalized)

2.0 EXISTING TRANSPORTATION CONDITIONS

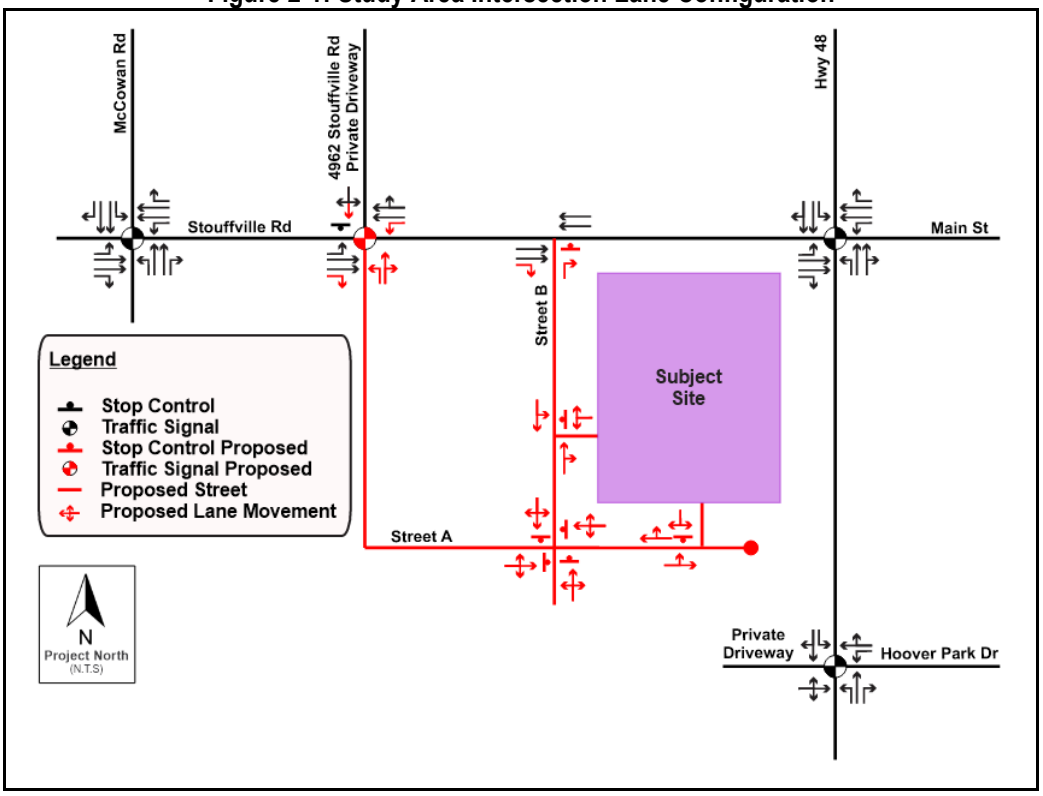
This section will identify and consider the existing transportation conditions for the road, transit, bicycling, and pedestrian networks within the study area. The transportation road network and active transportation facilities are based on Schedule O, Schedule P, and Schedule P-1 of the Town of Whitchurch-Stouffville Official Plan dated May 2024 (see **Appendix C**).

2.1. ROAD NETWORK

This subsection will describe the study area road network. Illustrated in **Figure 2-1** is the existing lane configuration and intersection control of the roads within the study area. The existing road network descriptions are as follows:

- **Stouffville Road / Main Street** is an east-west arterial road with an existing typical five-lane cross-section (two lanes per direction with centre turning lane) within the study area. Stouffville Road (west of Hwy 48) is under the jurisdiction of York Region and Main Street (east of Hwy 48) is under the jurisdiction of the Town of Whitchurch-Stouffville. Within the study area, Main Street maintains a posted speed limit of 50km/h east of Hwy 48. Stouffville Road maintains a posted speed limit of 60km/h west of Hwy 48 and transitions to a posted speed limit of 70km/h approximately 640m west of Hwy 48.
- **Highway 48** is a north-south provincial highway. Approximately 340m south of Stouffville Road / Main Street, Highway 48 maintains an existing typical two-lane cross-section (one lane per direction) and posted speed limit of 80km/h to the north and a four-lane cross-section (two lanes per direction) with a posted speed limit of 70km/h to the south.
- **McCowan Road** is a north-south regional arterial road with an existing typical two-lane cross-section (one lane per direction) and maintains a posted speed limit of 70km/h.
- **Hoover Park Drive** is an east-west Town collector road with an existing typical four-lane configuration (two lanes per direction) and maintains a posted speed limit of 50km/h.

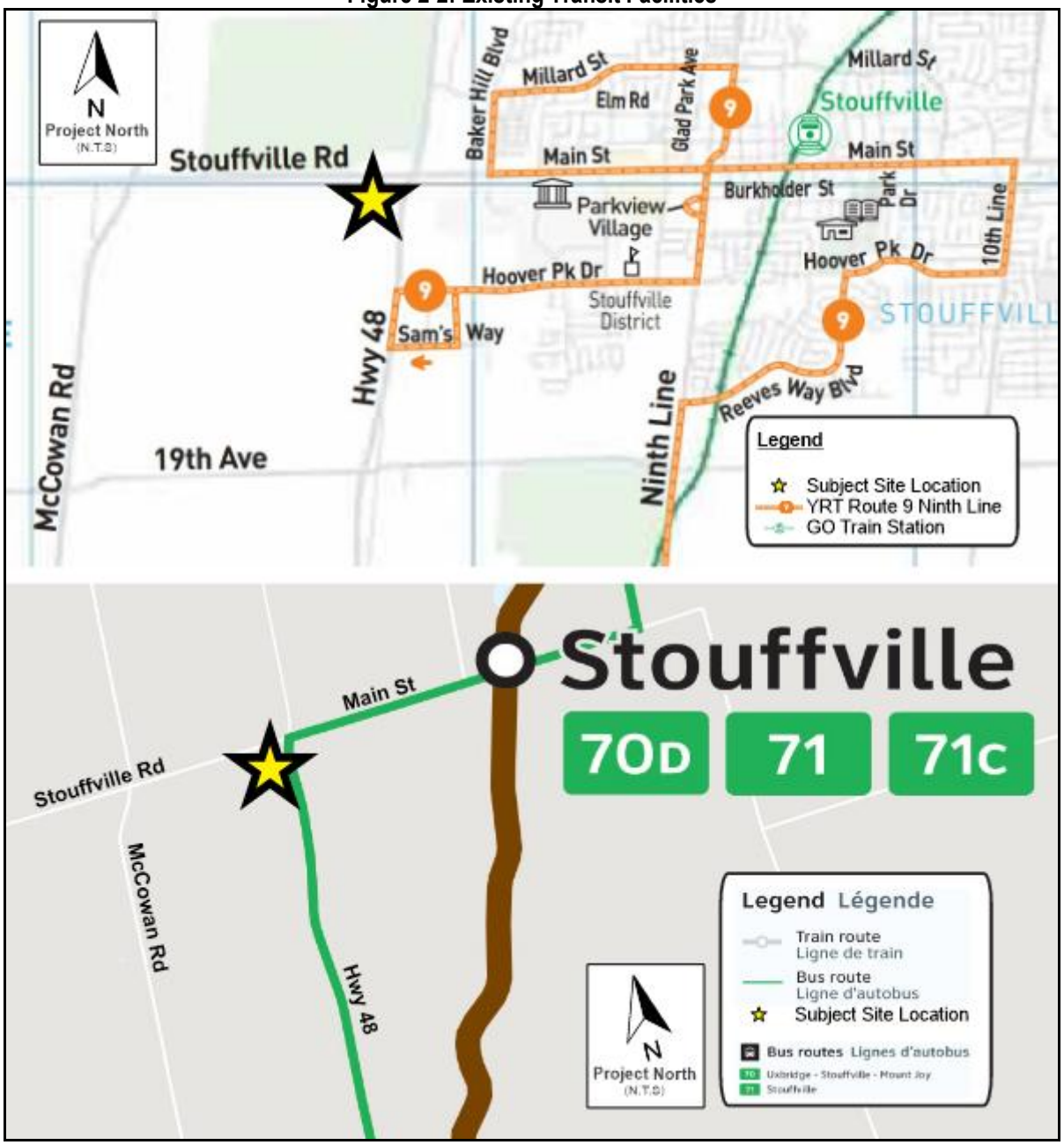
Figure 2-1: Study Area Intersection Lane Configuration



2.2. EXISTING TRANSIT FACILITIES

Within the broader area to the subject site, transit service is offered by York Region Transit (YRT) local bus service and GO Transit bus and commuter rail services. **Figure 2-2** illustrates the transit routes nearby the subject site.

Figure 2-2: Existing Transit Facilities



Source: Top – YRT System Map (November 2024); Bottom – GO Route 70-71 Map (April 2024)

The following transit routes and facilities are available nearest to the subject site and within short walking distance:

- **YRT Bus Route 9 Ninth Line** is a local bus route that operates generally along Ninth Line and provides connection between the Stouffville area and the Ninth Line / Riverwalk Drive / 14th Avenue area in Markham. This route operates weekdays with approximately 35-45-minute headways during AM and PM peak periods.

The nearest bus stop is located approximately 600m (9-minute walk) to the subject site at the intersection of Main Street and Baker Hill Boulevard / Ringwood Drive.

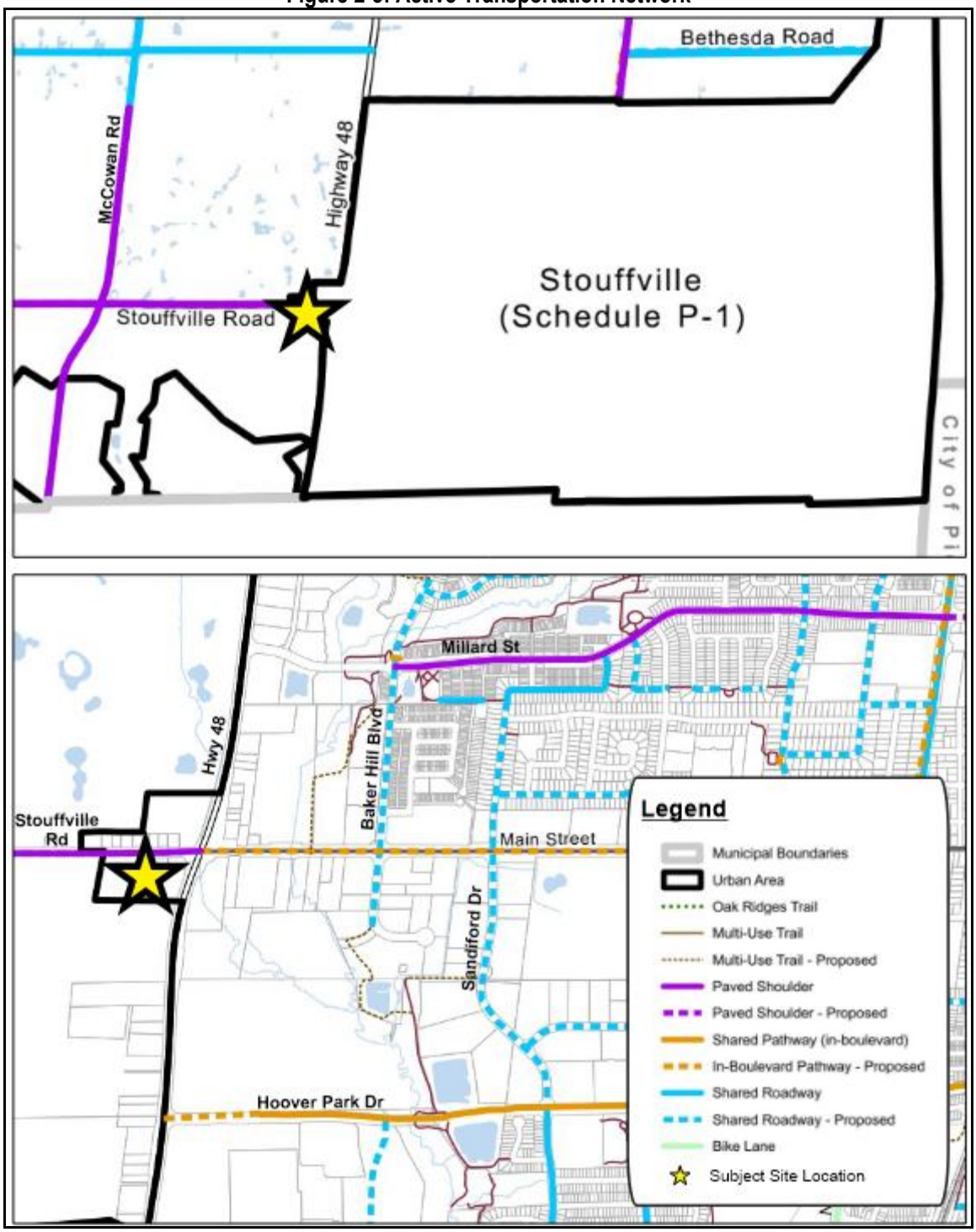
It is noted prior to 2024, YRT Route 9 operated with bus service at the Highway 48 and Main Street intersection based on the YRT 2024 Transit Initiatives (see excerpt in **Appendix C**), in which the bus stop was located approximately 100m (2-minute walk). Since 2024, the service route for Route 9 was revised to its current service routing and discontinued service along the Highway 48 and Main Street intersection area.

- **GO Bus Routes 70-71 Stouffville** is a commuter bus service. Route 70 operates between Uxbridge, Stouffville GO, and Mount Joy GO. Route 71 operates between Uxbridge to Union Station in Toronto, with connections to a number of GO stations along the route, including Stouffville GO. Routes 70-71 operate all days of the week. The nearest bus stop from the subject site is located approximately 600m (9-minute walk) to the subject site at the intersection of Main Street and Baker Hill Boulevard / Ringwood Drive.
- **Stouffville GO Line** is a commuter rail service operated by GO Transit between Old Elm GO Station and Union Station GO Station. Stouffville GO Station is the nearest GO Train station from the subject site, located approximately 2.6km east. Service is offered all days of the week at Stouffville GO Station. Bus connections to GO Bus Routes 70-71 are provided at Stouffville GO.
- **YRT Mobility On-Request** is a ride-sharing service operated by YRT, that provides on-demand transit within selected service areas within York Region based on mobile app booking. The nearest On-Request service area to the subject site is the Stouffville service area bounded by St John's Side Road to the north, York Durham Line to the east, 19th Avenue to the south, Highway 48 to the west (south of Vandorf Side Road) and McCowan Road to the west (north of Vandorf Side Road). YRT also provides On-Request 65+ service that provides on-request service for seniors 65 years of age or older for door-to-door service within 5km of the senior's home.

2.3. ACTIVE TRANSPORTATION NETWORK

Figure 2-3 illustrates the active transportation network within the area surrounding the subject site. Within the study area, paved asphalt shoulders are avaialble along Stouffville Road and McCowan Road. Concrete sidewalks are available along Main Street and Hoover Park Drive. Signalized pedestrian crosswalks are available at the Stouffville Road / Main Street and Hwy 48 intersection, Stouffville Road and McCowan Road intersection, and Hoover Park Drive and Hwy 48 intersection.

Figure 2-3: Active Transportation Network



Source: Town of Whitchirch-Stouffville Official Plan May 2024, Schedule P (top), Schedule P-1 (bottom)

2.4. TRANSIT MODE ASSESSMENT

The nearest bus transit stop is located approximately 600m east of the subject site at the Main Street and Baker Hill Boulevard intersection and approximately 600m south at the Highway 48 and Hoover Park Drive intersection. It is noted that the subject site is located approximately 2.6km from Stouffville GO Station. Intersection LOS was extracted from the intersection capacity analysis of the critical weekday peak hour from the existing traffic analysis.

Table 2-1 summarizes the transit level of service for intersections with transit stops within the study area based on the criteria detailed in the York Region Transportation Mobility Plan Guidelines.

Table 2-1: Existing Transit Level of Service Assessment

Intersection Transit Stop Location	Direction	Access to Transit Stops LOS	Transit Headways LOS	Intersection Approach LOS
Highway 48 and Hoover Park Drive	NB	E	F	B
	SB	E	F	A
	EB	E	F	A
	WB	-	-	D

The results of the existing transit levels of service indicate that the Highway 48 and Hoover Park Drive intersection provides limited transit facilities and service. Walking distance to the intersection bus stop is greater than 600m and service frequency is greater than 30 minutes. Improved bus facilities, including the re-introduction of a YRT bus stop at the Highway 48 and Stouffville Road / Main Street intersection (closer proximity to the subject site) and shorter bus headways, would improve the connectivity of the subject site and the study area.

2.5. PEDESTRIAN MODE ASSESSMENT

Table 2-2 summarizes the existing pedestrian level of service for the study area based on the criteria detailed in the York Region Transportation Mobility Plan Guidelines.

Table 2-2: Existing Pedestrian Level of Service Assessment

Intersection	Direction	Segment		Intersection LOS
		Description	LOS	
McCowan Road and Stouffville Road	NB	McCowan Road	E	C
	SB	McCowan Road	E	E
	EB	Stouffville Road	E	C
	WB	Stouffville Road	E	C
Highway 48 and Stouffville Road / Main Street	NB	Highway 48	E	C
	SB	Highway 48	E	C
	EB	Stouffville Road / Main Street	E	C
	WB	Stouffville Road / Main Street	E	C
Highway 48 and Hoover Park Drive	NB	Highway 48	F	B
	SB	Highway 48	F	F
	EB	Hoover Park Drive	B	E
	WB	Hoover Park Drive	B	B

The results indicate that pedestrian segment facilities in between intersections are generally limited and can be greatly improved by providing dedicated pedestrian facilities such as concrete sidewalks or multi-use paths.

2.6. CYCLING MODE ASSESSMENT

Table 2-3 summarizes the existing pedestrian level of service for the study area based on the criteria detailed in the York Region Transportation Mobility Plan Guidelines.

Table 2-3: Existing Cycling Level of Service Assessment

Intersection	Direction	Segment		Intersection LOS
		Description	LOS	
McCowan Road and Stouffville Road	NB	McCowan Road	E	E
	SB	McCowan Road	E	E
	EB	Stouffville Road	E	E
	WB	Stouffville Road	E	E
Highway 48 and Stouffville Road / Main Street	NB	Highway 48	F	F
	SB	Highway 48	F	F
	EB	Stouffville Road / Main Street	E	F
	WB	Stouffville Road / Main Street	E	F
Highway 48 and Hoover Park Drive	NB	Highway 48	F	F
	SB	Highway 48	F	F
	EB	Hoover Park Drive	F	F
	WB	Hoover Park Drive	F	F

The results indicate that although paved shoulders exist along McCowan Road and Stouffville Road for cycling, there are limited cycling facilities within the study area.

2.7. TRAFFIC DATA COLLECTION

A turning movement count (TMC) survey was undertaken by Spectrum Traffic Data for the following study area intersections during the weekday AM and PM peak periods.

A summary of the traffic data collection is tabulated in **Table 2-4** below. Existing traffic data including TMC data and traffic signal timing plans is enclosed in **Appendix C**.

Table 2-4: Summary of TMC Data Collection

Intersection	Date of Survey	Time of Survey	Source
McCowan Road and Stouffville Road (Signalized)	Thursday, June 22, 2023	AM: 7:00-10:00 PM: 4:00-7:00	Spectrum Traffic
4962 Stouffville Road Driveway and Stouffville Road / Main Street (Unsignalized)			
Highway 48 and Stouffville Road / Main Street (Signalized)			
Highway 48 and Hoover Park Drive (Signalized)			

2.8. EXISTING INTERSECTION CAPACITY ANALYSIS

The intersection capacity analysis has been conducted for the weekday AM and PM peak hours. **Figure 2-4** illustrates the traffic volumes within the study area road network. The existing intersection capacity and queue analysis results for the intersection study area are summarized in **Figure 2-4**. Detailed Synchro and SimTraffic outputs are provided in **Appendix D**.

Figure 2-4
Existing Traffic Volumes
5061 Stouffville Road, Town of Whitchurch-Stouffville

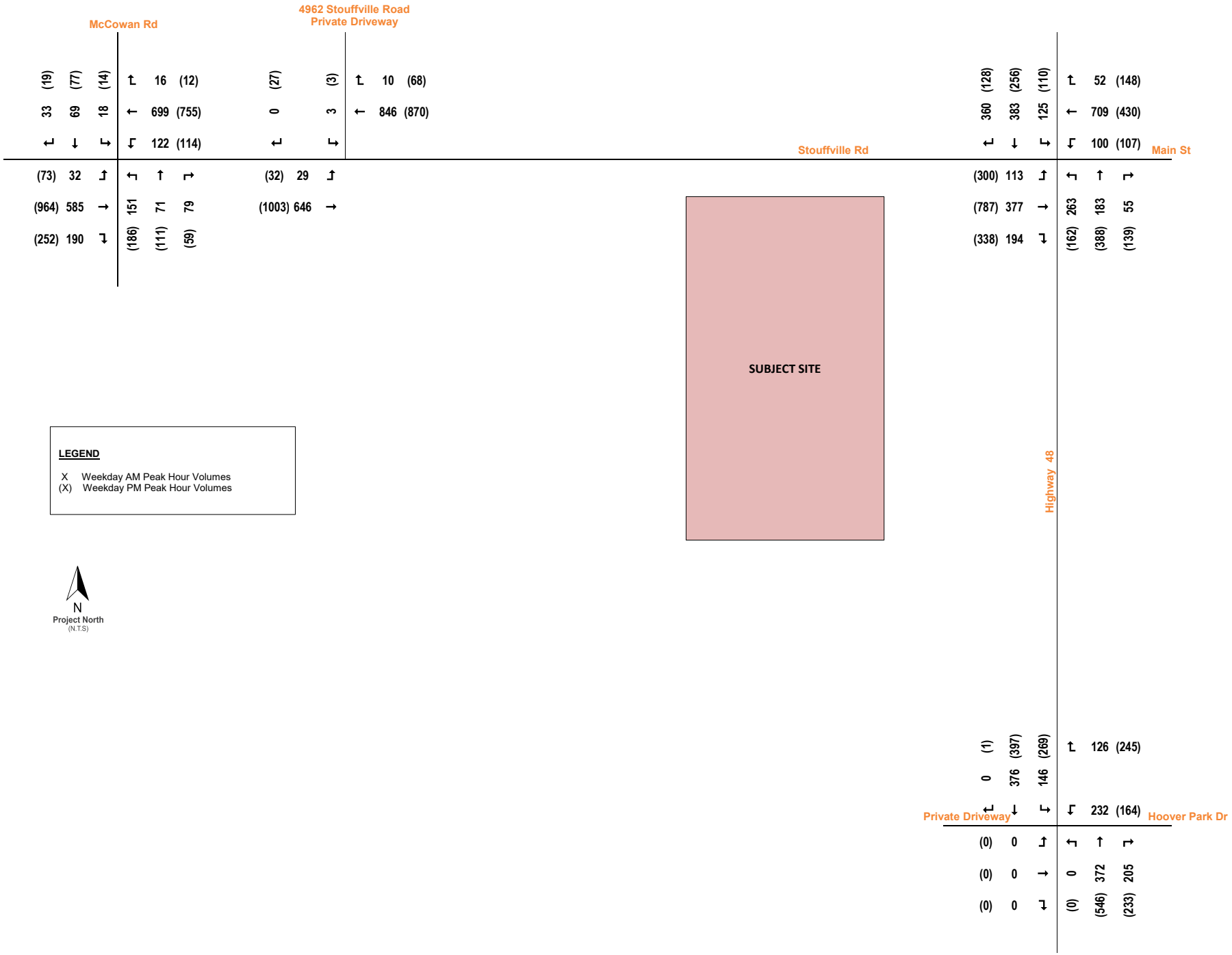


Table 2-5: Existing Intersection Capacity Analysis

Intersection	Movement of Interest	V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	Storage (m)
1: McCowan Rd & Stouffville Rd (Signalized)	**Overall**	**0.45**	**16**	**B**	**-**	**0.54**	**16**	**B**	**-**	**-**
	EBL	0.10	8	A	13	0.22	10	B	27	105
	EBT	0.31	9	A	37	0.47	12	B	61	-
	EBR	0.15	8	A	20	0.18	9	A	22	170
	WBL	0.33	11	B	35	0.46	16	B	44	125
	WBT	0.37	10	A	51	0.37	10	B	54	-
	WBR	0.01	7	A	6	0.01	8	A	4	65
	NBL	0.69	49	D	55	0.73	50	D	59	140
	NBT	0.12	37	D	20	0.15	35	D	23	-
	NBR	0.10	36	D	17	0.08	35	C	13	150
	SBL	0.08	36	D	8	0.05	35	C	8	75
	SBT	0.12	37	D	14	0.11	35	D	14	-
	SBR	0.03	36	D	6	0.01	34	C	3	110
4: Hwy 48 & Stouffville Rd/Main St (Signalized)	**Overall**	**0.75**	**45**	**D**	**-**	**0.62**	**40**	**D**	**-**	**-**
	EBL	0.77	55	D	42	0.91	65	E	114	45
	EBT	0.42	41	D	55	0.78	48	D	188	-
	EBR	0.14	37	D	29	0.22	37	D	48	135
	WBL	0.35	33	C	37	0.54	35	C	37	60
	WBT	0.80	50	D	103	0.43	40	D	60	-
	WBR	0.04	36	D	17	0.10	35	D	23	105
	NBL	0.61	33	C	59	0.33	20	C	40	50
	NBT	0.18	26	C	37	0.40	31	C	61	-
	SBL	0.33	33	C	32	0.28	26	C	29	45
	SBT	0.84	58	E	89	0.33	35	C	41	-
6: Hwy 48 & Private Driveway/Hoover Park Dr (Signalized)	**Overall**	**0.52**	**22**	**C**	**-**	**0.73**	**30**	**C**	**-**	**-**
	WBL	0.77	59	E	79	0.70	60	E	58	-
	WBR	0.09	42	D	19	0.18	47	D	37	-
	NBT	0.41	15	B	59	0.81	41	D	95	-
	NBR	0.15	12	B	21	0.17	23	C	19	150
	SBL	0.26	8	A	30	0.46	13	B	49	220
	SBT	0.35	9	A	53	0.34	7	A	45	-
2: Stouffville Rd & 4962 Stouffville Rd Private Driveway (Unsignalized)	EBL	0.04	10	B	12	0.05	11	B	12	45
	SBLR	0.01	16	C	5	0.07	13	B	13	-

Based on the existing intersection capacity analysis results, the existing intersections operate within capacity and with acceptable overall levels of service during the AM and PM peak hours.

It is noted that at the Hwy 48 and Stouffville Road intersection, the eastbound left movement operates at a v/c of 0.91 and LOS E. Although the 95th percentile queue of 114m for the eastbound left movement exceeds the 45m storage length, the lane is along a centre two-way left-turn lane, in which there is significant storage length from the two-way left turn lane beyond the dedicated left turn storage length to accommodate the queue.

Queues from all other movements can be accommodated within the available storage lengths.

3.0 FUTURE BACKGROUND TRAFFIC CONDITIONS

The future background conditions include the summation of existing traffic volumes, general traffic corridor growth, and site-specific traffic volumes generated from other development applications within the surrounding area. The future background condition also incorporates any planned road improvement works such as road widenings.

A 5-year horizon (2029) and 10-year horizon (2034) were assessed in this study given the scale of the development.

3.1. FUTURE ROAD IMPROVEMENTS

No road improvements are expected that will affect the intersection study area based on the York Region 2024 10-Year Road and Transit Growth Capital Construction Program.

Notwithstanding, based on the Town of Whitchurch-Stouffville Transportation Master Plan Update dated April 3, 2024, Highway 48 is planned to be widened from one lane per direction to two lanes per direction (four-lane cross section) between Donald Cousins Parkway to Stouffville Road within the Town (see excerpt from Town TMP Update in **Appendix C**). The capital project is planned as part of the new capacity expansion on Highway 48 between Major Mackenzie Drive to Bloomington Road and outlined within the province's planning document titled Connecting the GCH: A Transportation Plan for the Greater Golden Horseshoe dated 2022. The road improvements are subject to further study. A timeline for completion of the planned road widening is uncertain at the time of this study. Given the uncertainty, the widening of Highway 48 (affecting the intersection of Highway 48 and Hoover Park Drive / Private Driveway) was assessed as a sensitivity analysis for the 10-year future total condition as part of possible mitigation measures within **Section 5.4.4** in this study.

Further, as noted in **Section 1.1** and depicted in the Context Plan in **Appendix A**, two (2) new public streets, Street A and Street B will be provided adjacent to the subject site as part of the proposed development that will be provide site access to the external road network. Street A will connect to Stouffville Road as the south intersection leg opposite to the private driveway for 4962 Stouffville Road (Spring Lakes Golf Club). The Street A and Stouffville Road intersection is proposed as a full moves signalized intersection. Street B will connect to Stouffville Road and will be restricted to right-in/right-out movements. Vehicular access to the subject site will be provided by two full moves driveways along Street A and Street B, for access to Stouffville Road. Street A and Street B will also service future developments that will be proposed within the property of 5061 Stouffville Road. No background development traffic volumes from the foregoing future developments were included within the study as there are no development applications and/or concept development plans for these developments at the time of this study.

3.2. CORRIDOR GROWTH

Table 3-1 summarizes the corridor growth rates compounded per annum that were applied to the study area roads.

Table 3-1: Corridor Growth Rates

Road Corridor	Growth Rate
McCowan Road	3.29%
Stouffville Road / Main Street	1.62%
Highway 48	0.94%
Hoover Park Drive	2.00%

The corridor growth rates for McCowan Road and Stouffville Road/Main Street were derived from historical York Region AADT data. The growth rate for Highway 48 was derived from MTO historical AADT data for provincial highways. A conservative 2.0% per annum growth rate was applied to Hoover Park Drive as corridor growth and historical traffic data were not available. Corridor growth details are enclosed in **Appendix C**.

3.3. BACKGROUND DEVELOPMENTS

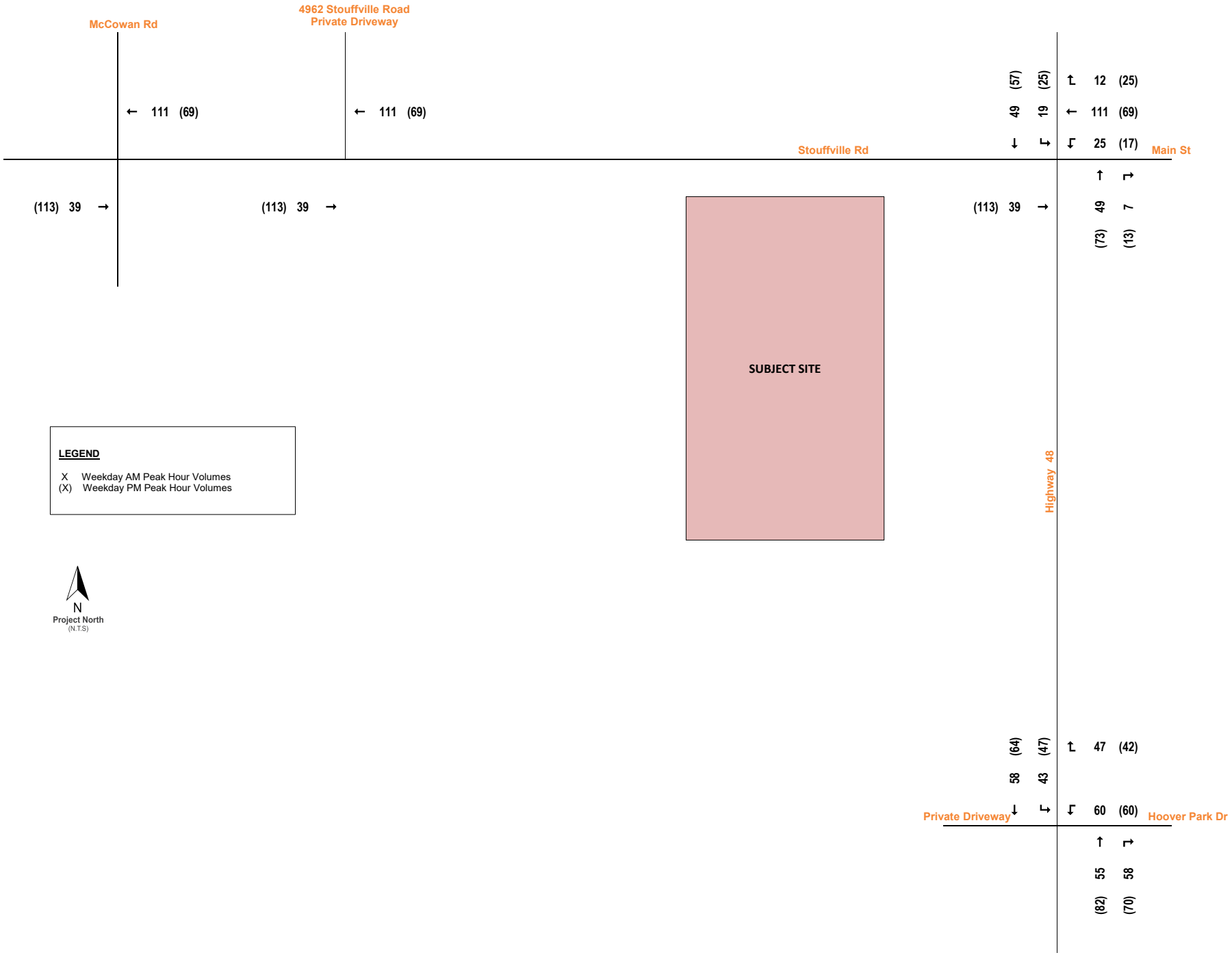
A number of background developments were identified near the subject site. Site-specific traffic volumes from the identified background developments within the surrounding area to the subject site are in the future background condition.

Table 3-2 summarizes the identified background developments that were included as background development traffic volumes. The background developments were confirmed and provided by Town Transportation staff. **Figure 3-1** illustrates the background development traffic volumes within the intersection study area. Relevant background development documents are available in **Appendix C**.

Table 3-2: Summary of Background Developments

No.	Address / Development	Description / Statistics	Source
1	5505 Main Street, Whitchurch-Stouffville [SPA22.029]	Development proposal for a gas station with four-pump gas bar and a convenience store with 125.59sqm of GFA.	n Engineering (Jun 2023)
2	Schlegel Villages, Whitchurch-Stouffville [OPA21.001; ZBA21.002]	Mixed-use development located along Hoover Park Drive. Consists of one LTC building (192 LTC beds), two retirement home buildings (424 retirement dwelling units, 106 apartment dwelling units).	GHD (Feb 2023)
3	Sam's Way (north side, west of Rougeview Avenue), Whitchurch-Stouffville [SPA22.011]	Two-storey commercial building with 2,120.07sqm of GFA.	CGE (May 2022)
4	11776 Highway 48 (Stouffville Meadows), Whitchurch-Stouffville/Markham	Development proposal located along the Whitchurch-Stouffville and Markham limits, for 352 condominium dwelling units, 445 seniors apartment dwelling units, 2,040sqm of commercial/medical office GFA, and 123 townhouse units.	Crozier (Dec 2020)
5	5472 Main Street, Whitchurch-Stouffville [SPA18.004; ZBA18.003]	Development proposal for 147 townhouse units, located at the northeast corner of Main Street and Baker Hill Boulevard. 31 townhouse units are configured as live-work units, with a total commercial GFA of 505.3sqm.	Aecom (Jan 2019)
6	5531 Main Street, Whitchurch-Stouffville [SPA19.030]	Development proposal for condominium building with 319 dwelling units and 732.35sqm of at-grade retail GFA.	LEA (Mar 2023)

Figure 3-1
Background Development Traffic Volumes
5061 Stouffville Road, Town of Whitchurch-Stouffville



3.4. 2029 FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS

Figure 3-2 illustrates the 2029 future background traffic volumes. **Table 3-3** summarizes the 2029 future background intersection capacity analysis results. Detailed Synchro and SimTraffic results are enclosed in **Appendix D**.

Table 3-3: 2029 Future Background Intersection Capacity Analysis Results

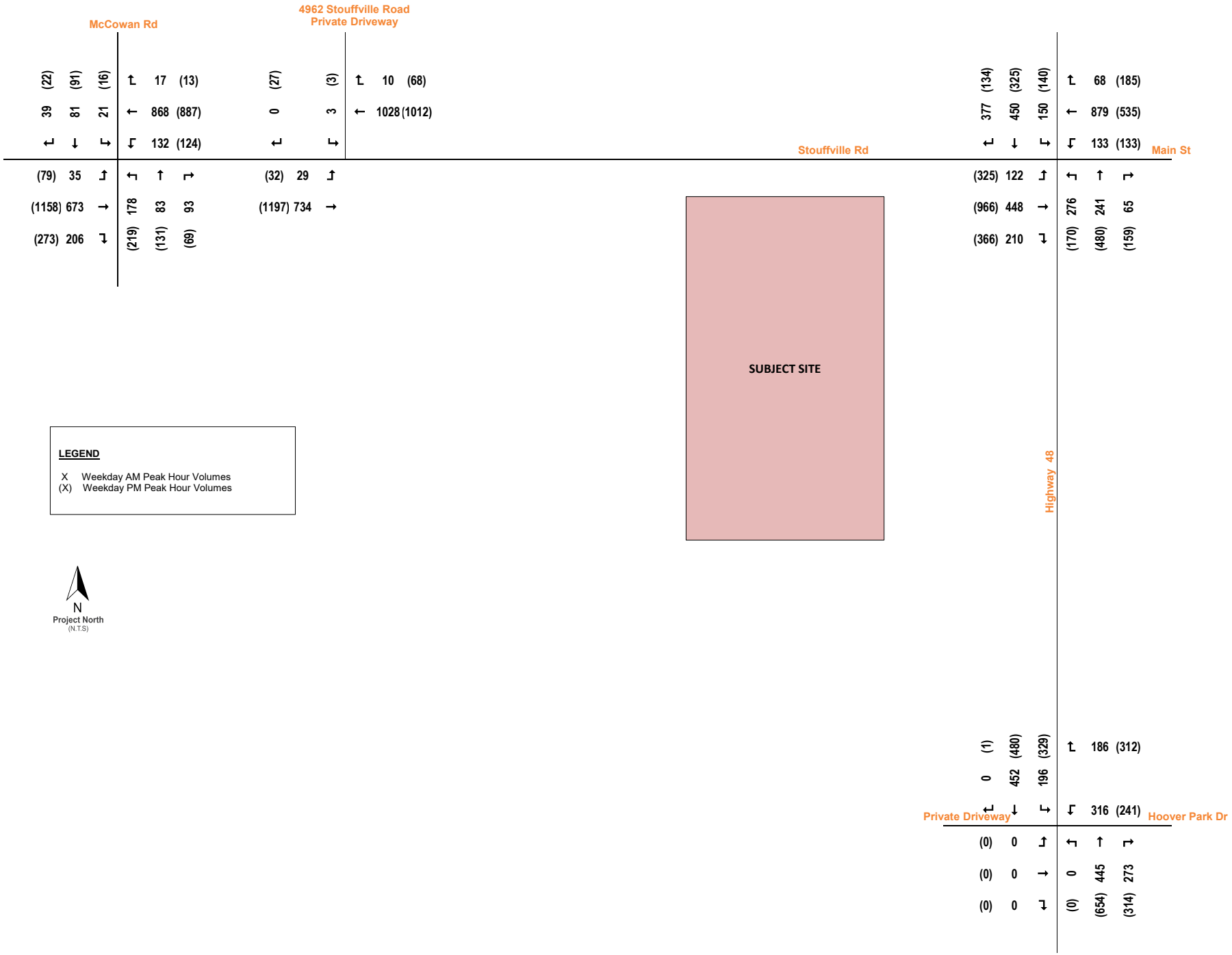
Intersection	Movement of Interest	V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	Storage (m)
1: McCowan Rd & Stouffville Rd (Signalized)	**Overall**	**0.55**	**17**	**B**	**-**	**0.76**	**19**	**B**	**-**	**-**
	EBL	0.15	10	A	17	0.31	14	B	32	105
	EBT	0.37	11	B	44	0.59	15	B	85	-
	EBR	0.16	9	A	21	0.19	10	B	25	170
	WBL	0.43	15	B	41	0.75	41	D	96	125
	WBT	0.48	12	B	60	0.46	13	B	71	-
	WBR	0.01	8	A	7	0.01	9	A	4	65
	NBL	0.74	51	D	62	0.78	51	D	72	140
	NBT	0.13	35	C	17	0.16	33	C	25	-
	NBR	0.21	36	D	17	0.10	33	C	17	150
	SBL	0.09	34	C	9	0.06	32	C	5	75
	SBT	0.13	35	C	16	0.12	33	C	17	-
	SBR	0.03	34	C	6	0.02	32	C	4	110
4: Hwy 48 & Stouffville Rd/Main St (Signalized)	**Overall**	**0.89**	**48**	**D**	**-**	**0.77**	**41**	**D**	**-**	**-**
	EBL	0.89	74	E	73	0.97	77	E	109	45
	EBT	0.41	35	D	76	0.80	44	D	250	-
	EBR	0.15	32	C	28	0.29	32	C	81	135
	WBL	0.44	29	C	70	0.72	41	D	52	60
	WBT	0.81	46	D	122	0.44	34	C	70	-
	WBR	0.05	31	C	16	0.12	30	C	30	105
	NBL	0.85	57	E	71	0.45	27	C	63	50
	NBT	0.27	33	C	85	0.58	41	D	81	-
	SBL	0.39	32	C	67	0.46	29	C	44	45
	SBT	0.93	67	E	134	0.43	39	D	59	-
6: Hwy 48 & Private Driveway/Hoover Park Dr (Signalized)	**Overall**	**0.69**	**27**	**C**	**-**	**0.95**	**68**	**E**	**-**	**-**
	WBL	0.82	56	E	103	0.77	58	E	76	-
	WBR	0.13	37	D	27	0.31	44	D	54	-
	NBT	0.61	28	C	90	1.24	164	F	167	-
	NBR	0.20	20	C	25	0.22	32	C	77	150
	SBL	0.42	13	B	40	0.58	28	C	84	220
	SBT	0.45	13	B	85	0.44	10	B	72	-
2: Stouffville Rd & 4962 Stouffville Rd Private Driveway (Unsignalized)	EBL	0.05	11	B	11	0.06	11	B	12	30
	SBLR	0.01	19	C	5	0.08	14	B	13	-

Under the 2029 future background conditions, the Hwy 48 and Hoover Park Drive intersection will operate with an overall v/c of 0.95 and LOS E in the PM peak hour. The northbound through movement at the Hwy 48 and Hoover Park Drive intersection is expected to operate above capacity and LOS F in the PM peak hour. This is likely attributed to the overcapacity from the two-lane cross section (one lane per direction) along Hwy 48 that cannot accommodate the future northbound traffic volume.

At the Hwy 48 and Stouffville Road intersection, the eastbound left movement is expected to operate above the critical threshold v/c of 0.85, with a v/c of 0.89 and 0.97 in the AM and PM peak hours, respectively. The 95th queues of the eastbound left turn lane and westbound left turn lane are expected to exceed the available storage lengths. Notwithstanding, there is additional storage length from the centre two-way left turn lane beyond the dedicated left turn storage length that will accommodate the queues from the eastbound left turn and westbound left turn lanes. Similarly, the northbound left turn and southbound left turn lanes are expected to exceed the available storage lengths for the 95th queues. However, there is existing median lane space beyond the dedicated left turn lane storage lengths that can accommodate the additional queues.

All other future background study area intersection movements are expected to operate within capacity and acceptable levels of service.

Figure 3-2
2029 Future Background Traffic Volumes
5061 Stouffville Road, Town of Whitchurch-Stouffville



3.5. 2034 FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS

Figure 3-3 illustrates the 2034 future background traffic volumes. **Table 3-4** summarizes the 2034 future background intersection capacity analysis results. Detailed Synchro and SimTraffic results are enclosed in **Appendix D**.

Table 3-4: 2034 Future Background Intersection Capacity Analysis Results

Intersection	Movement of Interest	V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	Storage (m)
1: McCowan Rd & Stouffville Rd (Signalized)	**Overall**	**0.61**	**19**	**B**	**-**	**1.02**	**26**	**C**	**-**	**-**
	EBL	0.20	12	B	18	0.42	20	B	44	105
	EBT	0.42	13	B	53	0.68	19	B	102	-
	EBR	0.18	11	B	24	0.21	13	B	28	170
	WBL	0.54	20	C	49	1.13	143	F	244	125
	WBT	0.54	14	B	71	0.52	16	B	231	-
	WBR	0.01	9	A	9	0.01	11	B	5	65
	NBL	0.79	52	D	73	0.80	50	D	81	140
	NBT	0.14	32	C	22	0.16	30	C	25	-
	NBR	0.24	34	C	18	0.12	30	C	19	150
	SBL	0.09	32	C	13	0.06	29	C	8	75
	SBT	0.13	32	C	19	0.12	30	C	18	-
	SBR	0.05	32	C	9	0.02	29	C	4	110
4: Hwy 48 & Stouffville Rd/Main St (Signalized)	**Overall**	**1.01**	**54**	**D**	**-**	**0.85**	**44**	**D**	**-**	**-**
	EBL	1.02	116	F	75	1.06	101	F	103	45
	EBT	0.42	33	C	73	0.81	42	D	282	-
	EBR	0.16	30	C	34	0.36	31	C	123	135
	WBL	0.47	28	C	84	0.81	51	D	66	60
	WBT	0.82	44	D	132	0.45	33	C	73	-
	WBR	0.05	29	C	45	0.13	28	C	30	105
	NBL	0.97	83	F	78	0.51	30	C	57	50
	NBT	0.30	35	C	135	0.64	44	D	86	-
	SBL	0.41	32	C	94	0.53	31	C	45	45
	SBT	0.99	80	E	153	0.47	41	D	59	-
6: Hwy 48 & Private Driveway/Hoover Park Dr (Signalized)	**Overall**	**0.76**	**30**	**C**	**-**	**0.99**	**81**	**F**	**-**	**-**
	WBL	0.83	55	E	112	0.78	57	E	83	-
	WBR	0.14	35	D	32	0.41	44	D	58	-
	NBT	0.71	36	D	98	1.34	208	F	223	-
	NBR	0.20	24	C	26	0.23	33	C	115	150
	SBL	0.45	15	B	50	0.61	29	C	87	220
	SBT	0.49	15	B	91	0.47	11	B	78	-
2: Stouffville Rd & 4962 Stouffville Rd Private Driveway (Unsignalized)	EBL	0.05	12	B	12	0.06	12	B	13	30
	SBLR	0.01	21	C	5	0.09	15	C	13	-

Figure 3-3: 2034 Future Background Traffic Volumes

Under the 2034 future background condition, a number of intersection movements are expected to operate above capacity with failing levels of service.

The McCowan Road and Stouffville Road intersection is expected to operate above capacity overall in the PM peak hour, with the westbound left movement expected to operate above capacity, failing level of service, and 95th queue that will exceed the available storage length.

At the Hwy 48 and Stouffville Road intersection, the eastbound left movement is expected to operate above capacity and failing levels of service in the AM and PM peak hours. Similar to the 2029 future background condition, the centre two-way left turn lane storage beyond the dedicated left turn lane storage lengths for the eastbound left turn and westbound left turn movements will be able to accommodate the 95th queues that spill past the dedicated left turn lane storage lengths. Likewise, the median lane space beyond the storage lengths of the northbound left turn lane and southbound left turn lane are expected to accommodate the queue spillover of the respective movements. In the AM peak hour, the northbound left movement and southbound through movement are anticipated to approach capacity, with a v/c of 0.97 and 0.99, respectively.

Similar to the 2029 future background condition, the northbound through movement is expected to operate above capacity and failing level of service in the PM peak hour at the Hwy 48 and Hoover Park Drive intersection given one through lane per direction along this section of Hwy 48.

All other intersection movements within the study area are expected to operate within capacity and acceptable levels of service.

4.0 SITE TRAFFIC

The following section discusses the calculation, distribution, and assignment of trips generated by the subject site.

4.1. TRAVEL MODE SHARE

Table 4-1 summarizes the travel mode split data based on 2016 Transportation Tomorrow Survey (TTS) data for traffic zones 2708 and 2709 (see **Appendix E**).

Table 4-1: Travel Mode Share

Mode	Auto	HOV	Transit	Walk and Cycle	Total
Mode Share	75%	14%	3%	7%	100%

The travel mode share data is consistent with the mode share for the Town based on the Town of Whitchurch-Stouffville Transportation Master Plan dated March 2018 (see excerpt in **Appendix C**), in which the Town is heavily dependent on automobiles for travel.

4.2. SITE TRIP GENERATION

The vehicular trip generation for proposed development was derived from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition for the weekday AM and PM peak hour of adjacent street for the following land use codes (LUC) using the average rate. **Table 4-2** summarizes the site auto trip generation.

- Residential (1,243 dwelling units): LUC 222 Multifamily Housing (High-Rise) Not Close to Rail Transit
- Day Care (10,333sqft): LUC 565 Day Care Center

Table 4-2: Vehicular Site Trip Generation

ITE Land Use	Units / GFA	Parameter	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
LUC 222 Multifamily Housing (High-Rise)	1,243 Units	Auto Trip Rate	0.09	0.18	0.27	0.18	0.14	0.32
		Auto Trips Generated	114	222	336	223	175	398
LUC 565 Day Care Center	960 sqm (10,333 sqft)	Auto Trip Rate	5.83	5.16	10.99	5.24	5.91	11.15
		Auto Trips Generated	70	62	132	63	71	134
		Total	**184**	**284**	**468**	**286**	**246**	**532**

The proposed development will generate 468 two-way auto trips (184 in, 284 out) and 532 two-way auto trips (286 in, 246 out) in the weekday AM and PM peak hours, respectively.

4.3. NON-AUTO TRIP GENERATION

The non-auto (i.e. walk, bike, and transit) trip generation for proposed development was derived from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition using LUC 222 Multifamily Housing (High-Rise) Not Close to Rail Transit for the weekday AM and PM peak hour of adjacent street using the average rate. Non-auto trip generation data for LUC 565 Day Care Center is not available within ITE Trip Generation Manual 11th Edition. Given the nature of a day care center within a suburban area, it is also anticipated that trips generated by the proposed day care will be from an automobile.

The non-auto trip generation was divided further into trips generated for transit, as well as for walk and cycle (i.e. active transportation) based on the non-auto modal split derived for the area surrounding the subject site from 2016 TTS data. Modal split data is enclosed in **Appendix E**.

Table 4-3: Non-Auto Site Trip Generation

Land Use	Units / GFA	Parameter	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) (LUC 222)	1,243 Units	Walk+Bike+Transit Trip Rate	0.08	0.02	0.10	0.05	0.05	0.10
		Transit Trips	30	8	38	18	20	38
		Walk+Bike Trips	68	18	86	40	46	86
		Total Walk+Bike+Transit Trips	98	26	124	58	66	124

The proposed development will generate 38 two-way transit trips (30 in, 8 out) in the AM peak hour and 38 two-way transit trips (18 in, 20 out) in the PM peak hour. For active transportation trips (walk and cycling), a total of 86 two-way trips (68 in, 18 out) in the AM peak hour and 86 two-way trips (40 in, 46 out) in the PM peak hour, will be generated by the proposed development. In total, the development will generate 123 two-way non-auto trips (98 in, 26 out) in the AM peak hour and 124 two-way non-auto trips (58 in, 66 out) in the PM peak hour.

4.4. TRIP DISTRIBUTION AND ASSIGNMENT

Table 4-4 summarizes the residential trip distribution. **Table 4-5** summarizes the day care trip distribution. Detailed TTS data is enclosed in **Appendix E**.

Table 4-4: Residential Directional Trip Distribution

Corridor	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour	
		In	Out	In	Out
Hwy 48	Northbound	15%	6%	15%	6%
	Southbound	8%	14%	8%	14%
McCowan Rd	Northbound	5%	5%	5%	5%
	Southbound	13%	16%	13%	16%
Stouffville Rd / Main St	Eastbound	36%	16%	36%	16%
	Westbound	24%	42%	24%	42%
TOTAL		100%	100%	100%	100%

Table 4-5: Day Care Directional Trip Distribution

Corridor	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour	
		In	Out	In	Out
Hwy 48	Northbound	23%	19%	35%	26%
	Southbound	24%	30%	18%	24%
McCowan Rd	Northbound	9%	4%	10%	5%
	Southbound	3%	13%	3%	11%
Stouffville Rd / Main St	Eastbound	16%	12%	21%	21%
	Westbound	25%	21%	13%	14%
TOTAL		100%	100%	100%	100%

The residential trip distribution of the auto site traffic volumes for the weekday AM and PM peak hours was derived from travel patterns from 2016 TTS data based on traffic zones 2708 and 2709. The day care trip distribution was derived from the existing traffic volumes within the intersection study area based on the existing TMC data used in this study.

Using engineering judgement, extracted data was further reviewed to determine the trip assignment on roads within the study area, based on routes that drivers would likely take to access the subject development site and reflect the configuration of the site access, turning restrictions, and logical routing. The site-generated residential, day care, and total site traffic volumes are illustrated onto the intersection study area in **Figure 4-1**, **Figure 4-2**, and **Figure 4-3**, respectively.

Figure 4-1
Residential Site Traffic Volumes
5061 Stouffville Road, Town of Whitchurch-Stouffville

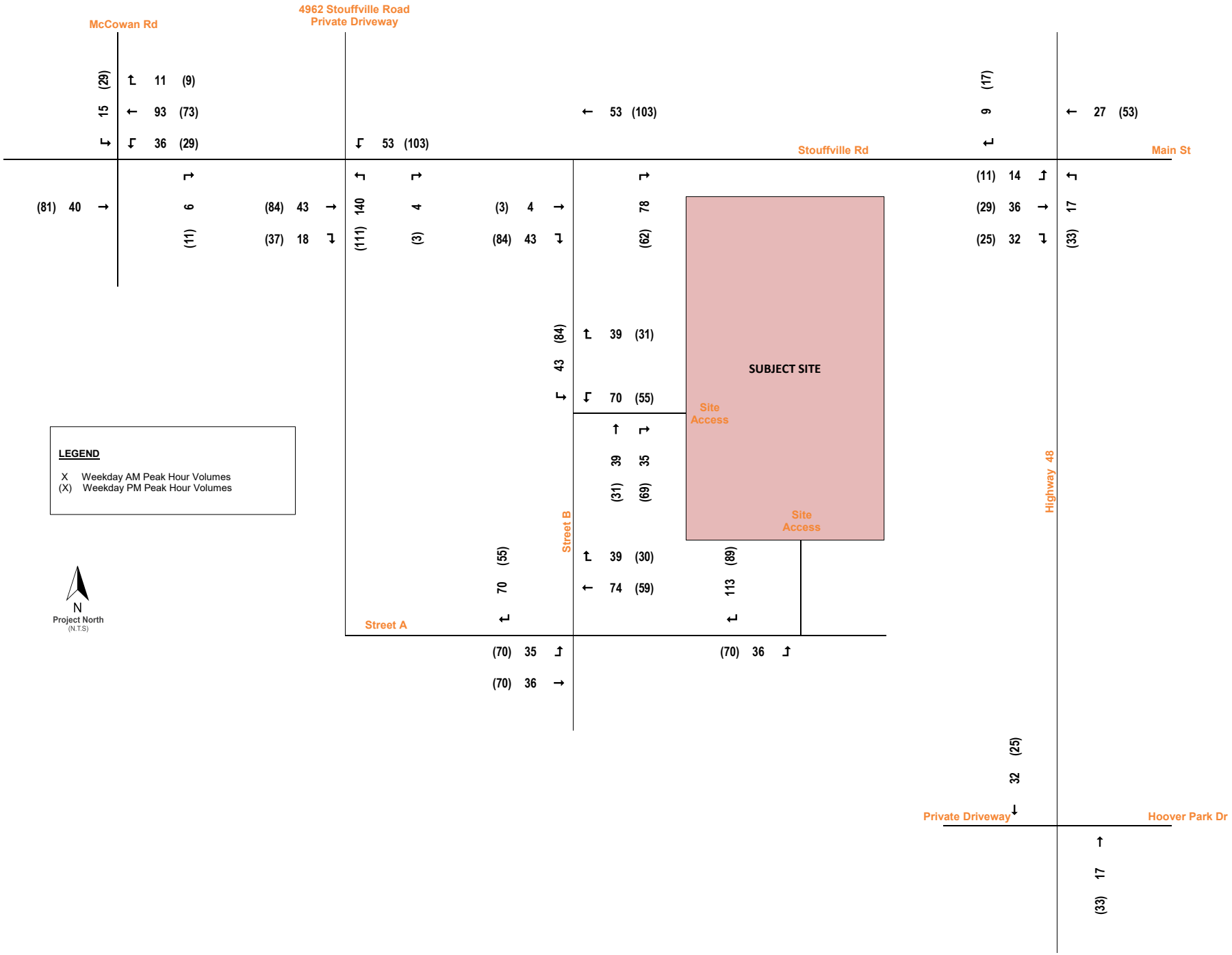


Figure 4-2
Day Care Site Traffic Volumes
5061 Stouffville Road, Town of Whitchurch-Stouffville

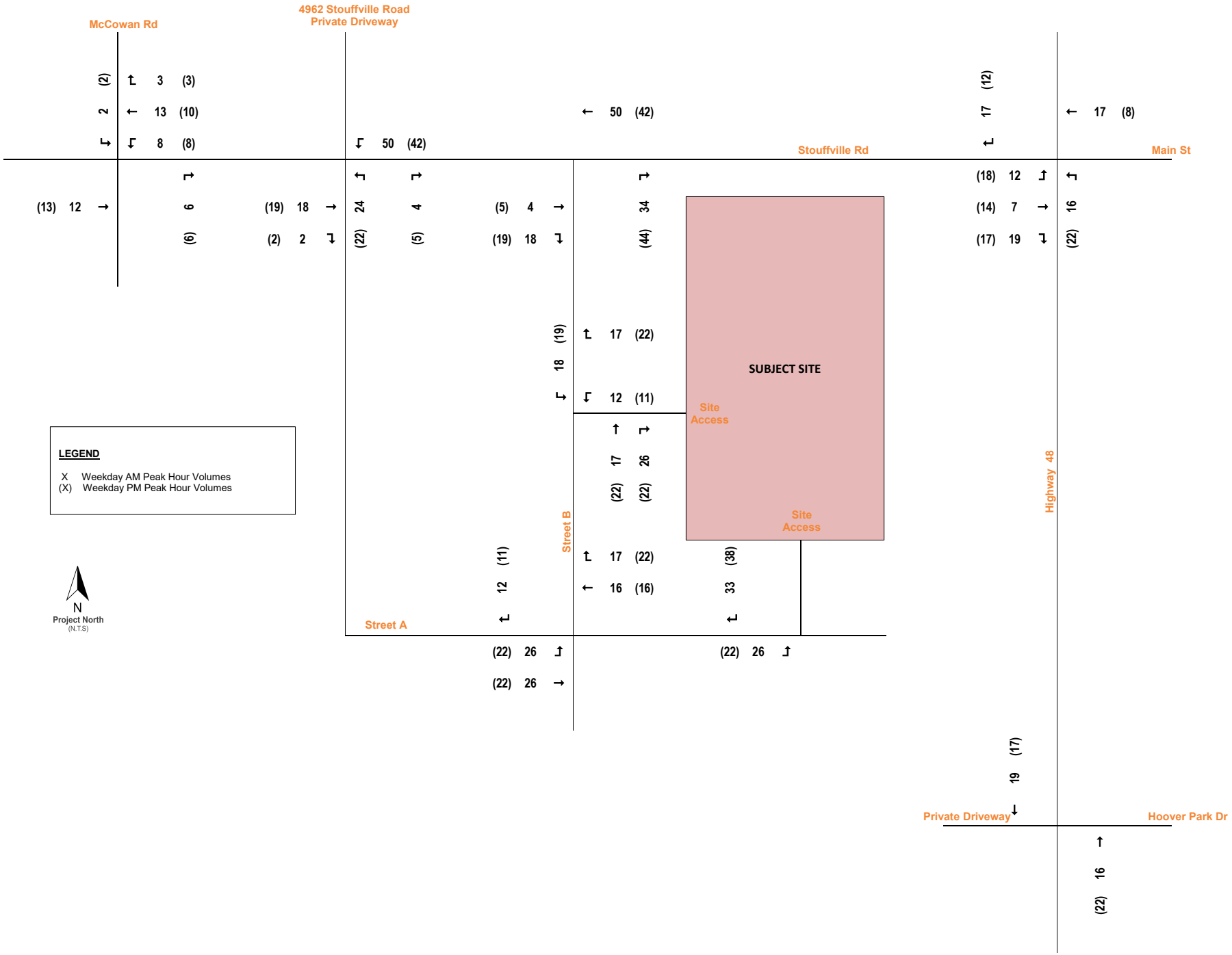
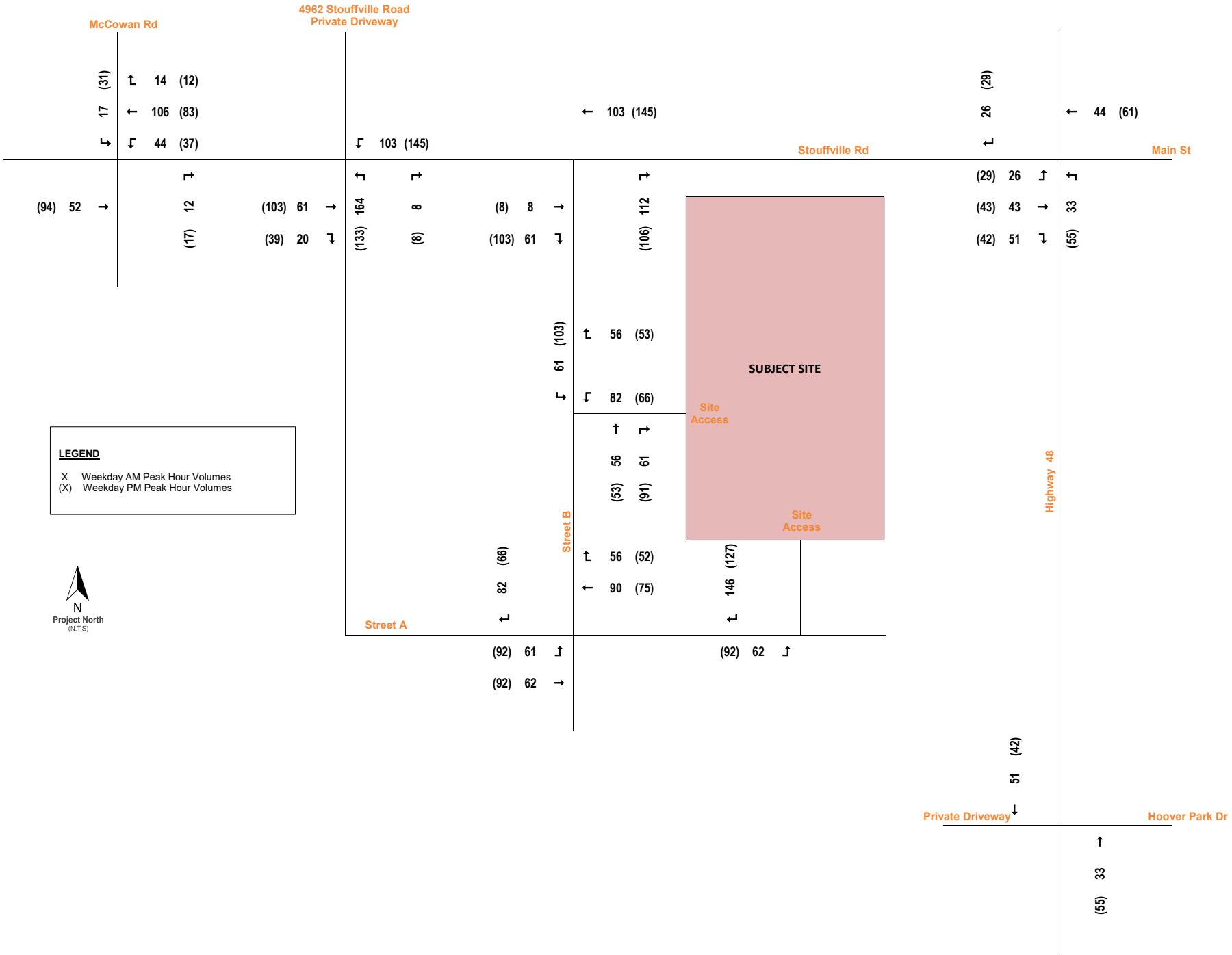


Figure 4-3
Total Site Traffic Volumes
5061 Stouffville Road, Town of Whitchurch-Stouffville



5.0 FUTURE TOTAL TRAFFIC CONDITIONS

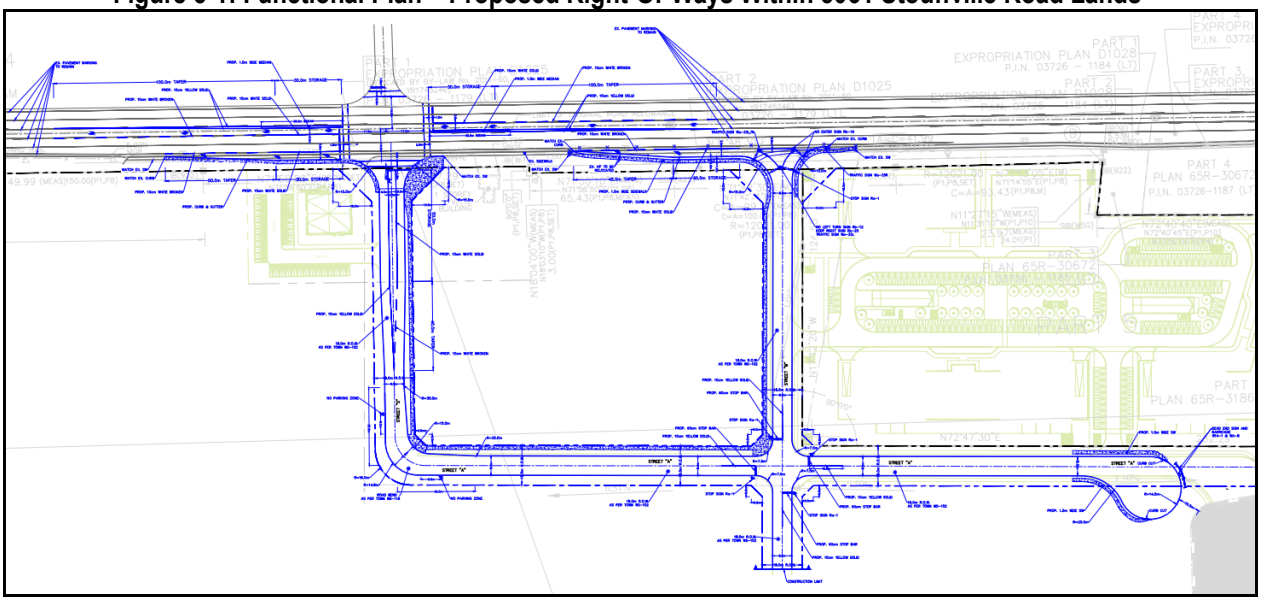
The future total traffic conditions include existing traffic volumes, future background traffic volumes, and site-generated auto trips produced by the proposed development.

5.1. PROPOSED ROAD IMPROVEMENTS OF THE SUBJECT DEVELOPMENT

Within the property of 5061 Stouffville Road and adjacent to the subject site, two public streets (Street A and Street B) are proposed to provide access from Stouffville Road to the subject site and future developments, as shown in **Figure 2-1**.

A Functional Plan was prepared by Nextrans to illustrate the proposed road improvements within the property of 5061 Stouffville Road (see Functional Plan drawings FP-1 to FP-6 in **Appendix F**). **Figure 5-1** depicts the Functional Plan, including the subject site and the adjacent proposed public right-of-ways.

Figure 5-1: Functional Plan – Proposed Right-Of-Ways Within 5061 Stouffville Road Lands



Street A is proposed as an 18.0m public right-of-way with a two-lane cross-section (one lane per direction) that connects to Stouffville Road as the south leg at the intersection of Stouffville Road and 4962 Stouffville Road private driveway (Spring Lakes Golf Club access). A dedicated eastbound right-turn lane, eastbound left-turn lane, and westbound left-turn lane are proposed for the intersection. Street A terminates eastward as a cul-de-sac adjacent to the proposed south site driveway access.

Street B is proposed as a north-south 18.0m public right-of-way that will connect to Stouffville Road through a restricted right-in/right-out access. The intersection of Street B and Stouffville Road will provide a dedicated eastbound right-turn lane and a traffic directional island to enforce right-in/right-out movements.

The Street A and Stouffville Road intersection was assessed as an unsignalized intersection and a signalized intersection within this study. The Street A and Street B intersection is proposed as an unsignalized all-way stop-controlled intersection.

West of Street B, concrete pedestrian sidewalks are proposed along the north and east sides of Street A. North of Street A, concrete sidewalks are proposed along the west side of Street B.

5.2. 2029 FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS

The 2029 future total traffic volumes are illustrated in **Figure 5-2**. The results of the intersection capacity analysis under the 2029 future total conditions are summarized in **Table 5-1**. Detailed Synchro and SimTraffic results are available in **Appendix D**.

Table 5-1: 2029 Future Total Intersection Capacity Analysis

Intersection	Movement of Interest	V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	Storage (m)
1: McCowan Rd & Stouffville Rd (Signalized)	**Overall**	**0.62**	**18**	**B**	**-**	**0.99**	**23**	**C**	**-**	**-**
	EBL	0.18	11	B	18	0.35	15	B	18	105
	EBT	0.39	11	B	46	0.63	16	B	49	-
	EBR	0.16	9	A	23	0.19	10	B	23	170
	WBL	0.58	20	B	54	1.08	117	F	54	125
	WBT	0.53	13	B	69	0.49	13	B	69	-
	WBR	0.02	8	A	10	0.02	9	A	10	65
	NBL	0.74	51	D	68	0.78	51	D	68	140
	NBT	0.13	35	C	20	0.16	33	C	20	-
	NBR	0.23	36	D	21	0.13	33	C	21	150
	SBL	0.15	35	D	14	0.16	33	C	14	75
	SBT	0.13	35	C	16	0.12	33	C	16	-
	SBR	0.03	34	C	7	0.02	32	C	7	110
4: Hwy 48 & Stouffville Rd/Main St (Signalized)	**Overall**	**0.99**	**51**	**D**	**-**	**0.84**	**43**	**D**	**-**	**-**
	EBL	1.02	117	F	88	1.05	99	F	88	45
	EBT	0.43	35	C	84	0.80	43	D	84	-
	EBR	0.17	31	C	29	0.34	32	C	29	135
	WBL	0.45	29	C	76	0.72	42	D	76	60
	WBT	0.81	45	D	128	0.48	34	C	128	-
	WBR	0.05	30	C	16	0.12	29	C	16	105
	NBL	0.92	71	E	77	0.55	29	C	77	50
	NBT	0.28	33	C	131	0.60	42	D	131	-
	SBL	0.39	32	C	84	0.48	30	C	84	45
	SBT	0.95	71	E	142	0.47	41	D	142	-
6: Hwy 48 & Private Driveway/Hoover Park Dr (Signalized)	**Overall**	**0.72**	**28**	**C**	**-**	**0.97**	**76**	**E**	**-**	**-**
	WBL	0.82	56	E	98	0.77	58	E	98	-
	WBR	0.13	37	D	28	0.33	44	D	28	-
	NBT	0.66	31	C	100	1.30	190	F	100	-
	NBR	0.20	21	C	27	0.22	32	C	27	150
	SBL	0.42	13	B	45	0.58	28	C	45	220
	SBT	0.49	14	B	87	0.46	11	B	87	-
2: Stouffville Rd & Street A/4962 Stouffville Rd Private Driveway (Unsignalized)	EBL	0.05	11	B	13	0.06	11	B	13	30
	WBL	0.07	10	A	13	0.24	15	B	13	30
	NBL	0.67	49	E	50	1.16	215	F	50	50
	NBTR	0.01	11	B	4	0.01	14	B	4	-
	SBLTR	0.02	28	D	5	0.10	17	C	5	-
3: Street B & Stouffville Rd (Unsignalized)	NBR	0.15	12	B	2	0.24	22	C	2	-
7: Street B & Site	WBLR	0.13	10	A	14	0.12	10	B	14	-

Access (Unsignalized)	SBLT	0.03	7	A	6	0.06	8	A	6	-
8: Street B & Street A (Unsignalized)	EBLTR	-	8	A	15	-	8	A	15	-
	WBLTR	-	8	A	12	-	7	A	12	-
	NBLTR	-	7	A	-	-	8	A	-	-
	SBLTR	-	7	A	13	-	7	A	13	-
9: Street A & Site Access (Unsignalized)	EBLT	0.02	7	A	-	0.05	7	A	-	-
	SBLR	0.11	9	A	13	0.09	9	A	13	-

Under the 2029 future total condition, at the McCowan Road and Stouffville Road intersection, the westbound left movement is expected to operate above capacity and failing level of service in the PM peak hour with the permissive-only left turn type.

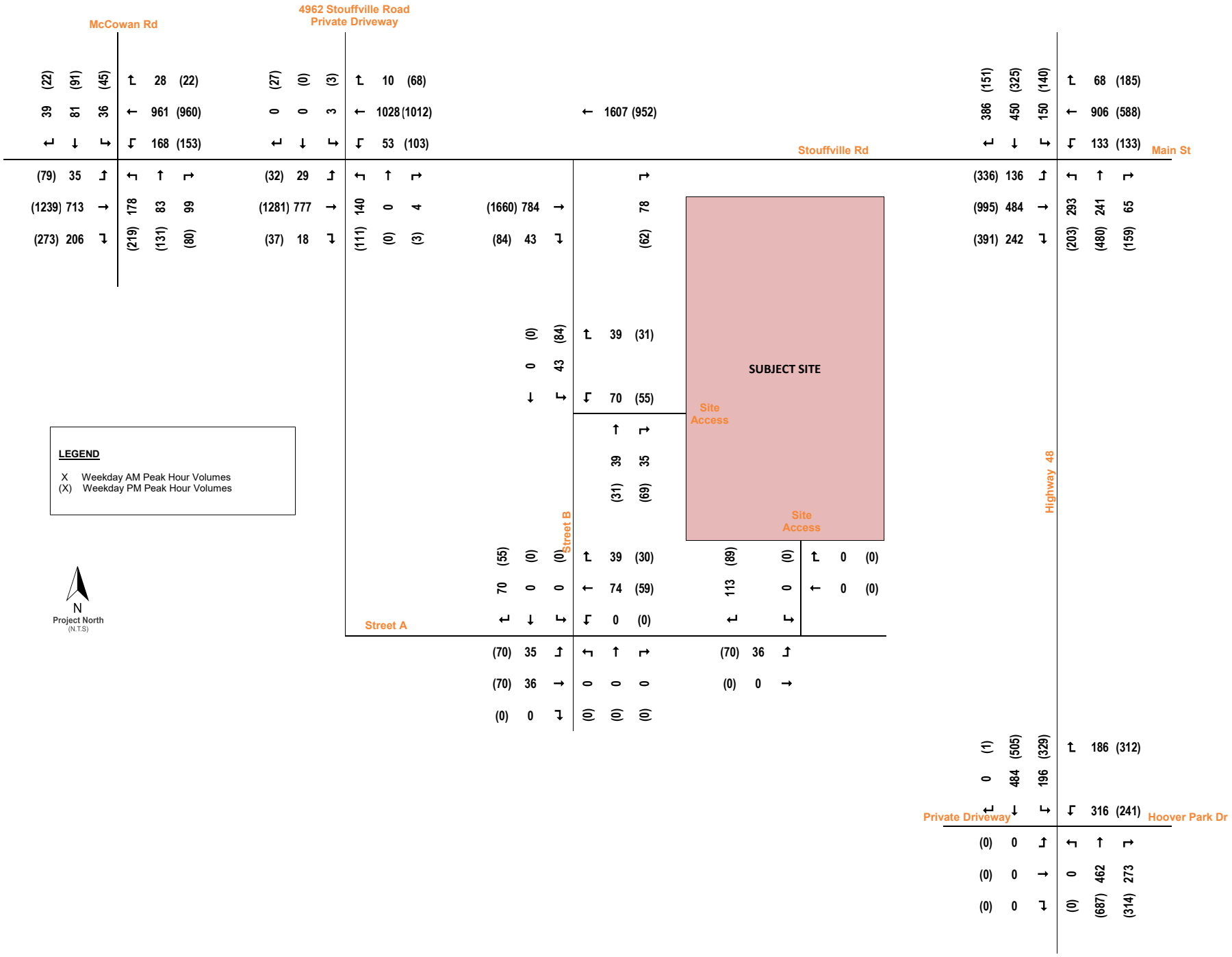
At the Hwy 48 and Stouffville Road intersection, the eastbound left movement will operate above capacity and failing levels of service. Similar to the 2029 future background condition, the northbound left movement and southbound through movement is expected to operate within capacity but above the critical v/c threshold of 0.85 in the AM peak hour.

At the Hwy 48 and Hoover Drive intersection, the northbound through movement will continue to operate above capacity and failing level of service in the PM peak hour similar to its future background condition.

With the introduction Street A at the intersection of Stouffville Road and 4962 Stouffville Road private driveway (assessed as a two-way stop-controlled intersection), the northbound left movement is expected to operate above capacity and failing level of service in the PM peak hour given the volume of left turning trips and reliance on limited gap opportunities against heavy through volumes along Stouffville Road.

All other intersection movements within the future total condition are expected to operate within capacity and acceptable levels of service.

Figure 5-2
2029 Future Total Traffic Volumes
5061 Stouffville Road, Town of Whitchurch-Stouffville



5.3. 2034 FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS

The 2034 future total traffic volumes are illustrated in **Table 5-2**. The results of the 2034 intersection capacity analysis under the future total conditions are summarized in **Table 5-2**. Detailed Synchro and SimTraffic results are available in **Appendix D**.

Table 5-2: 2034 Future Total Intersection Capacity Analysis

Intersection	Movement of Interest	V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	Storage (m)
1: McCowan Rd & Stouffville Rd (Signalized)	**Overall**	**0.75**	**20**	**C**	**-**	**1.37**	**38**	**D**	**-**	**-**
	EBL	0.24	14	B	20	0.48	23	C	57	105
	EBT	0.44	13	B	57	0.73	21	C	108	-
	EBR	0.18	11	B	23	0.21	13	B	27	170
	WBL	0.73	31	C	57	1.69	371	F	271	125
	WBT	0.60	16	B	79	0.57	17	B	446	-
	WBR	0.02	9	A	9	0.02	11	B	7	65
	NBL	0.78	51	D	75	0.79	48	D	86	140
	NBT	0.13	32	C	22	0.16	30	C	24	-
	NBR	0.26	34	C	21	0.15	30	C	23	150
	SBL	0.15	32	C	16	0.15	30	C	17	75
	SBT	0.13	32	C	16	0.12	29	C	19	-
	SBR	0.05	31	C	9	0.02	28	C	4	110
4: Hwy 48 & Stouffville Rd/Main St (Signalized)	**Overall**	**1.13**	**59**	**E**	**-**	**0.93**	**46**	**D**	**-**	**-**
	EBL	1.13	151	F	111	1.14	128	F	101	45
	EBT	0.44	33	C	169	0.81	41	D	361	-
	EBR	0.19	30	C	33	0.40	31	C	114	135
	WBL	0.48	28	C	82	0.81	52	D	56	60
	WBT	0.82	44	D	130	0.48	32	C	76	-
	WBR	0.05	28	C	39	0.13	27	C	27	105
	NBL	1.07	115	F	79	0.63	33	C	75	50
	NBT	0.31	36	D	277	0.66	46	D	102	-
	SBL	0.41	32	C	130	0.55	34	C	44	45
	SBT	1.01	84	F	265	0.51	43	D	65	-
6: Hwy 48 & Private Driveway/Hoover Park Dr (Signalized)	**Overall**	**0.79**	**32**	**C**	**-**	**1.02**	**90**	**F**	**-**	**-**
	WBL	0.83	55	E	107	0.78	57	E	84	-
	WBR	0.14	35	D	29	0.42	44	D	61	-
	NBT	0.77	40	D	112	1.41	236	F	374	-
	NBR	0.20	25	C	25	0.23	33	C	192	150
	SBL	0.46	16	B	48	0.61	29	C	92	220
	SBT	0.52	16	B	90	0.49	12	B	81	-
2: Stouffville Rd & Street A/4962 Stouffville Rd Private Driveway (Unsignalized)	EBL	0.05	12	B	11	0.06	12	B	32	30
	WBL	0.08	10	B	15	0.26	16	C	34	30
	NBL	0.73	59	F	54	1.34	291	F	109	50
	NBTR	0.01	12	B	4	0.01	15	C	177	-
	SBLTR	0.02	30	D	5	0.10	18	C	29	-
3: Street B & Stouffville Rd (Unsignalized)	NBR	0.15	13	B	6	0.26	24	C	75	-
7: Street B & Site	WBLR	0.13	10	A	15	0.12	10	B	61	-

Access (Unsignalized)	SBLT	0.03	7	A	5	0.06	8	A	10	-
8: Street B & Street A (Unsignalized)	EBLTR	-	8	A	14	-	8	A	21	-
	WBLTR	-	8	A	11	-	7	A	12	-
	NBLTR	-	7	A	-	-	8	A	-	-
	SBLTR	-	7	A	13	-	7	A	13	-
9: Street A & Site Access (Unsignalized)	EBLT	0.02	7	A	-	0.05	7	A	-	-
	SBLR	0.11	9	A	13	0.09	9	A	12	-

The 2034 future total condition is expected to operate similar to its future background condition in both peak hours.

The westbound left movement at McCowan Road and Stouffville Road intersection is expected to continue operating above capacity, failing level of service, and with a 95th queue spillover in the PM peak hour.

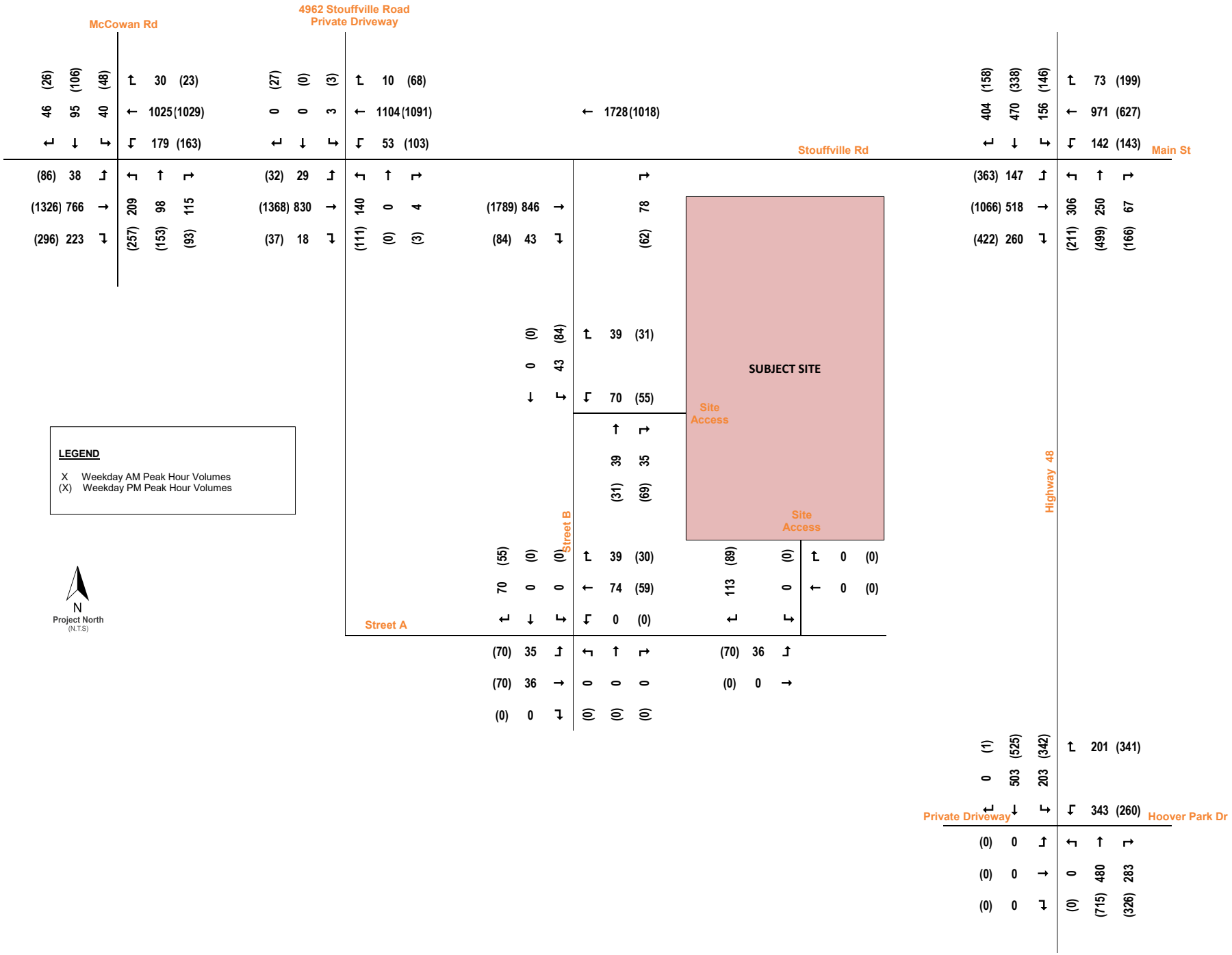
At the Hwy 48 and Stouffville Road intersection, all critical movements will continue to operate similar to the future background condition. The eastbound left, northbound left, and southbound through movements are expected to operate above capacity in the AM peak hour. The eastbound left movement is expected to operate above capacity in the PM peak hour. The 95th queues of all left turn movements at the intersection are expected to exceed their available lane storage lengths, with the centre two-way left turn lane or median lane space capable of accommodating the queue length that exceeds the available left-turn lane storage lengths.

At the Hwy 48 and Hoover Park Drive intersection, the northbound through movement is expected to operate above capacity in the PM peak hour similar to the future background condition due to the limited capacity of one through lane per direction along Hwy 48 at Hoover Park Drive. The 95th queue of the northbound right turn movement is expected to exceed the available northbound right turn lane storage length.

Similar to the 2029 future total condition, the northbound left movement at the Street A and Stouffville Road intersection will operate above capacity, failing level of service, and queue spillover in the PM peak hour given the typical nature of left turn movements from an unsignalized minor road onto a major arterial corridor with high through traffic volumes.

All other intersections will operate within capacity and acceptable levels of service.

Figure 5-3
2034 Future Total Traffic Volumes
5061 Stouffville Road, Town of Whitchurch-Stouffville



5.4. MITIGATION MEASURES – 2034 FUTURE TOTAL CONDITION

Mitigation measures were considered to improve capacity, levels of service, and 95th percentile queues for the 2034 (ultimate) future total traffic condition in the AM and PM peak hours.

5.4.1. MCCOWAN ROAD AND STOUFFVILLE ROAD

At the McCowan Road and Stouffville Road intersection, two scenarios were assessed, including the following to improve capacity and levels of service of the westbound left turn movement. **Table 5-3** summarizes the intersection capacity analysis results based on the two scenarios.

- Scenario A: Intersection traffic signal split timing optimization of the existing signal timing plan.
- Scenario B: The introduction of a westbound left turn protected-permissive phase in lieu of the existing permissive-only westbound left turn phase. Cycle length of 120 seconds.

Table 5-3: 2034 Future Total Results of Mitigation Measures – McCowan Road and Stouffville Road

Scenario	Movement of Interest	AM Peak Hour				PM Peak Hour				Storage (m)
		V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	
Scenario A: Optimized Signal Timing Splits	**Overall**	**0.74**	**20**	**C**	**-**	**1.29**	**33**	**C**	**-**	**-**
	EBL	0.23	13	B	17	0.44	20	B	64	105
	EBT	0.43	13	B	53	0.70	18	B	91	-
	EBR	0.18	10	B	22	0.21	12	B	25	170
	WBL	0.71	29	C	64	1.49	282	F	270	125
	WBT	0.59	15	B	80	0.55	15	B	503	-
	WBR	0.02	9	A	10	0.02	10	A	9	65
	NBL	0.82	56	E	71	0.86	59	E	84	140
	NBT	0.14	33	C	20	0.18	32	C	24	-
	NBR	0.14	33	C	20	0.16	32	C	23	150
	SBL	0.16	33	C	17	0.16	32	C	16	75
	SBT	0.14	33	C	18	0.13	31	C	16	-
	SBR	0.05	32	C	12	0.02	30	C	5	110
Scenario B: New Westbound Left Turn Protected-Permissive Phasing	**Overall**	**0.67**	**23**	**C**	**-**	**0.86**	**30**	**C**	**-**	**-**
	EBL	0.22	20	C	22	0.43	27	C	36	105
	EBT	0.54	23	C	71	0.86	34	C	117	-
	EBR	0.18	18	B	25	0.21	19	B	29	170
	WBL	0.57	14	B	47	0.81	51	D	59	125
	WBT	0.57	15	B	80	0.53	15	B	87	-
	WBR	0.02	9	A	9	0.02	10	A	8	65
	NBL	0.83	61	E	74	0.87	65	E	107	140
	NBT	0.14	36	D	21	0.18	34	C	25	-
	NBR	0.09	35	D	18	0.06	33	C	24	150
	SBL	0.16	36	D	15	0.16	34	C	20	75
	SBT	0.14	36	D	20	0.13	34	C	18	-
	SBR	0.04	35	C	8	0.02	33	C	5	110

Under Scenario A, the intersection will operate similar to the non-optimized signal timing splits. The westbound left movement will continue to operate above capacity with failing level of service and 95th queue spillover in the PM peak hour.

With the introduction of the protective-permissive westbound left turn phasing in Scenario B, intersection capacity and levels of service are expected to improve in which all intersection movements are expected to operate within capacity and acceptable levels of service. In both peak hours, the westbound left movement will operate within capacity, acceptable level of service, and the available storage length is expected to be able to accommodate the 95th percentile queue lengths.

It is recommended that the Region monitor the intersection and implement traffic signal improvements in the future as the subject development and developments within the surrounding area are built out.

5.4.2. STREET 'A' AND STOUFFVILLE ROAD

The subject development proposes traffic signalization for the intersection of Street A and Stouffville Road.

Given the overcapacity and failing level of service at the intersection of Street A and Stouffville Road in unsignalized intersection scenario in the 2029 and 2034 future total conditions, a signal warrant analysis was undertaken to determine if traffic control signal is warranted. The traffic signal warrant was assessed based on Justification 7 of Ontario Traffic Manual (OTM) Book 12 (OTM Book 12, Section 4.10) to determine if a traffic signal control is justified under the 2034 future total condition. Based on the signal warrant analysis results as enclosed in **Appendix G**, traffic signalization is technically not warranted.

Notwithstanding, a sensitivity analysis with intersection signalization of Street A at Stouffville Road was assessed. The timing plan was assumed with a cycle length of 70 seconds and permissive-only phases. **Table 5-4** summarizes the intersection capacity results with traffic signalization for the 2034 future total condition. Detailed Synchro and SimTraffic results are enclosed in **Appendix D**.

Table 5-4: 2034 Future Total Results of Mitigation Measures – Street A and Stouffville Road

Scenario	Movement of Interest	AM Peak Hour				PM Peak Hour				Storage (m)
		V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	
Scenario A: New Signalized Intersection	**Overall**	**0.57**	**19**	**B**	**-**	**0.68**	**12**	**B**	**-**	**-**
	EBL	0.21	19	B	16	0.14	9	A	14	30
	EBT	0.61	22	C	74	0.70	14	B	87	-
	EBR	0.01	15	B	19	0.03	7	A	25	30
	WBL	0.22	12	B	20	0.48	11	B	28	30
	WBT	0.67	17	B	85	0.51	6	A	56	-
	NBL	0.32	23	C	35	0.61	41	D	34	50
	SBT	0.01	20	C	4	0.02	33	C	15	-

Under intersection signalization, the Street A and Stouffville Road intersection is expected to operate with all intersection movements operating with improved capacity, levels of service, and queueing. The northbound left movement will improve in the PM peak hour from overcapacity in the unsignalized scenario, and will operate within capacity and good level of service with signalization. The available storage lengths are expected to generally accommodate the 95th queues.

Although traffic signals are unwarranted based on OTM Book 12, traffic signalization of the intersection is strongly recommended to improve capacity, levels of service, and queueing for the intersection movements, in particular for the northbound left turn movement.

5.4.3. HIGHWAY 48 AND STOUFFVILLE ROAD

To mitigate the overcapacity, failing levels of service, and improve 95th percentile queues, the Highway 48 and Stouffville Road intersection was assessed in a scenario with optimized signal timing splits (unchanged cycle length). **Table 5-5** summarizes the intersection capacity results with signal timing split optimization for the 2034 future total condition. Detailed Synchro and SimTraffic results are enclosed in **Appendix D**.

Table 5-5: 2034 Future Total Results of Mitigation Measures – Highway 48 and Stouffville Road

Scenario	Movement of Interest	AM Peak Hour				PM Peak Hour				Storage (m)
		V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	
Scenario A: Optimized Existing Signal Timing Splits	**Overall**	**1.00**	**58**	**E**	**-**	**0.80**	**44**	**D**	**-**	**-**
	EBL	0.93	84	F	62	0.89	49	D	111	45
	EBT	0.50	38	D	70	0.87	47	D	160	-
	EBR	0.18	34	C	45	0.37	33	C	60	135
	WBL	0.49	30	C	128	0.75	50	D	43	60
	WBT	0.97	66	E	206	0.72	49	D	90	-
	WBR	0.05	33	C	105	0.13	39	D	36	105
	NBL	0.99	89	F	76	0.61	31	C	64	50
	NBT	0.27	31	C	144	0.63	43	D	81	-
	SBL	0.45	34	C	119	0.55	34	C	39	45
	SBT	0.96	72	E	207	0.51	43	D	67	-

Under optimized signal timing splits, all intersection movements are expected to operate within capacity for both peak hours, in comparison to the overcapacity expected in the non-optimized scenarios for the 2029 and 2034 future total conditions. The intersection will operate at capacity overall in the AM peak hour, as the northbound left movement is expected to operate virtually at capacity (v/c of 0.99). The eastbound left movement and northbound left movement are expected to have failing levels of service. Similar to the future background conditions, the 95th queues for all left turning movements at the intersection are expected to exceed the respective available storage lengths. However, for all left turn lanes at the intersection, there is additional storage length from the centre two-way left turn lane or median space beyond the dedicated left turn storage lane with the potential to accommodate additional queue length.

It is recommended that the Region and MTO monitor the intersection and implement traffic signal improvements in the future as the subject development and developments within the surrounding area are built out. The left turn storage lanes for all four intersection legs is recommended to be extended by restriping the pavement markings to provide additional storage length that can accommodate the 95th percentile queue lengths.

5.4.4. HIGHWAY 48 AND HOOVER PARK DRIVE

To mitigate the overcapacity and failing levels of service for Highway 48 and Hoover Park Drive intersection, two scenarios were considered, including the following.

- Scenario A: Optimized signal timing splits (existing cycle length).
- Scenario B: Road improvements to widen Highway 48 from two lanes (one through lane per direction) to four lanes (two through lanes per direction).

Highway 48 exists as a typical two-lane cross section (one through lane per direction) at Hoover Park Drive. Based on the Town of Whitchurch-Stouffville Transportation Master Plan Update dated April 3, 2024, Highway 48 is planned to be widened from one lane per direction to two lanes per direction (four-lane cross section) between Donald Cousins Parkway to Stouffville Road within the Town (see excerpt from Town TMP Update in **Appendix C**). The capital project is planned as part of the new capacity expansion on Highway 48 between Major Mackenzie Drive to

Bloomington Road and outlined within the province's planning document titled Connecting the GCH: A Transportation Plan for the Greater Golden Horseshoe dated 2022. The road improvements are subject to further study. A timeline for completion of the planned road widening is uncertain at the time of this study. Scenario B assessed the road widening of Highway 48.

Table 5-6 summarizes the intersection capacity results for the foregoing scenarios for the 2034 future total condition. Detailed Synchro and SimTraffic results are enclosed in **Appendix D**.

Table 5-6: 2034 Future Total Results of Mitigation Measures – Highway 48 and Hoover Park Drive

Scenario	Movement of Interest	AM Peak Hour				PM Peak Hour				Storage (m)
		V/C	Delay (s)	LOS	95th Queue (m)	V/C	Delay (s)	LOS	95th Queue (m)	
Scenario A: Optimized Signal Timing Splits	**Overall**	**0.73**	**28**	**C**	**-**	**1.01**	**59**	**E**	**-**	**-**
	WBL	0.84	57	E	115	0.80	60	E	88	-
	WBR	0.14	36	D	30	0.29	43	D	55	-
	NBT	0.63	27	C	105	1.16	126	F	342	-
	NBR	0.20	19	B	24	0.23	27	C	207	150
	SBL	0.50	14	B	48	0.74	39	D	101	220
	SBT	0.52	15	B	97	0.49	11	B	83	-
Scenario B: Road Widening of Hwy 48 to 4-Lane Cross Section (2 Through Lanes Per Direction)	**Overall**	**0.60**	**25**	**C**	**-**	**0.79**	**25**	**C**	**-**	**-**
	WBL	0.84	57	E	115	0.80	60	E	86	-
	WBR	0.14	36	D	27	0.25	42	D	56	-
	NBT	0.33	20	B	58	0.50	24	C	77	-
	NBR	0.20	19	B	25	0.23	20	C	26	150
	SBL	0.42	11	B	44	0.69	15	B	72	220
	SBT	0.27	11	B	50	0.26	8	A	37	-

Under Scenario A, although the intersection will generally improve in capacity, the intersection is expected to continue operating above capacity in the PM peak hour, with the northbound through movement expected to operate above capacity and failing level of service. The northbound right movement is expected to continue to experience PM peak hour 95th queue that exceeds the available storage length.

Given the road widening of Highway 48 assessed in Scenario B, the intersection is expected to operate within capacity and acceptable levels of service in both peak hours. The northbound through and southbound through movements will operate well within capacity and LOS C or better in both peak hours. The 95th queues of the northbound right and southbound left movements are expected to significantly improve and be accommodated within the available storage lengths.

As there is no definite timeline for the planned road widening of Highway 48, it is recommended that the Region and MTO monitor the intersection and implement traffic signal improvements in the future as the subject development and developments within the surrounding area are built out.

6.0 SITE PLAN REVIEW

6.1. VEHICULAR SITE CIRCULATION

A vehicle swept path analysis using AutoTURN was prepared to determine the functionality of the subject site for vehicle access, including drive aisles, access entrances, parking areas, fire routes, loading spaces, and waste collection. Vehicle movement diagrams are enclosed in **Appendix H**. The following vehicles were assessed.

- P TAC-2017 (large passenger car)
- York Region Aerial Fire Truck (fire truck)
- HSU TAC-2017 (simulation for front-end waste collection truck)

The swept path analysis determined that the foregoing test vehicles were able to circulate through the subject site accordingly without functional conflicts.

6.2. LOADING SPACE REVIEW

Within Section 3.25 of the Town of Whitchurch-Stouffville Zoning By-law 2010-001-ZO, as amended, loading spaces are not required for multi-unit residential apartment buildings and day care facilities. As summarized in T, five (5) large loading spaces (dimensions 15m by 3.6m and vertical clearance of 4.25m) are proposed for the subject site, including one (1) large loading space per residential tower. The proposed day care building (Building F) will share the loading space of Building A. Waste collection from a front-end refuse truck will occur at each loading space.

7.0 PARKING REVIEW

This section will review the proposed parking provision for the subject site and compare it to the parking requirements defined in the Town of Whitchurch-Stouffville Zoning By-law 2010-001-ZO, as amended.

7.1. PROPOSED PARKING PROVISION

The proposed development will provide 1,865 vehicular parking spaces, including 1,553 residential and 312 visitors, of which 20 visitor spaces will be shared with day care use.

7.2. VEHICULAR PARKING REVIEW – ZONING BY-LAW 2010-001-ZO

The vehicular parking supply requirements for the subject site are based on Section 3.23 of the Town of Whitchurch-Stouffville Zoning By-law 2010-001-ZO, as amended. It is noted that the proposed day care centre will consist of 5 classrooms with a total of 84 children based on correspondence with the architect. A summary of the minimum zoning by-law parking requirements is provided in **Table 7-1**.

Table 7-1: Summary of Zoning By-law Vehicular Parking Requirements

Use	Parameter	Zoning By-law 2010-001-ZO, As Amended		Proposed Parking Provision	Variance
		Required Parking Rate	Spaces Required		
Apartment Building – Residential	1,243 units	1.25 sp/unit	1,553	1,553	-
Apartment Building – Visitor		0.25 sp/unit	311	312[1]	-23
Day Care Centre	5 classrooms (84 children)	1.5 sp per classroom plus 1 sp per 5-person capacity	24		
		Total	**1,888**	**1,865[1]**	**-23**

Note:
1. Within the provision of 312 visitor parking spaces, 20 parking spaces will be designated for shared non-residential parking for visitor and day care uses.

Based on the parking requirements stipulated in Zoning By-law 2010-001-ZO, a minimum of 1,888 parking spaces (1,553 residential, 311 visitor, 24 day care) is required for the proposed development.

The development proposes a parking provision of 1,865 parking spaces, including 1,553 residential spaces and 312 visitor spaces (inclusive of 292 visitor spaces and 20 shared non-residential spaces for visitor and day care uses). The proposed parking provision meets the residential parking requirement and visitor parking requirement. Parking justification is provided to support the shared non-residential parking provision.

The majority of day care parking (from parents and guardians picking or dropping off children) are expected to occur within a short time period (i.e. within a 15-minute period). The typical day care pick-up/drop-off time periods occur during weekdays between 7:00am and 9:00am in the morning and between 3:00pm and 6:00pm in the afternoon. It is expected that the day care centre will not operate during the weekends. Based on the Recommended Time-of-Day Factors for Weekdays within Table 2-5 of the Urban Land Institute (ULI) Shared Parking, 2nd Edition, the demand of residential visitor parking is expected to be 10% to 20% during the day care peak morning period of 7:00am and 9:00am, and 20% to 60% during the day care peak afternoon period of 3:00pm to 6:00pm. Visitor parking demand is expected to be at 100% capacity after 7:00pm until the late evening on weekdays. Given that the peak parking demand times for the visitor use and day care use are expected to occur during different times from each other during a typical weekday, the proposed shared non-residential parking provision of 20 spaces will be able to accommodate the parking demand for both visitor and day care uses at all times of the day.

The provision of shared non-residential parking for visitor and day care uses is recommended to be increased to 24 spaces to meet the minimum zoning by-law requirement of 24 spaces, and is subject to revision based on changes to the number of classrooms and person capacity.

7.3. BARRIER-FREE PARKING SPACE REVIEW

The proposed development is subject to the barrier-free (accessible) parking space requirements within Section 3.23.2.2 of the Town of Whitchurch-Stouffville Zoning By-law 2010-001-ZO, as amended. **Table 7-2** summarizes the minimum barrier-free parking space supply requirement.

Table 7-2: Summary of Barrier-Free Parking Requirements

Town of Whitchurch-Stouffville Zoning By-law 2010-001-ZO			Barrier Free Spaces Provided	Variance
Total Parking Spaces Required	Barrier Free Parking Rate	Barrier Free Spaces Required		
1,888	11 sp + 1% total required parking	30 (15 Type A, 15 Type B)	30 (15 Type A, 15 Type B)	-

A barrier-free parking space provision of 30 spaces, including 15 Type A and 15 Type B spaces, meets the minimum barrier-free parking space requirement within Zoning By-law 2010-001.

7.4. BICYCLE PARKING REVIEW

The proposed development is not subject to bicycle parking standards as the Town of Whitchurch-Stouffville Zoning By-law 2010-001-ZO does not contain bicycle parking space requirements. Notwithstanding, the proposed development will provide 329 residential bicycle parking spaces.

Given no bicycle parking space requirements within Zoning By-law 2010-001-ZO, the City of Markham Comprehensive Zoning By-law 2024-19 was reviewed for the proposed development given the generally similar transportation context of the two municipalities within York Region and the proximate adjacent location of the City of Markham south of the Town of Whitchurch-Stouffville. A summary of the minimum bicycle parking spaces required and proposed bicycle parking supply for the subject site is provided in **Table 7-3**.

Table 7-3: Summary of Bicycle Parking Requirements from City of Markham Zoning By-law 2024-19

Use	Units / GFA	Markham Zoning By-law 2024-19, Table 5.9.2		Bicycle Spaces Provided	Variance
		Required Parking Rate	Required Parking		
Residential (Long-term)	1,243	0.50sp/unit	622	201	-436
Residential (Short-term)		Greater of 0.10sp/unit or 3sp	125	110	
Day Care (Long-term)	1,116 sqm	None	0	0	0
Day Care (Short-term)		None	0	0	0
TOTAL			**747**	**311**	**-436**

Although the Town of Whitchurch-Stouffville Zoning By-law 2010-001-ZO does not provide bicycle parking space standards and the proposed development provides a bicycle provision of 311 residential spaces, a higher bicycle parking provision of 747 spaces (622 residential long-term, 125 residential short-term) is recommended based on City of Markham Zoning By-law 2024-19 bicycle parking requirements. The increased provision of bicycle parking spaces will support active transportation as a more viable non-auto mode of travel and will further support the reduction in vehicular parking.

8.0 TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation demand management (TDM) refers to variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system.

Potential TDM measures may include but are not limited to: TDM supportive land use, bicycle and pedestrian programs and facilities, public transit improvements, and ride sharing.

8.1. TDM MEASURES

Based on Nextrans' review of the proposed development, the following TDM measures and incentives are recommended for the proposed development in **Table 8-1**.

Table 8-1: TDM Measures for the Proposed Development

TDM Measure	Responsibility	Estimated Cost
Transit Incentives (i.e. Pre-loaded Presto Cards). One-time Presto card pre-loaded with a monthly weekday cost of $160 ($4.00 fare x 4 weeks/month x 5 weekdays/week x 2 trips/day) on a one-time basis for each unit upon initial occupancy. 1,243 units x $160 = $198,880.	York Region to Consider	$198,880
TDM information package (i.e. YRT/GO maps and schedules, Active Transportation maps, etc).	York Region to Consider	TBD
Communications strategy and physical location to deliver Presto Cards and Information Packages.	York Region to Consider	$1,500
Outreach Programs.	York Region to Consider	TBD
Pedestrian Connections, including connections to the adjacent streets.	Applicant	The associated cost will be included in the site plan agreement.
Cycling Connections, including connections to the adjacent streets.	Applicant	The associated cost will be included in the site plan agreement.
Bicycle Parking (includes long-term and short-term spaces). A provision of 311 bicycle parking spaces will be provided.	Applicant	The associated cost will be included in the site plan agreement.
Recommended that four (4) on-site bicycle maintenance facilities (based on rate of 1 maintenance facility per 200 required long-term bicycle parking spaces or part thereof.	Applicant	The associated cost will be included in the site plan agreement.
Undertake a TDM Monitoring Initial Survey with residents at 50% condominium occupancy and report back to Town/Region Staff within 2 months of reaching this occupancy rate. The Owner will coordinate with the Town/Region Staff for a list for survey questions.	York Region to Consider	Securities of $1,000 are required to undertake the Initial survey.
Undertake a TDM Monitoring Follow-up Survey after the Initial survey and report back to Town/Region Staff within 2 months. The Owner will coordinate with the Town/Region a list for survey questions.	York Region to Consider	Securities of $1,000 are required to undertake the Follow-up survey.

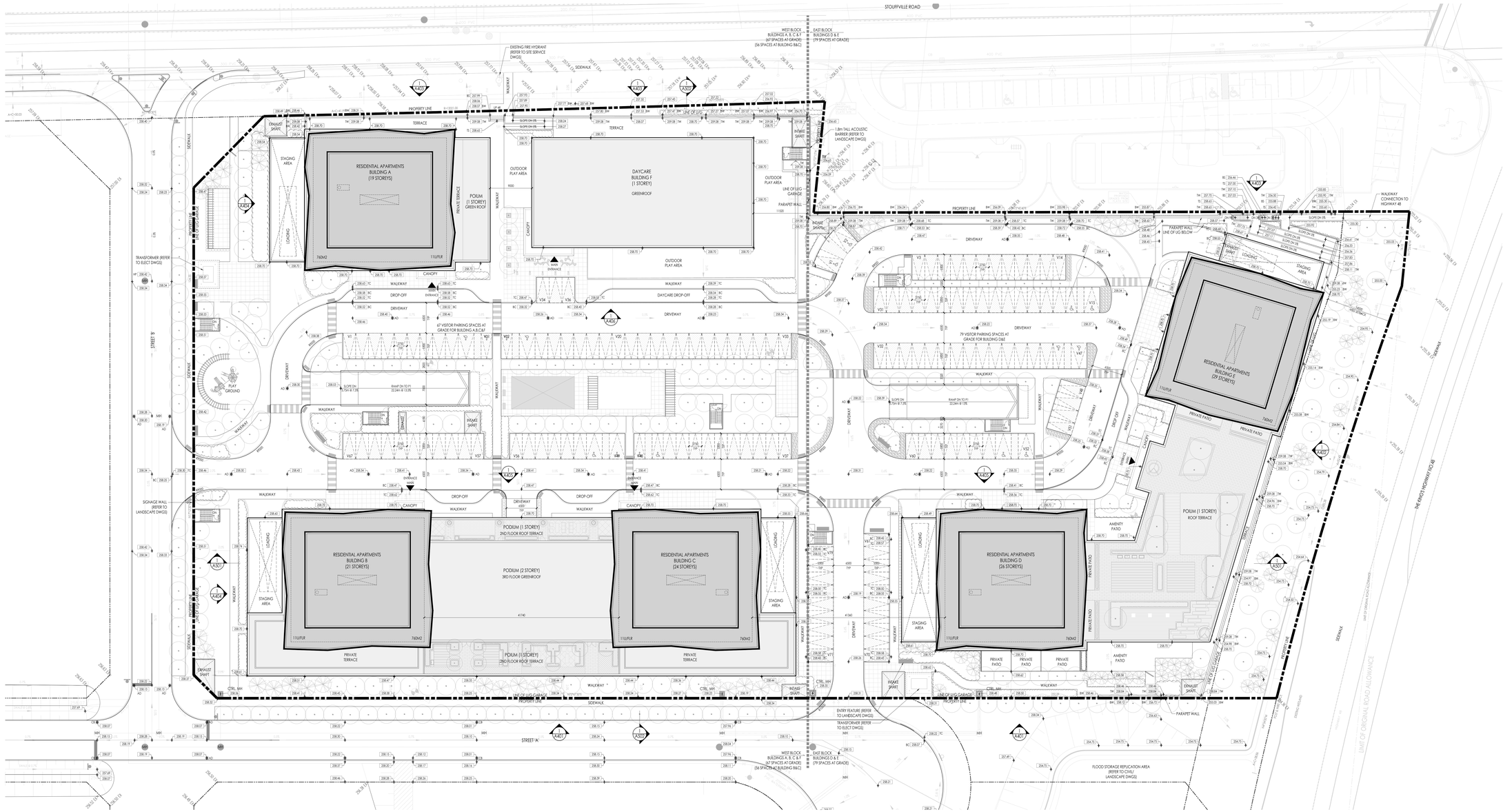
9.0 CONCLUSIONS AND RECOMMENDATIONS

The findings, conclusions, and recommendations of this Transportation Impact Study are summarized as follows:

- The proposed development is expected to generate:
    - 468 two-way auto trips (184 in, 284 out) in the AM peak hour and 532 two-way auto trips (286 in, 246 out) in the PM peak hour.
    - 123 two-way non-auto trips (98 in, 26 out) in the AM peak hour and 124 two-way non-auto trips (58 in, 66 out) in the PM peak hour.
- The traffic analysis indicates that signal timing improvements will be required to mitigate overcapacity and failing levels of service for intersection movements at the McCowan Road and Stouffville Road intersection, Highway 48 and Stouffville Road intersection, and Highway 48 and Hoover Park Drive intersection. It is recommended that the Region and/or MTO monitor the noted intersections and implement traffic signal improvements in the future as the subject development and developments within the surrounding area are built out. A protected phase-permissive westbound left-turn phasing is recommended to improve capacity and level of service for the westbound left movement at the McCowan Road and Stouffville Road intersection. At the Highway 48 and Stouffville Road intersection, the lane pavement markings of all left turn storage lanes are recommended to be restriped within the median space beyond the left turn lane to accommodate 95th queues. Traffic signalization of the proposed Street A and Stouffville Road intersection is recommended despite not meeting the threshold from the OTM Book 12 traffic signal warrant analysis, to mitigate overcapacity, failing level of service, and queue spillover of the northbound left movement. Although there is no definite timeline, Highway 48 at Hoover Park Drive is recommended to be increased from two lanes to four lanes (as planned within the Town TMP Update and by MTO) to improve capacity and levels of service. Further, transit improvements, including increased YRT bus service route coverage and frequency, is recommended to mitigate traffic congestion.
- The proposed residential and visitor parking space provision meets the zoning by-law minimum parking requirement. Inclusive of the visitor parking provision are 20 spaces that will be for shared non-residential parking (i.e. visitor and day care uses). Given that the peak parking demand times for the visitor use and day care use are expected to occur during different times from each other during a typical weekday, the proposed shared non-residential parking provision will be able to accommodate the parking demand for both visitor and day care uses at all times of the day. The provision of shared non-residential parking for visitor and day care uses is recommended to be increased to 24 spaces to meet the minimum zoning by-law requirement of 24 spaces, and is subject to revision based on changes to the number of classrooms and person capacity.
- An accessible parking provision of 30 barrier-free spaces (15 Type A, 15 Type B) meets the Town zoning by-law requirement.
- Although there no are no bicycle parking space requirements within the Town zoning by-law, the development proposes 311 bicycle parking spaces. Consideration for a higher bicycle parking provision is recommended to support and encourage multi-modal trip generation.
- The proposed development will implement the Transportation Demand Management (TDM) measures and incentives identified within this study to target a reduction in single occupancy vehicle trips and support active transportation and transit.

Appendix A

Architectural Plans


STOUFFVILLE ROAD
WEST BLOCK
BUILDINGS A, B, C & F
(67 SPACES AT GRADE)
(56 SPACES AT BUILDING B&C)
EAST BLOCK
BUILDINGS D & E
(79 SPACES AT GRADE)
EXISTING FIRE HYDRANT (REFER TO SITE SERVICE DWGS)
SIDEWALK
WALKWAY
PROPERTY LINE
TERRACE
EXHAUST SHAFT
STAGING AREA
RESIDENTIAL APARTMENTS BUILDING A (19 STOREYS)
760M2
111U/FLR
LOADING
PORTER
PRIVATE TERRACE
PORLM (1 STOREY) GREEN ROOF
OUTDOOR PLAY AREA
DAYCARE BUILDING F (1 STOREY) GREENROOF
LINE OF U/G GARAGE
PARAPET WALL
1.8m TALL ACOUSTIC BARRIER (REFER TO LACDSCAPE DWGS)
INTAKE SHAFT
CANOPY
ENTRANCE
DROP-OFF
DAYCARE DROP-OFF
DRIVEWAY
67 VISITOR PARKING SPACES AT GRADE FOR BUILDING A,B,C&F
79 VISITOR PARKING SPACES AT GRADE FOR BUILDING D&E
RAMP DN TO P1 22.24m @ 13.5%
RAMP DN TO P1 22.24m @ 13.5%
SLOPE DN 15% TYP @ 7.5%
SLOPE DN 5% TYP @ 7.5%
PLAY GROUND
STREET 'B'
STREET 'A'
SIGNAGE WALL (REFER TO LANDSCAPE DWGS)
TRANSFORMER (REFER TO ELECT DWGS)
PODIUM (1 STOREY) 2ND FLOOR ROOF TERRACE
PODIUM (2 STOREY) 3RD FLOOR GREENROOF
RESIDENTIAL APARTMENTS BUILDING B (21 STOREYS)
RESIDENTIAL APARTMENTS BUILDING C (24 STOREYS)
RESIDENTIAL APARTMENTS BUILDING D (26 STOREYS)
RESIDENTIAL APARTMENTS BUILDING E (29 STOREYS)
PODIUM (1 STOREY) ROOF TERRACE
AMENITY PATIO
PRIVATE PATIO
PRIVATE PATIO
PRIVATE TERRACE
PRIVATE TERRACE
PRIVATE PATIO
PRIVATE PATIO
PRIVATE PATIO

Appendix B

Terms of Reference

520 Industrial Parkway South, Suite 201
Aurora, Ontario L4G 6W8

Phone: 905-503-2563
www.nextrans.ca

nexTrans CONSULTING ENGINEERS
NextEng Consulting Group Inc.

To: Monika Dhungana, Town of Whitchurch-Stouffville
Vi Bui, York Region
Mark White, Ministry of Transportation

From: John Nhan, Nextrans Consulting Engineers

Date: June 16, 2023

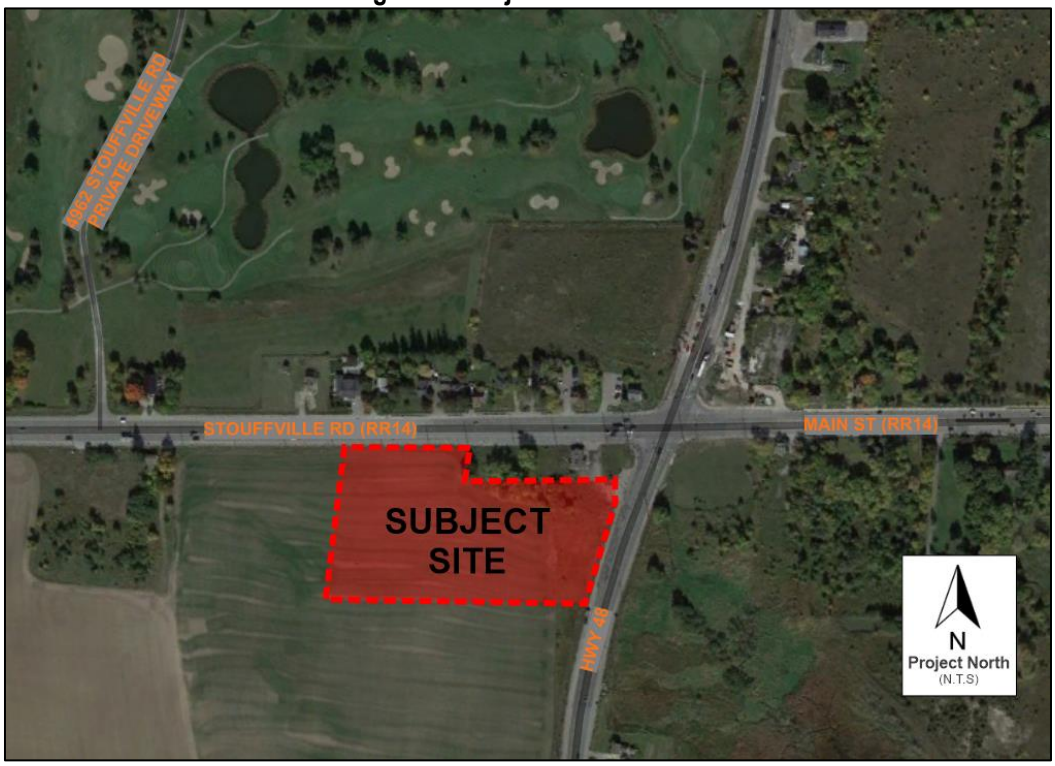
Re: **Terms of Reference – Transportation Impact Study**
Proposed Mixed-Use Development
5061 Stouffville Road, Town of Whitchurch-Stouffville, York Region
Town/Region File No. PRE22.094
Our Project No. NT-23-038

INTRODUCTION

We wish to confirm the following work plan for a Transportation Impact Study (TIS) in support of an Official Plan Amendment (OPA) Application and Zoning By-law Amendment (ZBA) Application for a proposed mixed-use development located at the southwest corner of the intersection of Highway 48 and Stouffville Road / Main Street, known municipally as 5061 Stouffville Road (herein referred to as the "subject site") within the Town of Whitchurch-Stouffville, York Region.

Figure 1 illustrates the subject site location. The proposed site plan is enclosed in **Attachment 1**.

Figure 1: Subject Site Location



Please note that Building A (170m^2), Building B (295m^2), and Building C (210m^2) as denoted on the enclosed site plan are not part of the proposed development nor are the foregoing buildings located on the subject lands (i.e. different developer and development application). The unrelated development is municipally located at 5211 Stouffville Road, 5223 Stouffville Road, and 5241 Stouffville Road and will be included as a background development that will use the proposed site driveways for access onto the external road network.

Based on the latest site plan, the development proposes five (5) 18-storey buildings for a total of 1,121 residential dwelling units and 1,525m^2 of ground floor commercial GFA.

Three (3) vehicular accesses are proposed.

- A full moves access will be introduced as the south leg at the intersection of Stouffville Road and the private driveway for 4962 Stouffville Road (Spring Lakes Golf Club entrance) approximately 490m west of the intersection of Stouffville Road / Main Street and Highway 48. Traffic signalization of the foregoing intersection is proposed.
- A right-in/right-out driveway is proposed along Stouffville Road.
- A right-in/right-out driveway is proposed along Highway 48.

The TIS for the proposed development will be conducted following York Region Transportation Mobility Plan Guidelines dated November 2016 and Ministry of Transportation General Guidelines for the Preparation of Traffic Impact Studies dated February 2021. The following outlines the proposed Terms of Reference for the study.

STUDY AREA & TRAFFIC DATA

The study will assess the weekday AM and PM peak hours. The proposed study area will include the analysis of the following intersections.

- Stouffville Road / Main Street & Highway 48 (signalized);
- Stouffville Road & 4962 Stouffville Road Private Driveway (unsignalized);
- Stouffville Road & McCowan Road (signalized); and
- Stouffville Road & Hoover Park Drive / Private Road (signalized).

A Turning Movement Count (TMC) survey will be undertaken for the studied intersections during the weekday AM and PM peak periods of 7:00am-10:00am and 4:00pm-7:00pm.

TRAFFIC ASSESSMENT & STUDY HORIZON YEAR

The study will focus on weekday AM and PM peak hour traffic operations. Synchro version 10 and SimTraffic will be used to assess intersection operations and queueing during the peak hours.

Along with the existing year of 2023, a 5-year study horizon of 2028 and 10-year study horizon of 2033 will be assessed given the preliminary nature of the development.

BACKGROUND TRAFFIC

General Corridor Growth Rate – Nextrans will review historical traffic data and consult with reviewing agency staff to determine corridor growth rates.

Road Network Improvements – Nextrans will note any road network improvements identified within the study area and account for any traffic diversions associated with these improvements within in our analysis.

It is Nextrans' understanding that there are no currently planned road improvements for the proposed study area.

Background Development Traffic – Nextrans will review the Town's online interactive Development Activity Map for any relevant background developments to be considered within the study.

Nextrans requests from the Town the relevant transportation documents from the following development applications as applicable to include as background development traffic volumes within the study.

- 5182, 5192, 5226 Stouffville Road (SPA08.015);
- 5262, 5270, 5286, 5318 Main Street (19T(W)16.003);
- 5472 Main Street (SPA18.004);
- 5531 Main Street (SPA19.030);
- 12049 Highway 48 (OPA21.005);
- Hoover Park Drive (SPA23.001);
- 11776 Highway 48 (19T(W)-20.004);
- Sam's Way (north side), west of Rougeview Ave (SPA22.011);
- 5505 Main Street (SPA22.029)
- Automall NW corner & Millard (SPA22.040); and
- Automall Boulevard (SPA18.027).

TRIP GENERATION, DISTRIBUTION, & ASSIGNMENT

Nextrans proposes to use the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition to determine the site traffic volumes of the proposed development onto the surrounding road network.

The residential and commercial directional trip distribution will be based on 2016 Transportation Tomorrow Survey data, unless otherwise noted.

Trip assignment will be completed accordingly to reflect the configuration of the proposed site accesses, turning restrictions, and logical routings.

REMEDIAL MEASURES

Under future conditions, any movements that exceed an individual movement or overall intersection v/c ratio of 0.85 will be identified, in which remedial actions such as intersection road improvements or signal timing split optimization will be identified. Queueing will be assessed against available storage space. If remedial measures are to be employed, a scenario will be provided demonstrating the intersection remedial measures.

SITE PLAN REVIEW

Nextrans will review the proposed site plan and undertake a vehicle swept path analysis to determine site circulation and functionality of the access driveway entrance, internal driveway aisles, loading space provision, and vehicular parking provision, as necessary.

The proposed site accesses will be reviewed in accordance with York Region Access Guidelines (2020).

A preliminary functional plan of a proposed full moves signalized site access along Stouffville Road at the Spring Lakes Golf Club entrance. Applicable signage and pavement markings will be included.

PARKING & LOADING

The site is currently subject to Town of Whitchurch-Stouffville Zoning By-law 2010-001-ZO and will be reviewed for parking and loading requirements.

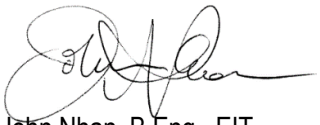
TRANSPORTATION DEMAND MANAGEMENT

A review of existing nearby transportation facilities and possible initiatives and policies to promote and encourage modes of transportation in lieu of single occupant vehicle (SOV) trips will be made to influence the travel behaviour of residents and visitors to reduce travel demand and create a more efficient transportation network.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS CONSULTING ENGINEERS



John Nhan, B.Eng., EIT
Transportation Analyst

Enclosed: Attachment 1: Proposed Site Plan

John Nhan

From: Schleihauf, David <David.Schleihauf@york.ca>
Sent: June 28, 2023 8:17 AM
To: John Nhan
Cc: Wong, Ryan; Monika Dhungana; Bui, Vi; mark.j.white@ontario.ca; Richard Pernicky
Subject: RE: NT-23-038 - Transportation Impact Study Terms of Reference - Highway 48 & Stouffville Road, Town of Whitchurch-Stouffville, York Region

Follow Up Flag: Follow up
Flag Status: Completed

Hello John,

Please see our comments below regarding the terms of reference.

1. The study shall be consistent with the Region's Mobility Plan Guidelines and Access Guidelines. Please note that only one access to Stouffville Road will be permitted.
2. Exclusive turn lanes will be required at the access to Stouffville Road.
3. The applicant shall provide signal warrants for any proposed signalized intersections on Regional Roads.
4. Traffic Counts, signal timings, EMME model printouts, and historic AADTs can be purchased through traffic.data@york.ca (if available).
5. As per the Region's 2023 10-Year Roads and Transit Capital Construction Program, there are no planned road improvements scheduled in the vicinity of the site.
6. The Owner shall provide a basic 36 metre right-of-way for this section of Stouffville Road. As such, all municipal setbacks shall be referenced from a point 18 metres from the centreline of construction on Stouffville Road, and any additional lands required for turn lanes at intersections will be conveyed to York Region for public highway purposes, free of all costs and encumbrances, to the satisfaction of York Region Solicitor.

Please note, this is not an approval, the Region will provide additional detailed comments when a study is submitted for review.

Regards,

Our working hours may be different. Please do not feel obligated to reply outside of your scheduled working hours. Let's work together to help foster healthy work-life boundaries.

David Schleihauf, P.Eng. | Transportation Planner, Transportation Development Planning, Transportation & Infrastructure Planning Branch, Public Works Department

---

1-877-464-9675 ext. 77857

Our Mission: **Working together to serve our thriving communities – today and tomorrow**

From: John Nhan <john@nextrans.ca>
Sent: Friday, June 16, 2023 3:06 PM
To: Monika Dhungana <monika.dhungana@townofws.ca>; Bui, Vi <Vi.Bui@york.ca>; mark.j.white@ontario.ca
Cc: Richard Pernicky <richard@nextrans.ca>
Subject: NT-23-038 - Transportation Impact Study Terms of Reference - Highway 48 & Stouffville Road, Town of Whitchurch-Stouffville, York Region

CAUTION! This is an external email. Verify the sender's email address and carefully examine any links or attachments before clicking. If you believe this may be a phishing email, forward it to isitsafe@york.ca then delete it from your inbox. If you think you may have clicked on a phishing link, report it to the IT Service Desk, ext. 71111, and notify your supervisor immediately.

Hi Monika, Vi, and Mark,

Nextrans has been retained to undertake a Transportation Impact Study for a proposed development located southwest of Stouffville Road (RR14) and Highway 48, known municipally as 5061 Stouffville Road, in the Town of Whitchurch-Stouffville, York Region. The proposal will introduce five (5) 18-storey high-rise buildings with 1,121 residential dwelling units and 1,525sqm of ground floor commercial GFA.

Please find attached our Terms of Reference for your review. Please let me know if you have any comments with our work plan.

Thanks,

John Nhan, B.Eng., EIT
Transportation Analyst

o: 905-503-2563 ext.223
e: john@nextrans.ca
w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

John Nhan

From: Monika Dhungana <monika.dhungana@townofws.ca>
Sent: June 20, 2023 9:44 AM
To: John Nhan; Bui, Vi; mark.j.white@ontario.ca
Cc: Richard Pernicky
Subject: RE: NT-23-038 - Transportation Impact Study Terms of Reference - Highway 48 & Stouffville Road, Town of Whitchurch-Stouffville, York Region

Follow Up Flag: Follow up
Flag Status: Completed

Hello John
Town has no comments on the TOR provided.
I will be sending a FTP link with requested project TIS report in another email. Please be considerate that the Town can only share reports that are final.

Regards,

Stouffville

MONIKA DHUNGANA
Development Engineer| Development Services
111 Sandiford Drive, Stouffville, Ontario L4A 0Z8
t: 905-640-1900 ext. 2291 | **tf:** 855-642-TOWN | townofws.ca

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From: John Nhan <john@nextrans.ca>
Sent: Friday, June 16, 2023 3:06 PM
To: Monika Dhungana <monika.dhungana@townofws.ca>; Bui, Vi <Vi.Bui@york.ca>; mark.j.white@ontario.ca
Cc: Richard Pernicky <richard@nextrans.ca>
Subject: NT-23-038 - Transportation Impact Study Terms of Reference - Highway 48 & Stouffville Road, Town of Whitchurch-Stouffville, York Region

Hi Monika, Vi, and Mark,

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Please find attached our Terms of Reference for your review. Please let me know if you have any comments with our work plan.

Thanks,

John Nhan, B.Eng., EIT
Transportation Analyst

o: 905-503-2563 ext.223
e: john@nextrans.ca
w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

John Nhan

From: Monika Dhungana <monika.dhungana@townofws.ca>
Sent: December 6, 2024 8:39 AM
To: John Nhan
Cc: Sepand Mesgarzadeh
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]

Hello John
In absence of a complete application, I will not be able to comment on any detail commentary. Please include your justification in the Parking Study and submit with the full package. Our reviewers will have to make a comprehensive review for any detailed comments.

Regards,
Monika

MONIKA DHUNGANA, M. Sc., P. Eng.
Senior Development Engineer| Engineering and Public Works
111 Sandiford Drive, Stouffville, Ontario L4A 0Z8
t: 905-640-1900 ext. 2291 | **tf:** 855-642-TOWN |
townofws.ca

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From: John Nhan <john@nextrans.ca>
Sent: Thursday, December 5, 2024 5:59 PM
To: Monika Dhungana <monika.dhungana@townofws.ca>
Cc: Sepand Mesgarzadeh <sepand@timesgroup.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]

Hi Monika,

Just following up if you have any comments to the list of potential proxy sites, of which we'll survey one of these sites in lieu of the 11750 Ninth Line proxy site that we were not granted access to.

Regards,
John Nhan, P.Eng.
Project Engineer

o: 905-503-2563 ext.223
e: john@nextrans.ca
w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.

From: Sepand Mesgarzadeh <sepand@timesgroup.ca>
Sent: December 2, 2024 3:30 PM
To: John Nhan <john@nextrans.ca>; Monika Dhungana <monika.dhungana@townofws.ca>
Cc: Hamid Ghadaki <hamid@timesgroup.ca>; Hashem Ghadaki <hashem@timesgroup.ca>; Richard Pernicky <richard@nextrans.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]

Hi Monika,

We would appreciate an expedited review and confirmation of a proxy site as we try to finalize our application.

Thank you,

Sepand Mesgarzadeh
Associate
Times Group Corporation
3985 Highway 7 East, Suite 202, Markham, ON L3R 2A2
T (905) 940-6286 Ext. 267

Times Group

From: John Nhan <john@nextrans.ca>
Sent: Thursday, November 28, 2024 8:52 PM
To: Monika Dhungana <monika.dhungana@townofws.ca>
Cc: Sepand Mesgarzadeh <sepand@timesgroup.ca>; Hamid Ghadaki <hamid@timesgroup.ca>; Hashem Ghadaki <hashem@timesgroup.ca>; Richard Pernicky <richard@nextrans.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]
Importance: High

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Monika,

We were able to conduct the proxy parking demand survey at the property of 2 and 6 David Eyer Road. However, building management did not grant us access to survey the second proxy site at 11750 Ninth Line in Whitchurch-Stouffville. On this basis and in the essence of time, I'd like to request your expedited review of the following potential proxy sites, of which we'll survey one (1) site as the second proxy survey site (pending access permission from building management) in lieu of the 11750 Ninth Line site. All three sites are located in greenfield areas that are up and coming/being developed. Please let me know if you have any comments on the proxy sites.

1. 460 Gordon Krantz Ave & 470 Gordon Krantz Ave, Milton
    - Two 6-storey buildings with 255 dwelling units.
    - Nearest transit based on on-demand service.
    - Nearest fixed-route bus stop is 900m.
2. 3200 William Coltson Ave, Oakville
    - 14-storey building with 266 dwelling units.
    - 220m from bus stop.
3. 2550 Simcoe St N, North Oshawa

- 25-storey building with 503 dwelling units.
- 110m from bus stop.

Please also note that YRT previously serviced the Main/48 intersection via YRT Bus Route 9 Ninth Line prior to 2024 but discontinued service at Main/48 (one reason likely due to low passenger demand as the Main/48 intersection area has not yet been developed). See attached excerpt from YRT 2024 Transit Initiatives for the service route changes. The bus stop would be less than 200m walking distance from the subject development. Once the subject development is fully built out along with other large developments nearby, there is the likelihood that YRT could revise their routing to return service to Main/48.

Regards,
John Nhan, B.Eng., EIT
Transportation Analyst

o: 905-503-2563 ext.223
e: john@nextrans.ca
w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

From: Monika Dhungana <monika.dhungana@townofws.ca>
Sent: November 14, 2024 3:34 PM
To: John Nhan <john@nextrans.ca>
Cc: Sepand Mesgarzadeh <sepand@timesgroup.ca>; Hamid Ghadaki <hamid@timesgroup.ca>; Hashem Ghadaki <hashem@timesgroup.ca>; Richard Pernicky <richard@nextrans.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]

Hello John
There are no further comments on two proxy sites.

Regards,
Monika

From: John Nhan <john@nextrans.ca>
Sent: Thursday, November 14, 2024 3:13 PM
To: Monika Dhungana <monika.dhungana@townofws.ca>
Cc: Sepand Mesgarzadeh <sepand@timesgroup.ca>; Hamid Ghadaki <hamid@timesgroup.ca>; Hashem Ghadaki <hashem@timesgroup.ca>; Richard Pernicky <richard@nextrans.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]

Hi Monika,

I left a voicemail to follow up for confirmation if the two proxy parking sites are acceptable (2-6 David Eyer Road in Richmond Hill and 11750 Ninth Line in Whitchurch-Stouffville).

Thank you,
John Nhan, B.Eng., EIT
Transportation Analyst

o: 905-503-2563 ext.223
e: john@nextrans.ca

w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

From: Sepand Mesgarzadeh <sepand@timesgroup.ca>
Sent: November 13, 2024 10:31 AM
To: John Nhan <john@nextrans.ca>; Monika Dhungana <monika.dhungana@townofws.ca>
Cc: Hamid Ghadaki <hamid@timesgroup.ca>; Hashem Ghadaki <hashem@timesgroup.ca>; Richard Pernicky <richard@nextrans.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]

Hi Monika,

Please confirm if the proxy sites proposed by Nextrans are acceptable. We would like to conduct the surveys immediately in order to finalize our reports and submit our application shortly thereafter.

Regards,

Sepand Mesgarzadeh
Associate
Times Group Corporation
3985 Highway 7 East, Suite 202, Markham, ON L3R 2A2
T (905) 940-6286 Ext. 267



From: John Nhan <john@nextrans.ca>
Sent: Monday, November 11, 2024 2:44 PM
To: Monika Dhungana <monika.dhungana@townofws.ca>
Cc: Sepand Mesgarzadeh <sepand@timesgroup.ca>; Hamid Ghadaki <hamid@timesgroup.ca>; Hashem Ghadaki <hashem@timesgroup.ca>; Richard Pernicky <richard@nextrans.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]

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Hi Monika,

Just following up on my last email. I've cc'd the client as they are eager to commence the parking surveys as part of the study.

Please let us know if the two proxy sites are acceptable to be surveyed. The parking study will be included within the TIS, as previously noted.

Thank you,
John Nhan, B.Eng., EIT
Transportation Analyst

o: 905-503-2563 ext.223
e: john@nextrans.ca
w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

From: John Nhan
Sent: November 7, 2024 4:07 PM
To: Monika Dhungana <monika.dhungana@townofws.ca>
Cc: Richard Pernicky <richard@nextrans.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]
Importance: High

Hi Monika,

Thanks for the response. Noted regarding the pedestrian facilities along the southern boulevard and will be addressed in the TIS.

Please note that the parking study will be provided as part of the TIS that will soon be going for submission. To prepare the parking study, as previously noted, I'd like to confirm the proxy sites with the Town. In lieu of 25 Baker Hill Boulevard, please see the following potential proxy site:

2 & 6 David Eyer Road, Richmond Hill
- Two 10-storey buildings connected by podium, with 258 dwelling units in total.
- Located northeast of Elgin Mills Rd E and Bayview Ave in Richmond Hill.
- 14-minute walk (approx. 1km) to nearest transit stop (YRT bus)

In addition to 11750 Ninth Line in Whitchurch-Stouffville as noted in the prior email, can you please confirm if these two sites are acceptable to the Town as proxy sites?

Thank you,
John Nhan, B.Eng., EIT
Transportation Analyst

o: 905-503-2563 ext.223
e: john@nextrans.ca
w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

From: Monika Dhungana <monika.dhungana@townofws.ca>
Sent: November 7, 2024 9:47 AM
To: John Nhan <john@nextrans.ca>
Cc: Richard Pernicky <richard@nextrans.ca>
Subject: RE: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]

Hello John,
In general, we will like to see your full report for parking reduction proposal. Currently, there is no pedestrian facility along southern boulevard and the development will be responsible to provide a Sidewalk to facilitate the mobility and cross the intersection at HWY 48. Please provide your report comprehensive to other deliverables that can be reviewed for approval.

Just a note. 25 Baker Hill Boulevard is not a comparable site in terms of density as well as proximity to the nearest transit stop. We can accept comparable site outside of Stouffville, if the transit distances are comparable.

Thanks.
Monika

MONIKA DHUNGANA, M. Sc., P. Eng.
Senior Development Engineer| Engineering and Public Works
111 Sandiford Drive, Stouffville, Ontario L4A 0Z8
t: 905-640-1900 ext. 2291 | **tf:** 855-642-TOWN |
townofws.ca

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From: John Nhan <john@nextrans.ca>
Sent: Monday, November 4, 2024 11:10 AM
To: Monika Dhungana <monika.dhungana@townofws.ca>
Cc: Richard Pernicky <richard@nextrans.ca>
Subject: NT-23-038 - 5061 Stouffville Road - Parking Study Terms of Reference [PRE22.094]
Importance: High

Hi Monika,

Nextrans is the transportation consultant currently preparing a TIS for an OPA/ZBA application (Town File No. PRE22.094) for a proposed mixed-use development at the property of 5061 Stouffville Road in the Town of Whitchurch-Stouffville (see attached preliminary architectural plans for reference). A TIS Terms of Reference was previously sent to the Town but without a section confirming a Parking Justification Study. As part of the TIS, we have decided to provide a Parking Justification Study for a proposed parking reduction from the zoning by-law minimum requirements. Please find the following Parking Study Terms of Reference, for your review and comment. It would be greatly appreciated if the Town review for the Parking Study ToR can be expedited, as the client has expressed intent to submit this month.

Parking Study Terms of Reference
The subject site is located at the southwest corner of Stouffville Rd/Main St and Hwy 48. Nearest GO Bus/YRT stop is a 9-minute walk (approximately 650m east) at Main St and Baker Hill Blvd. Approximately 2.7km from Stouffville GO. The development proposes five high-rise buildings, consisting of 193 to 308 residential dwelling units per building, for a total of 1,256 units. A one-storey daycare is also proposed. A parking provision of 1,529 spaces is proposed, including 1,383 residential spaces (1.1sp/unit), 127 visitor spaces (0.1sp/unit), and 19 daycare spaces. Given the zoning by-law requirement of 1,570 residential spaces (1.25sp/unit) and 314 visitor spaces (0.25sp/unit), the development will require parking justification to support the parking reduction from the zoning by-law requirement.

Nextrans will undertake a parking demand survey for residential and visitor parking demand at two (2) proxy sites with similar area and transportation context. The parking demand of the proxy site will be recorded in 30-minute intervals on a typical Friday and Saturday, between 6pm and 12am each day. The proxy peak parking demand

results will be applied to the subject development to determine an appropriate parking requirement and compare to the proposed provision.

The following are potential proxy sites within the Town, to be confirmed if acceptable to Town transportation staff.

25 Baker Hill Blvd, Whitchurch-Stouffville

- Mid-rise building with 157 dwelling units
- Located approximately 620m from the subject site at the northwest corner of Main St and Baker Hill Blvd.
- Approximately 200m from nearest GO Bus/YRT stop.
- Approximately 2.3km by car from Stouffville GO.
- 

11750 Ninth Line, Whitchurch-Stouffville

- Two mid-rise buildings connected by podium, with a total of 245 dwelling units.
- Located approximately 480m south of the Ninth Line and Hoover Park Dr intersection.
- Approximately 350m from nearest YRT regular service stop.
- Approximately 1.8km by car from Stouffville GO.

- 

In addition to the proxy parking demand surveys, the parking reduction will also be supported by other justification including a robust Transportation Demand Management (TDM) measures program, bicycle parking provision.

Please let me know if the following proxy sites are acceptable and if you have any questions/comments, thanks!

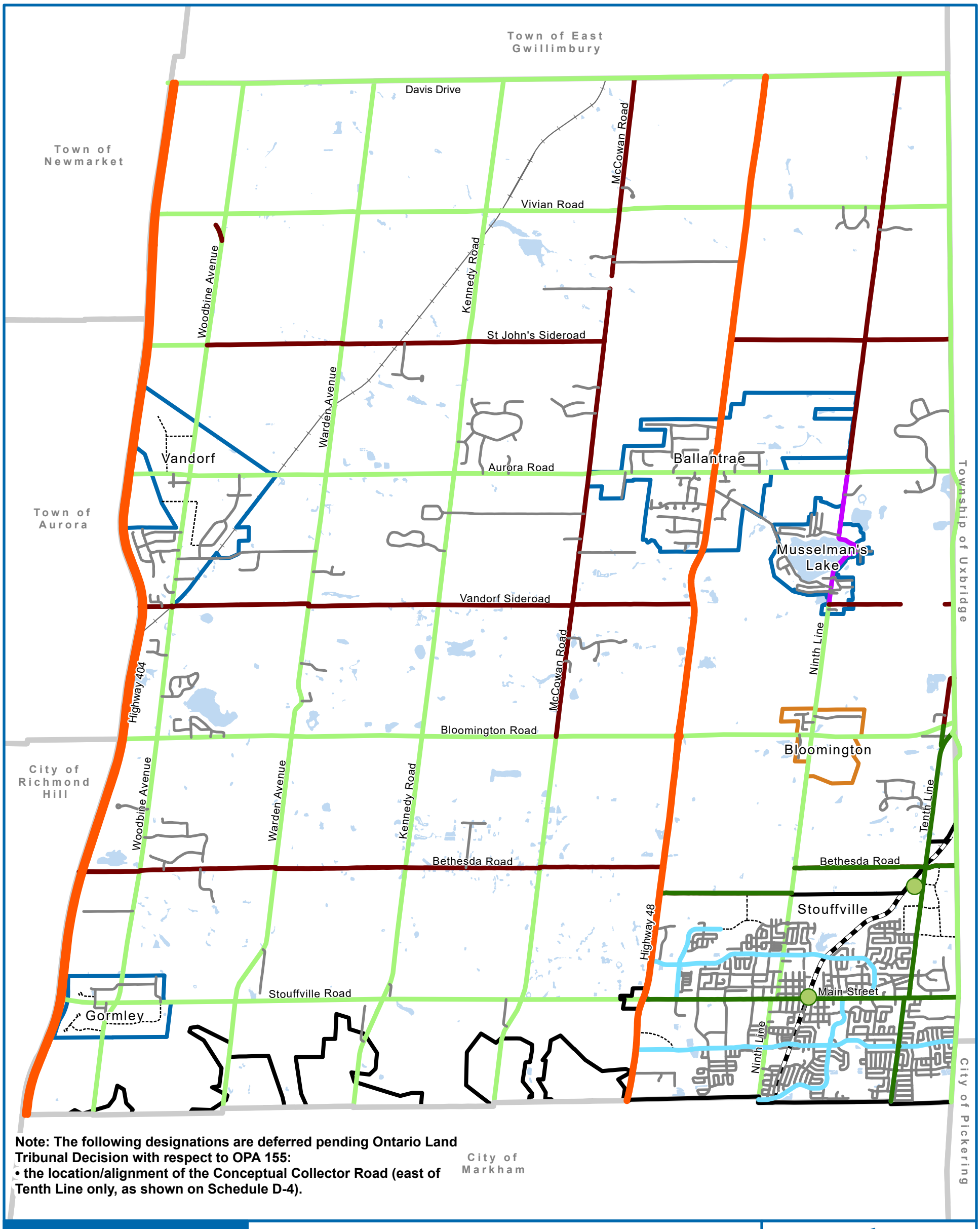
Thank you,
John Nhan, B.Eng., EIT
Transportation Analyst

o: 905-503-2563 ext.223
e: john@nextrans.ca
w: www.nextrans.ca

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Aurora ON L4G 6W8

Appendix C

Traffic Data and Background Documents



Note: The following designations are deferred pending Ontario Land Tribunal Decision with respect to OPA 155:
• the location/alignment of the Conceptual Collector Road (east of Tenth Line only, as shown on Schedule D-4).

Schedule O
Transportation Plan

Town of Whitchurch-Stouffville
Official Plan

- Municipal Boundaries
- Urban Area
- Community Area
- Hamlet Area
- GO Train Station
- GO Train Route
- Potential Road
- Provincial Highway

Regional Road Classification and Planned Widths

- Regional Arterial Road (up to 30 metres)
- Regional Arterial Road (up to 36 metres)

Town Road Classification and Planned Widths

- Arterial Road (30 to 45 metres)
- Collector Road (up to 27 metres)
- Local Road (up to 20 metres)
- Rural Arterial (up to 27 metres)

0 1 2 3
Kilometres

Sources: MNRF, York Region & Town of Whitchurch-Stouffville
Projection: UTM NAD83 Zone 17
Adopted by Council May 2024

Stouffville

This map is illustrative only . Do not rely on it as being a precise indicator of routes, locations of features, nor as a guide to navigation. The Town of Whitchurch-Stouffville shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

Schedule P
Active Transportation Plan

Town of Whitchurch-Stouffville
Official Plan

Town of East Gwillimbury
Town of Newmarket
Town of Aurora
City of Richmond Hill
City of Markham
Township of Uxbridge
City of Pickering

Vivian Road
St John's Sideroad
Vandorf Sideroad
Bloomington Road
Bethesda Road
Stouffville Road
Aurora Road

McCowan Road
York/Durham Line
Woodbine Avenue
Warden Avenue
Kennedy Road
Highway 404
Highway 48
Ninth Line
Tenth Line

Vandorf
Ballantrae
Musselman's Lake
Bloomington
Gormley

Stouffville
(Schedule P-1)

- Municipal Boundaries
- Urban Area
- Community Area
- Hamlet Area
- Oak Ridges Trail
- Multi-Use Trail
- Multi-Use Trail - Proposed
- Paved Shoulder
- Paved Shoulder - Proposed
- Shared Pathway (in-boulevard)
- In-Boulevard Pathway - Proposed
- Shared Roadway
- Shared Roadway - Proposed
- Bike Lane

0 1 2 3
Kilometres

Sources: MNRF, York Region & Town of Whitchurch-Stouffville
Projection: UTM NAD83 Zone 17
Adopted by Council May 2024

Stouffville

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Town of Whitchurch-Stouffville
Official Plan

Schedule P-1
Stouffville Active Transportation Plan

- Municipal Boundaries
- Urban Area
- Oak Ridges Trail
- Multi-Use Trail
- Multi-Use Trail - Proposed
- Paved Shoulder
- Paved Shoulder - Proposed
- Shared Pathway (in-boulevard)
- In-Boulevard Pathway - Proposed
- Shared Roadway
- Shared Roadway - Proposed
- Bike Lane

0 325 650 975
Metres

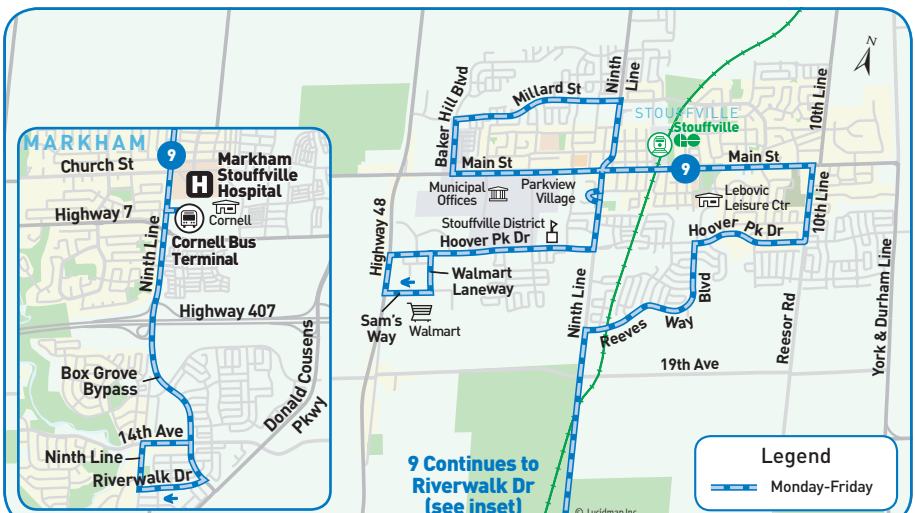
Sources: MNRF, York Region & Town of Whitchurch-Stouffville
Projection: UTM NAD83 Zone 17
Adopted by Council May 2024

Stouffville

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9 Ninth Line

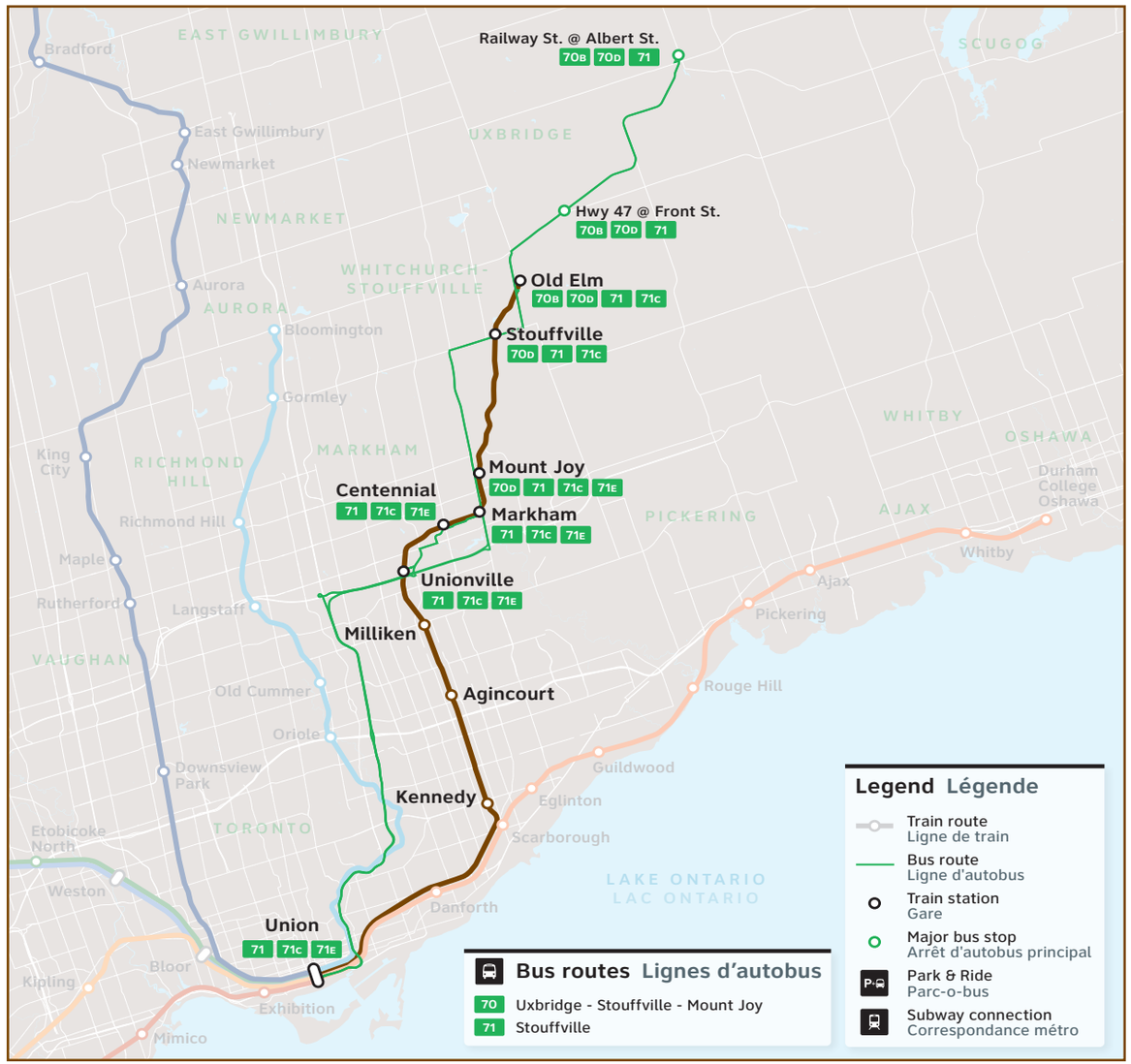
YORK REGION TRANSIT



70-71

Route number
Numéro du trajet

Stouffville



CONTACT US

1-888-438-6646
416-869-3200
TTY: #711 or call
1 (800) 855-0511

gotransit.com/schedules

@GOtransitST

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Say Something.
24/7 Transit Safety Dispatch:
1-877-297-0642

prestocard.ca

Sign-up for email or text alerts/ Inscrivez-vous pour recevoir des alertes par courriel ou message texte.
gotransit.com/OnTheGO

Stouffville

GO Train and Bus Schedule/
Horaire des trains et des autobus GO

METROLINX

ST 70 71

- Uxbridge
- Goodwood
- Old Elm GO
- Stouffville GO
- Mount Joy GO
- Markham GO
- Centennial GO
- Unionville GO
- Milliken GO
- Agincourt GO
- Kennedy GO
- Union Station

Daily / Quotidiennement
Includes GO Bus routes 70 and 71/
Inclut les trajets 70 et 71d'autobus GO

Effective / À partir de:
27 & 28 APRIL AVRIL 2024

How to read our schedules

Step 1
Find the station or terminal you are departing from. Stops are listed across the top in the order they are served.

Step 2
The upper left corner tells you what day the schedule is for and the direction of travel.

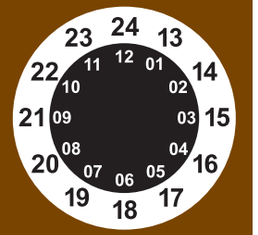
Step 3
Look across the rows for available departure times.

Step 4
Not all trains or buses stop at every station. If you see → the train or bus will not stop at that station.

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00

Noon to midnight
12 01 - 24 00



Legend

Train trips

Bus trips

→ Trip does not serve this location.

↓ Check below for connecting trips.

GO Train service is accessible to passengers using mobility devices at this location.

GO Bus service is accessible to passengers using mobility devices at this location.

GO Train & GO Bus service is accessible to passengers using mobility devices at this location.

Parking available.

For the latest schedule information and updates, please visit gotransit.com/schedules.

Notes

h Trip holds for connection from train.

S GO Bus services GO Station from bus stop on street.

Bicycles

1. Bicycles are not allowed in Union Station or on-board trains during morning rush hour (6:30-9:30) and evening rush hour (15:30-18:30), Monday to Friday.

2. Foldable bicycles are allowed on-board trains at all times.

Comment lire nos horaires

Étape 1
Trouvez votre gare ou terminus de départ. La liste des arrêts est donnée en haut dans l'ordre dans lequel ils sont desservis.

Étape 2
Le coin supérieur gauche vous indique le jour pour lequel l'horaire est donné et la direction de circulation.

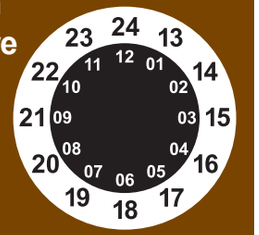
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

Étape 4
Les trains ou les autobus ne s'arrêtent pas tous à chaque gare. Si vous voyez le symbole → le train ou l'autobus ne s'arrêtera pas à cette gare.

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00

De midi à minuit:
12 01 - 24 00



Légende

Horaire des trains

Horaire des autobus

→ Trajet ne sert pas cette station.

↓ Vérifiez les trajets de correspondance cidessous.

Service de trains GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.

Service d'autobus GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.

Les services de trains et d'autobus GO sont accessibles aux utilisateurs d'un appareil d'aide à la mobilité à cet endroit.

Stationnement disponible.

Pour consulter les horaires les plus récents et les mises à jour, veuillez visiter gotransit.com/schedules.

Notes

h Les départ de l'autobus est retardé pour assurer la correspondance avec le service de trains.

S Les autobus GO desservent la gare à partir de l'arrêt situé sur la rue.

Vélos

1. Les vélos ne sont pas autorisés dans la gare Union ou à bord des trains du lundi au vendredi, pendant l'heure de pointe (6:30-9:30) et pendant l'heure de pointe du soir (15:30-18:30).

2. Les vélos pliables sont permis à bord des trains en tout temps.

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

SOUTHBOUND / EN DIRECTION SUD

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Uxbridge 76 Dp	Goodwood 75	Stouffville 74 Dp	Stouffville 74	Markham 73 Dp	Markham 72	Markham 72	Markham 71	Scarborough 70	Scarborough 7	Scarborough 77	Toronto 2 Ar
			Railway St. @ Albert St.	Hwy. 47 @ Front St.	Old Elm GO	Stouffville GO s	Mount Joy GO	Markham GO s	Centennial GO s	Unionville GO	Milliken GO	Agincourt GO	Kennedy GO	Union Station
71	71050		04 20	04 31	04 40	04 46	05 00	05 04	05 08	05 15	→	→	→	05 45
	7705				05 18	05 23	05 33	05 37	05 43	05 48	05 54	06 01	06 09	06 29
70B	70060		05 43	05 54	06 03↓									
	7707				06 18	06 23	06 33	06 37	06 43	06 48	06 54	07 01	07 09	07 29
	7907				06 48	06 53	07 03	07 07	07 13	07 18	07 24	07 31	07 39	07 59
70B	70110		06 43	06 54	07 03↓									
	7709				07 18	07 23	07 33	07 37	07 43	07 48	07 54	08 01	08 09	08 29
	7909				07 48	07 53	08 03	08 07	08 13	08 18	08 24	08 31	08 39	08 59
	7711				08 18	08 23	08 33	08 37	08 43	08 48	08 54	09 01	09 09	09 29
70B	70220		08 44	08 55	09 04↓									
	7713				09 19	09 24	09 34	09 38	09 43	09 48	09 54	10 01	10 09	10 29
	7415						10 34	10 38	10 43	10 48	10 54	11 01	11 09	11 29
70D	70300		10 36	10 47	10 56	11 02	11 19↓							
	7417						11 34	11 38	11 43	11 48	11 54	12 01	12 09	12 29
	7419						12 34	12 38	12 43	12 48	12 54	13 01	13 09	13 29
70D	70380		12 36	12 47	12 56	13 02	13 19↓							
	7421						13 34	13 38	13 43	13 48	13 54	14 01	14 09	14 29
	7423						14 34	14 38	14 43	14 48	14 54	15 01	15 09	15 29
70D	70460		14 36	14 47	14 56	15 02	15 19↓							
	7425						15 34	15 38	15 43	15 48	15 54	16 01	16 09	16 29
71	71620		15 30	15 41	15 50	15 56	16 15	16 20	16 26	16 40	→	→	→	17 35
71E	71650						16 45	16 50	16 56	17 10	→	→	→	18 05
71	71670		16 35	16 46	16 55	17 01	17 20	17 25	17 31	17 45	→	→	→	18 35
71C	71710				17 55	18 01	18 20	18 25	18 31	18 40	→	→	→	19 25
70D	70680		18 36	18 47	18 56	19 02	19 19↓							
	7433						19 34	19 38	19 43	19 48	19 54	20 01	20 09	20 29
	7435						20 34	20 38	20 43	20 48	20 54	21 01	21 09	21 29
70D	70760		20 39	20 50	20 59	21 05	21 19↓							
	7437						21 34	21 38	21 43	21 48	21 54	22 01	22 09	22 29
	7439						22 34	22 38	22 43	22 48	22 54	23 01	23 09	23 29
71	71840		22 45	22 56	23 05	23 11	23 25	23 29	23 33	23 40	→	→	→	00 10
71C	71910				01 10	01 16	01 30	01 34	01 38	01 45	→	→	→	02 15

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

NORTHBOUND / EN DIRECTION NORD

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Toronto 2 Dp	Scarborough 77	Scarborough 7	Scarborough 70	Markham 71	Markham 72	Markham 72	Markham 73 Ar	Stouffville 74	Stouffville 74 Ar	Goodwood 75	Uxbridge 76 Ar
			Union Station	Kennedy GO	Agincourt GO	Milliken GO	Unionville GO	Centennial GO	Markham GO s	Mount Joy GO	Stouffville GO s	Old Elm GO	Hwy. 47 @ Front St.	Railway St. @ Albert St.
71C	71111		06 43	→	→	→	07 13	07 20	07 25	07 33	07 45	07 53		
71	71171		07 43	→	→	→	08 18	08 25	08 30	08 38	08 53	09 03	09 09	09 28
	7410		09 12	09 31	09 39	09 46	09 52	09 57	10 02	10 07↓				
70D	70261									10 15**h**	10 28	10 38	10 44	11 00
	7412		10 12	10 31	10 39	10 46	10 52	10 57	11 02	11 07↓				
70D	70331									11 15**h**	11 28	11 38	11 44	12 00
	7414		11 12	11 31	11 39	11 46	11 52	11 57	12 02	12 07↓				
	7416		12 12	12 31	12 39	12 46	12 52	12 57	13 02	13 07↓				
70D	70411									13 15**h**	13 28	13 38	13 44	14 00
	7418		13 12	13 31	13 39	13 46	13 52	13 57	14 02	14 07↓				
	7420		14 12	14 31	14 39	14 46	14 52	14 57	15 02	15 07↓				
70D	70491									15 15**h**	15 30	15 40	15 46	16 02
	7622		15 12	15 31	15 39	15 46	15 52	15 57	16 02	16 07	16 18	16 24		
	7624		16 12	16 31	16 39	16 46	16 52	16 57	17 02	17 07	17 18	17 24↓		
70B	70651											17 32**h**	17 38	17 52
	7824		16 42	17 01	17 09	17 16	17 22	17 27	17 32	17 37	17 48	17 54		
	7626		17 12	17 31	17 39	17 46	17 52	17 57	18 02	18 07	18 18	18 24		
	7826		17 42	18 01	18 09	18 16	18 22	18 27	18 32	18 37	18 48	18 54		
	7428		18 12	18 31	18 39	18 46	18 52	18 57	19 02	19 07↓				
70D	70721									19 15**h**	19 28	19 34	19 40	19 54
	7430		19 12	19 31	19 39	19 46	19 52	19 57	20 02	20 07↓				
70D	70741									20 15**h**	20 27	20 35	20 41	20 55
	7432		20 12	20 31	20 39	20 46	20 52	20 57	21 02	21 07↓				
70D	70791									21 15**h**	21 27	21 35	21 41	21 55
	7434		21 12	21 31	21 39	21 46	21 52	21 57	22 02	22 07				
	7436		22 12	22 31	22 39	22 46	22 52	22 57	23 02	23 07↓				
70D	70861									23 15**h**	23 27	23 35	23 41	23 55
	7638		23 12	23 31	23 39	23 46	23 52	23 57	00 02	00 07	00 18	00 24		
	7640		00 12	00 31	00 39	00 46	00 52	00 57	01 02	01 07	01 18	01 24↓		
70B	70651											01 32**h**	01 38	01 52
71C	71901		01 10	→	→	→	01 35	01 40	01 45	01 50	02 00	02 10		
71C	71961		02 43	→	→	→	03 08	03 13	03 18	03 23	03 33	03 43		

Saturday and Sunday
Samedi et dimanche

SOUTHBOUND / EN DIRECTION SUD

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Uxbridge 76 Dp Railway St. @ Albert St.	Goodwood 75 Hwy. 47 @ Front St.	Stouffville 74 Dp Old Elm GO	Stouffville 74 Stouffville GO	Markham 73 Dp Mount Joy GO	Markham 72 Markham GO	Markham 72 Centennial GO	Markham 71 Unionville GO	Scarborough 70 Milliken GO	Scarborough 7 Agincourt GO	Scarborough 77 Kennedy GO	Toronto 2 Ar Union Station
71	71140		05 45	05 58	06 05	06 11	06 25	06 29	06 33	06 40	→	→	→	07 10
	7709				07 19	07 23	07 33	07 37	07 42	07 47	07 53	08 00	08 08	08 28
70B	70160		07 44	07 57	08 04↓									
	7711				08 19	08 23	08 33	08 37	08 42	08 47	08 53	09 00	09 08	09 28
	7713				09 19	09 23	09 33	09 37	09 42	09 47	09 53	10 00	10 08	10 28
70D	70260		09 35	09 48	09 55	10 01	10 18↓							
	7415						10 33	10 37	10 42	10 47	10 53	11 00	11 08	11 28
	7417						11 33	11 37	11 42	11 47	11 53	12 00	12 08	12 28
70D	70340		11 35	11 48	11 55	12 01	12 18↓							
	7419						11 33	12 37	12 42	12 47	12 53	13 00	13 08	13 28
	7421						13 33	13 37	13 42	13 47	13 53	14 00	14 08	14 28
70D	70420		13 35	13 48	13 55	14 01	14 18↓							
	7423						14 33	14 37	14 42	14 47	14 53	15 00	15 08	15 28
	7425						15 33	15 37	15 42	15 47	15 53	16 00	16 08	16 28
70D	70510		15 35	15 48	15 55	16 01	16 18↓							
	7427						16 33	16 37	16 42	16 47	16 53	17 00	17 08	17 28
	7429						17 33	17 37	17 42	17 47	17 53	18 00	18 08	18 28
70D	70630		17 35	17 48	17 55	18 01	18 18							
	7431						18 33	18 37	18 42	18 47	18 53	19 00	19 08	19 28
	7433						19 33	19 37	19 42	19 47	19 53	20 00	20 08	20 28
71E	71780						20 05	20 10	20 16	20 25	→	→	→	20 55
70D	70720		19 38	19 51	19 58	20 04	20 18							
	7435						20 33	20 37	20 42	20 47	20 53	21 00	21 08	21 28
	7437						21 33	21 37	21 42	21 47	21 53	22 00	22 08	22 28
71	71840		21 45	21 58	22 05	22 11	22 25	22 29	22 33	22 40	→	→	→	23 10
71C	71880				23 00	23 06	23 20	23 24	23 28	23 35	→	→	→	00 05
71C	71910				01 10	01 16	01 30	01 34	01 38	01 45	→	→	→	02 10

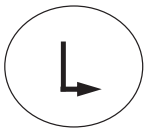
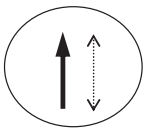
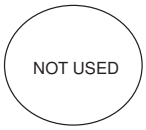
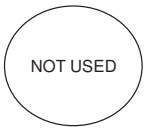
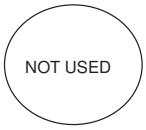
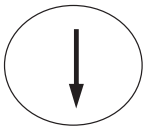
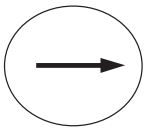
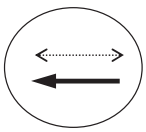
Saturday and Sunday
Samedi et dimanche

NORTHBOUND / EN DIRECTION NORD

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Toronto 2 Dp Union Station	Scarborough 6 Kennedy GO	Scarborough 7 Agincourt GO	Scarborough 70 Milliken GO	Markham 71 Unionville GO	Markham 72 Centennial GO	Markham 72 Markham GO	Markham 73 Ar Mount Joy GO	Stouffville 74 Stouffville GO	Stouffville 74 Old Elm GO	Goodwood 75 Hwy. 47 @ Front St.	Uxbridge 76 Ar Railway St. @ Albert St.
71	71171		07 43	→	→	→	08 13	08 19	08 23	08 28	08 40	08 48	08 54	09 13
	7410		09 11	09 30	09 38	09 45	09 51	09 56	10 01	10 06↓				
70D	70291									10 14**h**	10 27	10 37	10 43	10 59
	7412		10 11	10 30	10 38	10 45	10 51	10 56	11 01	11 06				
	7414		11 11	11 30	11 38	11 45	11 51	11 56	12 01	12 06↓				
70D	70371									12 14**h**	12 27	12 37	12 43	12 59
	7416		12 11	12 30	12 38	12 45	12 51	12 56	13 01	13 06				
	7418		13 11	13 30	13 38	13 45	13 51	13 56	14 01	14 06↓				
70D	70451									14 14**h**	14 27	17 37	14 43	14 59
	7420		14 11	14 30	14 38	14 45	14 51	14 56	15 01	15 06				
	7422		15 11	15 30	15 38	15 45	15 51	15 56	16 01	16 06↓				
70D	70551									16 14**h**	16 27	16 37	16 43	16 59
	7424		16 11	16 30	16 38	16 45	16 51	16 56	17 01	17 06				
	7626		17 11	17 30	17 38	17 45	17 51	17 56	18 01	18 06↓				
70D	70671									18 14**h**	18 27	18 37	18 43	18 59
	7628		18 11	18 30	18 38	18 45	18 51	18 56	19 01	19 06				
	7630		19 11	19 30	19 38	19 45	19 51	19 56	20 01	20 06↓				
70D	70751									20 14**h**	20 27	20 37	20 43	20 57
	7432		20 11	20 30	20 38	20 45	20 51	20 56	21 01	21 06				
	7634		21 11	21 30	21 38	21 45	21 51	21 56	22 01	22 06	22 17	22 23↓		
70B	70831											22 31**h**	22 37	22 51
	7636		22 11	22 30	22 38	22 45	22 51	22 56	23 01	23 06	23 17	23 23		
	7638		23 11	23 30	23 38	23 45	23 51	23 56	00 01	00 06	00 17	00 23↓		
70B	70891											00 31**h**	00 37	00 51
71C	71891		00 20	→	→	→	00 50	00 55	01 00	01 05	01 15	01 25		
71C	71901		01 20	→	→	→	01 50	01 55	02 00	02 05	02 15	02 25		
71C	71961		02 43	→	→	→	03 08	03 13	03 18	03 23	03 33	03 43		

LOCATION:	**Hwy 48 & Hoover Park Dr**	***MUNICIPALITY:***	**Whitchurch-Stouffville**
CTCS:	**701 (MTO Signal)**	***COMPUTER SYSTEM:***	**Centracs**
MODE/COMMENT:	**SA**	***CONTROLLER/CABINET TYPE:***	**Econolite Cobalt / TS2T1**
PREPARED/CHECKED BY:	**MQL**		
PREPARATION DATE:	**February 27, 2019**	***DESIGN WALK SPEED:***	
IMPLEMENTATION DATE:	**March 20, 2019**	***CHANNEL/DROP:***	

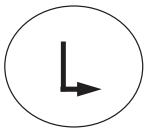
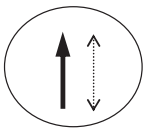
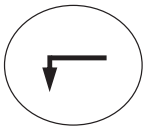
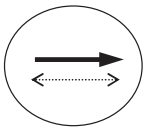
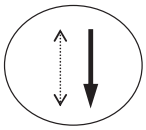
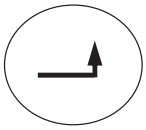
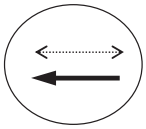
N

NEMA Phase (MTO)	Normal Time	Free 24 hrs, 7 days Pattern 99 Plan 99	Phase Mode (Fixed/Demanded/Callable)	Remarks
1. S/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 0 AMB 3 ALR 0 SPLIT	**0**	Callable/Extendable by stopbar loop 5 secs detector delay	Pedestrian Minimums: NSWK = 15 sec., NSFD = 25 sec. EWWK = 7 sec., EWFD = 25 sec. **Emergency vehicle pre-emption 3:** Serve NSG/NSDW min 20 secs and up to 100 secs if there are continuous emergency calls in NS direction.
2. Northbound  Hwy 48	WLK 15 FDW 25 MIN 40 EXT 4.6 MAX1 50 MAX2 0 AMB 5.4 ALR 2.3 SPLIT	**0**	Veh Min Recall & Ped Recall	EW phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum EWG is 10 seconds. If ongoing vehicle demand exists on the stopbar loop, the EWG is capable of providing vehicle extensions up to the maximum green. If a pedestrian call is received, the pedestrian minimum will be served.
3. W/B Left Turn Arrow  NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT	**0**		**Please see reverse page for Pretime.** Timing changes based on new timing plans provided by MTO dated Feb 19, 2019.
4.  NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT	**0**		
5. N/B Left Turn Arrow  NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
6. Southbound  Hwy 48	WLK 15 FDW 25 MIN 40 EXT 4.6 MAX1 50 MAX2 0 AMB 5.4 ALR 2.3 SPLIT	**0**	Veh Min Recall & Ped Recall No ped crossing	
7. EB Fully Protected  Hoover Park Dr	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 0 AMB 4.1 ALR 3.4 SPLIT		Callable/Extendable by stopbar loop 10 secs detector delay	**LEGEND:** SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR -All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal
8. WB Fully Protected  Hoover Park Dr	WLK 7 FDW 25 MIN 10 EXT 3 MAX1 25 MAX2 0 AMB 4.5 ALR 2.7 SPLIT	**0**	Callable/Extendable by stopbar loop 10 secs detector delay	
	CL OF VP	**0 (FREE)** **0 (FREE)** **0 (FREE)**		

NOTES:

LOCATION:	**Hwy 48 & Stouffville Rd (YR 14)/ Main St**	***MUNICIPALITY:***	**Whitchurch-Stouffville**
CTCS:	**430 (MTO Signal)**	***COMPUTER SYSTEM:***	**Centracs**
MODE/COMMENT:	**SA**	***CONTROLLER/CABINET TYPE:***	**Econolite Cobalt / TS2T1**
PREPARED/CHECKED BY:	**MQL**		
PREPARATION DATE:	**February 19, 2019**	***DESIGN WALK SPEED:***	
IMPLEMENTATION DATE:	**April 4, 2019**	***CHANNEL/DROP:***	

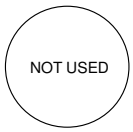
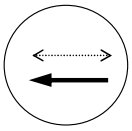
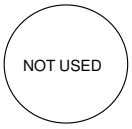
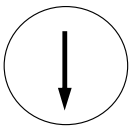
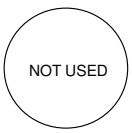
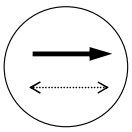
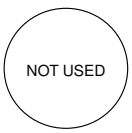
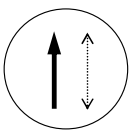
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NEMA Phase (MTO)	Normal Time	Free 24 hrs, 7 days Pattern 99 Plan 99	Phase Mode (Fixed/Demanded/Callable)	Remarks
1. S/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 0 AMB 3 ALR 1 SPLIT	**0**	Callable/Extendable by setback loop	Pedestrian Minimums: NSWK = 19 sec., NSFD = 14 sec. EWWK = 19 sec., EWFD = 14 sec. **Emergency vehicle pre-emption 3:** Serve NSG/NSDW min 20 secs and up to 100 secs if there are continuous emergency calls in NS direction.
2. Northbound  Hwy 48	WLK 19 FDW 14 MIN 33 EXT 4.6 MAX1 36 MAX2 0 AMB 5.9 ALR 2.0 SPLIT	**0**	Veh Min Recall & Ped Recall MAX Int = 30 secs with 2 secs increment	**Emergency vehicle pre-emption 4:** Serve EWG/EWDW min 20 secs and up to 100 secs if there are continuous emergency calls in EW direction. EW phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum EWG is 10 seconds. If ongoing vehicle demand exists on the stopbar loop, the EWG is capable of providing vehicle extensions up to the maximum green. If a pedestrian call is received, the pedestrian minimum will be served.
3. W/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 0 AMB 3 ALR 1 SPLIT	**0**	Callable/Extendable by setback loop	**Please see reverse page for Pretime.**
4. Eastbound  Stouffville Rd	WLK 19 FDW 14 MIN 10 EXT 3 MAX1 40 MAX2 0 AMB 5.0 ALR 2.7 SPLIT	**0**	Callable/Extendable by stopbar loop	
5. N/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 0 AMB 3 ALR 1 SPLIT		Callable/Extendable by setback loop	
6. Southbound  Hwy 48	WLK 19 FDW 14 MIN 33 EXT 4.6 MAX1 36 MAX2 0 AMB 5.9 ALR 2.0 SPLIT	**0**	Veh Min Recall & Ped Recall MAX Int = 30 secs with 2 secs increment	
7. E/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 0 AMB 3 ALR 1 SPLIT		Callable/Extendable by setback loop	**LEGEND:** SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR -All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal
8. Westbound  Main St	WLK 19 FDW 14 MIN 10 EXT 3 MAX1 40 MAX2 0 AMB 5.0 ALR 2.7 SPLIT	**0**	Callable/Extendable by stopbar loop	
	CL OF VP	**0 (FREE)** **0 (FREE)** **0 (FREE)**		

NOTES:

LOCATION:	**Stouffville Rd (YR 14) & McCowan Rd (YR 67)**	***MUNICIPALITY:***	**Town of Whitchurch-Stouffville**
CTCS:	**94**	***COMPUTER SYSTEM:***	**Centracs**
MODE/COMMENT:	**SA**	***CONTROLLER/CABINET TYPE:***	**Econolite Cobalt / TS2T1**
PREPARED/CHECKED BY:	**JS**	***CONFLICT FLASH:***	**Red & Red**
PREPARATION DATE:	**June 4, 2020**	***DESIGN WALK SPEED:***	**1.0 m/s (FDW based on full crossing at 1.2 m/s)**
IMPLEMENTATION DATE:	**October 5, 2020**	***CHANNEL/DROP:***	

N

NEMA Phase (York)		**FREE** **All Day**	**Phase Mode (Fixed/Demanded/Callable)**	**Remarks**
	Local Plan	Pattern 99		
	System Plan	Plan 99		
1. 	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			Pedestrian Minimums: EWWK = 7 sec., EWFD = 32 sec. NSWK = 7 sec., NSFD = 30 sec.
				Emergency vehicle pre-emption 3: Serve EWG/EWDW min 20 secs and up to 100 secs if there are continuous emergency calls in EW direction.
2. Westbound  Stouffville Rd (YR 14)	WLK 7 FDW 32 MIN 39 EXT 0 MAX1 39 MAX2 0 AMB 5.5 ALR 2.5 SPLIT	**0**	Fixed	**Emergency vehicle pre-emption 4:** Serve NSG/NSDW min 20 secs and up to 100 secs if there are continuous emergency calls in NS direction.
3. 	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is served. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum green split during coordinated operation or serves MAX1 during Free operation. If a pedestrian call is received, the pedestrian minimum will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG.
4. Southbound  McCowan Rd (YR 67)	WLK 7 FDW 30 MIN 10 EXT 3 MAX1 30 MAX2 0 AMB 5.5 ALR 3.0 SPLIT	**0**	Callable by stopbar loop Extendable by stopbar loop.	During coordinated operation, the signal constantly cycles through main street FDW to improve response time to side street vehicle and pedestrian demand.
				During free plan, signal rests in EWWK and does not cycle through EWFD unless there is side street vehicle or pedestrian demand.
5. 	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			EWFD reverts to EWWK if there is no side street demand at the end of the EWFD.
6. Eastbound  Stouffville Rd (YR 14)	WLK 7 FDW 32 MIN 39 EXT 0 MAX1 39 MAX2 0 AMB 5.5 ALR 2.5 SPLIT	**0**	Fixed	
7. 	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			**LEGEND:** SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR -All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal RLC - Red Light Camera
8. Northbound  McCowan Rd (YR 67)	WLK 7 FDW 30 MIN 10 EXT 3 MAX1 30 MAX2 0 AMB 5.5 ALR 3.0 SPLIT	**0**	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.	
	CL OF VP	**0 (FREE)** **0 (FREE)** 0 (FREE)		

NOTES: **No pedestrain crossing on West leg**

Spectrum

Turning Movement Count
Location Name: HWY 48 & HOOVER PARK DR
Date: Thu, Jun 22, 2023 Deployment Lead: Walter Fugaj

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Turning Movement Count (4 . HWY 48 & HOOVER PARK DR)

Start Time	N Approach HWY 48						E Approach HOOVER PARK DR						S Approach HWY 48						W Approach PRIVATE RD						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		
07:00:00	0	51	7	0	0	58	35	0	25	0	0	60	26	74	0	0	0	100	0	0	0	0	0	0	218	
07:15:00	0	82	7	0	0	89	33	0	36	0	0	69	27	77	0	0	0	104	0	0	0	0	0	0	262	
07:30:00	0	73	22	0	0	95	36	0	55	0	0	91	25	63	0	0	0	88	0	0	0	0	0	0	274	
07:45:00	0	103	22	0	0	125	40	0	67	0	0	107	42	86	0	0	0	128	0	0	0	0	0	0	360	1114
08:00:00	0	92	19	0	0	111	34	0	51	0	0	85	31	107	0	0	0	138	0	0	0	0	0	0	334	1230
08:15:00	0	78	29	0	0	107	25	0	63	0	0	88	50	90	0	0	0	140	0	0	0	0	0	0	335	1303
08:30:00	0	112	45	0	0	157	38	0	43	0	0	81	52	87	0	0	0	139	0	0	0	0	0	0	377	1406
08:45:00	0	87	42	1	0	130	31	0	75	0	0	106	60	109	0	0	0	169	0	0	0	0	0	0	405	1451
09:00:00	0	99	30	1	0	130	32	0	51	0	0	83	43	86	0	0	0	129	0	0	0	0	0	0	342	1459
09:15:00	0	68	20	0	0	88	22	0	42	0	0	64	31	73	0	0	0	104	0	0	0	0	0	0	256	1380
09:30:00	0	83	35	0	0	118	30	0	42	0	0	72	24	101	0	0	0	125	0	0	0	0	0	0	315	1318
09:45:00	0	82	38	0	0	120	27	0	41	0	0	68	44	100	0	0	0	144	0	0	0	0	0	0	332	1245
BREAK																										
16:00:00	0	86	47	0	0	133	55	0	39	0	0	94	51	143	0	0	0	194	1	0	0	0	0	1	422	
16:15:00	0	91	48	0	0	139	42	0	35	0	0	77	70	135	0	0	0	205	0	0	0	0	0	0	421	
16:30:00	0	103	55	0	0	158	44	0	42	0	0	86	58	149	0	0	0	207	0	0	0	0	0	0	451	
16:45:00	0	103	66	0	0	169	57	0	34	0	0	91	54	119	0	0	0	173	0	0	0	0	0	0	433	1727
17:00:00	1	83	65	0	1	149	77	0	42	0	1	119	56	125	0	0	0	181	0	0	0	0	1	0	449	1754
17:15:00	0	108	83	0	0	191	67	0	46	0	0	113	65	153	0	0	0	218	0	0	0	0	0	0	522	1855
17:30:00	0	97	66	0	0	163	44	0	48	0	0	92	58	128	0	0	0	186	0	0	1	0	0	1	442	1846
17:45:00	0	84	63	0	0	147	51	0	32	0	0	83	52	127	0	0	0	179	0	0	0	0	0	0	409	1822
18:00:00	0	74	57	0	0	131	30	0	34	0	0	64	53	148	0	0	0	201	0	0	0	0	0	0	396	1769
18:15:00	0	66	58	0	0	124	32	0	39	0	0	71	43	98	1	0	0	142	0	0	0	0	0	0	337	1584
18:30:00	1	76	42	0	0	119	43	0	30	0	0	73	35	98	0	0	0	133	1	0	1	0	0	2	327	1469
18:45:00	0	52	46	0	0	98	36	0	34	0	0	70	51	91	0	0	0	142	0	0	0	0	0	0	310	1370
Grand Total	2	2033	1012	2	1	3049	961	0	1046	0	1	2007	1101	2567	1	0	0	3669	2	0	2	0	1	4	**8729**	-
Approach%	0.1%	66.7%	33.2%	0.1%		-	47.9%	0%	52.1%	0%		-	30%	70%	0%	0%		-	50%	0%	50%	0%		-	**-**	-
Totals %	0%	23.3%	11.6%	0%		34.9%	11%	0%	12%	0%		23%	12.6%	29.4%	0%	0%		42%	0%	0%	0%	0%		0%	**-**	-
Heavy	1	107	28	0		-	24	0	27	0		-	35	135	0	0		-	1	0	0	0		-	**-**	-
Heavy %	50%	5.3%	2.8%	0%		-	2.5%	0%	2.6%	0%		-	3.2%	5.3%	0%	0%		-	50%	0%	0%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Spectrum

Turning Movement Count
Location Name: HWY 48 & HOOVER PARK DR
Date: Thu, Jun 22, 2023 Deployment Lead: Walter Fugaj

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (16.37 °C)

Start Time	N Approach HWY 48						E Approach HOOVER PARK DR						S Approach HWY 48						W Approach PRIVATE RD						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	
08:15:00	0	78	29	0	0	107	25	0	63	0	0	88	50	90	0	0	0	140	0	0	0	0	0	0	335
08:30:00	0	112	45	0	0	157	38	0	43	0	0	81	52	87	0	0	0	139	0	0	0	0	0	0	377
08:45:00	0	87	42	1	0	130	31	0	75	0	0	106	60	109	0	0	0	169	0	0	0	0	0	0	405
09:00:00	0	99	30	1	0	130	32	0	51	0	0	83	43	86	0	0	0	129	0	0	0	0	0	0	342
Grand Total	0	376	146	2	0	524	126	0	232	0	0	358	205	372	0	0	0	577	0	0	0	0	0	0	**1459**
Approach%	0%	71.8%	27.9%	0.4%		-	35.2%	0%	64.8%	0%		-	35.5%	64.5%	0%	0%		-	0%	0%	0%	0%		-	**-**
Totals %	0%	25.8%	10%	0.1%		35.9%	8.6%	0%	15.9%	0%		24.5%	14.1%	25.5%	0%	0%		39.5%	0%	0%	0%	0%		0%	**-**
PHF	0	0.84	0.81	0.5		0.83	0.83	0	0.77	0		0.84	0.85	0.85	0	0		0.85	0	0	0	0		0	**-**
Heavy	0	26	8	0		34	3	0	9	0		12	8	32	0	0		40	0	0	0	0		0	**-**
Heavy %	0%	6.9%	5.5%	0%		6.5%	2.4%	0%	3.9%	0%		3.4%	3.9%	8.6%	0%	0%		6.9%	0%	0%	0%	0%		0%	**-**
Lights	0	349	138	2		489	123	0	223	0		346	197	340	0	0		537	0	0	0	0		0	**-**
Lights %	0%	92.8%	94.5%	100%		93.3%	97.6%	0%	96.1%	0%		96.6%	96.1%	91.4%	0%	0%		93.1%	0%	0%	0%	0%		0%	**-**
Single-Unit Trucks	0	14	6	0		20	1	0	7	0		8	4	23	0	0		27	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	3.7%	4.1%	0%		3.8%	0.8%	0%	3%	0%		2.2%	2%	6.2%	0%	0%		4.7%	0%	0%	0%	0%		0%	**-**
Buses	0	1	1	0		2	2	0	2	0		4	3	4	0	0		7	0	0	0	0		0	**-**
Buses %	0%	0.3%	0.7%	0%		0.4%	1.6%	0%	0.9%	0%		1.1%	1.5%	1.1%	0%	0%		1.2%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	11	1	0		12	0	0	0	0		0	1	5	0	0		6	0	0	0	0		0	**-**
Articulated Trucks %	0%	2.9%	0.7%	0%		2.3%	0%	0%	0%	0%		0%	0.5%	1.3%	0%	0%		1%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	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%		**-**

Spectrum

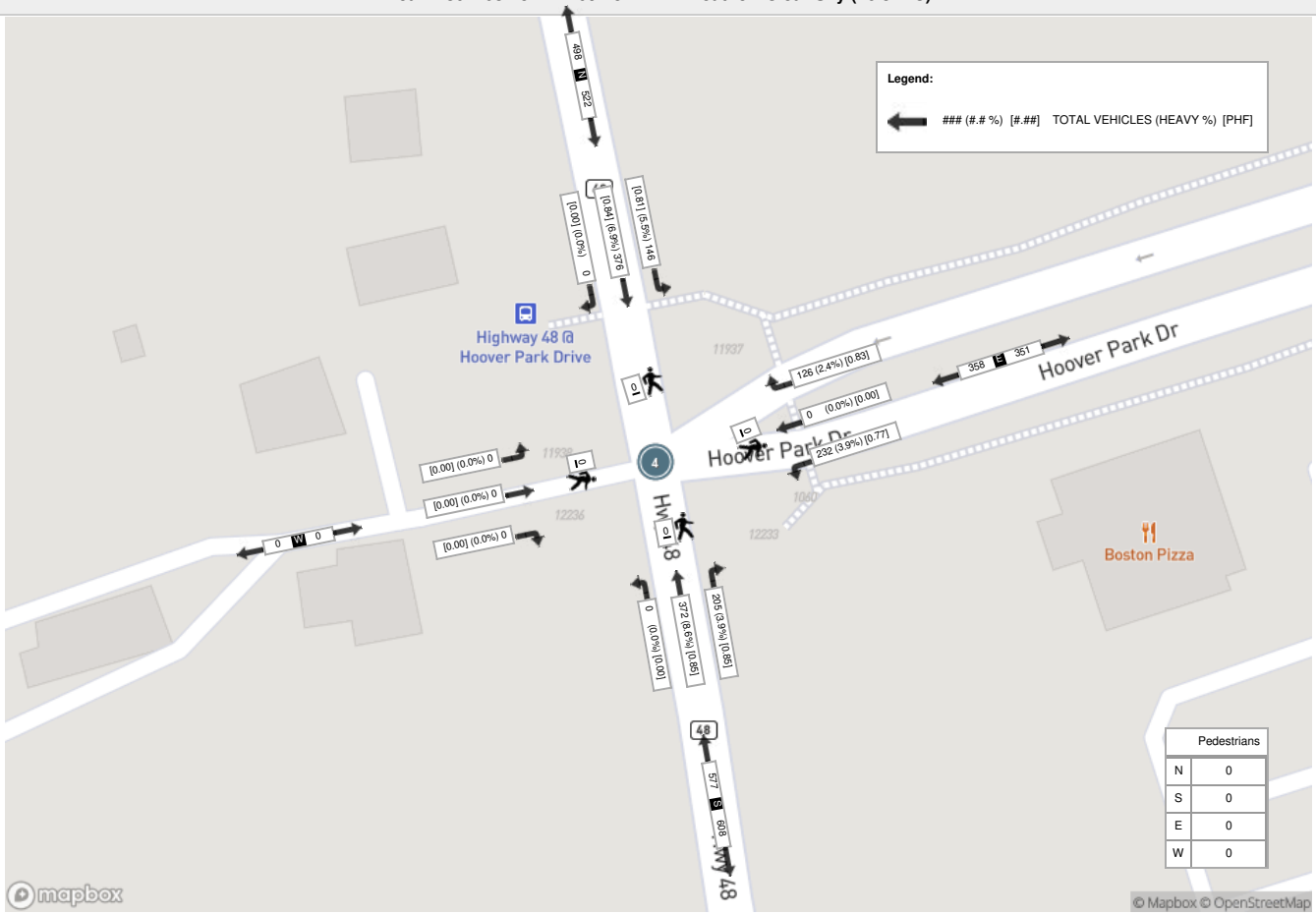
Turning Movement Count
Location Name: HWY 48 & HOOVER PARK DR
Date: Thu, Jun 22, 2023 Deployment Lead: Walter Fugaj

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

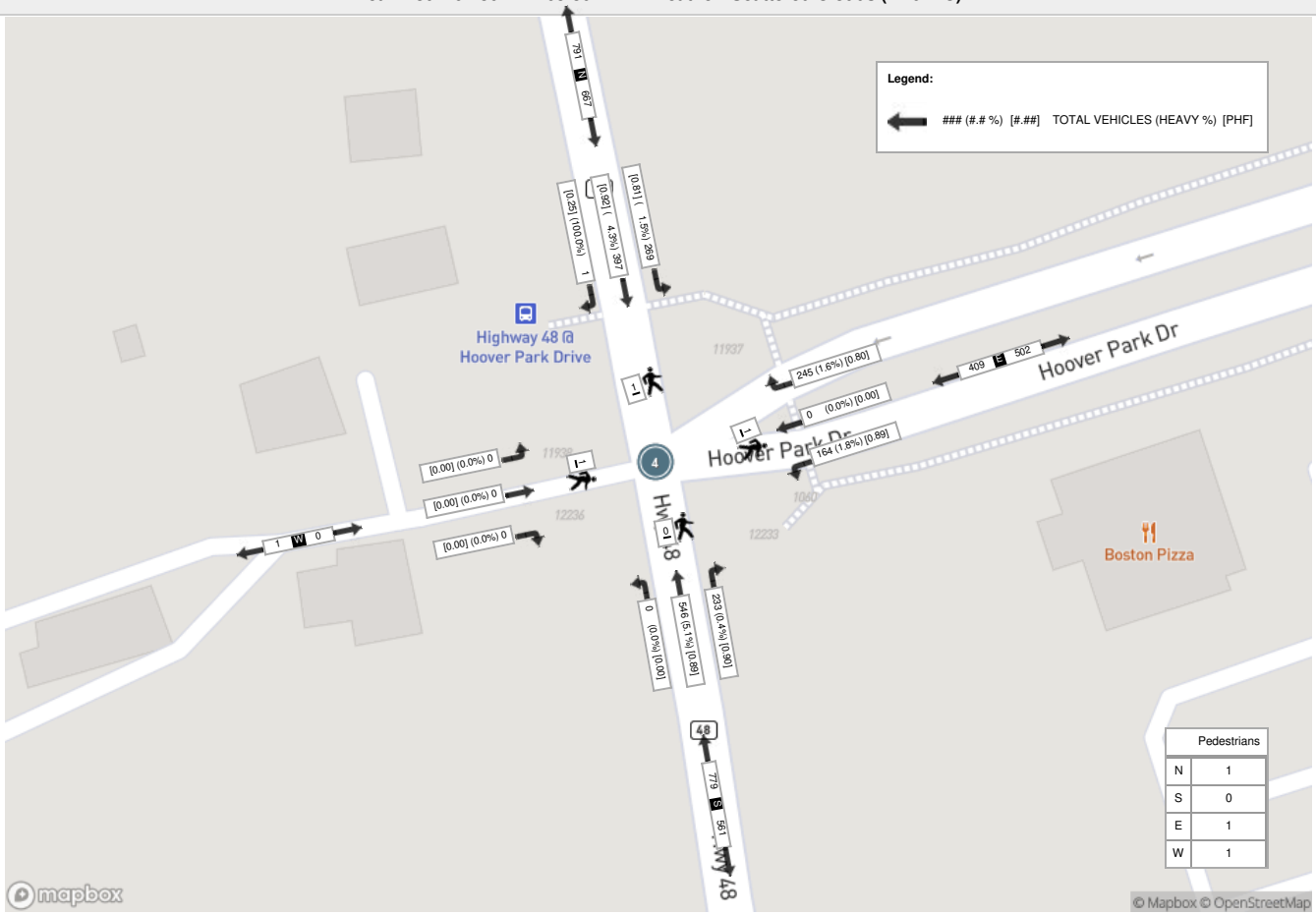
Peak Hour: 04:30 PM - 05:30 PM Weather: Scattered Clouds (24.02 °C)

Start Time	N Approach HWY 48						E Approach HOOVER PARK DR						S Approach HWY 48						W Approach PRIVATE RD						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	0	103	55	0	0	158	44	0	42	0	0	86	58	149	0	0	0	207	0	0	0	0	0	0	451
16:45:00	0	103	66	0	0	169	57	0	34	0	0	91	54	119	0	0	0	173	0	0	0	0	0	0	433
17:00:00	1	83	65	0	1	149	77	0	42	0	1	119	56	125	0	0	0	181	0	0	0	0	1	0	449
17:15:00	0	108	83	0	0	191	67	0	46	0	0	113	65	153	0	0	0	218	0	0	0	0	0	0	522
Grand Total	1	397	269	0	1	667	245	0	164	0	1	409	233	546	0	0	0	779	0	0	0	0	1	0	**1855**
Approach%	0.1%	59.5%	40.3%	0%		-	59.9%	0%	40.1%	0%		-	29.9%	70.1%	0%	0%		-	0%	0%	0%	0%		-	**-**
Totals %	0.1%	21.4%	14.5%	0%		36%	13.2%	0%	8.8%	0%		22%	12.6%	29.4%	0%	0%		42%	0%	0%	0%	0%		0%	**-**
PHF	0.25	0.92	0.81	0		0.87	0.8	0	0.89	0		0.86	0.9	0.89	0	0		0.89	0	0	0	0		0	**-**
Heavy	1	17	4	0		22	4	0	3	0		7	1	28	0	0		29	0	0	0	0		0	**-**
Heavy %	100%	4.3%	1.5%	0%		3.3%	1.6%	0%	1.8%	0%		1.7%	0.4%	5.1%	0%	0%		3.7%	0%	0%	0%	0%		0%	**-**
Lights	0	380	265	0		645	241	0	161	0		402	232	518	0	0		750	0	0	0	0		0	**-**
Lights %	0%	95.7%	98.5%	0%		96.7%	98.4%	0%	98.2%	0%		98.3%	99.6%	94.9%	0%	0%		96.3%	0%	0%	0%	0%		0%	**-**
Single-Unit Trucks	0	10	3	0		13	4	0	1	0		5	0	22	0	0		22	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	2.5%	1.1%	0%		1.9%	1.6%	0%	0.6%	0%		1.2%	0%	4%	0%	0%		2.8%	0%	0%	0%	0%		0%	**-**
Buses	0	4	1	0		5	0	0	2	0		2	1	3	0	0		4	0	0	0	0		0	**-**
Buses %	0%	1%	0.4%	0%		0.7%	0%	0%	1.2%	0%		0.5%	0.4%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	1	3	0	0		4	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	**-**
Articulated Trucks %	100%	0.8%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Pedestrians%	-	-	-	-	33.3%		-	-	-	-	33.3%		-	-	-	-	0%		-	-	-	-	33.3%		**-**

Peak Hour: 08:15 AM - 09:15 AM **Weather: Clear Sky (16.37 °C)**



Peak Hour: 04:30 PM - 05:30 PM **Weather: Scattered Clouds (24.02 °C)**



Spectrum

Turning Movement Count
Location Name: HWY 48 & STOUFFVILLE RD / MAIN ST
Date: Thu, Jun 22, 2023 Deployment Lead: Walter Fugaj

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Turning Movement Count (2 . HWY 48 & STOUFFVILLE RD / MAIN ST)

Start Time	N Approach HWY 48						E Approach MAIN ST						S Approach HWY 48						W Approach STOUFFVILLE RD						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		
07:00:00	64	48	15	0	0	127	10	123	1	0	0	134	19	50	38	0	0	107	6	29	2	0	0	37	405	
07:15:00	74	77	23	0	0	174	7	116	5	0	0	128	12	60	34	0	0	106	4	17	2	0	0	23	431	
07:30:00	100	78	31	0	0	209	8	153	1	0	0	162	15	41	31	0	0	87	11	22	1	0	0	34	492	
07:45:00	82	110	36	0	0	228	13	129	6	0	0	148	16	67	44	0	0	127	7	27	1	0	0	35	538	1866
08:00:00	61	105	39	0	0	205	6	137	3	0	0	146	24	64	47	0	0	135	5	23	0	0	0	28	514	1975
08:15:00	82	97	31	0	0	210	13	116	2	0	0	131	24	67	36	0	0	127	9	25	0	0	0	34	502	2046
08:30:00	74	105	40	0	0	219	19	127	2	0	0	148	20	68	37	0	0	125	57	97	2	0	0	156	648	2202
08:45:00	83	63	27	0	0	173	19	100	0	0	0	119	25	67	39	0	0	131	54	136	3	0	0	193	616	2280
09:00:00	58	81	36	0	0	175	14	107	5	0	0	126	29	64	40	0	0	133	49	100	0	0	0	149	583	2349
09:15:00	56	52	27	0	0	135	16	122	2	0	0	140	17	48	26	0	0	91	37	112	4	0	0	153	519	2366
09:30:00	62	69	21	0	0	152	21	98	4	0	0	123	17	73	38	0	0	128	46	119	4	0	0	169	572	2290
09:45:00	48	74	21	0	0	143	27	104	3	0	0	134	22	73	37	0	0	132	39	102	1	0	0	142	551	2225
BREAK																										
16:00:00	38	63	21	0	0	122	26	123	4	0	0	153	32	126	53	0	0	211	58	159	3	0	0	220	706	
16:15:00	35	80	23	0	0	138	38	133	2	0	0	173	31	106	40	0	0	177	62	179	2	0	0	243	731	
16:30:00	46	79	26	0	0	151	36	124	1	0	0	161	29	109	59	0	0	197	72	164	2	0	0	238	747	
16:45:00	47	106	20	0	0	173	32	109	3	0	0	144	21	91	51	0	0	163	58	168	3	0	0	229	709	2893
17:00:00	43	85	20	0	0	148	40	137	2	0	0	179	25	120	60	0	0	205	71	166	1	0	0	238	770	2957
17:15:00	56	109	21	0	0	186	32	141	2	0	0	175	41	125	62	0	0	228	83	178	2	0	0	263	852	3078
17:30:00	43	92	21	0	0	156	33	120	2	0	0	155	35	83	58	0	0	176	76	179	0	0	0	255	742	3073
17:45:00	38	69	28	0	0	135	25	106	3	0	0	134	33	118	40	0	0	191	64	182	2	0	0	248	708	3072
18:00:00	43	69	24	0	0	136	31	91	4	0	0	126	36	97	40	0	0	173	60	170	2	0	0	232	667	2969
18:15:00	37	60	14	0	0	111	36	114	0	0	0	150	15	78	43	0	0	136	67	170	3	0	0	240	637	2754
18:30:00	41	65	22	0	0	128	32	114	3	0	0	149	30	64	44	0	0	138	54	150	7	0	0	211	626	2638
18:45:00	30	46	16	0	0	92	20	93	1	0	0	114	28	64	37	0	0	129	52	160	1	0	0	213	548	2478
Grand Total	1341	1882	603	0	0	3826	554	2837	61	0	0	3452	596	1923	1034	0	0	3553	1101	2834	48	0	0	3983	**14814**	-
Approach%	35%	49.2%	15.8%	0%		-	16%	82.2%	1.8%	0%		-	16.8%	54.1%	29.1%	0%		-	27.6%	71.2%	1.2%	0%		-	**-**	-
Totals %	9.1%	12.7%	4.1%	0%		25.8%	3.7%	19.2%	0.4%	0%		23.3%	4%	13%	7%	0%		24%	7.4%	19.1%	0.3%	0%		26.9%	**-**	-
Heavy	57	100	27	0		-	15	77	5	0		-	38	82	40	0		-	30	82	1	0		-	**-**	-
Heavy %	4.3%	5.3%	4.5%	0%		-	2.7%	2.7%	8.2%	0%		-	6.4%	4.3%	3.9%	0%		-	2.7%	2.9%	2.1%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

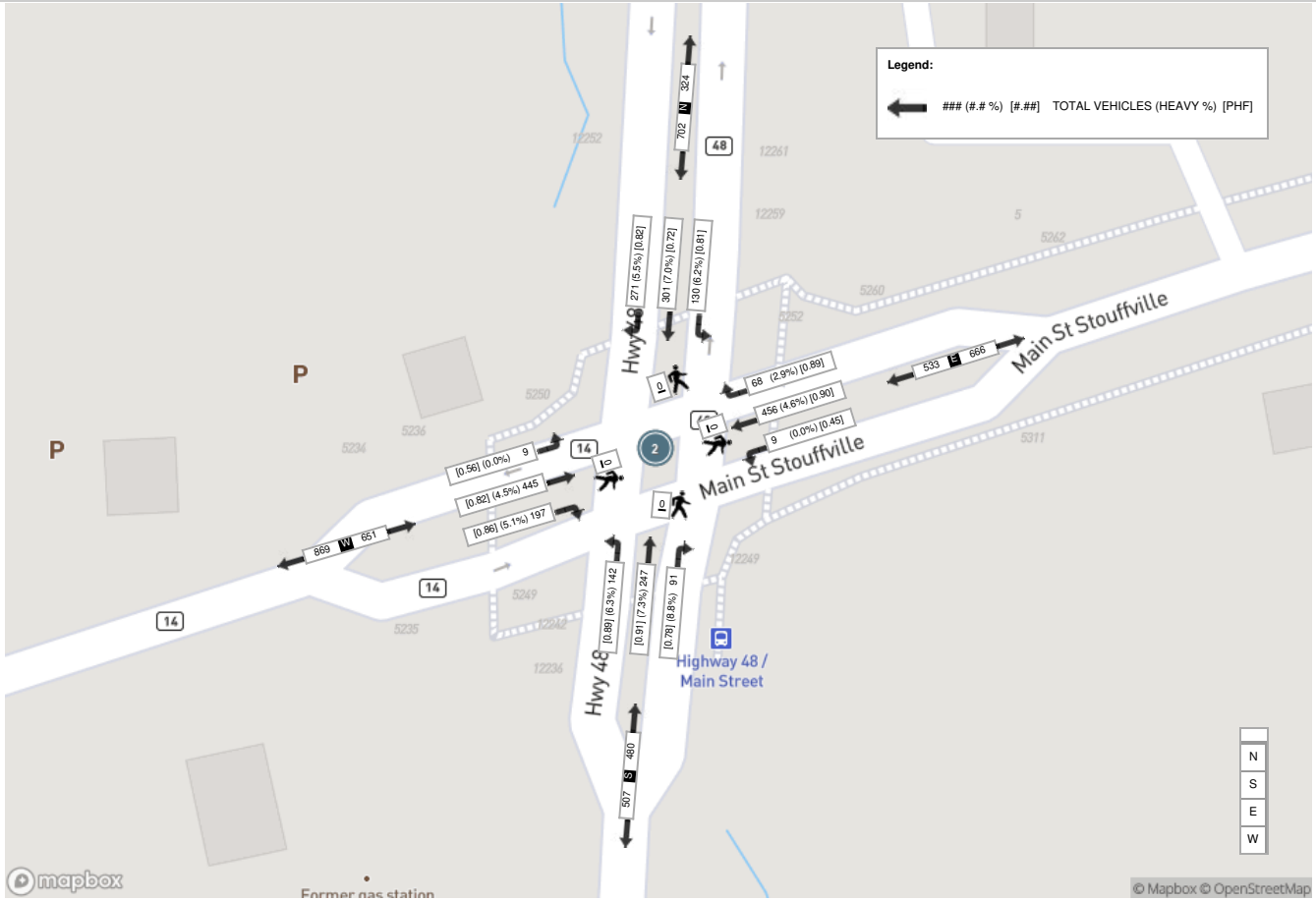
Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (16.37 °C)

Start Time	N Approach HWY 48						E Approach MAIN ST						S Approach HWY 48						W Approach STOUFFVILLE RD						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	
08:30:00	74	105	40	0	0	219	19	127	2	0	0	148	20	68	37	0	0	125	57	97	2	0	0	156	648
08:45:00	83	63	27	0	0	173	19	100	0	0	0	119	25	67	39	0	0	131	54	136	3	0	0	193	616
09:00:00	58	81	36	0	0	175	14	107	5	0	0	126	29	64	40	0	0	133	49	100	0	0	0	149	583
09:15:00	56	52	27	0	0	135	16	122	2	0	0	140	17	48	26	0	0	91	37	112	4	0	0	153	519
Grand Total	271	301	130	0	0	702	68	456	9	0	0	533	91	247	142	0	0	480	197	445	9	0	0	651	**2366**
Approach%	38.6%	42.9%	18.5%	0%		-	12.8%	85.6%	1.7%	0%		-	19%	51.5%	29.6%	0%		-	30.3%	68.4%	1.4%	0%		-	-
Totals %	11.5%	12.7%	5.5%	0%		29.7%	2.9%	19.3%	0.4%	0%		22.5%	3.8%	10.4%	6%	0%		20.3%	8.3%	18.8%	0.4%	0%		27.5%	-
PHF	0.82	0.72	0.81	0		0.8	0.89	0.9	0.45	0		0.9	0.78	0.91	0.89	0		0.9	0.86	0.82	0.56	0		0.84	-
Heavy	15	21	8	0		44	2	21	0	0		23	8	18	9	0		35	10	20	0	0		30	-
Heavy %	5.5%	7%	6.2%	0%		6.3%	2.9%	4.6%	0%	0%		4.3%	8.8%	7.3%	6.3%	0%		7.3%	5.1%	4.5%	0%	0%		4.6%	-
Lights	256	280	122	0		658	66	435	9	0		510	83	229	133	0		445	187	424	9	0		620	-
Lights %	94.5%	93%	93.8%	0%		93.7%	97.1%	95.4%	100%	0%		95.7%	91.2%	92.7%	93.7%	0%		92.7%	94.9%	95.3%	100%	0%		95.2%	-
Single-Unit Trucks	10	14	4	0		28	2	14	0	0		16	5	13	5	0		23	6	14	0	0		20	-
Single-Unit Trucks %	3.7%	4.7%	3.1%	0%		4%	2.9%	3.1%	0%	0%		3%	5.5%	5.3%	3.5%	0%		4.8%	3%	3.1%	0%	0%		3.1%	-
Buses	0	1	2	0		3	0	6	0	0		6	3	1	2	0		6	1	5	0	0		6	-
Buses %	0%	0.3%	1.5%	0%		0.4%	0%	1.3%	0%	0%		1.1%	3.3%	0.4%	1.4%	0%		1.3%	0.5%	1.1%	0%	0%		0.9%	-
Articulated Trucks	5	6	2	0		13	0	1	0	0		1	0	4	2	0		6	3	1	0	0		4	-
Articulated Trucks %	1.8%	2%	1.5%	0%		1.9%	0%	0.2%	0%	0%		0.2%	0%	1.6%	1.4%	0%		1.3%	1.5%	0.2%	0%	0%		0.6%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	-

Peak Hour: 04:30 PM - 05:30 PM Weather: Scattered Clouds (24.02 °C)

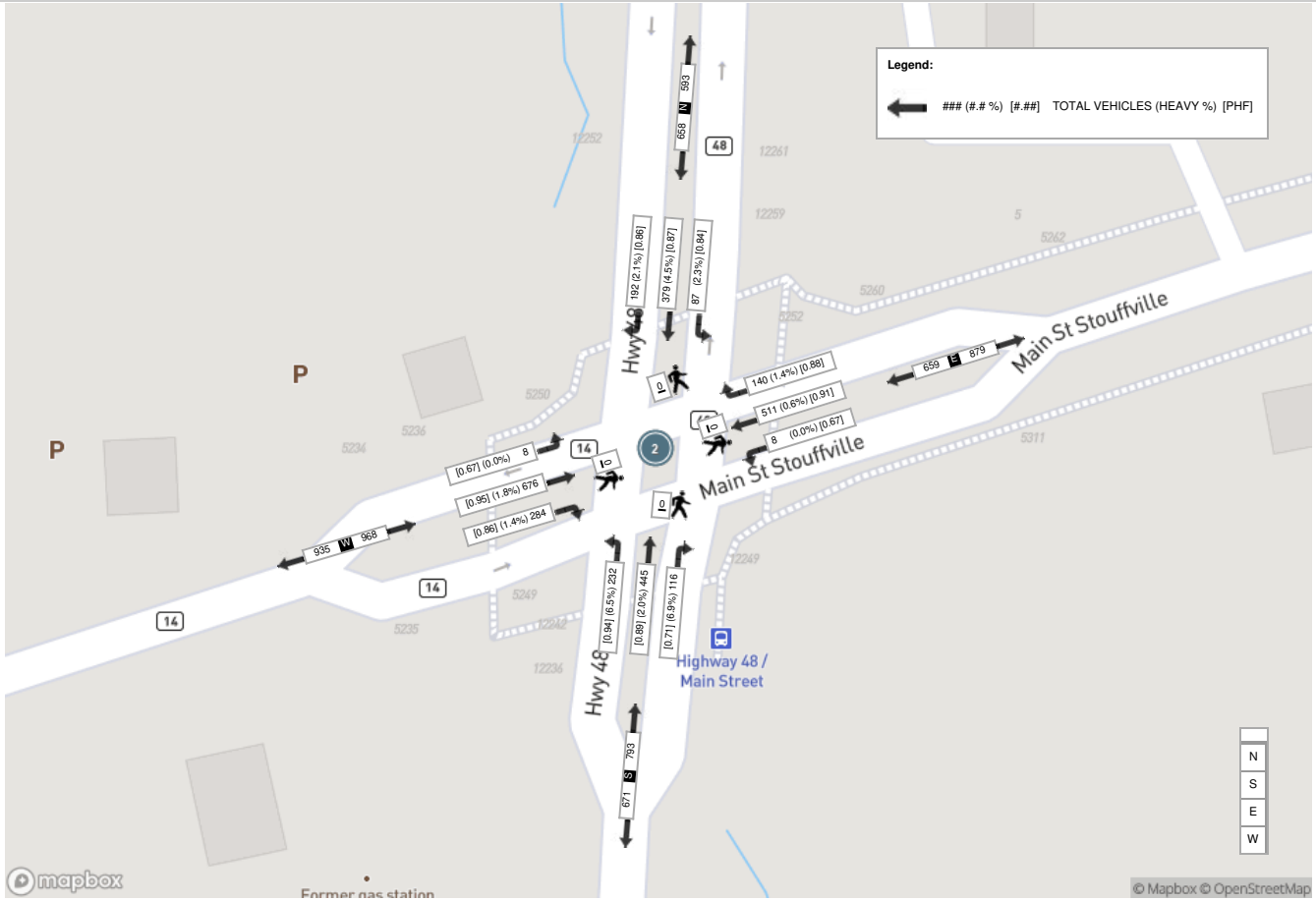
Start Time	N Approach HWY 48						E Approach MAIN ST						S Approach HWY 48						W Approach STOUFFVILLE RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	46	79	26	0	0	151	36	124	1	0	0	161	29	109	59	0	0	197	72	164	2	0	0	238	747
16:45:00	47	106	20	0	0	173	32	109	3	0	0	144	21	91	51	0	0	163	58	168	3	0	0	229	709
17:00:00	43	85	20	0	0	148	40	137	2	0	0	179	25	120	60	0	0	205	71	166	1	0	0	238	770
17:15:00	56	109	21	0	0	186	32	141	2	0	0	175	41	125	62	0	0	228	83	178	2	0	0	263	852
Grand Total	192	379	87	0	0	658	140	511	8	0	0	659	116	445	232	0	0	793	284	676	8	0	0	968	**3078**
Approach%	29.2%	57.6%	13.2%	0%		-	21.2%	77.5%	1.2%	0%		-	14.6%	56.1%	29.3%	0%		-	29.3%	69.8%	0.8%	0%		-	**-**
Totals %	6.2%	12.3%	2.8%	0%		21.4%	4.5%	16.6%	0.3%	0%		21.4%	3.8%	14.5%	7.5%	0%		25.8%	9.2%	22%	0.3%	0%		31.4%	**-**
PHF	0.86	0.87	0.84	0		0.88	0.88	0.91	0.67	0		0.92	0.71	0.89	0.94	0		0.87	0.86	0.95	0.67	0		0.92	**-**
Heavy	4	17	2	0		23	2	3	0	0		5	8	9	15	0		32	4	12	0	0		16	**-**
Heavy %	2.1%	4.5%	2.3%	0%		3.5%	1.4%	0.6%	0%	0%		0.8%	6.9%	2%	6.5%	0%		4%	1.4%	1.8%	0%	0%		1.7%	**-**
Lights	188	362	85	0		635	138	508	8	0		654	108	436	217	0		761	280	664	8	0		952	**-**
Lights %	97.9%	95.5%	97.7%	0%		96.5%	98.6%	99.4%	100%	0%		99.2%	93.1%	98%	93.5%	0%		96%	98.6%	98.2%	100%	0%		98.3%	**-**
Single-Unit Trucks	4	10	1	0		15	2	3	0	0		5	6	7	13	0		26	2	7	0	0		9	**-**
Single-Unit Trucks %	2.1%	2.6%	1.1%	0%		2.3%	1.4%	0.6%	0%	0%		0.8%	5.2%	1.6%	5.6%	0%		3.3%	0.7%	1%	0%	0%		0.9%	**-**
Buses	0	4	0	0		4	0	0	0	0		0	2	0	1	0		3	1	2	0	0		3	**-**
Buses %	0%	1.1%	0%	0%		0.6%	0%	0%	0%	0%		0%	1.7%	0%	0.4%	0%		0.4%	0.4%	0.3%	0%	0%		0.3%	**-**
Articulated Trucks	0	3	1	0		4	0	0	0	0		0	0	2	1	0		3	1	3	0	0		4	**-**
Articulated Trucks %	0%	0.8%	1.1%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.4%	0.4%	0%		0.4%	0.4%	0.4%	0%	0%		0.4%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**

Peak Hour: 08:30 AM - 09:30 AM **Weather: Clear Sky (16.37 °C)**



NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Scattered Clouds (24.02 °C)**



Spectrum

Turning Movement Count
Location Name: STOUFFVILLE RD & MCCOWAN RD (RR67)
Date: Thu, Jun 22, 2023 Deployment Lead: Walter Fugaj

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Turning Movement Count (1 . STOUFFVILLE RD & MCCOWAN RD (RR67))

Start Time	N Approach MCCOWAN RD (RR 67)						E Approach STOUFFVILLE RD (RR 14)						S Approach MCCOWAN RD (RR 67)						W Approach STOUFFVILLE RD (RR 14)						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		
07:00:00	3	17	14	0	0	34	27	114	61	0	0	202	9	7	19	0	0	35	93	2	50	0	0	145	416	
07:15:00	0	28	9	0	0	37	52	5	161	0	0	218	17	29	4	3	0	53	14	1	7	0	0	22	330	
07:30:00	0	38	14	0	0	52	80	1	169	0	0	250	19	57	0	4	0	80	3	2	2	0	0	7	389	
07:45:00	0	42	16	1	0	59	82	1	183	1	0	267	21	56	1	3	0	81	3	1	0	1	0	5	412	1547
08:00:00	0	30	10	0	0	40	74	0	175	0	0	249	16	60	0	2	0	78	0	1	0	0	0	1	368	1499
08:15:00	1	30	18	0	0	49	64	10	161	0	0	235	16	51	0	1	0	68	2	5	1	0	4	8	360	1529
08:30:00	11	28	6	0	0	45	5	196	29	0	0	230	27	15	62	0	0	104	69	152	6	0	0	227	606	1746
08:45:00	7	16	5	0	0	28	7	171	35	0	1	213	16	19	31	0	0	66	37	168	6	0	0	211	518	1852
09:00:00	6	11	3	0	0	20	1	174	26	1	0	202	17	17	30	0	0	64	39	136	8	0	0	183	469	1953
09:15:00	9	14	4	0	0	27	3	158	32	0	0	193	19	20	28	0	0	67	45	129	12	0	0	186	473	2066
09:30:00	7	9	1	0	0	17	3	177	18	0	0	198	8	14	27	0	0	49	44	148	11	0	0	203	467	1927
09:45:00	8	23	6	0	0	37	1	161	28	0	0	190	10	9	17	0	0	36	32	132	11	0	0	175	438	1847
BREAK																										
16:00:00	5	11	4	0	0	20	2	203	17	0	0	222	20	23	45	0	0	88	36	197	10	0	0	243	573	
16:15:00	0	16	2	0	0	18	10	165	13	1	0	189	17	35	46	0	0	98	48	218	25	0	0	291	596	
16:30:00	5	12	2	0	1	19	3	204	28	0	0	235	21	28	49	0	0	98	64	204	23	0	0	291	643	
16:45:00	5	12	3	0	0	20	3	167	20	0	0	190	13	33	57	0	0	103	57	220	20	0	0	297	610	2422
17:00:00	4	23	4	0	0	31	3	192	35	0	0	230	21	21	33	0	0	75	59	223	24	0	0	306	642	2491
17:15:00	6	21	2	0	0	29	5	208	28	0	0	241	17	30	51	0	0	98	72	271	9	0	0	352	720	2615
17:30:00	4	21	5	0	0	30	1	188	31	0	0	220	8	27	45	0	0	80	64	250	20	1	0	335	665	2637
17:45:00	6	12	0	0	0	18	3	155	32	0	0	190	13	14	26	0	0	53	48	207	20	0	0	275	536	2563
18:00:00	5	13	1	0	0	19	3	149	21	0	0	173	16	17	27	0	0	60	45	225	10	0	0	280	532	2453
18:15:00	3	10	3	0	0	16	5	172	16	0	0	193	13	17	29	0	0	59	48	203	10	0	0	261	529	2262
18:30:00	1	9	2	0	0	12	4	177	22	0	0	203	14	27	32	0	0	73	27	187	9	0	0	223	511	2108
18:45:00	2	11	2	0	0	15	4	134	20	0	0	158	23	12	18	0	0	53	24	170	7	0	0	201	427	1999
Grand Total	98	457	136	1	1	692	445	3282	1361	3	1	5091	391	638	677	13	0	1719	973	3452	301	2	4	4728	**12230**	-
Approach%	14.2%	66%	19.7%	0.1%		-	8.7%	64.5%	26.7%	0.1%		-	22.7%	37.1%	39.4%	0.8%		-	20.6%	73%	6.4%	0%		-	**-**	-
Totals %	0.8%	3.7%	1.1%	0%		5.7%	3.6%	26.8%	11.1%	0%		41.6%	3.2%	5.2%	5.5%	0.1%		14.1%	8%	28.2%	2.5%	0%		38.7%	**-**	-
Heavy	8	24	5	0		-	15	103	49	0		-	16	18	31	2		-	45	90	14	0		-	**-**	-
Heavy %	8.2%	5.3%	3.7%	0%		-	3.4%	3.1%	3.6%	0%		-	4.1%	2.8%	4.6%	15.4%		-	4.6%	2.6%	4.7%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Spectrum

Turning Movement Count
Location Name: STOUFFVILLE RD & MCCOWAN RD (RR67)
Date: Thu, Jun 22, 2023 Deployment Lead: Walter Fugaj

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 08:30 AM - 09:30 AM **Weather: Clear Sky (16.37 °C)**

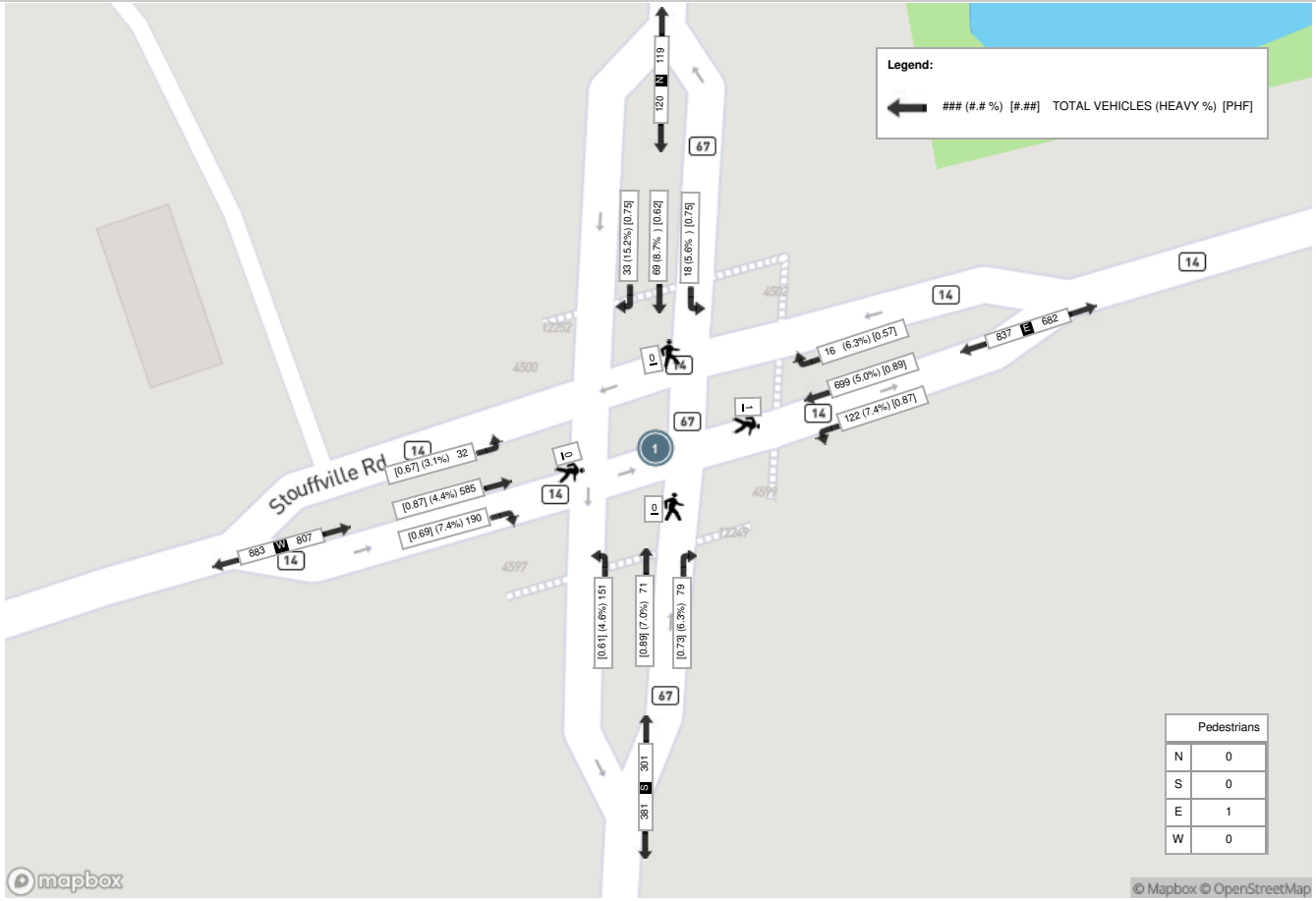
Start Time	N Approach MCCOWAN RD (RR 67)						E Approach STOUFFVILLE RD (RR 14)						S Approach MCCOWAN RD (RR 67)						W Approach STOUFFVILLE RD (RR 14)						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:30:00	11	28	6	0	0	45	5	196	29	0	0	230	27	15	62	0	0	104	69	152	6	0	0	227	606
08:45:00	7	16	5	0	0	28	7	171	35	0	1	213	16	19	31	0	0	66	37	168	6	0	0	211	518
09:00:00	6	11	3	0	0	20	1	174	26	1	0	202	17	17	30	0	0	64	39	136	8	0	0	183	469
09:15:00	9	14	4	0	0	27	3	158	32	0	0	193	19	20	28	0	0	67	45	129	12	0	0	186	473
Grand Total	33	69	18	0	0	120	16	699	122	1	1	838	79	71	151	0	0	301	190	585	32	0	0	807	**2066**
Approach%	27.5%	57.5%	15%	0%		-	1.9%	83.4%	14.6%	0.1%		-	26.2%	23.6%	50.2%	0%		-	23.5%	72.5%	4%	0%		-	**-**
Totals %	1.6%	3.3%	0.9%	0%		5.8%	0.8%	33.8%	5.9%	0%		40.6%	3.8%	3.4%	7.3%	0%		14.6%	9.2%	28.3%	1.5%	0%		39.1%	**-**
PHF	0.75	0.62	0.75	0		0.67	0.57	0.89	0.87	0.25		0.91	0.73	0.89	0.61	0		0.72	0.69	0.87	0.67	0		0.89	**-**
Heavy	5	6	1	0		12	1	35	9	0		45	5	5	7	0		17	14	26	1	0		41	**-**
Heavy %	15.2%	8.7%	5.6%	0%		10%	6.3%	5%	7.4%	0%		5.4%	6.3%	7%	4.6%	0%		5.6%	7.4%	4.4%	3.1%	0%		5.1%	**-**
Lights	28	60	17	0		105	15	664	113	1		793	74	64	144	0		282	176	558	31	0		765	**-**
Lights %	84.8%	87%	94.4%	0%		87.5%	93.8%	95%	92.6%	100%		94.6%	93.7%	90.1%	95.4%	0%		93.7%	92.6%	95.4%	96.9%	0%		94.8%	**-**
Single-Unit Trucks	4	5	0	0		9	1	19	9	0		29	3	5	3	0		11	6	18	1	0		25	**-**
Single-Unit Trucks %	12.1%	7.2%	0%	0%		7.5%	6.3%	2.7%	7.4%	0%		3.5%	3.8%	7%	2%	0%		3.7%	3.2%	3.1%	3.1%	0%		3.1%	**-**
Buses	0	1	1	0		2	0	7	0	0		7	0	0	3	0		3	4	5	0	0		9	**-**
Buses %	0%	1.4%	5.6%	0%		1.7%	0%	1%	0%	0%		0.8%	0%	0%	2%	0%		1%	2.1%	0.9%	0%	0%		1.1%	**-**
Articulated Trucks	1	0	0	0		1	0	9	0	0		9	2	0	1	0		3	4	3	0	0		7	**-**
Articulated Trucks %	3%	0%	0%	0%		0.8%	0%	1.3%	0%	0%		1.1%	2.5%	0%	0.7%	0%		1%	2.1%	0.5%	0%	0%		0.9%	**-**
Bicycles on Road	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	0	1	0	0		1	**-**
Bicycles on Road %	0%	4.3%	0%	0%		2.5%	0%	0%	0%	0%		0%	0%	2.8%	0%	0%		0.7%	0%	0.2%	0%	0%		0.1%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		**-**

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AURORA ONTARIO, L4G 1N4
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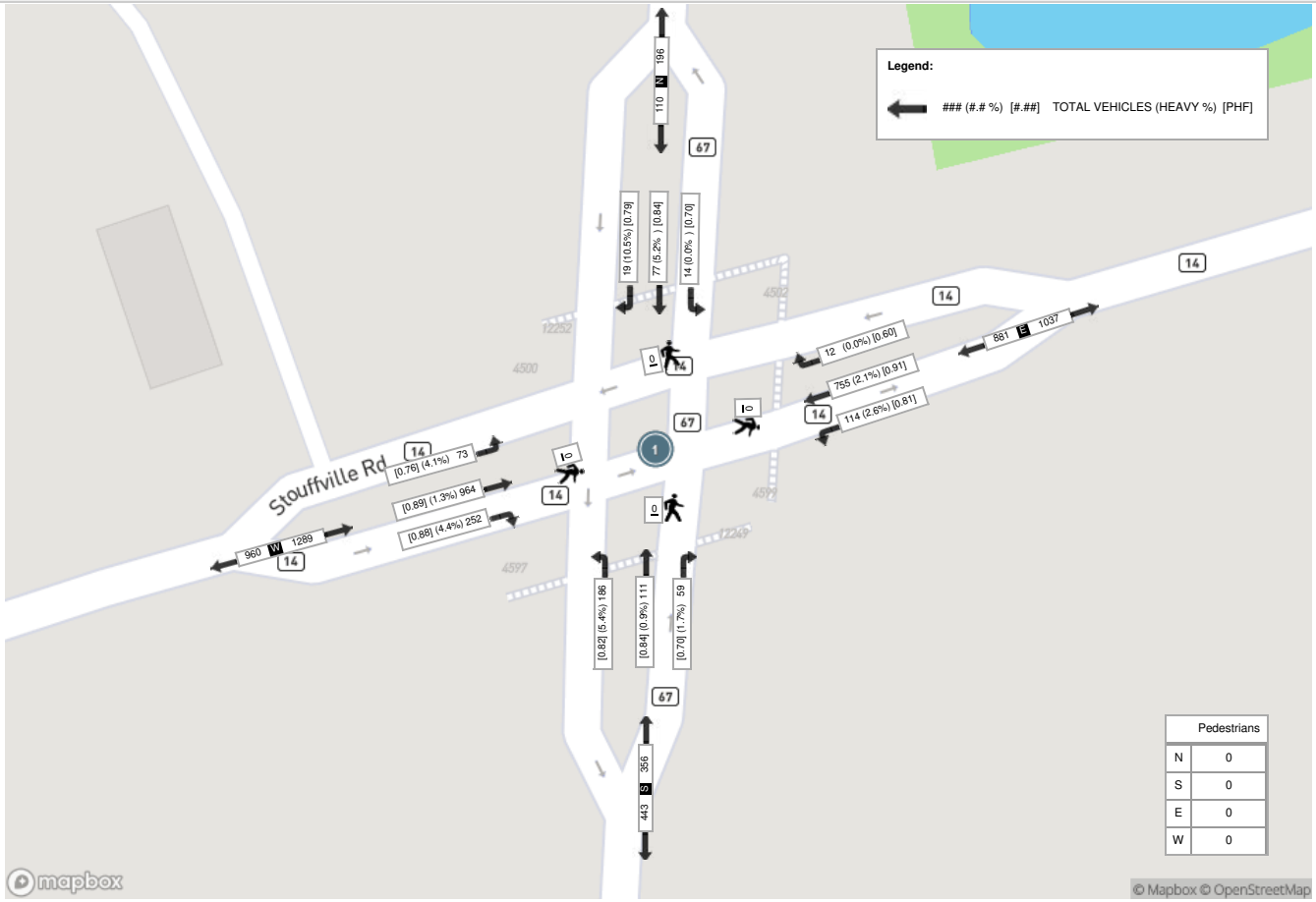
Peak Hour: 04:45 PM - 05:45 PM Weather: Scattered Clouds (24.02 °C)

Start Time	N Approach MCCOWAN RD (RR 67)						E Approach STOUFFVILLE RD (RR 14)						S Approach MCCOWAN RD (RR 67)						W Approach STOUFFVILLE RD (RR 14)						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	
16:45:00	5	12	3	0	0	20	3	167	20	0	0	190	13	33	57	0	0	103	57	220	20	0	0	297	610
17:00:00	4	23	4	0	0	31	3	192	35	0	0	230	21	21	33	0	0	75	59	223	24	0	0	306	642
17:15:00	6	21	2	0	0	29	5	208	28	0	0	241	17	30	51	0	0	98	72	271	9	0	0	352	720
17:30:00	4	21	5	0	0	30	1	188	31	0	0	220	8	27	45	0	0	80	64	250	20	1	0	335	665
Grand Total	19	77	14	0	0	110	12	755	114	0	0	881	59	111	186	0	0	356	252	964	73	1	0	1290	**2637**
Approach%	17.3%	70%	12.7%	0%		-	1.4%	85.7%	12.9%	0%		-	16.6%	31.2%	52.2%	0%		-	19.5%	74.7%	5.7%	0.1%		-	**-**
Totals %	0.7%	2.9%	0.5%	0%		4.2%	0.5%	28.6%	4.3%	0%		33.4%	2.2%	4.2%	7.1%	0%		13.5%	9.6%	36.6%	2.8%	0%		48.9%	**-**
PHF	0.79	0.84	0.7	0		0.89	0.6	0.91	0.81	0		0.91	0.7	0.84	0.82	0		0.86	0.88	0.89	0.76	0.25		0.92	**-**
Heavy	2	4	0	0		6	0	16	3	0		19	1	1	10	0		12	11	13	3	0		27	**-**
Heavy %	10.5%	5.2%	0%	0%		5.5%	0%	2.1%	2.6%	0%		2.2%	1.7%	0.9%	5.4%	0%		3.4%	4.4%	1.3%	4.1%	0%		2.1%	**-**
Lights	17	73	14	0		104	12	739	111	0		862	58	109	176	0		343	241	951	70	1		1263	**-**
Lights %	89.5%	94.8%	100%	0%		94.5%	100%	97.9%	97.4%	0%		97.8%	98.3%	98.2%	94.6%	0%		96.3%	95.6%	98.7%	95.9%	100%		97.9%	**-**
Single-Unit Trucks	2	4	0	0		6	0	15	2	0		17	1	0	8	0		9	10	8	2	0		20	**-**
Single-Unit Trucks %	10.5%	5.2%	0%	0%		5.5%	0%	2%	1.8%	0%		1.9%	1.7%	0%	4.3%	0%		2.5%	4%	0.8%	2.7%	0%		1.6%	**-**
Buses	0	0	0	0		0	0	1	1	0		2	0	1	0	0		1	0	2	0	0		2	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.1%	0.9%	0%		0.2%	0%	0.9%	0%	0%		0.3%	0%	0.2%	0%	0%		0.2%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	2	0		2	1	3	1	0		5	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	1.1%	0%		0.6%	0.4%	0.3%	1.4%	0%		0.4%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.3%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:30 AM - 09:30 AM **Weather: Clear Sky (16.37 °C)**



Peak Hour: 04:45 PM - 05:45 PM **Weather: Scattered Clouds (24.02 °C)**



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Turning Movement Count (3 . STOUFFVILLE RD (RR14) & 4962 STOUFFVILLE RD)

Start Time	N Approach 4962 STOUFFVILLE RD (SPRING LAKES GOLF CLUB DRIVEW					E Approach STOUFFVILLE RD (RR14)					W Approach STOUFFVILLE RD (RR14)					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	1	0	0	0	1	5	218	0	0	223	25	0	0	0	25	249	
07:15:00	0	0	0	0	0	1	221	0	0	222	24	3	0	0	27	249	
07:30:00	0	0	0	0	0	1	277	0	0	278	32	4	0	0	36	314	
07:45:00	0	0	0	0	0	1	250	0	0	251	31	5	0	0	36	287	1099
08:00:00	1	2	0	0	3	3	240	0	0	243	26	3	0	0	29	275	1125
08:15:00	0	0	0	0	0	3	229	0	0	232	32	6	0	0	38	270	1146
08:30:00	0	0	0	0	0	2	235	0	0	237	170	9	0	0	179	416	1248
08:45:00	0	1	0	0	1	3	216	0	0	219	183	7	0	0	190	410	1371
09:00:00	0	2	0	0	2	2	200	0	0	202	147	5	0	0	152	356	1452
09:15:00	0	0	0	0	0	3	195	1	0	199	146	8	0	0	154	353	1535
09:30:00	1	0	0	0	1	1	198	2	0	201	157	1	0	0	158	360	1479
09:45:00	6	0	0	0	6	2	187	1	0	190	145	7	0	0	152	348	1417
BREAK																	
16:00:00	2	1	0	0	3	3	207	0	0	210	215	9	0	0	224	437	
16:15:00	8	2	0	0	10	0	203	0	0	203	251	5	0	0	256	469	
16:30:00	3	0	0	1	3	2	224	1	0	227	218	4	0	0	222	452	
16:45:00	3	1	0	0	4	14	194	0	0	208	225	9	0	0	234	446	1804
17:00:00	3	2	0	0	5	17	228	0	0	245	255	8	0	0	263	513	1880
17:15:00	12	0	0	0	12	22	242	0	0	264	266	6	0	0	272	548	1959
17:30:00	9	0	0	0	9	15	206	0	0	221	257	9	0	0	266	496	2003
17:45:00	5	2	0	0	7	3	177	0	0	180	228	3	0	0	231	418	1975
18:00:00	3	3	0	0	6	2	171	0	0	173	239	1	0	0	240	419	1881
18:15:00	6	0	1	0	7	0	191	0	0	191	212	4	1	0	217	415	1748
18:30:00	1	1	0	0	2	1	196	0	0	197	212	0	0	0	212	411	1663
18:45:00	4	6	0	0	10	1	152	0	0	153	189	0	0	0	189	352	1597
Grand Total	68	23	1	1	92	107	5057	5	0	5169	3885	116	1	0	4002	**9263**	-
Approach%	73.9%	25%	1.1%		-	2.1%	97.8%	0.1%		-	97.1%	2.9%	0%		-	**-**	-
Totals %	0.7%	0.2%	0%		1%	1.2%	54.6%	0.1%		55.8%	41.9%	1.3%	0%		43.2%	**-**	-
Heavy	0	0	0		-	0	172	0		-	109	0	0		-	**-**	-
Heavy %	0%	0%	0%		-	0%	3.4%	0%		-	2.8%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

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SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (16.37 °C)

Start Time	N Approach 4962 STOUFFVILLE RD (SPRING LAKES GOLF CLUB DRIVEW					E Approach STOUFFVILLE RD (RR14)					W Approach STOUFFVILLE RD (RR14)					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
08:30:00	0	0	0	0	0	2	235	0	0	237	170	9	0	0	179	416
08:45:00	0	1	0	0	1	3	216	0	0	219	183	7	0	0	190	410
09:00:00	0	2	0	0	2	2	200	0	0	202	147	5	0	0	152	356
09:15:00	0	0	0	0	0	3	195	1	0	199	146	8	0	0	154	353
Grand Total	0	3	0	0	3	10	846	1	0	857	646	29	0	0	675	**1535**
Approach%	0%	100%	0%		-	1.2%	98.7%	0.1%		-	95.7%	4.3%	0%		-	**-**
Totals %	0%	0.2%	0%		0.2%	0.7%	55.1%	0.1%		55.8%	42.1%	1.9%	0%		44%	**-**
PHF	0	0.38	0		0.38	0.83	0.9	0.25		0.9	0.88	0.81	0		0.89	**-**
Heavy	0	0	0		0	0	44	0		44	31	0	0		31	**-**
Heavy %	0%	0%	0%		0%	0%	5.2%	0%		5.1%	4.8%	0%	0%		4.6%	**-**
Lights	0	3	0		3	10	802	1		813	614	29	0		643	**-**
Lights %	0%	100%	0%		100%	100%	94.8%	100%		94.9%	95%	100%	0%		95.3%	**-**
Single-Unit Trucks	0	0	0		0	0	29	0		29	21	0	0		21	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0%	3.4%	0%		3.4%	3.3%	0%	0%		3.1%	**-**
Buses	0	0	0		0	0	7	0		7	6	0	0		6	**-**
Buses %	0%	0%	0%		0%	0%	0.8%	0%		0.8%	0.9%	0%	0%		0.9%	**-**
Articulated Trucks	0	0	0		0	0	8	0		8	4	0	0		4	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0.9%	0%		0.9%	0.6%	0%	0%		0.6%	**-**
Bicycles on Road	0	0	0		0	0	0	0		0	1	0	0		1	**-**
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0.2%	0%	0%		0.1%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Scattered Clouds (24.02 °C)

Start Time	N Approach 4962 STOUFFVILLE RD (SPRING LAKES GOLF CLUB DRIVEW					E Approach STOUFFVILLE RD (RR14)					W Approach STOUFFVILLE RD (RR14)					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	3	1	0	0	4	14	194	0	0	208	225	9	0	0	234	446
17:00:00	3	2	0	0	5	17	228	0	0	245	255	8	0	0	263	513
17:15:00	12	0	0	0	12	22	242	0	0	264	266	6	0	0	272	548
17:30:00	9	0	0	0	9	15	206	0	0	221	257	9	0	0	266	496
Grand Total	27	3	0	0	30	68	870	0	0	938	1003	32	0	0	1035	**2003**
Approach%	90%	10%	0%		-	7.2%	92.8%	0%		-	96.9%	3.1%	0%		-	**-**
Totals %	1.3%	0.1%	0%		1.5%	3.4%	43.4%	0%		46.8%	50.1%	1.6%	0%		51.7%	**-**
PHF	0.56	0.38	0		0.63	0.77	0.9	0		0.89	0.94	0.89	0		0.95	**-**
Heavy	0	0	0		0	0	19	0		19	12	0	0		12	**-**
Heavy %	0%	0%	0%		0%	0%	2.2%	0%		2%	1.2%	0%	0%		1.2%	**-**
Lights	27	3	0		30	68	851	0		919	991	32	0		1023	**-**
Lights %	100%	100%	0%		100%	100%	97.8%	0%		98%	98.8%	100%	0%		98.8%	**-**
Single-Unit Trucks	0	0	0		0	0	17	0		17	7	0	0		7	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0%	2%	0%		1.8%	0.7%	0%	0%		0.7%	**-**
Buses	0	0	0		0	0	2	0		2	2	0	0		2	**-**
Buses %	0%	0%	0%		0%	0%	0.2%	0%		0.2%	0.2%	0%	0%		0.2%	**-**
Articulated Trucks	0	0	0		0	0	0	0		0	3	0	0		3	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.3%	0%	0%		0.3%	**-**
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

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SUITE 204 15260 YONGE ST
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CANADA

Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (16.37 °C)



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SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Scattered Clouds (24.02 °C)



Ontario

Ministry of Transportation | Highway Standards Branch | Traffic Office

Provincial Highways

Traffic Volumes 1988-2019

King's Highways / Secondary Highways / Tertiary Roads

Ministry Contact:
Provincial Traffic Office (905)-704-2960

Abstract:
This annual publication contains averaged traffic volume information for each of the sections of highway under MTO jurisdiction.

Key Words:
Annual Average Daily Traffic volume (AADT), Summer Average Daily Traffic volume (SADT), Summer Average Weekday Traffic volume (SAWDT), Winter Average Daily Traffic volume (WADT)

Highway	Location Description	Dist (KM)	Year	Pattern Type	AADT	SADT	SAWDT	WADT
41			2017	UC	5150	5100	5150	4950
41			2018	UC	5250	5200	5300	5050
41			2019	UC	5250	5150	5250	5050
41	HWY 17 START OF NA	1.0	9999					
41	RENFREW RD 19 END OF NA HWY END		9999					
48	MARKHAM RD START OF NA	14.1	9999					
48	YORK RD 25 MAJOR MACKENZIE DR	6.1	1988	CR	10800	13800	13000	8950
48			1989	CR	11000	14100	13100	9250
48			1990	CR	11300	14000	13000	10200
48			1991	CR	11300	13900	13000	10200
48			1992	CR	11300	13900	12900	10200
48			1993	CR	11300	13900	13000	10200
48			1994	CR	11600	14300	13200	10400
48			1995	CR	11700	14500	13800	10100
48			1996	IR	13200	16400	14700	11200
48			1997	IC	12000	13400	13600	10600
48			1998	IC	12200	13700	13700	10900
48			1999	IC	11700	13100	13100	10400
48			2000	IC	11100	12400	12400	9900
48			2001	IC	11200	12500	12600	9900
48			2002	IC	10900	12200	12200	9600
48			2003	IC	10700	11900	12000	9500
48			2004	IC	10700	12000	12000	9450
48			2005	IC	11300	12600	12700	9950
48			2006	IC	10400	11600	11700	9200
48			2007	IC	11700	13000	13400	10300
48			2008	IC	13000	14400	13900	11500
48			2009	IC	11700	13000	13100	10400
48			2010	IC	13200	14600	14700	11700
48			2011	IC	14000	15400	16000	12600
48			2012	IC	14000	15500	15000	12400
48			2013	IC	12600	13900	13900	11200
48			2014	CTR	12600	15400	15500	10700
48			2015	CTR	12700	15500	15600	10800
48			2016	CTR	12800	15600	15700	10900
48			2017	CTR	12900	17200	17200	10500
48			2018	CTR	12900	17200	17200	10500
48			2019	CTR	13000	17300	17200	10600
48	HWY 47 YORK RD 14 WHITCHURCH/STOUFFVILLE	4.1	1988	CR	9100	11600	10900	7550
48			1989	CR	9250	11800	11000	7750
48			1990	CR	9350	11600	10800	8400
48			1991	CR	9300	11400	10700	8350
48			1992	CR	9300	11400	10600	8350
48			1993	CR	9250	11400	10600	8300
48			1994	CR	9750	12000	11100	8800

Highway	Location Description	Dist (KM)	Year	Pattern Type	AADT	SADT	SAWDT	WADT
48			1995	CR	9900	12300	11700	8500
48			1996	HT	10100	19100	17400	4600
48			1997	IC	10200	11400	11500	9000
48			1998	IC	10400	11600	11600	9250
48			1999	IC	10500	11800	11800	9350
48			2000	IC	10500	11800	11800	9350
48			2001	IC	10600	11900	11900	9350
48			2002	IC	10500	11700	11800	9250
48			2003	IC	10700	11900	12000	9500
48			2004	IC	10800	12100	12100	9550
48			2005	IC	11000	12200	12300	9700
48			2006	IC	11000	12200	12300	9750
48			2007	IC	10900	12100	12500	9650
48			2008	IC	11200	12400	12000	9900
48			2009	IC	11200	12400	12500	9950
48			2010	IC	11300	12500	12600	10000
48			2011	IC	11400	12500	13000	10200
48			2012	IC	11500	12700	12400	10200
48			2013	IR	11600	13800	14800	9850
48			2014	IR	11700	13900	14000	9950
48			2015	IR	11800	14000	14100	10000
48			2016	IR	11900	14200	14200	10100
48			2017	IR	12000	14600	14500	10200
48			2018	IR	12100	14700	14600	10300
48			2019	IR	12200	14800	14800	10400
48	HWY 47 (E) YORK RD 40 BLOOMINGTON RD (W)	4.2	1988	IR	9400	12200	10300	7500
48			1989	IR	9500	12300	10500	7800
48			1990	IR	9700	12300	10800	7950
48			1991	IR	9300	11700	10300	7700
48			1992	IR	8900	10900	9800	7550
48			1993	IR	8350	10300	8650	6850
48			1994	IR	9050	11100	9950	7600
48			1995	IR	9000	11100	9900	7650
48			1996	IR	8750	10900	9750	7450
48			1997	IR	8950	11200	10000	7600
48			1998	IR	8950	11100	10000	7500
48			1999	IR	9000	11200	10000	7550
48			2000	CR	9000	11100	10500	7650
48			2001	CR	8950	11000	10500	7550
48			2002	CR	8950	11000	10500	7550
48			2003	CR	8950	10900	10500	7550
48			2004	IR	8950	11100	9900	7550
48			2005	IR	8950	10800	9800	7650
48			2006	IC	8950	9950	10000	7950
48			2007	IC	8800	9800	10100	7800

AADT Midblocks Report

Description	2012	2014	2015	2016	2017	2019	2022
McCowan Road btwn McCowan Lane & Stouffville Road	3581	6320	6123	7042	6731	2152	1111

AADT Midblocks Report

Description	2012	2014	2016	2018	2022
Stouffville Road btwn Main Street/Highway 48 & McCowan Road	15185	15840	16895	16127	18185

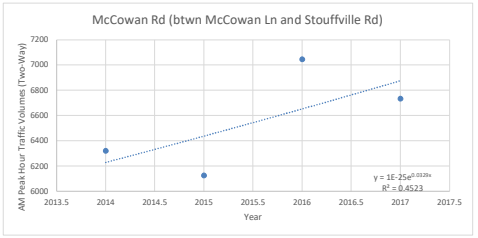
CORRIDOR TRAFFIC GROWTH
5061 Stouffville Road

McCowan Rd (btwn McCowan Ln and Stouffville Rd)

Year	AADT
2012	3581
2014	6320
2015	6123
2016	7042
2017	6731
2019	2152
2022	1111

*Grey Data Years excluded given large discrepancy relative to other years.

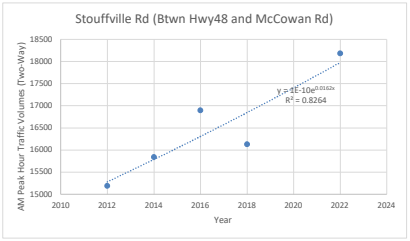
Growth Rate Per Annum: 3.29%



Stouffville Rd (btwn Main St/Hwy 48 and McCowan Rd)

Year	AADT
2012	15185
2014	15840
2016	16895
2018	16127
2022	18185

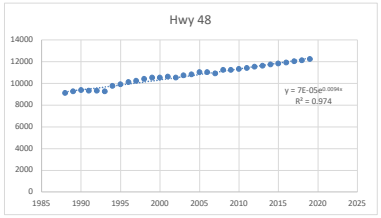
Growth Rate Per Annum: 1.62%



Hwy 48 (at Stouffville Rd)

Year	AADT
1988	9100
1989	9250
1990	9350
1991	9300
1992	9300
1993	9250
1994	9750
1995	9900
1996	10100
1997	10200
1998	10400
1999	10500
2000	10500
2001	10600
2002	10500
2003	10700
2004	10800
2005	11000
2006	11000
2007	10900
2008	11200
2009	11200
2010	11300
2011	11400
2012	11500
2013	11600
2014	11700
2015	11800
2016	11900
2017	12000
2018	12100
2019	12200

Growth Rate Per Annum: 0.94%



Hoover Park Dr (at Hwy 48)

Assumed Growth Per Annum 2%

PROPOSED COMMERCIAL DEVELOPMENT

5505 MAIN STREET, WHITCHURCH STOUFFVILLE, ONTARIO

TRAFFIC IMPACT STUDY

PROJECT No. n 2166

Prepared By:

n Engineering Inc

9120 Leslie Street, Suite-208
Richmond Hill, Ontario L4B 3J9
T: 905-597-5937
www.nengineering.com

June 06, 2023

7 Trip Generation

The trip generation rates from ITE Trip Generation Manual were used for the Weekday AM and Weekday PM Peak Hour Periods of the proposed development.

- Land use codes for Gasoline/Service Station (LUC 944), was used for the proposed development. The total estimated trips for this proposed land use were rounded up before applying the inbound and outbound directional split.
- Pass-by trips are required for the proposed commercial development. These are calculated using the ITE Manual as each property type has a percent of pass-by trips.
- These pass-by trips are reduced from the site generated trips. Two separate trip assignments have been completed: one for pass-by trips and one for new trips. The sum of these two produce the total trips generated for the proposed development.

Table 16 below shows the necessary calculations required to generate trips for each property type.

Table 16 - ITE Trip Generation from Proposed Development

Gasoline/Service Station (LUC 944)	**AM Peak Hour**			**PM Peak Hour**		
	Average rate*	IN	OUT	Average rate*	IN	OUT
1286.28 sq. ft	84.55	50%	50%	109.27	50%	50%
Trips	109	55	55	141	71	71
Pass-by Trips	34%	**19**	**19**	34%	**24**	**24**
Site-Generated Trips	**72**	**36**	**36**	**94**	**47**	**47**

No modal split was applied to these trips generated due to the type of development being proposed. Heavy vehicle traffic volumes were included in the Synchro simulation.

7.1 Trip Distribution and Assignment

Trip distribution of site generated traffic was based on the orientation of the site with respect to road network; existing traffic volumes split percentages; and travel patterns. Table 17 below shows the percent of trips based on the direction of travel for AM and PM peak hours.

Table 17 - Trip Distribution for AM & PM Peak Hours

Direction of Travel	AM		PM	
	IN (%)	OUT (%)	IN (%)	OUT (%)
Eastbound on Main St	21.6	17.6	16.9	24.4
Westbound on Main St	20.9	32.8	28.5	19.8
Northbound on Hwy 48	22.8	10.1	12.4	18.0
Southbound on Hwy 48	15.0	18.0	16.5	15.7
Northbound on Baker Hill Blvd	6.0	3.5	4.7	5.4
Southbound on Ringwood Dr	1.8	3.5	5.4	4.0
Northbound on Sandale Rd	5.6	4.7	5.8	6.5
Southbound on Sandiford Dr	6.3	9.7	9.8	6.0
Total	100.0	100.0	100.0	100.0

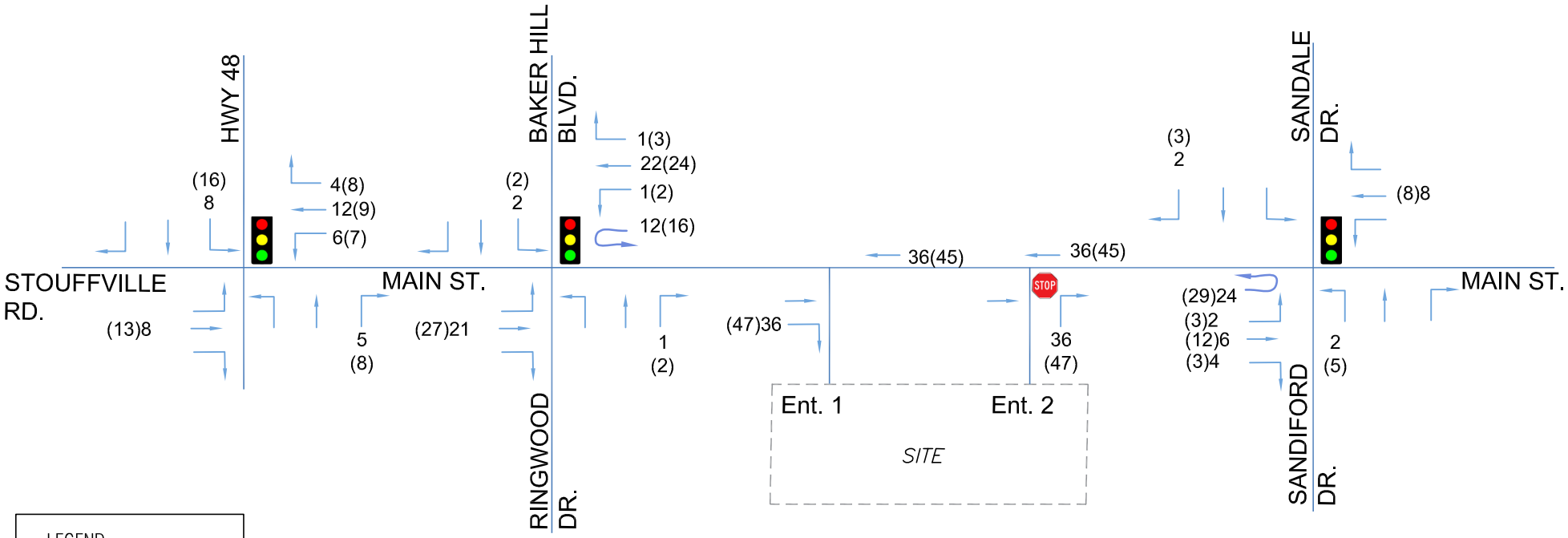
Table 18 below shows the number of trips assigned in the all directions entering and exiting the proposed site development.

Table 18 - Trip Assignment for AM & PM Peak Hours

Direction of Travel	AM		PM	
	IN	OUT	IN	OUT
Eastbound on Main St	8	6	8	12
Westbound on Main St	8	12	13	9
Northbound on Hwy 48	8	4	6	8
Southbound on Hwy 48	5	6	8	7
Northbound on Baker Hill Blvd	2	1	2	3
Southbound on Ringwood Dr	1	1	2	2
Northbound on Sandale Rd	2	2	3	3
Southbound on Sandiford Dr	2	4	5	3
Total	**36**	**36**	**47**	**48**

The site generated trips are distributed and shown in Figure 8.

Trip distribution of pass-by trips reflect the predominant commuting travel patterns on adjacent and nearby roadways. The pass-by trips are distributed and shown in Figure 9.



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www.narchitecture.com

PROJECT:

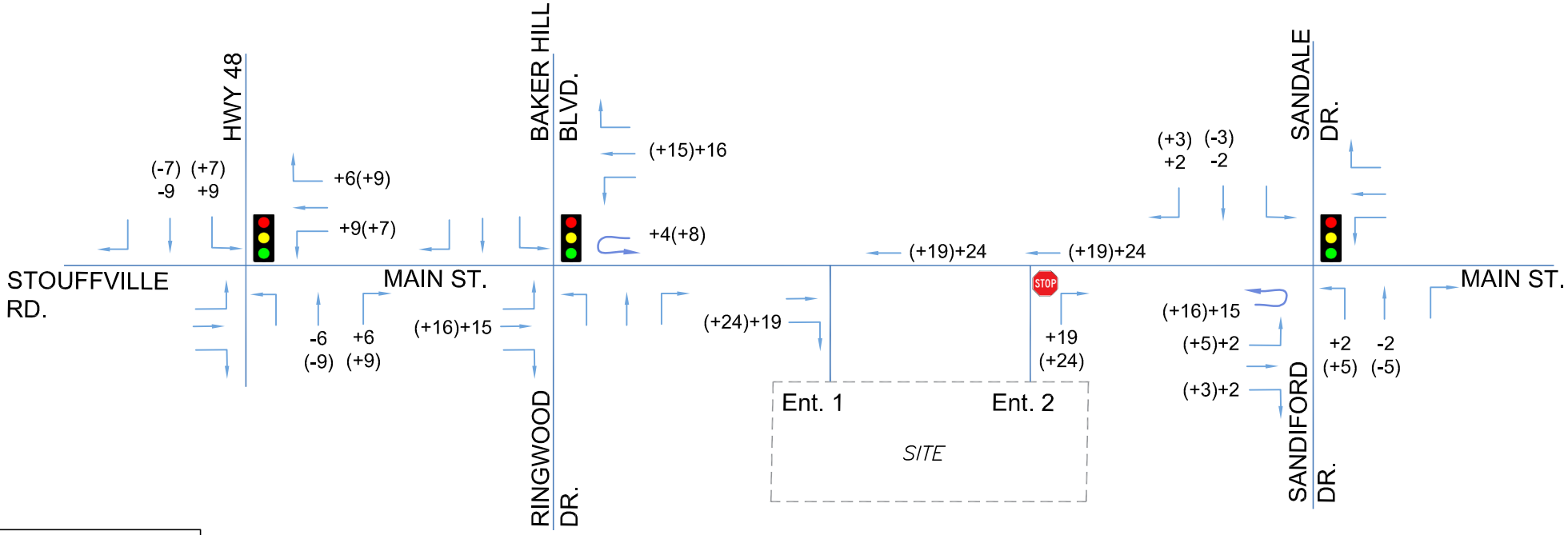
GAS STATION AT 5505 MAIN ST., WHITCHURCH-STOUFFVILLE,ON.

DRAWING TITLE:

SITE GENERATED TRIPS

DRAWN BY: SA	DATE: 27 APRIL 2023
CHECKED BY: AZ	SCALE: NTS
PROJECT NO.: **21-66**	DRAWING NO.: **FIG-8**

N (GEODETIC NORTH)
PROJECT NORTH



LEGEND

100	WEEKDAY AM
(100)	WEEKDAY PM
	SIGNALIZED INTERSECTIONS
STOP	STOP CONTROL
	PROPOSED DEVELOPMENT

n Engineering Inc
9120 Leslie Street, Suite-208
Richmond Hill, Ontario, L4B 3J9
T: 416.258.9741
E: info@narchitecture.com
www.narchitecture.com

PROJECT:

GAS STATION AT 5505 MAIN ST., WHITCHURCH-STOUFFVILLE,ON.

DRAWING TITLE:

PASS-BY TRIPS

DRAWN BY: SA	DATE: 27 APRIL 2023
CHECKED BY: AZ	SCALE: NTS
PROJECT NO.: **21-66**	DRAWING NO.: **FIG-9**

N (GEODETIC NORTH)
PROJECT NORTH



Traffic Impact Study

Schlegel Villages Stouffville

Schlegel

7 February 2023

The Power of Commitment

5. Site Generated Traffic

5.1 Site Traffic Generation

The proposed Schlegel Villages Stouffville site consists of a total of 358 long-term care beds and retirement home/apartment dwelling units and will be built-out in phases.

Phase 1 consists of Building 1 with:

- 192 long-term care beds
- 1 Living Classroom

Full Build-out consists of Buildings 1, 2 and 3 with:

- 192 long-term care beds
- 424 retirement home dwelling units
- 106 apartment units
- 1 Living Classroom plus several other ancillary uses

The trip generation for the residential uses were calculated using rates provided in the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 11th Edition using Land Use Code (LUC) 254 (Assisted Living) for the 192 long-term care beds and LUC 252 (Senior Adult Housing – Multifamily) for the 424 unit retirement home and 106 apartment dwelling units.

The Living Classroom proposed for the site will have a total of 40 students and 5 staff members. The 5 staff members will have parking spaces allocated for them, and as a result 5 inbound trips during the a.m. peak and 5 outbound trips during the p.m. peak were added to the trip generation for the subject site. The students will be informed that they do will not have any parking spaces allocated for them and be required to find an alternative mode of transportation for commuting to the subject site. As a result, the student component of the living classroom will not generate any additional new trips.

Site trips for the additional accessory uses were not included in the calculated trip generation for the subject site as they will be used primarily by residents and visitors and would not result in any significant volume of new site trips to the site generated by the general public. While some uses such as the Medical Centre, Spa and Salon and Ruby Restaurant may generate a small number of additional site trips from outside visitors, the volumes are expected to be small and will have a nominal impact to the operation of the study intersections.

For each of the proposed land uses, GHD compared the average rates to the fitted curve equation and adopted the rate that generated the highest volume of site trips for a more conservative analysis.

Table 2 below summarizes the estimated trip generation for the proposed development.

Table 2 Estimated Site Trips

Land Uses	Beds/ Dwelling Units	Parameters	Peak Hour					
			Weekday AM			Weekday PM		
			In	Out	Total	In	Out	Total
Assisted Living (LUC 254) - Phase 1	192 beds	Trip Ratio	60%	40%	100%	39%	61%	100%
		Gross Trips	21	14	35	18	28	46
Senior Adult Housing - Multifamily (LUC 252) – Full Build-out	530 units	Trip Ratio	34%	64%	100%	56%	44%	100%
		Gross Trips	36	70	106	74	59	133

Living Classroom – Phase 1	5 Staff	Gross Trips	5	0	5	0	5	5
Total Primary Trips (Phase 1)			***26***	***14***	***40***	***18***	***33***	***51***
Total Primary Trips (Full Build-out)			***62***	***84***	***141***	***92***	***92***	***179***

Phase 1 of the proposed Schlegel Village is expected to generate a total of 40 new two-way trips during the weekday a.m. peak hour consisting of 26 inbound and 14 outbound trips and 51 new two-way trips during the weekday p.m. peak hour consisting of 18 inbound and 33 outbound trips.

Full Build-out of the Schlegel Village is expected to generate a total of 141 new two-way trips during the weekday a.m. peak hour consisting of 62 inbound and 84 outbound trips and 179 new two-way trips during the weekday p.m. peak hour consisting of 92 inbound and 92 outbound trips.

5.2 Site Traffic Distribution and Assignment

The distribution of the site-generated traffic was based primarily on first principles and identifying the shortest routes available from Whitchurch-Stouffville and adjacent municipalities.

With the subject site located in the south-west corner of Whitchurch-Stouffville, it was assumed that half of the trips would arrive and leave from the Town as it's the nearest municipality and most visitors and staff members could be located nearby. The remaining trips would arrive from the north and south via Highway 48, with a larger portion (35%) arriving from the south with the City of Markham being the next nearest municipality.

The proposed trip distribution is summarized in **Table 3** below.

Table 3 Trip Distribution

Origin/Destination	AM Peak Hour		PM Peak Hour	
	Percentage of Inbound Trips	Percentage of Outbound Trips	Percentage of Inbound Trips	Percentage of Outbound Trips
North (Highway 48)	15%	15%	15%	15%
South (Highway 48)	35%	35%	35%	35%
East (Hoover Park Drive)	50%	50%	50%	50%
Total	**100%**	**100%**	**100%**	**100%**

The distribution of site trips between the north (visitors) and south (staff) parking lots was based on the number of spaces available in each lot.

For Phase 1, all trips arriving and leaving from the north parking lot were assumed to use the full-moves driveway along Hoover Park Drive and all trips from the south parking lot were assumed to use the temporary access from the adjacent commercial parking lot. Trips to/from the south accessing the south parking lot would use Sam's Way and the commercial parking lot and would not appear in any of the study intersections. For full build-out, trips to/from the south and the south parking lot would use Sam's Way and the Rougeview Avenue extension to access the parking site.

The estimated site trips generated by the proposed development and distributed to the study area road network for the weekday a.m. and p.m. peak hours are shown in **Figure 13** (Phase 1) and **Figure 14** (Full Build-out).

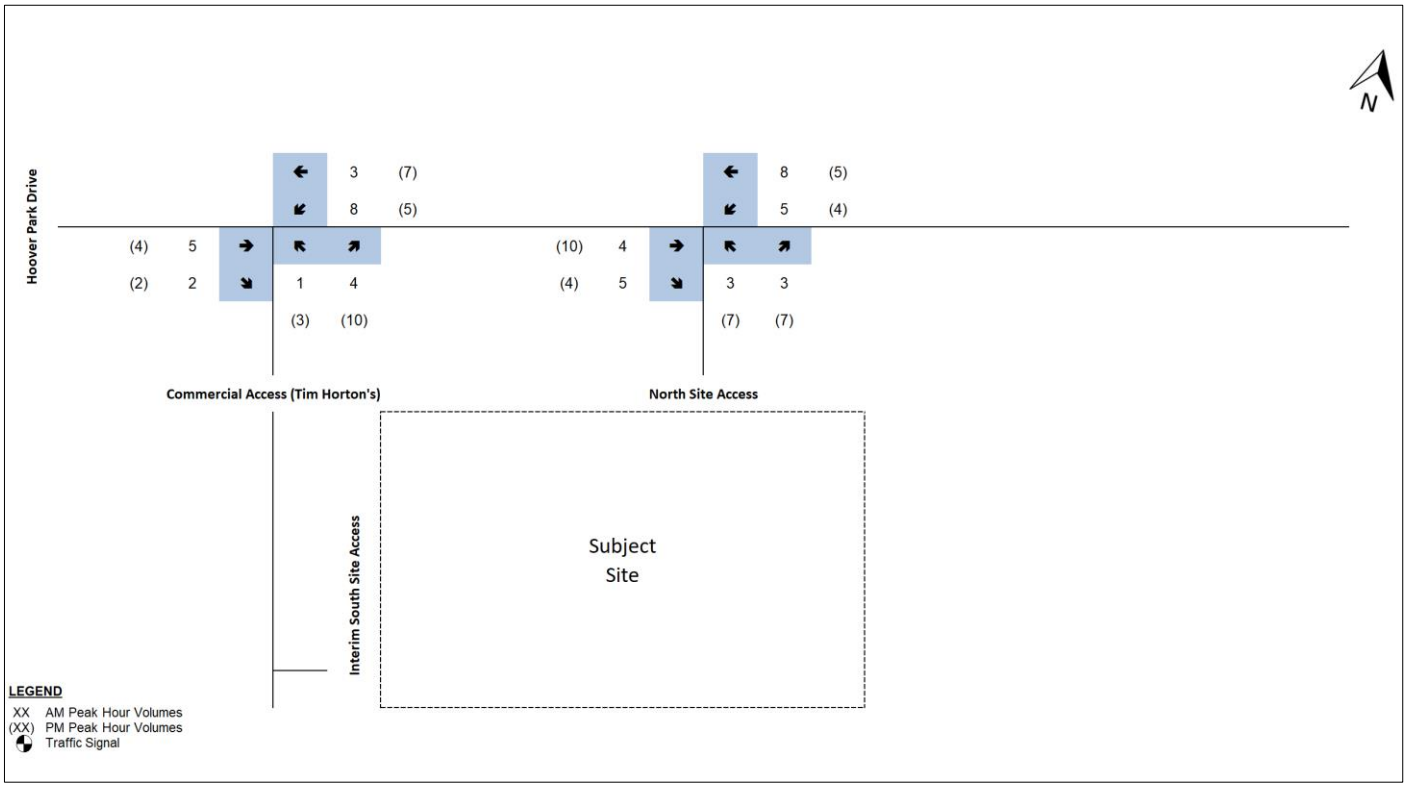


Figure 13 Phase 1 Site Trips

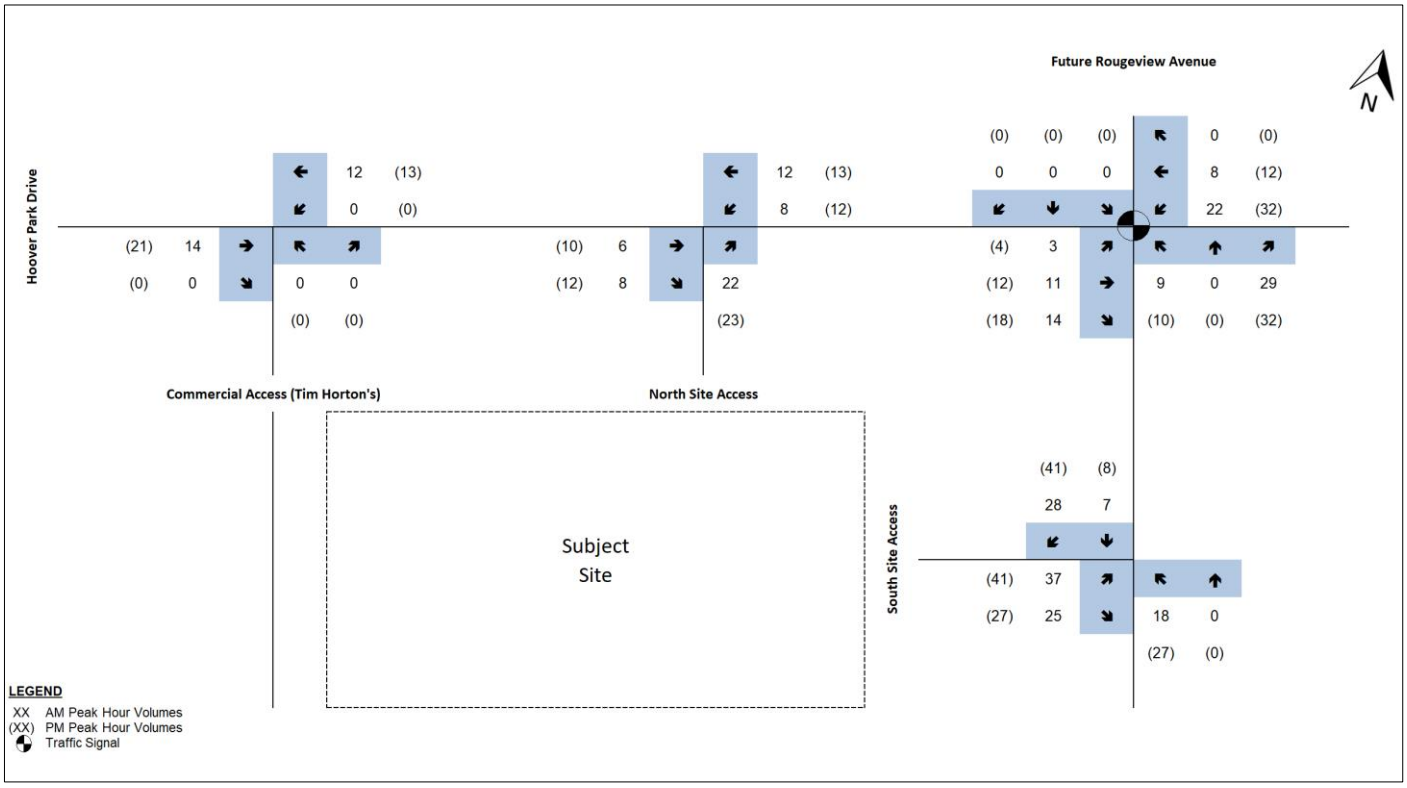


Figure 14 Full Build-out Site Trips

May 18, 2022

Long & MCQuade Limited
722 Rosebank Road
Pickering ON L1W 4B2

Attention: Mr. Stephan Leenheer

Re: Transportation Study
Proposed Commercial Development
Sam's Way – East of HWY 48
Town of Whitchurch-Stouffville, York Region

CGE Transportation Consulting is pleased to submit this Transportation Study for the proposed two storey commercial building located at the north side of Sam's Way approximately 450 metres east of HWY 48, in the Town Whitchurch-Stouffville.

This report concludes that the incremental site traffic generated by the proposed development can be accommodated by the existing transportation network, no roadway improvements are required. The proposed site accesses can adequately support the forecasted traffic operations.

Should you have any questions regarding this study, please do not hesitate to contact the undersigned.

Yours truly,

CGE TRANSPORTATION CONSULTING



Casey Ge, P.Eng.
President

4.2 Site Traffic Projection

4.2.1 Trip Generation

The projection of new additional traffic volumes generated by the development proposal is estimated based on the *Trip Generation Manual, 10th Edition,* published by the Institute of Transportation Engineers (ITE) for Commercial land use. There isn't exactly a music store land use in the Manual; therefore, for a conservative approach we used "Shopping Center" for the entire site. In addition, no reductions (non-auto modes or pass-by trips) were applied.

Table 2 summarizes the total site trip generation for the proposed development.

Table 2 Site Trip Generation

Parameters	Peak Hour Trip Generation for LUC 820 Shopping Centre					
	Weekday PM			Saturday Peak		
	In	Out	Total	In	Out	Total
Trips	87	95	182	96	89	185
Rates	3.81	4.17	7.98	4.21	3.90	8.11

Based on the foregoing, the development proposal is anticipated to generate 182 two-way trips during the weekday afternoon peak hour and 185 two-way trips during the Saturday peak hour.

4.2.2 Trip Distribution

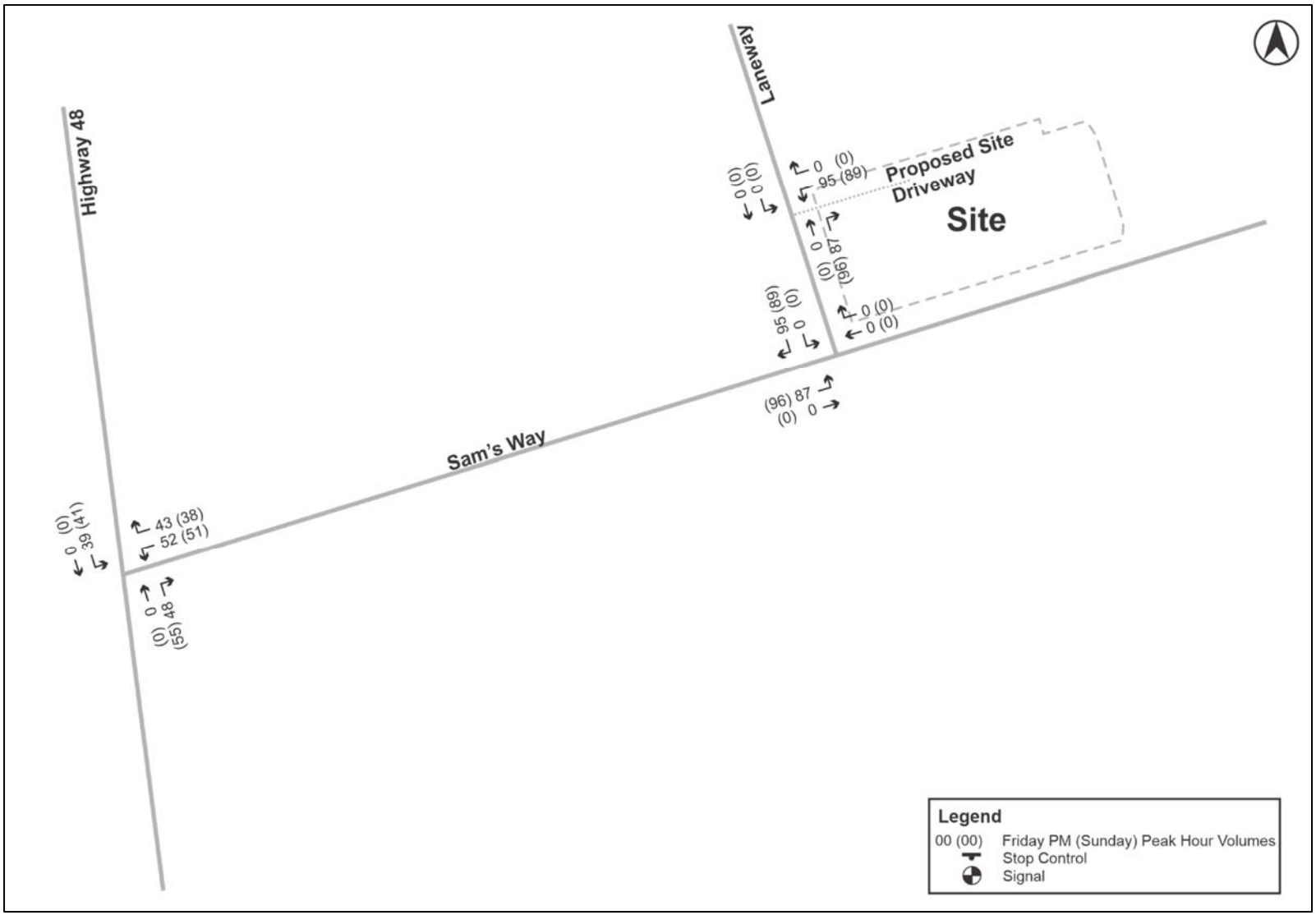
The directional orientation of the site traffic has been estimated on the basis of the observed traffic patterns in the study area and the population distribution within commuting distance.

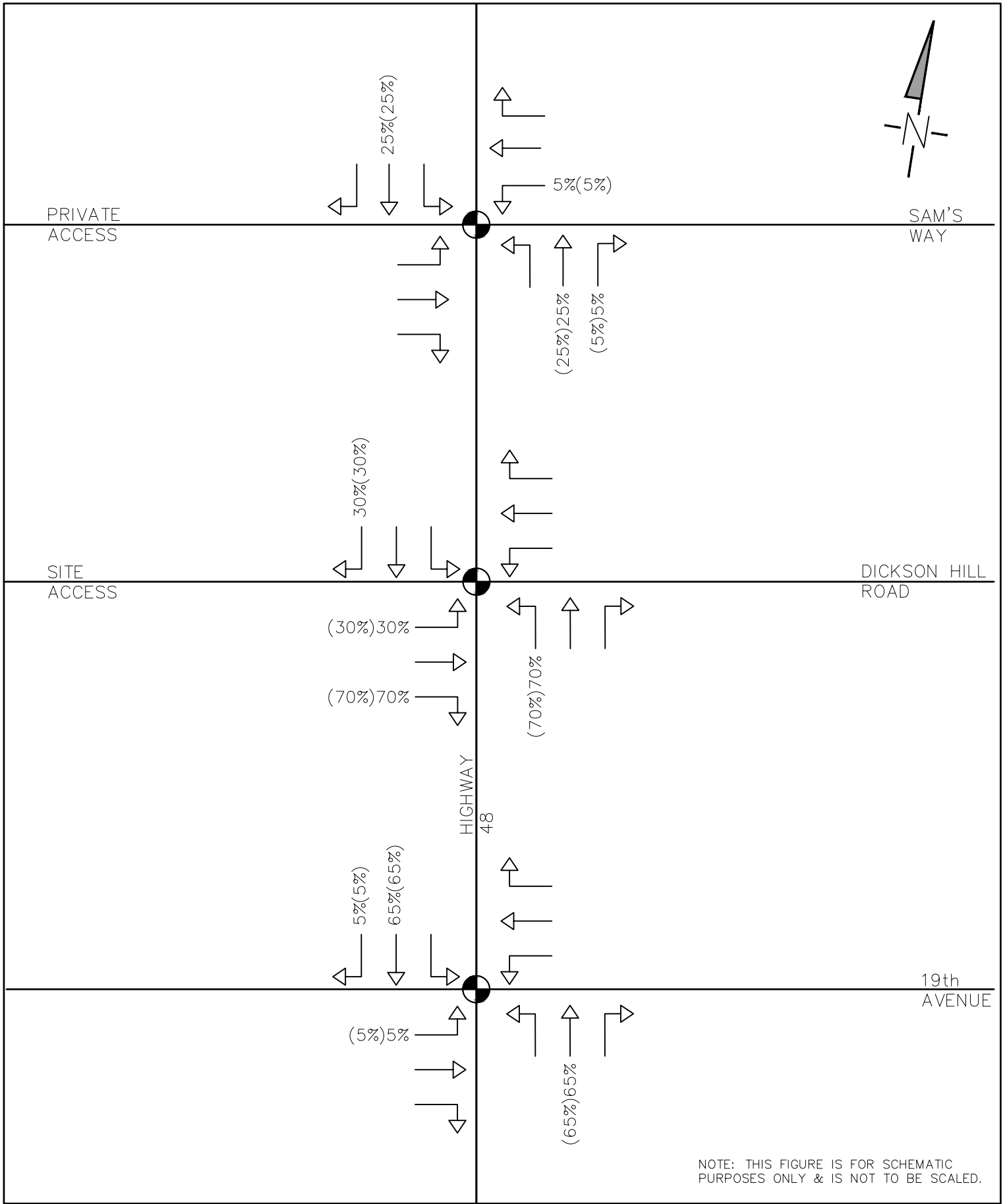
Table 3 summaries the applied trip distribution pattern and new site traffic volumes are illustrated in **Figure 8**.

Table 3 Site Trip Distribution

Direction	Weekday PM Peak Hour	Saturday Peak Hour
	In / Out	
North (HWY 48)	45%	43%
South (HWY 48)	55%	57%
Total	100%	100%

Figure 8 New Site Traffic Volumes





Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

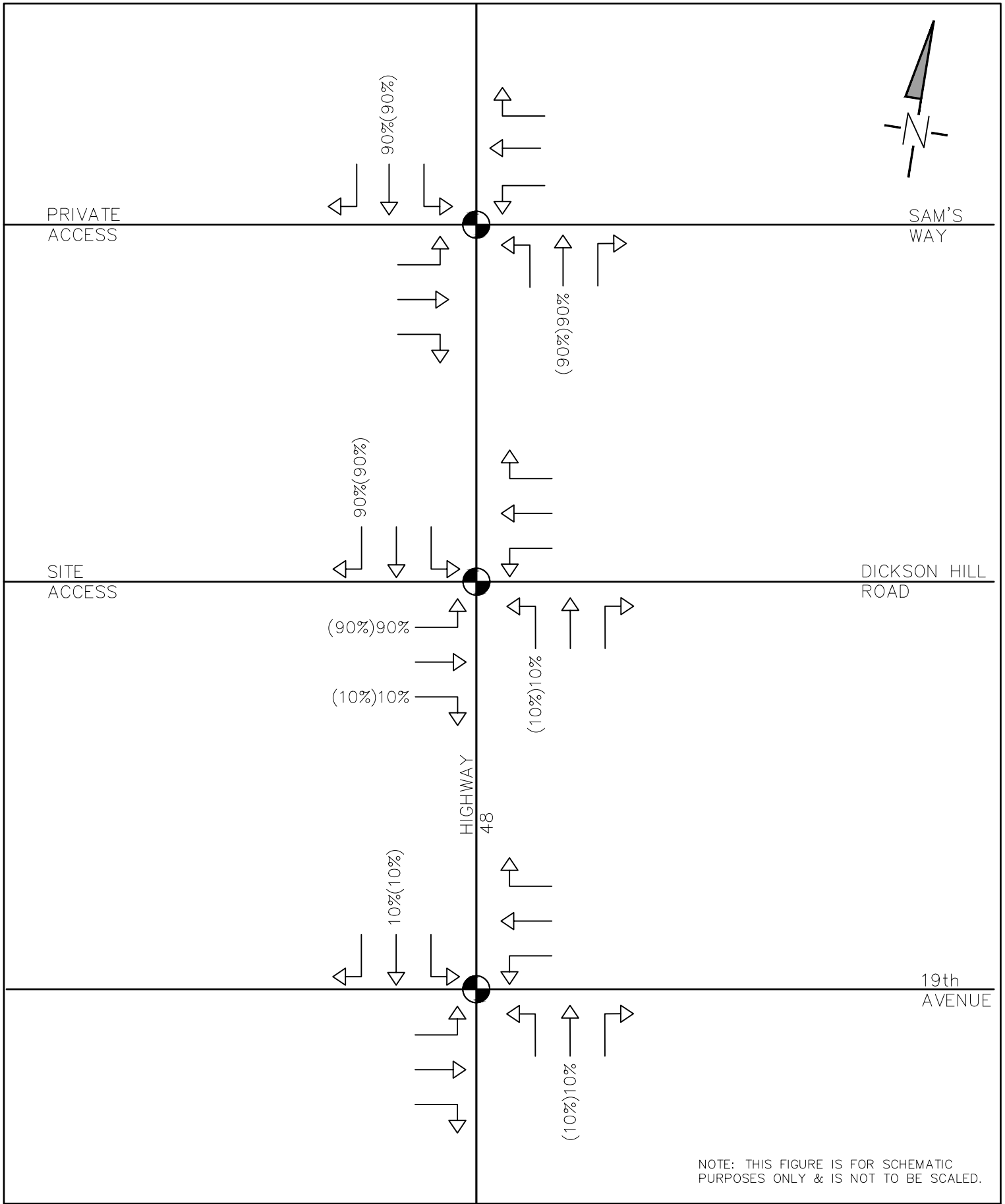
Project: FLATO UPPER MARKHAM VILLAGE
TOWN OF WHITCHURCH–STOUFFVILLE

Drawing: RESIDENTIAL TRIP DISTRIBUTION

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	Scale	Date	Check By	Drawing
S.K.	M.F.	1060–5609	N.T.S.	2020/11/30	A.F.	FIG. 9

J:\1000\1060-Flato Dev\5609-Flato Markham Stouffville\CAD\TRANSPORTATION_Sheets\5609_Figures.dwg, FIG 9, 2020-12-01 4:24:27 PM, skerr



Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

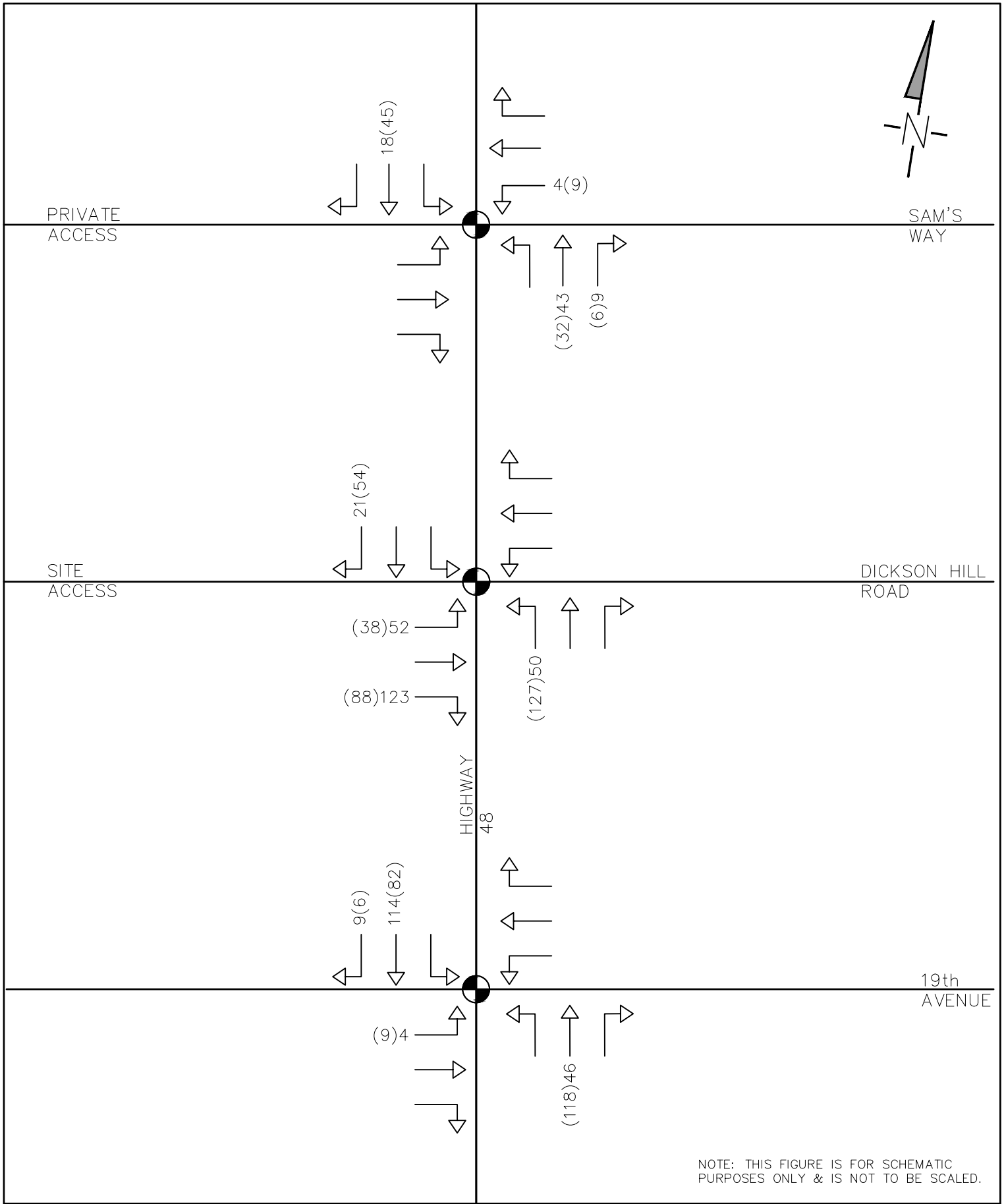
Project: FLATO UPPER MARKHAM VILLAGE
TOWN OF WHITCHURCH–STOUFFVILLE

Drawing: MEDICAL TRIP DISTRIBUTION

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	Scale	Date	Check By	Drawing
S.K.	M.F.	1060–5609	N.T.S.	2020/11/30	A.F.	FIG. 10

J:\1000\1060-Flato Dev\5609-Flato Markham Stouffville\CAD\TRANSPORTATION_Sheets\5609_Figures.dwg, FIG 10, 2020-12-01 4:24:32 PM, skerr



Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

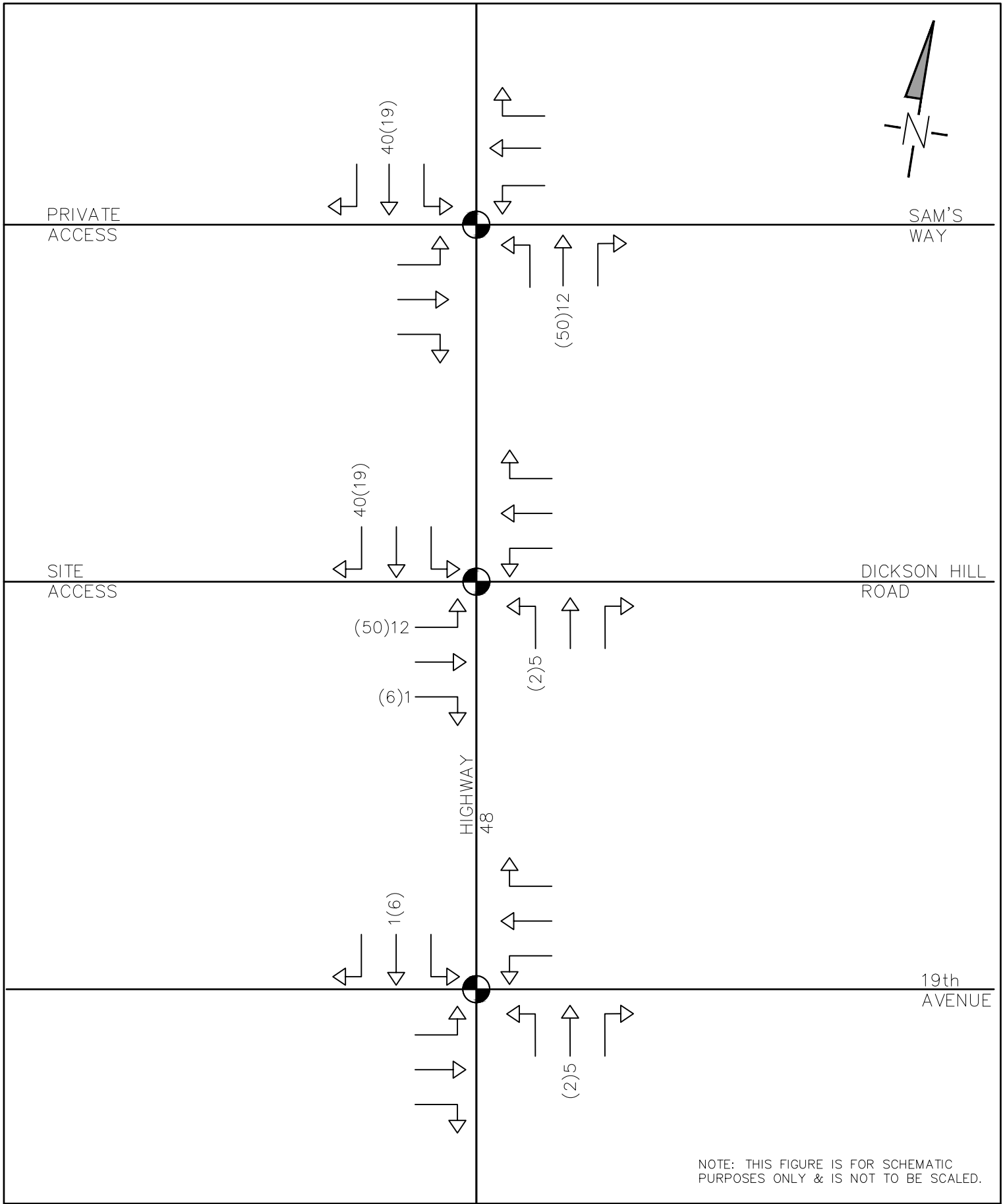
Project: FLATO UPPER MARKHAM VILLAGE
TOWN OF WHITCHURCH–STOUFFVILLE

Drawing: RESIDENTIAL TRIP ASSIGNMENT

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
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Drawn By	Design By	Project	Scale	Date	Check By	Drawing
S.K.	M.F.	1060–5609	N.T.S.	2020/11/30	A.F.	FIG. 11

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Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project: FLATO UPPER MARKHAM VILLAGE
TOWN OF WHITCHURCH–STOUFFVILLE

Drawing: MEDICAL TRIP ASSIGNMENT

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	Scale	Date	Check By	Drawing
S.K.	M.F.	1060–5609	N.T.S.	2020/11/30	A.F.	FIG. 12

J:\1000\1060-Flato Dev\5609-Flato Markham Stouffville\CAD\TRANSPORTATION_Sheets\5609_Figures.dwg, FIG 12, 2020-12-01 4:24:42 PM, skerr

Baker Hill Development 5400, 5472 and 5508 Main Street, Stouffville

Traffic Impact Study

Project Number: 60528715

January, 2019

Norstar Baker Hill Inc.
7077 Keele Street, Suite 102
Concord, ON L4K 0B6

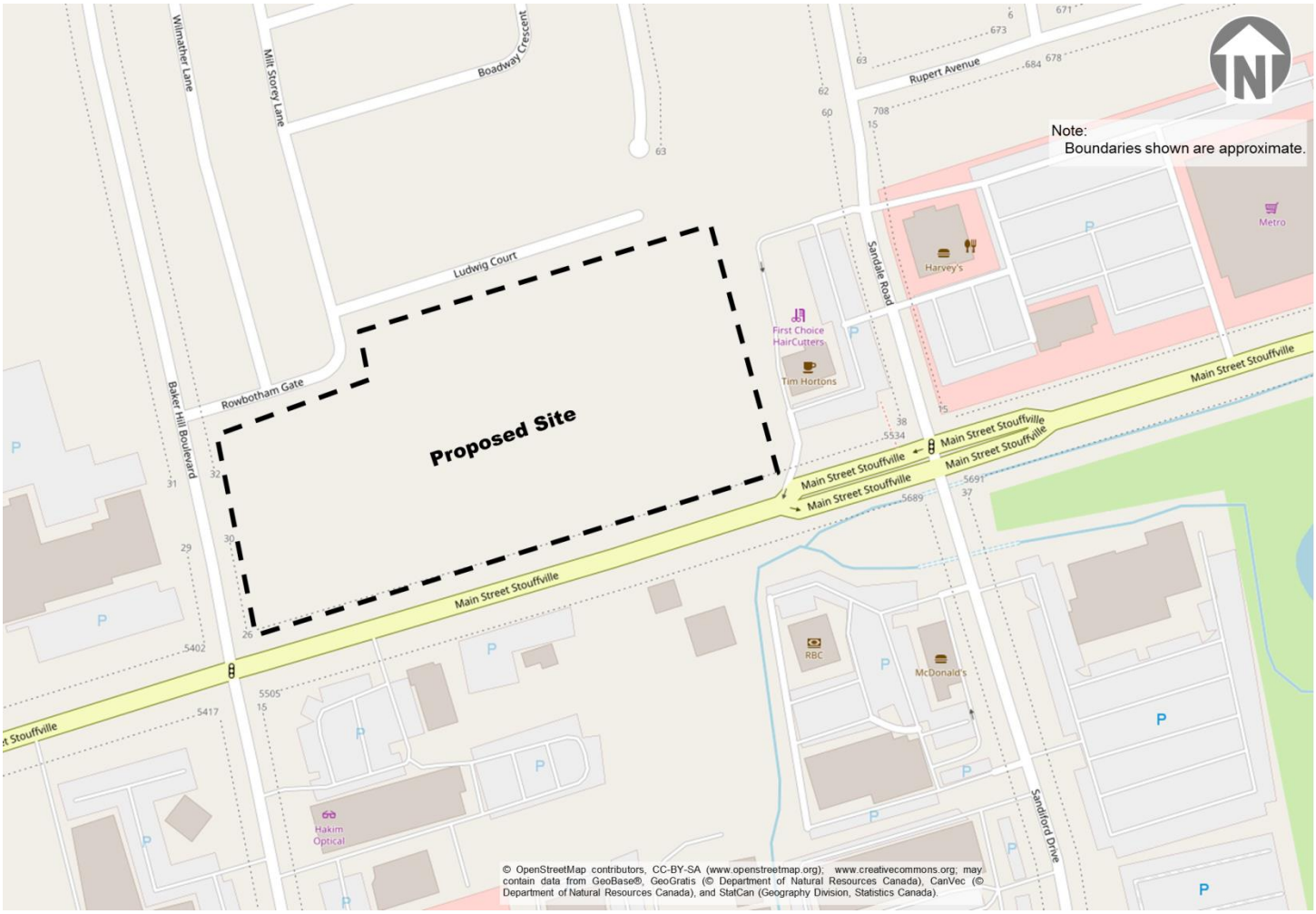


Figure 1-1: Study Area

1.3 Development Proposal

The proposed residential development is planned to consist of 147 townhouse units. The 31 townhouse units fronting Main Street are configured as live-work units. Each unit has approximately 16.3 m^2 (175 ft^2) commercial space on the ground floor for a total of 505.3 m^2 (5,425 ft^2). A total of 21 and 10 parking spaces are provided for residential visitors and commercial purposes, respectively. In addition, the site includes an entry plaza on the NE corner of the Main Street / Baker Hill Boulevard intersection and outdoor amenity space with an area of 640m^2 (6,889 ft^2). Site accesses are proposed on the south side of the property on Main Street and the northwest side of the site at the Rowbotham Gate/Wilmather Lane intersection. The proposed draft site plan for the residential development is attached in **Appendix A**.

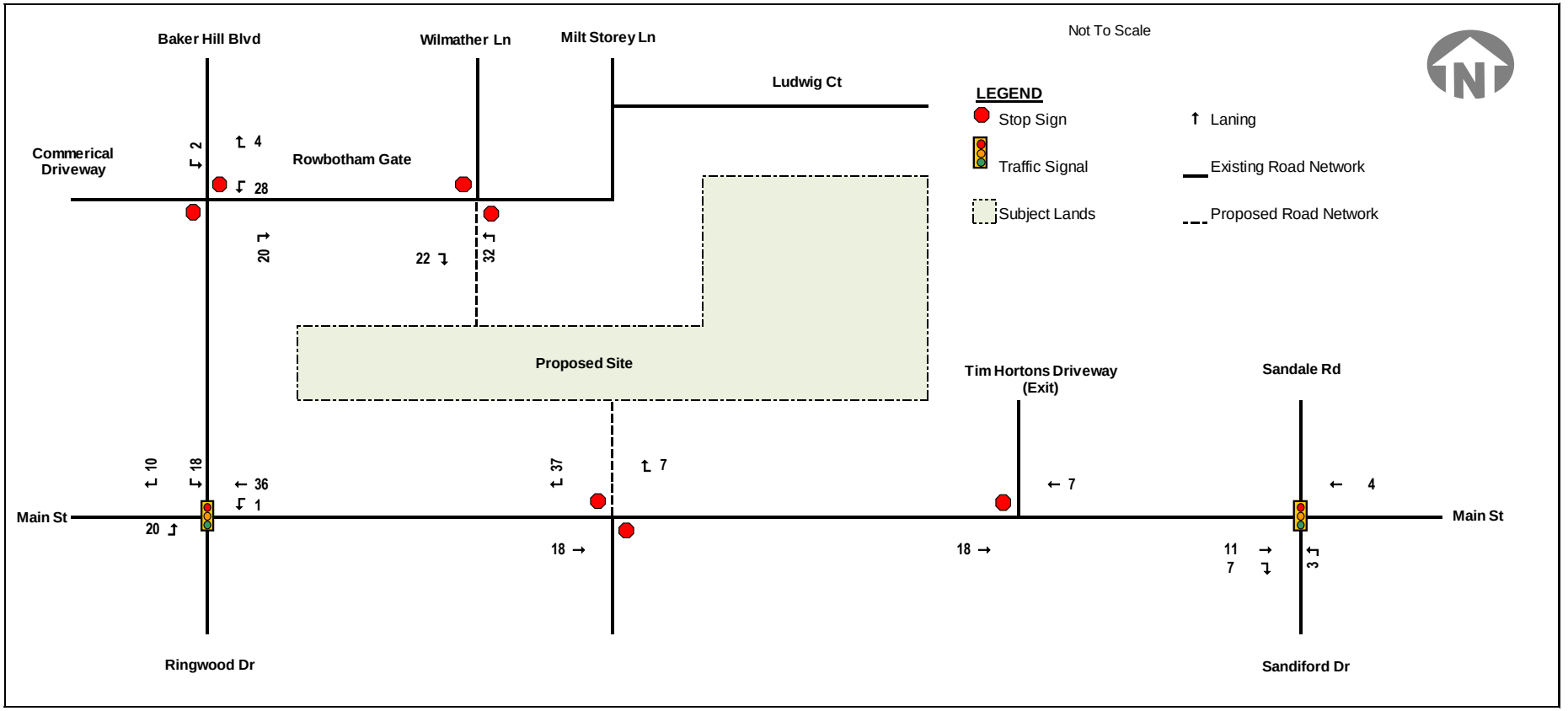


Figure 6-4: Site Traffic AM Peak Hour

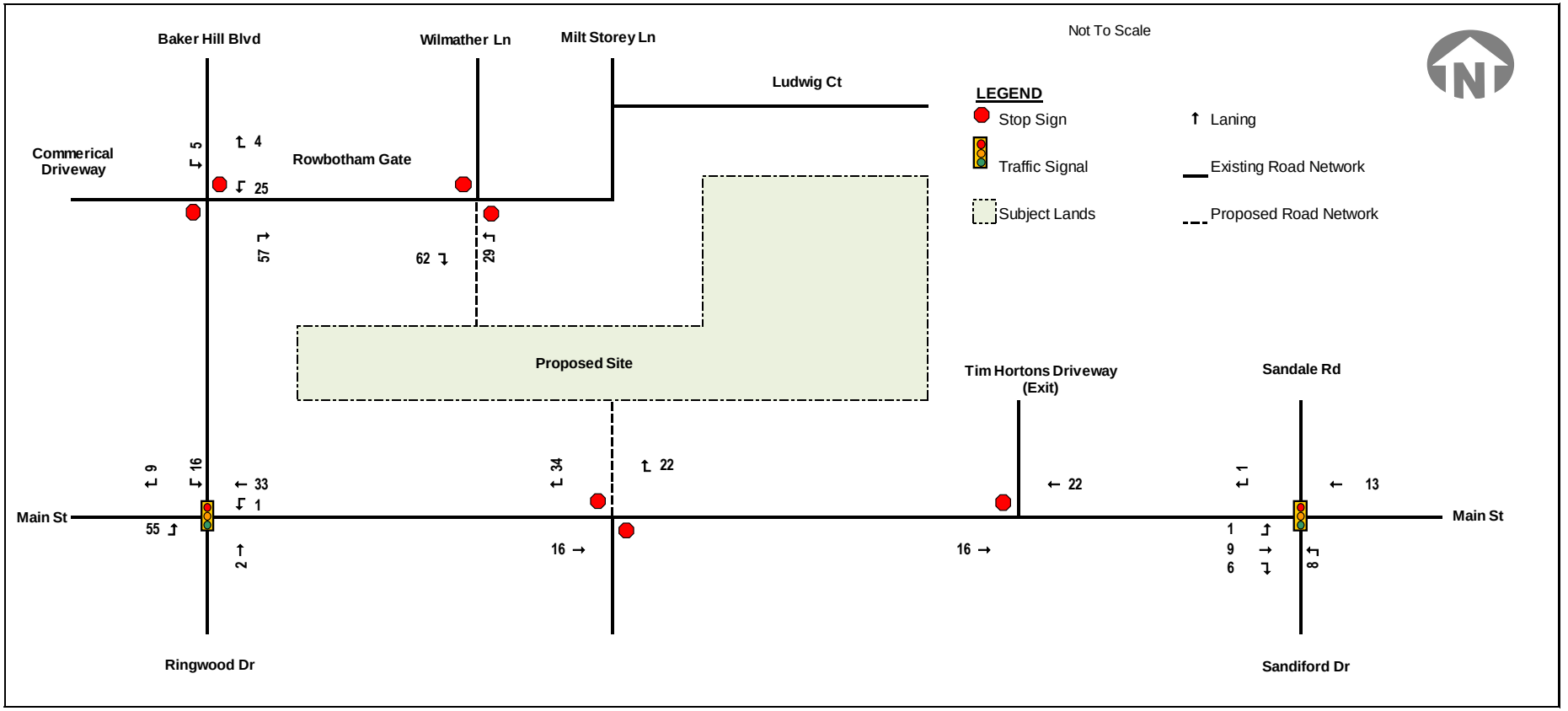


Figure 6-5: Site Traffic PM Peak Hour

LEA Consulting Ltd.
425 University Ave, Suite 400
Toronto, ON, M5G 1T6 Canada
T | 905 470 0015 F | 905 470 0030
WWW.LEA.CA

March 8th, 2023

Reference Number: 19347

Thomas Yeung
Senior Project Director
TopFar Developments
50 Acadia Avenue, Suite 100
Markham, ON L3R 0B3

Dear Mr. Yeung,

RE: 5531 Main Street Transportation Mobility Plan (TMP) – SPA Resubmission Letter

LEA Consulting Ltd. (LEA) is pleased to submit this TMP SPA letter for the proposed development at 5531 Main Street in Whitchurch-Stouffville, Ontario. By way of background, LEA prepared a TMP dated October 2019, as well as updated TMP reports in July 2020, December 2020, October 2021, and March 2022 in response to comments received from the Town and peer reviewers. A June 2022 resubmission letter was also provided to support a rezoning submission. The following letter provides a response to the peer reviewer comments received on the March 2022 TIS resubmission.

Since March 2022, the development proposal has been slightly revised. A comparison of the site statistics between the previous and current proposals is provided below in **Table 1-1.**

Table 1-1: Site Statistics Comparison

Land Use	Previous Statistics (March 2022)	Current Statistics (March 2023)	Difference
Residential	309 units	319 units	+10 units
Retail GFA	814.17 sq. m.	732.35 sq. m.	-81.82 sq.m.
Vehicular Parking	329 Residential (1.06 per unit) 25 Retail (3 per 100 sq. m.) 78 Visitor (0.25 per unit)	330 Residential (1.03 per unit) 22 Retail (3 per 100 sq. m.) 80 Visitor (0.25 per unit)	+1 Residential -3 Retail +2 Visitor

2.3 SITE TRIP GENERATION

Site trip generation was undertaken using the same methodology applied as part of the previous TIS report, utilizing the latest site statistics. **Table 2-1** details the updated site vehicle trip generation.

Table 2-1: Site Vehicle Trip Generation

	Weekday AM Peak Hour			Weekday PM Peak Hour		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Condominium (319 Units)						
ITE Trip Rates – LUC 222 (per unit)	0.07	0.24	0.31	0.22	0.14	0.36
Residential External Auto Trips	22	77	99	70	45	115
Conversion to Person Trips	28	87	115	84	57	141
Internal Person Trips	0	1	1	5	2	7
Residential External Auto Trips	22	76	98	66	43	109
Retail (732.35 m^2 or 7883 ft^2)						
ITE Trip Rates – LUC 820 (per 1000 ft^2)	0.58	0.36	0.94	1.83	1.98	3.81
Retail Baseline Trips	5	2	7	14	16	30
Conversion to Person Trips	6	2	8	17	19	36
Internal Person Trips	1	0	1	2	5	7
Conversion to Auto Trips	4	2	6	12	12	24
Pass-by Trips (AM: 0%; PM: 34%)				4	4	8
Retail External Auto Trips	4	2	6	8	8	16
Total ITE Trip Gen. External Auto Trips	**26**	**78**	**104**	**74**	**51**	**125**
GO Train Riders via Auto		2	2	5		5
Total External Auto Trips	**26**	**80**	**106**	**79**	**51**	**130**
Previous Development Concept (March 2022)	*26*	*78*	*104*	*79*	*49*	*128*
Net Difference	-	+2	+2	-	+2	+2

The site is predicted to generate 106 and 130 two-way vehicle trips during the weekday AM and PM peak hour respectively. This represents an additional 2 vehicle trips per hour relative to the previous TIS report.

Site traffic was assigned based on the provision of an outbound access on to Ringwood Drive and a right-in/right-out access on Main Street.

Figure 2-3 details the assignment of site traffic, including the commercial passby trip adjustment at the site access on Main Street. **Figure 2-4** details future total traffic during the weekday AM and PM peak hour.

Figure 2-3: Site Traffic – Weekday AM (PM) Peak Hour

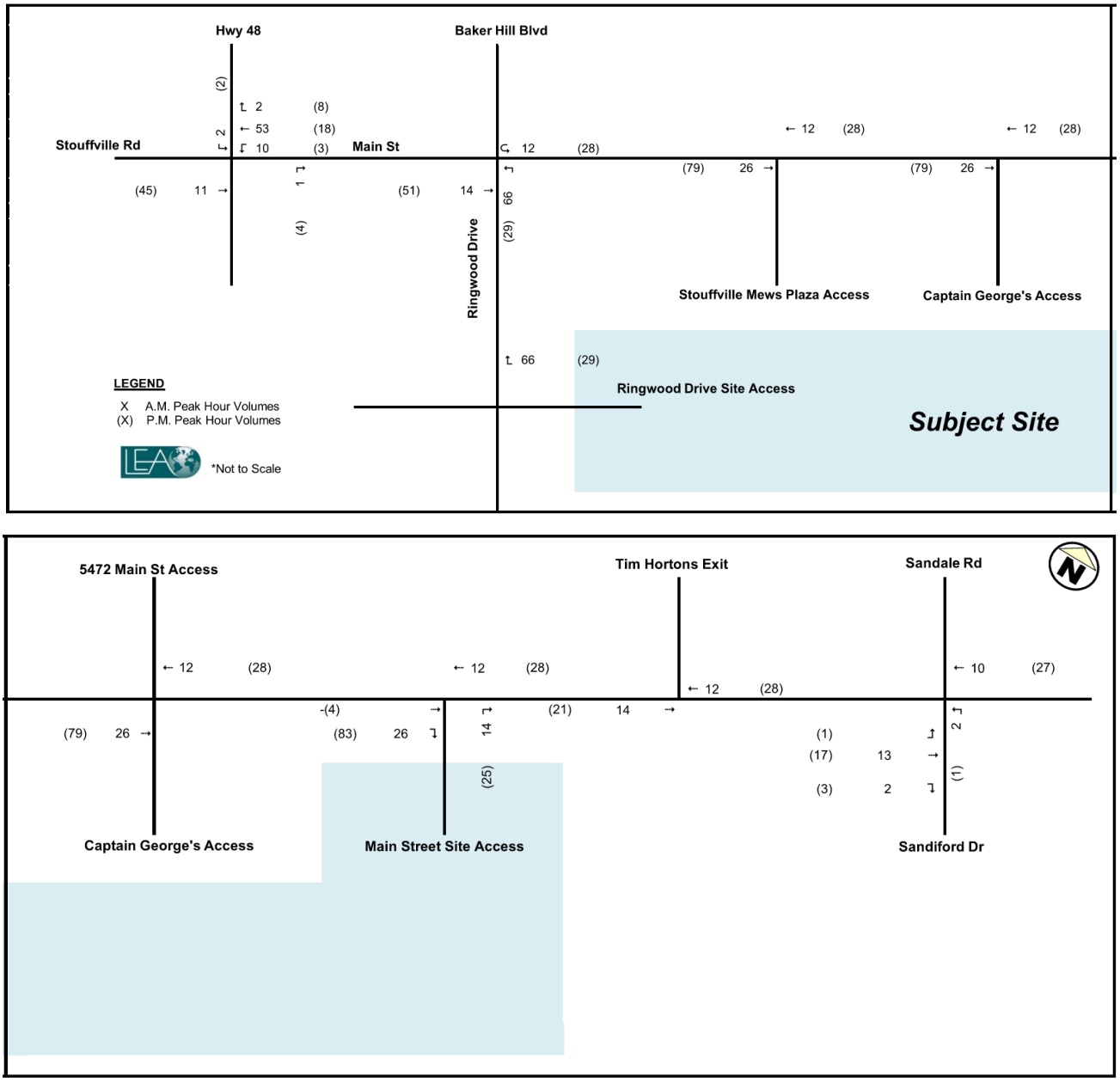
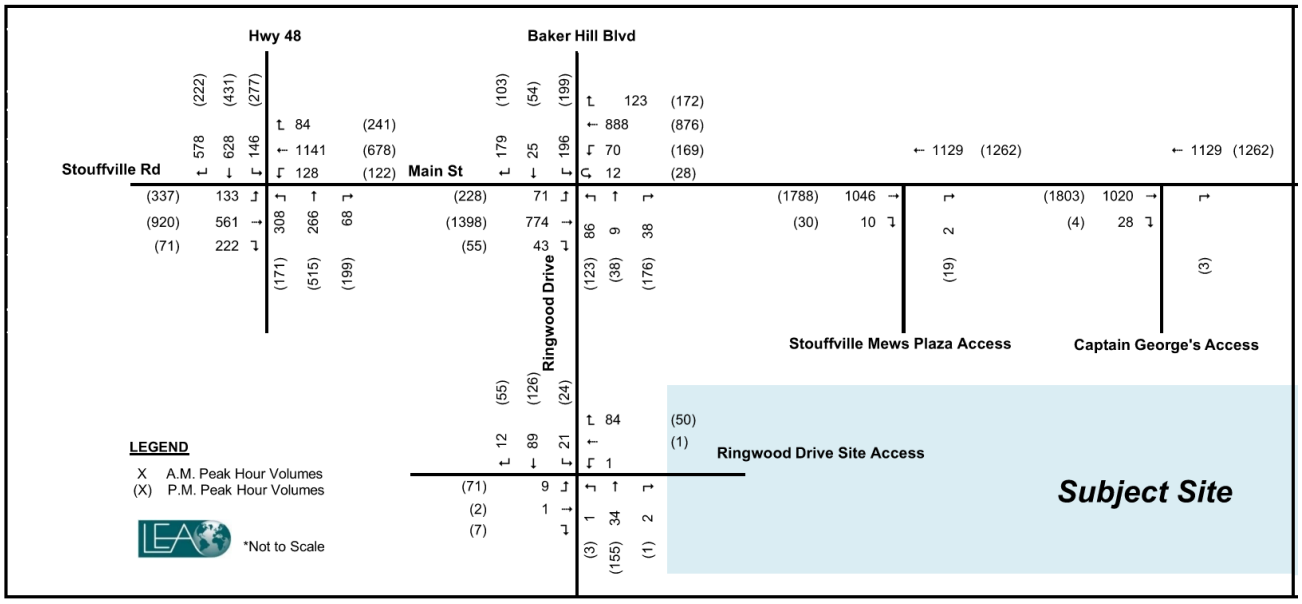
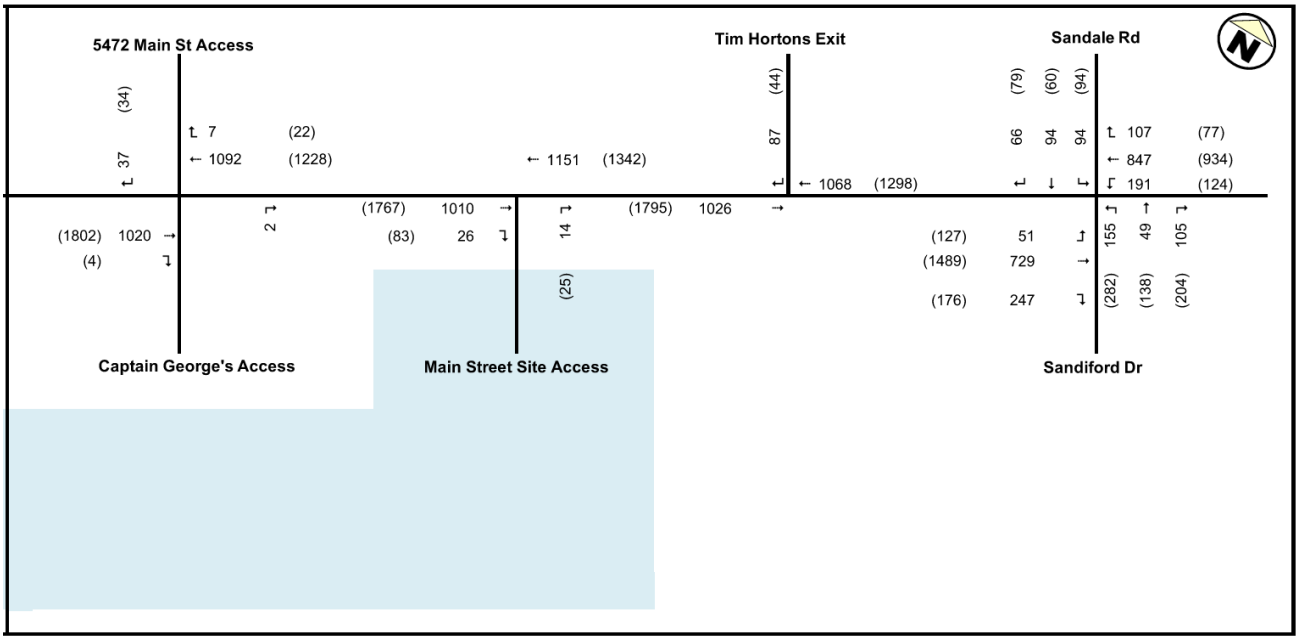


Figure 2-4: Future Total Traffic – Weekday AM (PM) Peak Hour





there will be 84% growth while the remaining areas will experience very little growth or some negative growth due to aging and migration to urban centres.

Table 3-1: Population and Employment by Settlement Area

Secondary Plan Area	Population			Employment			Growth (2011 to 2031)	
	2011	2021	2031	2011	2021	2031	Population	Employment
Stouffville	24,800	38,200	45,600	7,800	14,100	16,700	84%	114%
Gormley	700	700	700	2,300	2,600	2,800	0%	22%
Vandorf	1,600	1,500	1,500	900	800	800	-6%	-11%
Ballantrae	6,400	6,900	7,100	800	1,000	1,000	11%	25%
Rural	5,800	5,800	5,700	1,800	1,700	1,700	-2%	-6%
Total	**39,300**	**53,100**	**60,600**	**13,600**	**20,200**	**23,000**	**54%**	**69%**

Source: York Region

Similarly, employment growth will also be focused in the Community of Stouffville at 114% growth (doubling), followed by 25% and 22% employment growth in Ballantrae and Gormley, respectively.

3.3.3 Modal Share

Modal share describes the proportion of trips made within a specified time period by various travel modes including walking, cycling, transit, auto drivers and auto passengers. The modal share for weekday AM and PM peak period travel by Town residents is illustrated in **Exhibit 3-8.**

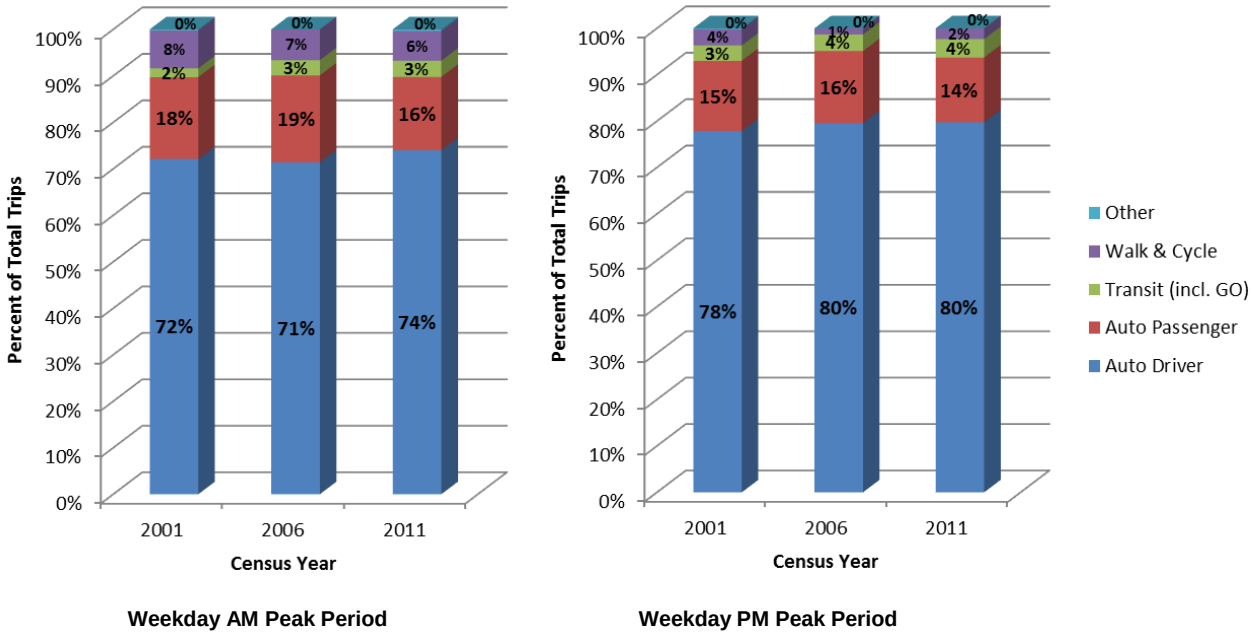


Exhibit 3-8: Modal Share

Modal share has remained relatively constant between 2001 and 2011 as the Town's urban and rural form and transportation network have changed very little in that time despite significant population growth between 2006 and 2011. The vast majority of trips within the community are completed with private auto. During the weekday AM peak period there is a higher proportion of auto passenger trips as well as walk and cycle trips, as the AM peak is typically composed of a higher number of commuter (work) and school trips. Trips by students on school buses are also captured under auto passengers. It is likely that the higher proportion of auto passenger and walk and cycle trips is due to students being driven to school, taking the school bus, and walking and cycling to school. In the PM peak period, which falls after the school hours, most students have already returned home from school, thus there are a greater proportion of auto-driver trips reflecting the employees returning home from work.

3.3.4 Employment Survey Travel Trends

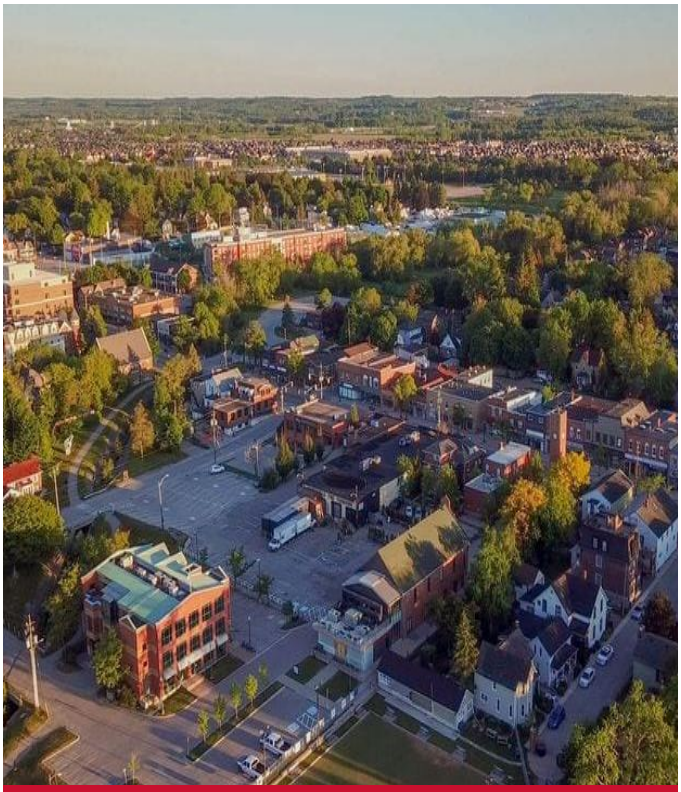
Smart-Commute Central York conducted Employee Commuter Travel Habits surveys for two major employers in the Town – the Town of Whitchurch-Stouffville and Strategic Information Technology Ltd. (SIT), a software company with its head offices in Stouffville. The first was conducted in 2013 for the Town of Whitchurch-Stouffville and the second in 2014 for SIT. The results of these surveys provide a snapshot of specific employers in Town to supplement the TTS data. The detailed surveys are provided in **Appendix B**.

The Town of Whitchurch-Stouffville employs approximately 150 full-time staff of which 96% drive alone, 1% carpool and 3% walk. This modal share is similar to overall Town results from the TTS with the exception of very few carpool trips. This low proportion of carpool trips may be a function of the specific origin locations of Town employees as 50% of survey respondents indicated that they need help finding suitable people to share the ride with. The need for their car for work was the second highest barrier to carpooling.

SIT employs approximately 161 persons, of which 79% drive alone, 14% carpool 2% take transit, 2% walk, and the remaining 3% get dropped off, telework, or vanpool (employee subsidized). This modal share is similar to overall Town results.

3.3.5 Travel Distribution in the Town

The internal distribution of trips within the Town is illustrated in **Exhibit 3-9**. In the AM peak period approximately 5,800 trips are made for all trip purposes. The Community of Stouffville is the focal point of travel with 74% trips internal to Stouffville and another 12% of trips destined to or from Stouffville from another part of the Town. Ballantrae-Musselman Lake is the next largest generator of trips while rural areas tend to generate more travel than Vandorf or Gormley.



Whitchurch-Stouffville Transportation Master Plan Update

Final Report

Town of Whitchurch-Stouffville

April 3, 2024

hdrinc.com 100 York Boulevard, Suite 300, Richmond Hill, ON CA L4B 1J8
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2 Planning Framework

Planning guidance that informs this TMP study includes strategic documents from the Province of Ontario, the Regional Municipality of York, and the Town. Relevant documents are identified and summarized in this section. Details are documented in **Appendix B**: Background Conditions Report.

2.1 The Provincial Planning Context

A number of provincial policy documents provide the basis and guidance for the transportation vision for this TMP study. Relevant provincial plans are identified and summarized in **Table 2-1**.

Table 2-1: Provincial Planning Policies

Provincial Planning Document	Directions
Connecting the GGH: A Transportation Plan for the Greater Golden Horseshoe, 2022	The province released the Connecting the GGH: A Transportation Plan for the Greater Golden Horseshoe in February 2022. The report consists of a long-term transportation plan for the Greater Golden Horseshoe (GGH), outlining a 30-year vision for enhanced mobility within and across the GGH region and Ontario. The province has outlined the following planned road improvement within Whitchurch-Stouffville: 1. Committed Widening on Highway 404 between Highway 407 to Stouffville Road; and 2. New Capacity Expansion on Highway 48 between Major Mackenzie Drive to Bloomington Road.
Provincial Policy Statement, 2020	The Provincial Policy Statement (PPS) provides policy direction for land use planning and development in Ontario. The policy guides the appropriate use of land and its associated developments while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. Within settlement areas, land use patterns should efficiently use resources, infrastructure, and public service facilities; minimize negative impacts on air quality and climate change; prepare for the impacts of a changing climate; and, support active transportation, transit and freight. The PPS requires municipalities to protect corridors and rights-of-way for infrastructure, including transportation and transit purposes. New developments adjacent to the corridors shall be compatible with, and supportive of, the long-term purpose of the identified corridor.
A Place to Grow: Growth Plan for the Greater Golder Horseshoe, 2020	The Growth Plan projects the Greater Golden Horseshoe (GGH) to grow to, at a minimum, 14.8 million people and 7.0 million jobs by 2051. Within York Region, population and employment are expected to grow to 2,020,000 and 990,000 respectively. The Growth Plan for GGH sets minimum density targets of not less than 50 residents and jobs combined per hectare for developments within designated Greenfield Areas and 150 residents and jobs combined per hectare for those that are served by the GO Transit rail network. The Growth Plan for GGH also encourages the transportation system within the GGH to actively promote transit and

3.6.2 Currently Planned Road Improvements

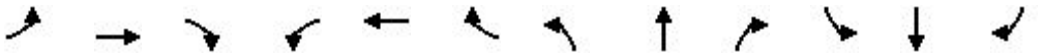
There are a number of future roadway improvements planned by York Region or by MTO which will affect the Town's future travel patterns and needs. These improvements are summarized in **Table 3-11** and are assumed in the 2051 base WSTMP model. It is noted that all the roads widening projects identified as involving widening up to four lanes and widening up to six lanes, as applicable, are subject to further study and review to determine the preferred solution.

Table 3-11: Currently Planned Future Road Improvements

Listed Future Road Improvement	Representation in 2051 WSTMP Model
Within Whitchurch-Stouffville	
Committed Widening on Highway 404 between Highway 407 to Stouffville Road	Addition of an HOV lane per direction in 2051 that is 3 general purpose lanes + 1 HOV lane per direction in 2051
New Capacity Expansion on Highway 48 between Major Mackenzie Drive to Bloomington Road	Highway 48 widened from 1 lane to 2 lanes per direction between Donald Cousins to Stouffville Road
An interchange between Highway 404 and St John's Sideroad	Exists in 2051 model
Completion of a full interchange between Highway 404 and Vivian Road	Full interchange in 2051, partially exists in 2016 model
Outside Whitchurch-Stouffville, in the vicinity	
Widening of Donald Cousens between 16th Avenue and Major Mackenzie with an extension to Highway 48	Donald Cousens Parkway widened from 1 lane to 2 lanes per direction between 16th Avenue and Major Mackenzie Donald Cousens Parkway extended from current terminus to Highway 48
Widening of 19th Avenue between Leslie and Warden Avenue	19th Avenue widened from 1 lane to 2 lanes per direction between Bayview Avenue and Warden Avenue
Widening of Elgin Mills between Woodbine Avenue and Highway 48	Elgin Mills widened from 1 to 2 lanes per direction between Woodbine Avenue and Highway 48
Midblock overpass over Highway 404 between Elgin Mills Road and 19th Avenue	4-lane overpass added to 2051 network
Midblock overpass over Highway 404 between Elgin Mills Road and Major Mackenzie Drive	4-lane overpass added to 2051 network
Midblock overpass over Highway 404 between Major Mackenzie Drive and 16th Avenue	4-lane overpass added to 2051 network
Widening on Warden Avenue between 19th and Major Mackenzie Drive	Warden Avenue widened from 1 lane to 2 lanes per direction between 19th Avenue and Major Mackenzie Drive

Appendix D

Synchro and SimTraffic Reports



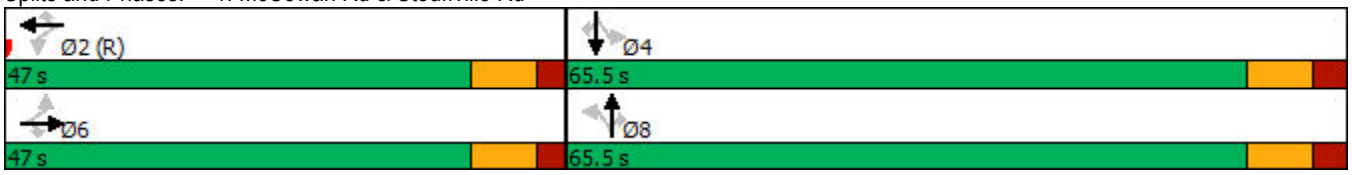
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	585	190	122	699	16	151	71	79	18	69	33
Future Volume (vph)	32	585	190	122	699	16	151	71	79	18	69	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1507	1684	3275	1389
Flt Permitted	0.321			0.379			0.702			0.700		
Satd. Flow (perm)	586	3433	1493	666	3400	1507	1256	3336	1487	1240	3275	1389
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			224			53			78			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Adj. Flow (vph)	38	688	224	144	822	19	178	84	93	21	81	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	688	224	144	822	19	178	84	93	21	81	39
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	72.9	72.9	72.9	72.9	72.9	72.9	23.1	23.1	23.1	23.1	23.1	23.1
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.65	0.65	0.21	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.10	0.31	0.21	0.33	0.37	0.02	0.69	0.12	0.25	0.08	0.12	0.12
Control Delay	11.2	10.4	2.1	14.0	11.1	0.1	53.7	33.8	11.0	32.2	33.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	10.4	2.1	14.0	11.1	0.1	53.7	33.8	11.0	32.2	33.7	7.1
LOS	B	B	A	B	B	A	D	C	B	C	C	A
Approach Delay		8.5			11.3			37.8			26.1	
Approach LOS		A			B			D			C	
Queue Length 50th (m)	2.9	32.7	0.0	13.3	41.2	0.0	39.0	8.5	2.8	4.0	8.2	0.0
Queue Length 95th (m)	9.9	57.2	9.5	34.2	70.7	0.0	50.0	12.2	12.7	8.7	11.8	5.4
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	379	2223	1045	431	2202	994	636	1690	791	628	1659	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.31	0.21	0.33	0.37	0.02	0.28	0.05	0.12	0.03	0.05	0.05

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 14.9 Intersection LOS: B
Intersection Capacity Utilization 101.0% ICU Level of Service G
Analysis Period (min) 15

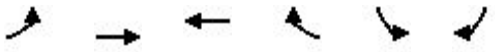
Splits and Phases: 1: McCowan Rd & Stouffville Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	585	190	122	699	16	151	71	79	18	69	33
Future Volume (vph)	32	585	190	122	699	16	151	71	79	18	69	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1487	1683	3275	1389
Flt Permitted	0.32	1.00	1.00	0.38	1.00	1.00	0.70	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	585	3433	1493	666	3400	1507	1256	3336	1487	1239	3275	1389
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	38	688	224	144	822	19	178	84	93	21	81	39
RTOR Reduction (vph)	0	0	79	0	0	7	0	0	62	0	0	31
Lane Group Flow (vph)	38	688	145	144	822	12	178	84	31	21	81	8
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	72.9	72.9	72.9	72.9	72.9	72.9	23.1	23.1	23.1	23.1	23.1	23.1
Effective Green, g (s)	72.9	72.9	72.9	72.9	72.9	72.9	23.1	23.1	23.1	23.1	23.1	23.1
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.65	0.65	0.21	0.21	0.21	0.21	0.21	0.21
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	379	2224	967	431	2203	976	257	684	305	254	672	285
v/s Ratio Prot		0.20			c0.24			0.03			0.02	
v/s Ratio Perm	0.06		0.10	0.22		0.01	c0.14		0.02	0.02		0.01
v/c Ratio	0.10	0.31	0.15	0.33	0.37	0.01	0.69	0.12	0.10	0.08	0.12	0.03
Uniform Delay, d1	7.5	8.7	7.7	8.9	9.2	7.0	41.4	36.4	36.3	36.1	36.4	35.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.4	0.3	2.1	0.5	0.0	7.8	0.1	0.1	0.1	0.1	0.0
Delay (s)	8.0	9.1	8.0	11.0	9.7	7.1	49.2	36.5	36.4	36.3	36.5	35.8
Level of Service	A	A	A	B	A	A	D	D	D	D	D	D
Approach Delay (s)		8.8			9.8			42.9			36.3	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	646	846	10	3	0
Future Volume (Veh/h)	29	646	846	10	3	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)	32	702	920	11	3	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)						
pX, platoon unblocked						
vC, conflicting volume	931				1340	466
vC1, stage 1 conf vol					926	
vC2, stage 2 conf vol					415	
vCu, unblocked vol	931				1340	466
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 %	96				99	100
cM capacity (veh/h)	743				318	549

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	32	351	351	613	318	3
Volume Left	32	0	0	0	0	3
Volume Right	0	0	0	0	11	0
cSH	743	1700	1700	1700	1700	318
Volume to Capacity	0.04	0.21	0.21	0.36	0.19	0.01
Queue Length 95th (m)	1.1	0.0	0.0	0.0	0.0	0.2
Control Delay (s)	10.1	0.0	0.0	0.0	0.0	16.4
Lane LOS	B					C
Approach Delay (s)	0.4			0.0		16.4
Approach LOS						C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

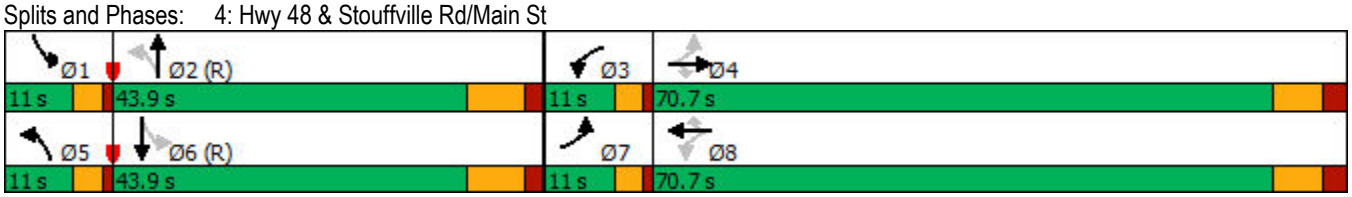
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	377	194	100	709	52	263	183	55	125	383	360
Future Volume (vph)	113	377	194	100	709	52	263	183	55	125	383	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.965			0.927	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3330	0	1716	3166	0
Flt Permitted	0.158			0.437			0.103			0.592		
Satd. Flow (perm)	258	3500	1551	782	3500	1507	190	3330	0	1070	3166	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			211			103		28			169	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Adj. Flow (vph)	123	410	211	109	771	57	286	199	60	136	416	391
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	410	211	109	771	57	286	259	0	136	807	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	49.5	38.0	38.0	49.1	37.8	37.8	75.3	56.4		49.9	35.0	
Actuated g/C Ratio	0.36	0.28	0.28	0.36	0.28	0.28	0.55	0.41		0.37	0.26	

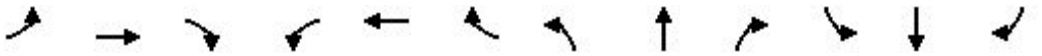
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.74	0.42	0.36	0.33	0.80	0.12	0.60	0.19		0.31	0.86	
Control Delay	54.9	40.9	5.9	29.1	52.1	0.9	34.7	24.7		20.3	48.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.9	40.9	5.9	29.1	52.1	0.9	34.7	24.7		20.3	48.4	
LOS	D	D	A	C	D	A	C	C		C	D	
Approach Delay		33.3			46.3			29.9			44.4	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	23.2	50.3	0.0	20.2	107.1	0.0	52.7	21.2		18.0	93.0	
Queue Length 95th (m)	#41.5	60.7	18.0	30.7	120.6	1.1	#100.9	36.6		33.6	120.1	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	167	1614	829	332	1614	750	474	1391		442	959	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.74	0.25	0.25	0.33	0.48	0.08	0.60	0.19		0.31	0.84	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 39.9 Intersection LOS: D
Intersection Capacity Utilization 87.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	377	194	100	709	52	263	183	55	125	383	360
Future Volume (vph)	113	377	194	100	709	52	263	183	55	125	383	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3330		1716	3167	
Flt Permitted	0.16	1.00	1.00	0.44	1.00	1.00	0.10	1.00		0.59	1.00	
Satd. Flow (perm)	259	3500	1551	781	3500	1507	189	3330		1069	3167	
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)	123	410	211	109	771	57	286	199	60	136	416	391
RTOR Reduction (vph)	0	0	152	0	0	41	0	16	0	0	126	0
Lane Group Flow (vph)	123	410	59	109	771	16	286	243	0	136	681	0
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	45.8	38.0	38.0	45.4	37.8	37.8	71.4	56.4		46.0	35.0	
Effective Green, g (s)	45.8	38.0	38.0	45.4	37.8	37.8	71.4	56.4		46.0	35.0	
Actuated g/C Ratio	0.34	0.28	0.28	0.33	0.28	0.28	0.52	0.41		0.34	0.26	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	160	973	431	310	968	417	469	1374		412	811	
v/s Ratio Prot	c0.04	0.12		0.02	c0.22		c0.14	0.07		0.03	c0.22	
v/s Ratio Perm	0.21		0.04	0.10		0.01	0.17			0.08		
v/c Ratio	0.77	0.42	0.14	0.35	0.80	0.04	0.61	0.18		0.33	0.84	
Uniform Delay, d1	34.9	40.3	37.0	32.7	45.8	36.1	30.8	25.4		32.6	48.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.6	0.3	0.1	0.7	4.6	0.0	2.3	0.3		0.5	10.2	
Delay (s)	54.5	40.6	37.1	33.3	50.4	36.1	33.0	25.7		33.1	58.4	
Level of Service	D	D	D	C	D	D	C	C		C	E	
Approach Delay (s)		41.9			47.6			29.5			54.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

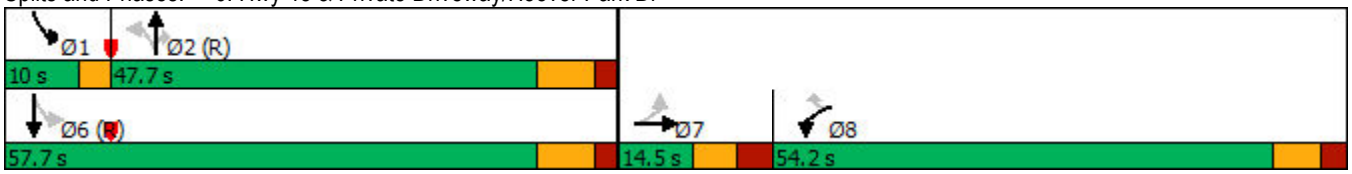
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	232	0	126	0	372	205	146	376	0
Future Volume (vph)	0	0	0	232	0	126	0	372	205	146	376	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1716	0	1566	1879	1724	1536	1700	1756	0
Flt Permitted				0.950						0.447		
Satd. Flow (perm)	0	1879	0	1716	0	1566	1879	1724	1536	800	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						140			228			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Adj. Flow (vph)	0	0	0	258	0	140	0	413	228	162	418	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	258	0	140	0	413	228	162	418	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	
Act Effct Green (s)				24.7		24.7		74.3	74.3	91.5	86.8	
Actuated g/C Ratio				0.20		0.20		0.59	0.59	0.72	0.69	

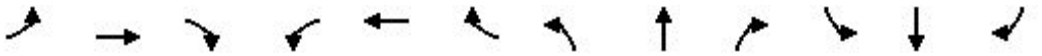
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.77		0.33		0.41	0.23	0.25	0.35	
Control Delay				62.8		8.2		17.3	2.6	7.2	10.0	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				62.8		8.2		17.3	2.6	7.2	10.0	
LOS				E		A		B	A	A	B	
Approach Delay					43.6			12.1			9.2	
Approach LOS					D			B			A	
Queue Length 50th (m)				64.6		0.0		55.1	0.0	11.5	41.0	
Queue Length 95th (m)				88.0		16.4		99.0	13.3	24.0	72.3	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				638		670		1012	996	646	1205	
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				0.40		0.21		0.41	0.23	0.25	0.35	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 18.8 Intersection LOS: B
Intersection Capacity Utilization 95.7% ICU Level of Service F
Analysis Period (min) 15

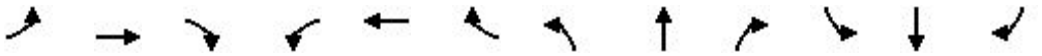
Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	232	0	126	0	372	205	146	376	0
Future Volume (vph)	0	0	0	232	0	126	0	372	205	146	376	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1716		1566		1724	1536	1700	1756	
Flt Permitted				0.95		1.00		1.00	1.00	0.45	1.00	
Satd. Flow (perm)				1716		1566		1724	1536	801	1756	
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	0	0	258	0	140	0	413	228	162	418	0
RTOR Reduction (vph)	0	0	0	0	0	113	0	0	94	0	0	0
Lane Group Flow (vph)	0	0	0	258	0	27	0	413	134	162	418	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				24.7		24.7		74.3	74.3	86.8	86.8	
Effective Green, g (s)				24.7		24.7		74.3	74.3	86.8	86.8	
Actuated g/C Ratio				0.20		0.20		0.59	0.59	0.69	0.69	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				335		306		1013	902	617	1205	
v/s Ratio Prot				c0.15				c0.24		0.02	c0.24	
v/s Ratio Perm						0.02			0.09	0.16		
v/c Ratio				0.77		0.09		0.41	0.15	0.26	0.35	
Uniform Delay, d1				48.2		41.6		14.1	11.8	7.4	8.1	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				10.4		0.1		1.2	0.3	0.2	0.8	
Delay (s)				58.6		41.8		15.3	12.1	7.6	8.9	
Level of Service				E		D		B	B	A	A	
Approach Delay (s)		0.0			52.7			14.2			8.6	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



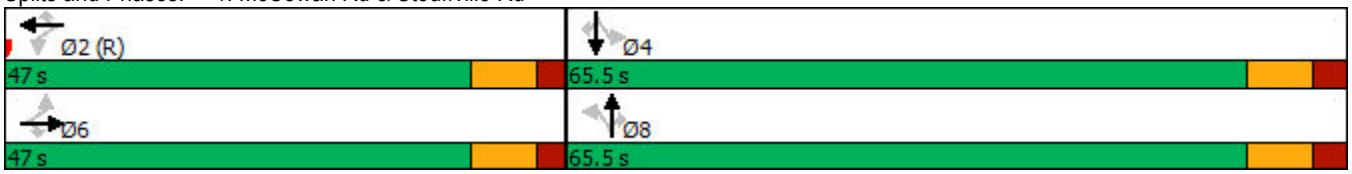
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	964	252	114	755	12	186	111	59	14	77	19
Future Volume (vph)	73	964	252	114	755	12	186	111	59	14	77	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.318			0.234			0.700			0.675		
Satd. Flow (perm)	575	3535	1536	427	3500	1597	1253	3535	1566	1268	3400	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			274			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Adj. Flow (vph)	79	1048	274	124	821	13	202	121	64	15	84	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	1048	274	124	821	13	202	121	64	15	84	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	71.1	71.1	71.1	71.1	71.1	71.1	24.9	24.9	24.9	24.9	24.9	24.9
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.22	0.47	0.26	0.46	0.37	0.01	0.73	0.15	0.17	0.05	0.11	0.06
Control Delay	13.2	12.9	2.1	20.8	11.7	0.0	54.8	33.4	12.9	30.2	32.5	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	12.9	2.1	20.8	11.7	0.0	54.8	33.4	12.9	30.2	32.5	1.6
LOS	B	B	A	C	B	A	D	C	B	C	C	A
Approach Delay		10.8			12.7			41.2			26.8	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	7.1	60.6	0.0	13.5	43.7	0.0	44.0	12.0	3.0	2.8	8.3	0.0
Queue Length 95th (m)	20.7	102.7	12.6	41.7	75.5	0.0	61.2	17.3	12.4	7.4	12.9	1.6
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	363	2234	1071	269	2212	1029	634	1791	817	642	1722	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.47	0.26	0.46	0.37	0.01	0.32	0.07	0.08	0.02	0.05	0.03

Intersection Summary

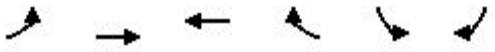
Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 102.4% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: McCowan Rd & Stouffville Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	964	252	114	755	12	186	111	59	14	77	19
Future Volume (vph)	73	964	252	114	755	12	186	111	59	14	77	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.32	1.00	1.00	0.23	1.00	1.00	0.70	1.00	1.00	0.68	1.00	1.00
Satd. Flow (perm)	574	3535	1536	426	3500	1597	1252	3535	1566	1269	3400	1452
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)	79	1048	274	124	821	13	202	121	64	15	84	21
RTOR Reduction (vph)	0	0	101	0	0	5	0	0	37	0	0	16
Lane Group Flow (vph)	79	1048	173	124	821	8	202	121	27	15	84	5
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	71.1	71.1	71.1	71.1	71.1	71.1	24.9	24.9	24.9	24.9	24.9	24.9
Effective Green, g (s)	71.1	71.1	71.1	71.1	71.1	71.1	24.9	24.9	24.9	24.9	24.9	24.9
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	362	2234	970	269	2212	1009	277	782	346	280	752	321
v/s Ratio Prot		c0.30			0.23			0.03			0.02	
v/s Ratio Perm	0.14		0.11	0.29		0.01	c0.16		0.02	0.01		0.00
v/c Ratio	0.22	0.47	0.18	0.46	0.37	0.01	0.73	0.15	0.08	0.05	0.11	0.01
Uniform Delay, d1	8.8	10.8	8.6	10.7	10.0	7.7	40.7	35.3	34.7	34.5	35.0	34.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.7	0.4	5.6	0.5	0.0	9.2	0.1	0.1	0.1	0.1	0.0
Delay (s)	10.2	11.5	9.0	16.3	10.4	7.7	49.9	35.4	34.8	34.6	35.0	34.2
Level of Service	B	B	A	B	B	A	D	D	C	C	D	C
Approach Delay (s)		11.0			11.2			42.9			34.8	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	1003	870	68	3	27
Future Volume (Veh/h)	32	1003	870	68	3	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	35	1102	956	75	3	30
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)						
pX, platoon unblocked						
vC, conflicting volume	1031				1614	516
vC1, stage 1 conf vol					994	
vC2, stage 2 conf vol					621	
vCu, unblocked vol	1031				1614	516
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 %	95				99	94
cM capacity (veh/h)	682				274	510

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	35	551	551	637	394	33
Volume Left	35	0	0	0	0	3
Volume Right	0	0	0	0	75	30
cSH	682	1700	1700	1700	1700	473
Volume to Capacity	0.05	0.32	0.32	0.37	0.23	0.07
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0	1.8
Control Delay (s)	10.6	0.0	0.0	0.0	0.0	13.2
Lane LOS	B					B
Approach Delay (s)	0.3			0.0		13.2
Approach LOS						B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

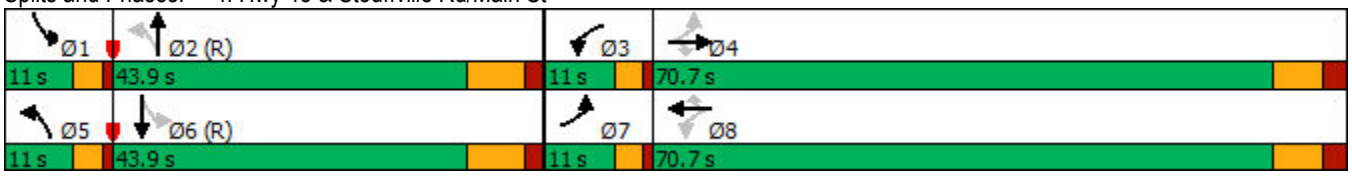
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	787	338	107	430	148	162	388	139	110	256	128
Future Volume (vph)	300	787	338	107	430	148	162	388	139	110	256	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.960			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3396	0	1750	3251	0
Flt Permitted	0.407			0.155			0.434			0.447		
Satd. Flow (perm)	735	3535	1581	283	3535	1597	792	3396	0	823	3251	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			348			153		36			62	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Adj. Flow (vph)	309	811	348	110	443	153	167	400	143	113	264	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	309	811	348	110	443	153	167	543	0	113	396	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	

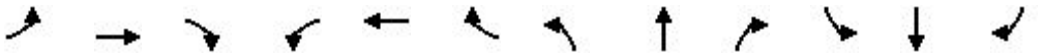
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	53.8	40.1	40.1	52.9	39.7	39.7	71.2	53.1		59.6	45.5	
Actuated g/C Ratio	0.39	0.29	0.29	0.39	0.29	0.29	0.52	0.39		0.44	0.33	
v/c Ratio	0.86	0.78	0.49	0.52	0.43	0.27	0.31	0.40		0.26	0.35	
Control Delay	54.2	49.6	5.6	32.2	39.8	5.7	20.5	31.0		20.6	31.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.2	49.6	5.6	32.2	39.8	5.7	20.5	31.0		20.6	31.1	
LOS	D	D	A	C	D	A	C	C		C	C	
Approach Delay		40.1			31.2			28.6			28.8	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	61.1	111.5	0.0	19.1	53.7	0.0	24.5	54.4		16.0	37.0	
Queue Length 95th (m)	#78.4	123.7	20.9	28.5	63.6	14.9	44.0	82.5		31.1	58.3	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	361	1630	916	211	1630	818	536	1341		429	1126	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.86	0.50	0.38	0.52	0.27	0.19	0.31	0.40		0.26	0.35	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 34.2 Intersection LOS: C
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	787	338	107	430	148	162	388	139	110	256	128
Future Volume (vph)	300	787	338	107	430	148	162	388	139	110	256	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3398		1749	3251	
Flt Permitted	0.41	1.00	1.00	0.15	1.00	1.00	0.43	1.00		0.45	1.00	
Satd. Flow (perm)	736	3535	1581	283	3535	1597	792	3398		822	3251	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	309	811	348	110	443	153	167	400	143	113	264	132
RTOR Reduction (vph)	0	0	246	0	0	109	0	22	0	0	41	0
Lane Group Flow (vph)	309	811	102	110	443	44	167	521	0	113	355	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	50.1	40.1	40.1	49.3	39.7	39.7	67.3	53.0		55.7	45.4	
Effective Green, g (s)	50.1	40.1	40.1	49.3	39.7	39.7	67.3	53.0		55.7	45.4	
Actuated g/C Ratio	0.37	0.29	0.29	0.36	0.29	0.29	0.49	0.39		0.41	0.33	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	341	1037	464	204	1027	464	513	1318		405	1080	
v/s Ratio Prot	c0.07	0.23		0.04	0.13		c0.04	c0.15		0.02	0.11	
v/s Ratio Perm	c0.27		0.06	0.16		0.03	0.12			0.09		
v/c Ratio	0.91	0.78	0.22	0.54	0.43	0.10	0.33	0.40		0.28	0.33	
Uniform Delay, d1	38.8	44.2	36.4	31.9	39.3	35.4	19.7	30.2		25.6	34.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.4	3.9	0.2	2.7	0.3	0.1	0.4	0.9		0.4	0.8	
Delay (s)	65.2	48.1	36.7	34.6	39.6	35.4	20.1	31.1		26.0	35.0	
Level of Service	E	D	D	C	D	D	C	C		C	C	
Approach Delay (s)		49.0			37.9			28.5			33.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

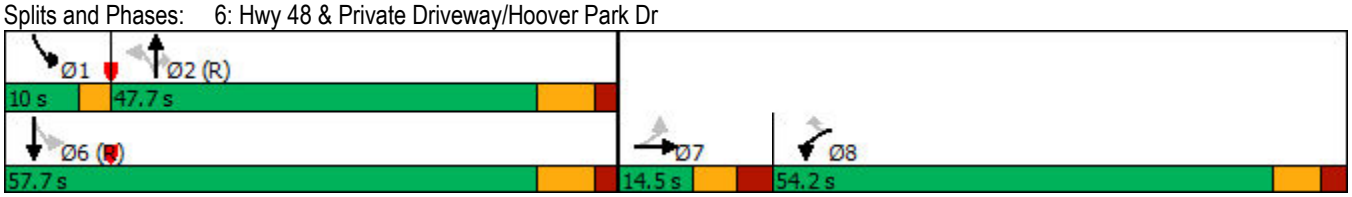
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	164	0	245	0	546	233	269	397	1
Future Volume (vph)	0	0	0	164	0	245	0	546	233	269	397	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.99			0.99	1.00	1.00	
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1750	0	1566	1879	1789	1597	1767	1803	0
Flt Permitted				0.950						0.180		
Satd. Flow (perm)	0	1879	0	1750	0	1545	1879	1789	1576	335	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						275			262			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Adj. Flow (vph)	0	0	0	184	0	275	0	613	262	302	446	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	184	0	275	0	613	262	302	447	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				18.9		18.9		53.6	53.6	97.3	92.6	
Actuated g/C Ratio				0.15		0.15		0.42	0.42	0.77	0.73	
v/c Ratio				0.70		0.59		0.81	0.32	0.45	0.34	
Control Delay				65.1		10.6		40.9	3.5	9.6	7.4	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				65.1		10.6		40.9	3.5	9.6	7.4	
LOS				E		B		D	A	A	A	
Approach Delay					32.5			29.7			8.3	
Approach LOS					C			C			A	
Queue Length 50th (m)				46.4		0.0		127.5	0.0	18.6	36.6	
Queue Length 95th (m)				67.1		22.9		181.9	15.1	47.9	63.1	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				650		747		758	818	666	1321	
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				0.28		0.37		0.81	0.32	0.45	0.34	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.6 Intersection LOS: C
Intersection Capacity Utilization 92.1% ICU Level of Service F
Analysis Period (min) 15

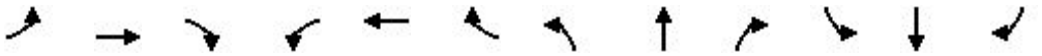
Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	164	0	245	0	546	233	269	397	1
Future Volume (vph)	0	0	0	164	0	245	0	546	233	269	397	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes				1.00		0.99		1.00	0.99	1.00	1.00	
Flpb, ped/bikes				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1750		1545		1789	1576	1767	1802	
Flt Permitted				0.95		1.00		1.00	1.00	0.18	1.00	
Satd. Flow (perm)				1750		1545		1789	1576	335	1802	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	184	0	275	0	613	262	302	446	1
RTOR Reduction (vph)	0	0	0	0	0	234	0	0	151	0	0	0
Lane Group Flow (vph)	0	0	0	184	0	41	0	613	111	302	447	0
Confl. Peds. (#/hr)	1					1	1		1	1		1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				18.9		18.9		53.5	53.5	92.6	92.6	
Effective Green, g (s)				18.9		18.9		53.5	53.5	92.6	92.6	
Actuated g/C Ratio				0.15		0.15		0.42	0.42	0.73	0.73	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				261		231		757	667	654	1320	
v/s Ratio Prot				c0.11				c0.34		c0.13	0.25	
v/s Ratio Perm						0.03			0.07	0.21		
v/c Ratio				0.70		0.18		0.81	0.17	0.46	0.34	
Uniform Delay, d1				51.1		47.0		32.0	22.6	12.3	6.0	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				8.4		0.4		9.1	0.5	0.5	0.7	
Delay (s)				59.5		47.3		41.1	23.2	12.8	6.7	
Level of Service				E		D		D	C	B	A	
Approach Delay (s)		0.0			52.2			35.7			9.2	
Approach LOS		A			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



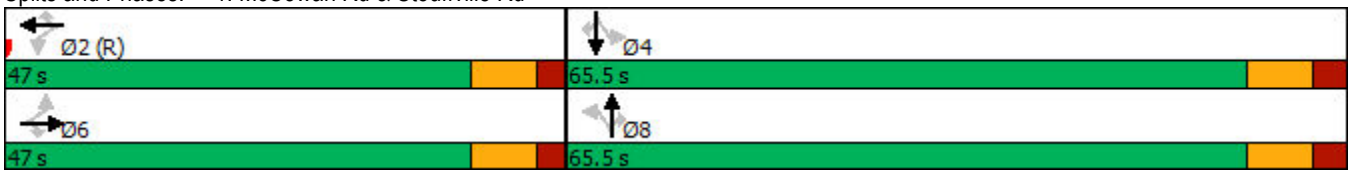
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	673	206	132	868	17	178	83	93	21	81	39
Future Volume (vph)	35	673	206	132	868	17	178	83	93	21	81	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1507	1684	3275	1389
Flt Permitted	0.241			0.329			0.692			0.690		
Satd. Flow (perm)	440	3433	1493	578	3400	1507	1238	3336	1487	1222	3275	1389
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			242			53			51			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Adj. Flow (vph)	41	792	242	155	1021	20	209	98	109	25	95	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	792	242	155	1021	20	209	98	109	25	95	46
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None

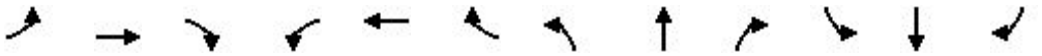
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	70.4	70.4	70.4	70.4	70.4	70.4	25.6	25.6	25.6	25.6	25.6	25.6
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63	0.63	0.23	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.15	0.37	0.24	0.43	0.48	0.02	0.74	0.13	0.29	0.09	0.13	0.13
Control Delay	13.2	12.0	2.2	17.9	13.5	0.1	55.0	32.3	19.7	30.9	32.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	12.0	2.2	17.9	13.5	0.1	55.0	32.3	19.7	30.9	32.3	8.4
LOS	B	B	A	B	B	A	E	C	B	C	C	A
Approach Delay		9.9			13.8			40.4			25.5	
Approach LOS		A			B			D			C	
Queue Length 50th (m)	3.6	43.2	0.0	16.9	61.3	0.0	45.3	9.5	10.9	4.6	9.2	0.0
Queue Length 95th (m)	11.3	67.3	9.8	40.4	92.7	0.0	59.1	13.8	20.9	9.9	13.5	7.2
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	275	2147	1024	361	2126	962	627	1690	778	619	1659	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.37	0.24	0.43	0.48	0.02	0.33	0.06	0.14	0.04	0.06	0.06

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.9 Intersection LOS: B
Intersection Capacity Utilization 102.4% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: McCowan Rd & Stouffville Rd

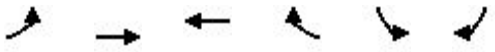




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	673	206	132	868	17	178	83	93	21	81	39
Future Volume (vph)	35	673	206	132	868	17	178	83	93	21	81	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1487	1683	3275	1389
Flt Permitted	0.24	1.00	1.00	0.33	1.00	1.00	0.69	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	440	3433	1493	577	3400	1507	1239	3336	1487	1223	3275	1389
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	41	792	242	155	1021	20	209	98	109	25	95	46
RTOR Reduction (vph)	0	0	91	0	0	7	0	0	39	0	0	36
Lane Group Flow (vph)	41	792	151	155	1021	13	209	98	70	25	95	10
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	70.4	70.4	70.4	70.4	70.4	70.4	25.6	25.6	25.6	25.6	25.6	25.6
Effective Green, g (s)	70.4	70.4	70.4	70.4	70.4	70.4	25.6	25.6	25.6	25.6	25.6	25.6
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63	0.63	0.23	0.23	0.23	0.23	0.23	0.23
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	275	2148	934	361	2127	943	281	759	338	278	745	316
v/s Ratio Prot		0.23			c0.30			0.03			0.03	
v/s Ratio Perm	0.09		0.10	0.27		0.01	c0.17		0.05	0.02		0.01
v/c Ratio	0.15	0.37	0.16	0.43	0.48	0.01	0.74	0.13	0.21	0.09	0.13	0.03
Uniform Delay, d1	8.7	10.2	8.8	10.8	11.3	7.9	40.4	34.6	35.2	34.3	34.6	33.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.5	0.4	3.7	0.8	0.0	10.2	0.1	0.3	0.1	0.1	0.0
Delay (s)	9.8	10.7	9.1	14.5	12.0	8.0	50.6	34.7	35.5	34.4	34.6	33.9
Level of Service	A	B	A	B	B	A	D	C	D	C	C	C
Approach Delay (s)		10.3			12.3			42.9			34.4	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

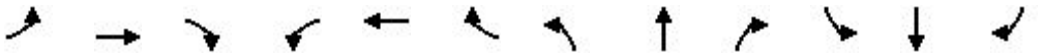
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	734	1028	10	3	0
Future Volume (Veh/h)	29	734	1028	10	3	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)	32	798	1117	11	3	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)			197			
pX, platoon unblocked						
vC, conflicting volume	1128				1586	564
vC1, stage 1 conf vol					1122	
vC2, stage 2 conf vol					463	
vCu, unblocked vol	1128				1586	564
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 %	95				99	100
cM capacity (veh/h)	627				254	474

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	32	399	399	745	383	3
Volume Left	32	0	0	0	0	3
Volume Right	0	0	0	0	11	0
cSH	627	1700	1700	1700	1700	254
Volume to Capacity	0.05	0.23	0.23	0.44	0.23	0.01
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	19.4
Lane LOS	B					C
Approach Delay (s)	0.4			0.0		19.4
Approach LOS						C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		



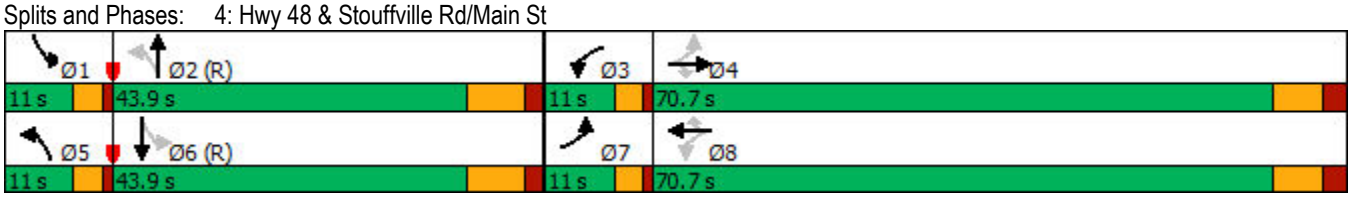
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	448	210	133	879	68	276	241	65	150	450	377
Future Volume (vph)	122	448	210	133	879	68	276	241	65	150	450	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.968			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3341	0	1716	3183	0
Flt Permitted	0.120			0.399			0.099			0.551		
Satd. Flow (perm)	196	3500	1551	714	3500	1507	182	3341	0	995	3183	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			103		24			151	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Adj. Flow (vph)	133	487	228	145	955	74	300	262	71	163	489	410
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	487	228	145	955	74	300	333	0	163	899	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	57.0	45.8	45.8	56.9	45.8	45.8	66.8	47.3		52.8	36.5	
Actuated g/C Ratio	0.42	0.34	0.34	0.42	0.34	0.34	0.49	0.35		0.39	0.27	

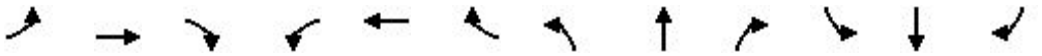
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.86	0.41	0.34	0.41	0.81	0.13	0.84	0.28		0.36	0.94	
Control Delay	68.6	35.4	4.7	26.3	47.3	2.4	56.8	32.5		23.9	57.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	68.6	35.4	4.7	26.3	47.3	2.4	56.8	32.5		23.9	57.9	
LOS	E	D	A	C	D	A	E	C		C	E	
Approach Delay		32.4			41.9			44.0			52.7	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	22.6	55.8	0.0	24.6	129.8	0.0	64.5	33.2		25.2	113.9	
Queue Length 95th (m)	#46.7	65.3	16.6	34.9	141.8	5.0	#147.0	52.5		44.9	#157.0	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	155	1614	838	350	1614	750	356	1172		450	960	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.86	0.30	0.27	0.41	0.59	0.10	0.84	0.28		0.36	0.94	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 43.2 Intersection LOS: D
Intersection Capacity Utilization 93.5% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

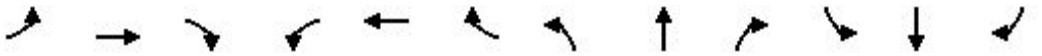
Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	448	210	133	879	68	276	241	65	150	450	377
Future Volume (vph)	122	448	210	133	879	68	276	241	65	150	450	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3341		1716	3181	
Flt Permitted	0.12	1.00	1.00	0.40	1.00	1.00	0.10	1.00		0.55	1.00	
Satd. Flow (perm)	195	3500	1551	715	3500	1507	182	3341		995	3181	
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)	133	487	228	145	955	74	300	262	71	163	489	410
RTOR Reduction (vph)	0	0	151	0	0	49	0	16	0	0	111	0
Lane Group Flow (vph)	133	487	77	145	955	25	300	317	0	163	788	0
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	53.4	45.9	45.9	53.2	45.8	45.8	63.7	47.3		48.8	36.4	
Effective Green, g (s)	53.4	45.9	45.9	53.2	45.8	45.8	63.7	47.3		48.8	36.4	
Actuated g/C Ratio	0.39	0.34	0.34	0.39	0.34	0.34	0.47	0.35		0.36	0.27	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	150	1176	521	331	1173	505	352	1156		420	847	
v/s Ratio Prot	c0.05	0.14		0.02	0.27		c0.15	0.09		0.04	c0.25	
v/s Ratio Perm	c0.30		0.05	0.15		0.02	0.25			0.10		
v/c Ratio	0.89	0.41	0.15	0.44	0.81	0.05	0.85	0.27		0.39	0.93	
Uniform Delay, d1	32.4	35.0	31.7	28.3	41.5	30.7	39.1	32.3		31.2	48.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	41.7	0.2	0.1	0.9	4.4	0.0	17.7	0.6		0.6	18.1	
Delay (s)	74.1	35.2	31.8	29.3	46.0	30.7	56.8	32.8		31.8	66.9	
Level of Service	E	D	C	C	D	C	E	C		C	E	
Approach Delay (s)		40.4			42.9			44.2			61.5	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



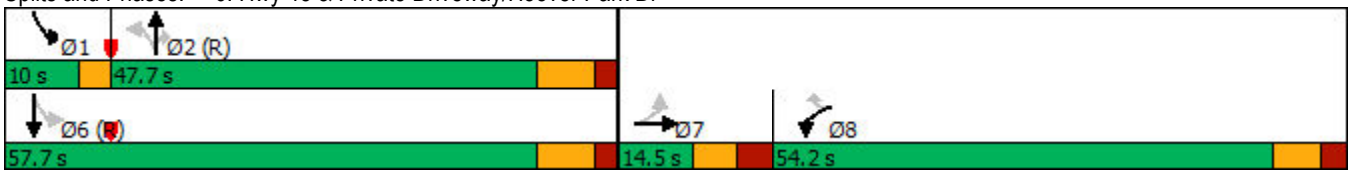
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	316	0	186	0	445	273	196	452	0
Future Volume (vph)	0	0	0	316	0	186	0	445	273	196	452	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1716	0	1566	1879	1724	1536	1700	1756	0
Flt Permitted				0.950						0.323		
Satd. Flow (perm)	0	1879	0	1716	0	1566	1879	1724	1536	578	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						207			303			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Adj. Flow (vph)	0	0	0	351	0	207	0	494	303	218	502	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	351	0	207	0	494	303	218	502	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	
Act Effct Green (s)				31.7		31.7		59.4	59.4	84.5	79.8	
Actuated g/C Ratio				0.25		0.25		0.47	0.47	0.67	0.63	

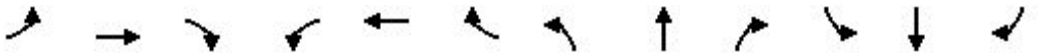
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.82		0.38		0.61	0.34	0.40	0.45	
Control Delay				59.5		6.2		30.5	3.8	11.4	14.9	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				59.5		6.2		30.5	3.8	11.4	14.9	
LOS				E		A		C	A	B	B	
Approach Delay					39.7			20.3			13.8	
Approach LOS					D			C			B	
Queue Length 50th (m)				86.9		0.0		92.2	0.0	20.0	63.5	
Queue Length 95th (m)				112.2		17.5		153.3	18.2	38.6	108.7	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				638		712		810	882	540	1108	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.55		0.29		0.61	0.34	0.40	0.45	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 23.3 Intersection LOS: C
Intersection Capacity Utilization 100.3% ICU Level of Service G
Analysis Period (min) 15

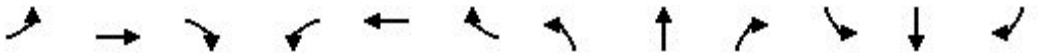
Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	316	0	186	0	445	273	196	452	0
Future Volume (vph)	0	0	0	316	0	186	0	445	273	196	452	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1716		1566		1724	1536	1700	1756	
Flt Permitted				0.95		1.00		1.00	1.00	0.32	1.00	
Satd. Flow (perm)				1716		1566		1724	1536	578	1756	
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	0	0	351	0	207	0	494	303	218	502	0
RTOR Reduction (vph)	0	0	0	0	0	155	0	0	161	0	0	0
Lane Group Flow (vph)	0	0	0	351	0	52	0	494	142	218	502	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				31.7		31.7		59.4	59.4	79.8	79.8	
Effective Green, g (s)				31.7		31.7		59.4	59.4	79.8	79.8	
Actuated g/C Ratio				0.25		0.25		0.47	0.47	0.63	0.63	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				430		392		810	721	519	1108	
v/s Ratio Prot				c0.20				c0.29		0.06	c0.29	
v/s Ratio Perm						0.03			0.09	0.21		
v/c Ratio				0.82		0.13		0.61	0.20	0.42	0.45	
Uniform Delay, d1				44.6		36.7		24.9	19.6	12.1	12.0	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				11.4		0.2		3.4	0.6	0.6	1.3	
Delay (s)				56.0		36.8		28.3	20.2	12.7	13.4	
Level of Service				E		D		C	C	B	B	
Approach Delay (s)		0.0			48.9			25.2			13.2	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



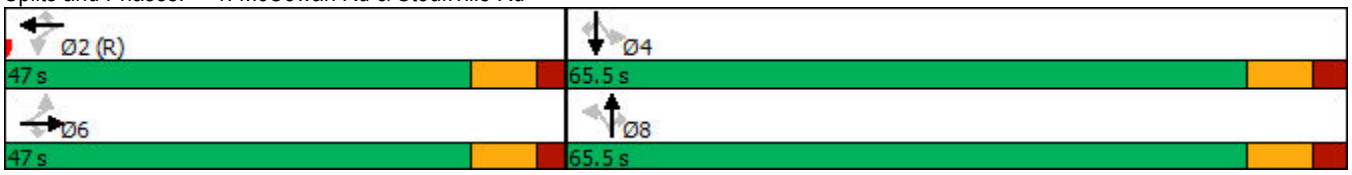
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1158	273	124	887	13	219	131	69	16	91	22
Future Volume (vph)	79	1158	273	124	887	13	219	131	69	16	91	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.257			0.164			0.690			0.662		
Satd. Flow (perm)	464	3535	1536	299	3500	1597	1235	3535	1566	1244	3400	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			297			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Adj. Flow (vph)	86	1259	297	135	964	14	238	142	75	17	99	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	1259	297	135	964	14	238	142	75	17	99	24
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	68.4	68.4	68.4	68.4	68.4	68.4	27.6	27.6	27.6	27.6	27.6	27.6
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25

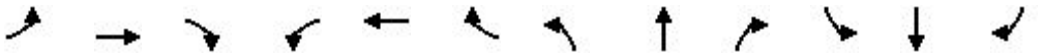
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.30	0.59	0.28	0.75	0.45	0.01	0.79	0.16	0.18	0.06	0.12	0.06
Control Delay	16.8	16.1	2.2	47.3	13.9	0.0	57.1	31.9	14.0	28.9	31.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	16.1	2.2	47.3	13.9	0.0	57.1	31.9	14.0	28.9	31.0	2.6
LOS	B	B	A	D	B	A	E	C	B	C	C	A
Approach Delay		13.6			17.8			42.1			25.9	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	9.0	87.8	0.0	21.0	59.8	0.0	51.5	13.6	4.8	3.0	9.3	0.0
Queue Length 95th (m)	24.6	133.5	13.0	#67.8	92.5	0.0	73.7	19.8	15.1	8.1	14.8	2.4
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	282	2149	1050	181	2128	992	625	1791	817	630	1722	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.59	0.28	0.75	0.45	0.01	0.38	0.08	0.09	0.03	0.06	0.03

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 104.2% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

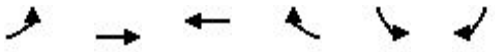
Splits and Phases: 1: McCowan Rd & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1158	273	124	887	13	219	131	69	16	91	22
Future Volume (vph)	79	1158	273	124	887	13	219	131	69	16	91	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.26	1.00	1.00	0.16	1.00	1.00	0.69	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	464	3535	1536	299	3500	1597	1234	3535	1566	1244	3400	1452
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)	86	1259	297	135	964	14	238	142	75	17	99	24
RTOR Reduction (vph)	0	0	116	0	0	5	0	0	36	0	0	18
Lane Group Flow (vph)	86	1259	181	135	964	9	238	142	39	17	99	6
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	68.4	68.4	68.4	68.4	68.4	68.4	27.6	27.6	27.6	27.6	27.6	27.6
Effective Green, g (s)	68.4	68.4	68.4	68.4	68.4	68.4	27.6	27.6	27.6	27.6	27.6	27.6
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	282	2149	933	181	2128	970	302	867	384	305	834	356
v/s Ratio Prot		0.36			0.28			0.04			0.03	
v/s Ratio Perm	0.19		0.12	c0.45		0.01	c0.19		0.02	0.01		0.00
v/c Ratio	0.30	0.59	0.19	0.75	0.45	0.01	0.79	0.16	0.10	0.06	0.12	0.02
Uniform Delay, d1	10.6	13.4	9.8	15.8	11.9	8.7	39.7	33.4	32.8	32.5	33.0	32.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	1.2	0.5	24.1	0.7	0.0	12.7	0.1	0.1	0.1	0.1	0.0
Delay (s)	13.4	14.6	10.3	39.9	12.6	8.7	52.5	33.5	33.0	32.6	33.1	32.2
Level of Service	B	B	B	D	B	A	D	C	C	C	C	C
Approach Delay (s)		13.8			15.9			43.3			32.8	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	1197	1012	68	3	27
Future Volume (Veh/h)	32	1197	1012	68	3	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	35	1315	1112	75	3	30
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)						
pX, platoon unblocked						
vC, conflicting volume	1187				1877	594
vC1, stage 1 conf vol					1150	
vC2, stage 2 conf vol					728	
vCu, unblocked vol	1187				1877	594
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 %	94				99	93
cM capacity (veh/h)	595				226	453

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	35	658	658	741	446	33
Volume Left	35	0	0	0	0	3
Volume Right	0	0	0	0	75	30
cSH	595	1700	1700	1700	1700	416
Volume to Capacity	0.06	0.39	0.39	0.44	0.26	0.08
Queue Length 95th (m)	1.5	0.0	0.0	0.0	0.0	2.1
Control Delay (s)	11.4	0.0	0.0	0.0	0.0	14.4
Lane LOS	B					B
Approach Delay (s)	0.3			0.0		14.4
Approach LOS						B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

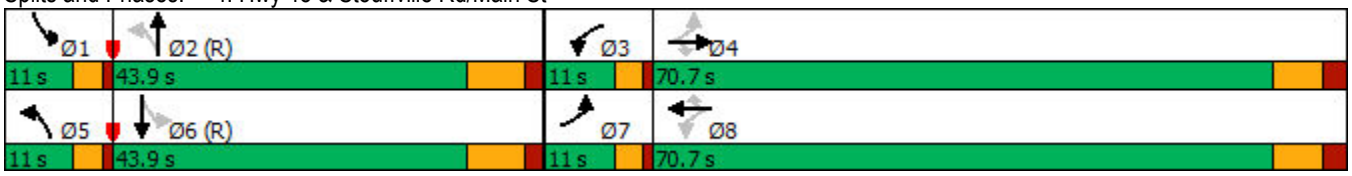
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	966	366	133	535	185	170	480	159	140	325	134
Future Volume (vph)	325	966	366	133	535	185	170	480	159	140	325	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.963			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3408	0	1750	3276	0
Flt Permitted	0.357			0.117			0.392			0.278		
Satd. Flow (perm)	645	3535	1581	213	3535	1597	715	3408	0	512	3276	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			332			191		32			44	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Adj. Flow (vph)	335	996	377	137	552	191	175	495	164	144	335	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	335	996	377	137	552	191	175	659	0	144	473	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	

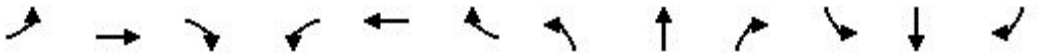
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	61.3	48.2	48.2	60.8	48.0	48.0	60.5	44.0		58.6	43.0	
Actuated g/C Ratio	0.45	0.35	0.35	0.45	0.35	0.35	0.44	0.32		0.43	0.31	
v/c Ratio	0.92	0.80	0.49	0.70	0.44	0.28	0.43	0.59		0.44	0.45	
Control Delay	60.9	44.8	6.8	40.5	34.5	4.4	26.8	40.9		27.5	36.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	60.9	44.8	6.8	40.5	34.5	4.4	26.8	40.9		27.5	36.8	
LOS	E	D	A	D	C	A	C	D		C	D	
Approach Delay		39.5			28.9			37.9			34.6	
Approach LOS		D			C			D			C	
Queue Length 50th (m)	59.5	133.1	8.5	21.3	62.7	0.0	29.5	80.2		23.8	52.4	
Queue Length 95th (m)	#102.0	144.1	30.3	#40.5	71.7	14.8	49.7	108.5		41.5	73.4	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	363	1630	908	196	1630	839	411	1118		325	1065	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.92	0.61	0.42	0.70	0.34	0.23	0.43	0.59		0.44	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 36.1 Intersection LOS: D
Intersection Capacity Utilization 90.7% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	966	366	133	535	185	170	480	159	140	325	134
Future Volume (vph)	325	966	366	133	535	185	170	480	159	140	325	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3407		1750	3277	
Flt Permitted	0.36	1.00	1.00	0.12	1.00	1.00	0.39	1.00		0.28	1.00	
Satd. Flow (perm)	645	3535	1581	214	3535	1597	715	3407		511	3277	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	335	996	377	137	552	191	175	495	164	144	335	138
RTOR Reduction (vph)	0	0	215	0	0	124	0	22	0	0	30	0
Lane Group Flow (vph)	335	996	162	137	552	67	175	637	0	144	443	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	57.6	48.2	48.2	57.2	48.0	48.0	56.6	43.9		54.6	42.9	
Effective Green, g (s)	57.6	48.2	48.2	57.2	48.0	48.0	56.6	43.9		54.6	42.9	
Actuated g/C Ratio	0.42	0.35	0.35	0.42	0.35	0.35	0.41	0.32		0.40	0.31	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	345	1247	557	191	1242	561	390	1094		310	1029	
v/s Ratio Prot	c0.07	0.28		0.05	0.16		c0.04	c0.19		0.04	0.14	
v/s Ratio Perm	c0.34		0.10	0.25		0.04	0.14			0.15		
v/c Ratio	0.97	0.80	0.29	0.72	0.44	0.12	0.45	0.58		0.46	0.43	
Uniform Delay, d1	36.6	39.8	31.9	29.1	34.1	30.0	26.4	38.7		27.6	37.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	40.5	3.7	0.3	12.1	0.3	0.1	0.8	2.3		1.1	1.3	
Delay (s)	77.1	43.5	32.2	41.2	34.3	30.1	27.2	41.0		28.7	38.5	
Level of Service	E	D	C	D	C	C	C	D		C	D	
Approach Delay (s)		47.6			34.5			38.1			36.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

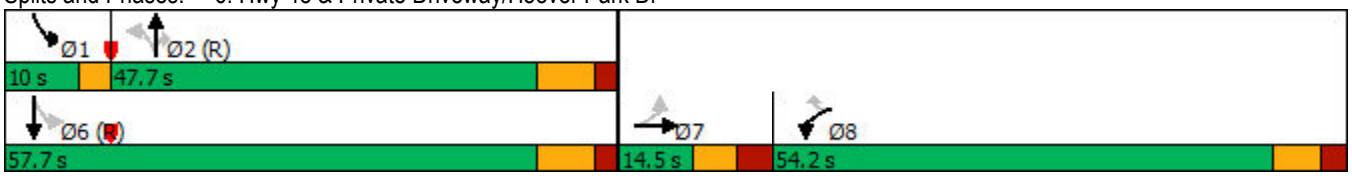
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	241	0	312	0	654	314	329	480	1
Future Volume (vph)	0	0	0	241	0	312	0	654	314	329	480	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.99			0.99		1.00	
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1750	0	1566	1879	1789	1597	1767	1803	0
Flt Permitted				0.950						0.089		
Satd. Flow (perm)	0	1879	0	1750	0	1545	1879	1789	1576	166	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						318			353			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Adj. Flow (vph)	0	0	0	271	0	351	0	735	353	370	539	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	271	0	351	0	735	353	370	540	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	

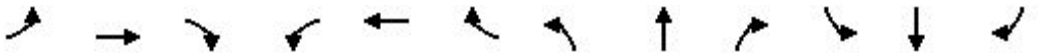
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				25.4		25.4		41.9	41.9	90.8	86.1	
Actuated g/C Ratio				0.20		0.20		0.33	0.33	0.72	0.68	
v/c Ratio				0.77		0.62		1.24	0.47	0.58	0.44	
Control Delay				61.8		11.4		158.8	5.3	28.5	11.6	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				61.8		11.4		158.8	5.3	28.5	11.6	
LOS				E		B		F	A	C	B	
Approach Delay					33.3			109.0			18.4	
Approach LOS					C			F			B	
Queue Length 50th (m)				67.8		7.1		~231.3	0.0	60.2	58.6	
Queue Length 95th (m)				89.7		32.1		#317.3	20.7	102.2	100.9	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				650		774		593	758	640	1227	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.42		0.45		1.24	0.47	0.58	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.24
Intersection Signal Delay: 59.6 Intersection LOS: E
Intersection Capacity Utilization 96.2% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr

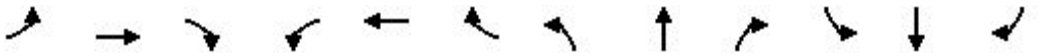




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	241	0	312	0	654	314	329	480	1
Future Volume (vph)	0	0	0	241	0	312	0	654	314	329	480	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes				1.00		0.99		1.00	0.99	1.00	1.00	
Flpb, ped/bikes				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1750		1545		1789	1576	1767	1803	
Flt Permitted				0.95		1.00		1.00	1.00	0.09	1.00	
Satd. Flow (perm)				1750		1545		1789	1576	166	1803	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	271	0	351	0	735	353	370	539	1
RTOR Reduction (vph)	0	0	0	0	0	254	0	0	236	0	0	0
Lane Group Flow (vph)	0	0	0	271	0	97	0	735	117	370	540	0
Confl. Peds. (#/hr)	1					1	1		1	1		1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				25.4		25.4		41.9	41.9	86.1	86.1	
Effective Green, g (s)				25.4		25.4		41.9	41.9	86.1	86.1	
Actuated g/C Ratio				0.20		0.20		0.33	0.33	0.68	0.68	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				351		310		593	522	634	1228	
v/s Ratio Prot				c0.15				c0.41		c0.19	0.30	
v/s Ratio Perm						0.06			0.07	0.21		
v/c Ratio				0.77		0.31		1.24	0.22	0.58	0.44	
Uniform Delay, d1				47.8		43.1		42.2	30.5	26.4	9.2	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				10.1		0.6		121.7	1.0	1.4	1.1	
Delay (s)				57.9		43.6		163.9	31.5	27.8	10.3	
Level of Service				E		D		F	C	C	B	
Approach Delay (s)		0.0			49.8			121.0			17.4	
Approach LOS		A			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	68.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



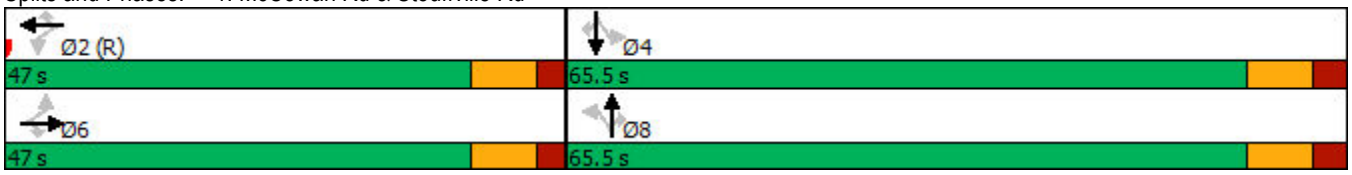
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	726	223	143	932	19	209	98	109	25	95	46
Future Volume (vph)	38	726	223	143	932	19	209	98	109	25	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1507	1684	3275	1389
Flt Permitted	0.209			0.297			0.681			0.679		
Satd. Flow (perm)	381	3433	1493	522	3400	1507	1219	3336	1487	1203	3275	1389
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			262			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Adj. Flow (vph)	45	854	262	168	1096	22	246	115	128	29	112	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	854	262	168	1096	22	246	115	128	29	112	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None

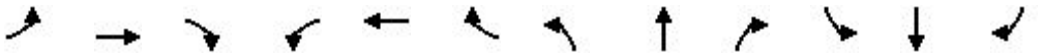
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	67.3	67.3	67.3	67.3	67.3	67.3	28.7	28.7	28.7	28.7	28.7	28.7
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.20	0.42	0.26	0.54	0.54	0.02	0.79	0.14	0.31	0.09	0.13	0.14
Control Delay	16.0	14.0	2.4	24.3	15.9	0.4	56.5	30.5	20.9	29.1	30.4	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	14.0	2.4	24.3	15.9	0.4	56.5	30.5	20.9	29.1	30.4	9.9
LOS	B	B	A	C	B	A	E	C	C	C	C	A
Approach Delay		11.5			16.7			41.0			24.6	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	4.5	52.5	0.0	21.8	74.9	0.0	53.0	10.7	14.6	5.1	10.5	1.1
Queue Length 95th (m)	13.0	75.9	10.3	50.6	105.1	0.3	69.4	15.4	25.5	10.8	15.1	8.8
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	228	2054	998	312	2034	922	617	1690	777	609	1659	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.42	0.26	0.54	0.54	0.02	0.40	0.07	0.16	0.05	0.07	0.07

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 19.1 Intersection LOS: B
Intersection Capacity Utilization 104.1% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: McCowan Rd & Stouffville Rd

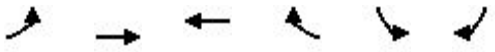




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	726	223	143	932	19	209	98	109	25	95	46
Future Volume (vph)	38	726	223	143	932	19	209	98	109	25	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1487	1683	3275	1389
Flt Permitted	0.21	1.00	1.00	0.30	1.00	1.00	0.68	1.00	1.00	0.68	1.00	1.00
Satd. Flow (perm)	381	3433	1493	521	3400	1507	1219	3336	1487	1203	3275	1389
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	45	854	262	168	1096	22	246	115	128	29	112	54
RTOR Reduction (vph)	0	0	105	0	0	9	0	0	36	0	0	36
Lane Group Flow (vph)	45	854	157	168	1096	13	246	115	92	29	112	18
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	67.3	67.3	67.3	67.3	67.3	67.3	28.7	28.7	28.7	28.7	28.7	28.7
Effective Green, g (s)	67.3	67.3	67.3	67.3	67.3	67.3	28.7	28.7	28.7	28.7	28.7	28.7
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	227	2053	893	311	2033	901	310	851	379	306	835	354
v/s Ratio Prot		0.25			0.32			0.03			0.03	
v/s Ratio Perm	0.12		0.11	c0.32		0.01	c0.20		0.06	0.02		0.01
v/c Ratio	0.20	0.42	0.18	0.54	0.54	0.01	0.79	0.14	0.24	0.09	0.13	0.05
Uniform Delay, d1	10.3	12.1	10.1	13.4	13.4	9.2	39.1	32.3	33.3	32.0	32.3	31.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.6	0.4	6.6	1.0	0.0	13.0	0.1	0.3	0.1	0.1	0.1
Delay (s)	12.3	12.7	10.6	20.0	14.4	9.2	52.2	32.4	33.6	32.1	32.4	31.7
Level of Service	B	B	B	C	B	A	D	C	C	C	C	C
Approach Delay (s)		12.2			15.1			42.7			32.2	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

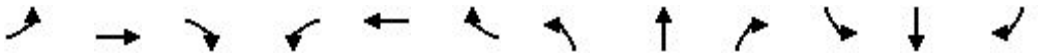
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	787	1104	10	3	0
Future Volume (Veh/h)	29	787	1104	10	3	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)	32	855	1200	11	3	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)						
pX, platoon unblocked						
vC, conflicting volume	1211				1697	606
vC1, stage 1 conf vol					1206	
vC2, stage 2 conf vol					492	
vCu, unblocked vol	1211				1697	606
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 %	95				99	100
cM capacity (veh/h)	583				230	445

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	32	428	428	800	411	3
Volume Left	32	0	0	0	0	3
Volume Right	0	0	0	0	11	0
cSH	583	1700	1700	1700	1700	230
Volume to Capacity	0.05	0.25	0.25	0.47	0.24	0.01
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	11.5	0.0	0.0	0.0	0.0	20.9
Lane LOS	B					C
Approach Delay (s)	0.4			0.0		20.9
Approach LOS						C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		



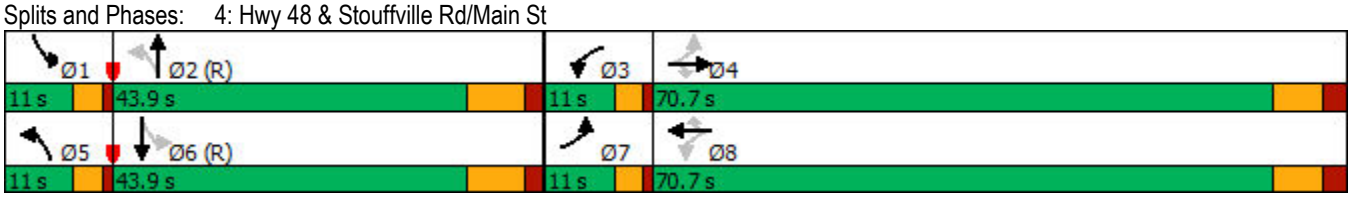
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	482	228	142	944	73	289	250	67	156	470	395
Future Volume (vph)	133	482	228	142	944	73	289	250	67	156	470	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.968			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3341	0	1716	3183	0
Flt Permitted	0.109			0.381			0.100			0.545		
Satd. Flow (perm)	178	3500	1551	682	3500	1507	184	3341	0	985	3183	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			248			103		24			145	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Adj. Flow (vph)	145	524	248	154	1026	79	314	272	73	170	511	429
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	524	248	154	1026	79	314	345	0	170	940	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	59.6	48.9	48.9	59.6	48.9	48.9	63.7	44.8		52.2	36.0	
Actuated g/C Ratio	0.44	0.36	0.36	0.44	0.36	0.36	0.47	0.33		0.38	0.26	

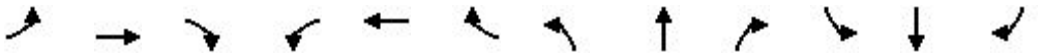
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.98	0.42	0.35	0.44	0.82	0.13	0.96	0.31		0.39	0.99	
Control Delay	95.7	33.5	4.3	25.2	45.4	2.5	78.6	34.5		26.0	70.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	95.7	33.5	4.3	25.2	45.4	2.5	78.6	34.5		26.0	70.3	
LOS	F	C	A	C	D	A	E	C		C	E	
Approach Delay		35.4			40.2			55.5			63.5	
Approach LOS		D			D			E			E	
Queue Length 50th (m)	23.8	58.8	0.0	25.2	138.5	0.0	71.3	36.2		27.6	123.3	
Queue Length 95th (m)	#53.7	67.5	16.4	35.0	149.2	6.0	#169.3	54.6		48.8	#171.6	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	148	1614	848	349	1614	750	327	1111		441	945	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.98	0.32	0.29	0.44	0.64	0.11	0.96	0.31		0.39	0.99	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 48.2 Intersection LOS: D
Intersection Capacity Utilization 96.6% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	482	228	142	944	73	289	250	67	156	470	395
Future Volume (vph)	133	482	228	142	944	73	289	250	67	156	470	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3342		1716	3181	
Flt Permitted	0.11	1.00	1.00	0.38	1.00	1.00	0.10	1.00		0.54	1.00	
Satd. Flow (perm)	177	3500	1551	682	3500	1507	184	3342		984	3181	
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)	145	524	248	154	1026	79	314	272	73	170	511	429
RTOR Reduction (vph)	0	0	159	0	0	51	0	16	0	0	107	0
Lane Group Flow (vph)	145	524	89	154	1026	28	314	329	0	170	833	0
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	55.9	48.9	48.9	55.9	48.9	48.9	61.1	44.8		48.3	36.0	
Effective Green, g (s)	55.9	48.9	48.9	55.9	48.9	48.9	61.1	44.8		48.3	36.0	
Actuated g/C Ratio	0.41	0.36	0.36	0.41	0.36	0.36	0.45	0.33		0.35	0.26	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	142	1252	555	331	1252	539	324	1096		413	838	
v/s Ratio Prot	c0.05	0.15		0.02	0.29		c0.15	0.10		0.04	0.26	
v/s Ratio Perm	c0.36		0.06	0.17		0.02	c0.28			0.11		
v/c Ratio	1.02	0.42	0.16	0.47	0.82	0.05	0.97	0.30		0.41	0.99	
Uniform Delay, d1	34.7	33.1	29.9	27.3	39.8	28.7	42.1	34.2		31.7	50.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	81.2	0.2	0.1	1.0	4.3	0.0	41.2	0.7		0.7	29.7	
Delay (s)	115.9	33.3	30.0	28.4	44.2	28.7	83.3	34.9		32.3	79.9	
Level of Service	F	C	C	C	D	C	F	C		C	E	
Approach Delay (s)		45.5			41.3			58.0			72.7	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

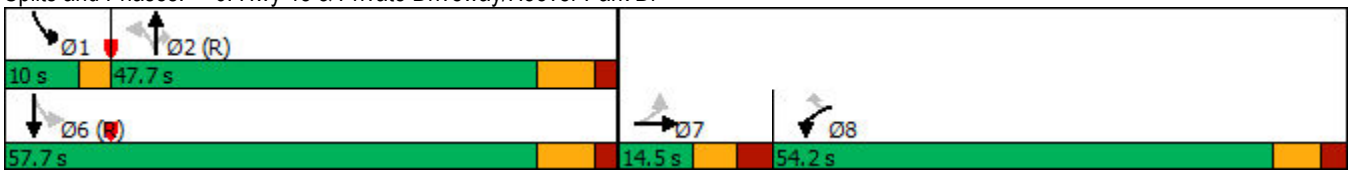
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	343	0	201	0	463	283	203	471	0
Future Volume (vph)	0	0	0	343	0	201	0	463	283	203	471	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1716	0	1566	1879	1724	1536	1700	1756	0
Flt Permitted				0.950						0.268		
Satd. Flow (perm)	0	1879	0	1716	0	1566	1879	1724	1536	480	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			314			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Adj. Flow (vph)	0	0	0	381	0	223	0	514	314	226	523	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	381	0	223	0	514	314	226	523	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	
Act Effct Green (s)				33.9		33.9		53.2	53.2	82.3	77.6	
Actuated g/C Ratio				0.27		0.27		0.42	0.42	0.65	0.61	

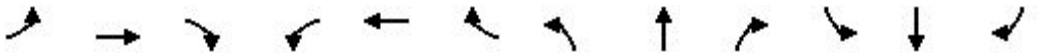
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.83		0.38		0.71	0.38	0.44	0.49	
Control Delay				58.3		5.8		37.9	4.4	12.9	16.7	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				58.3		5.8		37.9	4.4	12.9	16.7	
LOS				E		A		D	A	B	B	
Approach Delay					38.9			25.2			15.6	
Approach LOS					D			C			B	
Queue Length 50th (m)				94.0		0.0		105.0	0.0	22.1	71.1	
Queue Length 95th (m)				119.0		17.4		#187.6	20.0	42.5	121.8	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				638		722		726	828	518	1077	
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				0.60		0.31		0.71	0.38	0.44	0.49	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 25.7 Intersection LOS: C
Intersection Capacity Utilization 101.8% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

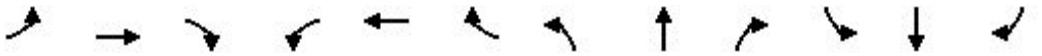
Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	343	0	201	0	463	283	203	471	0
Future Volume (vph)	0	0	0	343	0	201	0	463	283	203	471	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1716		1566		1724	1536	1700	1756	
Flt Permitted				0.95		1.00		1.00	1.00	0.27	1.00	
Satd. Flow (perm)				1716		1566		1724	1536	479	1756	
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	0	0	381	0	223	0	514	314	226	523	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	0	182	0	0	0
Lane Group Flow (vph)	0	0	0	381	0	60	0	514	132	226	523	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				33.9		33.9		53.3	53.3	77.6	77.6	
Effective Green, g (s)				33.9		33.9		53.3	53.3	77.6	77.6	
Actuated g/C Ratio				0.27		0.27		0.42	0.42	0.61	0.61	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				460		419		726	647	499	1078	
v/s Ratio Prot				c0.22				c0.30		0.08	c0.30	
v/s Ratio Perm						0.04			0.09	0.20		
v/c Ratio				0.83		0.14		0.71	0.20	0.45	0.49	
Uniform Delay, d1				43.5		35.2		30.1	23.1	14.1	13.4	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				11.7		0.2		5.8	0.7	0.7	1.6	
Delay (s)				55.2		35.4		35.9	23.8	14.8	15.0	
Level of Service				E		D		D	C	B	B	
Approach Delay (s)		0.0			47.9			31.3			14.9	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



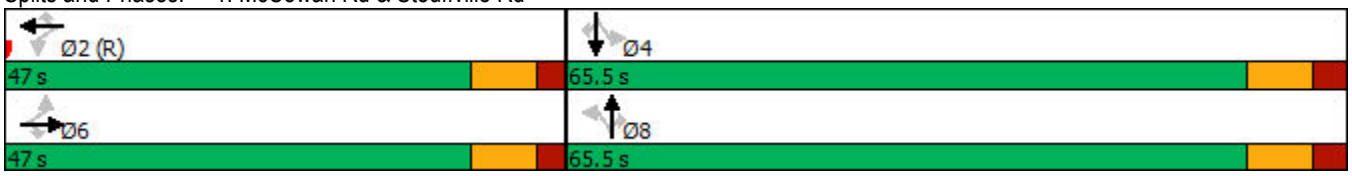
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1245	296	134	956	14	257	153	82	19	106	26
Future Volume (vph)	86	1245	296	134	956	14	257	153	82	19	106	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.218			0.126			0.679			0.647		
Satd. Flow (perm)	394	3535	1536	230	3500	1597	1215	3535	1566	1216	3400	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			322			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Adj. Flow (vph)	93	1353	322	146	1039	15	279	166	89	21	115	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	1353	322	146	1039	15	279	166	89	21	115	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	63.7	63.7	63.7	63.7	63.7	63.7	32.3	32.3	32.3	32.3	32.3	32.3
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.29	0.29	0.29	0.29	0.29	0.29

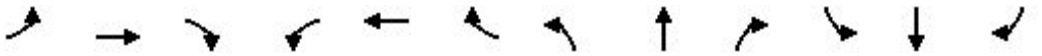
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.42	0.68	0.32	1.12	0.52	0.02	0.80	0.16	0.18	0.06	0.12	0.06
Control Delay	24.8	21.1	2.7	146.6	17.8	0.0	53.1	28.4	14.1	25.3	27.5	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	21.1	2.7	146.6	17.8	0.0	53.1	28.4	14.1	25.3	27.5	2.8
LOS	C	C	A	F	B	A	D	C	B	C	C	A
Approach Delay		17.9			33.2			38.9			23.0	
Approach LOS		B			C			D			C	
Queue Length 50th (m)	11.6	110.2	0.0	~39.1	74.3	0.0	59.6	15.1	6.9	3.5	10.3	0.0
Queue Length 95th (m)	34.3	170.7	15.4	#62.6	116.7	0.0	80.3	20.3	16.7	8.5	15.0	3.0
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	223	2001	1009	130	1981	926	615	1791	817	616	1722	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.68	0.32	1.12	0.52	0.02	0.45	0.09	0.11	0.03	0.07	0.04

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 26.2 Intersection LOS: C
Intersection Capacity Utilization 108.2% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

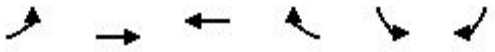
Splits and Phases: 1: McCowan Rd & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1245	296	134	956	14	257	153	82	19	106	26
Future Volume (vph)	86	1245	296	134	956	14	257	153	82	19	106	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.22	1.00	1.00	0.13	1.00	1.00	0.68	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	394	3535	1536	229	3500	1597	1215	3535	1566	1215	3400	1452
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)	93	1353	322	146	1039	15	279	166	89	21	115	28
RTOR Reduction (vph)	0	0	140	0	0	7	0	0	34	0	0	20
Lane Group Flow (vph)	93	1353	182	146	1039	8	279	166	55	21	115	8
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	63.7	63.7	63.7	63.7	63.7	63.7	32.3	32.3	32.3	32.3	32.3	32.3
Effective Green, g (s)	63.7	63.7	63.7	63.7	63.7	63.7	32.3	32.3	32.3	32.3	32.3	32.3
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.29	0.29	0.29	0.29	0.29	0.29
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	223	2001	869	129	1981	904	348	1014	449	348	976	416
v/s Ratio Prot		0.38			0.30			0.05			0.03	
v/s Ratio Perm	0.24		0.12	c0.64		0.01	c0.23		0.03	0.02		0.01
v/c Ratio	0.42	0.68	0.21	1.13	0.52	0.01	0.80	0.16	0.12	0.06	0.12	0.02
Uniform Delay, d1	13.9	17.2	12.0	24.4	15.1	10.6	37.1	30.0	29.6	29.1	29.6	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	1.9	0.5	119.0	1.0	0.0	12.5	0.1	0.1	0.1	0.1	0.0
Delay (s)	19.5	19.0	12.6	143.4	16.1	10.7	49.6	30.1	29.7	29.2	29.6	28.8
Level of Service	B	B	B	F	B	B	D	C	C	C	C	C
Approach Delay (s)		17.9			31.5			40.2			29.4	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	1284	1091	68	3	27
Future Volume (Veh/h)	32	1284	1091	68	3	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	35	1411	1199	75	3	30
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)						
pX, platoon unblocked						
vC, conflicting volume	1274				2012	637
vC1, stage 1 conf vol					1236	
vC2, stage 2 conf vol					776	
vCu, unblocked vol	1274				2012	637
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 %	94				99	93
cM capacity (veh/h)	552				204	425

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	35	706	706	799	475	33
Volume Left	35	0	0	0	0	3
Volume Right	0	0	0	0	75	30
cSH	552	1700	1700	1700	1700	387
Volume to Capacity	0.06	0.41	0.41	0.47	0.28	0.09
Queue Length 95th (m)	1.6	0.0	0.0	0.0	0.0	2.2
Control Delay (s)	12.0	0.0	0.0	0.0	0.0	15.2
Lane LOS	B					C
Approach Delay (s)	0.3			0.0		15.2
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

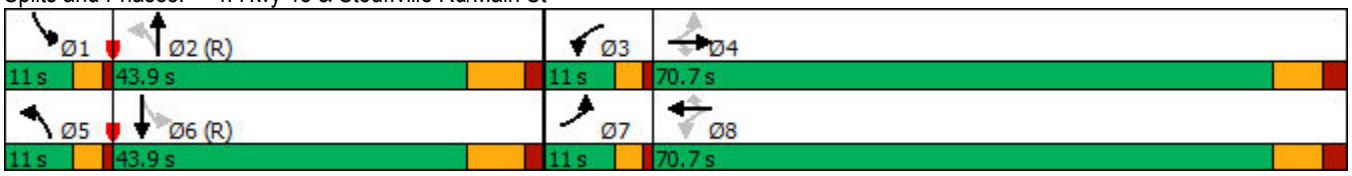
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	1037	397	143	574	199	178	499	166	146	338	141
Future Volume (vph)	352	1037	397	143	574	199	178	499	166	146	338	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.963			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3408	0	1750	3276	0
Flt Permitted	0.341			0.105			0.373			0.242		
Satd. Flow (perm)	616	3535	1581	192	3535	1597	680	3408	0	445	3276	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			316			205		32			46	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Adj. Flow (vph)	363	1069	409	147	592	205	184	514	171	151	348	145
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	1069	409	147	592	205	184	685	0	151	493	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	

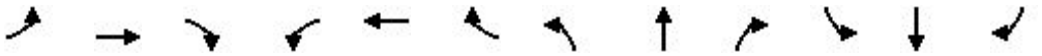
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	63.8	51.1	51.1	63.4	50.9	50.9	57.5	41.3		56.6	40.9	
Actuated g/C Ratio	0.47	0.37	0.37	0.46	0.37	0.37	0.42	0.30		0.41	0.30	
v/c Ratio	1.01	0.81	0.52	0.78	0.45	0.28	0.48	0.65		0.51	0.49	
Control Delay	79.8	43.3	9.2	48.6	32.8	4.1	30.4	44.0		31.5	38.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	79.8	43.3	9.2	48.6	32.8	4.1	30.4	44.0		31.5	38.6	
LOS	E	D	A	D	C	A	C	D		C	D	
Approach Delay		42.9			29.0			41.1			36.9	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	63.0	142.0	17.4	22.0	65.8	0.0	32.5	88.1		26.1	57.2	
Queue Length 95th (m)	#117.9	152.3	42.1	#46.5	74.4	14.7	54.3	113.5		45.1	76.7	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	360	1630	899	188	1630	846	380	1058		296	1017	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.01	0.66	0.45	0.78	0.36	0.24	0.48	0.65		0.51	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 38.6 Intersection LOS: D
Intersection Capacity Utilization 93.6% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	1037	397	143	574	199	178	499	166	146	338	141
Future Volume (vph)	352	1037	397	143	574	199	178	499	166	146	338	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3407		1750	3276	
Flt Permitted	0.34	1.00	1.00	0.10	1.00	1.00	0.37	1.00		0.24	1.00	
Satd. Flow (perm)	616	3535	1581	191	3535	1597	681	3407		446	3276	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	363	1069	409	147	592	205	184	514	171	151	348	145
RTOR Reduction (vph)	0	0	198	0	0	129	0	22	0	0	32	0
Lane Group Flow (vph)	363	1069	211	147	592	76	184	663	0	151	461	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	60.1	51.1	51.1	59.7	50.9	50.9	53.5	41.3		52.7	40.9	
Effective Green, g (s)	60.1	51.1	51.1	59.7	50.9	50.9	53.5	41.3		52.7	40.9	
Actuated g/C Ratio	0.44	0.37	0.37	0.44	0.37	0.37	0.39	0.30		0.39	0.30	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	343	1322	591	182	1317	595	360	1030		284	980	
v/s Ratio Prot	c0.07	0.30		0.05	0.17		0.05	c0.19		c0.05	0.14	
v/s Ratio Perm	c0.40		0.13	0.30		0.05	0.15			0.16		
v/c Ratio	1.06	0.81	0.36	0.81	0.45	0.13	0.51	0.64		0.53	0.47	
Uniform Delay, d1	36.3	38.4	30.9	28.7	32.3	28.2	28.6	41.3		29.3	39.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	64.8	3.7	0.4	22.4	0.2	0.1	1.2	3.1		1.9	1.6	
Delay (s)	101.1	42.1	31.3	51.1	32.5	28.3	29.9	44.4		31.2	40.6	
Level of Service	F	D	C	D	C	C	C	D		C	D	
Approach Delay (s)		51.3			34.5			41.3			38.4	
Approach LOS		D			C			D			D	

Intersection Summary					
HCM 2000 Control Delay	43.7	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.85				
Actuated Cycle Length (s)	136.6	Sum of lost time (s)		23.6	
Intersection Capacity Utilization	93.6%	ICU Level of Service		F	
Analysis Period (min)	15				

c Critical Lane Group

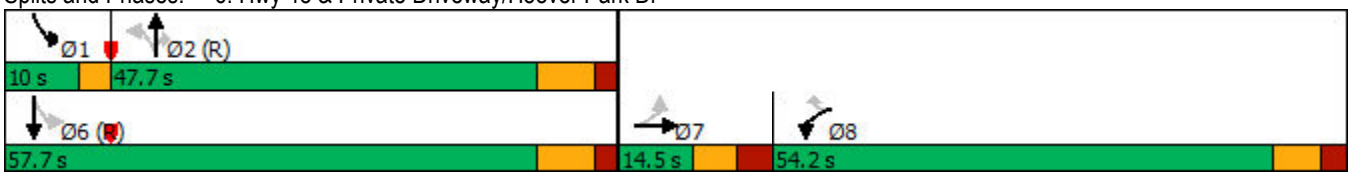
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	0	341	0	682	326	342	500	1
Future Volume (vph)	0	0	0	260	0	341	0	682	326	342	500	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.99			0.99		1.00	
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1750	0	1566	1879	1789	1597	1767	1804	0
Flt Permitted				0.950						0.092		
Satd. Flow (perm)	0	1879	0	1750	0	1545	1879	1789	1576	171	1804	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						314			366			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Adj. Flow (vph)	0	0	0	292	0	383	0	766	366	384	562	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	292	0	383	0	766	366	384	563	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				27.0		27.0		40.3	40.3	89.2	84.5	
Actuated g/C Ratio				0.21		0.21		0.32	0.32	0.71	0.67	
v/c Ratio				0.78		0.66		1.34	0.49	0.60	0.47	
Control Delay				61.0		14.5		200.7	5.5	29.4	12.8	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				61.0		14.5		200.7	5.5	29.4	12.8	
LOS				E		B		F	A	C	B	
Approach Delay					34.6			137.6			19.5	
Approach LOS					C			F			B	
Queue Length 50th (m)				72.9		15.0		~262.8	0.0	62.8	65.1	
Queue Length 95th (m)				94.9		43.4		#334.7	21.0	109.5	110.9	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				650		771		571	751	640	1205	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.45		0.50		1.34	0.49	0.60	0.47	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.34
Intersection Signal Delay: 71.7 Intersection LOS: E
Intersection Capacity Utilization 97.2% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

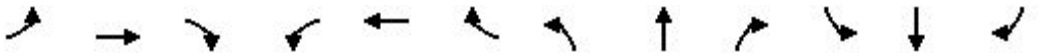
Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	0	341	0	682	326	342	500	1
Future Volume (vph)	0	0	0	260	0	341	0	682	326	342	500	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes				1.00		0.99		1.00	0.99	1.00	1.00	
Flpb, ped/bikes				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1750		1545		1789	1576	1767	1803	
Flt Permitted				0.95		1.00		1.00	1.00	0.09	1.00	
Satd. Flow (perm)				1750		1545		1789	1576	171	1803	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	292	0	383	0	766	366	384	562	1
RTOR Reduction (vph)	0	0	0	0	0	247	0	0	249	0	0	0
Lane Group Flow (vph)	0	0	0	292	0	136	0	766	117	384	563	0
Confl. Peds. (#/hr)	1					1	1		1	1		1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				27.0		27.0		40.4	40.4	84.5	84.5	
Effective Green, g (s)				27.0		27.0		40.4	40.4	84.5	84.5	
Actuated g/C Ratio				0.21		0.21		0.32	0.32	0.67	0.67	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				373		330		571	503	633	1205	
v/s Ratio Prot				c0.17				c0.43		c0.20	0.31	
v/s Ratio Perm						0.09			0.07	0.21		
v/c Ratio				0.78		0.41		1.34	0.23	0.61	0.47	
Uniform Delay, d1				46.9		42.9		43.0	31.6	26.8	10.1	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				10.3		0.8		165.2	1.1	1.7	1.3	
Delay (s)				57.2		43.7		208.2	32.7	28.5	11.4	
Level of Service				E		D		F	C	C	B	
Approach Delay (s)		0.0			49.5			151.5			18.3	
Approach LOS		A			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	80.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



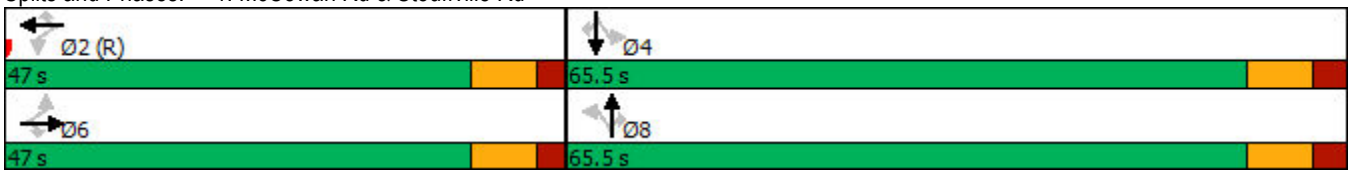
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	713	206	168	961	28	178	83	99	36	81	39
Future Volume (vph)	35	713	206	168	961	28	178	83	99	36	81	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1507	1684	3275	1389
Flt Permitted	0.206			0.309			0.692			0.690		
Satd. Flow (perm)	376	3433	1493	543	3400	1507	1238	3336	1487	1222	3275	1389
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			242			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Adj. Flow (vph)	41	839	242	198	1131	33	209	98	116	42	95	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	839	242	198	1131	33	209	98	116	42	95	46
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None

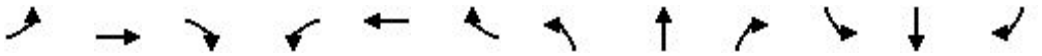
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	70.4	70.4	70.4	70.4	70.4	70.4	25.6	25.6	25.6	25.6	25.6	25.6
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63	0.63	0.23	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.17	0.39	0.24	0.58	0.53	0.03	0.74	0.13	0.31	0.15	0.13	0.13
Control Delay	14.1	12.3	2.2	24.2	14.3	1.7	55.2	32.4	21.4	32.4	32.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	12.3	2.2	24.2	14.3	1.7	55.2	32.4	21.4	32.4	32.3	8.4
LOS	B	B	A	C	B	A	E	C	C	C	C	A
Approach Delay		10.2			15.4			40.6			26.3	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	3.7	46.5	0.0	24.8	70.9	0.0	45.4	9.5	12.9	7.9	9.3	0.0
Queue Length 95th (m)	11.8	72.3	9.8	61.0	106.6	2.2	59.1	13.8	23.3	14.5	13.5	7.2
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	235	2148	1025	339	2127	962	627	1690	777	619	1659	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.39	0.24	0.58	0.53	0.03	0.33	0.06	0.15	0.07	0.06	0.06

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 102.4% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: McCowan Rd & Stouffville Rd

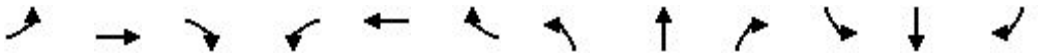




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	713	206	168	961	28	178	83	99	36	81	39
Future Volume (vph)	35	713	206	168	961	28	178	83	99	36	81	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1487	1683	3275	1389
Flt Permitted	0.21	1.00	1.00	0.31	1.00	1.00	0.69	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	375	3433	1493	543	3400	1507	1239	3336	1487	1223	3275	1389
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	41	839	242	198	1131	33	209	98	116	42	95	46
RTOR Reduction (vph)	0	0	91	0	0	12	0	0	37	0	0	36
Lane Group Flow (vph)	41	839	151	198	1131	21	209	98	79	42	95	10
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	70.4	70.4	70.4	70.4	70.4	70.4	25.6	25.6	25.6	25.6	25.6	25.6
Effective Green, g (s)	70.4	70.4	70.4	70.4	70.4	70.4	25.6	25.6	25.6	25.6	25.6	25.6
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63	0.63	0.23	0.23	0.23	0.23	0.23	0.23
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	234	2148	934	339	2127	943	281	759	338	278	745	316
v/s Ratio Prot		0.24			0.33			0.03			0.03	
v/s Ratio Perm	0.11		0.10	c0.36		0.01	c0.17		0.05	0.03		0.01
v/c Ratio	0.18	0.39	0.16	0.58	0.53	0.02	0.74	0.13	0.23	0.15	0.13	0.03
Uniform Delay, d1	8.8	10.4	8.8	12.4	11.8	8.0	40.4	34.6	35.4	34.8	34.6	33.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.5	0.4	7.2	1.0	0.0	10.2	0.1	0.4	0.3	0.1	0.0
Delay (s)	10.5	11.0	9.1	19.6	12.8	8.0	50.6	34.7	35.8	35.0	34.6	33.9
Level of Service	B	B	A	B	B	A	D	C	D	D	C	C
Approach Delay (s)		10.6			13.6			42.8			34.5	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

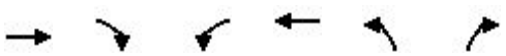
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	777	18	53	1028	10	140	0	4	3	0	0
Future Volume (Veh/h)	29	777	18	53	1028	10	140	0	4	3	0	0
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)	32	845	20	58	1117	11	152	0	4	3	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)												
pX, platoon unblocked												
vC, conflicting volume	1128			865			1584	2153	422	1729	2168	564
vC1, stage 1 conf vol							909	909		1238	1238	
vC2, stage 2 conf vol							674	1244		490	929	
vCu, unblocked vol	1128			865			1584	2153	422	1729	2168	564
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			93			33	100	99	98	100	100
cM capacity (veh/h)	627			787			225	170	585	163	176	474

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	32	422	422	20	58	745	383	152	4	3
Volume Left	32	0	0	0	58	0	0	152	0	3
Volume Right	0	0	0	20	0	0	11	0	4	0
cSH	627	1700	1700	1700	787	1700	1700	225	585	163
Volume to Capacity	0.05	0.25	0.25	0.01	0.07	0.44	0.23	0.67	0.01	0.02
Queue Length 95th (m)	1.3	0.0	0.0	0.0	1.9	0.0	0.0	34.0	0.2	0.4
Control Delay (s)	11.1	0.0	0.0	0.0	9.9	0.0	0.0	48.8	11.2	27.6
Lane LOS	B				A			E	B	D
Approach Delay (s)	0.4				0.5			47.8		27.6
Approach LOS								E		D

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	49.3%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	784	43	0	1607	0	78
Future Volume (Veh/h)	784	43	0	1607	0	78
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)	852	47	0	1747	0	85
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)				303		
pX, platoon unblocked					0.74	
vC, conflicting volume			852		1726	426
vC1, stage 1 conf vol					852	
vC2, stage 2 conf vol					874	
vCu, unblocked vol			852		1282	426
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	85
cM capacity (veh/h)			795		338	582

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	426	426	47	874	874	85
Volume Left	0	0	0	0	0	0
Volume Right	0	0	47	0	0	85
cSH	1700	1700	1700	1700	1700	582
Volume to Capacity	0.25	0.25	0.03	0.51	0.51	0.15
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	4.1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	12.2
Lane LOS						B
Approach Delay (s)	0.0			0.0		12.2
Approach LOS						B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

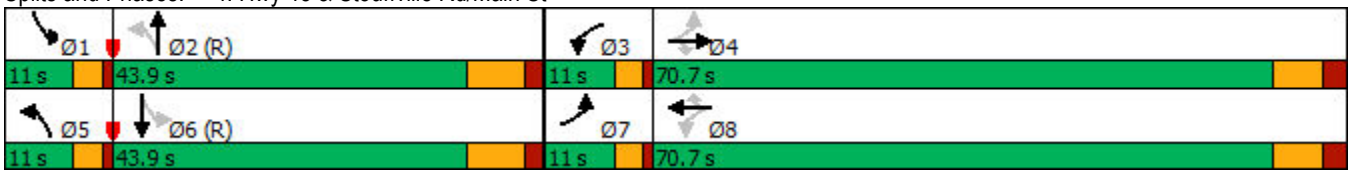
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	484	242	133	906	68	293	241	65	150	450	386
Future Volume (vph)	136	484	242	133	906	68	293	241	65	150	450	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.968			0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3341	0	1716	3179	0
Flt Permitted	0.116			0.375			0.100			0.551		
Satd. Flow (perm)	190	3500	1551	671	3500	1507	184	3341	0	995	3179	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			263			103		24			151	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Adj. Flow (vph)	148	526	263	145	985	74	318	262	71	163	489	420
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	526	263	145	985	74	318	333	0	163	909	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	58.0	47.3	47.3	58.0	47.3	47.3	65.7	46.5		52.1	36.0	
Actuated g/C Ratio	0.42	0.35	0.35	0.42	0.35	0.35	0.48	0.34		0.38	0.26	

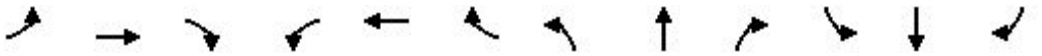
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.99	0.43	0.37	0.43	0.81	0.13	0.91	0.29		0.37	0.96	
Control Delay	98.2	34.8	4.5	25.8	46.1	2.3	68.1	33.2		24.7	61.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	98.2	34.8	4.5	25.8	46.1	2.3	68.1	33.2		24.7	61.9	
LOS	F	C	A	C	D	A	E	C		C	E	
Approach Delay		36.3			41.0			50.2			56.2	
Approach LOS		D			D			D			E	
Queue Length 50th (m)	25.0	60.2	0.0	24.2	133.5	0.0	71.3	33.7		25.6	115.9	
Queue Length 95th (m)	#55.6	69.3	17.1	33.9	144.5	4.9	#165.8	52.5		46.0	#160.6	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	150	1614	857	337	1614	750	348	1152		444	949	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.99	0.33	0.31	0.43	0.61	0.10	0.91	0.29		0.37	0.96	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 45.6 Intersection LOS: D
Intersection Capacity Utilization 96.0% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	484	242	133	906	68	293	241	65	150	450	386
Future Volume (vph)	136	484	242	133	906	68	293	241	65	150	450	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3341		1716	3178	
Flt Permitted	0.12	1.00	1.00	0.37	1.00	1.00	0.10	1.00		0.55	1.00	
Satd. Flow (perm)	190	3500	1551	670	3500	1507	184	3341		995	3178	
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)	148	526	263	145	985	74	318	262	71	163	489	420
RTOR Reduction (vph)	0	0	172	0	0	48	0	16	0	0	111	0
Lane Group Flow (vph)	148	526	91	145	985	26	318	317	0	163	798	0
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	54.3	47.3	47.3	54.3	47.3	47.3	62.7	46.5		48.2	36.0	
Effective Green, g (s)	54.3	47.3	47.3	54.3	47.3	47.3	62.7	46.5		48.2	36.0	
Actuated g/C Ratio	0.40	0.35	0.35	0.40	0.35	0.35	0.46	0.34		0.35	0.26	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	145	1211	537	319	1211	521	344	1137		415	837	
v/s Ratio Prot	c0.05	0.15		0.02	0.28		c0.15	0.09		0.04	0.25	
v/s Ratio Perm	c0.35		0.06	0.16		0.02	c0.27			0.10		
v/c Ratio	1.02	0.43	0.17	0.45	0.81	0.05	0.92	0.28		0.39	0.95	
Uniform Delay, d1	36.2	34.4	31.0	28.0	40.6	29.7	41.0	32.8		31.6	49.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	80.3	0.3	0.2	1.0	4.3	0.0	29.8	0.6		0.6	21.6	
Delay (s)	116.5	34.6	31.2	29.0	44.9	29.7	70.8	33.4		32.2	71.1	
Level of Service	F	C	C	C	D	C	E	C		C	E	
Approach Delay (s)		46.6			42.1			51.7			65.2	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

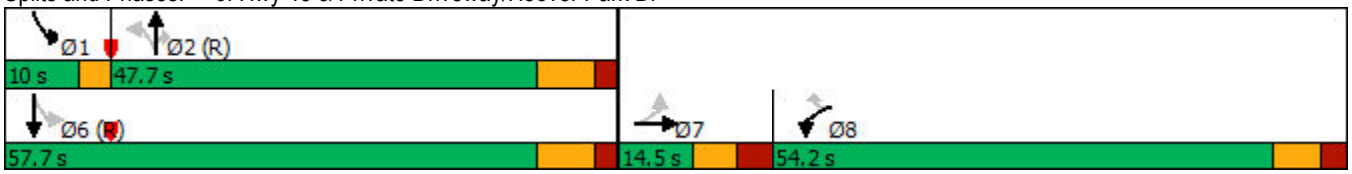
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	316	0	186	0	462	273	196	484	0
Future Volume (vph)	0	0	0	316	0	186	0	462	273	196	484	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1716	0	1566	1879	1724	1536	1700	1756	0
Flt Permitted				0.950						0.294		
Satd. Flow (perm)	0	1879	0	1716	0	1566	1879	1724	1536	526	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						207			303			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Adj. Flow (vph)	0	0	0	351	0	207	0	513	303	218	538	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	351	0	207	0	513	303	218	538	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	
Act Effct Green (s)				31.7		31.7		57.2	57.2	84.5	79.8	
Actuated g/C Ratio				0.25		0.25		0.45	0.45	0.67	0.63	

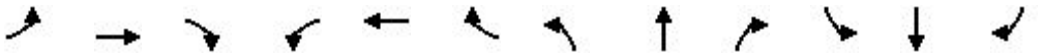
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.82		0.38		0.66	0.35	0.41	0.49	
Control Delay				59.5		6.2		33.3	3.9	11.5	15.5	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				59.5		6.2		33.3	3.9	11.5	15.5	
LOS				E		A		C	A	B	B	
Approach Delay					39.7			22.4			14.3	
Approach LOS					D			C			B	
Queue Length 50th (m)				86.9		0.0		99.4	0.0	20.0	70.3	
Queue Length 95th (m)				112.2		17.5		164.5	18.5	38.6	119.7	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				638		712		780	860	533	1108	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.55		0.29		0.66	0.35	0.41	0.49	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 24.1 Intersection LOS: C
Intersection Capacity Utilization 100.3% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	316	0	186	0	462	273	196	484	0
Future Volume (vph)	0	0	0	316	0	186	0	462	273	196	484	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1716		1566		1724	1536	1700	1756	
Flt Permitted				0.95		1.00		1.00	1.00	0.29	1.00	
Satd. Flow (perm)				1716		1566		1724	1536	526	1756	
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	0	0	351	0	207	0	513	303	218	538	0
RTOR Reduction (vph)	0	0	0	0	0	155	0	0	166	0	0	0
Lane Group Flow (vph)	0	0	0	351	0	52	0	513	137	218	538	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				31.7		31.7		57.2	57.2	79.8	79.8	
Effective Green, g (s)				31.7		31.7		57.2	57.2	79.8	79.8	
Actuated g/C Ratio				0.25		0.25		0.45	0.45	0.63	0.63	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				430		392		780	695	514	1108	
v/s Ratio Prot				c0.20				c0.30		0.07	c0.31	
v/s Ratio Perm						0.03			0.09	0.20		
v/c Ratio				0.82		0.13		0.66	0.20	0.42	0.49	
Uniform Delay, d1				44.6		36.7		27.0	20.8	12.6	12.4	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				11.4		0.2		4.3	0.6	0.6	1.5	
Delay (s)				56.0		36.8		31.3	21.4	13.2	13.9	
Level of Service				E		D		C	C	B	B	
Approach Delay (s)		0.0			48.9			27.6			13.7	
Approach LOS		A			D			C			B	

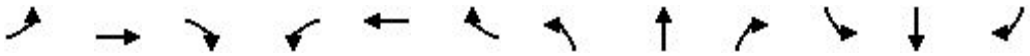
Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	39	39	35	43	0
Future Volume (Veh/h)	70	39	39	35	43	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)	76	42	42	38	47	0
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	155	61			80	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155	61			80	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	96			97	
cM capacity (veh/h)	815	1010			1531	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	118	80	47
Volume Left	76	0	47
Volume Right	42	38	0
cSH	875	1700	1531
Volume to Capacity	0.13	0.05	0.03
Queue Length 95th (m)	3.7	0.0	0.8
Control Delay (s)	9.8	0.0	7.4
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	7.4
Approach LOS	A		

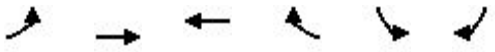
Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	36	0	0	74	39	0	0	0	0	0	70
Future Volume (vph)	35	36	0	0	74	39	0	0	0	0	0	70
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)	38	39	0	0	80	42	0	0	0	0	0	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	122	0	76
Volume Left (vph)	38	0	0	0
Volume Right (vph)	0	42	0	76
Hadj (s)	0.10	-0.21	0.00	-0.60
Departure Headway (s)	4.3	3.9	4.4	3.7
Degree Utilization, x	0.09	0.13	0.00	0.08
Capacity (veh/h)	821	895	786	917
Control Delay (s)	7.7	7.5	7.4	7.0
Approach Delay (s)	7.7	7.5	0.0	7.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.4			
Level of Service	A			
Intersection Capacity Utilization	21.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	0	0	0	0	113
Future Volume (Veh/h)	36	0	0	0	0	113
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)	39	0	0	0	0	123
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	0				78	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				78	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	89
cM capacity (veh/h)	1636				908	1091

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	39	0	123
Volume Left	39	0	0
Volume Right	0	0	123
cSH	1636	1700	1091
Volume to Capacity	0.02	0.00	0.11
Queue Length 95th (m)	0.6	0.0	3.0
Control Delay (s)	7.3	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

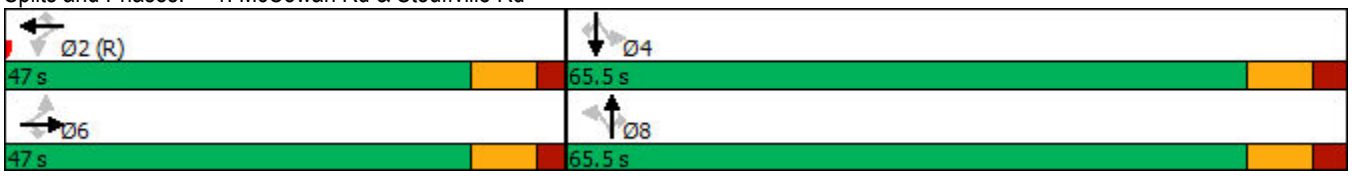
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1239	273	153	960	22	219	131	80	45	91	22
Future Volume (vph)	79	1239	273	153	960	22	219	131	80	45	91	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.228			0.140			0.690			0.662		
Satd. Flow (perm)	412	3535	1536	255	3500	1597	1235	3535	1566	1244	3400	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			297			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Adj. Flow (vph)	86	1347	297	166	1043	24	238	142	87	49	99	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	1347	297	166	1043	24	238	142	87	49	99	24
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	68.1	68.1	68.1	68.1	68.1	68.1	27.9	27.9	27.9	27.9	27.9	27.9
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25

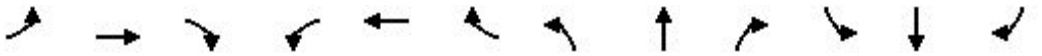
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.35	0.63	0.28	1.08	0.49	0.02	0.78	0.16	0.21	0.16	0.12	0.06
Control Delay	18.7	17.2	2.3	123.1	14.6	0.7	55.8	31.6	16.1	31.2	30.7	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	17.2	2.3	123.1	14.6	0.7	55.8	31.6	16.1	31.2	30.7	2.6
LOS	B	B	A	F	B	A	E	C	B	C	C	A
Approach Delay		14.7			29.0			41.1			26.9	
Approach LOS		B			C			D			C	
Queue Length 50th (m)	9.4	98.8	0.0	~43.1	67.5	0.0	51.2	13.5	7.0	8.9	9.3	0.0
Queue Length 95th (m)	26.4	149.0	13.1	#62.0	103.5	1.1	73.4	19.7	18.0	17.3	14.7	2.4
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	249	2139	1046	154	2118	987	625	1791	817	630	1722	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.63	0.28	1.08	0.49	0.02	0.38	0.08	0.11	0.08	0.06	0.03

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 23.6 Intersection LOS: C
Intersection Capacity Utilization 114.7% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

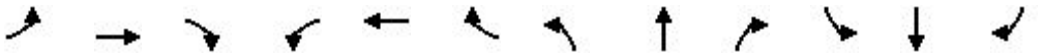
Splits and Phases: 1: McCowan Rd & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1239	273	153	960	22	219	131	80	45	91	22
Future Volume (vph)	79	1239	273	153	960	22	219	131	80	45	91	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.23	1.00	1.00	0.14	1.00	1.00	0.69	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	412	3535	1536	256	3500	1597	1234	3535	1566	1244	3400	1452
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)	86	1347	297	166	1043	24	238	142	87	49	99	24
RTOR Reduction (vph)	0	0	117	0	0	9	0	0	36	0	0	18
Lane Group Flow (vph)	86	1347	180	166	1043	15	238	142	51	49	99	6
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	68.1	68.1	68.1	68.1	68.1	68.1	27.9	27.9	27.9	27.9	27.9	27.9
Effective Green, g (s)	68.1	68.1	68.1	68.1	68.1	68.1	27.9	27.9	27.9	27.9	27.9	27.9
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	249	2139	929	154	2118	966	306	876	388	308	843	360
v/s Ratio Prot		0.38			0.30			0.04			0.03	
v/s Ratio Perm	0.21		0.12	c0.65		0.01	c0.19		0.03	0.04		0.00
v/c Ratio	0.35	0.63	0.19	1.08	0.49	0.02	0.78	0.16	0.13	0.16	0.12	0.02
Uniform Delay, d1	11.1	14.2	9.9	22.2	12.5	8.8	39.4	33.1	32.9	33.1	32.8	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	1.4	0.5	94.8	0.8	0.0	11.8	0.1	0.2	0.2	0.1	0.0
Delay (s)	14.8	15.6	10.4	117.0	13.3	8.9	51.2	33.2	33.0	33.4	32.8	32.0
Level of Service	B	B	B	F	B	A	D	C	C	C	C	C
Approach Delay (s)		14.7			27.2			42.3			32.9	
Approach LOS		B			C			D			C	

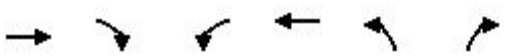
Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1281	37	103	1012	68	111	0	3	3	0	27
Future Volume (Veh/h)	32	1281	37	103	1012	68	111	0	3	3	0	27
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)	35	1408	41	113	1112	75	122	0	3	3	0	30
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)												
pX, platoon unblocked												
vC, conflicting volume	1187			1449			2290	2891	704	2152	2894	594
vC1, stage 1 conf vol							1478	1478		1376	1376	
vC2, stage 2 conf vol							812	1413		777	1519	
vCu, unblocked vol	1187			1449			2290	2891	704	2152	2894	594
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			76			0	100	99	97	100	93
cM capacity (veh/h)	595			474			105	97	384	103	55	453

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	35	704	704	41	113	741	446	122	3	33
Volume Left	35	0	0	0	113	0	0	122	0	3
Volume Right	0	0	0	41	0	0	75	0	3	30
cSH	595	1700	1700	1700	474	1700	1700	105	384	346
Volume to Capacity	0.06	0.41	0.41	0.02	0.24	0.44	0.26	1.16	0.01	0.10
Queue Length 95th (m)	1.5	0.0	0.0	0.0	7.4	0.0	0.0	63.3	0.2	2.5
Control Delay (s)	11.4	0.0	0.0	0.0	15.0	0.0	0.0	215.0	14.4	16.5
Lane LOS	B				B			F	B	C
Approach Delay (s)	0.3				1.3			210.2		16.5
Approach LOS								F		C

Intersection Summary				
Average Delay	9.8			
Intersection Capacity Utilization	63.9%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1660	84	0	952	0	62
Future Volume (Veh/h)	1660	84	0	952	0	62
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)	1804	91	0	1035	0	67
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)				303		
pX, platoon unblocked					0.87	
vC, conflicting volume			1804		2322	902
vC1, stage 1 conf vol					1804	
vC2, stage 2 conf vol					518	
vCu, unblocked vol			1804		2222	902
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	76
cM capacity (veh/h)			346		115	285

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	902	902	91	518	518	67
Volume Left	0	0	0	0	0	0
Volume Right	0	0	91	0	0	67
cSH	1700	1700	1700	1700	1700	285
Volume to Capacity	0.53	0.53	0.05	0.30	0.30	0.24
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	7.2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	21.5
Lane LOS						C
Approach Delay (s)	0.0			0.0		21.5
Approach LOS						C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

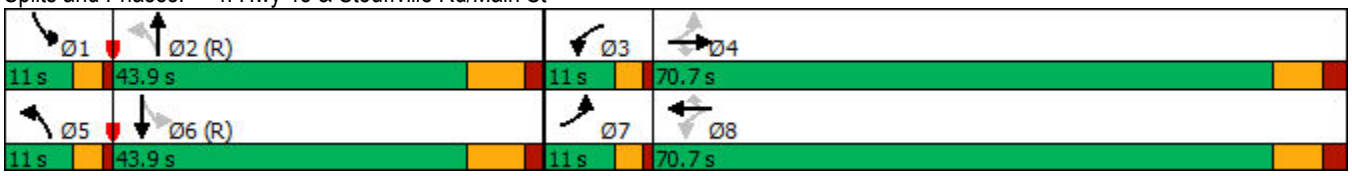
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	995	391	133	588	185	203	480	159	140	325	151
Future Volume (vph)	336	995	391	133	588	185	203	480	159	140	325	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.963			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3408	0	1750	3259	0
Flt Permitted	0.325			0.113			0.358			0.280		
Satd. Flow (perm)	587	3535	1581	206	3535	1597	653	3408	0	515	3259	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			331			191		32			55	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Adj. Flow (vph)	346	1026	403	137	606	191	209	495	164	144	335	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	346	1026	403	137	606	191	209	659	0	144	491	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	

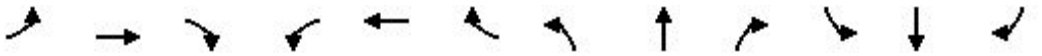
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	62.5	49.4	49.4	62.0	49.2	49.2	60.6	42.9		56.1	40.6	
Actuated g/C Ratio	0.46	0.36	0.36	0.45	0.36	0.36	0.44	0.31		0.41	0.30	
v/c Ratio	1.00	0.80	0.51	0.70	0.48	0.27	0.53	0.60		0.46	0.49	
Control Delay	78.5	44.1	8.2	40.2	34.4	4.3	30.4	41.9		28.7	38.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	78.5	44.1	8.2	40.2	34.4	4.3	30.4	41.9		28.7	38.1	
LOS	E	D	A	D	C	A	C	D		C	D	
Approach Delay		42.7			29.1			39.2			35.9	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	60.9	136.8	13.6	20.9	69.2	0.0	36.7	81.3		24.2	55.7	
Queue Length 95th (m)	#116.3	147.6	37.7	#40.5	78.4	14.7	59.8	108.5		42.0	75.0	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	346	1630	907	195	1630	839	398	1096		315	1021	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.00	0.63	0.44	0.70	0.37	0.23	0.53	0.60		0.46	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 37.9 Intersection LOS: D
Intersection Capacity Utilization 93.3% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	995	391	133	588	185	203	480	159	140	325	151
Future Volume (vph)	336	995	391	133	588	185	203	480	159	140	325	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3407		1750	3261	
Flt Permitted	0.33	1.00	1.00	0.11	1.00	1.00	0.36	1.00		0.28	1.00	
Satd. Flow (perm)	587	3535	1581	206	3535	1597	653	3407		515	3261	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	346	1026	403	137	606	191	209	495	164	144	335	156
RTOR Reduction (vph)	0	0	211	0	0	122	0	22	0	0	39	0
Lane Group Flow (vph)	346	1026	192	137	606	69	209	637	0	144	452	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	58.9	49.5	49.5	58.3	49.2	49.2	56.6	42.8		52.2	40.6	
Effective Green, g (s)	58.9	49.5	49.5	58.3	49.2	49.2	56.6	42.8		52.2	40.6	
Actuated g/C Ratio	0.43	0.36	0.36	0.43	0.36	0.36	0.41	0.31		0.38	0.30	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	330	1280	572	189	1273	575	379	1067		301	969	
v/s Ratio Prot	c0.07	0.29		0.05	0.17		c0.06	c0.19		0.04	0.14	
v/s Ratio Perm	c0.38		0.12	0.26		0.04	0.17			0.14		
v/c Ratio	1.05	0.80	0.34	0.72	0.48	0.12	0.55	0.60		0.48	0.47	
Uniform Delay, d1	36.6	39.1	31.6	28.7	33.7	29.2	27.2	39.6		29.1	39.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	62.8	3.7	0.3	12.9	0.3	0.1	1.7	2.5		1.2	1.6	
Delay (s)	99.4	42.8	32.0	41.6	34.0	29.3	28.9	42.1		30.3	40.8	
Level of Service	F	D	C	D	C	C	C	D		C	D	
Approach Delay (s)		51.4			34.2			38.9			38.4	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

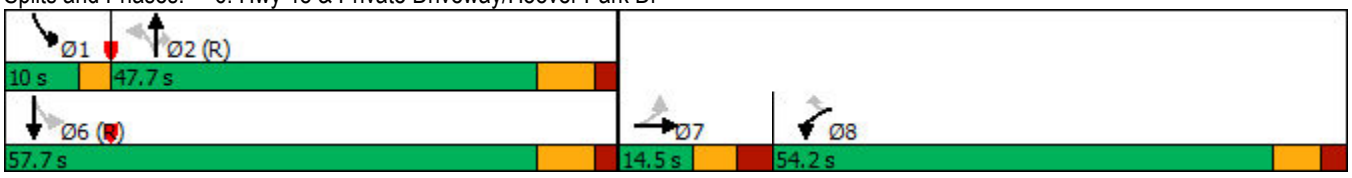
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	241	0	312	0	687	314	329	505	1
Future Volume (vph)	0	0	0	241	0	312	0	687	314	329	505	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.99			0.99		1.00	
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1750	0	1566	1879	1789	1597	1767	1804	0
Flt Permitted				0.950						0.089		
Satd. Flow (perm)	0	1879	0	1750	0	1545	1879	1789	1576	166	1804	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						313			353			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Adj. Flow (vph)	0	0	0	271	0	351	0	772	353	370	567	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	271	0	351	0	772	353	370	568	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	

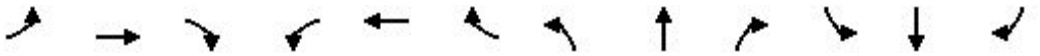
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				25.4		25.4		41.9	41.9	90.8	86.1	
Actuated g/C Ratio				0.20		0.20		0.33	0.33	0.72	0.68	
v/c Ratio				0.77		0.63		1.30	0.47	0.58	0.46	
Control Delay				61.8		11.9		183.8	5.3	28.5	11.9	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				61.8		11.9		183.8	5.3	28.5	11.9	
LOS				E		B		F	A	C	B	
Approach Delay					33.6			127.8			18.5	
Approach LOS					C			F			B	
Queue Length 50th (m)				67.8		8.3		~251.4	0.0	60.2	63.1	
Queue Length 95th (m)				89.7		33.5		#337.9	20.7	102.2	108.0	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				650		771		593	758	640	1228	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.42		0.46		1.30	0.47	0.58	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.30
Intersection Signal Delay: 67.8 Intersection LOS: E
Intersection Capacity Utilization 96.2% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	241	0	312	0	687	314	329	505	1
Future Volume (vph)	0	0	0	241	0	312	0	687	314	329	505	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes				1.00		0.99		1.00	0.99	1.00	1.00	
Flpb, ped/bikes				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1750		1545		1789	1576	1767	1803	
Flt Permitted				0.95		1.00		1.00	1.00	0.09	1.00	
Satd. Flow (perm)				1750		1545		1789	1576	166	1803	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	271	0	351	0	772	353	370	567	1
RTOR Reduction (vph)	0	0	0	0	0	250	0	0	236	0	0	0
Lane Group Flow (vph)	0	0	0	271	0	101	0	772	117	370	568	0
Confl. Peds. (#/hr)	1					1	1		1	1		1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				25.4		25.4		41.9	41.9	86.1	86.1	
Effective Green, g (s)				25.4		25.4		41.9	41.9	86.1	86.1	
Actuated g/C Ratio				0.20		0.20		0.33	0.33	0.68	0.68	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				351		310		593	522	634	1228	
v/s Ratio Prot				c0.15				c0.43		c0.19	0.32	
v/s Ratio Perm						0.07			0.07	0.21		
v/c Ratio				0.77		0.33		1.30	0.22	0.58	0.46	
Uniform Delay, d1				47.8		43.2		42.2	30.5	26.4	9.4	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				10.1		0.6		147.9	1.0	1.4	1.3	
Delay (s)				57.9		43.8		190.1	31.5	27.8	10.6	
Level of Service				E		D		F	C	C	B	
Approach Delay (s)		0.0			49.9			140.3			17.4	
Approach LOS		A			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	76.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

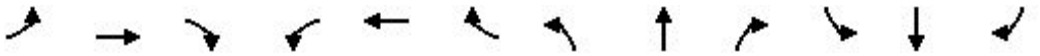
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	55	31	31	69	84	0
Future Volume (Veh/h)	55	31	31	69	84	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)	60	34	34	75	91	0
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	254	72			109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254	72			109	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	97			94	
cM capacity (veh/h)	694	996			1494	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	109	91
Volume Left	60	0	91
Volume Right	34	75	0
cSH	780	1700	1494
Volume to Capacity	0.12	0.06	0.06
Queue Length 95th (m)	3.3	0.0	1.6
Control Delay (s)	10.2	0.0	7.6
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	7.6
Approach LOS	B		

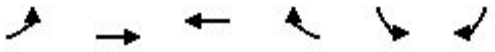
Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	70	70	0	0	59	30	0	0	0	0	0	55
Future Volume (vph)	70	70	0	0	59	30	0	0	0	0	0	55
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)	76	76	0	0	64	33	0	0	0	0	0	60

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	152	97	0	60
Volume Left (vph)	76	0	0	0
Volume Right (vph)	0	33	0	60
Hadj (s)	0.10	-0.20	0.00	-0.60
Departure Headway (s)	4.2	4.0	4.5	3.8
Degree Utilization, x	0.18	0.11	0.00	0.06
Capacity (veh/h)	836	884	763	881
Control Delay (s)	8.1	7.4	7.5	7.1
Approach Delay (s)	8.1	7.4	0.0	7.1
Approach LOS	A	A	A	A

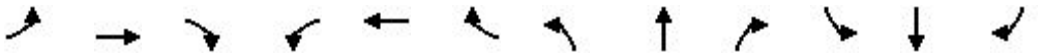
Intersection Summary				
Delay	7.7			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	0	0	0	89
Future Volume (Veh/h)	70	0	0	0	0	89
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)	76	0	0	0	0	97
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	0				152	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				152	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	91
cM capacity (veh/h)	1636				805	1091

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	76	0	97
Volume Left	76	0	0
Volume Right	0	0	97
cSH	1636	1700	1091
Volume to Capacity	0.05	0.00	0.09
Queue Length 95th (m)	1.2	0.0	2.3
Control Delay (s)	7.3	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		



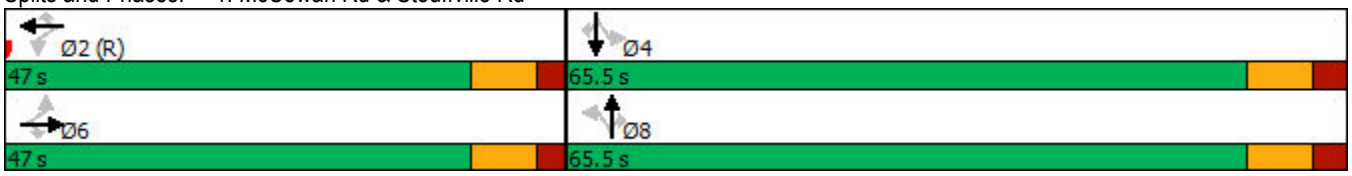
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Future Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1507	1684	3275	1389
Flt Permitted	0.175			0.277			0.681			0.679		
Satd. Flow (perm)	319	3433	1493	486	3400	1507	1219	3336	1487	1203	3275	1389
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			262			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Adj. Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None

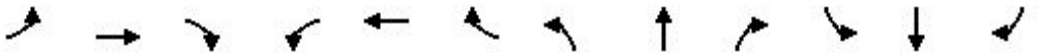
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	66.9	66.9	66.9	66.9	66.9	66.9	29.1	29.1	29.1	29.1	29.1	29.1
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59	0.59	0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.24	0.44	0.26	0.73	0.60	0.04	0.78	0.13	0.32	0.15	0.13	0.14
Control Delay	18.1	14.6	2.4	37.1	17.3	2.0	55.1	30.1	21.4	30.0	30.1	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	14.6	2.4	37.1	17.3	2.0	55.1	30.1	21.4	30.0	30.1	9.8
LOS	B	B	A	D	B	A	E	C	C	C	C	A
Approach Delay		12.1			19.8			40.1			24.9	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	4.6	57.0	0.0	33.1	87.3	0.0	52.8	10.7	15.9	8.4	10.4	1.1
Queue Length 95th (m)	14.0	82.3	10.4	#82.5	122.1	2.7	68.6	15.2	26.9	15.3	14.9	8.8
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	189	2042	994	289	2022	918	617	1690	777	609	1659	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.44	0.26	0.73	0.60	0.04	0.40	0.07	0.17	0.08	0.07	0.07

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 104.1% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: McCowan Rd & Stouffville Rd

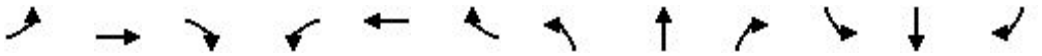




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Future Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1487	1683	3275	1389
Flt Permitted	0.17	1.00	1.00	0.28	1.00	1.00	0.68	1.00	1.00	0.68	1.00	1.00
Satd. Flow (perm)	318	3433	1493	486	3400	1507	1219	3336	1487	1203	3275	1389
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
RTOR Reduction (vph)	0	0	106	0	0	14	0	0	36	0	0	36
Lane Group Flow (vph)	45	901	156	211	1206	21	246	115	99	47	112	18
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	66.9	66.9	66.9	66.9	66.9	66.9	29.1	29.1	29.1	29.1	29.1	29.1
Effective Green, g (s)	66.9	66.9	66.9	66.9	66.9	66.9	29.1	29.1	29.1	29.1	29.1	29.1
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59	0.59	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	189	2041	887	289	2021	896	315	862	384	311	847	359
v/s Ratio Prot		0.26			0.35			0.03			0.03	
v/s Ratio Perm	0.14		0.10	c0.43		0.01	c0.20		0.07	0.04		0.01
v/c Ratio	0.24	0.44	0.18	0.73	0.60	0.02	0.78	0.13	0.26	0.15	0.13	0.05
Uniform Delay, d1	10.8	12.5	10.3	16.3	14.3	9.4	38.7	32.0	33.1	32.2	32.0	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.7	0.4	15.0	1.3	0.0	11.9	0.1	0.4	0.2	0.1	0.1
Delay (s)	13.7	13.2	10.8	31.3	15.6	9.4	50.6	32.1	33.5	32.4	32.1	31.4
Level of Service	B	B	B	C	B	A	D	C	C	C	C	C
Approach Delay (s)		12.7			17.8			41.6			32.0	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	830	18	53	1104	10	140	0	4	3	0	0
Future Volume (Veh/h)	29	830	18	53	1104	10	140	0	4	3	0	0
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)	32	902	20	58	1200	11	152	0	4	3	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)												
pX, platoon unblocked												
vC, conflicting volume	1211			922			1682	2293	451	1840	2308	606
vC1, stage 1 conf vol							966	966		1322	1322	
vC2, stage 2 conf vol							716	1327		519	986	
vCu, unblocked vol	1211			922			1682	2293	451	1840	2308	606
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			92			27	100	99	98	100	100
cM capacity (veh/h)	583			749			207	153	561	144	160	445

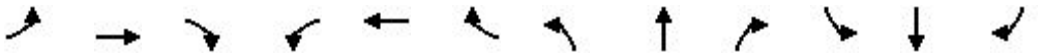
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	32	451	451	20	58	800	411	152	4	3
Volume Left	32	0	0	0	58	0	0	152	0	3
Volume Right	0	0	0	20	0	0	11	0	4	0
cSH	583	1700	1700	1700	749	1700	1700	207	561	144
Volume to Capacity	0.05	0.27	0.27	0.01	0.08	0.47	0.24	0.73	0.01	0.02
Queue Length 95th (m)	1.4	0.0	0.0	0.0	2.0	0.0	0.0	38.9	0.2	0.5
Control Delay (s)	11.5	0.0	0.0	0.0	10.2	0.0	0.0	59.3	11.5	30.4
Lane LOS	B				B			F	B	D
Approach Delay (s)	0.4				0.5			58.0		30.4
Approach LOS								F		D

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	51.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	846	43	0	1728	0	78
Future Volume (Veh/h)	846	43	0	1728	0	78
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)	920	47	0	1878	0	85
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)				303		
pX, platoon unblocked					0.72	
vC, conflicting volume			920		1859	460
vC1, stage 1 conf vol					920	
vC2, stage 2 conf vol					939	
vCu, unblocked vol			920		1421	460
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	85
cM capacity (veh/h)			750		310	554

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	460	460	47	939	939	85
Volume Left	0	0	0	0	0	0
Volume Right	0	0	47	0	0	85
cSH	1700	1700	1700	1700	1700	554
Volume to Capacity	0.27	0.27	0.03	0.55	0.55	0.15
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	4.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	12.7
Lane LOS						B
Approach Delay (s)	0.0			0.0		12.7
Approach LOS						B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Future Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.968			0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3341	0	1716	3179	0
Flt Permitted	0.103			0.358			0.100			0.545		
Satd. Flow (perm)	168	3500	1551	641	3500	1507	184	3341	0	985	3179	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			278			103		24			141	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Adj. Flow (vph)	160	563	283	154	1055	79	333	272	73	170	511	439
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	563	283	154	1055	79	333	345	0	170	950	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	60.7	50.0	50.0	60.7	50.0	50.0	62.4	43.8		52.1	36.0	
Actuated g/C Ratio	0.44	0.37	0.37	0.44	0.37	0.37	0.46	0.32		0.38	0.26	

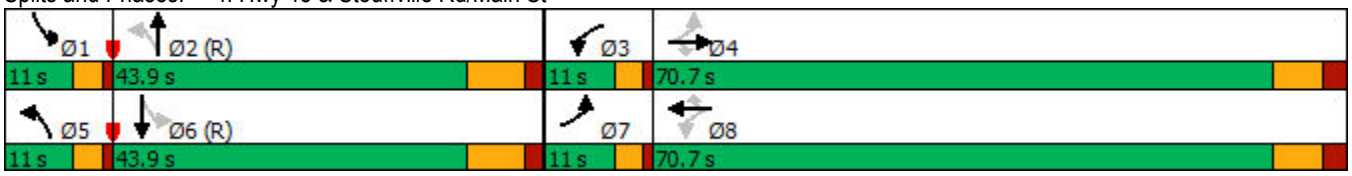
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	1.10	0.44	0.38	0.45	0.82	0.13	1.06	0.32		0.39	1.01	
Control Delay	130.2	33.2	4.5	24.9	45.0	2.4	106.4	35.1		26.7	74.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	130.2	33.2	4.5	24.9	45.0	2.4	106.4	35.1		26.7	74.0	
LOS	F	C	A	C	D	A	F	D		C	E	
Approach Delay		40.6			39.9			70.2			66.8	
Approach LOS		D			D			E			E	
Queue Length 50th (m)	~31.2	63.2	0.9	24.8	142.2	0.0	~86.0	36.7		28.0	~128.2	
Queue Length 95th (m)	#73.0	72.0	18.0	34.4	152.9	5.9	#185.1	54.6		49.4	#175.8	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	145	1614	865	339	1614	750	313	1088		440	941	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.10	0.35	0.33	0.45	0.65	0.11	1.06	0.32		0.39	1.01	

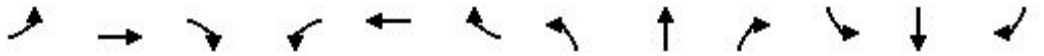
Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 52.5 Intersection LOS: D
Intersection Capacity Utilization 99.1% ICU Level of Service F
Analysis Period (min) 15

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

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Future Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3342		1716	3178	
Flt Permitted	0.10	1.00	1.00	0.36	1.00	1.00	0.10	1.00		0.54	1.00	
Satd. Flow (perm)	169	3500	1551	641	3500	1507	184	3342		984	3178	
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)	160	563	283	154	1055	79	333	272	73	170	511	439
RTOR Reduction (vph)	0	0	176	0	0	50	0	16	0	0	104	0
Lane Group Flow (vph)	160	563	107	154	1055	29	333	329	0	170	846	0
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	57.0	50.0	50.0	57.0	50.0	50.0	60.0	43.8		48.2	36.0	
Effective Green, g (s)	57.0	50.0	50.0	57.0	50.0	50.0	60.0	43.8		48.2	36.0	
Actuated g/C Ratio	0.42	0.37	0.37	0.42	0.37	0.37	0.44	0.32		0.35	0.26	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	141	1281	567	321	1281	551	310	1071		412	837	
v/s Ratio Prot	c0.06	0.16		0.02	0.30		c0.16	0.10		0.04	0.27	
v/s Ratio Perm	c0.41		0.07	0.18		0.02	c0.31			0.11		
v/c Ratio	1.13	0.44	0.19	0.48	0.82	0.05	1.07	0.31		0.41	1.01	
Uniform Delay, d1	33.9	32.7	29.5	26.7	39.3	28.0	42.8	35.0		31.7	50.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	116.6	0.2	0.2	1.1	4.4	0.0	72.2	0.7		0.7	33.8	
Delay (s)	150.5	33.0	29.6	27.9	43.7	28.0	115.0	35.7		32.4	84.1	
Level of Service	F	C	C	C	D	C	F	D		C	F	
Approach Delay (s)		50.7			40.9			74.7			76.3	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	58.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

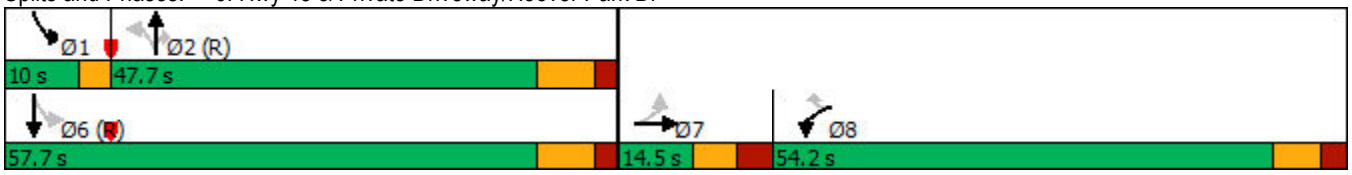
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Future Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1716	0	1566	1879	1724	1536	1700	1756	0
Flt Permitted				0.950						0.234		
Satd. Flow (perm)	0	1879	0	1716	0	1566	1879	1724	1536	419	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			314			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Adj. Flow (vph)	0	0	0	381	0	223	0	533	314	226	559	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	381	0	223	0	533	314	226	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	
Act Effct Green (s)				33.9		33.9		51.0	51.0	82.3	77.6	
Actuated g/C Ratio				0.27		0.27		0.40	0.40	0.65	0.61	

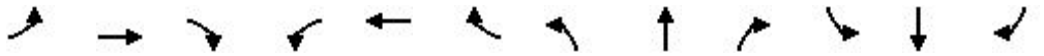
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.83		0.38		0.77	0.39	0.44	0.52	
Control Delay				58.3		5.8		42.0	4.6	13.0	17.4	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				58.3		5.8		42.0	4.6	13.0	17.4	
LOS				E		A		D	A	B	B	
Approach Delay					38.9			28.1			16.2	
Approach LOS					D			C			B	
Queue Length 50th (m)				94.0		0.0		113.9	0.0	22.1	78.2	
Queue Length 95th (m)				119.0		17.4		#203.3	20.4	42.5	133.5	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				638		722		696	807	511	1077	
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				0.60		0.31		0.77	0.39	0.44	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 26.8 Intersection LOS: C
Intersection Capacity Utilization 101.8% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Future Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1716		1566		1724	1536	1700	1756	
Flt Permitted				0.95		1.00		1.00	1.00	0.23	1.00	
Satd. Flow (perm)				1716		1566		1724	1536	418	1756	
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	0	0	381	0	223	0	533	314	226	559	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	0	187	0	0	0
Lane Group Flow (vph)	0	0	0	381	0	60	0	533	127	226	559	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				33.9		33.9		51.1	51.1	77.6	77.6	
Effective Green, g (s)				33.9		33.9		51.1	51.1	77.6	77.6	
Actuated g/C Ratio				0.27		0.27		0.40	0.40	0.61	0.61	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				460		419		696	620	494	1078	
v/s Ratio Prot				c0.22				c0.31		0.08	c0.32	
v/s Ratio Perm						0.04			0.08	0.20		
v/c Ratio				0.83		0.14		0.77	0.20	0.46	0.52	
Uniform Delay, d1				43.5		35.2		32.5	24.5	14.8	13.8	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				11.7		0.2		7.9	0.7	0.7	1.8	
Delay (s)				55.2		35.4		40.4	25.2	15.5	15.6	
Level of Service				E		D		D	C	B	B	
Approach Delay (s)		0.0			47.9			34.7			15.6	
Approach LOS		A			D			C			B	

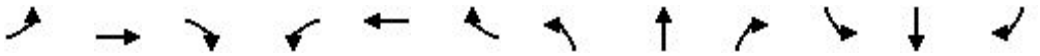
Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	39	39	35	43	0
Future Volume (Veh/h)	70	39	39	35	43	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)	76	42	42	38	47	0
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	155	61			80	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155	61			80	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	96			97	
cM capacity (veh/h)	815	1010			1531	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	118	80	47
Volume Left	76	0	47
Volume Right	42	38	0
cSH	875	1700	1531
Volume to Capacity	0.13	0.05	0.03
Queue Length 95th (m)	3.7	0.0	0.8
Control Delay (s)	9.8	0.0	7.4
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	7.4
Approach LOS	A		

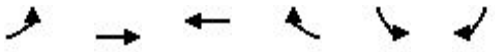
Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	36	0	0	74	39	0	0	0	0	0	70
Future Volume (vph)	35	36	0	0	74	39	0	0	0	0	0	70
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)	38	39	0	0	80	42	0	0	0	0	0	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	122	0	76
Volume Left (vph)	38	0	0	0
Volume Right (vph)	0	42	0	76
Hadj (s)	0.10	-0.21	0.00	-0.60
Departure Headway (s)	4.3	3.9	4.4	3.7
Degree Utilization, x	0.09	0.13	0.00	0.08
Capacity (veh/h)	821	895	786	917
Control Delay (s)	7.7	7.5	7.4	7.0
Approach Delay (s)	7.7	7.5	0.0	7.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.4			
Level of Service	A			
Intersection Capacity Utilization	21.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	0	0	0	0	113
Future Volume (Veh/h)	36	0	0	0	0	113
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)	39	0	0	0	0	123
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	0				78	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				78	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	89
cM capacity (veh/h)	1636				908	1091

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	39	0	123
Volume Left	39	0	0
Volume Right	0	0	123
cSH	1636	1700	1091
Volume to Capacity	0.02	0.00	0.11
Queue Length 95th (m)	0.6	0.0	3.0
Control Delay (s)	7.3	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Future Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.191			0.103			0.679			0.647		
Satd. Flow (perm)	345	3535	1536	188	3500	1597	1215	3535	1566	1216	3400	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			322			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Adj. Flow (vph)	93	1441	322	177	1118	25	279	166	101	52	115	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	1441	322	177	1118	25	279	166	101	52	115	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	65.5	65.5	65.5	65.5	65.5	65.5
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	63.2	63.2	63.2	63.2	63.2	63.2	32.8	32.8	32.8	32.8	32.8	32.8
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56	0.56	0.29	0.29	0.29	0.29	0.29	0.29

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.48	0.73	0.32	1.69	0.57	0.03	0.79	0.16	0.21	0.15	0.12	0.06
Control Delay	29.6	22.9	2.8	369.9	18.9	1.0	51.5	28.0	15.3	26.9	27.0	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	22.9	2.8	369.9	18.9	1.0	51.5	28.0	15.3	26.9	27.0	2.7
LOS	C	C	A	F	B	A	D	C	B	C	C	A
Approach Delay		19.7			65.7			37.6			23.5	
Approach LOS		B			E			D			C	
Queue Length 50th (m)	12.3	123.7	0.0	~60.0	83.6	0.0	59.1	15.0	9.0	8.9	10.2	0.0
Queue Length 95th (m)	#41.7	#192.7	15.7	#91.9	131.3	1.5	79.2	20.0	19.2	16.1	14.8	2.9
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	193	1985	1003	105	1965	920	615	1791	817	616	1722	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.73	0.32	1.69	0.57	0.03	0.45	0.09	0.12	0.08	0.07	0.04

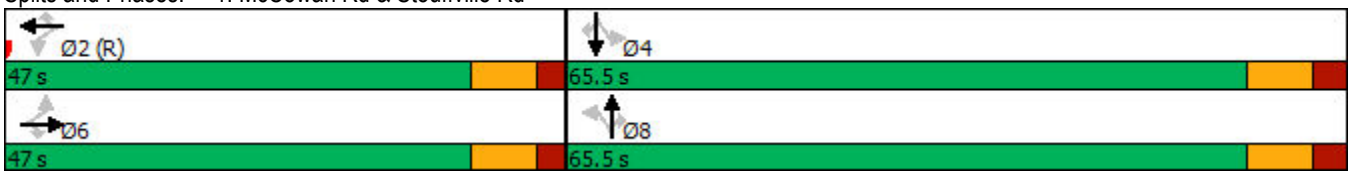
Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.69
Intersection Signal Delay: 37.9 Intersection LOS: D
Intersection Capacity Utilization 119.2% ICU Level of Service H
Analysis Period (min) 15

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

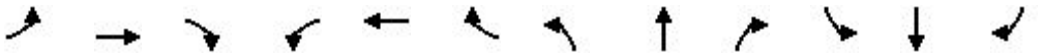
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: McCowan Rd & Stouffville Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Future Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.19	1.00	1.00	0.10	1.00	1.00	0.68	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	344	3535	1536	188	3500	1597	1215	3535	1566	1215	3400	1452
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)	93	1441	322	177	1118	25	279	166	101	52	115	28
RTOR Reduction (vph)	0	0	141	0	0	11	0	0	34	0	0	20
Lane Group Flow (vph)	93	1441	181	177	1118	14	279	166	67	52	115	8
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	63.2	63.2	63.2	63.2	63.2	63.2	32.8	32.8	32.8	32.8	32.8	32.8
Effective Green, g (s)	63.2	63.2	63.2	63.2	63.2	63.2	32.8	32.8	32.8	32.8	32.8	32.8
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56	0.56	0.29	0.29	0.29	0.29	0.29	0.29
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	193	1985	862	105	1966	897	354	1030	456	354	991	423
v/s Ratio Prot		0.41			0.32			0.05			0.03	
v/s Ratio Perm	0.27		0.12	c0.94		0.01	c0.23		0.04	0.04		0.01
v/c Ratio	0.48	0.73	0.21	1.69	0.57	0.02	0.79	0.16	0.15	0.15	0.12	0.02
Uniform Delay, d1	14.8	18.2	12.2	24.6	15.9	10.9	36.7	29.6	29.5	29.5	29.2	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	2.4	0.6	346.1	1.2	0.0	11.1	0.1	0.1	0.2	0.1	0.0
Delay (s)	23.2	20.6	12.8	370.8	17.1	10.9	47.7	29.7	29.6	29.7	29.3	28.4
Level of Service	C	C	B	F	B	B	D	C	C	C	C	C
Approach Delay (s)		19.4			64.4			38.9			29.3	
Approach LOS		B			E			D			C	

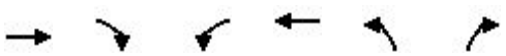
Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	119.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1368	37	103	1091	68	111	0	3	3	0	27
Future Volume (Veh/h)	32	1368	37	103	1091	68	111	0	3	3	0	27
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)	35	1503	41	113	1199	75	122	0	3	3	0	30
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)												
pX, platoon unblocked												
vC, conflicting volume	1274			1544			2428	3073	752	2287	3076	637
vC1, stage 1 conf vol							1573	1573		1462	1462	
vC2, stage 2 conf vol							856	1500		824	1614	
vCu, unblocked vol	1274			1544			2428	3073	752	2287	3076	637
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			74			0	100	99	97	100	93
cM capacity (veh/h)	552			436			91	83	357	89	39	425

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	35	752	752	41	113	799	475	122	3	33
Volume Left	35	0	0	0	113	0	0	122	0	3
Volume Right	0	0	0	41	0	0	75	0	3	30
cSH	552	1700	1700	1700	436	1700	1700	91	357	316
Volume to Capacity	0.06	0.44	0.44	0.02	0.26	0.47	0.28	1.34	0.01	0.10
Queue Length 95th (m)	1.6	0.0	0.0	0.0	8.2	0.0	0.0	71.5	0.2	2.8
Control Delay (s)	12.0	0.0	0.0	0.0	16.1	0.0	0.0	291.1	15.2	17.7
Lane LOS	B				C			F	C	C
Approach Delay (s)	0.3				1.3			284.5		17.7
Approach LOS								F		C

Intersection Summary				
Average Delay	12.3			
Intersection Capacity Utilization	66.3%	ICU Level of Service		C
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1789	84	0	1018	0	62
Future Volume (Veh/h)	1789	84	0	1018	0	62
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)	1945	91	0	1107	0	67
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)				303		
pX, platoon unblocked					0.87	
vC, conflicting volume			1945		2498	972
vC1, stage 1 conf vol					1945	
vC2, stage 2 conf vol					554	
vCu, unblocked vol			1945		2421	972
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	74
cM capacity (veh/h)			305		97	256

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	972	972	91	554	554	67
Volume Left	0	0	0	0	0	0
Volume Right	0	0	91	0	0	67
cSH	1700	1700	1700	1700	1700	256
Volume to Capacity	0.57	0.57	0.05	0.33	0.33	0.26
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	8.2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	24.0
Lane LOS						C
Approach Delay (s)	0.0			0.0		24.0
Approach LOS						C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

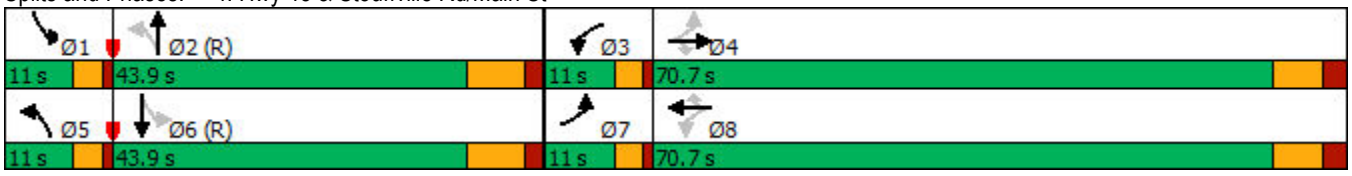
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Future Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.963			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3408	0	1750	3259	0
Flt Permitted	0.313			0.102			0.336			0.245		
Satd. Flow (perm)	565	3535	1581	186	3535	1597	613	3408	0	451	3259	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			315			205		32			55	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Adj. Flow (vph)	374	1099	435	147	646	205	218	514	171	151	348	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	374	1099	435	147	646	205	218	685	0	151	511	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	11.0	70.7	70.7	11.0	70.7	70.7	11.0	43.9		11.0	43.9	
Total Split (%)	8.1%	51.8%	51.8%	8.1%	51.8%	51.8%	8.1%	32.1%		8.1%	32.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	

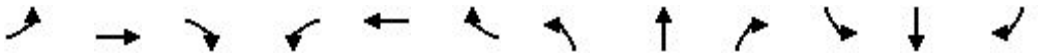
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	65.1	52.6	52.6	64.8	52.4	52.4	57.5	40.4		53.8	38.5	
Actuated g/C Ratio	0.48	0.39	0.39	0.47	0.38	0.38	0.42	0.30		0.39	0.28	
v/c Ratio	1.09	0.81	0.54	0.79	0.48	0.28	0.60	0.67		0.53	0.53	
Control Delay	102.8	42.3	10.4	49.5	32.4	3.9	35.5	44.9		33.4	40.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	102.8	42.3	10.4	49.5	32.4	3.9	35.5	44.9		33.4	40.0	
LOS	F	D	B	D	C	A	D	D		C	D	
Approach Delay		46.9			29.0			42.7			38.5	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	~68.5	144.7	22.8	21.4	71.7	0.0	40.3	89.7		26.7	61.2	
Queue Length 95th (m)	#131.3	156.2	49.4	#53.8	81.0	14.5	#69.3	113.5		45.6	78.7	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	344	1630	898	186	1630	846	366	1031		285	973	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.09	0.67	0.48	0.79	0.40	0.24	0.60	0.66		0.53	0.53	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 40.8 Intersection LOS: D
Intersection Capacity Utilization 96.3% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Future Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3407		1750	3260	
Flt Permitted	0.31	1.00	1.00	0.10	1.00	1.00	0.34	1.00		0.24	1.00	
Satd. Flow (perm)	565	3535	1581	186	3535	1597	612	3407		451	3260	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	374	1099	435	147	646	205	218	514	171	151	348	163
RTOR Reduction (vph)	0	0	194	0	0	126	0	23	0	0	39	0
Lane Group Flow (vph)	374	1099	241	147	646	79	218	662	0	151	472	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	61.5	52.6	52.6	61.1	52.4	52.4	53.5	40.3		49.9	38.5	
Effective Green, g (s)	61.5	52.6	52.6	61.1	52.4	52.4	53.5	40.3		49.9	38.5	
Actuated g/C Ratio	0.45	0.39	0.39	0.45	0.38	0.38	0.39	0.30		0.37	0.28	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	329	1361	608	181	1356	612	348	1005		273	918	
v/s Ratio Prot	c0.07	0.31		0.05	0.18		c0.06	c0.19		0.05	0.14	
v/s Ratio Perm	c0.44		0.15	0.31		0.05	0.18			0.16		
v/c Ratio	1.14	0.81	0.40	0.81	0.48	0.13	0.63	0.66		0.55	0.51	
Uniform Delay, d1	35.5	37.5	30.5	28.2	31.8	27.3	29.5	42.1		31.1	41.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	92.0	3.6	0.4	23.4	0.3	0.1	3.5	3.4		2.4	2.1	
Delay (s)	127.5	41.1	30.9	51.6	32.0	27.4	33.0	45.5		33.5	43.2	
Level of Service	F	D	C	D	C	C	C	D		C	D	
Approach Delay (s)		55.7			34.0			42.5			41.0	
Approach LOS		E			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

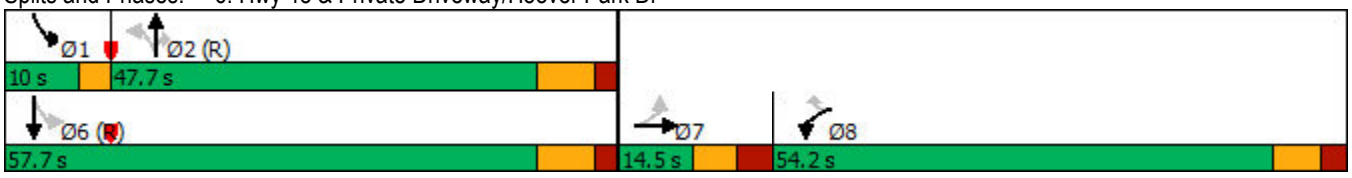
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Future Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.99			0.99		1.00	
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1750	0	1566	1879	1789	1597	1767	1804	0
Flt Permitted				0.950						0.092		
Satd. Flow (perm)	0	1879	0	1750	0	1545	1879	1789	1576	171	1804	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						309			366			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Adj. Flow (vph)	0	0	0	292	0	383	0	803	366	384	590	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	292	0	383	0	803	366	384	591	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		54.2		54.2	47.7	47.7	47.7	10.0	57.7	
Total Split (%)	11.5%	11.5%		42.9%		42.9%	37.7%	37.7%	37.7%	7.9%	45.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				27.0		27.0		40.3	40.3	89.2	84.5	
Actuated g/C Ratio				0.21		0.21		0.32	0.32	0.71	0.67	
v/c Ratio				0.78		0.67		1.41	0.49	0.60	0.49	
Control Delay				61.0		15.1		227.4	5.5	29.4	13.2	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				61.0		15.1		227.4	5.5	29.4	13.2	
LOS				E		B		F	A	C	B	
Approach Delay					34.9			158.0			19.6	
Approach LOS					C			F			B	
Queue Length 50th (m)				72.9		16.2		~283.0	0.0	62.8	69.9	
Queue Length 95th (m)				94.9		44.8		#355.4	21.0	109.5	119.1	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				650		768		571	751	640	1205	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.45		0.50		1.41	0.49	0.60	0.49	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.41
Intersection Signal Delay: 80.6 Intersection LOS: F
Intersection Capacity Utilization 97.2% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Future Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes				1.00		0.99		1.00	0.99	1.00	1.00	
Flpb, ped/bikes				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1750		1545		1789	1576	1767	1803	
Flt Permitted				0.95		1.00		1.00	1.00	0.09	1.00	
Satd. Flow (perm)				1750		1545		1789	1576	171	1803	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	292	0	383	0	803	366	384	590	1
RTOR Reduction (vph)	0	0	0	0	0	243	0	0	249	0	0	0
Lane Group Flow (vph)	0	0	0	292	0	140	0	803	117	384	591	0
Confl. Peds. (#/hr)	1					1	1		1	1		1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				27.0		27.0		40.4	40.4	84.5	84.5	
Effective Green, g (s)				27.0		27.0		40.4	40.4	84.5	84.5	
Actuated g/C Ratio				0.21		0.21		0.32	0.32	0.67	0.67	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				373		330		571	503	633	1205	
v/s Ratio Prot				c0.17				c0.45		c0.20	0.33	
v/s Ratio Perm						0.09			0.07	0.21		
v/c Ratio				0.78		0.42		1.41	0.23	0.61	0.49	
Uniform Delay, d1				46.9		43.0		43.0	31.6	26.8	10.3	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				10.3		0.9		193.2	1.1	1.7	1.4	
Delay (s)				57.2		43.9		236.2	32.7	28.5	11.8	
Level of Service				E		D		F	C	C	B	
Approach Delay (s)		0.0			49.6			172.5			18.3	
Approach LOS		A			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	89.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

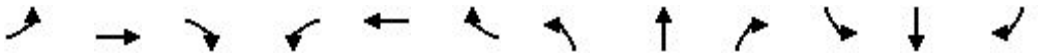
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	55	31	31	69	84	0
Future Volume (Veh/h)	55	31	31	69	84	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)	60	34	34	75	91	0
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	254	72			109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254	72			109	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	97			94	
cM capacity (veh/h)	694	996			1494	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	109	91
Volume Left	60	0	91
Volume Right	34	75	0
cSH	780	1700	1494
Volume to Capacity	0.12	0.06	0.06
Queue Length 95th (m)	3.3	0.0	1.6
Control Delay (s)	10.2	0.0	7.6
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	7.6
Approach LOS	B		

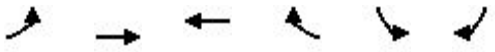
Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	70	70	0	0	59	30	0	0	0	0	0	55
Future Volume (vph)	70	70	0	0	59	30	0	0	0	0	0	55
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)	76	76	0	0	64	33	0	0	0	0	0	60

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	152	97	0	60
Volume Left (vph)	76	0	0	0
Volume Right (vph)	0	33	0	60
Hadj (s)	0.10	-0.20	0.00	-0.60
Departure Headway (s)	4.2	4.0	4.5	3.8
Degree Utilization, x	0.18	0.11	0.00	0.06
Capacity (veh/h)	836	884	763	881
Control Delay (s)	8.1	7.4	7.5	7.1
Approach Delay (s)	8.1	7.4	0.0	7.1
Approach LOS	A	A	A	A

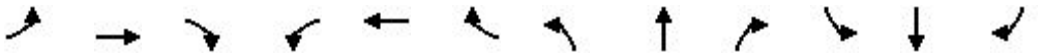
Intersection Summary				
Delay	7.7			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	0	0	0	89
Future Volume (Veh/h)	70	0	0	0	0	89
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)	76	0	0	0	0	97
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	0				152	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				152	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	91
cM capacity (veh/h)	1636				805	1091

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	76	0	97
Volume Left	76	0	0
Volume Right	0	0	97
cSH	1636	1700	1091
Volume to Capacity	0.05	0.00	0.09
Queue Length 95th (m)	1.2	0.0	2.3
Control Delay (s)	7.3	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Future Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1507	1684	3275	1389
Flt Permitted	0.178			0.280			0.681			0.679		
Satd. Flow (perm)	325	3433	1493	492	3400	1507	1219	3336	1487	1203	3275	1389
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			262			53			112			50
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Adj. Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	67.0	67.0	67.0	67.0	67.0	67.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (%)	59.6%	59.6%	59.6%	59.6%	59.6%	59.6%	40.4%	40.4%	40.4%	40.4%	40.4%	40.4%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None

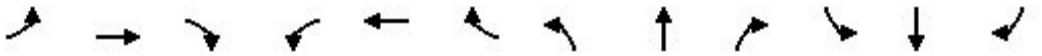
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	68.2	68.2	68.2	68.2	68.2	68.2	27.8	27.8	27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.23	0.43	0.26	0.71	0.58	0.04	0.82	0.14	0.30	0.16	0.14	0.14
Control Delay	16.7	13.7	2.3	33.9	16.2	1.8	60.5	31.3	9.7	31.4	31.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	13.7	2.3	33.9	16.2	1.8	60.5	31.3	9.7	31.4	31.3	9.6
LOS	B	B	A	C	B	A	E	C	A	C	C	A
Approach Delay		11.3			18.4			39.9			25.8	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	4.5	55.3	0.0	31.8	84.6	0.0	53.7	10.9	4.1	8.5	10.6	0.7
Queue Length 95th (m)	13.4	78.7	10.0	#79.6	117.0	2.6	70.8	15.7	15.7	15.8	15.4	8.7
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	197	2081	1008	298	2062	934	400	1097	564	395	1077	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.43	0.26	0.71	0.58	0.04	0.61	0.10	0.24	0.12	0.10	0.11

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 19.5 Intersection LOS: B
Intersection Capacity Utilization 104.1% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: McCowan Rd & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Future Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1487	1683	3275	1389
Flt Permitted	0.18	1.00	1.00	0.28	1.00	1.00	0.68	1.00	1.00	0.68	1.00	1.00
Satd. Flow (perm)	325	3433	1493	491	3400	1507	1219	3336	1487	1203	3275	1389
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
RTOR Reduction (vph)	0	0	103	0	0	14	0	0	84	0	0	38
Lane Group Flow (vph)	45	901	159	211	1206	21	246	115	51	47	112	16
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	68.2	68.2	68.2	68.2	68.2	68.2	27.8	27.8	27.8	27.8	27.8	27.8
Effective Green, g (s)	68.2	68.2	68.2	68.2	68.2	68.2	27.8	27.8	27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	197	2081	905	297	2061	913	301	824	367	297	809	343
v/s Ratio Prot		0.26			0.35			0.03			0.03	
v/s Ratio Perm	0.14		0.11	c0.43		0.01	c0.20		0.03	0.04		0.01
v/c Ratio	0.23	0.43	0.18	0.71	0.59	0.02	0.82	0.14	0.14	0.16	0.14	0.05
Uniform Delay, d1	10.1	11.8	9.8	15.3	13.5	8.8	40.0	33.0	33.0	33.2	33.0	32.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.7	0.4	13.5	1.2	0.0	15.6	0.1	0.2	0.3	0.1	0.1
Delay (s)	12.8	12.5	10.2	28.8	14.7	8.9	55.6	33.1	33.2	33.4	33.1	32.3
Level of Service	B	B	B	C	B	A	E	C	C	C	C	C
Approach Delay (s)		12.0			16.6			44.3			33.0	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

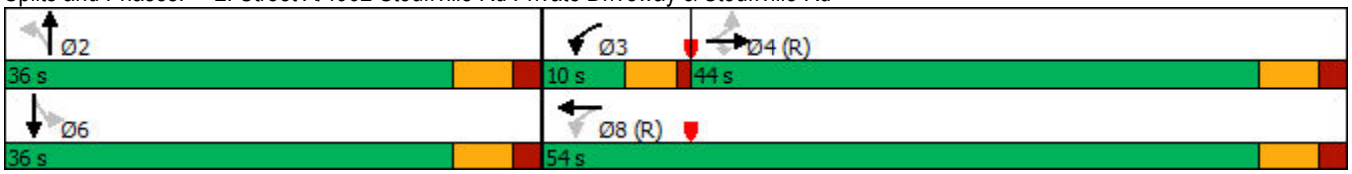
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	830	18	53	1104	10	140	0	4	3	0	0
Future Volume (vph)	29	830	18	53	1104	10	140	0	4	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		30.0	30.0		30.0	50.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	100.0			100.0			40.0			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.850				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1785	3400	1597	1785	3398	0	1785	1597	0	0	1785	0
Flt Permitted	0.184			0.195			0.756				0.755	
Satd. Flow (perm)	346	3400	1597	366	3398	0	1420	1597	0	0	1419	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91		2			193				
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1439.1			197.2			172.2			197.2	
Travel Time (s)		86.3			11.8			12.4			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	32	902	20	58	1200	11	152	0	4	3	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	902	20	58	1211	0	152	4	0	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	4.0	30.0		30.0	30.0		30.0	30.0	
Minimum Split (s)	36.0	36.0	36.0	8.5	36.0		36.0	36.0		36.0	36.0	
Total Split (s)	44.0	44.0	44.0	10.0	54.0		36.0	36.0		36.0	36.0	
Total Split (%)	48.9%	48.9%	48.9%	11.1%	60.0%		40.0%	40.0%		40.0%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	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	4.5	6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	40.0	40.0	40.0	49.5	48.0		30.0	30.0			30.0	
Actuated g/C Ratio	0.44	0.44	0.44	0.55	0.53		0.33	0.33			0.33	

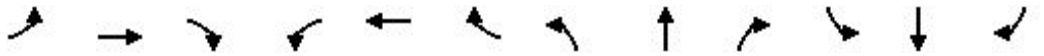
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.21	0.60	0.03	0.20	0.67		0.32	0.01			0.01	
Control Delay	21.1	21.6	0.1	11.2	17.5		24.8	0.0			20.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	21.1	21.6	0.1	11.2	17.5		24.8	0.0			20.3	
LOS	C	C	A	B	B		C	A			C	
Approach Delay		21.1			17.2			24.1			20.3	
Approach LOS		C			B			C			C	
Queue Length 50th (m)	3.6	66.1	0.0	4.6	79.1		20.4	0.0			0.4	
Queue Length 95th (m)	11.0	86.7	0.0	10.1	102.1		36.8	0.0			2.3	
Internal Link Dist (m)		1415.1			173.2			148.2			173.2	
Turn Bay Length (m)	30.0		30.0	30.0			50.0					
Base Capacity (vph)	154	1511	760	288	1813		473	661			473	
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	0.21	0.60	0.03	0.20	0.67		0.32	0.01			0.01	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 49 (54%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 19.2 Intersection LOS: B
Intersection Capacity Utilization 79.0% ICU Level of Service D
Analysis Period (min) 15

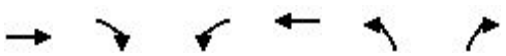
Splits and Phases: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	830	18	53	1104	10	140	0	4	3	0	0
Future Volume (vph)	29	830	18	53	1104	10	140	0	4	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.5	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	
Satd. Flow (prot)	1785	3400	1597	1785	3397		1785	1597			1785	
Flt Permitted	0.18	1.00	1.00	0.19	1.00		0.76	1.00			0.76	
Satd. Flow (perm)	346	3400	1597	366	3397		1420	1597			1419	
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)	32	902	20	58	1200	11	152	0	4	3	0	0
RTOR Reduction (vph)	0	0	11	0	1	0	0	3	0	0	0	0
Lane Group Flow (vph)	32	902	9	58	1210	0	152	1	0	0	3	0
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	39.1	39.1	39.1	48.0	48.0		30.0	30.0			30.0	
Effective Green, g (s)	39.1	39.1	39.1	48.0	48.0		30.0	30.0			30.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.53	0.53		0.33	0.33			0.33	
Clearance Time (s)	6.0	6.0	6.0	4.5	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	150	1477	693	264	1811		473	532			473	
v/s Ratio Prot		0.27		0.01	c0.36			0.00				
v/s Ratio Perm	0.09		0.01	0.11			c0.11				0.00	
v/c Ratio	0.21	0.61	0.01	0.22	0.67		0.32	0.00			0.01	
Uniform Delay, d1	15.9	19.6	14.5	11.9	15.2		22.4	20.0			20.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	3.2	1.9	0.0	0.4	2.0		0.4	0.0			0.0	
Delay (s)	19.1	21.5	14.5	12.3	17.2		22.8	20.0			20.0	
Level of Service	B	C	B	B	B		C	C			C	
Approach Delay (s)		21.3			17.0			22.7			20.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	846	43	0	1728	0	78
Future Volume (Veh/h)	846	43	0	1728	0	78
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)	920	47	0	1878	0	85
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)	197			303		
pX, platoon unblocked			0.81		0.81	0.81
vC, conflicting volume			920		1859	460
vC1, stage 1 conf vol					920	
vC2, stage 2 conf vol					939	
vCu, unblocked vol			417		497	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	90
cM capacity (veh/h)			929		491	878

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	460	460	47	939	939	85
Volume Left	0	0	0	0	0	0
Volume Right	0	0	47	0	0	85
cSH	1700	1700	1700	1700	1700	878
Volume to Capacity	0.27	0.27	0.03	0.55	0.55	0.10
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	2.6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.5
Lane LOS						A
Approach Delay (s)	0.0			0.0		9.5
Approach LOS						A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Future Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.968			0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3341	0	1716	3179	0
Flt Permitted	0.091			0.344			0.097			0.545		
Satd. Flow (perm)	149	3500	1551	616	3500	1507	179	3341	0	985	3179	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			283			135		28			156	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Adj. Flow (vph)	160	563	283	154	1055	79	333	272	73	170	511	439
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	563	283	154	1055	79	333	345	0	170	950	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	15.0	51.4	51.4	14.0	50.4	50.4	26.0	58.2		13.0	45.2	
Total Split (%)	11.0%	37.6%	37.6%	10.2%	36.9%	36.9%	19.0%	42.6%		9.5%	33.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	58.5	43.8	43.8	56.0	42.6	42.6	67.3	50.4		50.2	37.3	
Actuated g/C Ratio	0.43	0.32	0.32	0.41	0.31	0.31	0.49	0.37		0.37	0.27	

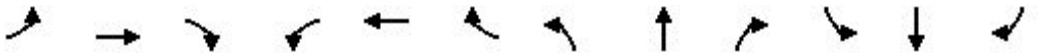
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.91	0.50	0.41	0.47	0.97	0.14	0.97	0.28		0.41	0.97	
Control Delay	79.1	39.5	5.6	28.3	66.8	0.7	80.3	28.4		25.3	62.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	79.1	39.5	5.6	28.3	66.8	0.7	80.3	28.4		25.3	62.9	
LOS	E	D	A	C	E	A	F	C		C	E	
Approach Delay		36.2			58.1			53.9			57.2	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	29.9	68.2	0.0	26.0	155.2	0.0	77.1	33.0		26.6	122.0	
Queue Length 95th (m)	#74.3	86.8	20.7	41.6	#201.3	0.8	#140.6	45.8		41.6	#168.0	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	176	1122	689	332	1094	563	343	1250		410	981	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.91	0.50	0.41	0.46	0.96	0.14	0.97	0.28		0.41	0.97	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 51.8 Intersection LOS: D
Intersection Capacity Utilization 99.1% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Future Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3342		1716	3178	
Flt Permitted	0.09	1.00	1.00	0.34	1.00	1.00	0.10	1.00		0.54	1.00	
Satd. Flow (perm)	149	3500	1551	615	3500	1507	178	3342		984	3178	
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)	160	563	283	154	1055	79	333	272	73	170	511	439
RTOR Reduction (vph)	0	0	192	0	0	54	0	18	0	0	113	0
Lane Group Flow (vph)	160	563	91	154	1055	25	333	327	0	170	837	0
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	54.8	43.8	43.8	52.4	42.6	42.6	63.4	50.4		46.3	37.3	
Effective Green, g (s)	54.8	43.8	43.8	52.4	42.6	42.6	63.4	50.4		46.3	37.3	
Actuated g/C Ratio	0.40	0.32	0.32	0.38	0.31	0.31	0.46	0.37		0.34	0.27	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	172	1122	497	313	1091	469	336	1233		381	867	
v/s Ratio Prot	c0.07	0.16		0.04	c0.30		c0.16	0.10		0.03	0.26	
v/s Ratio Perm	0.30		0.06	0.15		0.02	c0.30			0.12		
v/c Ratio	0.93	0.50	0.18	0.49	0.97	0.05	0.99	0.27		0.45	0.96	
Uniform Delay, d1	35.1	37.6	33.5	28.9	46.3	32.9	42.9	30.2		33.2	49.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	48.6	0.4	0.2	1.2	19.5	0.0	46.5	0.5		0.8	23.2	
Delay (s)	83.7	37.9	33.7	30.2	65.8	32.9	89.4	30.7		34.0	72.2	
Level of Service	F	D	C	C	E	C	F	C		C	E	
Approach Delay (s)		44.0			59.6			59.5			66.4	
Approach LOS		D			E			E			E	

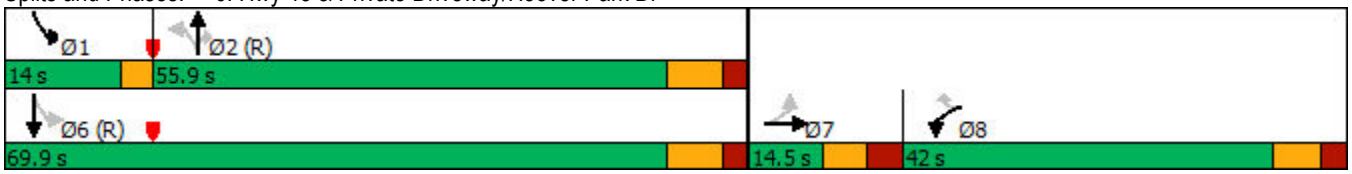
Intersection Summary			
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

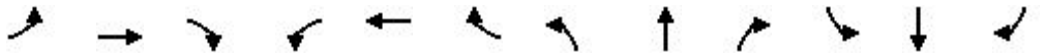
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Future Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1716	0	1566	1879	1724	1536	1700	1756	0
Flt Permitted				0.950						0.306		
Satd. Flow (perm)	0	1879	0	1716	0	1566	1879	1724	1536	548	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			314			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Adj. Flow (vph)	0	0	0	381	0	223	0	533	314	226	559	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	381	0	223	0	533	314	226	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		42.0		42.0	55.9	55.9	55.9	14.0	69.9	
Total Split (%)	11.5%	11.5%		33.2%		33.2%	44.2%	44.2%	44.2%	11.1%	55.3%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	
Act Effct Green (s)				33.4		33.4		62.2	62.2	82.8	78.1	
Actuated g/C Ratio				0.26		0.26		0.49	0.49	0.66	0.62	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.84		0.39		0.63	0.34	0.47	0.52	
Control Delay				60.3		6.0		30.2	3.7	13.2	16.9	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				60.3		6.0		30.2	3.7	13.2	16.9	
LOS				E		A		C	A	B	B	
Approach Delay					40.2			20.4			15.8	
Approach LOS					D			C			B	
Queue Length 50th (m)				94.3		0.0		99.8	0.0	22.0	77.8	
Queue Length 95th (m)				122.4		17.9		170.9	18.6	40.5	128.0	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				498		612		848	915	481	1084	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.77		0.36		0.63	0.34	0.47	0.52	

Intersection Summary			
Area Type:	Other		
Cycle Length: 126.4			
Actuated Cycle Length: 126.4			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 24.1		Intersection LOS: C	
Intersection Capacity Utilization 101.8%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Future Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1716		1566		1724	1536	1700	1756	
Flt Permitted				0.95		1.00		1.00	1.00	0.31	1.00	
Satd. Flow (perm)				1716		1566		1724	1536	548	1756	
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	0	0	381	0	223	0	533	314	226	559	0
RTOR Reduction (vph)	0	0	0	0	0	164	0	0	159	0	0	0
Lane Group Flow (vph)	0	0	0	381	0	59	0	533	155	226	559	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				33.4		33.4		62.2	62.2	78.1	78.1	
Effective Green, g (s)				33.4		33.4		62.2	62.2	78.1	78.1	
Actuated g/C Ratio				0.26		0.26		0.49	0.49	0.62	0.62	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				453		413		848	755	456	1084	
v/s Ratio Prot				c0.22				c0.31		0.05	c0.32	
v/s Ratio Perm						0.04			0.10	0.26		
v/c Ratio				0.84		0.14		0.63	0.20	0.50	0.52	
Uniform Delay, d1				44.0		35.6		23.6	18.1	13.3	13.5	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				13.2		0.2		3.5	0.6	0.9	1.8	
Delay (s)				57.2		35.7		27.1	18.7	14.2	15.3	
Level of Service				E		D		C	B	B	B	
Approach Delay (s)		0.0			49.3			24.0			15.0	
Approach LOS		A			D			C			B	

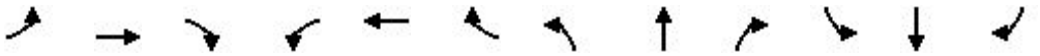
Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	39	39	35	43	0
Future Volume (Veh/h)	70	39	39	35	43	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)	76	42	42	38	47	0
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	155	61			80	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155	61			80	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	96			97	
cM capacity (veh/h)	815	1010			1531	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	118	80	47
Volume Left	76	0	47
Volume Right	42	38	0
cSH	875	1700	1531
Volume to Capacity	0.13	0.05	0.03
Queue Length 95th (m)	3.7	0.0	0.8
Control Delay (s)	9.8	0.0	7.4
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	7.4
Approach LOS	A		

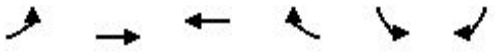
Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	36	0	0	74	39	0	0	0	0	0	70
Future Volume (vph)	35	36	0	0	74	39	0	0	0	0	0	70
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)	38	39	0	0	80	42	0	0	0	0	0	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	122	0	76
Volume Left (vph)	38	0	0	0
Volume Right (vph)	0	42	0	76
Hadj (s)	0.10	-0.21	0.00	-0.60
Departure Headway (s)	4.3	3.9	4.4	3.7
Degree Utilization, x	0.09	0.13	0.00	0.08
Capacity (veh/h)	821	895	786	917
Control Delay (s)	7.7	7.5	7.4	7.0
Approach Delay (s)	7.7	7.5	0.0	7.0
Approach LOS	A	A	A	A

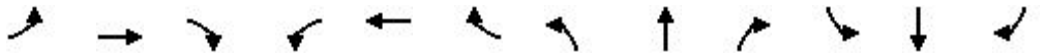
Intersection Summary				
Delay	7.4			
Level of Service	A			
Intersection Capacity Utilization	21.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	0	0	0	0	113
Future Volume (Veh/h)	36	0	0	0	0	113
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)	39	0	0	0	0	123
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	0				78	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				78	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	89
cM capacity (veh/h)	1636				908	1091

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	39	0	123
Volume Left	39	0	0
Volume Right	0	0	123
cSH	1636	1700	1091
Volume to Capacity	0.02	0.00	0.11
Queue Length 95th (m)	0.6	0.0	3.0
Control Delay (s)	7.3	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Future Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.198			0.112			0.679			0.647		
Satd. Flow (perm)	358	3535	1536	204	3500	1597	1215	3535	1566	1216	3400	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			322			53			48			48
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Adj. Flow (vph)	93	1441	322	177	1118	25	279	166	101	52	115	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	1441	322	177	1118	25	279	166	101	52	115	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	39.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	47.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	67.0	67.0	67.0	67.0	67.0	67.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (%)	59.6%	59.6%	59.6%	59.6%	59.6%	59.6%	40.4%	40.4%	40.4%	40.4%	40.4%	40.4%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	65.9	65.9	65.9	65.9	65.9	65.9	30.1	30.1	30.1	30.1	30.1	30.1
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59	0.59	0.27	0.27	0.27	0.27	0.27	0.27

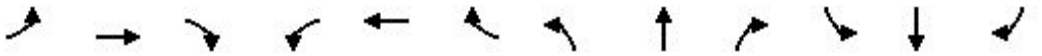
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.44	0.70	0.31	1.49	0.55	0.03	0.86	0.18	0.22	0.16	0.13	0.07
Control Delay	24.1	19.7	2.3	284.4	16.4	0.8	63.1	30.6	17.3	30.1	29.7	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	19.7	2.3	284.4	16.4	0.8	63.1	30.6	17.3	30.1	29.7	3.4
LOS	C	B	A	F	B	A	E	C	B	C	C	A
Approach Delay		16.9			52.1			44.8			26.1	
Approach LOS		B			D			D			C	
Queue Length 50th (m)	11.7	118.7	0.0	~57.1	80.1	0.0	60.6	15.3	9.2	9.1	10.4	0.0
Queue Length 95th (m)	32.3	165.3	13.5	#81.4	113.0	1.3	89.1	22.5	21.6	18.1	16.7	3.3
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	209	2071	1033	119	2051	957	399	1162	547	399	1118	509
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.70	0.31	1.49	0.55	0.03	0.70	0.14	0.18	0.13	0.10	0.06

Intersection Summary

Area Type: Other
Cycle Length: 112.5
Actuated Cycle Length: 112.5
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.49
Intersection Signal Delay: 33.1 Intersection LOS: C
Intersection Capacity Utilization 119.2% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: McCowan Rd & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Future Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.20	1.00	1.00	0.11	1.00	1.00	0.68	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	358	3535	1536	204	3500	1597	1215	3535	1566	1215	3400	1452
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)	93	1441	322	177	1118	25	279	166	101	52	115	28
RTOR Reduction (vph)	0	0	133	0	0	10	0	0	35	0	0	21
Lane Group Flow (vph)	93	1441	189	177	1118	15	279	166	66	52	115	7
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	65.9	65.9	65.9	65.9	65.9	65.9	30.1	30.1	30.1	30.1	30.1	30.1
Effective Green, g (s)	65.9	65.9	65.9	65.9	65.9	65.9	30.1	30.1	30.1	30.1	30.1	30.1
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59	0.59	0.27	0.27	0.27	0.27	0.27	0.27
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	209	2070	899	119	2050	935	325	945	418	325	909	388
v/s Ratio Prot		0.41			0.32			0.05			0.03	
v/s Ratio Perm	0.26		0.12	c0.87		0.01	c0.23		0.04	0.04		0.01
v/c Ratio	0.44	0.70	0.21	1.49	0.55	0.02	0.86	0.18	0.16	0.16	0.13	0.02
Uniform Delay, d1	13.1	16.3	11.0	23.3	14.2	9.7	39.2	31.7	31.5	31.5	31.2	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	2.0	0.5	258.5	1.0	0.0	19.5	0.1	0.2	0.2	0.1	0.0
Delay (s)	19.8	18.3	11.5	281.8	15.2	9.8	58.7	31.8	31.7	31.8	31.3	30.4
Level of Service	B	B	B	F	B	A	E	C	C	C	C	C
Approach Delay (s)		17.2			50.9			45.5			31.3	
Approach LOS		B			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	119.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

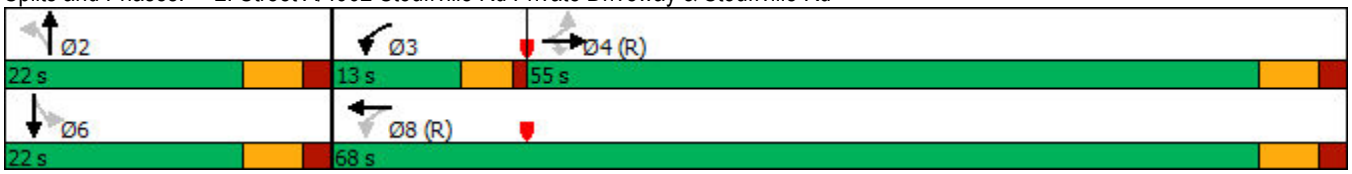
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1368	37	103	1091	68	111	0	3	3	0	27
Future Volume (vph)	32	1368	37	103	1091	68	111	0	3	3	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		30.0	30.0		30.0	50.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	100.0			100.0			40.0			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.991			0.850			0.877	
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1785	3535	1597	1785	3472	0	1785	1597	0	0	1640	0
Flt Permitted	0.218			0.095			0.736				0.980	
Satd. Flow (perm)	410	3535	1597	178	3472	0	1383	1597	0	0	1615	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91		16			183			91	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1439.1			197.2			172.2			197.2	
Travel Time (s)		86.3			11.8			12.4			14.2	
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
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	35	1503	41	113	1199	75	122	0	3	3	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	1503	41	113	1274	0	122	3	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	36.0	36.0	36.0	11.5	36.0		22.0	22.0		22.0	22.0	
Total Split (s)	55.0	55.0	55.0	13.0	68.0		22.0	22.0		22.0	22.0	
Total Split (%)	61.1%	61.1%	61.1%	14.4%	75.6%		24.4%	24.4%		24.4%	24.4%	
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	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	4.5	6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	55.2	55.2	55.2	66.4	64.9		13.1	13.1			13.1	
Actuated g/C Ratio	0.61	0.61	0.61	0.74	0.72		0.15	0.15			0.15	

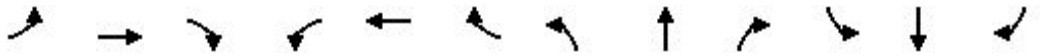
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.69	0.04	0.43	0.51		0.61	0.01			0.11	
Control Delay	11.4	15.3	0.2	10.0	6.6		48.8	0.0			0.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	11.4	15.3	0.2	10.0	6.6		48.8	0.0			0.7	
LOS	B	B	A	A	A		D	A			A	
Approach Delay		14.8			6.9			47.6			0.7	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	2.6	94.3	0.0	4.8	44.4		21.1	0.0			0.0	
Queue Length 95th (m)	8.6	136.5	0.5	13.7	65.7		38.0	0.0			0.0	
Internal Link Dist (m)		1415.1			173.2			148.2			173.2	
Turn Bay Length (m)	30.0		30.0	30.0			50.0					
Base Capacity (vph)	251	2166	1013	283	2508		245	434			361	
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	0.14	0.69	0.04	0.40	0.51		0.50	0.01			0.09	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 12.5 Intersection LOS: B
Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15

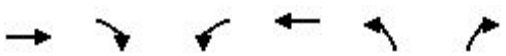
Splits and Phases: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1368	37	103	1091	68	111	0	3	3	0	27
Future Volume (vph)	32	1368	37	103	1091	68	111	0	3	3	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.5	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.85			0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1785	3535	1597	1785	3473		1785	1597			1641	
Flt Permitted	0.22	1.00	1.00	0.09	1.00		0.74	1.00			0.98	
Satd. Flow (perm)	409	3535	1597	178	3473		1382	1597			1615	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	35	1503	41	113	1199	75	122	0	3	3	0	30
RTOR Reduction (vph)	0	0	16	0	4	0	0	3	0	0	28	0
Lane Group Flow (vph)	35	1503	25	113	1270	0	122	0	0	0	5	0
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	54.3	54.3	54.3	64.9	64.9		13.1	13.1			13.1	
Effective Green, g (s)	54.3	54.3	54.3	64.9	64.9		13.1	13.1			13.1	
Actuated g/C Ratio	0.60	0.60	0.60	0.72	0.72		0.15	0.15			0.15	
Clearance Time (s)	6.0	6.0	6.0	4.5	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	246	2132	963	237	2504		201	232			235	
v/s Ratio Prot		c0.43		0.03	c0.37			0.00				
v/s Ratio Perm	0.09		0.02	0.31			c0.09				0.00	
v/c Ratio	0.14	0.70	0.03	0.48	0.51		0.61	0.00			0.02	
Uniform Delay, d1	7.7	12.3	7.2	9.7	5.5		36.0	32.9			33.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	1.2	2.0	0.0	1.5	0.7		5.1	0.0			0.0	
Delay (s)	9.0	14.3	7.2	11.2	6.3		41.1	32.9			33.0	
Level of Service	A	B	A	B	A		D	C			C	
Approach Delay (s)		14.0			6.7			40.9			33.0	
Approach LOS		B			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1789	84	0	1018	0	62
Future Volume (Veh/h)	1789	84	0	1018	0	62
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)	1945	91	0	1107	0	67
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)	197			303		
pX, platoon unblocked			0.69		0.77	0.69
vC, conflicting volume			1945		2498	972
vC1, stage 1 conf vol					1945	
vC2, stage 2 conf vol					554	
vCu, unblocked vol			1478		1406	76
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	90
cM capacity (veh/h)			320		121	677

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	972	972	91	554	554	67
Volume Left	0	0	0	0	0	0
Volume Right	0	0	91	0	0	67
cSH	1700	1700	1700	1700	1700	677
Volume to Capacity	0.57	0.57	0.05	0.33	0.33	0.10
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	2.6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	10.9
Lane LOS						B
Approach Delay (s)	0.0			0.0		10.9
Approach LOS						B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

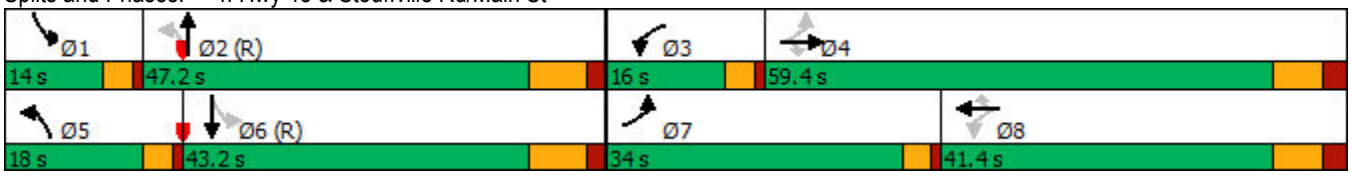
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Future Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.963			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3408	0	1750	3259	0
Flt Permitted	0.198			0.115			0.325			0.267		
Satd. Flow (perm)	358	3535	1581	210	3535	1597	593	3408	0	491	3259	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			352			205		33			55	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Adj. Flow (vph)	374	1099	435	147	646	205	218	514	171	151	348	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	374	1099	435	147	646	205	218	685	0	151	511	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	34.0	59.4	59.4	16.0	41.4	41.4	18.0	47.2		14.0	43.2	
Total Split (%)	24.9%	43.5%	43.5%	11.7%	30.3%	30.3%	13.2%	34.6%		10.2%	31.6%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	

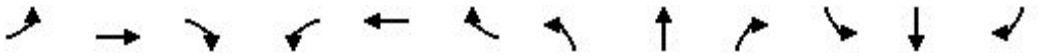
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	67.9	49.0	49.0	49.7	34.8	34.8	60.1	42.4		53.2	39.0	
Actuated g/C Ratio	0.50	0.36	0.36	0.36	0.25	0.25	0.44	0.31		0.39	0.29	
v/c Ratio	0.87	0.87	0.55	0.73	0.72	0.37	0.58	0.63		0.53	0.53	
Control Delay	46.4	48.9	9.3	50.1	51.6	7.1	32.3	42.5		32.4	39.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.4	48.9	9.3	50.1	51.6	7.1	32.3	42.5		32.4	39.9	
LOS	D	D	A	D	D	A	C	D		C	D	
Approach Delay		39.4			42.3			40.1			38.2	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	66.3	149.0	15.6	21.9	86.9	0.0	39.9	88.2		26.5	60.7	
Queue Length 95th (m)	104.5	176.5	46.1	#52.9	112.4	20.1	61.4	109.4		43.2	79.3	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	476	1343	819	214	909	562	384	1099		291	985	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.79	0.82	0.53	0.69	0.71	0.36	0.57	0.62		0.52	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 40.0 Intersection LOS: D
Intersection Capacity Utilization 96.3% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Future Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3407		1750	3260	
Flt Permitted	0.20	1.00	1.00	0.11	1.00	1.00	0.32	1.00		0.27	1.00	
Satd. Flow (perm)	357	3535	1581	209	3535	1597	593	3407		492	3260	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	374	1099	435	147	646	205	218	514	171	151	348	163
RTOR Reduction (vph)	0	0	226	0	0	153	0	23	0	0	39	0
Lane Group Flow (vph)	374	1099	209	147	646	52	218	662	0	151	472	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	64.3	49.0	49.0	46.2	34.9	34.9	56.1	42.3		49.3	38.9	
Effective Green, g (s)	64.3	49.0	49.0	46.2	34.9	34.9	56.1	42.3		49.3	38.9	
Actuated g/C Ratio	0.47	0.36	0.36	0.34	0.26	0.26	0.41	0.31		0.36	0.28	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	420	1268	567	196	903	408	358	1055		273	928	
v/s Ratio Prot	c0.17	0.31		0.06	0.18		c0.06	c0.19		0.04	0.14	
v/s Ratio Perm	c0.25		0.13	0.19		0.03	0.19			0.16		
v/c Ratio	0.89	0.87	0.37	0.75	0.72	0.13	0.61	0.63		0.55	0.51	
Uniform Delay, d1	28.6	40.8	32.4	34.7	46.3	39.1	27.9	40.4		31.2	40.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.3	6.5	0.4	14.8	2.7	0.1	2.9	2.8		2.4	2.0	
Delay (s)	49.0	47.2	32.8	49.6	49.0	39.3	30.9	43.2		33.7	42.8	
Level of Service	D	D	C	D	D	D	C	D		C	D	
Approach Delay (s)		44.3			47.1			40.2			40.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

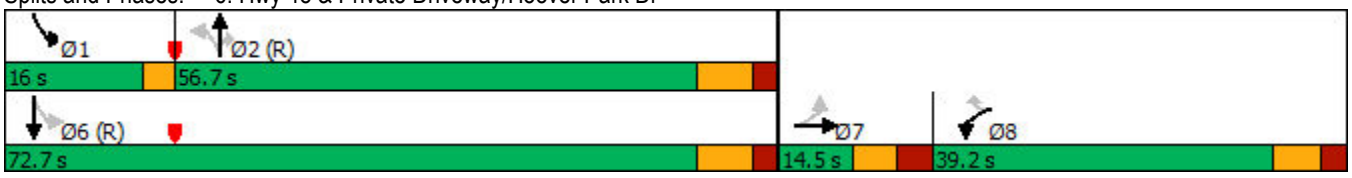
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Future Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.99			0.99		1.00	
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1750	0	1566	1879	1789	1597	1767	1804	0
Flt Permitted				0.950						0.077		
Satd. Flow (perm)	0	1879	0	1750	0	1545	1879	1789	1576	143	1804	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						365			366			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Adj. Flow (vph)	0	0	0	292	0	383	0	803	366	384	590	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	292	0	383	0	803	366	384	591	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		39.2		39.2	56.7	56.7	56.7	16.0	72.7	
Total Split (%)	11.5%	11.5%		31.0%		31.0%	44.9%	44.9%	44.9%	12.7%	57.5%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	

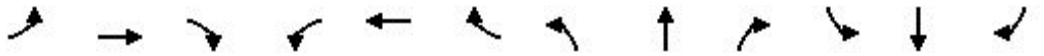
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				26.3		26.3		49.0	49.0	89.9	85.2	
Actuated g/C Ratio				0.21		0.21		0.39	0.39	0.71	0.67	
v/c Ratio				0.80		0.63		1.16	0.44	0.73	0.49	
Control Delay				63.6		9.7		122.9	4.3	39.8	12.7	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				63.6		9.7		122.9	4.3	39.8	12.7	
LOS				E		A		F	A	D	B	
Approach Delay					33.0			85.8			23.4	
Approach LOS					C			F			C	
Queue Length 50th (m)				73.3		3.8		~248.3	0.0	72.2	68.8	
Queue Length 95th (m)				96.5		29.0		#320.7	18.6	#140.7	115.4	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				451		668		693	835	528	1215	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.65		0.57		1.16	0.44	0.73	0.49	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 51.6 Intersection LOS: D
Intersection Capacity Utilization 97.2% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Future Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes				1.00		0.99		1.00	0.99	1.00	1.00	
Flpb, ped/bikes				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1750		1545		1789	1576	1767	1803	
Flt Permitted				0.95		1.00		1.00	1.00	0.08	1.00	
Satd. Flow (perm)				1750		1545		1789	1576	143	1803	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	292	0	383	0	803	366	384	590	1
RTOR Reduction (vph)	0	0	0	0	0	289	0	0	224	0	0	0
Lane Group Flow (vph)	0	0	0	292	0	94	0	803	142	384	591	0
Confl. Peds. (#/hr)	1					1	1		1	1		1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				26.3		26.3		49.0	49.0	85.2	85.2	
Effective Green, g (s)				26.3		26.3		49.0	49.0	85.2	85.2	
Actuated g/C Ratio				0.21		0.21		0.39	0.39	0.67	0.67	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				364		321		693	610	522	1215	
v/s Ratio Prot				c0.17				c0.45		c0.19	0.33	
v/s Ratio Perm						0.06			0.09	0.30		
v/c Ratio				0.80		0.29		1.16	0.23	0.74	0.49	
Uniform Delay, d1				47.6		42.2		38.7	26.0	33.7	10.0	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				12.0		0.5		87.0	0.9	5.3	1.4	
Delay (s)				59.6		42.7		125.7	26.9	39.1	11.4	
Level of Service				E		D		F	C	D	B	
Approach Delay (s)		0.0			50.0			94.8			22.3	
Approach LOS		A			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	59.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

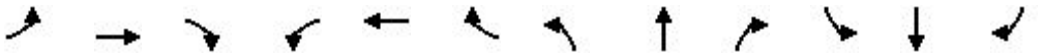
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	55	31	31	69	84	0
Future Volume (Veh/h)	55	31	31	69	84	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)	60	34	34	75	91	0
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	254	72			109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254	72			109	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	97			94	
cM capacity (veh/h)	694	996			1494	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	109	91
Volume Left	60	0	91
Volume Right	34	75	0
cSH	780	1700	1494
Volume to Capacity	0.12	0.06	0.06
Queue Length 95th (m)	3.3	0.0	1.6
Control Delay (s)	10.2	0.0	7.6
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	7.6
Approach LOS	B		

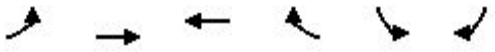
Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	70	70	0	0	59	30	0	0	0	0	0	55
Future Volume (vph)	70	70	0	0	59	30	0	0	0	0	0	55
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)	76	76	0	0	64	33	0	0	0	0	0	60

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	152	97	0	60
Volume Left (vph)	76	0	0	0
Volume Right (vph)	0	33	0	60
Hadj (s)	0.10	-0.20	0.00	-0.60
Departure Headway (s)	4.2	4.0	4.5	3.8
Degree Utilization, x	0.18	0.11	0.00	0.06
Capacity (veh/h)	836	884	763	881
Control Delay (s)	8.1	7.4	7.5	7.1
Approach Delay (s)	8.1	7.4	0.0	7.1
Approach LOS	A	A	A	A

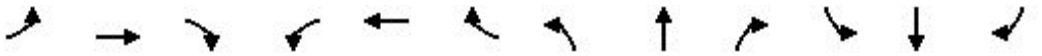
Intersection Summary				
Delay	7.7			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	0	0	0	89
Future Volume (Veh/h)	70	0	0	0	0	89
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)	76	0	0	0	0	97
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	0				152	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				152	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	91
cM capacity (veh/h)	1636				805	1091

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	76	0	97
Volume Left	76	0	0
Volume Right	0	0	97
cSH	1636	1700	1091
Volume to Capacity	0.05	0.00	0.09
Queue Length 95th (m)	1.2	0.0	2.3
Control Delay (s)	7.3	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		



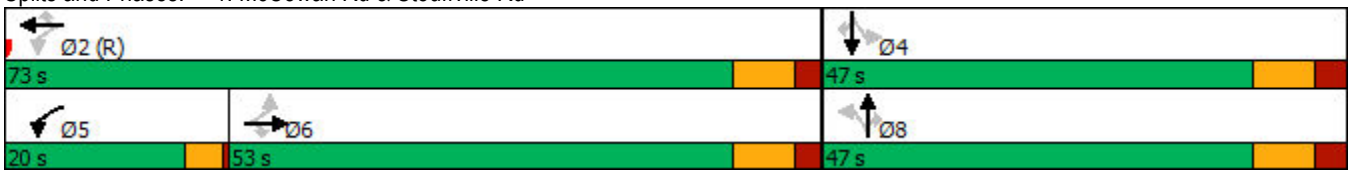
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Future Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1507	1684	3275	1389
Flt Permitted	0.229			0.225			0.681			0.679		
Satd. Flow (perm)	418	3433	1493	395	3400	1507	1219	3336	1487	1203	3275	1389
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			262			50			135			82
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Adj. Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	4.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	8.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	53.0	53.0	53.0	20.0	73.0	73.0	47.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	44.2%	44.2%	44.2%	16.7%	60.8%	60.8%	39.2%	39.2%	39.2%	39.2%	39.2%	39.2%
Yellow Time (s)	5.5	5.5	5.5	3.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	0.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	4.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Max	Max	Max	None	C-Max	C-Max	None	None	None	None	None	None

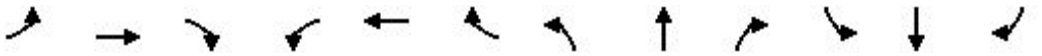
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	58.5	58.5	58.5	78.3	74.3	74.3	29.2	29.2	29.2	29.2	29.2	29.2
Actuated g/C Ratio	0.49	0.49	0.49	0.65	0.62	0.62	0.24	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.22	0.54	0.30	0.55	0.57	0.04	0.83	0.14	0.29	0.16	0.14	0.14
Control Delay	26.2	24.8	3.9	15.4	16.0	2.1	64.8	33.9	6.7	34.0	33.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	24.8	3.9	15.4	16.0	2.1	64.8	33.9	6.7	34.0	33.9	3.2
LOS	C	C	A	B	B	A	E	C	A	C	C	A
Approach Delay		20.3			15.6			41.8			26.1	
Approach LOS		C			B			D			C	
Queue Length 50th (m)	6.3	79.7	0.0	19.4	87.9	0.0	57.8	11.7	0.0	9.2	11.4	0.0
Queue Length 95th (m)	17.3	113.1	13.8	35.2	119.3	2.8	75.6	16.8	12.2	16.9	16.4	3.4
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	203	1674	862	427	2104	951	391	1070	568	385	1050	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.54	0.30	0.49	0.57	0.04	0.63	0.11	0.24	0.12	0.11	0.11

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 21.8 Intersection LOS: C
Intersection Capacity Utilization 104.1% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: McCowan Rd & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Future Volume (vph)	38	766	223	179	1025	30	209	98	115	40	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	4.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3433	1493	1668	3400	1507	1700	3336	1487	1683	3275	1389
Flt Permitted	0.23	1.00	1.00	0.23	1.00	1.00	0.68	1.00	1.00	0.68	1.00	1.00
Satd. Flow (perm)	417	3433	1493	396	3400	1507	1219	3336	1487	1203	3275	1389
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	45	901	262	211	1206	35	246	115	135	47	112	54
RTOR Reduction (vph)	0	0	134	0	0	13	0	0	102	0	0	41
Lane Group Flow (vph)	45	901	128	211	1206	22	246	115	33	47	112	13
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	3%	4%	7%	7%	5%	6%	5%	7%	6%	6%	9%	15%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	58.6	58.6	58.6	74.3	74.3	74.3	29.2	29.2	29.2	29.2	29.2	29.2
Effective Green, g (s)	58.6	58.6	58.6	74.3	74.3	74.3	29.2	29.2	29.2	29.2	29.2	29.2
Actuated g/C Ratio	0.49	0.49	0.49	0.62	0.62	0.62	0.24	0.24	0.24	0.24	0.24	0.24
Clearance Time (s)	8.0	8.0	8.0	4.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	203	1676	729	369	2105	933	296	811	361	292	796	337
v/s Ratio Prot		0.26		0.06	c0.35			0.03			0.03	
v/s Ratio Perm	0.11		0.09	0.30		0.01	c0.20		0.02	0.04		0.01
v/c Ratio	0.22	0.54	0.18	0.57	0.57	0.02	0.83	0.14	0.09	0.16	0.14	0.04
Uniform Delay, d1	17.6	21.3	17.2	12.1	13.5	8.8	43.1	35.6	35.1	35.8	35.6	34.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	1.2	0.5	2.1	1.1	0.0	17.7	0.1	0.1	0.3	0.1	0.0
Delay (s)	20.1	22.5	17.7	14.3	14.6	8.9	60.7	35.7	35.2	36.0	35.7	34.7
Level of Service	C	C	B	B	B	A	E	D	D	D	D	C
Approach Delay (s)		21.4			14.4			48.0			35.5	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

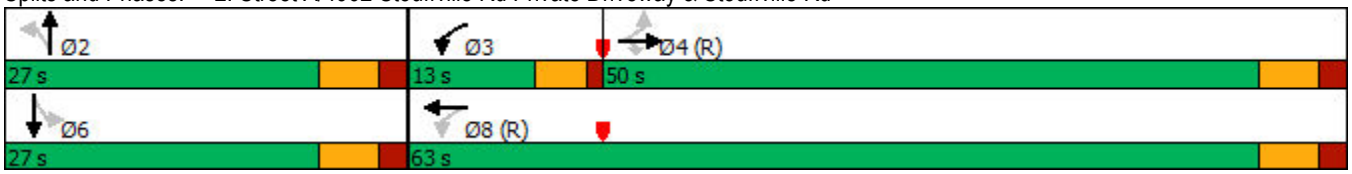
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	830	18	53	1104	10	140	0	4	3	0	0
Future Volume (vph)	29	830	18	53	1104	10	140	0	4	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		30.0	30.0		30.0	50.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	100.0			100.0			40.0			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.850				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1785	3400	1597	1785	3398	0	1785	1597	0	0	1785	0
Flt Permitted	0.232			0.250			0.756				0.755	
Satd. Flow (perm)	436	3400	1597	470	3398	0	1420	1597	0	0	1419	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91		2			256				
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1439.1			197.2			172.2			197.2	
Travel Time (s)		86.3			11.8			12.4			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	32	902	20	58	1200	11	152	0	4	3	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	902	20	58	1211	0	152	4	0	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	36.0	36.0	36.0	11.5	36.0		22.0	22.0		22.0	22.0	
Total Split (s)	50.0	50.0	50.0	13.0	63.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.6%	55.6%	55.6%	14.4%	70.0%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	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	4.5	6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	53.6	53.6	53.6	64.4	62.9		15.1	15.1			15.1	
Actuated g/C Ratio	0.60	0.60	0.60	0.72	0.70		0.17	0.17			0.17	

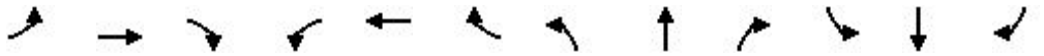
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.12	0.45	0.02	0.13	0.51		0.64	0.01			0.01	
Control Delay	12.4	12.3	0.1	5.3	7.8		46.6	0.0			28.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	12.4	12.3	0.1	5.3	7.8		46.6	0.0			28.3	
LOS	B	B	A	A	A		D	A			C	
Approach Delay		12.1			7.7			45.4			28.3	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	2.5	46.5	0.0	2.6	45.8		26.2	0.0			0.5	
Queue Length 95th (m)	8.8	73.6	0.0	7.5	76.3		43.0	0.0			2.7	
Internal Link Dist (m)		1415.1			173.2			148.2			173.2	
Turn Bay Length (m)	30.0		30.0	30.0			50.0					
Base Capacity (vph)	259	2023	987	460	2375		331	568			331	
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	0.12	0.45	0.02	0.13	0.51		0.46	0.01			0.01	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 12.0 Intersection LOS: B
Intersection Capacity Utilization 62.4% ICU Level of Service B
Analysis Period (min) 15

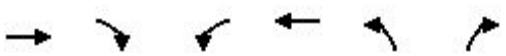
Splits and Phases: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	830	18	53	1104	10	140	0	4	3	0	0
Future Volume (vph)	29	830	18	53	1104	10	140	0	4	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.5	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	
Satd. Flow (prot)	1785	3400	1597	1785	3397		1785	1597			1785	
Flt Permitted	0.23	1.00	1.00	0.25	1.00		0.76	1.00			0.76	
Satd. Flow (perm)	436	3400	1597	470	3397		1420	1597			1419	
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)	32	902	20	58	1200	11	152	0	4	3	0	0
RTOR Reduction (vph)	0	0	8	0	1	0	0	3	0	0	0	0
Lane Group Flow (vph)	32	902	12	58	1210	0	152	1	0	0	3	0
Heavy Vehicles (%)	0%	5%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	52.7	52.7	52.7	62.9	62.9		15.1	15.1			15.1	
Effective Green, g (s)	52.7	52.7	52.7	62.9	62.9		15.1	15.1			15.1	
Actuated g/C Ratio	0.59	0.59	0.59	0.70	0.70		0.17	0.17			0.17	
Clearance Time (s)	6.0	6.0	6.0	4.5	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	255	1990	935	411	2374		238	267			238	
v/s Ratio Prot		0.27		0.01	c0.36			0.00				
v/s Ratio Perm	0.07		0.01	0.09			c0.11				0.00	
v/c Ratio	0.13	0.45	0.01	0.14	0.51		0.64	0.00			0.01	
Uniform Delay, d1	8.3	10.5	7.8	5.1	6.3		34.9	31.2			31.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	1.0	0.7	0.0	0.2	0.8		5.5	0.0			0.0	
Delay (s)	9.4	11.3	7.8	5.2	7.1		40.4	31.2			31.3	
Level of Service	A	B	A	A	A		D	C			C	
Approach Delay (s)		11.1			7.0			40.2			31.3	
Approach LOS		B			A			D			C	

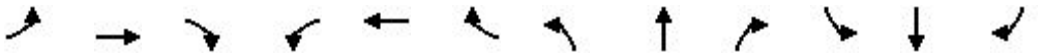
Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	846	43	0	1728	0	78
Future Volume (Veh/h)	846	43	0	1728	0	78
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)	920	47	0	1878	0	85
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)	197			303		
pX, platoon unblocked			0.86		0.78	0.86
vC, conflicting volume			920		1859	460
vC1, stage 1 conf vol					920	
vC2, stage 2 conf vol					939	
vCu, unblocked vol			583		729	49
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	90
cM capacity (veh/h)			862		422	875

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	460	460	47	939	939	85
Volume Left	0	0	0	0	0	0
Volume Right	0	0	47	0	0	85
cSH	1700	1700	1700	1700	1700	875
Volume to Capacity	0.27	0.27	0.03	0.55	0.55	0.10
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	2.6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.6
Lane LOS						A
Approach Delay (s)	0.0			0.0		9.6
Approach LOS						A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Future Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.968			0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3341	0	1716	3179	0
Flt Permitted	0.091			0.344			0.097			0.545		
Satd. Flow (perm)	149	3500	1551	616	3500	1507	179	3341	0	985	3179	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			283			135		28			156	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Adj. Flow (vph)	160	563	283	154	1055	79	333	272	73	170	511	439
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	563	283	154	1055	79	333	345	0	170	950	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	15.0	51.4	51.4	14.0	50.4	50.4	26.0	58.2		13.0	45.2	
Total Split (%)	11.0%	37.6%	37.6%	10.2%	36.9%	36.9%	19.0%	42.6%		9.5%	33.1%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	58.5	43.8	43.8	56.0	42.6	42.6	67.3	50.4		50.2	37.3	
Actuated g/C Ratio	0.43	0.32	0.32	0.41	0.31	0.31	0.49	0.37		0.37	0.27	

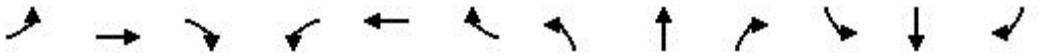
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.91	0.50	0.41	0.47	0.97	0.14	0.97	0.28		0.41	0.97	
Control Delay	79.1	39.5	5.6	28.3	66.8	0.7	80.3	28.4		25.3	62.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	79.1	39.5	5.6	28.3	66.8	0.7	80.3	28.4		25.3	62.9	
LOS	E	D	A	C	E	A	F	C		C	E	
Approach Delay		36.2			58.1			53.9			57.2	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	29.9	68.2	0.0	26.0	155.2	0.0	77.1	33.0		26.6	122.0	
Queue Length 95th (m)	#74.3	86.8	20.7	41.6	#201.3	0.8	#140.6	45.8		41.6	#168.0	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	176	1122	689	332	1094	563	343	1250		410	981	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.91	0.50	0.41	0.46	0.96	0.14	0.97	0.28		0.41	0.97	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 51.8 Intersection LOS: D
Intersection Capacity Utilization 99.1% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Future Volume (vph)	147	518	260	142	971	73	306	250	67	156	470	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1552	3500	1551	1700	3500	1507	1750	3342		1716	3178	
Flt Permitted	0.09	1.00	1.00	0.34	1.00	1.00	0.10	1.00		0.54	1.00	
Satd. Flow (perm)	149	3500	1551	615	3500	1507	178	3342		984	3178	
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)	160	563	283	154	1055	79	333	272	73	170	511	439
RTOR Reduction (vph)	0	0	192	0	0	54	0	18	0	0	113	0
Lane Group Flow (vph)	160	563	91	154	1055	25	333	327	0	170	837	0
Heavy Vehicles (%)	15%	2%	3%	5%	2%	6%	2%	3%	5%	4%	5%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	54.8	43.8	43.8	52.4	42.6	42.6	63.4	50.4		46.3	37.3	
Effective Green, g (s)	54.8	43.8	43.8	52.4	42.6	42.6	63.4	50.4		46.3	37.3	
Actuated g/C Ratio	0.40	0.32	0.32	0.38	0.31	0.31	0.46	0.37		0.34	0.27	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	172	1122	497	313	1091	469	336	1233		381	867	
v/s Ratio Prot	c0.07	0.16		0.04	c0.30		c0.16	0.10		0.03	0.26	
v/s Ratio Perm	0.30		0.06	0.15		0.02	c0.30			0.12		
v/c Ratio	0.93	0.50	0.18	0.49	0.97	0.05	0.99	0.27		0.45	0.96	
Uniform Delay, d1	35.1	37.6	33.5	28.9	46.3	32.9	42.9	30.2		33.2	49.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	48.6	0.4	0.2	1.2	19.5	0.0	46.5	0.5		0.8	23.2	
Delay (s)	83.7	37.9	33.7	30.2	65.8	32.9	89.4	30.7		34.0	72.2	
Level of Service	F	D	C	C	E	C	F	C		C	E	
Approach Delay (s)		44.0			59.6			59.5			66.4	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

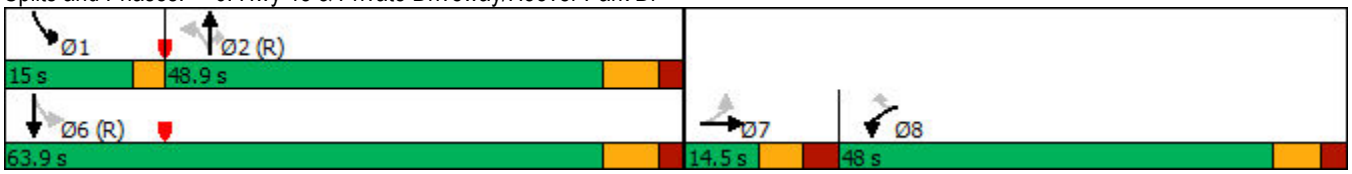
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Future Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1716	0	1566	1879	3275	1536	1700	3336	0
Flt Permitted				0.950						0.405		
Satd. Flow (perm)	0	1879	0	1716	0	1566	1879	3275	1536	725	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			314			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Adj. Flow (vph)	0	0	0	381	0	223	0	533	314	226	559	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	381	0	223	0	533	314	226	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		48.0		48.0	48.9	48.9	48.9	15.0	63.9	
Total Split (%)	11.5%	11.5%		38.0%		38.0%	38.7%	38.7%	38.7%	11.9%	50.6%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	
Act Effct Green (s)				33.4		33.4		62.5	62.5	82.8	78.1	
Actuated g/C Ratio				0.26		0.26		0.49	0.49	0.66	0.62	

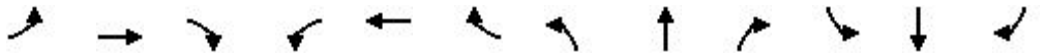
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.84		0.39		0.33	0.34	0.40	0.27	
Control Delay				60.3		5.9		21.9	3.8	12.0	12.4	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				60.3		5.9		21.9	3.8	12.0	12.4	
LOS				E		A		C	A	B	B	
Approach Delay					40.2			15.2			12.3	
Approach LOS					D			B			B	
Queue Length 50th (m)				94.6		0.0		42.8	0.0	21.9	33.3	
Queue Length 95th (m)				120.7		17.6		70.7	19.0	41.5	52.5	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				559		660		1619	918	581	2061	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.68		0.34		0.33	0.34	0.39	0.27	

Intersection Summary

Area Type: Other
Cycle Length: 126.4
Actuated Cycle Length: 126.4
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 20.9 Intersection LOS: C
Intersection Capacity Utilization 101.8% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Future Volume (vph)	0	0	0	343	0	201	0	480	283	203	503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		0.95	1.00	1.00	0.95	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1716		1566		3275	1536	1700	3336	
Flt Permitted				0.95		1.00		1.00	1.00	0.40	1.00	
Satd. Flow (perm)				1716		1566		3275	1536	724	3336	
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	0	0	381	0	223	0	533	314	226	559	0
RTOR Reduction (vph)	0	0	0	0	0	164	0	0	159	0	0	0
Lane Group Flow (vph)	0	0	0	381	0	59	0	533	155	226	559	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	2%	0%	9%	4%	5%	7%	0%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				33.4		33.4		62.5	62.5	78.1	78.1	
Effective Green, g (s)				33.4		33.4		62.5	62.5	78.1	78.1	
Actuated g/C Ratio				0.26		0.26		0.49	0.49	0.62	0.62	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				453		413		1619	759	544	2061	
v/s Ratio Prot				c0.22				0.16		c0.04	0.17	
v/s Ratio Perm						0.04			0.10	c0.21		
v/c Ratio				0.84		0.14		0.33	0.20	0.42	0.27	
Uniform Delay, d1				44.0		35.6		19.3	18.0	10.9	11.1	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				13.2		0.2		0.5	0.6	0.5	0.3	
Delay (s)				57.2		35.7		19.8	18.6	11.4	11.4	
Level of Service				E		D		B	B	B	B	
Approach Delay (s)		0.0			49.3			19.4			11.4	
Approach LOS		A			D			B			B	

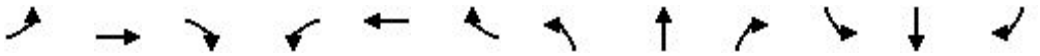
Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	39	39	35	43	0
Future Volume (Veh/h)	70	39	39	35	43	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)	76	42	42	38	47	0
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	155	61			80	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155	61			80	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	96			97	
cM capacity (veh/h)	815	1010			1531	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	118	80	47
Volume Left	76	0	47
Volume Right	42	38	0
cSH	875	1700	1531
Volume to Capacity	0.13	0.05	0.03
Queue Length 95th (m)	3.7	0.0	0.8
Control Delay (s)	9.8	0.0	7.4
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	7.4
Approach LOS	A		

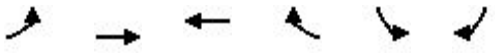
Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	36	0	0	74	39	0	0	0	0	0	70
Future Volume (vph)	35	36	0	0	74	39	0	0	0	0	0	70
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)	38	39	0	0	80	42	0	0	0	0	0	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	122	0	76
Volume Left (vph)	38	0	0	0
Volume Right (vph)	0	42	0	76
Hadj (s)	0.10	-0.21	0.00	-0.60
Departure Headway (s)	4.3	3.9	4.4	3.7
Degree Utilization, x	0.09	0.13	0.00	0.08
Capacity (veh/h)	821	895	786	917
Control Delay (s)	7.7	7.5	7.4	7.0
Approach Delay (s)	7.7	7.5	0.0	7.0
Approach LOS	A	A	A	A

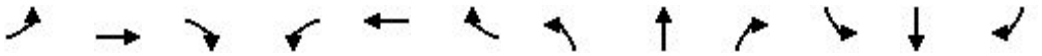
Intersection Summary				
Delay	7.4			
Level of Service	A			
Intersection Capacity Utilization	21.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	0	0	0	0	113
Future Volume (Veh/h)	36	0	0	0	0	113
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)	39	0	0	0	0	123
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	0				78	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				78	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	89
cM capacity (veh/h)	1636				908	1091

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	39	0	123
Volume Left	39	0	0
Volume Right	0	0	123
cSH	1636	1700	1091
Volume to Capacity	0.02	0.00	0.11
Queue Length 95th (m)	0.6	0.0	3.0
Control Delay (s)	7.3	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		



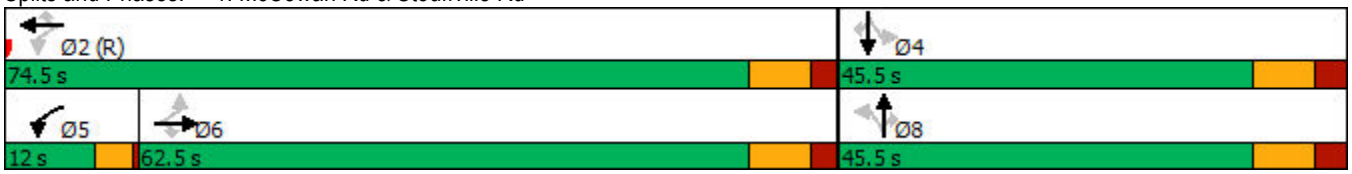
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Future Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.253			0.066			0.679			0.647		
Satd. Flow (perm)	457	3535	1536	120	3500	1597	1215	3535	1566	1216	3400	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			322			50			101			82
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		805.1			1439.1			697.0			730.5	
Travel Time (s)		41.4			74.0			35.8			37.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Adj. Flow (vph)	93	1441	322	177	1118	25	279	166	101	52	115	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	1441	322	177	1118	25	279	166	101	52	115	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	6	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	39.0	39.0	39.0	4.0	39.0	39.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	47.0	47.0	47.0	8.0	47.0	47.0	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (s)	62.5	62.5	62.5	12.0	74.5	74.5	45.5	45.5	45.5	45.5	45.5	45.5
Total Split (%)	52.1%	52.1%	52.1%	10.0%	62.1%	62.1%	37.9%	37.9%	37.9%	37.9%	37.9%	37.9%
Yellow Time (s)	5.5	5.5	5.5	3.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.5	2.5	2.5	0.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	8.0	8.0	8.0	4.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Max	Max	Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	56.9	56.9	56.9	75.9	71.9	71.9	31.6	31.6	31.6	31.6	31.6	31.6
Actuated g/C Ratio	0.47	0.47	0.47	0.63	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26

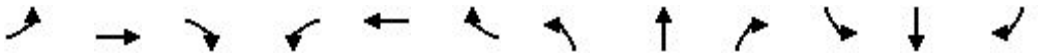
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.43	0.86	0.36	0.79	0.53	0.03	0.87	0.18	0.21	0.16	0.13	0.06
Control Delay	30.0	35.2	3.3	50.8	16.2	1.0	68.4	33.3	6.9	33.0	32.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	35.2	3.3	50.8	16.2	1.0	68.4	33.3	6.9	33.0	32.5	0.3
LOS	C	D	A	D	B	A	E	C	A	C	C	A
Approach Delay		29.4			20.5			46.3			28.0	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	15.5	169.3	0.0	26.2	84.1	0.0	64.9	16.4	0.0	9.7	11.2	0.0
Queue Length 95th (m)	33.2	204.7	16.3	#75.9	111.7	1.4	#102.5	24.6	12.9	19.7	18.2	0.0
Internal Link Dist (m)		781.1			1415.1			673.0			706.5	
Turn Bay Length (m)	105.0		170.0	125.0		65.0	140.0		150.0	75.0		110.0
Base Capacity (vph)	216	1675	897	224	2097	976	374	1089	552	374	1048	504
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.86	0.36	0.79	0.53	0.03	0.75	0.15	0.18	0.14	0.11	0.06

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 28.7 Intersection LOS: C
Intersection Capacity Utilization 115.1% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: McCowan Rd & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Future Volume (vph)	86	1326	296	163	1029	23	257	153	93	48	106	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	4.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	3535	1536	1733	3500	1597	1700	3535	1566	1785	3400	1452
Flt Permitted	0.25	1.00	1.00	0.07	1.00	1.00	0.68	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	457	3535	1536	120	3500	1597	1215	3535	1566	1215	3400	1452
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)	93	1441	322	177	1118	25	279	166	101	52	115	28
RTOR Reduction (vph)	0	0	169	0	0	10	0	0	74	0	0	21
Lane Group Flow (vph)	93	1441	153	177	1118	15	279	166	27	52	115	7
Heavy Vehicles (%)	4%	1%	4%	3%	2%	0%	5%	1%	2%	0%	5%	10%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	56.9	56.9	56.9	71.9	71.9	71.9	31.6	31.6	31.6	31.6	31.6	31.6
Effective Green, g (s)	56.9	56.9	56.9	71.9	71.9	71.9	31.6	31.6	31.6	31.6	31.6	31.6
Actuated g/C Ratio	0.47	0.47	0.47	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	8.0	8.0	8.0	4.0	8.0	8.0	8.5	8.5	8.5	8.5	8.5	8.5
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	3.0
Lane Grp Cap (vph)	216	1676	728	219	2097	956	319	930	412	319	895	382
v/s Ratio Prot		c0.41		c0.07	0.32			0.05			0.03	
v/s Ratio Perm	0.20		0.10	0.41		0.01	c0.23		0.02	0.04		0.01
v/c Ratio	0.43	0.86	0.21	0.81	0.53	0.02	0.87	0.18	0.06	0.16	0.13	0.02
Uniform Delay, d1	20.8	28.0	18.4	31.9	14.2	9.7	42.3	34.2	33.1	34.0	33.7	32.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	6.0	0.7	19.3	1.0	0.0	22.3	0.1	0.1	0.2	0.1	0.0
Delay (s)	27.0	34.0	19.1	51.2	15.1	9.8	64.6	34.3	33.2	34.3	33.8	32.7
Level of Service	C	C	B	D	B	A	E	C	C	C	C	C
Approach Delay (s)		31.1			19.9			49.6			33.8	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

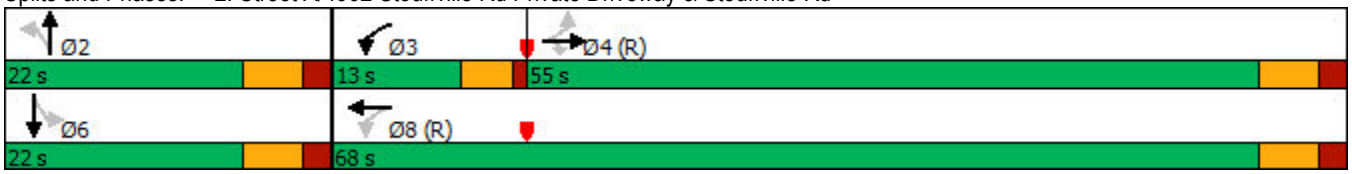
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1368	37	103	1091	68	111	0	3	3	0	27
Future Volume (vph)	32	1368	37	103	1091	68	111	0	3	3	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		30.0	30.0		30.0	50.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	100.0			100.0			40.0			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.991			0.850			0.877	
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1785	3535	1597	1785	3472	0	1785	1597	0	0	1640	0
Flt Permitted	0.218			0.095			0.736				0.980	
Satd. Flow (perm)	410	3535	1597	178	3472	0	1383	1597	0	0	1615	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91		16			183			91	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1439.1			197.2			172.2			197.2	
Travel Time (s)		86.3			11.8			12.4			14.2	
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
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	35	1503	41	113	1199	75	122	0	3	3	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	1503	41	113	1274	0	122	3	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	36.0	36.0	36.0	11.5	36.0		22.0	22.0		22.0	22.0	
Total Split (s)	55.0	55.0	55.0	13.0	68.0		22.0	22.0		22.0	22.0	
Total Split (%)	61.1%	61.1%	61.1%	14.4%	75.6%		24.4%	24.4%		24.4%	24.4%	
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	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	4.5	6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	55.2	55.2	55.2	66.4	64.9		13.1	13.1			13.1	
Actuated g/C Ratio	0.61	0.61	0.61	0.74	0.72		0.15	0.15			0.15	

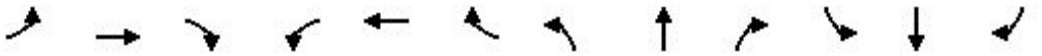
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.69	0.04	0.43	0.51		0.61	0.01			0.11	
Control Delay	11.4	15.3	0.2	10.0	6.6		48.8	0.0			0.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	11.4	15.3	0.2	10.0	6.6		48.8	0.0			0.7	
LOS	B	B	A	A	A		D	A			A	
Approach Delay		14.8			6.9			47.6			0.7	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	2.6	94.3	0.0	4.8	44.4		21.1	0.0			0.0	
Queue Length 95th (m)	8.6	136.5	0.5	13.7	65.7		38.0	0.0			0.0	
Internal Link Dist (m)		1415.1			173.2			148.2			173.2	
Turn Bay Length (m)	30.0		30.0	30.0			50.0					
Base Capacity (vph)	251	2166	1013	283	2508		245	434			361	
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	0.14	0.69	0.04	0.40	0.51		0.50	0.01			0.09	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 12.5 Intersection LOS: B
Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15

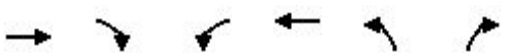
Splits and Phases: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1368	37	103	1091	68	111	0	3	3	0	27
Future Volume (vph)	32	1368	37	103	1091	68	111	0	3	3	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.5	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.85			0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1785	3535	1597	1785	3473		1785	1597			1641	
Flt Permitted	0.22	1.00	1.00	0.09	1.00		0.74	1.00			0.98	
Satd. Flow (perm)	409	3535	1597	178	3473		1382	1597			1615	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	35	1503	41	113	1199	75	122	0	3	3	0	30
RTOR Reduction (vph)	0	0	16	0	4	0	0	3	0	0	28	0
Lane Group Flow (vph)	35	1503	25	113	1270	0	122	0	0	0	5	0
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	54.3	54.3	54.3	64.9	64.9		13.1	13.1			13.1	
Effective Green, g (s)	54.3	54.3	54.3	64.9	64.9		13.1	13.1			13.1	
Actuated g/C Ratio	0.60	0.60	0.60	0.72	0.72		0.15	0.15			0.15	
Clearance Time (s)	6.0	6.0	6.0	4.5	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	246	2132	963	237	2504		201	232			235	
v/s Ratio Prot		c0.43		0.03	c0.37			0.00				
v/s Ratio Perm	0.09		0.02	0.31			c0.09				0.00	
v/c Ratio	0.14	0.70	0.03	0.48	0.51		0.61	0.00			0.02	
Uniform Delay, d1	7.7	12.3	7.2	9.7	5.5		36.0	32.9			33.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	1.2	2.0	0.0	1.5	0.7		5.1	0.0			0.0	
Delay (s)	9.0	14.3	7.2	11.2	6.3		41.1	32.9			33.0	
Level of Service	A	B	A	B	A		D	C			C	
Approach Delay (s)		14.0			6.7			40.9			33.0	
Approach LOS		B			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1789	84	0	1018	0	62
Future Volume (Veh/h)	1789	84	0	1018	0	62
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)	1945	91	0	1107	0	67
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)	197			303		
pX, platoon unblocked			0.69		0.77	0.69
vC, conflicting volume			1945		2498	972
vC1, stage 1 conf vol					1945	
vC2, stage 2 conf vol					554	
vCu, unblocked vol			1478		1406	76
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	90
cM capacity (veh/h)			320		121	677

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	972	972	91	554	554	67
Volume Left	0	0	0	0	0	0
Volume Right	0	0	91	0	0	67
cSH	1700	1700	1700	1700	1700	677
Volume to Capacity	0.57	0.57	0.05	0.33	0.33	0.10
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	2.6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	10.9
Lane LOS						B
Approach Delay (s)	0.0			0.0		10.9
Approach LOS						B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

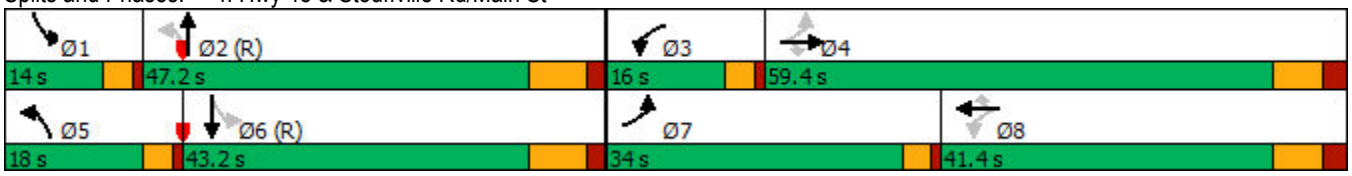
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Future Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		135.0	60.0		105.0	50.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			50.0			15.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.963			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3408	0	1750	3259	0
Flt Permitted	0.198			0.115			0.325			0.267		
Satd. Flow (perm)	358	3535	1581	210	3535	1597	593	3408	0	491	3259	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			352			205		33			55	
Link Speed (k/h)		60			50			80			80	
Link Distance (m)		302.9			1290.6			420.9			878.3	
Travel Time (s)		18.2			92.9			18.9			39.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Adj. Flow (vph)	374	1099	435	147	646	205	218	514	171	151	348	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	374	1099	435	147	646	205	218	685	0	151	511	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	33.0		7.0	33.0	
Minimum Split (s)	11.0	40.7	40.7	11.0	40.7	40.7	11.0	40.9		11.0	40.9	
Total Split (s)	34.0	59.4	59.4	16.0	41.4	41.4	18.0	47.2		14.0	43.2	
Total Split (%)	24.9%	43.5%	43.5%	11.7%	30.3%	30.3%	13.2%	34.6%		10.2%	31.6%	
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.9		3.0	5.9	
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.0		1.0	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	
Total Lost Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	

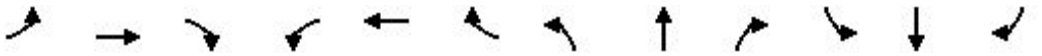
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	67.9	49.0	49.0	49.7	34.8	34.8	60.1	42.4		53.2	39.0	
Actuated g/C Ratio	0.50	0.36	0.36	0.36	0.25	0.25	0.44	0.31		0.39	0.29	
v/c Ratio	0.87	0.87	0.55	0.73	0.72	0.37	0.58	0.63		0.53	0.53	
Control Delay	46.4	48.9	9.3	50.1	51.6	7.1	32.3	42.5		32.4	39.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.4	48.9	9.3	50.1	51.6	7.1	32.3	42.5		32.4	39.9	
LOS	D	D	A	D	D	A	C	D		C	D	
Approach Delay		39.4			42.3			40.1			38.2	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	66.3	149.0	15.6	21.9	86.9	0.0	39.9	88.2		26.5	60.7	
Queue Length 95th (m)	104.5	176.5	46.1	#52.9	112.4	20.1	61.4	109.4		43.2	79.3	
Internal Link Dist (m)		278.9			1266.6			396.9			854.3	
Turn Bay Length (m)	45.0		135.0	60.0		105.0	50.0			45.0		
Base Capacity (vph)	476	1343	819	214	909	562	384	1099		291	985	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.79	0.82	0.53	0.69	0.71	0.36	0.57	0.62		0.52	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 136.6
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 40.0 Intersection LOS: D
Intersection Capacity Utilization 96.3% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Hwy 48 & Stouffville Rd/Main St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Future Volume (vph)	363	1066	422	143	627	199	211	499	166	146	338	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1716	3535	1581	1733	3535	1597	1733	3407		1750	3260	
Flt Permitted	0.20	1.00	1.00	0.11	1.00	1.00	0.32	1.00		0.27	1.00	
Satd. Flow (perm)	357	3535	1581	209	3535	1597	593	3407		492	3260	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	374	1099	435	147	646	205	218	514	171	151	348	163
RTOR Reduction (vph)	0	0	226	0	0	153	0	23	0	0	39	0
Lane Group Flow (vph)	374	1099	209	147	646	52	218	662	0	151	472	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	4%	1%	1%	3%	1%	0%	3%	0%	2%	2%	3%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	64.3	49.0	49.0	46.2	34.9	34.9	56.1	42.3		49.3	38.9	
Effective Green, g (s)	64.3	49.0	49.0	46.2	34.9	34.9	56.1	42.3		49.3	38.9	
Actuated g/C Ratio	0.47	0.36	0.36	0.34	0.26	0.26	0.41	0.31		0.36	0.28	
Clearance Time (s)	4.0	7.7	7.7	4.0	7.7	7.7	4.0	7.9		4.0	7.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6		3.0	4.6	
Lane Grp Cap (vph)	420	1268	567	196	903	408	358	1055		273	928	
v/s Ratio Prot	c0.17	0.31		0.06	0.18		c0.06	c0.19		0.04	0.14	
v/s Ratio Perm	c0.25		0.13	0.19		0.03	0.19			0.16		
v/c Ratio	0.89	0.87	0.37	0.75	0.72	0.13	0.61	0.63		0.55	0.51	
Uniform Delay, d1	28.6	40.8	32.4	34.7	46.3	39.1	27.9	40.4		31.2	40.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.3	6.5	0.4	14.8	2.7	0.1	2.9	2.8		2.4	2.0	
Delay (s)	49.0	47.2	32.8	49.6	49.0	39.3	30.9	43.2		33.7	42.8	
Level of Service	D	D	C	D	D	D	C	D		C	D	
Approach Delay (s)		44.3			47.1			40.2			40.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	136.6	Sum of lost time (s)	23.6
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

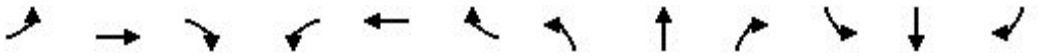
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Future Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	125.0		150.0	220.0		0.0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			50.0			85.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor						0.99			0.99	1.00	1.00	
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1879	0	1750	0	1566	1879	3400	1597	1767	3427	0
Flt Permitted				0.950						0.261		
Satd. Flow (perm)	0	1879	0	1750	0	1545	1879	3400	1576	485	3427	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						383			366			
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.7			554.4			427.8			397.4	
Travel Time (s)		11.4			39.9			22.0			20.4	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Adj. Flow (vph)	0	0	0	292	0	383	0	803	366	384	590	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	292	0	383	0	803	366	384	591	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Detector Phase	7	7		8		8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		10.0		10.0	40.0	40.0	40.0	7.0	40.0	
Minimum Split (s)	14.5	14.5		39.2		39.2	47.7	47.7	47.7	10.0	47.7	
Total Split (s)	14.5	14.5		39.2		39.2	48.7	48.7	48.7	24.0	72.7	
Total Split (%)	11.5%	11.5%		31.0%		31.0%	38.5%	38.5%	38.5%	19.0%	57.5%	
Yellow Time (s)	4.1	4.1		4.5		4.5	5.4	5.4	5.4	3.0	5.4	
All-Red Time (s)	3.4	3.4		2.7		2.7	2.3	2.3	2.3	0.0	2.3	
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		7.5		7.2		7.2	7.7	7.7	7.7	3.0	7.7	
Lead/Lag	Lead	Lead		Lag		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None		None		None	C-Min	C-Min	C-Min	None	C-Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				26.3		26.3		59.8	59.8	89.9	85.2	
Actuated g/C Ratio				0.21		0.21		0.47	0.47	0.71	0.67	
v/c Ratio				0.80		0.61		0.50	0.39	0.67	0.26	
Control Delay				63.6		8.2		26.9	4.2	14.5	9.1	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				63.6		8.2		26.9	4.2	14.5	9.1	
LOS				E		A		C	A	B	A	
Approach Delay					32.2			19.8			11.2	
Approach LOS					C			B			B	
Queue Length 50th (m)				73.3		0.0		74.1	0.0	33.3	29.4	
Queue Length 95th (m)				96.5		23.5		118.9	20.5	61.2	46.2	
Internal Link Dist (m)		133.7			530.4			403.8			373.4	
Turn Bay Length (m)									150.0	220.0		
Base Capacity (vph)				451		682		1607	938	592	2309	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.65		0.56		0.50	0.39	0.65	0.26	

Intersection Summary			
Area Type:	Other		
Cycle Length: 126.4			
Actuated Cycle Length: 126.4			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 19.8		Intersection LOS: B	
Intersection Capacity Utilization 97.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Hwy 48 & Private Driveway/Hoover Park Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Future Volume (vph)	0	0	0	260	0	341	0	715	326	342	525	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Lane Util. Factor				1.00		1.00		0.95	1.00	1.00	0.95	
Frpb, ped/bikes				1.00		0.99		1.00	0.99	1.00	1.00	
Flpb, ped/bikes				1.00		1.00		1.00	1.00	1.00	1.00	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1750		1545		3400	1576	1767	3426	
Flt Permitted				0.95		1.00		1.00	1.00	0.26	1.00	
Satd. Flow (perm)				1750		1545		3400	1576	486	3426	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	292	0	383	0	803	366	384	590	1
RTOR Reduction (vph)	0	0	0	0	0	303	0	0	193	0	0	0
Lane Group Flow (vph)	0	0	0	292	0	80	0	803	173	384	591	0
Confl. Peds. (#/hr)	1					1	1		1	1		1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	2%	0%	5%	0%	1%	4%	100%
Turn Type				Prot		Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		7		8				2		1	6	
Permitted Phases	7					8	2		2	6		
Actuated Green, G (s)				26.3		26.3		59.8	59.8	85.2	85.2	
Effective Green, g (s)				26.3		26.3		59.8	59.8	85.2	85.2	
Actuated g/C Ratio				0.21		0.21		0.47	0.47	0.67	0.67	
Clearance Time (s)				7.2		7.2		7.7	7.7	3.0	7.7	
Vehicle Extension (s)				3.0		3.0		4.6	4.6	3.0	4.6	
Lane Grp Cap (vph)				364		321		1608	745	554	2309	
v/s Ratio Prot				c0.17				0.24		c0.12	0.17	
v/s Ratio Perm						0.05			0.11	c0.34		
v/c Ratio				0.80		0.25		0.50	0.23	0.69	0.26	
Uniform Delay, d1				47.6		41.8		23.0	19.7	11.0	8.1	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				12.0		0.4		1.1	0.7	3.7	0.3	
Delay (s)				59.6		42.2		24.1	20.4	14.7	8.4	
Level of Service				E		D		C	C	B	A	
Approach Delay (s)		0.0			49.7			22.9			10.9	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	25.4
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

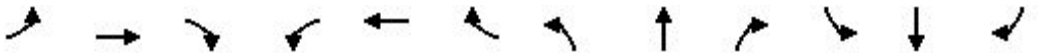
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	55	31	31	69	84	0
Future Volume (Veh/h)	55	31	31	69	84	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)	60	34	34	75	91	0
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	254	72			109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254	72			109	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	97			94	
cM capacity (veh/h)	694	996			1494	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	109	91
Volume Left	60	0	91
Volume Right	34	75	0
cSH	780	1700	1494
Volume to Capacity	0.12	0.06	0.06
Queue Length 95th (m)	3.3	0.0	1.6
Control Delay (s)	10.2	0.0	7.6
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	7.6
Approach LOS	B		

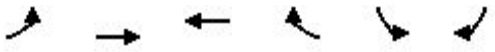
Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	70	70	0	0	59	30	0	0	0	0	0	55
Future Volume (vph)	70	70	0	0	59	30	0	0	0	0	0	55
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)	76	76	0	0	64	33	0	0	0	0	0	60

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	152	97	0	60
Volume Left (vph)	76	0	0	0
Volume Right (vph)	0	33	0	60
Hadj (s)	0.10	-0.20	0.00	-0.60
Departure Headway (s)	4.2	4.0	4.5	3.8
Degree Utilization, x	0.18	0.11	0.00	0.06
Capacity (veh/h)	836	884	763	881
Control Delay (s)	8.1	7.4	7.5	7.1
Approach Delay (s)	8.1	7.4	0.0	7.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.7			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	0	0	0	89
Future Volume (Veh/h)	70	0	0	0	0	89
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)	76	0	0	0	0	97
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	0				152	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				152	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	91
cM capacity (veh/h)	1636				805	1091

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	76	0	97
Volume Left	76	0	0
Volume Right	0	0	97
cSH	1636	1700	1091
Volume to Capacity	0.05	0.00	0.09
Queue Length 95th (m)	1.2	0.0	2.3
Control Delay (s)	7.3	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:35	7:35	7:35	7:35	7:35	7:35
End Time	8:45	8:45	8:45	8:45	8:45	8:45
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	3874	3988	4074	3888	3918	3948
Vehs Exited	3909	3987	4070	3908	3892	3950
Starting Vehs	247	215	250	235	220	232
Ending Vehs	212	216	254	215	246	228
Travel Distance (km)	9607	9893	10202	9679	9599	9796
Travel Time (hr)	221.8	230.1	237.3	224.8	221.2	227.0
Total Delay (hr)	49.7	52.5	54.7	51.6	48.9	51.5
Total Stops	3562	3723	3823	3672	3489	3654
Fuel Used (l)	712.7	733.2	753.8	717.0	711.3	725.6

Interval #0 Information Seeding

Start Time	7:35
End Time	7:45
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:45
End Time	8:45
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	3874	3988	4074	3888	3918	3948
Vehs Exited	3909	3987	4070	3908	3892	3950
Starting Vehs	247	215	250	235	220	232
Ending Vehs	212	216	254	215	246	228
Travel Distance (km)	9607	9893	10202	9679	9599	9796
Travel Time (hr)	221.8	230.1	237.3	224.8	221.2	227.0
Total Delay (hr)	49.7	52.5	54.7	51.6	48.9	51.5
Total Stops	3562	3723	3823	3672	3489	3654
Fuel Used (l)	712.7	733.2	753.8	717.0	711.3	725.6

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	15.9	42.7	46.7	23.1	39.7	56.6	58.8	9.6	60.8	24.6	15.0	24.6
Average Queue (m)	5.2	19.1	18.4	9.7	16.0	21.6	25.4	1.3	33.1	8.7	3.6	7.3
95th Queue (m)	13.1	34.6	36.6	20.0	34.5	47.2	50.7	6.0	54.5	20.2	11.1	17.0
Link Distance (m)		789.1	789.1			1409.1	1409.1			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	11.8	20.4	12.1	11.7
Average Queue (m)	2.2	5.2	1.2	1.4
95th Queue (m)	7.5	14.3	6.3	6.1
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Stouffville Rd & 4962 Stouffville Rd Private Driveway

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	16.1	8.9
Average Queue (m)	4.0	0.9
95th Queue (m)	12.2	5.3
Link Distance (m)		183.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	45.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	51.3	57.0	63.2	37.0	52.8	111.5	109.2	22.2	64.8	83.1	36.5	41.4
Average Queue (m)	20.3	31.4	34.7	15.9	15.7	69.1	72.2	7.6	33.0	9.0	11.5	14.7
95th Queue (m)	41.6	50.9	55.4	29.1	37.2	100.2	103.0	16.7	59.1	36.9	28.4	31.9
Link Distance (m)		271.4	271.4			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	1	2				14	1		4			0
Queuing Penalty (veh)	2	2				14	0		4			0

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	77.9	103.1
Average Queue (m)	42.1	53.4
95th Queue (m)	69.9	88.7
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	8	
Queuing Penalty (veh)	11	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	90.7	25.6	70.2	30.0	41.0	64.8
Average Queue (m)	50.0	11.6	29.8	10.7	14.5	23.8
95th Queue (m)	79.4	19.3	59.0	21.2	29.5	53.3
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 34

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:35	4:35	4:35	4:35	4:35	4:35
End Time	5:45	5:45	5:45	5:45	5:45	5:45
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4723	4705	4729	4691	4618	4695
Vehs Exited	4698	4753	4744	4716	4586	4700
Starting Vehs	246	308	283	315	272	286
Ending Vehs	271	260	268	290	304	281
Travel Distance (km)	11720	11810	11773	11827	11661	11758
Travel Time (hr)	281.8	280.6	288.0	284.8	304.0	287.8
Total Delay (hr)	69.7	67.2	75.2	70.9	92.9	75.2
Total Stops	4499	4413	4362	4568	4452	4459
Fuel Used (l)	875.1	885.6	884.8	884.8	890.7	884.2

Interval #0 Information Seeding

Start Time	4:35
End Time	4:45
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:45
End Time	5:45
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4723	4705	4729	4691	4618	4695
Vehs Exited	4698	4753	4744	4716	4586	4700
Starting Vehs	246	308	283	315	272	286
Ending Vehs	271	260	268	290	304	281
Travel Distance (km)	11720	11810	11773	11827	11661	11758
Travel Time (hr)	281.8	280.6	288.0	284.8	304.0	287.8
Total Delay (hr)	69.7	67.2	75.2	70.9	92.9	75.2
Total Stops	4499	4413	4362	4568	4452	4459
Fuel Used (l)	875.1	885.6	884.8	884.8	890.7	884.2

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	35.1	68.2	74.0	27.0	53.3	61.6	69.6	4.7	68.1	25.4	19.3	17.6
Average Queue (m)	12.5	32.6	34.8	12.4	20.8	22.0	26.8	0.8	36.5	11.1	6.9	5.1
95th Queue (m)	27.1	57.4	61.3	22.3	43.9	49.1	54.4	4.4	59.0	22.5	16.5	12.5
Link Distance (m)		789.1	789.1			1409.1	1409.1			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	14.4	18.9	15.9	6.2
Average Queue (m)	1.7	5.4	1.0	0.6
95th Queue (m)	7.6	14.3	7.0	3.1
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Stouffville Rd & 4962 Stouffville Rd Private Driveway

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	12.8	2.0	1.3	13.8
Average Queue (m)	4.0	0.1	0.0	5.3
95th Queue (m)	11.6	1.4	0.9	12.9
Link Distance (m)		179.6	179.6	183.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	45.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	193.9	180.4	62.9	43.7	67.3	70.0	28.8	55.9	62.3	66.1	31.6
Average Queue (m)	71.4	102.7	89.7	23.1	18.8	35.5	37.6	13.4	18.6	28.2	34.9	14.2
95th Queue (m)	114.4	188.2	158.7	48.0	37.1	57.3	59.9	23.4	40.4	53.0	60.8	28.5
Link Distance (m)		271.4	271.4			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	55	21	0		0	0			1	1		
Queuing Penalty (veh)	218	62	1		0	0			1	1		

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	45.4	52.2
Average Queue (m)	21.7	19.0
95th Queue (m)	39.4	41.1
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	67.0	48.3	107.9	22.3	61.7	52.4
Average Queue (m)	34.7	20.8	54.3	10.2	26.4	21.8
95th Queue (m)	57.5	37.4	94.6	18.5	48.6	45.1
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 285

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:35	7:35	7:35	7:35	7:35	7:35
End Time	8:45	8:45	8:45	8:45	8:45	8:45
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4693	4848	4685	4824	4775	4764
Vehs Exited	4724	4779	4704	4805	4773	4757
Starting Vehs	267	266	310	272	265	272
Ending Vehs	236	335	291	291	267	283
Travel Distance (km)	11671	11951	11792	11760	11789	11793
Travel Time (hr)	279.2	289.0	284.8	293.7	286.3	286.6
Total Delay (hr)	69.6	74.2	74.0	82.3	74.3	74.9
Total Stops	4590	4853	4707	4986	4710	4769
Fuel Used (l)	875.8	898.7	886.3	890.3	885.8	887.4

Interval #0 Information Seeding

Start Time	7:35
End Time	7:45
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:45
End Time	8:45
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4693	4848	4685	4824	4775	4764
Vehs Exited	4724	4779	4704	4805	4773	4757
Starting Vehs	267	266	310	272	265	272
Ending Vehs	236	335	291	291	267	283
Travel Distance (km)	11671	11951	11792	11760	11789	11793
Travel Time (hr)	279.2	289.0	284.8	293.7	286.3	286.6
Total Delay (hr)	69.6	74.2	74.0	82.3	74.3	74.9
Total Stops	4590	4853	4707	4986	4710	4769
Fuel Used (l)	875.8	898.7	886.3	890.3	885.8	887.4

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	21.9	46.2	56.3	27.4	48.5	67.9	72.4	10.0	67.7	20.5	19.8	22.7
Average Queue (m)	6.8	24.1	25.3	10.6	20.3	29.8	32.8	1.5	37.9	7.9	5.5	7.9
95th Queue (m)	16.6	40.5	43.9	21.3	40.8	58.8	60.2	6.8	61.6	16.7	15.0	17.1
Link Distance (m)		789.1	789.1			1409.1	1409.1			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	14.8	23.7	11.3	11.7
Average Queue (m)	2.4	6.4	1.3	0.9
95th Queue (m)	9.1	16.3	6.3	5.7
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Stouffville Rd & 4962 Stouffville Rd Private Driveway

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	14.2	8.9
Average Queue (m)	3.7	1.0
95th Queue (m)	11.3	5.5
Link Distance (m)		183.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	30.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	79.9	91.1	81.0	37.7	109.0	133.3	136.4	20.0	64.8	111.3	57.9	83.7
Average Queue (m)	34.2	39.0	41.3	15.8	26.2	80.3	83.8	7.7	45.1	27.5	21.3	26.1
95th Queue (m)	72.5	75.7	69.7	28.2	69.9	117.7	121.5	15.9	70.9	84.5	45.2	67.3
Link Distance (m)		271.4	271.4			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	17	3	0		0	21	3		16	0		1
Queuing Penalty (veh)	37	4	0		0	28	2		19	0		3

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	131.6	151.6
Average Queue (m)	71.7	82.5
95th Queue (m)	118.1	133.5
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	28	
Queuing Penalty (veh)	42	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	120.3	31.0	105.4	31.2	47.2	114.3
Average Queue (m)	67.1	15.4	51.4	14.1	23.1	36.9
95th Queue (m)	103.2	26.6	90.3	25.0	40.0	84.9
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Zone Summary

Zone wide Queuing Penalty: 135

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5663	5503	5768	5811	5473	5643
Vehs Exited	5657	5426	5796	5808	5417	5620
Starting Vehs	354	349	402	353	321	355
Ending Vehs	360	426	374	356	377	376
Travel Distance (km)	14437	13737	14427	14649	14010	14252
Travel Time (hr)	425.5	451.3	382.1	379.6	511.1	429.9
Total Delay (hr)	165.4	203.6	121.2	114.8	258.2	172.6
Total Stops	6163	5661	6063	6277	5693	5970
Fuel Used (l)	1151.3	1133.0	1115.0	1123.0	1200.8	1144.6

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5663	5503	5768	5811	5473	5643
Vehs Exited	5657	5426	5796	5808	5417	5620
Starting Vehs	354	349	402	353	321	355
Ending Vehs	360	426	374	356	377	376
Travel Distance (km)	14437	13737	14427	14649	14010	14252
Travel Time (hr)	425.5	451.3	382.1	379.6	511.1	429.9
Total Delay (hr)	165.4	203.6	121.2	114.8	258.2	172.6
Total Stops	6163	5661	6063	6277	5693	5970
Fuel Used (l)	1151.3	1133.0	1115.0	1123.0	1200.8	1144.6

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	42.4	90.4	93.0	32.9	97.0	98.9	95.8	7.4	76.9	28.6	21.8	24.7
Average Queue (m)	14.9	50.1	51.5	13.6	49.3	33.7	37.1	0.7	43.6	12.1	7.7	6.5
95th Queue (m)	31.7	84.2	84.9	25.4	96.0	70.8	71.2	4.1	71.5	24.5	17.4	16.5
Link Distance (m)		789.1	789.1			1409.1	1409.1			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)		0			0		2					
Queuing Penalty (veh)		0			0		0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	9.9	24.8	14.2	7.9
Average Queue (m)	1.3	6.7	1.6	0.5
95th Queue (m)	5.3	17.4	7.8	3.7
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Stouffville Rd & 4962 Stouffville Rd Private Driveway

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	13.2	6.5	2.6	12.9
Average Queue (m)	4.2	0.2	0.1	6.4
95th Queue (m)	12.0	3.3	1.6	13.5
Link Distance (m)		179.6	179.6	183.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	45.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	B3	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	T	L	T	T	R	L	T	TR
Maximum Queue (m)	95.0	231.4	220.0	118.0	3.6	55.0	75.6	78.0	37.2	64.8	88.0	83.6
Average Queue (m)	92.6	169.4	145.6	31.1	0.1	27.1	42.7	46.4	15.8	31.8	43.0	49.5
95th Queue (m)	108.5	250.3	234.0	81.3	2.5	52.4	67.5	69.8	29.5	63.0	77.2	80.8
Link Distance (m)		271.4	271.4		179.6		1270.2	1270.2			387.0	387.0
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		3	0									
Storage Bay Dist (m)	45.0			135.0		60.0			105.0	50.0		
Storage Blk Time (%)	90	24	2	0		3	2			3	7	
Queuing Penalty (veh)	433	78	9	0		8	2			8	11	

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (m)	60.1	65.0	67.3
Average Queue (m)	22.2	34.7	32.9
95th Queue (m)	43.7	58.4	59.3
Link Distance (m)		855.4	855.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	45.0		
Storage Blk Time (%)	2	4	
Queuing Penalty (veh)	3	5	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	83.0	76.3	211.6	110.2	98.4	88.4
Average Queue (m)	46.8	28.4	96.1	21.1	47.1	33.6
95th Queue (m)	75.6	54.1	167.4	77.0	83.8	71.9
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)			5			
Queuing Penalty (veh)			16			

Zone Summary

Zone wide Queuing Penalty: 577

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:35	7:35	7:35	7:35	7:35	7:35
End Time	8:45	8:45	8:45	8:45	8:45	8:45
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5116	5239	5139	5115	5048	5132
Vehs Exited	5140	5216	5124	5152	5035	5134
Starting Vehs	311	330	312	349	266	313
Ending Vehs	287	353	327	312	279	309
Travel Distance (km)	12404	12959	12699	12634	12341	12608
Travel Time (hr)	308.3	324.5	313.9	322.2	310.8	315.9
Total Delay (hr)	85.0	91.5	86.2	95.0	89.7	89.5
Total Stops	5224	5496	5314	5477	5347	5370
Fuel Used (l)	939.3	987.9	958.5	961.8	938.0	957.1

Interval #0 Information Seeding

Start Time	7:35
End Time	7:45
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:45
End Time	8:45
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5116	5239	5139	5115	5048	5132
Vehs Exited	5140	5216	5124	5152	5035	5134
Starting Vehs	311	330	312	349	266	313
Ending Vehs	287	353	327	312	279	309
Travel Distance (km)	12404	12959	12699	12634	12341	12608
Travel Time (hr)	308.3	324.5	313.9	322.2	310.8	315.9
Total Delay (hr)	85.0	91.5	86.2	95.0	89.7	89.5
Total Stops	5224	5496	5314	5477	5347	5370
Fuel Used (l)	939.3	987.9	958.5	961.8	938.0	957.1

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	22.3	63.0	63.9	29.0	61.1	78.3	80.7	11.6	86.7	26.3	23.7	23.3
Average Queue (m)	7.6	29.8	30.6	12.9	24.4	35.7	38.2	2.2	44.4	10.4	6.4	8.1
95th Queue (m)	18.0	50.8	53.4	23.5	48.5	68.3	70.7	8.6	72.8	22.0	16.5	17.8
Link Distance (m)		789.1	789.1			1409.1	1409.1			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)							1					
Queuing Penalty (veh)							0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	21.6	23.8	15.6	18.7
Average Queue (m)	3.6	7.1	2.0	2.0
95th Queue (m)	13.3	18.7	8.6	9.1
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Stouffville Rd & 4962 Stouffville Rd Private Driveway

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	13.1	8.9
Average Queue (m)	4.4	1.0
95th Queue (m)	12.2	5.5
Link Distance (m)		183.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	30.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	76.3	83.9	80.9	45.7	109.8	152.2	150.3	72.8	64.8	147.0	76.3	109.9
Average Queue (m)	37.4	40.8	41.7	17.6	31.4	85.4	88.7	10.5	52.1	52.4	25.2	38.4
95th Queue (m)	74.7	72.8	70.5	33.7	84.1	129.6	131.9	45.2	78.1	134.8	52.5	94.4
Link Distance (m)		271.4	271.4			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	18	5			0	23	5		33	0		2
Queuing Penalty (veh)	43	7			0	32	4		41	0		5

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	155.5	173.0
Average Queue (m)	86.5	98.6
95th Queue (m)	139.6	152.6
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	40	
Queuing Penalty (veh)	63	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB	B16	B16
Directions Served	L	R	T	R	L	TR	T	
Maximum Queue (m)	124.2	40.7	111.6	32.3	60.8	111.5	2.7	3.2
Average Queue (m)	71.6	17.4	58.2	14.4	26.5	41.4	0.1	0.1
95th Queue (m)	111.9	32.1	98.4	26.1	49.6	91.3	1.9	2.3
Link Distance (m)	540.0	540.0	415.6			377.8	387.0	387.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)				150.0	220.0			
Storage Blk Time (%)			0					
Queuing Penalty (veh)			0					

Zone Summary

Zone wide Queuing Penalty: 196

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5959	6062	6183	6111	5931	6053
Vehs Exited	5907	6029	6192	6066	5825	6005
Starting Vehs	375	416	430	383	372	395
Ending Vehs	427	449	421	428	478	440
Travel Distance (km)	14694	15356	15432	15023	14852	15071
Travel Time (hr)	466.0	501.5	447.3	444.4	554.2	482.7
Total Delay (hr)	200.7	224.4	168.9	172.8	286.2	210.6
Total Stops	6673	6846	7134	6623	6468	6748
Fuel Used (l)	1206.4	1269.9	1233.7	1201.7	1278.4	1238.0

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5959	6062	6183	6111	5931	6053
Vehs Exited	5907	6029	6192	6066	5825	6005
Starting Vehs	375	416	430	383	372	395
Ending Vehs	427	449	421	428	478	440
Travel Distance (km)	14694	15356	15432	15023	14852	15071
Travel Time (hr)	466.0	501.5	447.3	444.4	554.2	482.7
Total Delay (hr)	200.7	224.4	168.9	172.8	286.2	210.6
Total Stops	6673	6846	7134	6623	6468	6748
Fuel Used (l)	1206.4	1269.9	1233.7	1201.7	1278.4	1238.0

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	57.6	124.4	123.1	36.5	190.7	201.1	199.4	7.3	90.0	26.9	25.5	24.7
Average Queue (m)	21.3	60.3	61.5	15.1	126.3	95.1	83.7	0.8	50.2	12.9	9.6	8.4
95th Queue (m)	44.4	101.5	100.2	27.6	244.1	230.7	204.0	4.6	81.1	24.8	20.8	19.0
Link Distance (m)		789.1	789.1			1409.1	1409.1			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)		1			52	0	4					
Queuing Penalty (veh)		1			247	0	0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	14.4	22.5	14.9	7.7
Average Queue (m)	1.9	7.1	1.8	0.6
95th Queue (m)	7.5	17.6	7.7	3.6
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Stouffville Rd & 4962 Stouffville Rd Private Driveway

Movement	EB	EB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	15.6	3.1	3.3	2.7	14.0
Average Queue (m)	4.6	0.1	0.1	0.1	5.4
95th Queue (m)	12.7	2.2	2.3	1.7	12.8
Link Distance (m)		1409.1	179.6	179.6	183.0
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	45.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	B3	B3	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	R	T	T	L	T	T	R	L	T
Maximum Queue (m)	95.0	254.5	240.2	174.6	49.0	50.8	68.1	83.8	81.5	36.8	63.0	87.7
Average Queue (m)	93.8	192.4	160.3	43.5	10.8	7.9	33.8	44.7	46.8	17.3	29.6	44.9
95th Queue (m)	102.5	282.3	253.7	123.0	63.5	56.6	65.8	72.4	72.6	29.6	57.2	76.3
Link Distance (m)		271.4	271.4		179.6	179.6		1270.2	1270.2			387.0
Upstream Blk Time (%)		13	0		0	0						
Queuing Penalty (veh)		86	3		0	1						
Storage Bay Dist (m)	45.0			135.0			60.0			105.0	50.0	
Storage Blk Time (%)	92	25	5	0			5	3			2	8
Queuing Penalty (veh)	477	88	20	0			15	4			4	13

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	NB	SB	SB	SB
Directions Served	TR	L	T	TR
Maximum Queue (m)	97.0	59.4	59.0	62.6
Average Queue (m)	53.2	23.5	33.9	33.4
95th Queue (m)	85.6	45.0	55.8	59.3
Link Distance (m)	387.0		855.4	855.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)		45.0		
Storage Blk Time (%)		1	3	
Queuing Penalty (veh)		2	4	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	95.7	83.4	261.2	145.5	106.3	91.6
Average Queue (m)	53.0	31.7	126.6	30.3	51.1	39.2
95th Queue (m)	82.8	58.1	223.4	114.5	87.2	77.5
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)			16			
Queuing Penalty (veh)			51			

Zone Summary

Zone wide Queuing Penalty: 1016

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5235	5194	5039	4964	5141	5113
Vehs Exited	5207	5201	5091	4977	5097	5113
Starting Vehs	322	305	351	305	306	317
Ending Vehs	350	298	299	292	350	316
Travel Distance (km)	12900	12810	12627	12383	12669	12678
Travel Time (hr)	326.9	325.9	310.5	299.4	319.2	316.4
Total Delay (hr)	93.2	95.0	83.2	76.8	90.5	87.7
Total Stops	5983	6080	5567	5498	5919	5811
Fuel Used (l)	987.4	984.6	958.7	940.0	966.0	967.3

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5235	5194	5039	4964	5141	5113
Vehs Exited	5207	5201	5091	4977	5097	5113
Starting Vehs	322	305	351	305	306	317
Ending Vehs	350	298	299	292	350	316
Travel Distance (km)	12900	12810	12627	12383	12669	12678
Travel Time (hr)	326.9	325.9	310.5	299.4	319.2	316.4
Total Delay (hr)	93.2	95.0	83.2	76.8	90.5	87.7
Total Stops	5983	6080	5567	5498	5919	5811
Fuel Used (l)	987.4	984.6	958.7	940.0	966.0	967.3

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	24.3	59.3	63.7	29.7	68.3	89.3	86.9	16.6	84.2	25.1	23.1	30.6
Average Queue (m)	7.0	25.2	26.1	10.8	26.2	33.7	36.7	2.5	38.4	9.3	6.0	8.6
95th Queue (m)	17.5	45.6	48.8	23.2	53.8	69.1	68.6	10.3	67.7	20.1	16.4	20.6
Link Distance (m)		789.1	789.1			1405.8	1405.8			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)							1					
Queuing Penalty (veh)							0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	19.1	22.1	12.7	12.7
Average Queue (m)	5.0	6.2	1.5	1.5
95th Queue (m)	14.2	16.4	6.8	6.8
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	R	L	TR	L	TR	LTR
Maximum Queue (m)	16.4	1.1	16.8	4.6	53.3	5.9	8.8
Average Queue (m)	4.6	0.0	4.8	0.2	24.8	0.8	0.9
95th Queue (m)	12.8	0.8	12.8	1.9	49.8	4.1	5.2
Link Distance (m)				179.2		146.2	182.9
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	30.0	30.0	30.0		50.0		
Storage Blk Time (%)					5		
Queuing Penalty (veh)					0		

Intersection: 3: Street B & Stouffville Rd

Movement	NB
Directions Served	R
Maximum Queue (m)	3.4
Average Queue (m)	0.1
95th Queue (m)	2.4
Link Distance (m)	84.0
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	88.4	99.3	94.1	34.8	97.5	140.0	140.7	18.9	64.8	137.6	66.1	97.9
Average Queue (m)	48.0	43.1	41.4	16.6	28.9	86.2	89.1	8.2	53.6	54.3	23.9	31.8
95th Queue (m)	87.8	83.6	70.6	28.5	75.9	126.8	128.1	15.6	76.6	131.1	49.7	83.8
Link Distance (m)		275.0	275.0			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	31	5			1	22	4		31	0		1
Queuing Penalty (veh)	76	7			4	30	3		37	1		2

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	139.5	158.6
Average Queue (m)	79.1	90.0
95th Queue (m)	128.4	141.8
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	35	
Queuing Penalty (veh)	53	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	107.5	37.7	125.3	37.1	57.7	112.4
Average Queue (m)	62.8	15.2	54.3	14.8	24.3	39.3
95th Queue (m)	97.5	27.8	99.8	27.2	44.8	87.1
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)			0			
Queuing Penalty (veh)			1			

Intersection: 7: Street B & Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	17.5	10.5
Average Queue (m)	9.6	1.0
95th Queue (m)	13.9	5.8
Link Distance (m)	234.8	84.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Street B & Street A

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	16.4	11.6	11.8
Average Queue (m)	8.4	8.8	8.3
95th Queue (m)	14.6	11.8	13.0
Link Distance (m)	183.5	101.6	47.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Street A & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	16.3
Average Queue (m)	9.2
95th Queue (m)	12.8
Link Distance (m)	134.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 214

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5989	6244	6251	6008	6019	6099
Vehs Exited	5993	6189	6175	5982	5933	6052
Starting Vehs	396	366	398	396	386	384
Ending Vehs	392	421	474	422	472	431
Travel Distance (km)	14813	15596	15396	15071	14866	15149
Travel Time (hr)	406.2	416.7	425.5	408.9	450.1	421.5
Total Delay (hr)	136.9	133.1	146.1	134.4	179.9	146.1
Total Stops	7286	7158	7499	7412	7746	7419
Fuel Used (l)	1160.1	1215.1	1213.2	1183.0	1210.8	1196.4

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5989	6244	6251	6008	6019	6099
Vehs Exited	5993	6189	6175	5982	5933	6052
Starting Vehs	396	366	398	396	386	384
Ending Vehs	392	421	474	422	472	431
Travel Distance (km)	14813	15596	15396	15071	14866	15149
Travel Time (hr)	406.2	416.7	425.5	408.9	450.1	421.5
Total Delay (hr)	136.9	133.1	146.1	134.4	179.9	146.1
Total Stops	7286	7158	7499	7412	7746	7419
Fuel Used (l)	1160.1	1215.1	1213.2	1183.0	1210.8	1196.4

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	38.8	93.8	92.5	29.3	211.9	244.9	197.6	5.9	91.5	22.7	27.1	23.5
Average Queue (m)	16.7	48.6	50.1	13.3	142.1	99.0	78.0	1.0	44.2	11.6	8.8	8.0
95th Queue (m)	32.0	80.7	82.8	24.5	252.3	262.6	223.8	5.0	73.9	22.0	20.0	19.2
Link Distance (m)		789.1	789.1			1405.8	1405.8			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)		0			59	0	1					
Queuing Penalty (veh)		0			285	0	0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	22.3	25.8	12.9	4.1
Average Queue (m)	5.9	6.5	1.4	0.3
95th Queue (m)	15.8	17.7	7.0	1.9
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	TR	L	TR	LTR
Maximum Queue (m)	14.5	3.0	1.8	4.8	31.1	2.4	76.9	43.3	14.8
Average Queue (m)	4.7	0.1	0.1	0.2	12.8	0.1	42.9	1.8	5.6
95th Queue (m)	12.2	2.1	1.2	1.8	23.9	1.5	76.0	21.2	13.3
Link Distance (m)		1405.8	1405.8			179.2		146.2	182.9
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	30.0			30.0	30.0		50.0		
Storage Blk Time (%)					0		28		
Queuing Penalty (veh)					2		1		

Intersection: 3: Street B & Stouffville Rd

Movement	EB	EB	EB	NB
Directions Served	T	T	R	R
Maximum Queue (m)	85.4	68.3	15.0	26.6
Average Queue (m)	18.7	15.0	4.0	3.8
95th Queue (m)	86.3	80.7	31.7	17.7
Link Distance (m)	179.2	179.2		84.0
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (m)			30.0	
Storage Blk Time (%)		3		
Queuing Penalty (veh)		3		

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	95.0	263.5	275.1	161.4	59.2	76.6	79.2	39.2	64.8	103.0	101.9	49.6
Average Queue (m)	88.2	187.5	182.7	33.6	22.3	44.4	47.0	15.8	39.3	50.3	55.2	23.2
95th Queue (m)	115.0	316.0	318.9	91.9	47.2	69.4	72.4	29.1	69.0	89.0	87.0	40.3
Link Distance (m)		275.0	275.0			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)		6	14									
Queuing Penalty (veh)		53	122									
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	82	23	1		0	2			9	8		1
Queuing Penalty (veh)	406	78	6		0	3			21	16		1

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	64.3	70.0
Average Queue (m)	35.7	34.6
95th Queue (m)	59.4	60.5
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	4	
Queuing Penalty (veh)	5	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	92.4	70.4	224.6	109.1	93.9	101.3
Average Queue (m)	47.0	29.2	108.6	23.6	44.9	36.1
95th Queue (m)	78.5	54.6	191.5	84.8	76.5	78.0
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)			9			
Queuing Penalty (veh)			29			

Intersection: 7: Street B & Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	16.0	14.5
Average Queue (m)	9.0	2.2
95th Queue (m)	13.9	9.1
Link Distance (m)	234.8	84.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Street B & Street A

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	16.9	9.1	10.6
Average Queue (m)	11.3	8.8	7.3
95th Queue (m)	16.8	10.9	13.5
Link Distance (m)	183.5	101.6	47.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Street A & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	12.0
Average Queue (m)	8.8
95th Queue (m)	11.0
Link Distance (m)	134.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1032

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5554	5503	5543	5519	5518	5527
Vehs Exited	5559	5498	5486	5469	5445	5493
Starting Vehs	349	347	354	336	330	342
Ending Vehs	344	352	411	386	403	375
Travel Distance (km)	13590	13473	13428	13437	13386	13463
Travel Time (hr)	382.6	347.6	361.1	382.3	355.0	365.7
Total Delay (hr)	136.5	104.1	118.5	139.8	112.8	122.4
Total Stops	6973	6400	6625	7189	6626	6762
Fuel Used (l)	1066.4	1041.1	1047.2	1058.6	1037.2	1050.1

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5554	5503	5543	5519	5518	5527
Vehs Exited	5559	5498	5486	5469	5445	5493
Starting Vehs	349	347	354	336	330	342
Ending Vehs	344	352	411	386	403	375
Travel Distance (km)	13590	13473	13428	13437	13386	13463
Travel Time (hr)	382.6	347.6	361.1	382.3	355.0	365.7
Total Delay (hr)	136.5	104.1	118.5	139.8	112.8	122.4
Total Stops	6973	6400	6625	7189	6626	6762
Fuel Used (l)	1066.4	1041.1	1047.2	1058.6	1037.2	1050.1

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	24.9	65.4	66.8	30.4	64.1	94.9	95.1	15.1	86.4	26.9	22.7	26.6
Average Queue (m)	8.8	30.9	32.3	12.6	30.4	39.8	43.4	2.3	46.3	9.7	5.8	9.8
95th Queue (m)	20.2	55.1	56.9	23.2	57.4	76.4	78.5	9.3	75.2	21.7	15.3	20.8
Link Distance (m)		789.1	789.1			1405.8	1405.8			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)							2					
Queuing Penalty (veh)							1					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	21.8	20.4	16.0	11.2
Average Queue (m)	5.9	5.8	1.8	1.8
95th Queue (m)	16.1	16.0	8.2	8.5
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	R	L	TR	L	TR	LTR
Maximum Queue (m)	12.9	2.6	18.7	1.2	62.6	5.8	8.8
Average Queue (m)	3.7	0.1	6.0	0.0	28.6	0.8	0.9
95th Queue (m)	11.3	1.6	14.9	0.8	54.3	3.9	5.0
Link Distance (m)				179.2		146.2	182.9
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	30.0	30.0	30.0		50.0		
Storage Blk Time (%)					5		
Queuing Penalty (veh)					0		

Intersection: 3: Street B & Stouffville Rd

Movement	NB
Directions Served	R
Maximum Queue (m)	9.8
Average Queue (m)	0.6
95th Queue (m)	5.8
Link Distance (m)	84.0
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	171.0	147.0	37.9	98.4	138.2	140.7	74.5	64.9	212.9	135.3	109.9
Average Queue (m)	61.8	74.8	66.2	18.4	32.6	86.1	89.4	10.4	58.7	117.4	30.2	60.3
95th Queue (m)	111.4	168.9	141.0	33.2	82.1	127.9	130.1	39.0	78.5	276.5	75.5	130.2
Link Distance (m)		275.0	275.0			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	54	5	0		1	22	5		54	0		4
Queuing Penalty (veh)	139	8	0		6	31	4		68	1		9

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	252.2	259.6
Average Queue (m)	138.3	147.8
95th Queue (m)	259.4	265.2
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	58	
Queuing Penalty (veh)	90	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB	B16	B16
Directions Served	L	R	T	R	L	TR	T	
Maximum Queue (m)	117.8	36.7	131.9	34.1	60.8	121.0	2.0	2.4
Average Queue (m)	70.3	16.2	64.5	13.9	25.9	43.7	0.1	0.1
95th Queue (m)	107.2	28.7	112.1	25.1	47.9	90.2	1.4	1.7
Link Distance (m)	540.0	540.0	415.6			377.8	387.0	387.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)				150.0	220.0			
Storage Blk Time (%)			0					
Queuing Penalty (veh)			1					

Intersection: 7: Street B & Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	16.6	9.2
Average Queue (m)	9.6	0.9
95th Queue (m)	14.9	5.2
Link Distance (m)	234.8	84.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Street B & Street A

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	16.4	11.7	9.3
Average Queue (m)	8.9	9.0	8.2
95th Queue (m)	14.5	11.1	12.7
Link Distance (m)	183.5	101.6	47.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Street A & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	15.2
Average Queue (m)	9.4
95th Queue (m)	13.0
Link Distance (m)	134.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 357

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6493	6600	6628	6444	6131	6458
Vehs Exited	6384	6415	6532	6380	5960	6335
Starting Vehs	443	387	438	429	408	419
Ending Vehs	552	572	534	493	579	542
Travel Distance (km)	16172	16130	16342	15998	15459	16020
Travel Time (hr)	555.6	508.3	498.3	516.2	628.7	541.4
Total Delay (hr)	262.5	215.4	201.6	226.3	349.2	251.0
Total Stops	8881	9623	8542	9290	9169	9103
Fuel Used (l)	1372.1	1337.4	1330.6	1333.9	1394.8	1353.8

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6493	6600	6628	6444	6131	6458
Vehs Exited	6384	6415	6532	6380	5960	6335
Starting Vehs	443	387	438	429	408	419
Ending Vehs	552	572	534	493	579	542
Travel Distance (km)	16172	16130	16342	15998	15459	16020
Travel Time (hr)	555.6	508.3	498.3	516.2	628.7	541.4
Total Delay (hr)	262.5	215.4	201.6	226.3	349.2	251.0
Total Stops	8881	9623	8542	9290	9169	9103
Fuel Used (l)	1372.1	1337.4	1330.6	1333.9	1394.8	1353.8

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	64.1	118.0	122.4	33.9	225.0	424.4	413.1	7.8	95.8	27.4	22.9	30.2
Average Queue (m)	26.8	63.8	66.7	15.0	183.3	211.5	183.2	1.9	52.7	12.5	8.6	9.8
95th Queue (m)	56.6	105.3	108.0	27.0	271.1	446.4	419.7	7.1	85.9	23.7	20.0	22.6
Link Distance (m)		789.1	789.1			1405.8	1405.8			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)		1			80	0	3					
Queuing Penalty (veh)		1			412	0	1					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	22.9	26.2	13.9	9.2
Average Queue (m)	6.5	7.3	1.8	0.6
95th Queue (m)	17.4	18.6	7.9	4.1
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	B13	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	T	LTR
Maximum Queue (m)	39.5	75.2	86.0	18.6	37.9	16.5	4.7	89.3	150.9	39.4	27.8
Average Queue (m)	6.4	17.2	18.8	3.8	16.2	0.5	0.2	65.6	57.4	11.4	8.6
95th Queue (m)	31.5	93.4	100.6	31.6	33.5	8.6	1.9	109.0	177.2	52.6	28.5
Link Distance (m)		1405.8	1405.8			179.2	179.2		146.2	183.5	182.9
Upstream Blk Time (%)									24		
Queuing Penalty (veh)									27		
Storage Bay Dist (m)	30.0			30.0	30.0			50.0			
Storage Blk Time (%)		11	8		4	0		66			
Queuing Penalty (veh)		4	3		22	0		2			

Intersection: 3: Street B & Stouffville Rd

Movement	EB	EB	EB	NB
Directions Served	T	T	R	R
Maximum Queue (m)	139.3	148.2	59.6	59.9
Average Queue (m)	77.6	76.6	9.9	23.9
95th Queue (m)	198.8	205.2	51.7	74.8
Link Distance (m)	179.2	179.2		84.0
Upstream Blk Time (%)	6	5		8
Queuing Penalty (veh)	39	31		5
Storage Bay Dist (m)			30.0	
Storage Blk Time (%)		9		
Queuing Penalty (veh)		7		

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	95.0	270.3	280.3	123.2	68.7	85.5	85.2	32.1	64.8	109.4	100.8	51.2
Average Queue (m)	94.1	236.1	228.8	42.2	28.3	48.8	50.8	15.7	44.0	55.7	56.5	23.2
95th Queue (m)	100.5	339.1	360.8	114.3	55.6	75.0	76.0	27.3	74.6	102.1	90.3	44.3
Link Distance (m)		275.0	275.0			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)		31	43									
Queuing Penalty (veh)		284	402									
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	94	26	3	0	1	4	0		14	9		2
Queuing Penalty (veh)	501	93	11	0	3	5	0		35	19		3

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	63.7	72.7
Average Queue (m)	37.0	39.1
95th Queue (m)	59.5	64.6
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	4	
Queuing Penalty (veh)	6	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	99.2	68.8	289.8	145.1	99.6	96.1
Average Queue (m)	51.5	33.2	172.8	57.1	52.0	39.9
95th Queue (m)	83.9	61.2	373.7	191.9	91.6	81.3
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)			6			
Queuing Penalty (veh)			0			
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)			21			
Queuing Penalty (veh)			68			

Intersection: 7: Street B & Site Access

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (m)	49.3	12.6	14.7
Average Queue (m)	15.8	2.2	2.9
95th Queue (m)	60.6	16.7	10.5
Link Distance (m)	234.8	47.0	84.0
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		1	
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Street B & Street A

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	28.0	9.1	10.8
Average Queue (m)	12.0	8.6	7.5
95th Queue (m)	21.5	11.7	13.4
Link Distance (m)	183.5	101.6	47.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Street A & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	13.5
Average Queue (m)	8.8
95th Queue (m)	12.5
Link Distance (m)	134.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1986

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5453	5460	5532	5451	5541	5486
Vehs Exited	5466	5470	5482	5485	5481	5478
Starting Vehs	383	365	350	376	334	362
Ending Vehs	370	355	400	342	394	374
Travel Distance (km)	13298	13353	13338	13463	13458	13382
Travel Time (hr)	356.4	370.8	354.9	357.9	367.8	361.6
Total Delay (hr)	116.6	129.2	114.0	114.6	125.2	119.9
Total Stops	7500	7985	7572	7609	7880	7708
Fuel Used (l)	1046.4	1057.5	1042.6	1052.4	1063.4	1052.5

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5453	5460	5532	5451	5541	5486
Vehs Exited	5466	5470	5482	5485	5481	5478
Starting Vehs	383	365	350	376	334	362
Ending Vehs	370	355	400	342	394	374
Travel Distance (km)	13298	13353	13338	13463	13458	13382
Travel Time (hr)	356.4	370.8	354.9	357.9	367.8	361.6
Total Delay (hr)	116.6	129.2	114.0	114.6	125.2	119.9
Total Stops	7500	7985	7572	7609	7880	7708
Fuel Used (l)	1046.4	1057.5	1042.6	1052.4	1063.4	1052.5

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	23.5	58.6	66.7	28.0	70.7	97.2	100.3	17.2	81.1	23.7	22.5	24.8
Average Queue (m)	7.0	30.2	31.8	11.8	33.5	37.8	41.4	2.7	44.5	9.7	6.6	10.0
95th Queue (m)	17.3	51.1	53.3	22.4	64.1	77.8	79.5	10.4	70.8	19.7	17.0	20.2
Link Distance (m)		789.1	789.1			1405.8	1405.8			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)							2					
Queuing Penalty (veh)							1					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	23.7	24.5	13.0	24.2
Average Queue (m)	5.7	7.1	1.7	2.4
95th Queue (m)	17.4	18.0	8.1	11.9
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LTR
Maximum Queue (m)	20.5	74.7	83.4	24.3	23.2	87.8	93.8	39.0	5.8	8.8
Average Queue (m)	6.0	36.0	41.0	3.1	8.6	46.0	49.0	21.6	0.6	0.6
95th Queue (m)	15.8	68.6	73.9	18.9	19.8	82.7	84.5	35.2	3.4	4.2
Link Distance (m)		1405.8	1405.8			179.2	179.2		146.2	182.9
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	30.0			30.0	30.0			50.0		
Storage Blk Time (%)	0	11	14		0	12		0		
Queuing Penalty (veh)	0	3	3		1	7		0		

Intersection: 3: Street B & Stouffville Rd

Movement	NB
Directions Served	R
Maximum Queue (m)	9.8
Average Queue (m)	0.4
95th Queue (m)	4.7
Link Distance (m)	84.0
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	78.8	75.7	77.2	52.3	109.9	220.7	215.5	127.2	64.9	147.5	62.9	109.8
Average Queue (m)	32.6	39.8	44.3	22.7	54.3	129.2	131.1	25.7	55.3	61.3	22.1	50.7
95th Queue (m)	62.0	66.2	69.8	44.7	127.7	205.9	205.5	104.7	76.0	144.4	45.3	118.9
Link Distance (m)		275.0	275.0			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	8	7			0	45	24		36	0		4
Queuing Penalty (veh)	21	10			1	64	18		45	0		10

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	187.0	207.9
Average Queue (m)	110.8	123.1
95th Queue (m)	191.0	207.4
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	53	
Queuing Penalty (veh)	83	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	133.4	39.5	121.4	31.7	54.5	113.6
Average Queue (m)	72.5	17.1	61.3	13.6	26.8	47.1
95th Queue (m)	115.1	30.4	105.3	23.5	47.8	96.5
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)			0			
Queuing Penalty (veh)			1			

Intersection: 7: Street B & Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	16.1	10.3
Average Queue (m)	9.4	1.0
95th Queue (m)	13.1	5.9
Link Distance (m)	234.8	84.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Street B & Street A

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	16.6	12.8	10.4
Average Queue (m)	9.2	9.0	8.5
95th Queue (m)	16.4	11.3	12.7
Link Distance (m)	183.5	101.6	47.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Street A & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	14.9
Average Queue (m)	9.4
95th Queue (m)	13.1
Link Distance (m)	134.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 264

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6543	6683	6748	6454	6590	6607
Vehs Exited	6483	6632	6668	6447	6595	6565
Starting Vehs	422	422	415	448	446	429
Ending Vehs	482	473	495	455	441	471
Travel Distance (km)	16166	16652	16652	16130	16420	16404
Travel Time (hr)	460.9	490.2	495.3	436.7	468.6	470.3
Total Delay (hr)	167.4	187.2	193.5	144.3	170.3	172.6
Total Stops	8556	9158	9412	8128	8644	8784
Fuel Used (l)	1295.3	1361.4	1364.1	1271.8	1325.1	1323.6

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6543	6683	6748	6454	6590	6607
Vehs Exited	6483	6632	6668	6447	6595	6565
Starting Vehs	422	422	415	448	446	429
Ending Vehs	482	473	495	455	441	471
Travel Distance (km)	16166	16652	16652	16130	16420	16404
Travel Time (hr)	460.9	490.2	495.3	436.7	468.6	470.3
Total Delay (hr)	167.4	187.2	193.5	144.3	170.3	172.6
Total Stops	8556	9158	9412	8128	8644	8784
Fuel Used (l)	1295.3	1361.4	1364.1	1271.8	1325.1	1323.6

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	75.2	103.3	106.1	29.4	224.9	421.8	414.1	11.9	98.7	27.0	26.2	28.1
Average Queue (m)	28.0	58.9	60.9	15.1	198.0	254.7	229.7	2.5	52.6	12.3	9.0	10.9
95th Queue (m)	63.9	89.4	90.8	25.0	269.9	503.1	490.1	8.8	83.5	23.9	19.6	23.3
Link Distance (m)		789.1	789.1			1405.8	1405.8			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)		0			89		2					
Queuing Penalty (veh)		0			455		0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	22.3	19.5	13.2	11.2
Average Queue (m)	6.4	6.9	1.7	0.8
95th Queue (m)	16.2	16.3	8.2	5.3
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LTR
Maximum Queue (m)	16.6	100.8	99.6	51.4	37.6	70.7	69.6	37.2	5.5	16.7
Average Queue (m)	5.0	36.5	43.5	3.7	14.5	24.3	24.5	20.3	0.5	6.3
95th Queue (m)	13.6	76.8	86.9	25.1	28.1	54.8	55.9	33.8	3.0	15.0
Link Distance (m)		1405.8	1405.8			179.2	179.2		146.2	182.9
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	30.0			30.0	30.0			50.0		
Storage Blk Time (%)		8	10		1	3		0		
Queuing Penalty (veh)		2	4		6	3		0		

Intersection: 3: Street B & Stouffville Rd

Movement	NB
Directions Served	R
Maximum Queue (m)	16.5
Average Queue (m)	1.6
95th Queue (m)	9.7
Link Distance (m)	84.0
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	178.4	178.6	73.8	48.2	91.7	90.8	50.9	64.8	81.4	85.0	46.1
Average Queue (m)	73.0	100.7	94.4	32.9	21.5	61.3	63.3	18.9	37.7	47.1	54.5	22.1
95th Queue (m)	111.3	160.2	146.7	59.9	43.2	88.1	90.3	35.8	64.4	74.5	80.9	39.2
Link Distance (m)		275.0	275.0			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	31	32	1		1	10			4	7		0
Queuing Penalty (veh)	165	116	2		2	15			10	15		1

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	68.7	67.2
Average Queue (m)	38.8	39.8
95th Queue (m)	60.2	67.0
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	5	
Queuing Penalty (veh)	8	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	TR
Maximum Queue (m)	101.4	68.9	326.8	220.0	108.8	97.2
Average Queue (m)	53.9	31.5	176.0	66.9	60.5	41.6
95th Queue (m)	87.6	55.4	341.7	207.2	101.1	82.8
Link Distance (m)	540.0	540.0	415.6			377.8
Upstream Blk Time (%)			3			
Queuing Penalty (veh)			0			
Storage Bay Dist (m)				150.0	220.0	
Storage Blk Time (%)			25			
Queuing Penalty (veh)			82			

Intersection: 7: Street B & Site Access

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (m)	16.2	4.5	10.5
Average Queue (m)	9.5	0.2	2.2
95th Queue (m)	14.3	2.1	8.7
Link Distance (m)	234.8	47.0	84.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Street B & Street A

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	18.1	10.3	9.3
Average Queue (m)	11.7	8.7	7.6
95th Queue (m)	18.6	11.7	13.2
Link Distance (m)	183.5	101.6	47.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Street A & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	16.3
Average Queue (m)	9.1
95th Queue (m)	12.3
Link Distance (m)	134.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 887

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5488	5653	5405	5469	5553	5513
Vehs Exited	5515	5645	5440	5474	5448	5507
Starting Vehs	354	400	347	338	301	348
Ending Vehs	327	408	312	333	406	356
Travel Distance (km)	13559	13808	13355	13374	13436	13506
Travel Time (hr)	350.7	369.7	338.8	343.5	358.2	352.2
Total Delay (hr)	106.2	120.1	97.6	102.4	115.8	108.4
Total Stops	7234	7558	6905	6922	7247	7174
Fuel Used (l)	1059.0	1088.7	1026.5	1036.2	1054.7	1053.0

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5488	5653	5405	5469	5553	5513
Vehs Exited	5515	5645	5440	5474	5448	5507
Starting Vehs	354	400	347	338	301	348
Ending Vehs	327	408	312	333	406	356
Travel Distance (km)	13559	13808	13355	13374	13436	13506
Travel Time (hr)	350.7	369.7	338.8	343.5	358.2	352.2
Total Delay (hr)	106.2	120.1	97.6	102.4	115.8	108.4
Total Stops	7234	7558	6905	6922	7247	7174
Fuel Used (l)	1059.0	1088.7	1026.5	1036.2	1054.7	1053.0

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	28.0	78.9	81.1	31.4	57.7	86.8	91.4	14.8	89.6	24.9	22.0	24.2
Average Queue (m)	9.0	44.3	46.1	13.9	23.1	44.4	47.5	2.0	43.6	8.8	5.1	8.4
95th Queue (m)	21.8	69.6	71.0	25.1	46.9	79.0	80.0	8.5	73.7	21.3	15.3	17.9
Link Distance (m)		789.1	789.1			1405.8	1405.8			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)							2					
Queuing Penalty (veh)							0					

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	24.8	26.9	18.7	16.8
Average Queue (m)	4.7	7.7	2.7	1.7
95th Queue (m)	14.8	19.6	10.7	8.3
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LTR
Maximum Queue (m)	20.4	85.7	78.1	10.0	17.9	58.2	59.2	44.0	5.6	10.2
Average Queue (m)	5.4	22.8	27.1	0.9	6.9	22.7	26.6	23.6	0.5	0.9
95th Queue (m)	14.2	58.6	62.2	5.4	16.3	45.8	49.4	40.1	3.0	5.5
Link Distance (m)		1405.8	1405.8			179.2	179.2		146.2	182.9
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	30.0			30.0	30.0			50.0		
Storage Blk Time (%)	0	3	5		0	2		0		
Queuing Penalty (veh)	0	1	1		0	1		0		

Intersection: 3: Street B & Stouffville Rd

Movement	NB
Directions Served	R
Maximum Queue (m)	16.3
Average Queue (m)	0.6
95th Queue (m)	5.9
Link Distance (m)	84.0
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	81.8	84.7	71.6	55.8	109.9	210.2	209.3	128.1	64.8	115.9	55.4	109.8
Average Queue (m)	33.2	40.9	42.6	23.2	52.8	123.9	125.2	22.3	54.0	46.3	22.2	39.4
95th Queue (m)	67.6	70.2	65.2	45.4	123.7	199.4	199.9	92.8	76.8	114.2	44.8	100.6
Link Distance (m)		275.0	275.0			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	10	8			1	43	22		29	0		2
Queuing Penalty (veh)	27	12			3	61	16		36	0		4

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	186.2	218.4
Average Queue (m)	100.8	120.7
95th Queue (m)	177.1	199.4
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	44	
Queuing Penalty (veh)	68	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	TR
Maximum Queue (m)	131.7	33.5	64.1	57.2	30.3	55.8	67.5	72.4
Average Queue (m)	69.9	15.8	35.5	23.9	14.2	23.3	19.9	22.0
95th Queue (m)	115.4	27.3	58.4	49.8	25.4	44.4	47.3	49.6
Link Distance (m)	538.6	538.6	415.5	415.5			377.8	377.8
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					150.0	220.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: Street B & Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	16.3	9.2
Average Queue (m)	9.6	1.0
95th Queue (m)	14.0	5.6
Link Distance (m)	234.8	84.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Street B & Street A

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	15.0	13.0	11.6
Average Queue (m)	8.8	8.9	8.5
95th Queue (m)	14.8	12.4	12.7
Link Distance (m)	183.5	101.6	47.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Street A & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	17.6
Average Queue (m)	9.3
95th Queue (m)	13.8
Link Distance (m)	134.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 231

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6580	6647	6601	6586	6521	6584
Vehs Exited	6597	6643	6590	6603	6498	6588
Starting Vehs	399	426	402	453	422	417
Ending Vehs	382	430	413	436	445	418
Travel Distance (km)	16416	16529	16442	16433	16218	16408
Travel Time (hr)	422.7	427.7	424.7	422.2	415.5	422.6
Total Delay (hr)	124.6	126.8	126.4	123.3	120.9	124.4
Total Stops	8402	8514	8355	8337	8236	8371
Fuel Used (l)	1281.8	1291.5	1276.4	1282.6	1267.2	1279.9

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6580	6647	6601	6586	6521	6584
Vehs Exited	6597	6643	6590	6603	6498	6588
Starting Vehs	399	426	402	453	422	417
Ending Vehs	382	430	413	436	445	418
Travel Distance (km)	16416	16529	16442	16433	16218	16408
Travel Time (hr)	422.7	427.7	424.7	422.2	415.5	422.6
Total Delay (hr)	124.6	126.8	126.4	123.3	120.9	124.4
Total Stops	8402	8514	8355	8337	8236	8371
Fuel Used (l)	1281.8	1291.5	1276.4	1282.6	1267.2	1279.9

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (m)	40.0	125.7	130.2	34.3	67.8	94.0	94.8	12.2	121.9	28.6	28.2	29.8
Average Queue (m)	19.2	82.7	84.5	17.7	29.5	46.3	50.3	1.9	59.2	12.4	10.0	10.1
95th Queue (m)	35.6	114.0	117.4	28.8	58.8	82.7	87.1	7.7	106.9	25.3	21.3	23.9
Link Distance (m)		789.1	789.1			1405.8	1405.8			677.9	677.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	105.0			170.0	125.0			65.0	140.0			150.0
Storage Blk Time (%)		2					3		0			
Queuing Penalty (veh)		2					1		0			

Intersection: 1: McCowan Rd & Stouffville Rd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	30.6	24.6	17.0	9.9
Average Queue (m)	7.4	6.5	2.2	0.8
95th Queue (m)	20.4	17.6	9.8	4.7
Link Distance (m)		705.4	705.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	75.0			110.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Street A/4962 Stouffville Rd Private Driveway & Stouffville Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LTR
Maximum Queue (m)	18.0	96.7	105.5	52.7	39.6	61.8	65.6	38.3	5.5	14.2
Average Queue (m)	5.5	40.2	47.3	4.5	15.8	22.8	24.1	20.1	0.5	5.1
95th Queue (m)	14.7	87.9	96.4	28.3	30.8	50.9	53.6	34.3	3.2	13.3
Link Distance (m)		1405.8	1405.8			179.2	179.2		146.2	182.9
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	30.0			30.0	30.0			50.0		
Storage Blk Time (%)		8	11		2	3		0		
Queuing Penalty (veh)		3	4		10	3		0		

Intersection: 3: Street B & Stouffville Rd

Movement	EB	NB
Directions Served	T	R
Maximum Queue (m)	23.1	19.0
Average Queue (m)	0.8	1.9
95th Queue (m)	16.3	11.5
Link Distance (m)	179.2	84.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	182.8	174.8	96.7	55.8	91.9	95.1	47.9	64.8	89.3	90.4	61.1
Average Queue (m)	69.9	97.4	94.3	37.3	27.1	57.8	60.4	18.3	37.5	50.6	58.0	26.6
95th Queue (m)	109.0	153.6	141.4	72.9	48.7	83.1	86.1	32.7	67.1	82.9	88.1	51.4
Link Distance (m)		275.0	275.0			1270.2	1270.2			387.0	387.0	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0			135.0	60.0			105.0	50.0			45.0
Storage Blk Time (%)	25	33	1		0	8	0		4	10		4
Queuing Penalty (veh)	134	121	6		0	11	0		9	21		6

Intersection: 4: Hwy 48 & Stouffville Rd/Main St

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	67.8	77.4
Average Queue (m)	38.1	40.8
95th Queue (m)	60.5	67.2
Link Distance (m)	855.4	855.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	5	
Queuing Penalty (veh)	8	

Intersection: 6: Hwy 48 & Private Driveway/Hoover Park Dr

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	TR
Maximum Queue (m)	108.5	63.5	83.7	80.3	30.9	80.6	47.9	44.6
Average Queue (m)	51.9	32.3	50.5	41.0	15.5	42.6	17.1	19.1
95th Queue (m)	86.4	56.0	77.3	72.0	26.4	71.8	37.2	37.1
Link Distance (m)	538.6	538.6	415.5	415.5			377.8	377.8
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					150.0	220.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: Street B & Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	16.1	11.7
Average Queue (m)	9.1	2.0
95th Queue (m)	14.3	8.5
Link Distance (m)	234.8	84.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Street B & Street A

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	19.2	10.4	9.3
Average Queue (m)	12.2	8.5	8.0
95th Queue (m)	18.6	12.1	12.9
Link Distance (m)	183.5	101.6	47.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Street A & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	15.0
Average Queue (m)	8.7
95th Queue (m)	12.8
Link Distance (m)	134.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 339

Appendix E

TTS Data

Mode Split

Wed Dec 11 2024 15:21:42 GMT-0500 (Eastern Standard Time) - Run Time: 1800ms

Cross Tabulation Query Form - Trip - 2016

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of household - gta06_hhld

RowG:
ColG:(2708-2709)
TblG:

Filters:
2006 GTA zone of household - gta06_hhld In 2708-2714

Trip 2016
Table:

	1
Transit excluding GO rail	302
Auto driver	13202
GO rail only	129
Joint GO rail and local transit	131
Auto passenger	2284
School bus	199
Taxi passenger	10
Walk	1269
Total	17526

SOV	HOV	Transit	Walk & Cycle	Total
75%	14%	3%	7%	100%
			Auto	90%
			Non-Auto	10%

RESIDENTIAL

AM Out

Row Labels	Sum of %
HWY 48 NB	1%
HWY 48 SB	16%
MCCOWAN SB	18%
STOUFFVILLE EB	18%
STOUFFVILLE WB	47%
Grand Total	**100%**

Road	Base	Adjusted
HWY 48 NB	1%	6%
HWY 48 SB	16%	14%
MCCOWAN NB	0%	5%
MCCOWAN SB	18%	16%
STOUFFVILLE EB	18%	16%
STOUFFVILLE WB	47%	42%
	100%	100%

Nominal 5% to McCowan and Hwy 48 NB

PM In

Row Labels	Sum of %
HWY 48 NB	16%
HWY 48 SB	8%
MCCOWAN NB	14%
STOUFFVILLE EB	38%
STOUFFVILLE WB	25%
Grand Total	**100%**

Road	Base	Adjusted
HWY 48 NB	16%	15%
HWY 48 SB	8%	8%
MCCOWAN NB	0%	5%
MCCOWAN SB	14%	13%
STOUFFVILLE EB	38%	36%
STOUFFVILLE WB	25%	24%
	100%	100%

Nominal 5% to McCowan NB

RESIDENTIAL TRIP DISTRIBUTION

Corridor	Direction	AM		PM	
		IN	OUT	IN	OUT
Hwy 48	NB	15%	6%	15%	6%
	SB	8%	14%	8%	14%
McCowan Rd	NB	5%	5%	5%	5%
	SB	13%	16%	13%	16%
Stouffville Rd / Main St	EB	36%	16%	36%	16%
	WB	24%	42%	24%	42%
	Total	100%	100%	100%	100%

Trip Distribution

RESIDENTIAL

AM Outbound

AM Outbound

Thu Dec 12 2024 11:57:39 GMT-0500 (Eastern Standard Time) - Run Time: 2368ms

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(2708-2709)
TblG:

Filters:
2006 GTA zone of origin - gta06_orig In 2708-2709
and
Start time of trip - start_time In 700-959
and
Primary travel mode of trip - mode_prime In D M P S T U
and
Trip purpose - trip_purp In 1 2 3
and
Planning district of destination - pd_dest In 30

Thu Dec 12 2024 11:58:53 GMT-0500 (Eastern Standard Time) - Run Time: 2537ms

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(2708-2709)
TblG:

Filters:
2006 GTA zone of origin - gta06_orig In 2708-2709
and
Start time of trip - start_time In 700-959
and
Primary travel mode of trip - mode_prime In D M P S T U
and
Trip purpose - trip_purp In 1 2 3
and
Planning district of destination - pd_dest Not In 30

Interest TAZs: 2708-2709

TAZ/PD	Count	%	Assignment	
2702	31	1%	STOUFFVILLE WB	
2710	254	8%	STOUFFVILLE EB	
2711	23	1%	STOUFFVILLE EB	
2712	125	4%	STOUFFVILLE EB	
2713	107	3%	STOUFFVILLE EB	
2714	29	1%	STOUFFVILLE EB	
2717	31	1%	HWY 48 NB	
PD 1 of Toronto	196	6%	STOUFFVILLE WB	404
PD 4 of Toronto	113	4%	STOUFFVILLE WB	404
PD 5 of Toronto	37	1%	STOUFFVILLE WB	404
PD 6 of Toronto	28	1%	STOUFFVILLE WB	404
PD 11 of Toronto	129	4%	STOUFFVILLE WB	404
PD 12 of Toronto	73	2%	STOUFFVILLE WB	404
PD 13 of Toronto	77	2%	STOUFFVILLE WB	404
PD 13 of Toronto	77	2%	MCCOWAN SB	
PD 13 of Toronto	77	2%	HWY 48 SB	
PD 16 of Toronto	120	4%	MCCOWAN SB	
PD 16 of Toronto	119	4%	STOUFFVILLE WB	
PD 16 of Toronto	119	4%	HWY 48 SB	
Uxbridge	38	1%	STOUFFVILLE EB	
Ajax	27	1%	HWY 48 SB	
Whitby	15	0%	HWY 48 SB	
Georgina	7	0%	HWY 48 NB	404
Newmarket	17	1%	STOUFFVILLE WB	404
Aurora	78	2%	STOUFFVILLE WB	
Richmond Hill	160	5%	STOUFFVILLE WB	
Markham	339	11%	MCCOWAN SB	
Markham	339	11%	STOUFFVILLE WB	
Markham	340	11%	HWY 48 SB	
Vaughan	13	0%	STOUFFVILLE WB	
Oakville	25	1%	STOUFFVILLE WB	
		0%		
		0%		
		0%

PM Inbound

Thu Dec 12 2024 11:55:04 GMT-0500 (Eastern Standard Time) - Run Time: 2917ms

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(2708-2709)
TblG:

Filters:
2006 GTA zone of destination - gta06_dest In 2708-2709
and
Start time of trip - start_time In 1600-1859
and
Primary travel mode of trip - mode_prime In D M P S T U
and
Trip purpose - trip_purp In 1 2 3
and
Planning district of origin - pd_orig In 30

Thu Dec 12 2024 11:56:24 GMT-0500 (Eastern Standard Time) - Run Time: 2877ms

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(2708-2709)
TblG:

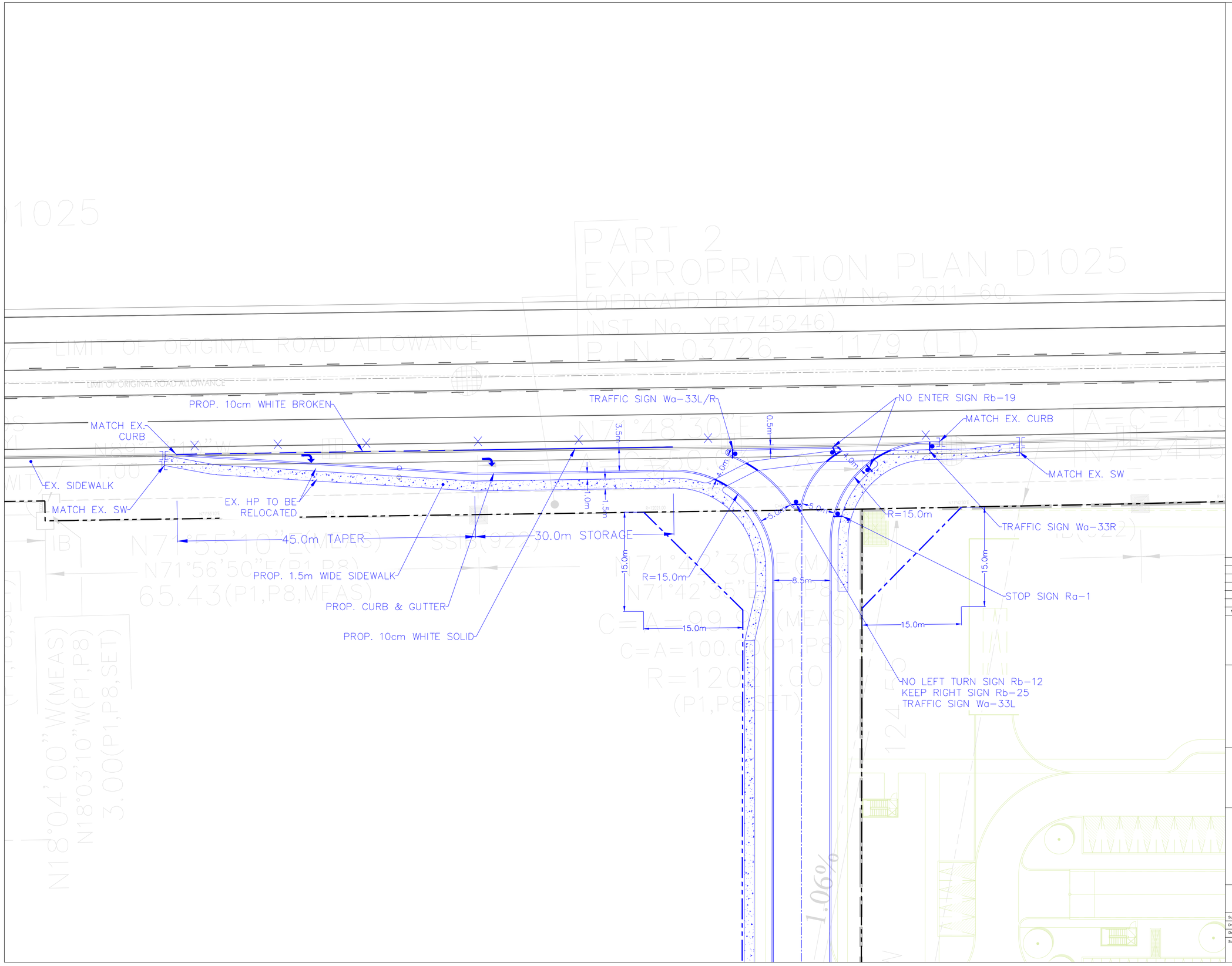
Filters:
2006 GTA zone of destination - gta06_dest In 2708-2709
and
Start time of trip - start_time In 1600-1859
and
Primary travel mode of trip - mode_prime In D M P S T U
and
Trip purpose - trip_purp In 1 2 3
and
Planning district of origin - pd_orig Not In 30

Interest TAZs: 2708-2709

TAZ/PD	Count	%	Assignment
2706	11	0%	STOUFFVILLE EB
2710	270	8%	STOUFFVILLE WB
2711	86	2%	STOUFFVILLE WB
2712	419	12%	STOUFFVILLE WB
2713	24	1%	STOUFFVILLE WB
2714	86	2%	STOUFFVILLE WB
2715	80	2%	HWY 48 SB
2716	41	1%	HWY 48 SB
2717	58	2%	HWY 48 SB
2718	78	2%	HWY 48 SB
PD 1 of Toronto	154	4%	STOUFFVILLE EB
PD 3 of Toronto	24	1%	STOUFFVILLE EB
PD 4 of Toronto	89	3%	STOUFFVILLE EB
PD 5 of Toronto	37	1%	STOUFFVILLE EB
PD 6 of Toronto	28	1%	STOUFFVILLE EB
PD 8 of Toronto	51	1%	STOUFFVILLE EB
PD 11 of Toronto	38	1%	STOUFFVILLE EB
PD 13 of Toronto	60	2%	MCCOWAN NB
PD 13 of Toronto	60	2%	STOUFFVILLE EB
PD 13 of Toronto	61	2%	HWY 48 NB
PD 16 of Toronto	97	3%	MCCOWAN NB
PD 16 of Toronto	97	3%	STOUFFVILLE EB
PD 16 of Toronto	97	3%	HWY 48 NB
Pickering	53	1%	HWY 48 NB
Oshawa	23	1%	HWY 48 NB
Georgina	29	1%	HWY 48 SB
East Gwillimbury	64	2%	STOUFFVILLE EB
Newmarket	67	2%	STOUFFVILLE EB
Aurora	149	4%	STOUFFVILLE EB
Richmond Hill	43	1%	STOUFFVILLE EB
Markham	324	9%	MCCOWAN NB
Markham	325	9%	STOUFFVILLE EB
Markham	325	9%	HWY 48 NB
Vaughan	13	0%	STOUFFVILLE EB
Mississauga	60	2%	STOUFFVILLE EB
Oakville	25	1%	STOUFFVILLE EB
		0%	
		0%	
		0%

Appendix F

Functional Plan Drawings



KEY PLAN



DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEFORE STARTING WORK. THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING CONDITIONS
- SITE DEVELOPMENT
- PROPOSED CONDITIONS
- CONCRETE SIDEWALK

No.	Revision	Date	By	Appr'd
6				
5				
4				
3				
2				
1	SUBMISSION FOR REVIEW	MAY 27 2024	W.L.	R.P.

CONSULTANT

DIRECTOR OF DEVELOPMENT ENGINEERING

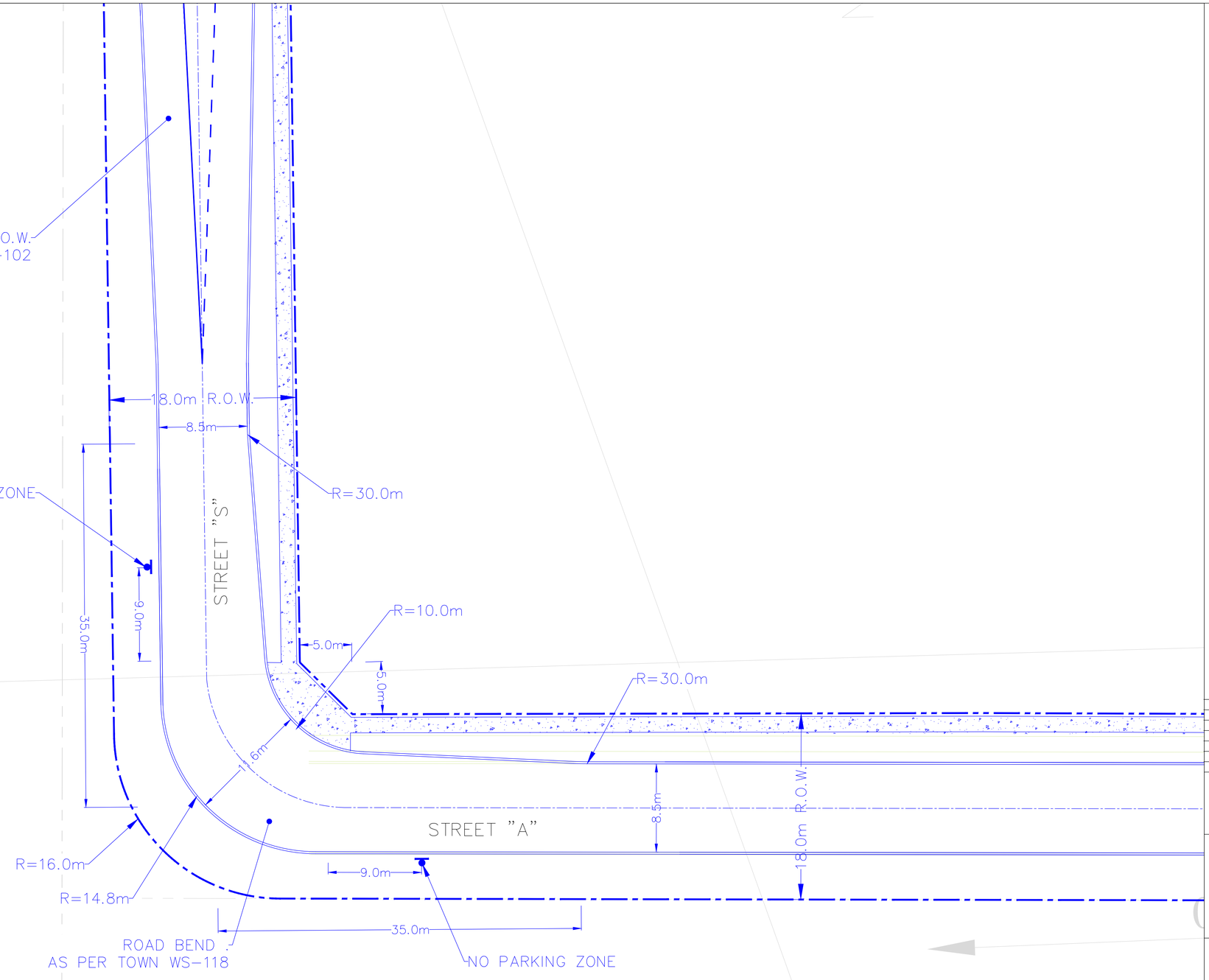
nexTrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

HIGHWAY 48 & STOUFFVILLE ROAD

TOWN OF WHITCHURCH-STOUFFVILLE
ONTARIO

FUNCTIONAL PLAN - RI/RO ENTRANCE

Surveyed by:	Checked by: R.P.	Project No.	NT-23-038
Drawn by: W.L.	Approved by: R.P.	Drawing No.	FP-1
Designed by: W.L.	Date: May/22/2024	Sheet No.	
Scale 1:250			



NOTE:
1. TRAFFIC SIGNS WILL BE INSTALLED IN INTERIM CONDITIONS;
2. TRAFFIC SIGNS WILL BE REMOVED IN ULTIMATE CONDITIONS.

KEY PLAN



DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEFORE STARTING WORK. THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING CONDITIONS
- SITE DEVELOPMENT
- PROPOSED CONDITIONS
- CONCRETE SIDEWALK

No.	Revision	Date	By	Appr'd
6				
5				
4				
3				
2				
1	SUBMISSION FOR REVIEW	MAY 27 2024	W.L.	R.P.

CONSULTANT

DIRECTOR OF DEVELOPMENT ENGINEERING

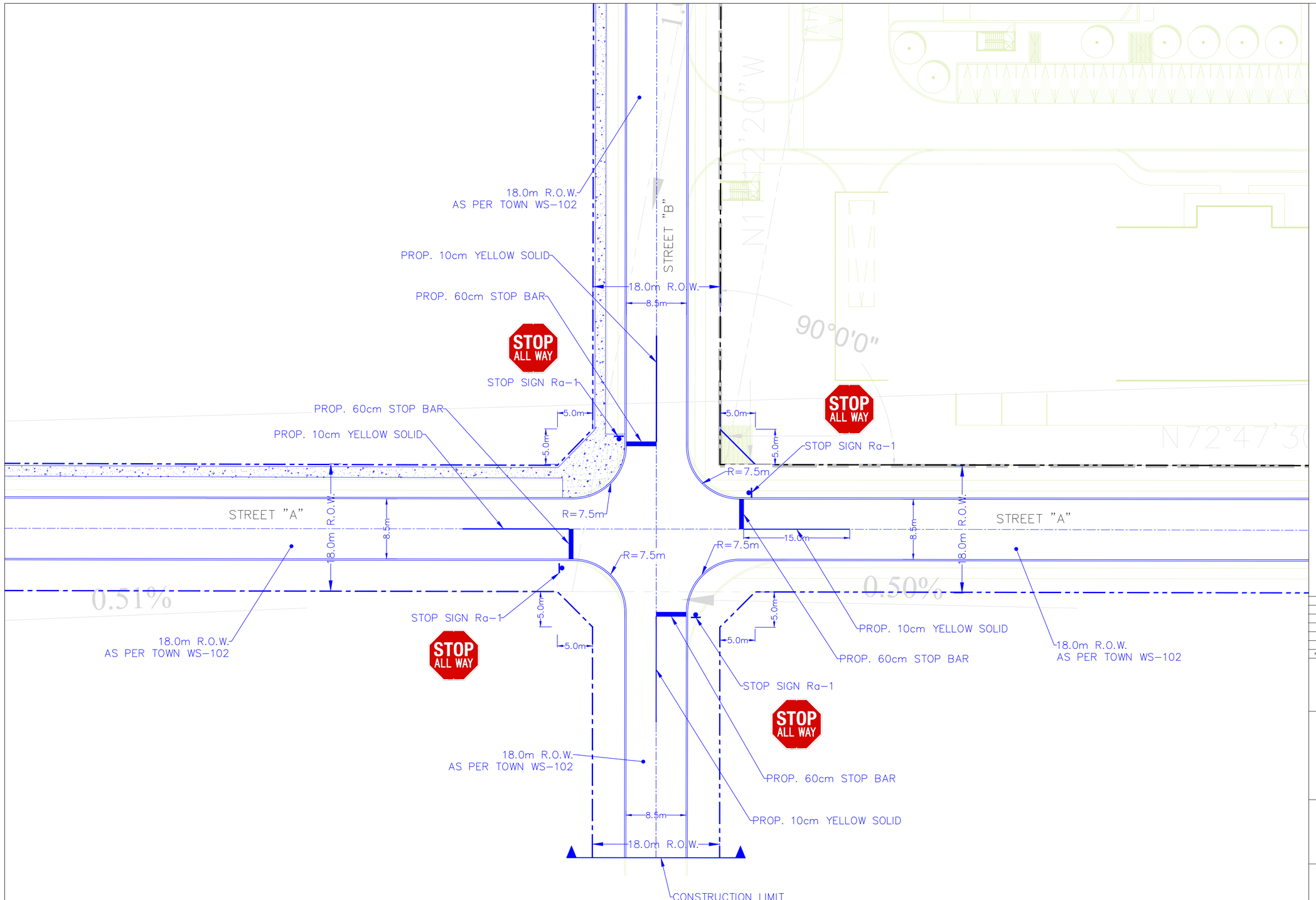
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CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

HIGHWAY 48 & STOUFFVILLE ROAD

TOWN OF WHITCHURCH-STOUFFVILLE
ONTARIO

FUNCTIONAL PLAN - ELBEND BOW

Surveyed by:		Checked by: R.P.	Project No. NT-23-038
Drawn by: W.L.		Approved by: R.P.	Drawing No. FP-2
Designed by: W.L.		Date: May/22/2024	Sheet No.
Scale 1:200			



NOTE:
1. TRAFFIC SIGNS WILL BE INSTALLED IN INTERIM CONDITIONS;
2. TRAFFIC SIGNS WILL BE REMOVED IN ULTIMATE CONDITIONS.

KEY PLAN



DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEFORE STARTING WORK. THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING CONDITIONS
- SITE DEVELOPMENT
- PROPOSED CONDITIONS
- CONCRETE SIDEWALK

No.	Revision	Date	By	Appr'd
6				
5				
4				
3				
2				
1	SUBMISSION FOR REVIEW	MAY 27 2024	W.L.	R.P.

CONSULTANT

DIRECTOR OF DEVELOPMENT ENGINEERING

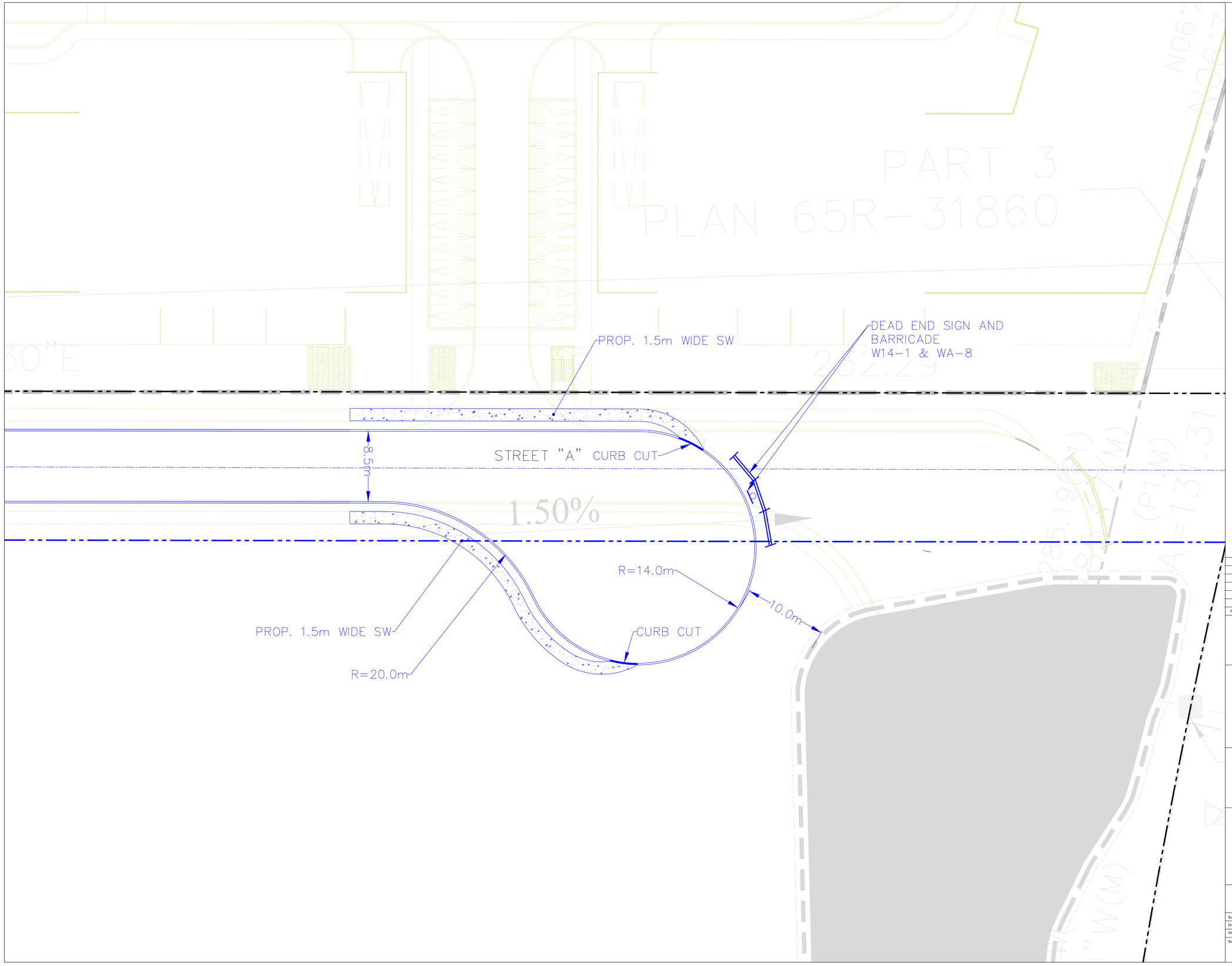
nextrans
CONSULTING ENGINEERS
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Tel: 905-503-2563
Web: www.nextrans.ca

HIGHWAY 48 & STOUFFVILLE ROAD

TOWN OF WHITCHURCH-STOUFFVILLE
ONTARIO

FUNCTIONAL PLAN - INTERSECTION OF STREET A & B

Surveyed by:		Checked by: R.P.	Project No. NT-23-038
Drawn by: W.L.		Approved by: R.P.	Drawing No. FP-3
Designed by: W.L.		Date: May/22/2024	Sheet No.
Scale 1:250			



KEY PLAN



DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEFORE STARTING WORK. THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING CONDITIONS
- SITE DEVELOPMENT
- PROPOSED CONDITIONS
- CONCRETE SIDEWALK

No.	Revision	Date	By	Appr'd
6				
5				
4				
3				
2				
1	SUBMISSION FOR REVIEW	MAY 27 2024	W.L.	R.P.

CONSULTANT

DIRECTOR OF DEVELOPMENT ENGINEERING

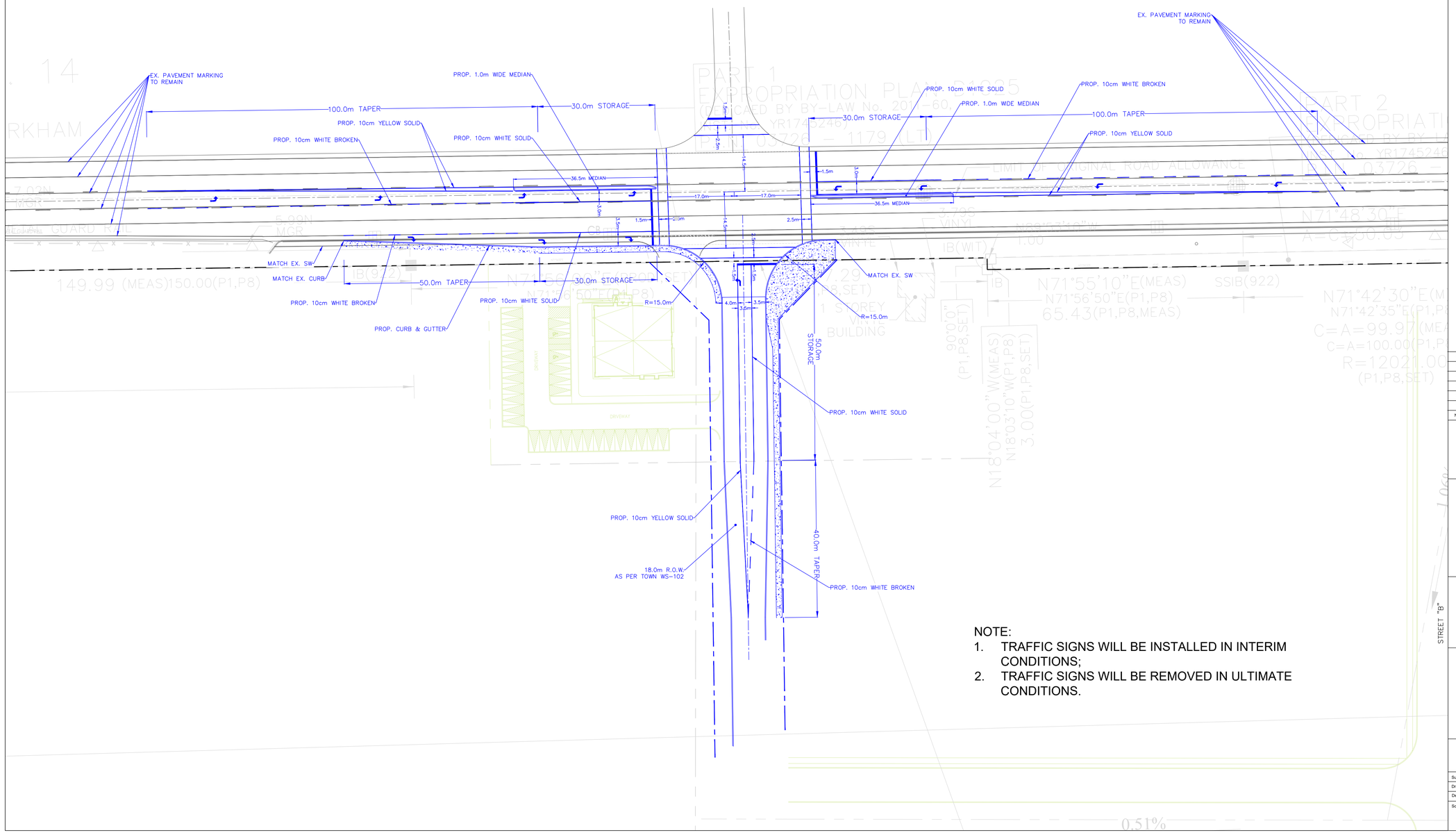
nextrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

HIGHWAY 48 & STOUFFVILLE ROAD

TOWN OF WHITCHURCH-STOUFFVILLE
ONTARIO

FUNCTIONAL PLAN - CUL-DE-SAC DESIGN

Surveyed by:	Checked by: R.P.	Project No.	NT-23-038
Drawn by: W.L.	Approved by: R.P.	Drawing No.	FP-4
Designed by: W.L.	Date: May/22/2024	Sheet No.	
Scale 1:200			



NOTE:

1. TRAFFIC SIGNS WILL BE INSTALLED IN INTERIM CONDITIONS;
2. TRAFFIC SIGNS WILL BE REMOVED IN ULTIMATE CONDITIONS.

KEY PLAN



DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING CONDITIONS
- SITE DEVELOPMENT
- PROPOSED CONDITIONS
- CONCRETE SIDEWALK

No.	Revision	Date	By	Appr'd
6				
5				
4				
3				
2				
1	SUBMISSION FOR REVIEW	MAY 27 2024	W.L.	R.P.

CONSULTANT

DIRECTOR OF DEVELOPMENT ENGINEERING

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Web: www.nextrans.ca

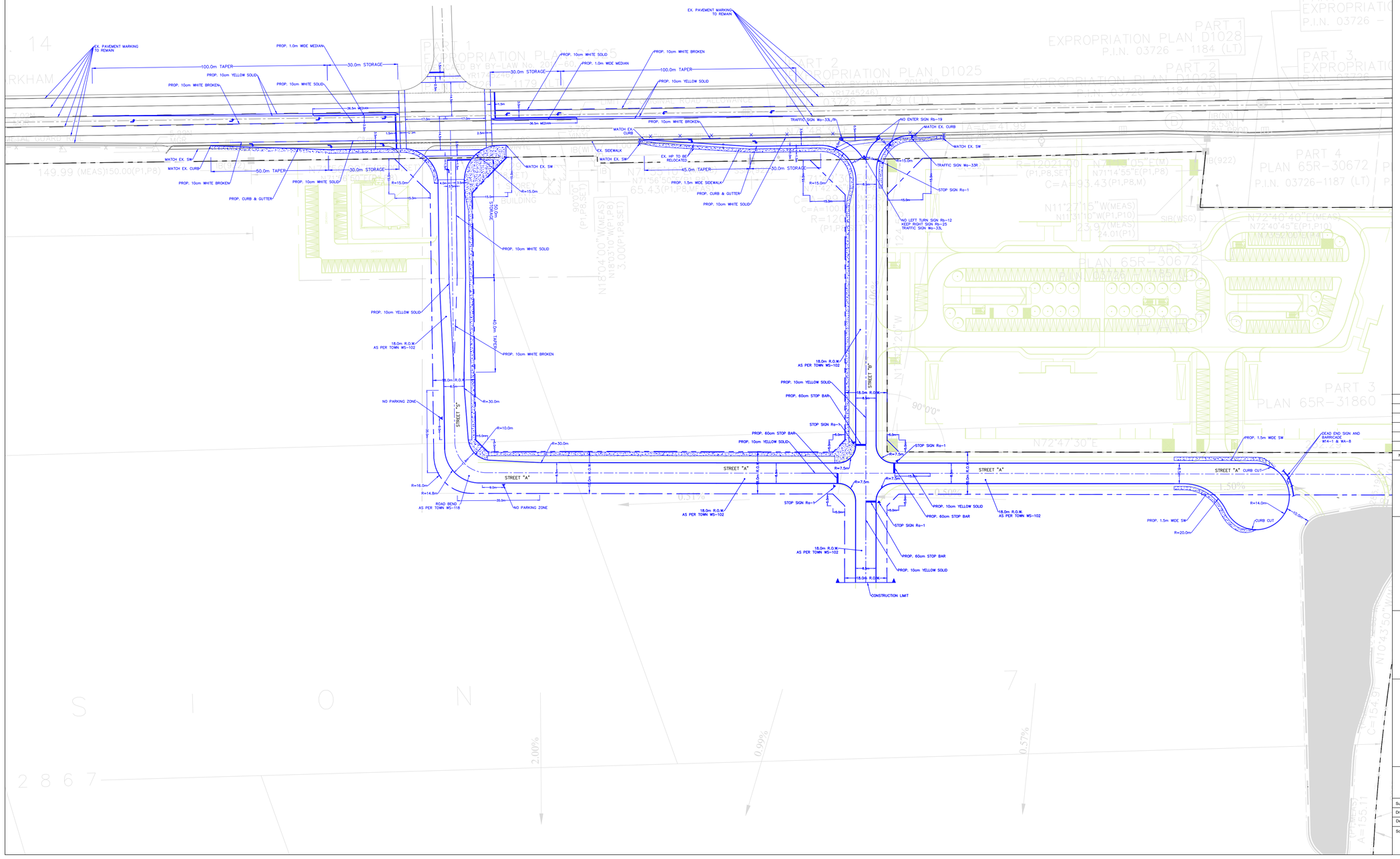
HIGHWAY 48 & STOUFFVILLE ROAD

TOWN OF WHITCHURCH-STOUFFVILLE
ONTARIO

FUNCTIONAL PLAN

- INTERSECTION OF STOUFFVILLE RD. & STREET A

Surveyed by:		Checked by: R.P.	Project No. NT-23-038
Drawn by: W.L.		Approved by: R.P.	Drawing No. FP-5
Designed by: W.L.		Date: May/22/2024	Sheet No.
Scale 1:500			



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LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING CONDITIONS
- SITE DEVELOPMENT
- PROPOSED CONDITIONS
- CONCRETE SIDEWALK

No.	Revision	Date	By	Appr'd
6				
5				
4				
3				
2				
1	SUBMISSION FOR REVIEW	MAY 27 2024	W.L.	R.P.

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HIGHWAY 48 & STOUFFVILLE ROAD

TOWN OF WHITCHURCH-STOUFFVILLE ONTARIO

FULL PLAN

Surveyed by:		Checked by:	R.P.
Drawn by:	W.L.	Approved by:	R.P.
Designed by:	W.L.	Date:	May/22/2024
Scale	1:800		

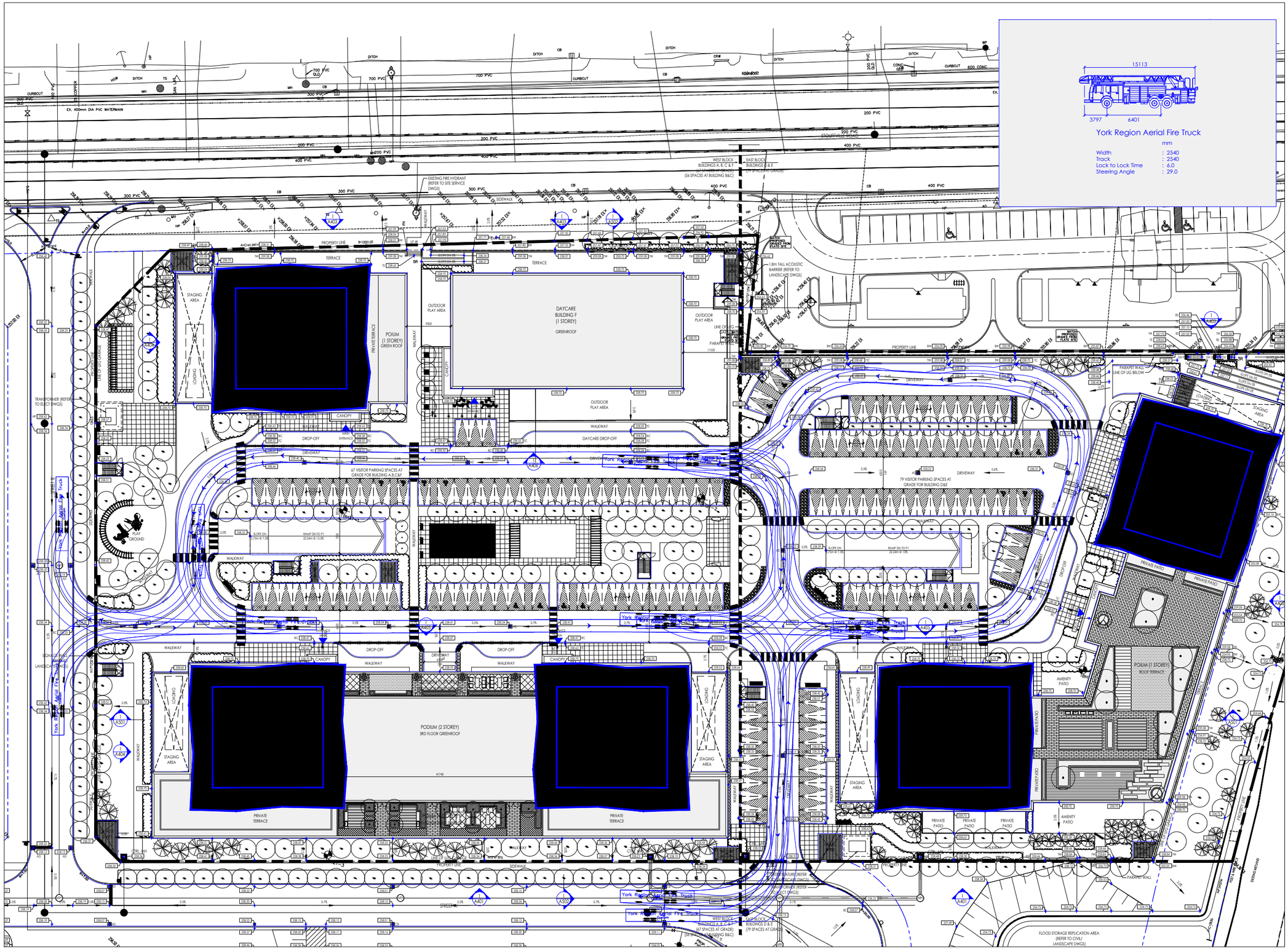
Project No. NT-23-038

Drawing No. FP-6

Sheet No.

Appendix G

Vehicle Movement Diagrams (AutoTURN Analysis)



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

STAMP

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Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:

Mixed-Use Development

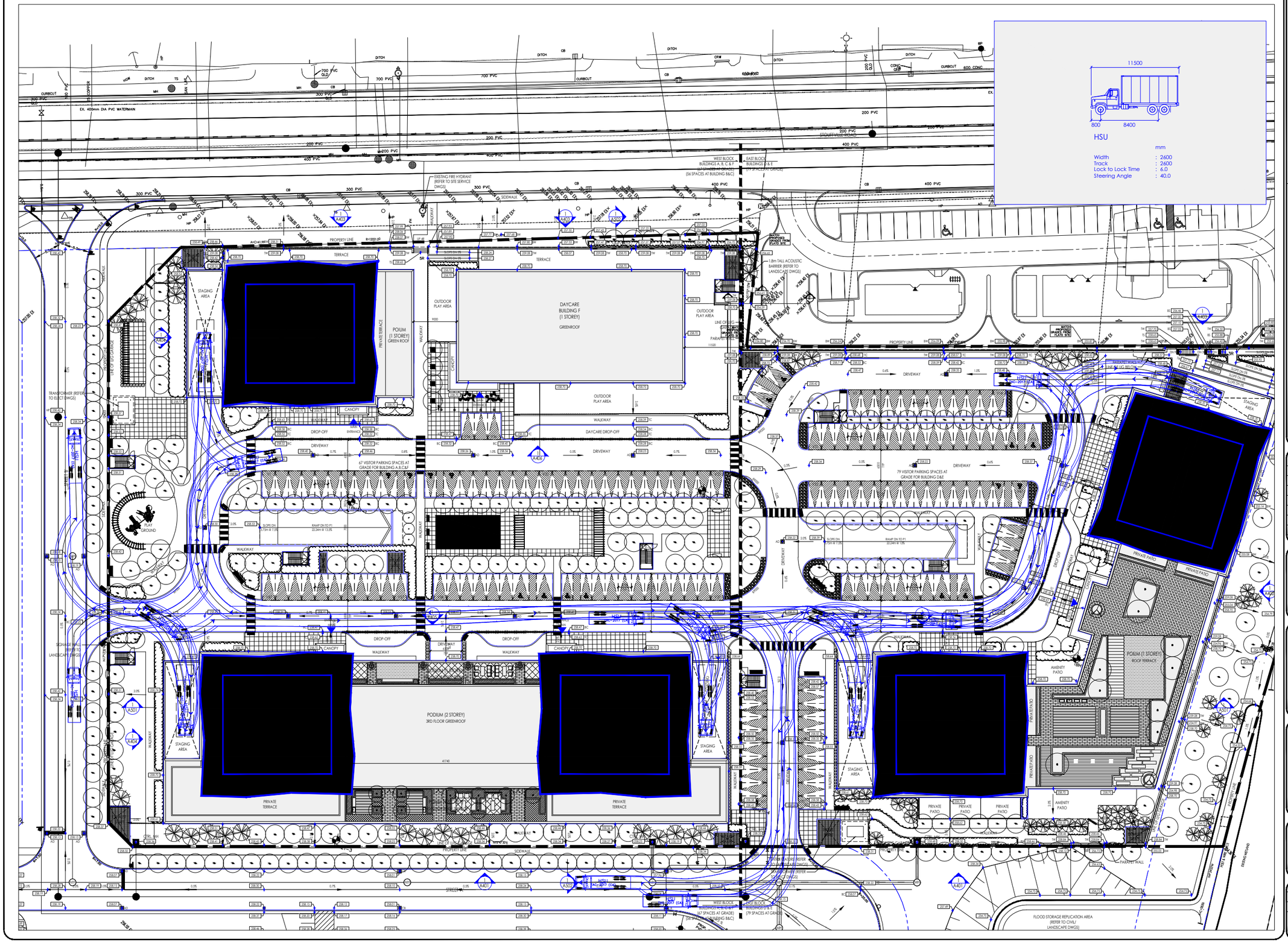
5061 Stouffville Road

Town of Whitchurch-Stouffville

DRAWING TITLE:

AutoTURN Analysis
York Region
Aerial Fire Truck

DESIGN BY: J.N.	DATE: May 2, 2025
CHECKED BY: R.P.	PROJECT NO. NT-23-038
DRAWN BY: J.N.	
SCALE: 1:750	DRAWING NO. AT-01



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Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:

Mixed-Use Development

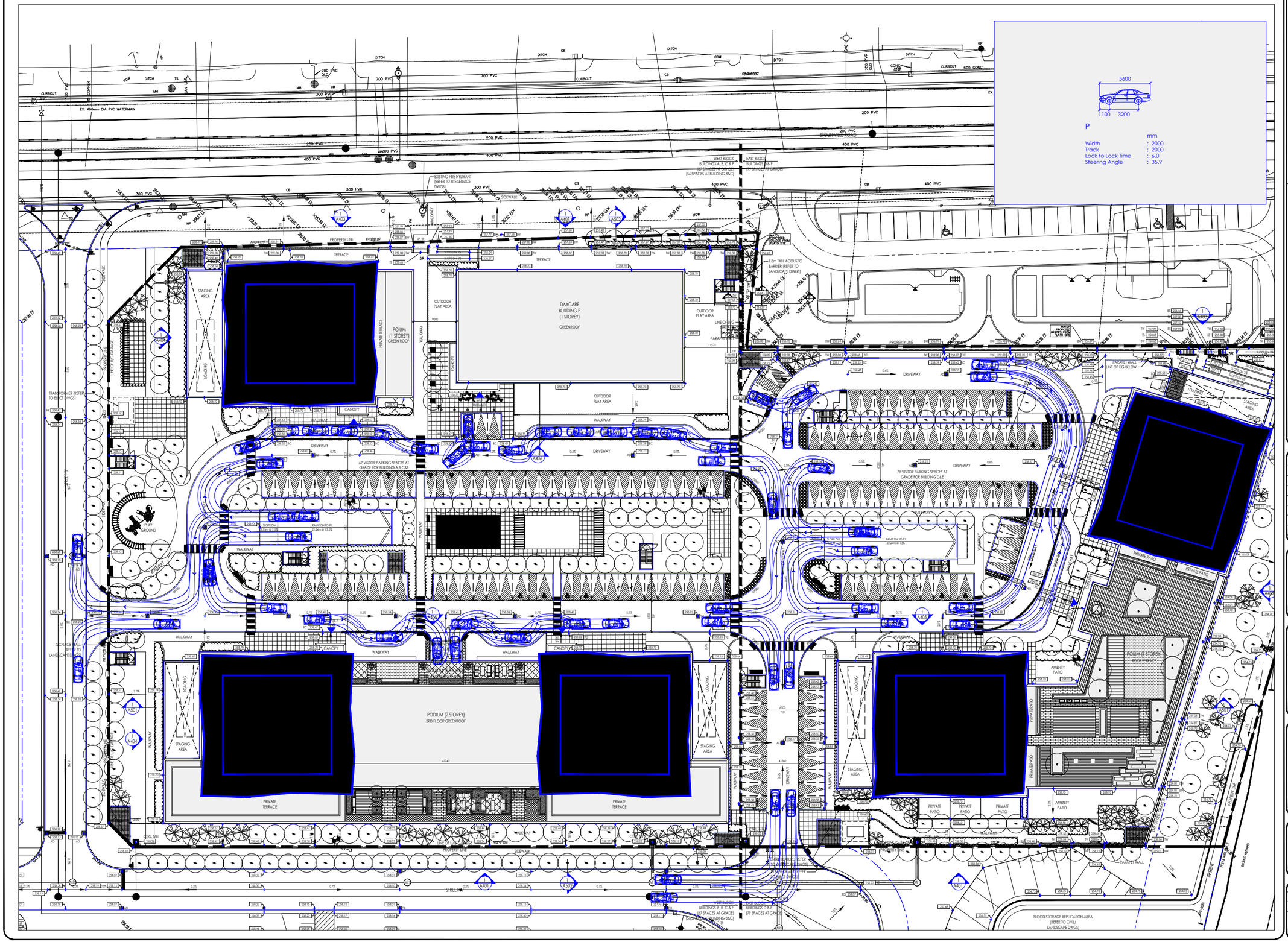
5061 Stouffville Road

Town of Whitchurch-Stouffville

DRAWING TITLE:

AutoTURN Analysis
HSU TAC-2017
Waste Collection

DESIGN BY: J.N.	DATE: May 2, 2025
CHECKED BY: R.P.	PROJECT NO. NT-23-038
DRAWN BY: J.N.	
SCALE: 1:750	DRAWING NO. AT-02



KEY PLAN

BENCHMARK

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STAMP

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Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:

Mixed-Use Development

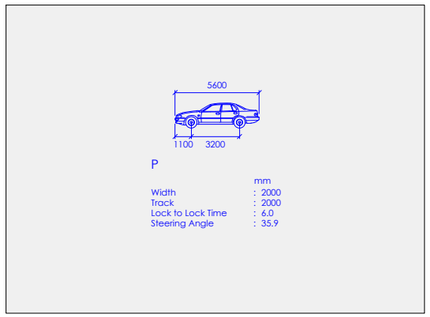
5061 Stouffville Road

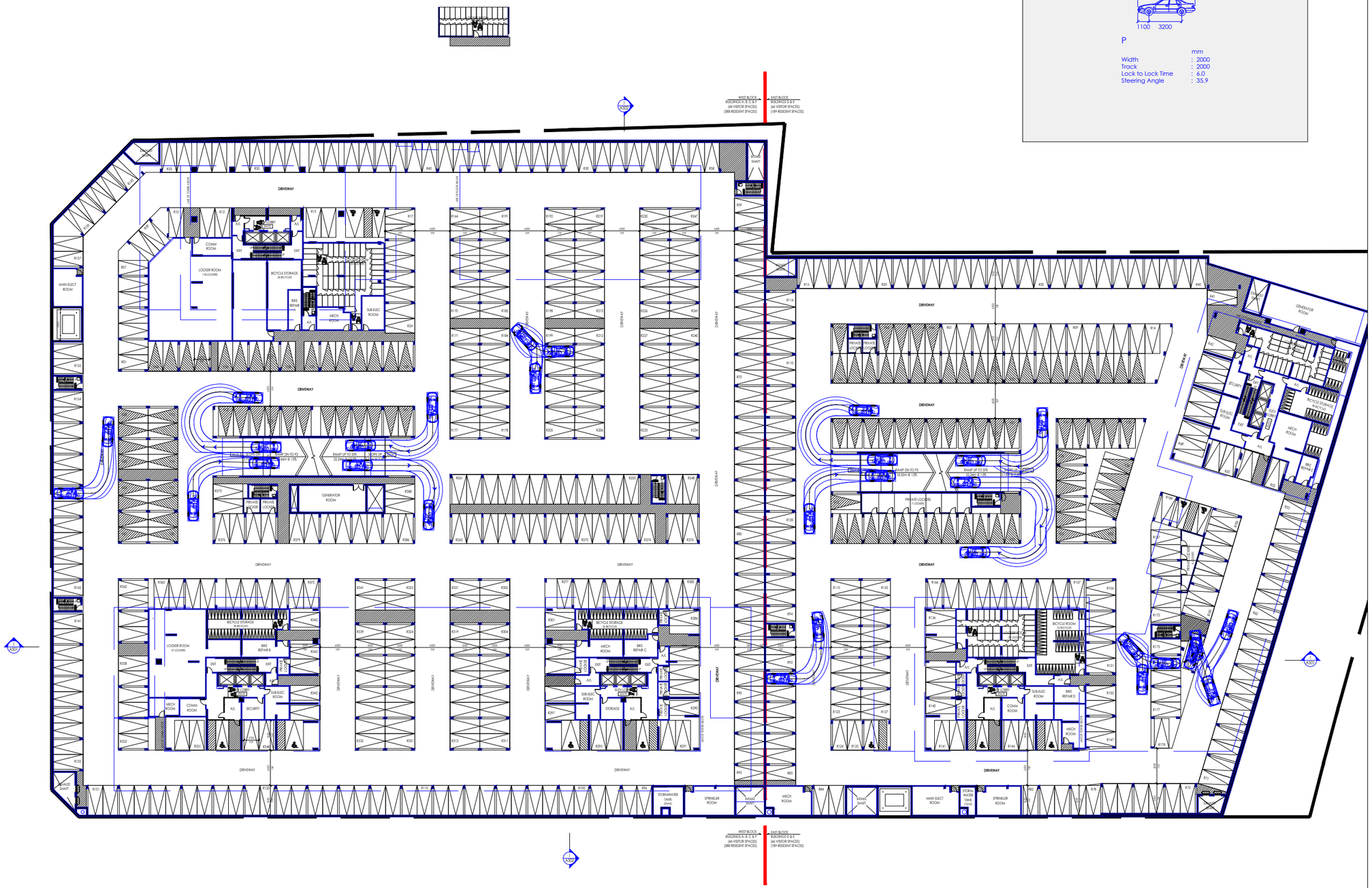
Town of Whitchurch-Stouffville

DRAWING TITLE:

AutoTURN Analysis
P TAC-2017

DESIGN BY: J.N.	DATE: May 2, 2025
CHECKED BY: R.P.	PROJECT NO. NT-23-038
DRAWN BY: J.N.	
SCALE: 1:750	DRAWING NO. AT-03





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BENCHMARK

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Web: www.nextrans.ca

PROJECT NAME:

Mixed-Use Development

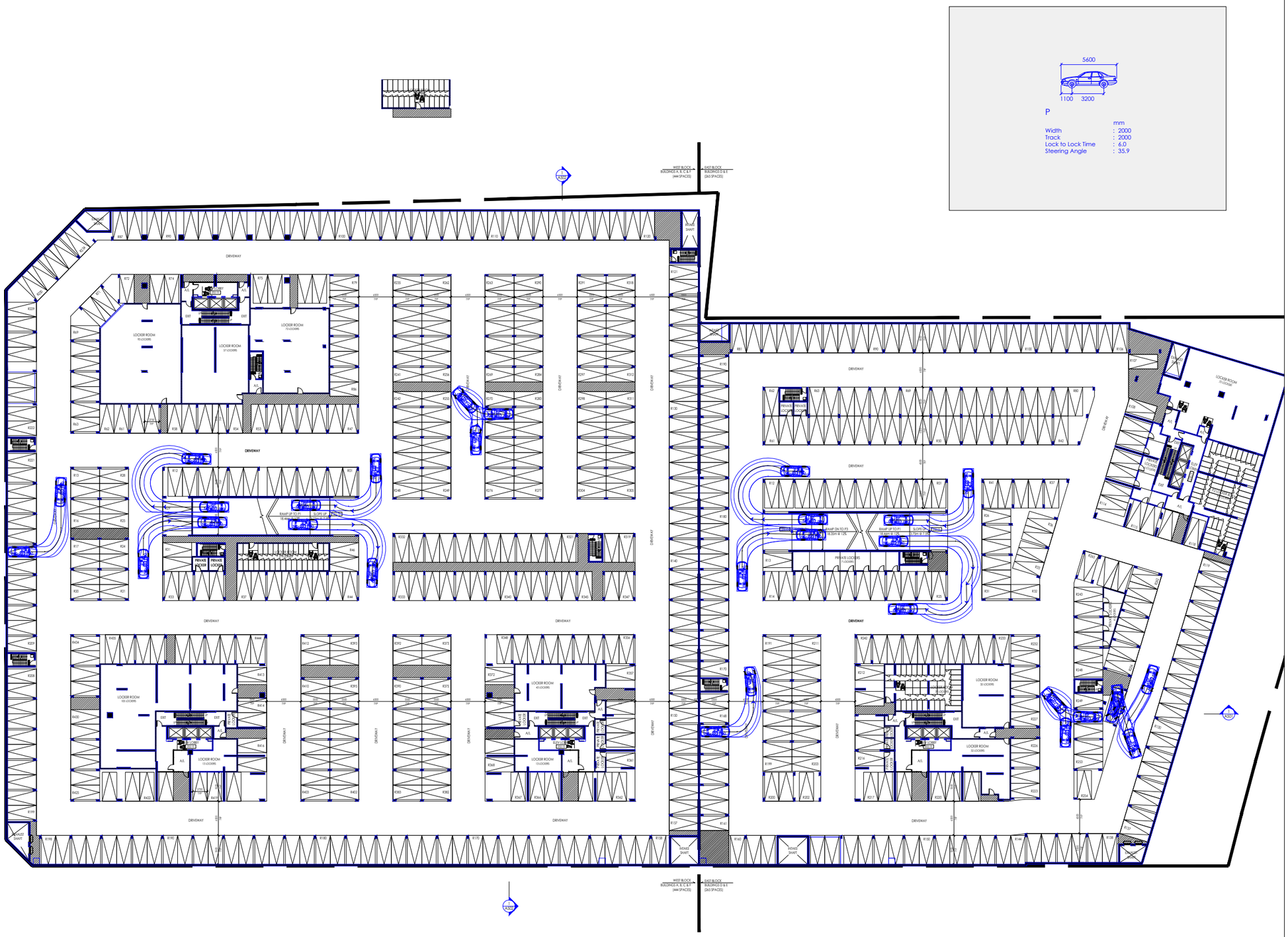
5061 Stouffville Road

Town of Whitchurch-Stouffville

DRAWING TITLE:

AutoTURN Analysis
P TAC-2017
P1

DESIGN BY: J.N.	DATE: May 2, 2025
CHECKED BY: R.P.	PROJECT NO. NT-23-038
DRAWN BY: J.N.	
SCALE: 1:750	DRAWING NO. AT-04



KEY PLAN

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Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:

Mixed-Use Development

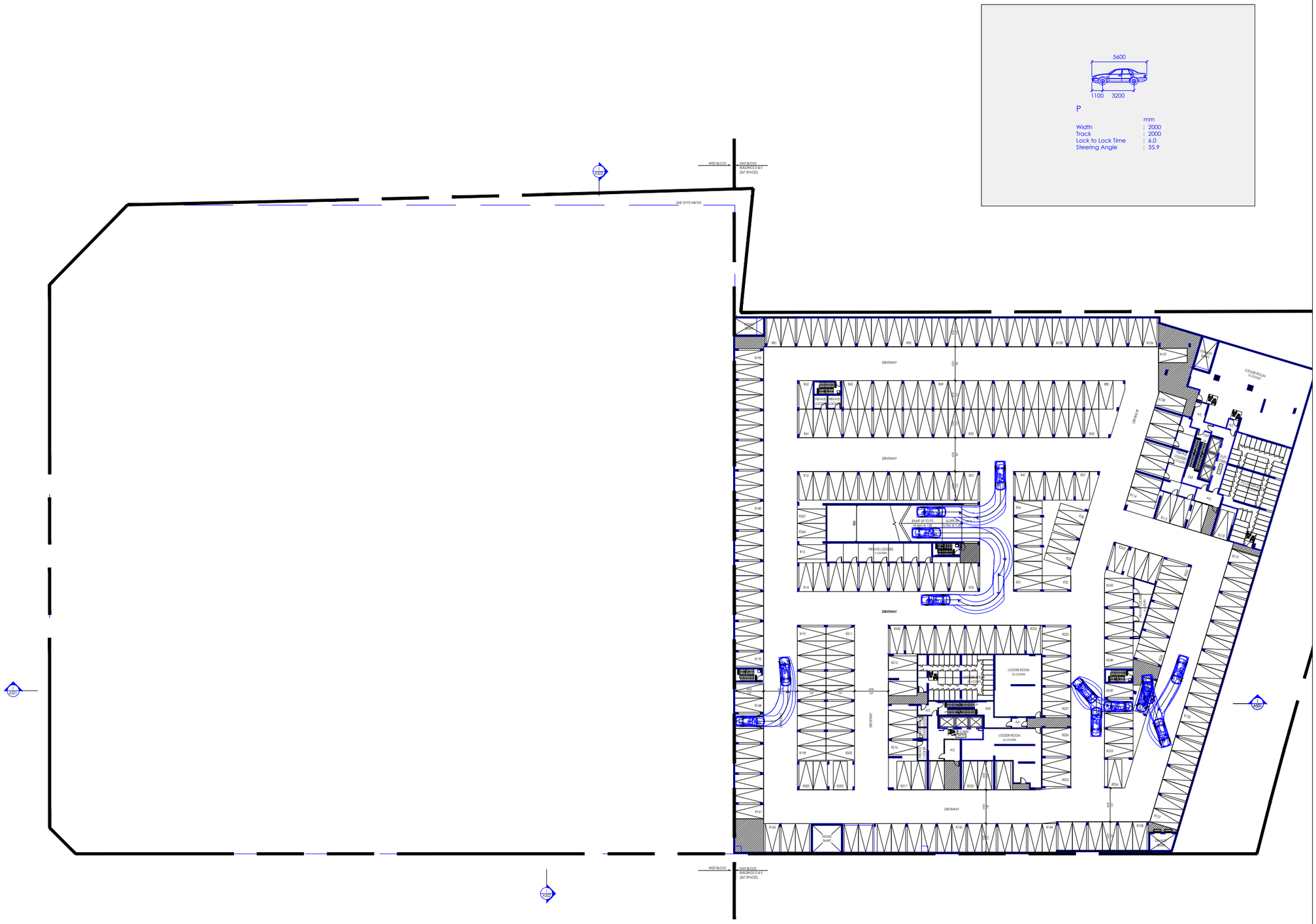
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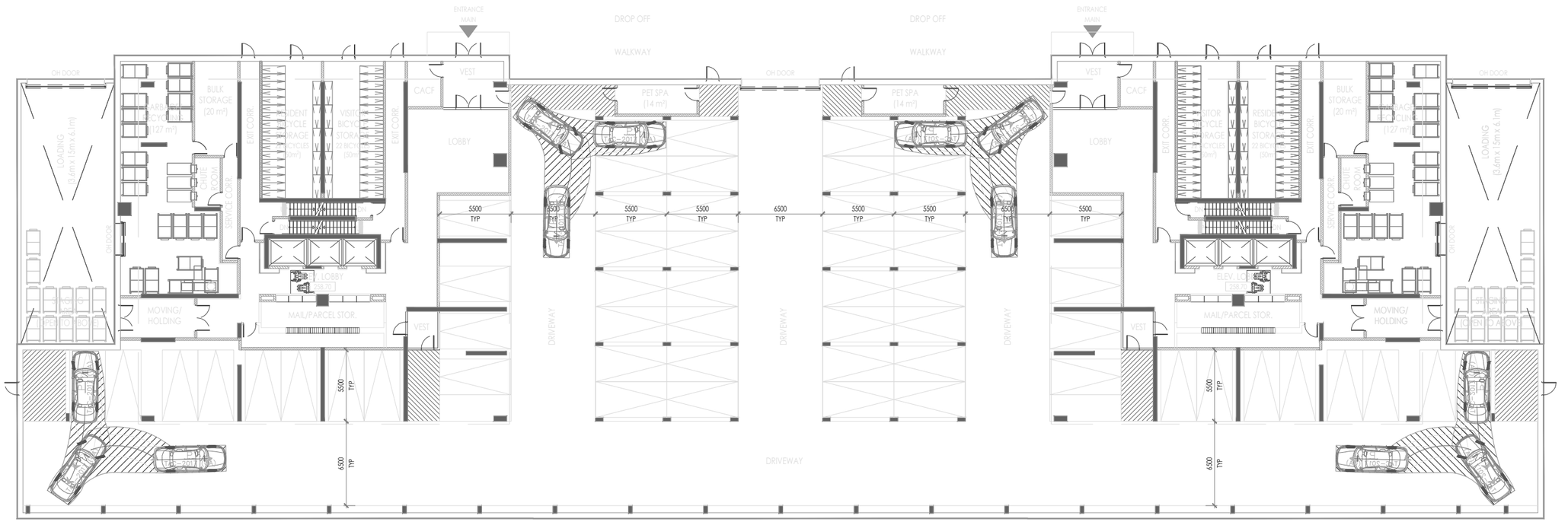
Town of Whitchurch-Stouffville

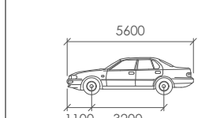
DRAWING TITLE:

AutoTURN Analysis
P TAC-2017
P2

DESIGN BY: J.N.	DATE: May 2, 2025
CHECKED BY: R.P.	PROJECT NO. NT-23-038
DRAWN BY: J.N.	
SCALE: 1:750	DRAWING NO. AT-05


WEST BLOCK
EAST BLOCK
BUILDINGS D & E
(247 SPACES)
LINE OF P2 ABOVE
A300
A301
A302
DRIVEWAY
RAMP UP TO P2
SLOPE 5.0%
LENGTH = 9.0m
RISE = 0.45m
RAMP DOWN TO P4
SLOPE 5.0%
LENGTH = 9.0m
RISE = 0.45m
PRIVATE LOCKERS
(1,000MM)
LOCKER ROOM
(0.600MM)
HOME SHAFT
HOME SHAFT
LOCKER ROOM
(1,000MM)
LOCKER ROOM
(0.600MM)
LOCKER ROOM
(1,000MM)
LOCKER ROOM
(0.600MM)
HOME SHAFT
HOME SHAFT
HOME SHAFT





P

	mm
Width	: 2000
Track	: 2000
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

KEY PLAN

BENCHMARK

REVISONS

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Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
Residential Development
459 Hopewell Avenue
City of Toronto

DRAWING TITLE:
AutoTURN Analysis
P TAC-2017
L1 Indoor (Bldg B&C)

DESIGN BY: J.N.	DATE: March 8, 2023
CHECKED BY: R.P.	PROJECT NO. NT-23-038
DRAWN BY: J.N.	
SCALE: 1:350	DRAWING NO. AT-02