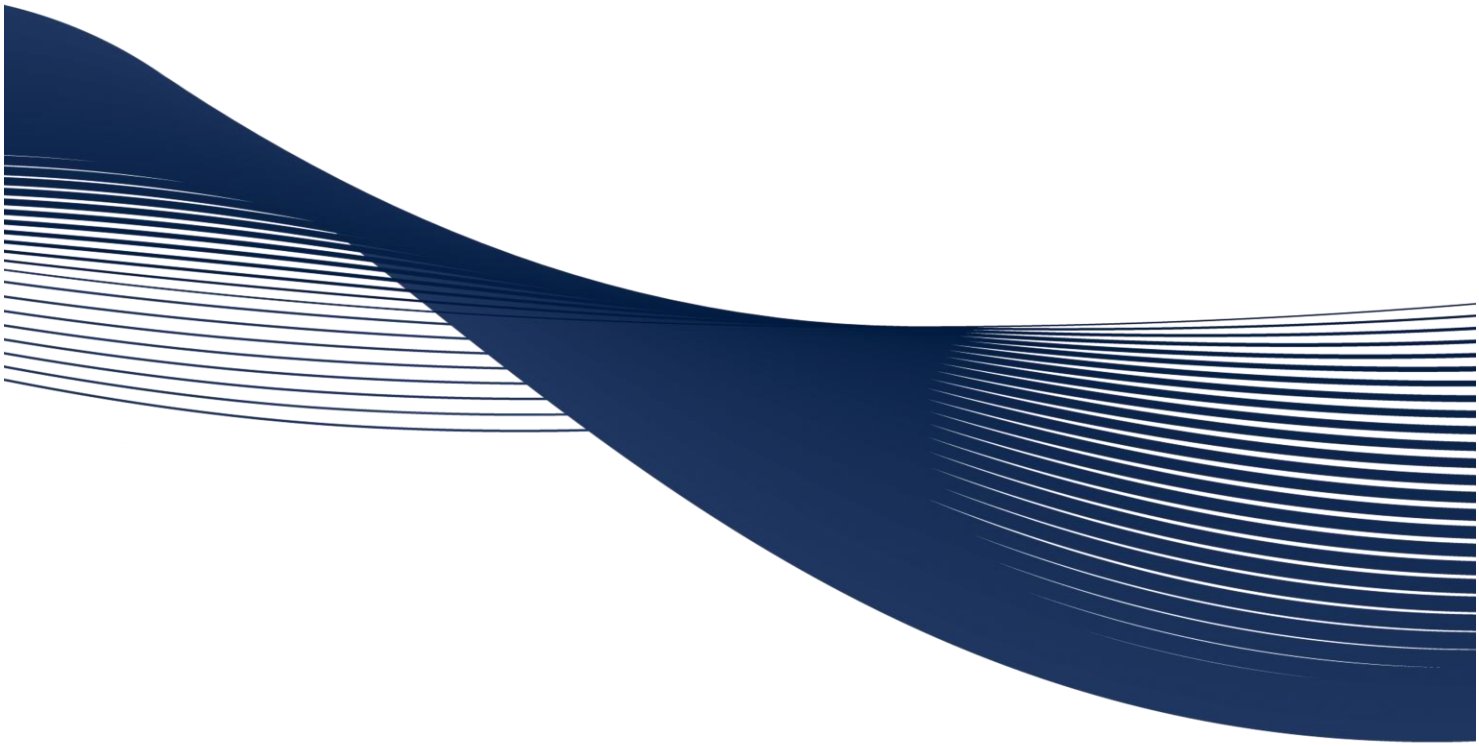
CITY PARK (OLD BARBER) HOMES INC.

TRAFFIC IMPACT AND PARKING STUDY

5155 Mississauga Road, City of Mississauga

Project No.: UD16-0022



JUNE 2016

COLE ENGINEERING GROUP LTD.

HEAD OFFICE
70 Valleywood Drive
Markham, ON CANADA L3R 4T5
T. 905.940.6161 | 416.987.6161
F. 905.940.2064 | www.ColeEngineering.ca

GTA WEST OFFICE
151 Superior Boulevard, Units 1 & 2
Mississauga, ON CANADA L5T 12L1
T. 905.364.6161
F. 905.364.6162

June 1, 2016
Project No.: UD16-0022

Evan Perlman
c/o City Park (Old Barber) Homes Inc.
Glen Schnarr & Associates Inc.
700 – 10 Kingsbridge Garden Circle
Mississauga, ON L5R 3K6

Dear Mr. Perlman:

Re: Traffic Impact and Parking Study
5155 Mississauga Road
City of Mississauga

Cole Engineering Group Ltd. (Cole Engineering) is pleased to submit this Traffic Impact and Parking Study for the above noted development. This report documents our findings and conclusions regarding the traffic impact and parking requirements in support of an application for Official Plan and Zoning By-law Amendment for the proposed residential development located at 5155 Mississauga Road, in the City of Mississauga (the "City").

The conceptual development plan for the site will consist of 30 residences including: one (1) freehold detached dwelling, eight (8) freehold townhouses, one (1) common element condo detached dwelling, 16 common element condo townhouse dwellings, and four (4) two-storey townhouse units within the Old Barber House. Access to the proposed development will be provided via a proposed full movement driveway to Mississauga Road. A total 48 parking spaces including 34 parking spaces for common element detached / townhouse dwelling units, six (6) spaces for common element condo/two-storey townhouse visitors, and eight (8) parking spaces for two-storey townhouse residents are provided.

This Traffic Impact and Parking Study concludes that the development will have minimal impact to the study intersections. Further, the proposed parking supply was found to be adequate to accommodate the parking demands of the proposed development.

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

Yours truly,

COLE ENGINEERING GROUP LTD.

Kim Nystrom
Principal
Urban Development (ICI)

Lauren Buss
Transportation Analyst Student
Urban Development (ICI)

LB:mi

PREPARED BY:

COLE ENGINEERING GROUP LTD.

Lauren Buss
Transportation Analyst Student
Urban Development (ICI)

CHECKED BY:

COLE ENGINEERING GROUP LTD.

Kim Nystrom
Principal
Urban Development (ICI)

Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
Draft Report	March 2016	For internal review
Draft Report	March 2016	For client review
Final Report	April 2016	For client submission
Final Report	May 2016	For client review
Final Report	June 2016	For client review

Statement of Conditions

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1 Introduction

Cole Engineering Group Ltd. (Cole Engineering) was retained by City Park (Old Barber) Homes Inc. (the "Owner") to undertake a Traffic Impact and Parking Study in support of an application for Official Plan and Zoning By-law Amendment for the proposed residential development located at 5155 Mississauga Road, in the City of Mississauga (the "City"), in the Region of Peel (the "Region").

The subject property is located in the northeast quadrant of the Mississauga Road and Barbertown Road intersection, with single family houses to the east, Mississauga Road to the west, vacant land to the north and Barbertown Road to the south. **Figure 1-1** illustrates the site location.

The proposed use will consist of 30 residences including (one (1) freehold detached dwelling unit, eight (8) freehold townhouse units, one (1) common element condo detached dwelling unit, 16 common element condo townhouse dwelling units, and four (4) two-storey townhouse units within the Old Barber House. Access to the development will be provided via a proposed full moves driveway to Mississauga Road. The proposed development will provide a total 48 parking spaces including 34 parking spaces for common element townhouses, six (6) parking spaces for residential visitors, and eight (8) spaces for two-storey townhouse residents. In addition, the freehold townhouses will provide a total 18 parking spaces (two (2) cars per unit, one (1) in garage and one (1) in driveway). **Figure 1-2** illustrates the proposed Site Plan.

The purpose of this study is to:

- Establish existing traffic conditions for the study area through the operational assessment of the study area intersections;
- Determine future traffic conditions for a post build out, 5-year traffic horizon;
- Identify study area capacity constraints (if any) in the future background conditions and recommend roadway improvements, if required, to provide better roadway operations;
- Forecast and estimate the traffic associated with the proposed development using the information published in the *Trip Generation Manual, 9th Edition*, by the Institute of Transportation Engineers (ITE).
- Undertake future total traffic analysis to determine the impact of the proposed development on the surrounding road network and recommend any improvements which may be required to accommodate the proposed development;
- Identify mitigation measures to address any deficiencies at each horizon year (existing, future background and future total traffic) for key study area intersections; and,
- Review the adequacy of the proposed parking supply with regards to the future demands of the site.

1.1 Study Approach

The study's methodology and analysis reflect the *City of Mississauga Traffic Impact Study Guidelines*.

Weekday morning and afternoon peak period traffic volume counts were undertaken by Accu-Traffic Inc. on February 10, 2016, on behalf of Cole Engineering for following intersection:

- Mississauga Road and Barbertown Road (Unsignalized).

Future background traffic volumes for the 2021 horizon year, excluding the additional traffic volumes generated by the proposed development, consist of the following components: traffic growth from outside the study area, and traffic from active developments in the vicinity of the subject development.

Site traffic was derived using information contained in the *Trip Generation, 9th Edition*, published by the Institute of Transportation Engineers (ITE), and distributed based on the existing traffic pattern.

Future total traffic conditions were determined by the summation of the estimated traffic volumes generated by the site and the background traffic volumes for the 2021 full build-out horizon.

1.1.1 Assessment of Unsignalized Intersection Operations

The unsignalized intersection operational analysis in this report was also conducted using *Synchro 9.0* software, which employs the Highway Capacity Manual (HCM 2000) methodology. All parameters for the unsignalized intersection analysis were based on the Synchro default values. Synchro results for the unsignalized intersections are provided in HCM format.

2 Existing Traffic Conditions

2.1 Existing Road Networks

The existing road network, lane configurations and existing traffic control for the study area is shown in **Figure 2-1**. The details are described as follows:

Mississauga Road: is a north-south major collector road consisting of two (2) through travel lanes with a continuous left turn lane in the center with dedicated a bike lane on both sides of the road. The road is under the jurisdictional control of the City. The roadway maintains a posted speed limit of 50 km/h in the vicinity of the subject site.

Barbertown Road: is an east-west local road consisting of two (2) through travel lanes, and is under jurisdictional control of the City. The roadway maintains an unposted speed limit of 50 km/h in the vicinity of the subject site. It is a dead end road with a sidewalk on the south side.

Rothesay Court: is an east-west and south-north local road consisting of two (2) through travel lanes, and is under jurisdictional control of the City. The roadway maintains an unposted speed limit of 50 km/h in the vicinity of the subject site. It is a dead end road with a cul-de-sac. A sidewalk is located on the south side of the road.

2.2 Existing Traffic Volumes

Existing traffic volumes were collected by Accu-Traffic Inc. on February 10, 2016 during the morning (7:00 a.m. to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) peak periods. Detailed existing traffic data is provided in **Appendix A**.

2.3 Existing Traffic Assessment

The study area intersections were analyzed under existing traffic conditions using *Synchro 9.0* software. Volume / Capacity (v/c) ratios for overall intersection operations, through movements, or shared through / turning movements greater than 0.85, and v/c ratios for exclusive movements greater than 0.95 have been shown in bold. The existing traffic volumes are illustrated in **Figure 2-2**. The results are summarized in **Table 2.1** below, and the detailed calculations are shown in **Appendix B**.

Table 2.1 Existing Traffic Analysis

Intersection	Key Movement	AM Peak Hour	PM Peak Hour
		LOS (v/c)	LOS (v/c)
Mississauga Road / Barbertown Road (Unsignalized)	EB left-through-right	B (0.05)	B (0.02)
	WB left-through-right	B (0.07)	C (0.08)
	NB Left	A (<0.01)	A (0.01)
	NB through-right	A (0.29)	A (0.41)
	SB left	A (0.01)	A (0.03)
	SB through-right	A (0.40)	A (0.33)

The existing analysis reveals that the unsignalized intersection of Mississauga Road / Barbertown Road is operating with good levels of service (LOS) and volume to capacity (v/c) ratios during the a.m. and p.m. peak hours.

3 Future Background Traffic Conditions

3.1 Background Traffic Growth

Based on the discussion with the City staff, a 1.0% growth rate per annum was applied to all traffic directions during the a.m. and p.m. peak hours, along Mississauga Road.

3.2 Background Developments

As discussed with the City staff, Cole Engineering was advised that there are three (3) active background development applications in the vicinity of the study area. The background developments included in the assessment are summarized in **Table 3.1** on the following page. The detailed calculations are shown in **Appendix C.**

Table 3.1 Background Developments Trip Generation

Land Use	Unit / GFA	Parameters	AM peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
5276 Mississauga Road Commercial/Retail Plaza (LUC 820)	111,900 ft^2	Gross Trips	104	63	167	199	216	415
		Gross Trip Rate (trips / unit)	0.92	0.57	1.49	1.78	1.93	3.71
		Bypass Trip (33%)	--	--	--	69	69	138
		New Trips	--	--	--	130	147	277
		New Trip Rate	--	--	--	1.16	1.32	2.48
5276 Mississauga Road Residential Development (LUC 210)	10 Units	Gross Trips	4	13	17	8	5	13
		Gross Trip Rate (trips / unit)	0.40	1.30	1.70	0.80	0.50	1.30
5175 Mississauga Road Residential Development (LUC 210)	15 Units	Gross Trips	5	15	20	12	7	19
		Gross Trip Rate (trips / unit)	0.33	1.00	1.33	0.80	0.47	1.27
Total			**113**	**91**	**204**	**150**	**159**	**309**

Based on the foregoing, the proposed background developments are expected to generate 204 two-way, and 309 two-way trips during the roadway a.m. and p.m. peak hours. The background development site traffic volumes are illustrated in **Figure 3-1**.

3.3 Future Background (2021) Assessment

The future background (2021) traffic (sum of the existing, general background growth and active background developments) was analyzed using *Synchro 9.0* software. The results are summarized in **Table** 3.2 below with v/c ratios for overall intersection operations, through movements, or shared through / turning movements greater than 0.85; and v/c ratios for exclusive movements greater than 0.95 have been shown in bold. The background developments included in the assessment are summarized in the below **Table 3.2** below. The detailed calculations are shown in **Appendix D**. The future background traffic volumes are illustrated in **Figure 3-2**.

Table 3.2 Future Background (2021) Traffic Analysis

Intersection	Key Movement	AM Peak Hour	PM Peak Hour
		LOS (v/c)	LOS (v/c)
Mississauga Road / Barbertown Road (Unsignalized)	EB left-through-right	C (0.06)	C (0.03)
	WB left-through-right	C (0.09)	C (0.11)
	NB Left	A (<0.01)	A (0.01)
	NB through-right	A (0.36)	A (0.53)
	SB left	A (0.02)	B (0.04)
	SB through-right	A (0.50)	A (0.43)

The future background analysis reveals that the unsignalized intersection of Mississauga Road / Barbertown Road is operating with good LOS and volume to capacity (v/c) ratios during the a.m. and p.m. peak hours.

4 Site Traffic

The proposed site will consist of 30 residences including (one (1) block freehold, two (2) blocks common element, two (2) single detached dwellings), one (1) block multiple dwelling units (holds four (4) two-storey residential dwelling units) on the subject property, for a total of 30 dwelling units. The existing historic Barber House will remain in place and is proposed for two-storey townhouses.

4.1 Site Generated Traffic

Trip generation forecasts are based on information contained in the *Trip Generation Manual, 9th Edition* published by the Institute of Transportation Engineers (ITE). The ITE Land Use Code (LUC) 230 (Residential Condominium / Townhouse) was selected to estimate residential townhouse trips for the weekday a.m., and p.m. peak hours. The equation was used instead of the average rate calculation since the equations generate higher traffic volume, which is considered more conservative. The results are summarized in **Table 4.1** below.

Table 4.1 Trip Generation for Proposed Development

Land Use	Unit / GFA	Parameters	AM peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Residential Condominium Freehold Townhouse (LUC 230)	9 Units	Gross Trips	1	7	8	5	3	8
		Gross Trip Rate (trips / unit)	0.11	0.78	0.89	0.56	0.33	0.89
Residential Condominium Common Element Townhouse (LUC 230)	21 Units	Gross Trips	3	12	15	11	6	17
		Gross Trip Rate (trips / unit)	0.14	0.57	0.71	0.52	0.29	0.81
Total			**4**	**19**	**23**	**16**	**9**	**25**

The proposed development is expected to generate 23 two-way (four (4) inbound and 19 outbound) trips during the a.m. peak hour and 25 two-way (16 inbound and nine (9) outbound) trips during the p.m. peak hour. The site traffic volumes associated with the proposed development are illustrated in **Figure 4-1** and detailed calculations are provided in **Appendix E**.

4.2 Trip Distribution

Trip distribution is based on the existing traffic patterns and the available road network. The resulting distribution is summarized in **Table 4.2** below. The site traffic was assigned to the road network as per the trip distribution noted below.

Table 4.2 Trip Distribution Based on Existing Traffic Pattern

Direction (to / from)	Street	AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
North	Mississauga Road	58%	41%	45%	55%
South	Mississauga Road	42%	59%	55%	45%
Total		**100%**			

4.3 Trip Assignment

The proposed site development traffic volumes noted in **Section 4.1** were assigned to the study area intersections based on the trip distribution presented in **Table 4.2**. The site traffic was assigned to the proposed site access on Mississauga Road.

5 Future Total Traffic Conditions

5.1 Future Total (2021) Assessment

The future (2021) total traffic (sum of the future (2021) background traffic and site traffic) was analyzed using *Synchro 9.0* software. The results are summarized in **Table 5.1** below with v/c ratios for overall intersection operations, through movements, or shared through / turning movements greater than 0.85; and v/c ratios for exclusive movements greater than 0.95 have been shown in bold. The future total traffic volumes are illustrated in **Figure 5-1**, respectively, and detailed calculations are provided in **Appendix F**.

Table 5.1 Future Total (2021) Traffic Analysis

Intersection	Key Movement	AM Peak Hour	PM Peak Hour
		LOS (v/c)	LOS (v/c)
Mississauga Road / Barbertown Road (Unsignalized)	EB left-through-right	C (0.06)	C (0.03)
	WB left-through-right	C (0.12)	C (0.13)
	NB Left	A (<0.01)	A (0.01)
	NB through-right	A (0.36)	A (0.54)
	SB left	A (0.02)	B (0.04)
	SB through-right	A (0.50)	A (0.44)
Mississauga Road / Proposed Site Access (Unsignalized)	WB left-right	B (0.03)	C (0.02)
	NB through-right	A (0.36)	A (0.53)
	SB left	A (<0.01)	A (0.01)
	SB through	A (0.51)	A (0.45)

The future total analysis reveals that the unsignalized intersection of Mississauga Road / Barbertown Road will operate with good LOS and v/c ratio during the a.m. and p.m. peak hours. In addition, the proposed Site Access / Mississauga Road intersection will operate with good LOS and v/c ratio during the road peak hours.

6 Parking Supply Evaluation

The Site Plan proposes a total of 48 parking spaces including 34 spaces for common elements townhouses (two (2) cars per unit: one (1) in garage and one (1) in driveway), four (4) parking spaces for common element condo visitors, eight parking spaces(8) for two-storey townhouse residents, and two parking spaces (2) for two-storey townhouse visitors. To determine the adequacy of the proposed parking supply to service the proposed residential development, the existing in force City of Mississauga Zoning By-law No. 0225-2007 Part 3 was reviewed and examined.

6.1 City of Mississauga Zoning By-law No.: 0225-2007

The City of Mississauga Zoning By-law No. 0225-2007 Part 3 has been reviewed. The parking rates are as follows and the detailed calculations are summarized in **Table 6.1** and **Table 6.2** below.

Table 6.1 Parking Requirements for Freehold Townhouses

Land Use	Unit/GFA	Parking Rate	Required Parking Space	Proposed Parking Space	Difference
Freehold Townhouse	9 Units	2 spaces / unit	18	18	--

Based on the current City of Mississauga Zoning By-law, the proposed development is required to provide 18 parking spaces for freehold townhouses, and is being met by the proposed development.

Table 6.2 Parking Requirements for Rest of the Development

Land Use	Unit/GFA	Parking Rate	Required Parking Space	Proposed Parking Space	Difference
Common Elements Townhouse	17 Units	2 spaces / unit	34	34	-
Two-storey Townhouses	4 Units	2 spaces / unit	8	8	-
Residential Visitors	21 Units	0.25 spaces / unit	5	6	+1
Total			**47**	**48**	**+1**

Based on the current City of Mississauga Zoning By-law, the proposed development is required to provide 47 parking spaces (34 parking spaces for common element townhouses, five (5) parking spaces for residential visitors and eight (8) spaces for two-storey townhouse residents). The proposed parking supply of 48 spaces will represent a technical surplus of one (1) space.

6.1.1 Public Transit

The site is located within an area serviced by the Mississauga Transit (Miway) bus services with at least 12 bus stops within a 500 m walking radius. **Figure 6-1** illustrates 500 m walking distance bus stops. The transit routes include:

- **Route 9 – Rathburn-Millers Grove**: operates along Rathburn Road to Creditview Road, continues to Eglinton Avenue and turns to Mississauga Road. The Route 9 ends at Meadowvale Town Centre Bus Terminal. In the vicinity of the site, this route operates with an average of 30 minutes during the weekday a.m. and p.m. peak hour, respectively. **Figure 6-2** illustrates Route 9 road network;
- **Route 44 – Mississauga Road:** operates along Mississauga Road. In the vicinity of the site, this route operates with an average of 18 to 19 minutes during the weekday a.m. and p.m. peak hour, respectively. **Figure 6-3** illustrates Route 44 road network;

- **Route 35 / Route 35A – Eglinton Road:** operates along Eglinton Avenue. Service starts at Islington Subway Station and it ends at Ninth Line. In the vicinity of the site, this route operates with an average of seven (7) minutes during the weekday a.m. and p.m. peak hour, respectively. **Figure 6-4** illustrates Route 35 road network;
- **Route 34 – Credit Valley**: operates along Eglinton Avenue. Service starts at Square One Bus Terminal and it ends at Erin Mills Town Centre Bus Terminal. In the vicinity of the site, this route operates with an average of 23 minutes during the weekday a.m. and p.m. peak hour, respectively. **Figure 6-5** illustrates Route 34 road network; and,
- The Streetville GO Train Station is approximately a 13 minute walk from the subject development property in travelling north along Queen Street to Old Station Road.

The above bus services provide a reliable, cost effective alternative mode of traveling through the comprehensive and continually growing transit network system. This further validates the accessibility of the subject site for non-automotive users.

7 Assessment of Inbound and Outbound Movements

The inbound and outbound movements were reviewed based on the latest Site Plan. The internal vehicular circulation for loading and servicing has been reviewed. The AutoTURN analysis for 12 m garbage trucks entering and exiting the site is illustrated in **Figure 7-1** and **Figure 7-2**.

From the analysis, there is adequate manoeuvring area on-site to enable garbage and other similar service trucks to exit the site in a forward manner without adversely affecting the adjacent public roadways.

8 Transportation Demand Management Plan

Transportation Demand Management (TDM) refers to a 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. In short, TDM works to change how, when, where, and why people travel.

The TDM measures have been prepared to address the following required transportation demand management objectives:

- Provision of facilities / operations to minimize single occupant vehicle (SOV) access to the study area and encourage the use of alternate transportation modes, particularly transit; and,
- Identify the operational and financial roles and responsibilities of the landowner including program development, implementation and ongoing management and operations of the travel demand management plan / program.

Travel Demand Management (TDM) education and promotion related strategies support mobility by making the public aware of the options available and actively encourages the use of alternative transportation. These marketing initiatives may take the form of general marketing to targeted outreach. TDM marketing and promotion approaches include:

- Area marketing campaigns – Promoting transit services, carpooling or other TDM;
- Education Programs – Campaigns to inform the public about the specifics of services; and,
- Employer Based Outreach – Partnerships with employers to support TDM.

8.1 TDM Programs

8.1.1 Area Marketing Campaigns

Area marketing campaigns are premised on the objective of behavioural change. The methods of persuasion include conveying messages of:

1) Personal benefit;
2) Social benefit, and,
3) Adhering to the "social norm".

It is recognized that individuals are more likely to change their current behaviour or continue that behaviour if it is the social norm amongst their peers.

One of the first area marketing TDM campaigns within the GTA was established by Metropolitan Toronto in 1994. The Diamond Lane Campaign was implemented in co-ordination with the expansion of the High Occupancy Lane network. The campaign included billboard, transit vehicle, radio, and newspaper ads. Transportation Management Association (TMA)'s can help facilitate TDM directives by developing promotional materials, advocate for funding, conduct transportation fairs, and many other things.

8.1.2 Education Programs and Information Services

The effectiveness of transportation systems to provide mobility to the public is only as good as the awareness of the public to the services provided. Education programs and information services (such as call-lines and internet based route planners) can supplement marketing campaigns, increasing the commuter's understanding of their mobility options.

Miway provides http://www.mississauga.ca/portal/miway a map based navigator. Progressive trip planners including web based trip data, can add to the commuter's understanding of travel options by providing real time information.

A Denver, Colorado TMA (Transportation Solutions) managed a program designed to improve ridership. Before-and-after surveys were to gauge the impact of the efforts. The results clearly demonstrated the direct impact of the project on improved perceptions of bus transportation in the area. The results showed an increase in awareness:

- 17% increase in those who "know which bus routes to take to work / school"; and,
- 19% increase in those who feel they have "the information I need to ride the bus".

8.1.3 Walking / Cycling

City of Mississauga has a long-standing commitment to an off-road trail system, having built over 250 km of pathways and trails in parks and greenspaces across the City. Pathways in the neighbourhood parks provide cycling and walking friendly connections to schools, community centres and libraries. In addition, cycling safety programs were offered such as CAN-BIKE courses and community safety workshops. The Road Safety Handbook was published and includes a chapter on cycling safety.

8.1.4 Carpooling

The Smart Commute program has been established in the form of 10 transportation management associations (TMAs) across the GTHA. The Smart Commute TMAs are supported by Metrolinx to coordinate and implement TDM initiatives.

Smart Commute – Mississauga is a TMA committed to reducing traffic congestion, improving air quality and advocating for sustainable transportation within the study area. Since inception in 2001, Smart Commute has collectively reduced approximately 1.2 million single-occupant vehicle (SOV) trips, which avoided more than 61 million vehicle kilometres traveled (VKT) and prevented the emission of over 14,000 tonnes of greenhouse gases (GHG) and 88 tonnes of smog-causing air pollutants. Smart Commute works to:

- Implement employee trip reduction programs at local workplaces;
- Decrease traffic congestion, and improve air quality and health by reducing vehicle emissions;
- Improve employee productivity and morale, and reduce employee turnover;
- Advocate for improved transit service, and increased local transportation infrastructure;
- Bus-only and cycling lanes, and a wider network of subway and light rapid transit;
- Promote the benefits of transit-supportive development and smart-growth strategies;
- Encourage legislative flexibility in support of high-value, cost effective transportation strategies such as vanpools, telework, transit subsidies and shuttle services; and,
- Increase opportunities for TMA collaboration with business and government.

Smart Commute offers one-on-one support for staff to use sustainable modes of transportation and provides promotions and incentives on an on-going basis. A web based car matching tool is provided to allow carpoolers to easily identify ride matching options among a large membership base and form carpooling arrangements.

9 Conclusions

Based on our analysis, our findings and recommendations are as follows:

- The study area intersection operates at good LOS in the existing traffic conditions during a.m. and p.m. peak hours;
- The study area intersection is operating at good LOS in the future (2021) background traffic conditions during a.m. and p.m. peak hours;
- The proposed development is expected to generate 23 two-way (four (4) inbound and 19 outbound) trips during the a.m. peak hour and 25 two-way (16 inbound and nine (9) outbound) trips during the p.m. peak hour;

- Similar to the future 2021 background traffic analysis, the study area intersections will operate at good LOS in the future (2021) total traffic conditions during a.m. and p.m. peak hours;
- Based on the current City of Mississauga Zoning By-law, the proposed development is required to provide 18 parking spaces for freehold townhouses. In addition, the proposed development is required to provide 47 parking spaces (34 parking spaces for common element townhouses, five (5) parking spaces for residential visitors and eight (8) spaces for two-storey townhouses). The proposed parking supply of 48 spaces represents a technical surplus of one (1) space successfully accommodating parking requirements during peak operation;
- The results of the AutoTURN assessment indicate that there is sufficient manoeuvring space within the site for trucks to enter / egress the site with ease; and,
- The proposed development will have minimal impact on the surrounding road network.

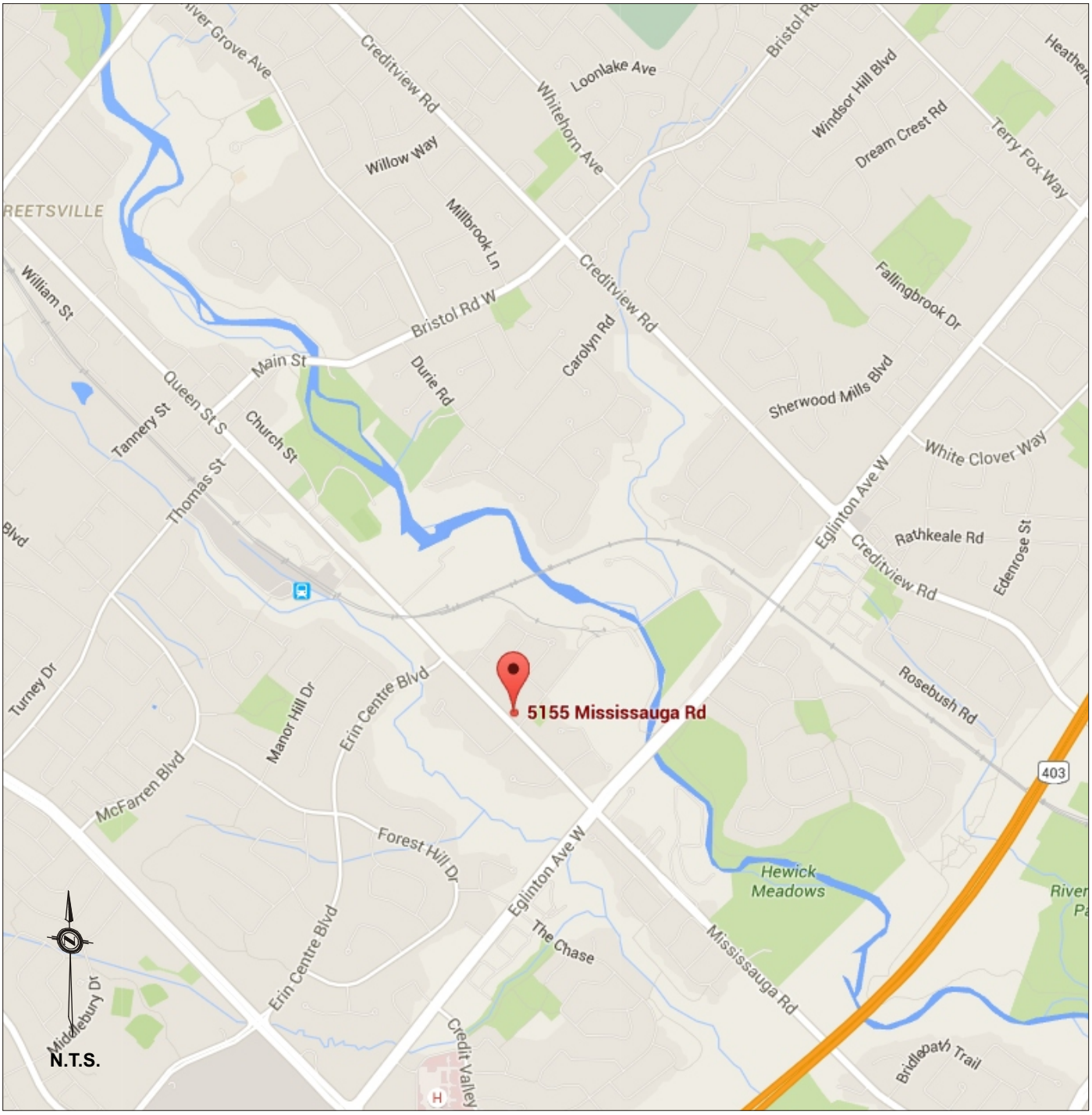
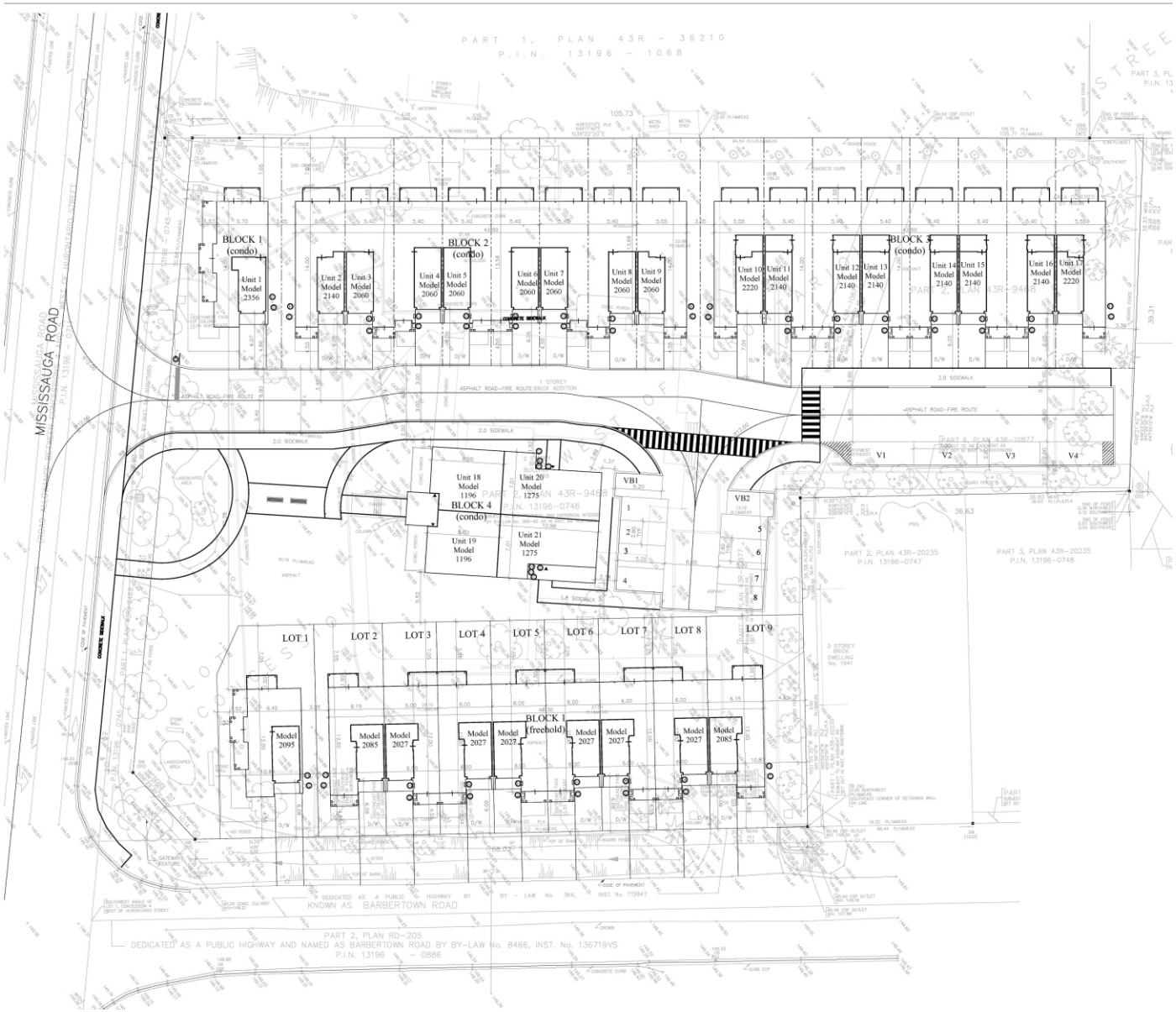


Figure 1-1
Site Location



N.T.S.

Figure 1-2
Proposed Site Plan

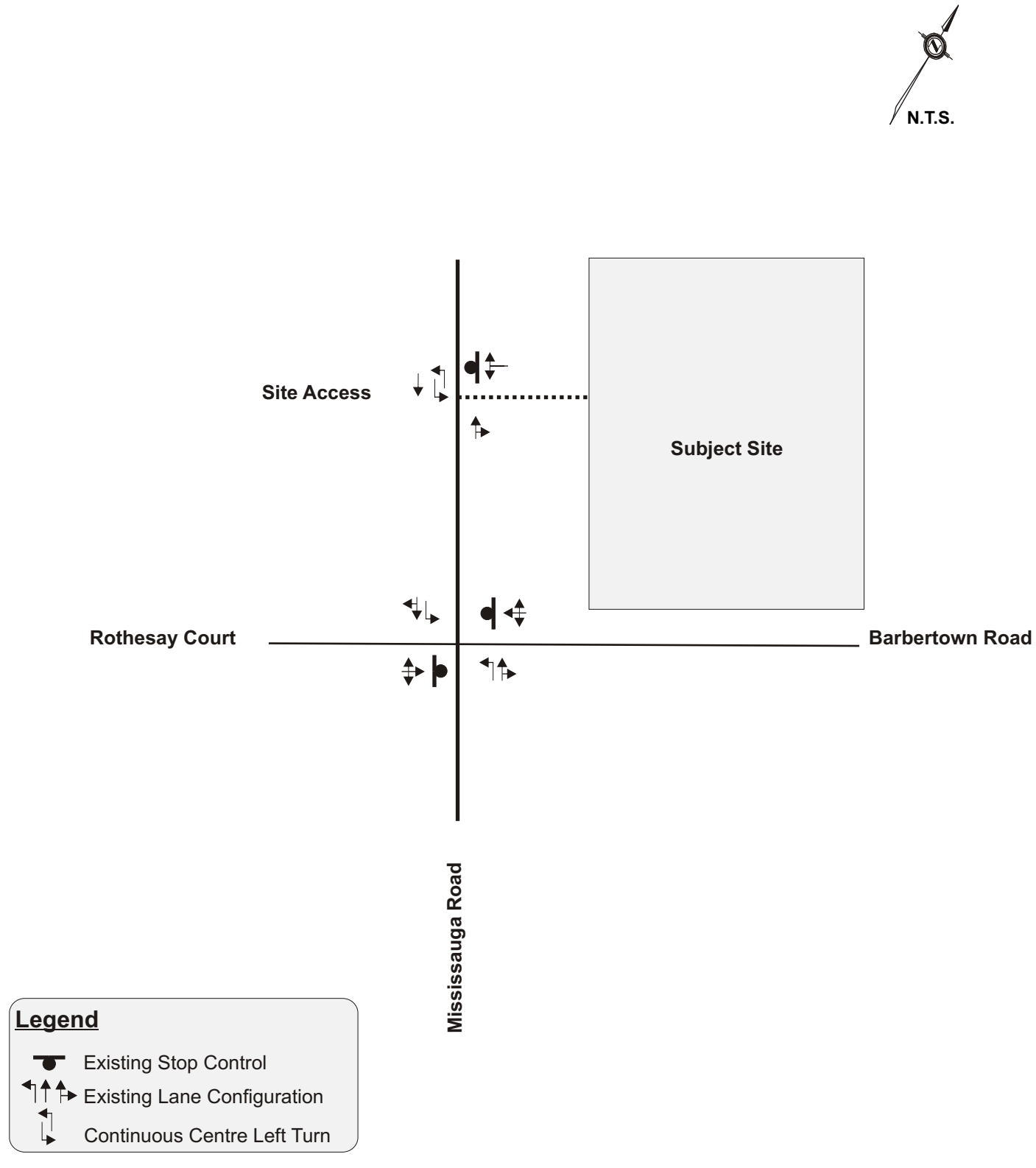
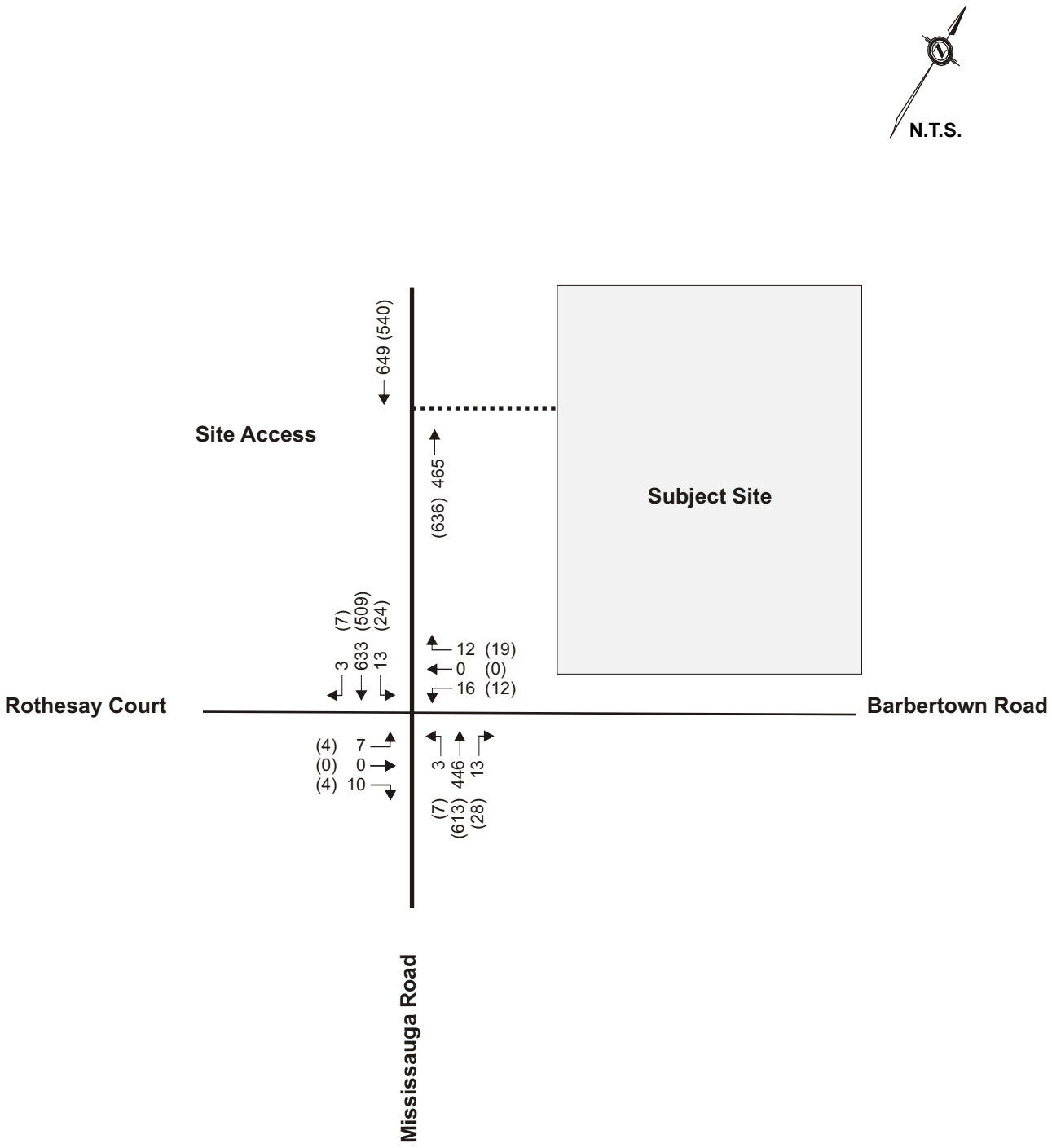


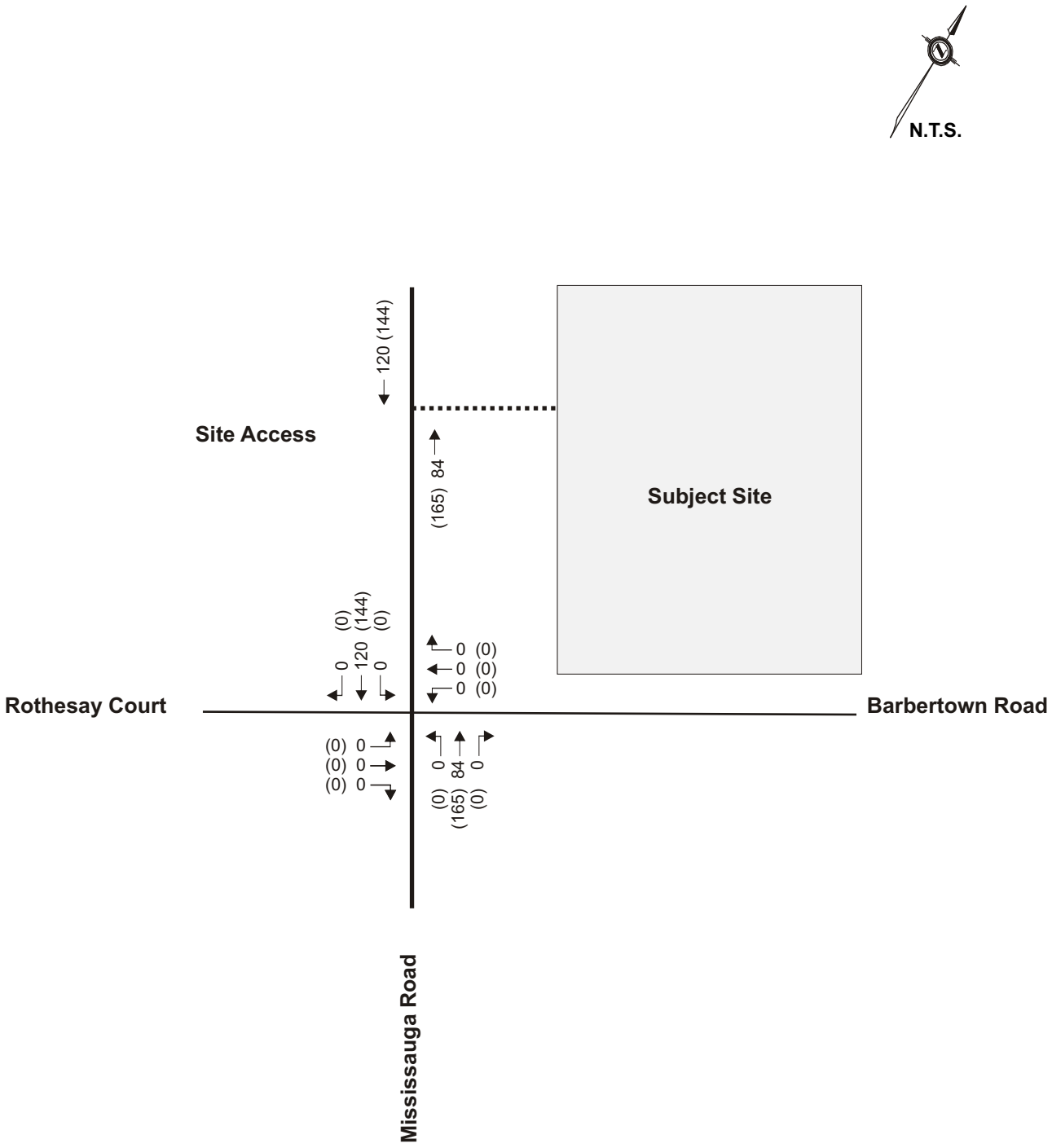
Figure 2-1
Existing Lane Configurations



Legend

99 AM Peak Hour Volume
(99) PM Peak Hour Volume

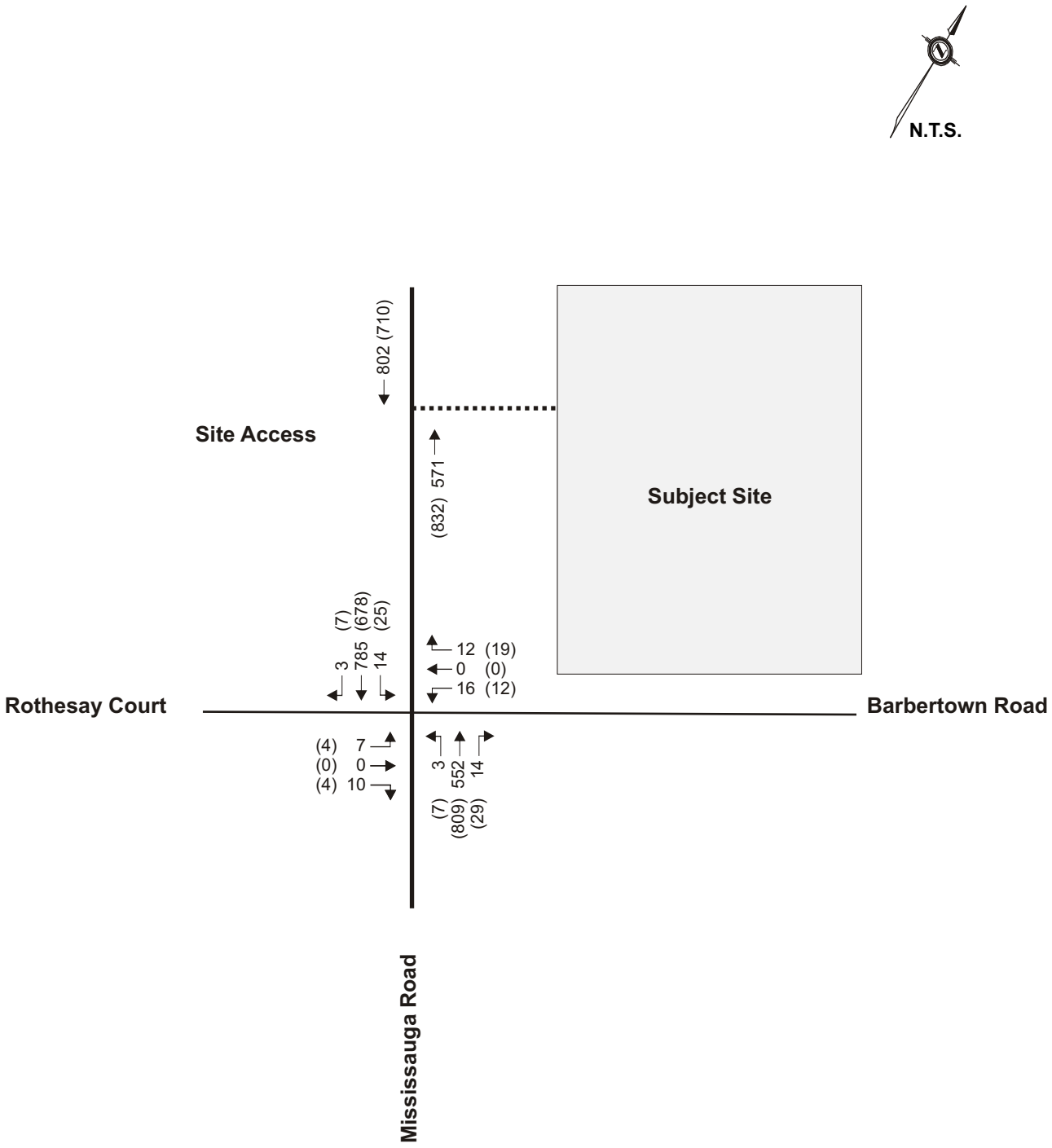
Figure 2-2
Existing Traffic Volumes



Legend

99 AM Peak Hour Volume
(99) PM Peak Hour Volume

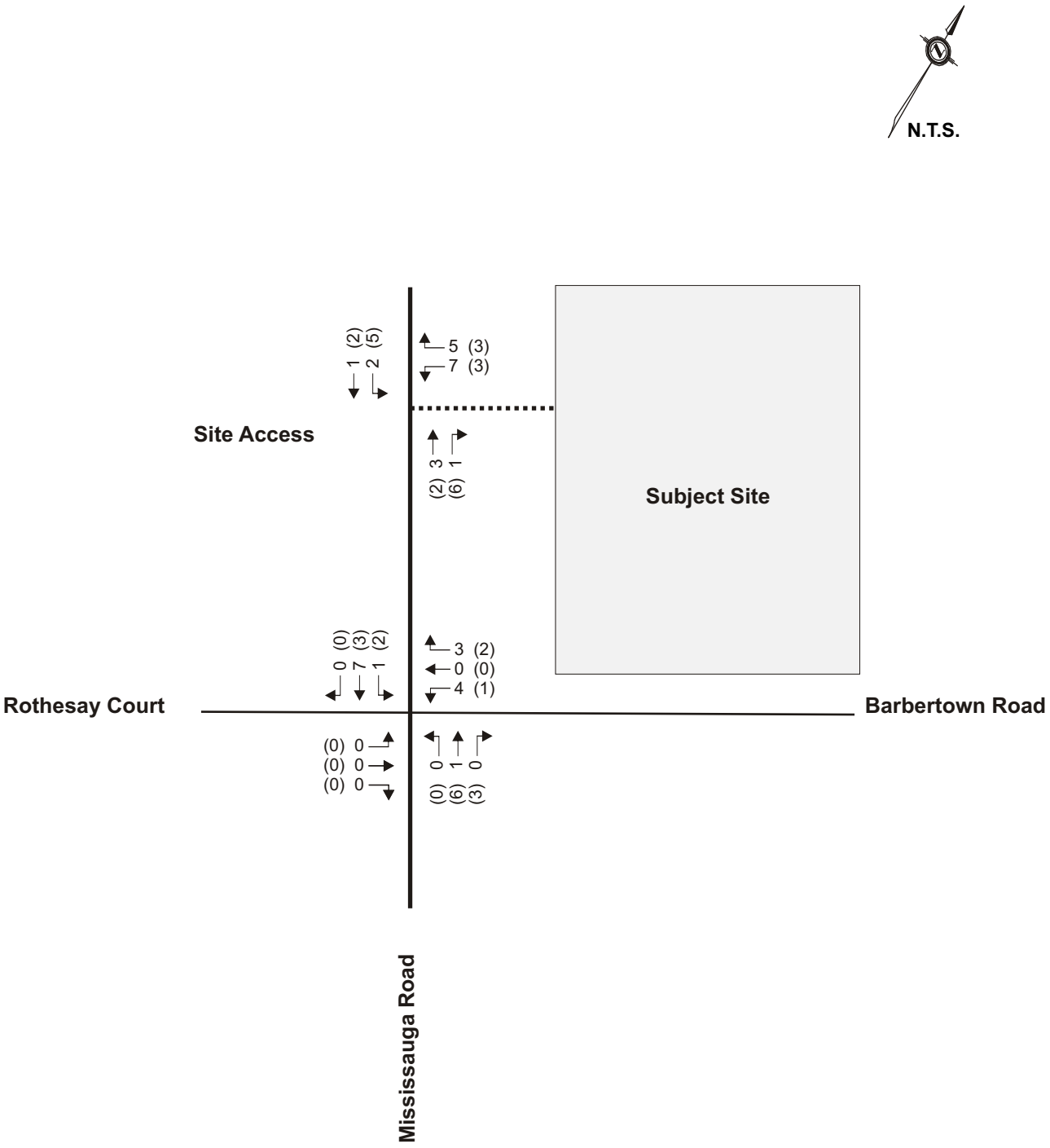
Figure 3-1
Background Development Site Traffic Volumes



Legend

99 AM Peak Hour Volume
(99) PM Peak Hour Volume

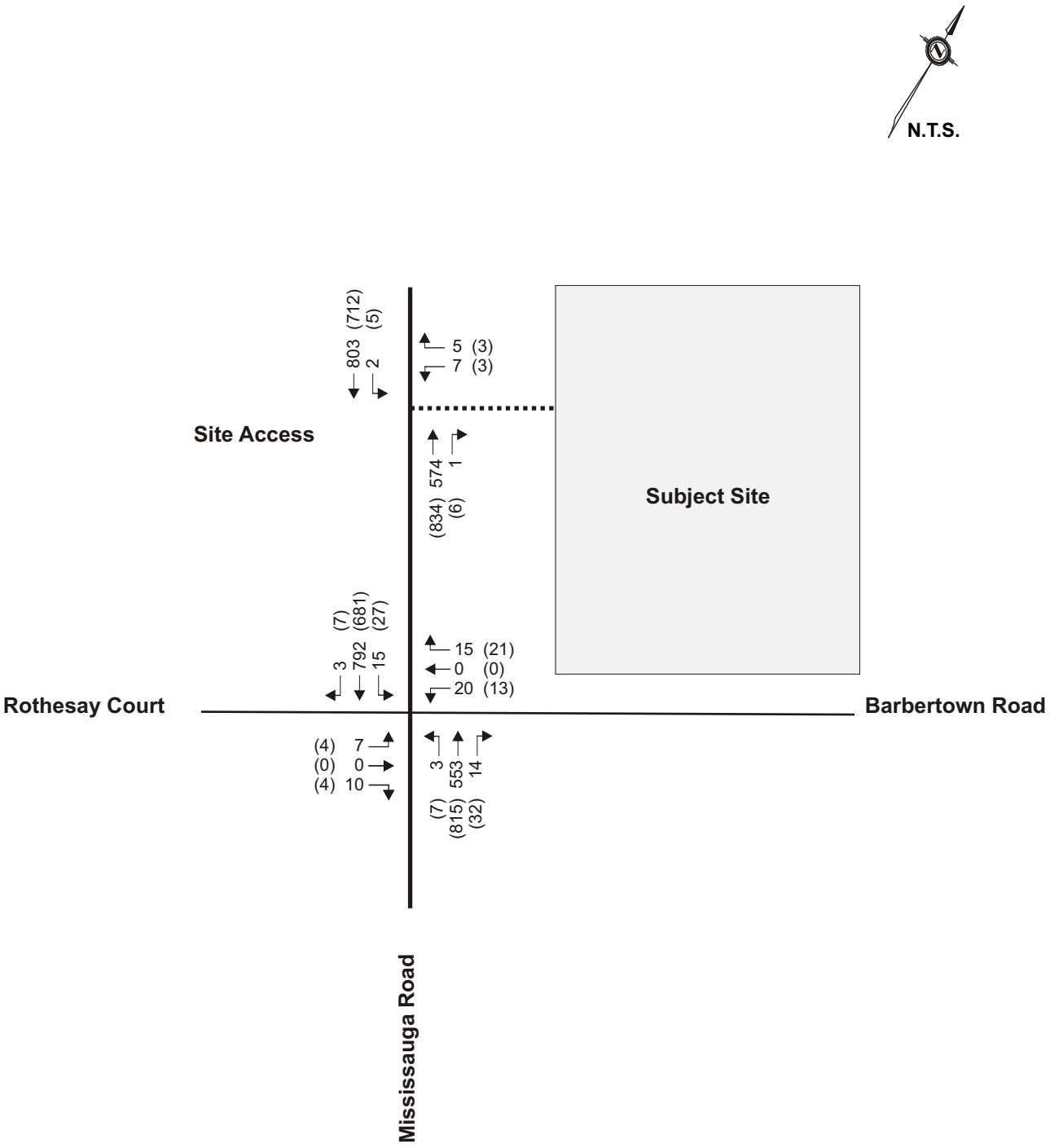
Figure 3-2
Future Background Traffic Volumes



Legend

99 AM Peak Hour Volume
(99) PM Peak Hour Volume

Figure 4-1
Site Traffic Volumes



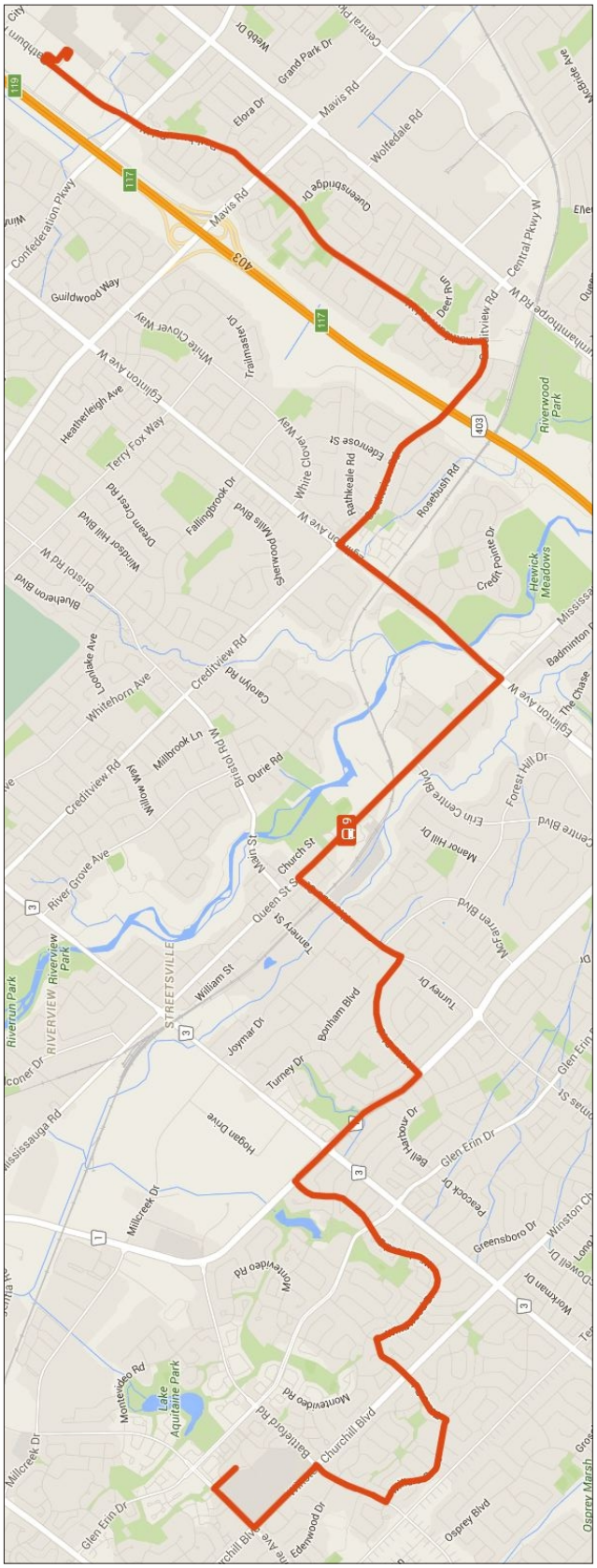
Legend

99 AM Peak Hour Volume
(99) PM Peak Hour Volume

Figure 5-1
Future Total Traffic Volumes

N.T.S.

Figure 6-1
Miway Bus Stops in 500 m Walking Distance



N.T.S.

Figure 6-2
Miway - Route 9 - Ratburn / Miller Drive

N.T.S.

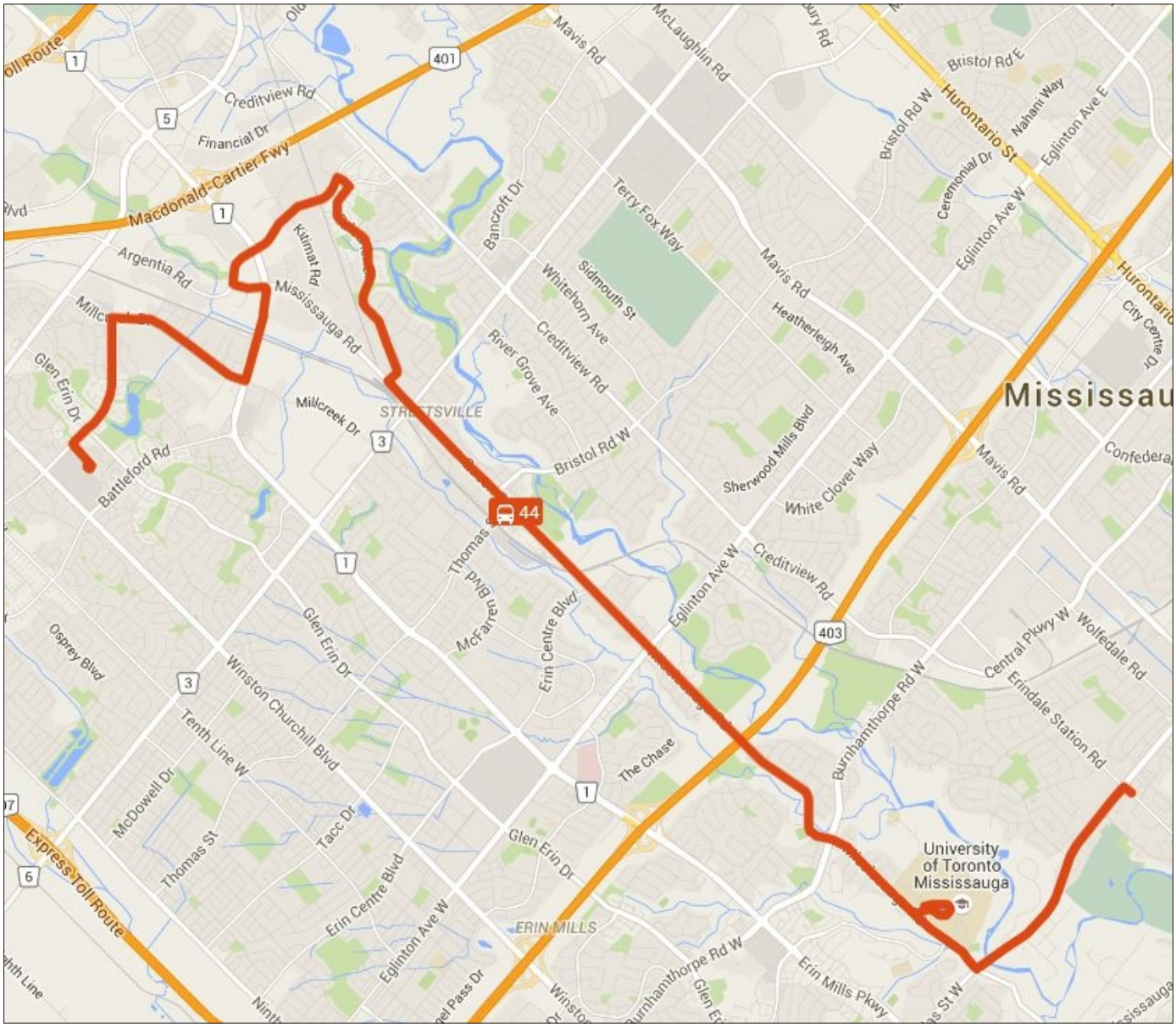


Figure 6-3
Miway - Route 44 - Mississauga Road

N.T.S.

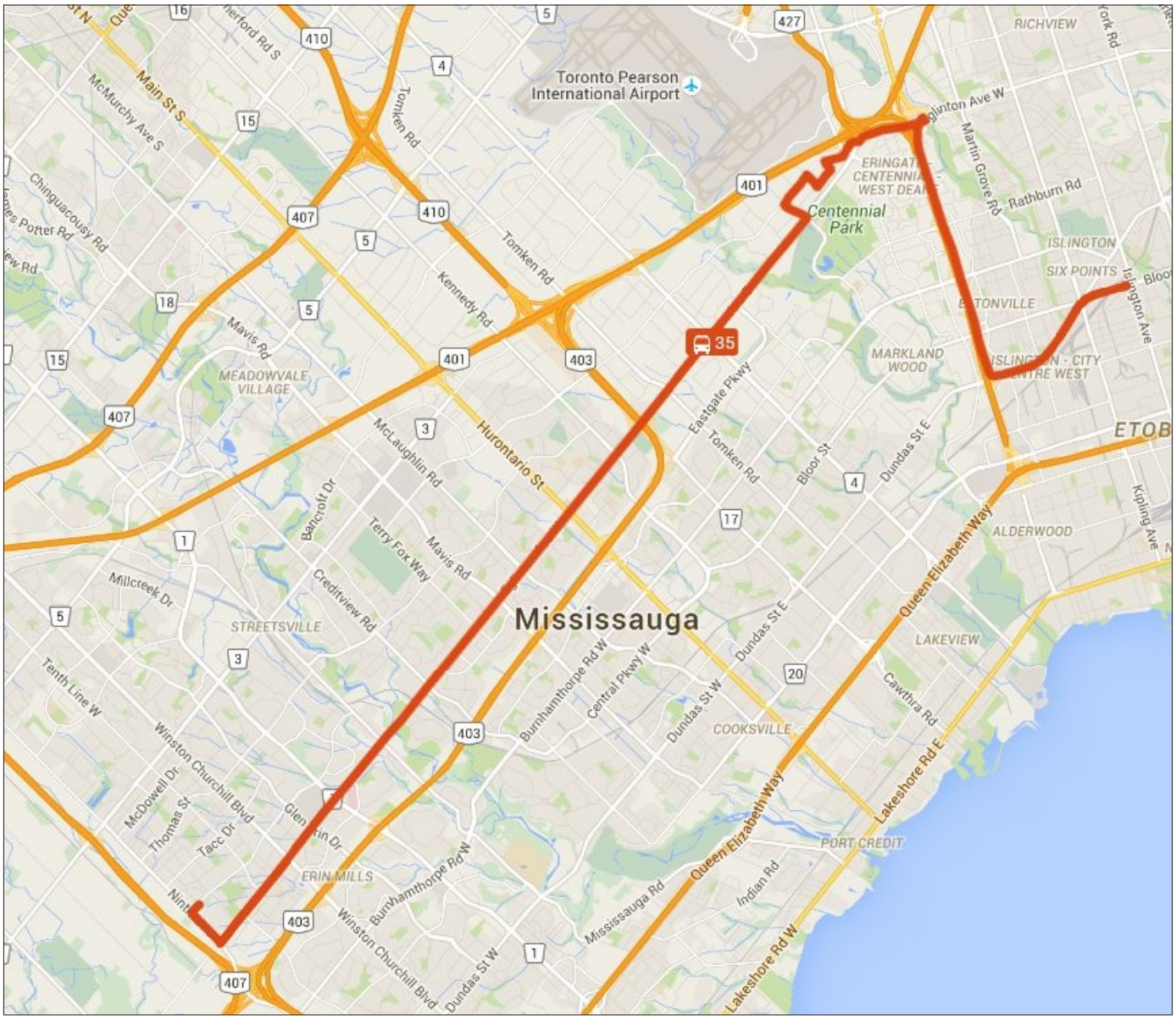


Figure 6-4
Miway - Route 35/35A - Eglinton Avenue

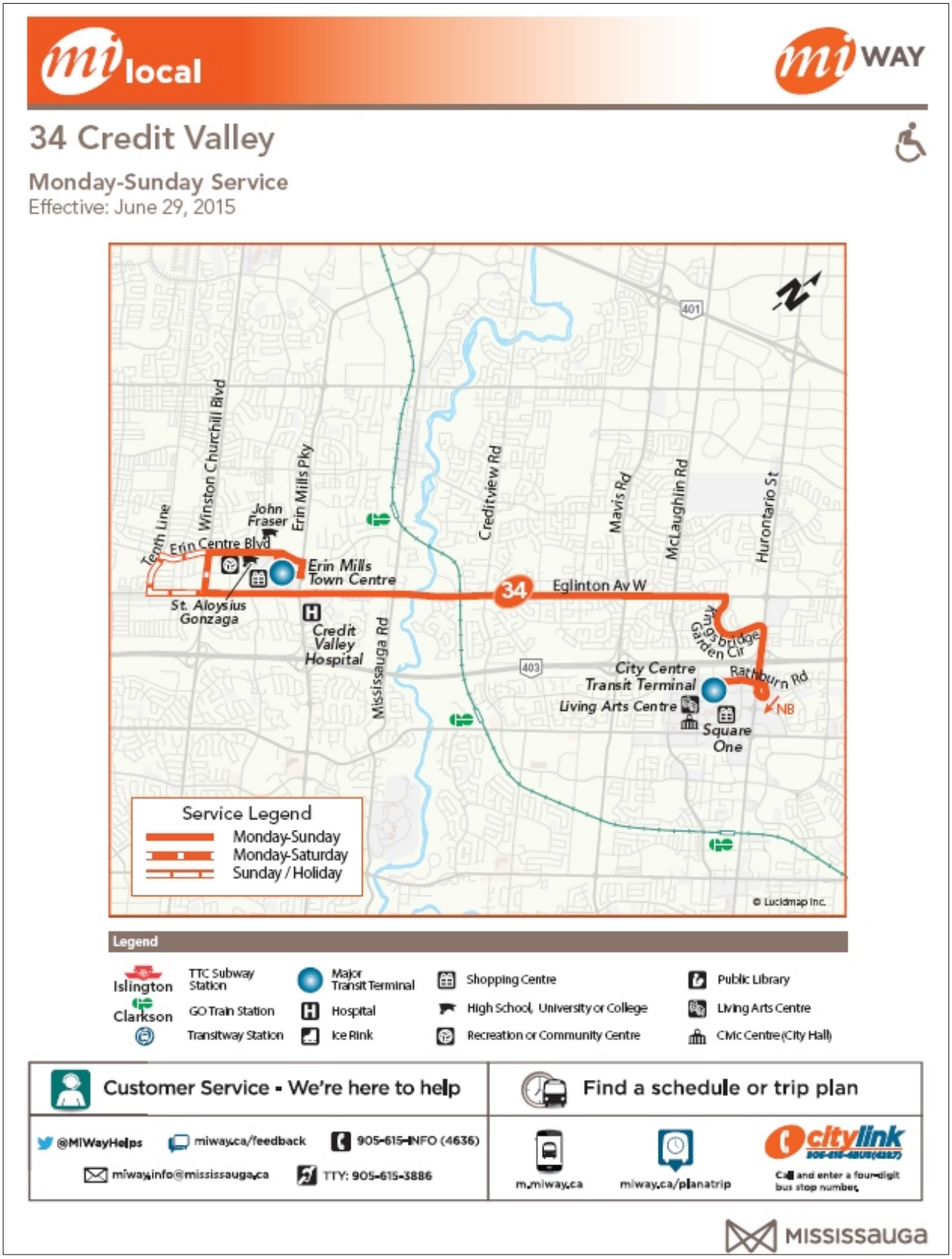
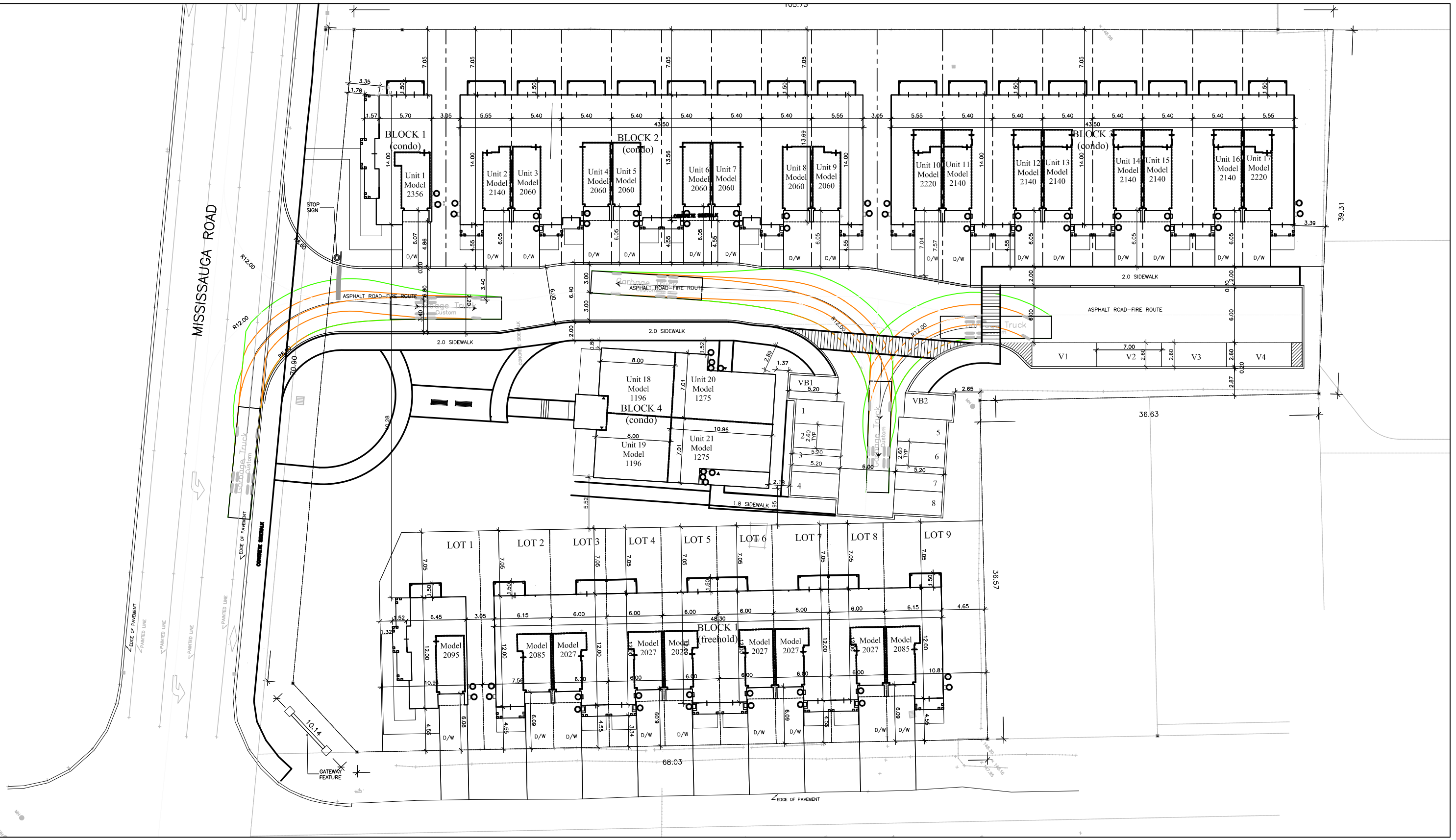
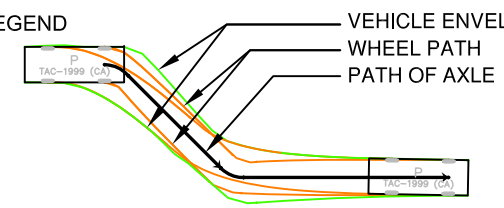


Figure 6-5
Miway - Route 34 - Credit Valley



COLE ENGINEERING
70 VALLEYWOOD DRIVE, MARKHAM, ON L3R 4T5
T:416.987.6161 / 905.940.6161 F:905.940.2064

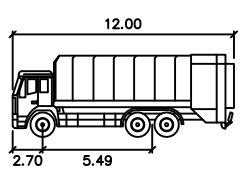
LEGEND



DESIGN VEHICLE

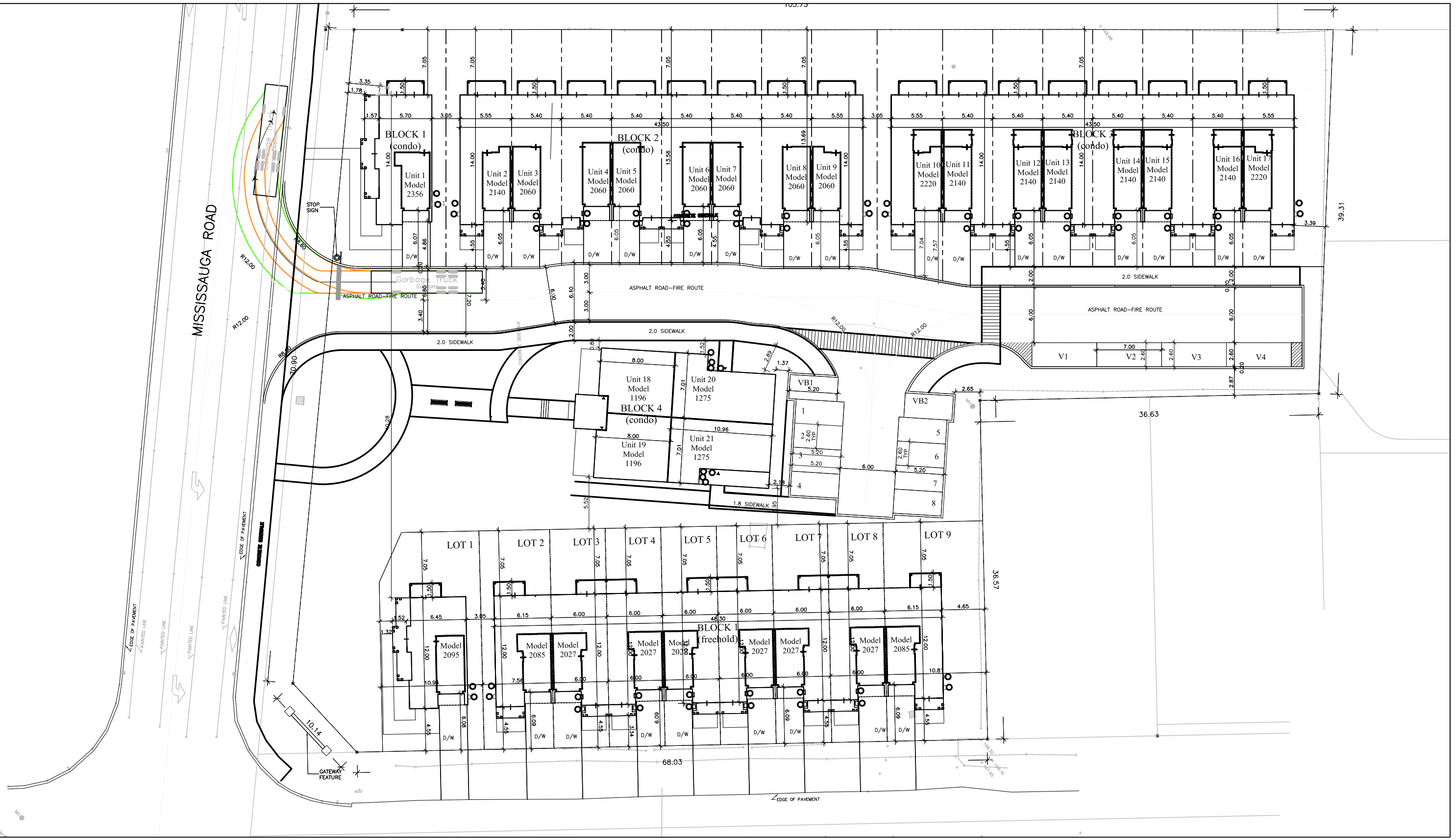
Garbage Truck

	meters
Width	: 2.40
Track	: 2.40
Lock to Lock Time	: 6.0
Steering Angle	: 28.3



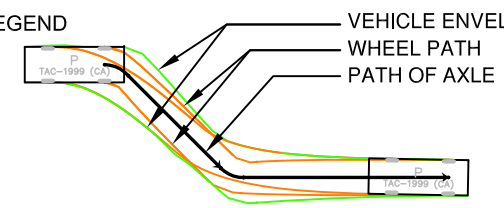
GARBAGE TRUCK (12.0 m) - INBOUND
PROPOSED RESIDENTIAL DEVELOPMENT
5155 MISSISSAUGA ROAD
CITY OF MISSISSAUGA

DATE:	JUNE 2016	PROJECT No.:	UD16-0022
SCALE:	1:400	FIGURE No.:	7-1



COLE ENGINEERING
70 VALLEYWOOD DRIVE, MARKHAM, ON L3R 4T5
T:416.987.6161 / 905.940.6161 F:905.940.2064

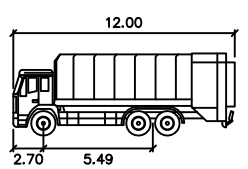
LEGEND



DESIGN VEHICLE

Garbage Truck

	meters
Width	: 2.40
Track	: 2.40
Lock to Lock Time	: 6.0
Steering Angle	: 28.3



GARBAGE TRUCK (12.0 m) - OUTBOUND
PROPOSED RESIDENTIAL DEVELOPMENT
5155 MISSISSAUGA ROAD
CITY OF MISSISSAUGA

DATE:	JUNE 2016	PROJECT No.:	UD16-0022
SCALE:	1:400	FIGURE No.:	7-2

APPENDIX A
Existing Traffic Data

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

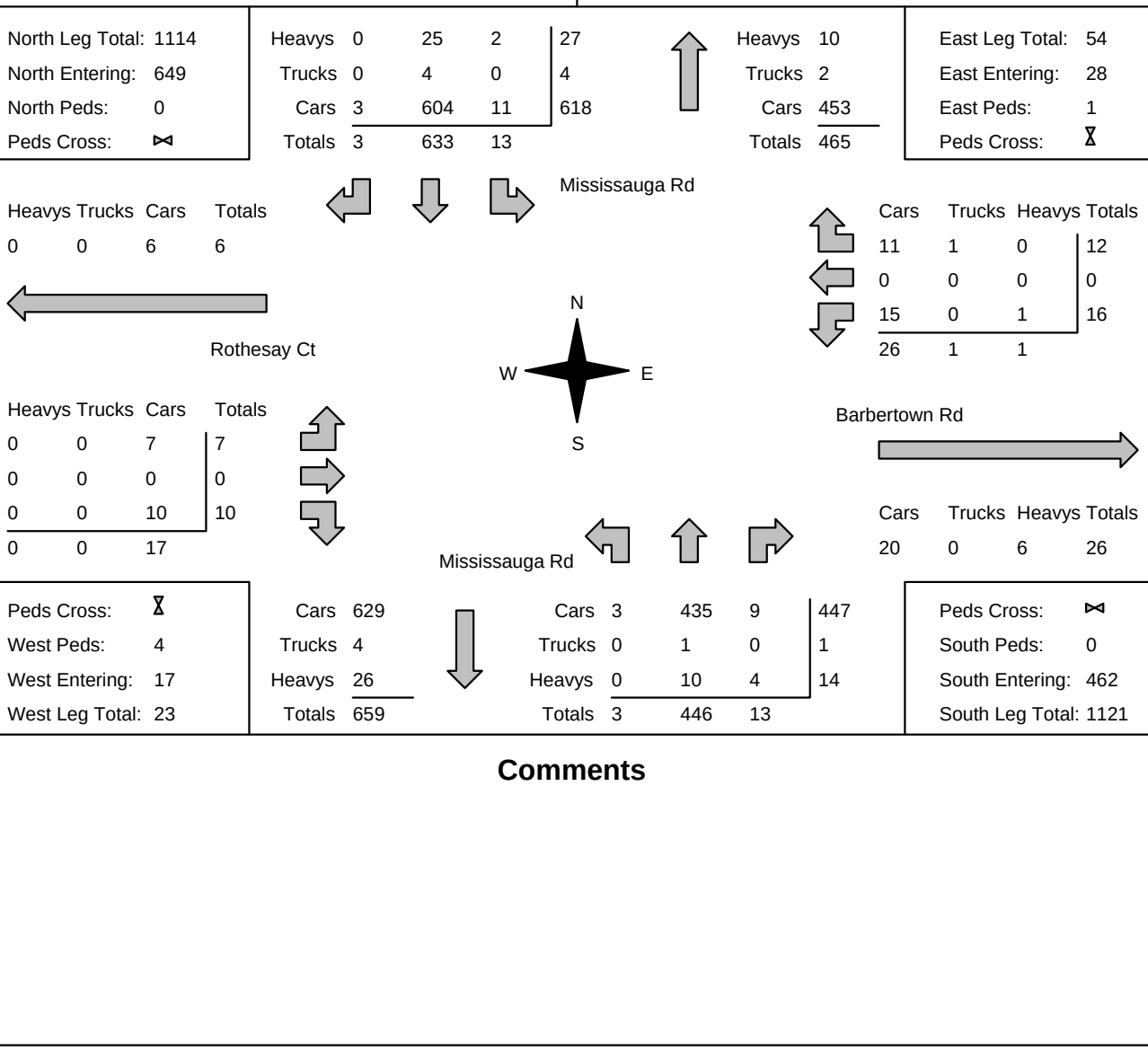
Municipality: Mississauga
Site #: 1602600001
Intersection: Mississauga Rd & Barbertown Rd
TFR File #: 1
Count date: 10-Feb-16

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Mississauga Rd runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 17:00:00
To: 18:00:00

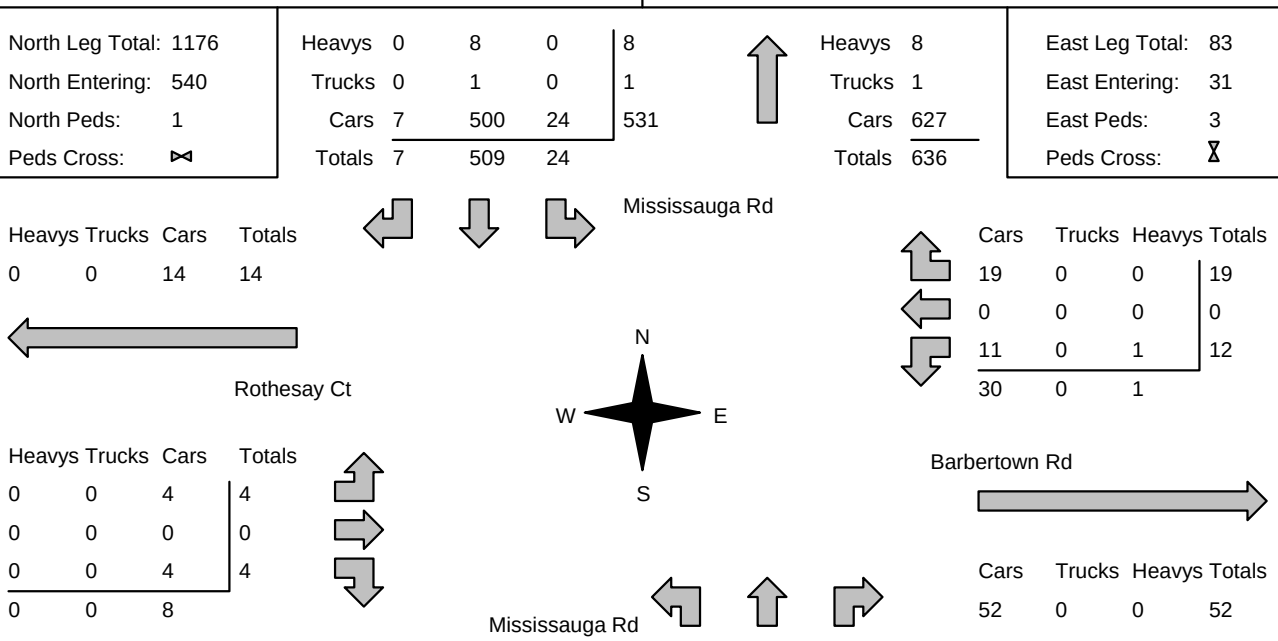
Municipality: Mississauga
Site #: 1602600001
Intersection: Mississauga Rd & Barbertown Rd
TFR File #: 1
Count date: 10-Feb-16

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Mississauga Rd runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Total Count Diagram

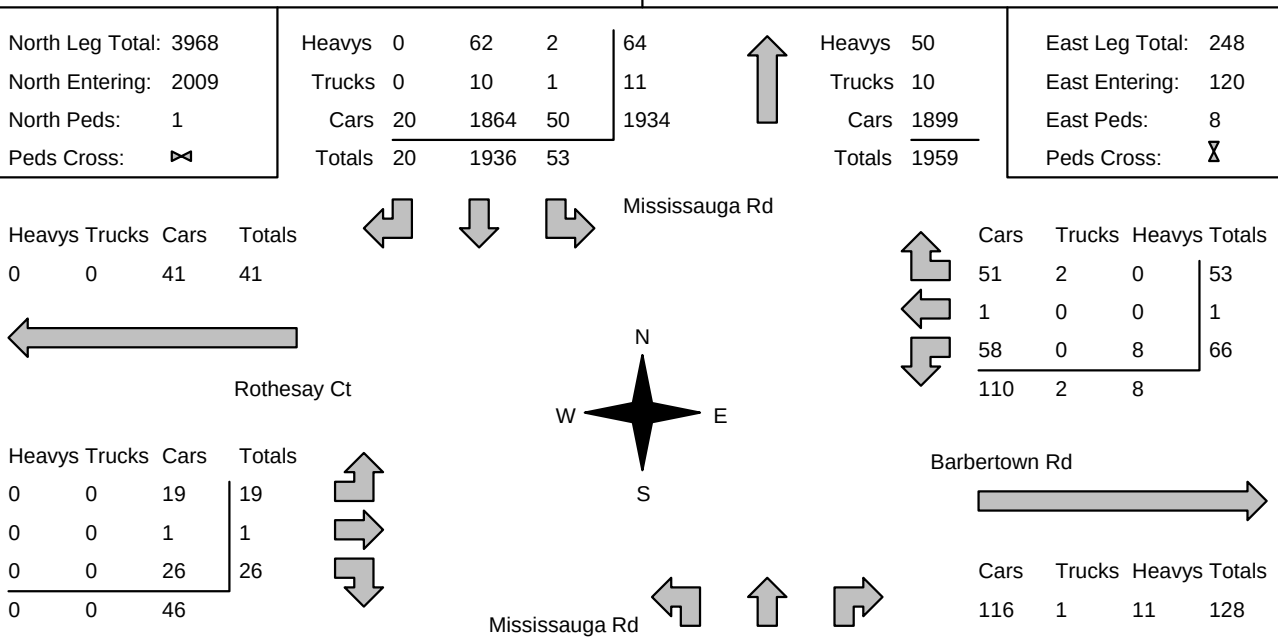
Municipality: Mississauga
Site #: 1602600001
Intersection: Mississauga Rd & Barbertown Rd
TFR File #: 1
Count date: 10-Feb-16

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Mississauga Rd runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Mississauga Rd & Barbertown Rd | **Count Date:** 10-Feb-16 | **Municipality:** Mississauga

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*7*	*420*	*2*	*429*	*0*
9:00:00	*13*	*633*	*3*	*649*	*0*
16:00:00	*0*	*0*	*0*	*0*	*0*
17:00:00	*9*	*374*	*8*	*391*	*0*
18:00:00	*24*	*509*	*7*	*540*	*1*
Totals:	53	1936	20	2009	1

North/South Total Approaches: *0*, *747*, *1111*, *0*, *944*, *1188*, 3990

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*4*	*301*	*13*	*318*	*1*
9:00:00	*3*	*446*	*13*	*462*	*0*
16:00:00	*0*	*0*	*0*	*0*	*0*
17:00:00	*6*	*527*	*20*	*553*	*0*
18:00:00	*7*	*613*	*28*	*648*	*0*
S Totals:	20	1887	74	1981	1

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*15*	*1*	*9*	*25*	*2*
9:00:00	*16*	*0*	*12*	*28*	*1*
16:00:00	*1*	*0*	*0*	*1*	*0*
17:00:00	*22*	*0*	*13*	*35*	*2*
18:00:00	*12*	*0*	*19*	*31*	*3*
Totals:	66	1	53	120	8

East/West Total Approaches: *1*, *38*, *45*, *1*, *42*, *39*, 166

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*1*	*0*	*0*	*1*	*0*
8:00:00	*5*	*1*	*7*	*13*	*4*
9:00:00	*7*	*0*	*10*	*17*	*4*
16:00:00	*0*	*0*	*0*	*0*	*0*
17:00:00	*2*	*0*	*5*	*7*	*1*
18:00:00	*4*	*0*	*4*	*8*	*0*
W Totals:	19	1	26	46	9

Calculated Values for Traffic Crossing Major Street

Hours Ending:	*7:00*	*8:00*	*9:00*	*16:00*	*17:00*	*18:00*	*0:00*	*0:00*
Crossing Values:	*1*	*22*	*23*	*1*	*24*	*17*	*0*	*0*

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 10-Feb-16 Site #: 1602600001

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	57	57	0	0	0	0	1	1	0	0	0	0	2	2	0	0	0	0
7:30:00	0	0	133	76	0	0	0	0	2	1	0	0	0	0	6	4	0	0	0	0
7:45:00	1	1	270	137	0	0	1	1	2	0	0	0	0	0	15	9	0	0	0	0
8:00:00	6	5	396	126	2	2	1	0	3	1	0	0	0	0	21	6	0	0	0	0
8:15:00	7	1	551	155	2	0	1	0	3	0	0	0	2	2	31	10	0	0	0	0
8:30:00	8	1	686	135	5	3	1	0	5	2	0	0	2	0	40	9	0	0	0	0
8:45:00	14	6	843	157	5	0	1	0	7	2	0	0	2	0	46	6	0	0	0	0
9:00:00	17	3	1000	157	5	0	1	0	7	0	0	0	2	0	46	0	0	0	0	0
9:15:00	17	0	1000	0	5	0	1	0	7	0	0	0	2	0	46	0	0	0	0	0
16:00:00	17	0	1000	0	5	0	1	0	7	0	0	0	2	0	46	0	0	0	0	0
16:15:00	17	0	1096	96	6	1	1	0	9	2	0	0	2	0	49	3	0	0	0	0
16:30:00	22	5	1188	92	8	2	1	0	9	0	0	0	2	0	51	2	0	0	0	0
16:45:00	23	1	1268	80	13	5	1	0	9	0	0	0	2	0	52	1	0	0	0	0
17:00:00	26	3	1364	96	13	0	1	0	9	0	0	0	2	0	54	2	0	0	0	0
17:15:00	29	3	1498	134	16	3	1	0	9	0	0	0	2	0	57	3	0	0	0	0
17:30:00	32	3	1630	132	17	1	1	0	9	0	0	0	2	0	59	2	0	0	0	0
17:45:00	39	7	1754	124	17	0	1	0	10	1	0	0	2	0	61	2	0	0	0	0
18:00:00	50	11	1864	110	20	3	1	0	10	0	0	0	2	0	62	1	0	0	1	1
18:15:00	50	0	1864	0	20	0	1	0	10	0	0	0	2	0	62	0	0	0	1	0
18:15:15	50	0	1864	0	20	0	1	0	10	0	0	0	2	0	62	0	0	0	1	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 10-Feb-16 Site #: 1602600001

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	3	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	4	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7:45:00	5	1	1	0	4	2	0	0	0	0	0	0	1	1	0	0	0	0	2	1
8:00:00	13	8	1	0	9	5	0	0	0	0	0	0	2	1	0	0	0	0	2	0
8:15:00	15	2	1	0	10	1	0	0	0	0	0	0	2	0	0	0	0	0	2	0
8:30:00	19	4	1	0	12	2	0	0	0	0	1	1	3	1	0	0	0	0	2	0
8:45:00	22	3	1	0	17	5	0	0	0	0	1	0	3	0	0	0	0	0	2	0
9:00:00	28	6	1	0	20	3	0	0	0	0	1	0	3	0	0	0	0	0	3	1
9:15:00	28	0	1	0	20	0	0	0	0	0	1	0	3	0	0	0	0	0	3	0
16:00:00	28	0	1	0	20	0	0	0	0	0	1	0	4	1	0	0	0	0	3	0
16:15:00	34	6	1	0	22	2	0	0	0	0	1	0	4	0	0	0	0	0	4	1
16:30:00	37	3	1	0	27	5	0	0	0	0	2	1	6	2	0	0	0	0	4	0
16:45:00	42	5	1	0	27	0	0	0	0	0	2	0	6	0	0	0	0	0	5	1
17:00:00	47	5	1	0	32	5	0	0	0	0	2	0	7	1	0	0	0	0	5	0
17:15:00	47	0	1	0	42	10	0	0	0	0	2	0	7	0	0	0	0	0	6	1
17:30:00	51	4	1	0	42	0	0	0	0	0	2	0	8	1	0	0	0	0	6	0
17:45:00	55	4	1	0	48	6	0	0	0	0	2	0	8	0	0	0	0	0	6	0
18:00:00	58	3	1	0	51	3	0	0	0	0	2	0	8	0	0	0	0	0	8	2
18:15:00	58	0	1	0	51	0	0	0	0	0	2	0	8	0	0	0	0	0	8	0
18:15:15	58	0	1	0	51	0	0	0	0	0	2	0	8	0	0	0	0	0	8	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 10-Feb-16 Site #: 1602600001

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	45	45	3	3	0	0	1	1	0	0	0	0	7	7	0	0	0	0
7:30:00	0	0	97	52	5	2	0	0	1	0	0	0	0	0	9	2	1	1	0	0
7:45:00	1	1	180	83	8	3	0	0	2	1	0	0	0	0	14	5	2	1	1	1
8:00:00	4	3	282	102	10	2	0	0	2	0	0	0	0	0	17	3	3	1	1	0
8:15:00	4	0	390	108	12	2	0	0	2	0	0	0	0	0	20	3	4	1	1	0
8:30:00	4	0	494	104	14	2	0	0	2	0	0	0	0	0	24	4	4	0	1	0
8:45:00	6	2	609	115	17	3	0	0	3	1	0	0	0	0	27	3	6	2	1	0
9:00:00	7	1	717	108	19	2	0	0	3	0	0	0	0	0	27	0	7	1	1	0
9:15:00	7	0	717	0	19	0	0	0	3	0	0	0	0	0	27	0	7	0	1	0
16:00:00	7	0	717	0	19	0	0	0	3	0	0	0	0	0	27	0	7	0	1	0
16:15:00	10	3	824	107	23	4	0	0	6	3	0	0	0	0	35	8	8	1	1	0
16:30:00	12	2	948	124	29	6	0	0	6	0	0	0	0	0	40	5	8	0	1	0
16:45:00	12	0	1080	132	32	3	0	0	6	0	0	0	0	0	41	1	8	0	1	0
17:00:00	13	1	1225	145	37	5	0	0	7	1	0	0	0	0	42	1	9	1	1	0
17:15:00	15	2	1378	153	38	1	0	0	7	0	0	0	0	0	45	3	9	0	1	0
17:30:00	15	0	1536	158	44	6	0	0	8	1	0	0	0	0	46	1	9	0	1	0
17:45:00	17	2	1693	157	55	11	0	0	8	0	0	0	0	0	47	1	9	0	1	0
18:00:00	20	3	1829	136	65	10	0	0	8	0	0	0	0	0	50	3	9	0	1	0
18:15:00	20	0	1829	0	65	0	0	0	8	0	0	0	0	0	50	0	9	0	1	0
18:15:15	20	0	1829	0	65	0	0	0	8	0	0	0	0	0	50	0	9	0	1	0

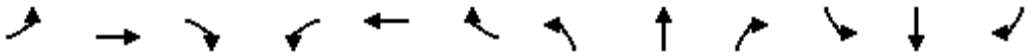
Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 10-Feb-16 Site #: 1602600001

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	3	1	1	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7:45:00	3	0	1	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	3	2
8:00:00	6	3	1	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	4	1
8:15:00	9	3	1	0	10	3	0	0	0	0	0	0	0	0	0	0	0	0	8	4
8:30:00	11	2	1	0	13	3	0	0	0	0	0	0	0	0	0	0	0	0	8	0
8:45:00	13	2	1	0	16	3	0	0	0	0	0	0	0	0	0	0	0	0	8	0
9:00:00	13	0	1	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	8	0
9:15:00	13	0	1	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
16:00:00	13	0	1	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
16:15:00	13	0	1	0	18	1	0	0	0	0	0	0	0	0	0	0	0	0	8	0
16:30:00	14	1	1	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	9	1
16:45:00	15	1	1	0	21	2	0	0	0	0	0	0	0	0	0	0	0	0	9	0
17:00:00	15	0	1	0	22	1	0	0	0	0	0	0	0	0	0	0	0	0	9	0
17:15:00	15	0	1	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
17:30:00	18	3	1	0	24	2	0	0	0	0	0	0	0	0	0	0	0	0	9	0
17:45:00	19	1	1	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
18:00:00	19	0	1	0	26	2	0	0	0	0	0	0	0	0	0	0	0	0	9	0
18:15:00	19	0	1	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
18:15:15	19	0	1	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0

APPENDIX B
Existing Traffic Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	10	16	0	12	3	446	13	13	633	3
Future Volume (Veh/h)	7	0	10	16	0	12	3	446	13	13	633	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	8	0	11	17	0	13	3	480	14	14	681	3
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	1210	1210	682	1213	1205	487	684			494		
vC1, stage 1 conf vol	710	710		493	493							
vC2, stage 2 conf vol	499	500		720	712							
vCu, unblocked vol	1210	1210	682	1213	1205	487	684			494		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.3	4.1			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.2			2.3		
p0 queue free %	98	100	98	95	100	98	100			99		
cM capacity (veh/h)	352	366	453	340	368	569	919			1006		

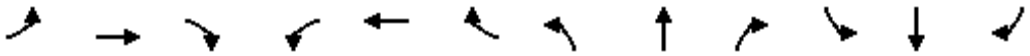
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	19	30	3	494	14	684
Volume Left	8	17	3	0	14	0
Volume Right	11	13	0	14	0	3
cSH	404	412	919	1700	1006	1700
Volume to Capacity	0.05	0.07	0.00	0.29	0.01	0.40
Queue Length 95th (m)	1.2	1.9	0.1	0.0	0.3	0.0
Control Delay (s)	14.3	14.4	8.9	0.0	8.6	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	14.3	14.4	0.1		0.2	
Approach LOS	B	B				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	43.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	465	0	0	649
Future Volume (Veh/h)	0	0	465	0	0	649
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	500	0	0	698
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	1198	500			500	
vC1, stage 1 conf vol	500					
vC2, stage 2 conf vol	698					
vCu, unblocked vol	1198	500			500	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	420	575			1075	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	0	500	0	698
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.29	0.00	0.41
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0	0.0	
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	4	12	0	19	7	613	28	24	509	7
Future Volume (Veh/h)	4	0	4	12	0	19	7	613	28	24	509	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	4	0	4	13	0	20	8	659	30	26	547	8
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	1298	1308	551	1293	1297	674	555			689		
vC1, stage 1 conf vol	603	603		690	690							
vC2, stage 2 conf vol	695	705		603	607							
vCu, unblocked vol	1298	1308	551	1293	1297	674	555			689		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.3	4.1			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.2			2.3		
p0 queue free %	99	100	99	96	100	95	99			97		
cM capacity (veh/h)	317	337	538	328	348	444	1026			848		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	33	8	689	26	555
Volume Left	4	13	8	0	26	0
Volume Right	4	20	0	30	0	8
cSH	399	390	1026	1700	848	1700
Volume to Capacity	0.02	0.08	0.01	0.41	0.03	0.33
Queue Length 95th (m)	0.5	2.2	0.2	0.0	0.8	0.0
Control Delay (s)	14.2	15.1	8.5	0.0	9.4	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	14.2	15.1	0.1		0.4	
Approach LOS	B	C				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	44.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	636	0	0	540
Future Volume (Veh/h)	0	0	636	0	0	540
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	684	0	0	581
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	1265	684			684	
vC1, stage 1 conf vol	684					
vC2, stage 2 conf vol	581					
vCu, unblocked vol	1265	684			684	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	407	452			919	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	0	684	0	581
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.40	0.00	0.34
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0	0.0	
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C
Background Developments Trip Generation Calculation

Land Use	Commercial/Retail Plaza- Shopping Center		111900 ft2
Total	111.9 000 square feet		1000
Land Use	820 Weekday AM peak Hour		
Equation	Ln(T)=0.61LN(x)+2.24		
In	62%	Avg. Rate	0.96
Out	38%		
Internal Capture	0%		
Pass-by	0%		

Source ITE	IN	OUT	TOTAL	Avg	Eqn
Gross	104	63	167	107	167
Gross Rate	0.92	0.57	1.49		
Internal	0	0	0		
Passby	0	0	0		
New	104	63	167		
New Rate	0.93	0.56	1.49		

To/From		Proportions		Trips		
		Inbound	Outbound	In	Out	Total
North	Mississaug	58%	41%	61	26	87
South	Mississaug	42%	59%	43	37	80
West						
East						
Total		100%	100%	104	63	167

Check	ok	ok
Difference	0	0
	0	0
	0	0
	0	0

Existing Distribution

	IN	
N	649	58%
S	462	42%
Total	1111	100%

AM 5267 Mississauga Rd Residential Development

Land Use:	Residential				
Variable:	10	Units			
Land Use	210	AM Peak Hour		Avg.Rate	0.75
Eqn	T=0.70(x)+9.74			Pg	297
IN	25%				
Out	75%				
Non-Auto	0%				
Internal Capture	0%				
Pass-by	0%				
Visitor	0%				

	IN	Out	Total	Eqn	Avg Rate
Gross	4	13	17	17	8
Gross Rate	0.40	1.30	1.70		
Transit	0	0	0		
Internal Capture	0	0	0		
Pass-by	0	0	0		
Visitors	0	0	0		
New	4	13	17		
Rate	0.40	1.30	1.70		

To/From		Proportions		Trips			Check	
		Inbound	Outbound	In	Out	Total	OK	OK
North	Mississauga Road	58%	41%	2	5	7		
South	Mississauga Road	42%	59%	2	8	10		
East				0	0	0		
West				0	0	0		
	Total	100%	100%	4	13	17		

Existing Distribution

	IN		OUT	
N	649	58%	465	41%
S	462	42%	659	59%
Total	1111	100%	1124	100%

AM 5267 Mississauga Rd Residential Development

Land Use:	Residential				
Variable:	15	Units			
Land Use	210	AM Peak Hour		Avg.Rate	0.75
Eqn	T=0.70(x)+9.74			Pg	297
IN	25%				
Out	75%				
Non-Auto	0%				
Internal Capture	0%				
Pass-by	0%				
Visitor	0%				

	IN	Out	Total	Eqn	Avg Rate
Gross	5	15	20	20	11
Gross Rate	0.33	1.00	1.33		
Transit	0	0	0		
Internal Capture	0	0	0		
Pass-by	0	0	0		
Visitors	0	0	0		
New	5	15	20		
Rate	0.33	1.00	1.33		

To/From		Proportions		Trips			Check	
		Inbound	Outbound	In	Out	Total	OK	OK
North	Mississauga Road	58%	41%	3	6	9		
South	Mississauga Road	42%	59%	2	9	11		
East				0	0	0		
West				0	0	0		
	Total	100%	100%	5	15	20		

Existing Distribution

	IN		OUT	
N	649	58%	465	41%
S	462	42%	659	59%
Total	1111	100%	1124	100%

Land Use	Commercial/Retail Plaza-Shopping Center		111900 ft2
Total	111.9 000 square feet		1000
Land Use	820 Weekday PM peak Hour		
Equation	Ln(T)=0.67LN(x)+3.31		
In	48%	Avg. Rate	3.71
Out	52%		
Internal Capture	0%		
Pass-by	33%		

Source ITE	IN	OUT	TOTAL	Avg	Eqn
Gross	199	216	415	415	646
Gross Rate	1.78	1.93	3.71		
Internal	0	0	0		
Passby	69	69	138		
New	130	147	277		
New Rate	1.16	1.32	2.48		

To/From		Proportions		Trips		
		Inbound	Outbound	In	Out	Total
North	Mississaug	45%	55%	59	81	140
South	Mississaug	55%	45%	71	66	137
West						
East						
	Total	100%	100%	130	147	277

Check	ok	ok
Difference	0	0
	0	0
	0	0
	0	0

Existing Distribution

	IN		OUT	
N	540	45%	636	55%
S	648	55%	525	45%
Total	1188	100%	1161	100%

PM 5267 Mississauga Rd Residential Development

Land Use:	Residential				
Variable:	10	Units			
Land Use	210	PM Peak Hour		Avg.Rate	1
Eqn	Ln(T)=0.90LN*(x)+0.51			Pg	298
IN	63%				
Out	37%				
Non-Auto	0%				
Internal Capture	0%				
Pass-by	0%				
Visitor	0%				

	IN	Out	Total	Eqn	Avg Rate
Gross	8	5	13	13	10
Gross Rate	0.80	0.50	1.30		
Transit	0	0	0		
Internal Capture	0	0	0		
Pass-by	0	0	0		
Visitors	0	0	0		
New	8	5	13		
Rate	0.80	0.50	1.30		

To/From		Proportions		Trips			Check	
		Inbound	Outbound	In	Out	Total	OK	OK
North	Mississauga Road	58%	41%	5	2	7		
South	Mississauga Road	42%	59%	3	3	6		
East				0	0	0		
West				0	0	0		
	Total	100%	100%	8	5	13		

Existing Distribution

	IN		OUT	
N	649	58%	465	41%
S	462	42%	659	59%
Total	1111	100%	1124	100%

PM 5267 Mississauga Rd Residential Development

Land Use:	Residential			
Variable:	15	Units		
Land Use	210	AM Peak Hour	Avg.Rate	1
Eqn	Ln(T)=0.90*LN(x)+0.51		Pg	298
IN	63%			
Out	37%			
Non-Auto	0%			
Internal Capture	0%			
Pass-by	0%			
Visitor	0%			

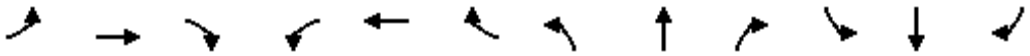
	IN	Out	Total	Eqn	Avg Rate
Gross	12	7	19	19	15
Gross Rate	0.80	0.47	1.27		
Transit	0	0	0		
Internal Capture	0	0	0		
Pass-by	0	0	0		
Visitors	0	0	0		
New	12	7	19		
Rate	0.80	0.47	1.27		

To/From		Proportions		Trips			Check	
		Inbound	Outbound	In	Out	Total	OK	OK
North	Mississauga Road	58%	41%	7	3	10		
South	Mississauga Road	42%	59%	5	4	9		
East				0	0	0		
West				0	0	0		
	Total	100%	100%	12	7	19		

Existing Distribution

	IN		OUT	
N	649	58%	465	41%
S	462	42%	659	59%
Total	1111	100%	1124	100%

APPENDIX D
Future Background Traffic Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	10	16	0	12	3	552	14	14	785	3
Future Volume (Veh/h)	7	0	10	16	0	12	3	552	14	14	785	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	8	0	11	17	0	13	3	594	15	15	844	3
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	1488	1490	846	1492	1484	602	847			609		
vC1, stage 1 conf vol	876	876		608	608							
vC2, stage 2 conf vol	613	615		885	877							
vCu, unblocked vol	1488	1490	846	1492	1484	602	847			609		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.3	4.1			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.2			2.3		
p0 queue free %	97	100	97	94	100	97	100			98		
cM capacity (veh/h)	282	302	365	270	304	489	799			909		

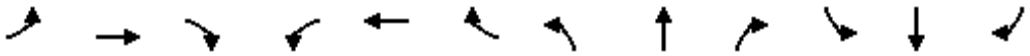
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	19	30	3	609	15	847
Volume Left	8	17	3	0	15	0
Volume Right	11	13	0	15	0	3
cSH	325	335	799	1700	909	1700
Volume to Capacity	0.06	0.09	0.00	0.36	0.02	0.50
Queue Length 95th (m)	1.5	2.3	0.1	0.0	0.4	0.0
Control Delay (s)	16.8	16.8	9.5	0.0	9.0	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	16.8	16.8	0.0		0.2	
Approach LOS	C	C				

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	51.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	571	0	0	802
Future Volume (Veh/h)	0	0	571	0	0	802
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	614	0	0	862
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	1476	614			614	
vC1, stage 1 conf vol	614					
vC2, stage 2 conf vol	862					
vCu, unblocked vol	1476	614			614	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	348	496			975	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	0	614	0	862
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.36	0.00	0.51
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0	0.0	
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	4	12	0	19	7	809	29	25	678	7
Future Volume (Veh/h)	4	0	4	12	0	19	7	809	29	25	678	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	4	0	4	13	0	20	8	870	31	27	729	8
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	1693	1704	733	1688	1692	886	737			901		
vC1, stage 1 conf vol	787	787		902	902							
vC2, stage 2 conf vol	906	917		787	791							
vCu, unblocked vol	1693	1704	733	1688	1692	886	737			901		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.3	4.1			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.2			2.3		
p0 queue free %	98	100	99	95	100	94	99			96		
cM capacity (veh/h)	229	257	424	242	268	335	878			703		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	33	8	901	27	737
Volume Left	4	13	8	0	27	0
Volume Right	4	20	0	31	0	8
cSH	297	291	878	1700	703	1700
Volume to Capacity	0.03	0.11	0.01	0.53	0.04	0.43
Queue Length 95th (m)	0.7	3.0	0.2	0.0	1.0	0.0
Control Delay (s)	17.4	18.9	9.1	0.0	10.3	0.0
Lane LOS	C	C	A		B	
Approach Delay (s)	17.4	18.9	0.1		0.4	
Approach LOS	C	C				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	54.3%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	832	0	0	710
Future Volume (Veh/h)	0	0	832	0	0	710
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	895	0	0	763
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	1658	895			895	
vC1, stage 1 conf vol	895					
vC2, stage 2 conf vol	763					
vCu, unblocked vol	1658	895			895	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	315	342			767	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	0	895	0	763
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.53	0.00	0.45
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0	0.0	
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX E
Site Trip Generation Calculations

AM Mississauga Rd

Land Use:	Residential-Common Elements Townhouse (Block 1, 2,and 3)				
Variable:	21	Units			
Land Use	230	AM Peak Hour	Avg.Rate	0.44	
Eqn	Ln(T)=0.80Ln(X)+0.26		Pg	395	
IN	17%				
Out	83%				
Non-Auto	0%				
Internal Capture	0%				
Pass-by	0%				
Visitor	0%				

	IN	Out	Total	Eqn	Avg Rate
Gross	3	12	15	15	9
Gross Rate	0.14	0.57	0.71		
Transit	0	0	0		
Internal Capture	0	0	0		
Pass-by	0	0	0		
Visitors	0	0	0		
New	3	12	15		
Rate	0.14	0.57	0.71		

To/From		Proportions		Trips			Check	
		Inbound	Outbound	In	Out	Total	OK	OK
North	Mississauga Road	58%	41%	2	5	7		
South	Mississauga Road	42%	59%	1	7	8		
East				0	0	0		
West				0	0	0		
	Total	100%	100%	3	12	15		

Existing Distribution

	IN		OUT	
N	649	58%	465	41%
S	462	42%	659	59%
Total	1111	100%	1124	100%

AM Mississauga Rd

Land Use:	Residential-Free Hold Townhouse (Block 4 and5)				
Variable:	9	Units			
Land Use	230	AM Peak Hour	Avg.Rate	0.44	
Eqn	Ln(T)=0.80Ln(X)+0.26		Pg	395	
IN	17%				
Out	83%				
Non-Auto	0%				
Internal Capture	0%				
Pass-by	0%				
Visitor	0%				

	IN	Out	Total	Eqn	Avg Rate
Gross	1	7	8	8	4
Gross Rate	0.11	0.78	0.89		
Transit	0	0	0		
Internal Capture	0	0	0		
Pass-by	0	0	0		
Visitors	0	0	0		
New	1	7	8		
Rate	0.11	0.78	0.89		

To/From		Proportions		Trips			Check	
		Inbound	Outbound	In	Out	Total	OK	0
North	Mississauga Road	58%	41%	1	3	4		
South	Mississauga Road	42%	59%	0	4	4		
East				0	0	0		
West				0	0	0		
	Total	100%	100%	1	7	8		

PM Mississauga Rd

Land Use:	Residential-Common Elements Townhouse (Block 1, 2,and 3)				
Variable:	21	Units			
Land Use	230	PM Peak Hour	Avg.Rate	0.52	
Eqn	Ln(T)=0.82Ln(X)+0.32		Pg	396	
IN	67%				
Out	33%				
Non-Auto	0%				
Internal Capture	0%				
Pass-by	0%				
Visitor	0%				

	IN	Out	Total	Eqn	Avg Rate
Gross	11	6	17	17	11
Gross Rate	0.52	0.29	0.81		
Transit	0	0	0		
Internal Capture	0	0	0		
Pass-by	0	0	0		
Visitors	0	0	0		
New	11	6	17		
Rate	0.52	0.29	0.81		

To/From		Proportions		Trips			Check	
		Inbound	Outbound	In	Out	Total	OK	OK
North	Mississauga Road	45%	55%	5	3	8		
South	Mississauga Road	55%	45%	6	3	9		
East				0	0	0		
West				0	0	0		
	Total	100%	100%	11	6	17		

Existing Distribution

	IN		OUT	
N	540	45%	636	55%
S	648	55%	525	45%
Total	1188	100%	1161	100%

PM Mississauga Rd

Land Use:	Residential-Free Hold Townhouse (Block 4 and5)				
Variable:	9	Units			
Land Use	230	PM Peak Hour	Avg.Rate	0.52	
Eqn	Ln(T)=0.82Ln(X)+0.32		Pg	396	
IN	67%				
Out	33%				
Non-Auto	0%				
Internal Capture	0%				
Pass-by	0%				
Visitor	0%				

	IN	Out	Total	Eqn	Avg Rate
Gross	5	3	8	8	5
Gross Rate	0.56	0.33	0.89		
Transit	0	0	0		
Internal Capture	0	0	0		
Pass-by	0	0	0		
Visitors	0	0	0		
New	5	3	8		
Rate	0.56	0.33	0.89		

To/From		Proportions		Trips			Check	
		Inbound	Outbound	In	Out	Total	OK	0
North	Mississauga Road	45%	55%	2	2	4		
South	Mississauga Road	55%	45%	3	1	4		
East				0	0	0		
West				0	0	0		
	Total	100%	100%	5	3	8		

APPENDIX F
Future Total Traffic Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	4	13	0	21	7	815	32	27	681	7
Future Volume (Veh/h)	4	0	4	13	0	21	7	815	32	27	681	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	4	0	4	14	0	23	8	876	34	29	732	8
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	1709	1720	736	1703	1707	893	740			910		
vC1, stage 1 conf vol	794	794		909	909							
vC2, stage 2 conf vol	915	926		794	798							
vCu, unblocked vol	1709	1720	736	1703	1707	893	740			910		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.3	4.1			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.2			2.3		
p0 queue free %	98	100	99	94	100	93	99			96		
cM capacity (veh/h)	223	253	422	239	265	332	876			697		

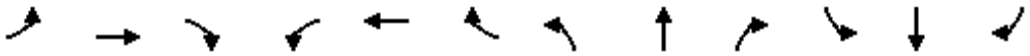
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	37	8	910	29	740
Volume Left	4	14	8	0	29	0
Volume Right	4	23	0	34	0	8
cSH	292	289	876	1700	697	1700
Volume to Capacity	0.03	0.13	0.01	0.54	0.04	0.44
Queue Length 95th (m)	0.7	3.5	0.2	0.0	1.0	0.0
Control Delay (s)	17.7	19.3	9.1	0.0	10.4	0.0
Lane LOS	C	C	A		B	
Approach Delay (s)	17.7	19.3	0.1		0.4	
Approach LOS	C	C				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	54.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	3	834	6	5	712
Future Volume (Veh/h)	3	3	834	6	5	712
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	3	3	897	6	5	766
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	1676	900			903	
vC1, stage 1 conf vol	900					
vC2, stage 2 conf vol	776					
vCu, unblocked vol	1676	900			903	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	310	340			761	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	6	903	5	766
Volume Left	3	0	5	0
Volume Right	3	6	0	0
cSH	325	1700	761	1700
Volume to Capacity	0.02	0.53	0.01	0.45
Queue Length 95th (m)	0.5	0.0	0.2	0.0
Control Delay (s)	16.3	0.0	9.8	0.0
Lane LOS	C		A	
Approach Delay (s)	16.3	0.0	0.1	
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	10	20	0	15	3	553	14	15	792	3
Future Volume (Veh/h)	7	0	10	20	0	15	3	553	14	15	792	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	8	0	11	22	0	16	3	595	15	16	852	3
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	1502	1502	854	1504	1496	602	855			610		
vC1, stage 1 conf vol	886	886		608	608							
vC2, stage 2 conf vol	617	616		895	887							
vCu, unblocked vol	1502	1502	854	1504	1496	602	855			610		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.3	4.1			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.2			2.3		
p0 queue free %	97	100	97	92	100	97	100			98		
cM capacity (veh/h)	277	300	362	267	301	488	793			909		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	19	38	3	610	16	855
Volume Left	8	22	3	0	16	0
Volume Right	11	16	0	15	0	3
cSH	321	330	793	1700	909	1700
Volume to Capacity	0.06	0.12	0.00	0.36	0.02	0.50
Queue Length 95th (m)	1.5	3.1	0.1	0.0	0.4	0.0
Control Delay (s)	16.9	17.3	9.6	0.0	9.0	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	16.9	17.3	0.0		0.2	
Approach LOS	C	C				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	51.9%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	5	574	1	2	803
Future Volume (Veh/h)	7	5	574	1	2	803
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	8	5	617	1	2	863
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	1484	618			618	
vC1, stage 1 conf vol	618					
vC2, stage 2 conf vol	867					
vCu, unblocked vol	1484	618			618	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	346	493			972	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	13	618	2	863
Volume Left	8	0	2	0
Volume Right	5	1	0	0
cSH	391	1700	972	1700
Volume to Capacity	0.03	0.36	0.00	0.51
Queue Length 95th (m)	0.8	0.0	0.0	0.0
Control Delay (s)	14.5	0.0	8.7	0.0
Lane LOS	B		A	
Approach Delay (s)	14.5	0.0	0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		