TRANSPORTATION IMPACT STUDY

118-132 CROSS AVENUE

TOWN OF OAKVILLE
REGION OF HALTON

PREPARED FOR:
BALBIR SANGHERA

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
4900 PALLADIUM WAY, SUITE 202, ONTARIO
L7M 0K9

MAY 2026
UPDATED: AUGUST 2026

CFCA FILE NO. 2856-7391

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CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev. 0a	December 2025	Draft Submission
Rev. 0b	January 2026	Draft Submission
Rev.1a	May 2026	First Submission
Rev. 1b	July 2026	Updated per site plan revisions
Rev. 1c	August 2026	Updated per site plan revisions

Executive Summary

Balbir Sanghera retained C.F. Crozier & Associates Inc. (Crozier) to complete a Transportation Impact Study in support of the proposed mixed-use development located at 118-132 Cross Avenue, in the Town of Oakville, Region of Halton. The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the study road network and to recommend or confirm any required mitigation measures, if warranted.

Based on the most recent Site Plan prepared by BDP Quadrangle, the Development Proposal envisions a 38-storey condominium tower with approximately 429 residential units and 580.5 m^2 of commercial use. To facilitate the development, a full moves site access at Cross Avenue is proposed which provides access to the underground parking facilities and at-grade loading area.

Existing Conditions

Pedestrian facilities are provided along the segments and intersections of the study road network. Each study roadway has a minimum 1.5-meter sidewalk on at least one side, while signalized intersections feature delineated crosswalks with pedestrian signal heads.

The Subject Site is located in an area with a high level of transit accessibility, serviced by Oakville Transit Busses, GO Busses, GO Trains, VIA Rail and Amtrack. The closest bus stop is less than 50 meters away from the subject site, at the Cross Avenue and Lyons Lane intersection, where six (6) Oakville Transit Routes can be accessed. The Oakville GO Station is also situated approximately 240 metres east of the subject site.

The intersection of Trafalgar Road & Cross Avenue/South Service Road East operates at an LOS "C" and "D" during the AM and PM peak hours, respectively. The intersection of Cross Avenue & Argus Road/Oakville GO Access (east) operates at an LOS "B" during the AM and PM peak hours. The intersection of Cross Avenue & Speers Road/Cornwall Road operates at an LOS "A" and "B" during the AM and PM peak hours, respectively. The remaining intersections are observed to operate efficiently with no critical movements.

Future Background Conditions

The Town of Oakville carried out a Class Environmental Assessment (EA) for Midtown Oakville to help plan the transportation and municipal stormwater infrastructure necessary to support the area's anticipated growth. The study identified key modifications to both the existing and proposed road network that will be needed to accommodate this planned development.

Under 2030 future background conditions, the intersection of Trafalgar Road & Cross Avenue/South Service Road operates at an LOS "F" and "E" during the AM and PM peak hours, respectively. The signalized intersection of future "Street C" and Cross Avenue, operates at an LOS "C" and "B" during the AM and PM peak periods, respectively. Similarly, most movements at the Argus Road and Cross Avenue intersection are expected to operate with reasonable control delays, aside from the southbound left movement.

The Speers Road/Cornwall Road and Cross Avenue intersection operates efficiently with an LOS "B" during the AM and PM peak period, with a maximum v/c ratio of 0.87. The remaining intersections operate efficiently with reasonable control delays, no critical movements and with reserve capacity to accommodate future increases in traffic.

With significant operational issues in the future background conditions, it is recommended that the signal timings at the Trafalgar Road & Cross Avenue/South Service Road, Street C & Cross Avenue, and Argus Road & Cross Avenue are optimized to help mitigate the effects of the expected increases in traffic volumes. Additionally, it is recommended that the Town constructs turning lanes with storage capacity to accommodate the 95th percentile queues outlined in this report.

With optimized signal timings applied, the intersection of Trafalgar Road & Cross Avenue/South Service Road still operates at an LOS "F" and "E" during the AM and PM peak hours, respectively, with an improvement in overall control delay at the intersection of Street C and Cross Avenue, the signal timings were optimized for the PM peak period only with an improvement in overall control delay and the southbound and northbound left turns. The optimized signal timing plans at the Argus Road and Cross Avenue intersection improve the LOS from "E" and "C" to a "D" and "C" during the AM and PM peak hours, respectively.

Overall, some operational issues experienced under future background conditions can be mitigated through the improvements suggested herein. It is still expected that the Cross Avenue and Trafalgar Road intersection will experience operational issues during the peak hours, but that is typical at major intersections during peak hours in urban areas.

Future Total Conditions

The proposed development is forecasted to generate 140 and 186 net site vehicle trips during the weekday AM and PM peak hours, respectively. Compared to 2030 background conditions, the future total scenario shows generally consistent control delays and v/c ratios across most intersections, suggesting that operational challenges are primarily driven by background development traffic and the continued growth of existing volumes

Traffic Safety

Although Cross Avenue is curved west of the subject property, adequate sight distance is expected to be achieved. Based on future conditions, it is expected that drivers egressing the site access can look west, beyond the signalized intersection of Lyons Lane and Cross Avenue. Due to the signalized intersection, vehicles turning onto Cross Avenue not expected to reach the posted or design speed, and egressing vehicles have a clear visual of the intersection. Accordingly, no sight distance issues are expected to the west of the Site Access.

Based on the current conditions east of the Site Access along Cross Avenue, it is expected that vehicles will have ample sight distance, beyond the TAC requirements for a left-turn. No site distance issues are expected to the east of the Site Access. Vehicle Turning Diagrams were prepared to indicate that there is sufficient space for vehicles expected to use the site to maneuver in and out of the site access, underground parking spaces and loading area without conflict.

Parking

The vehicle, accessible, and bicycle parking requirements, as well as the loading requirements were reviewed for the proposed development based on the Town of Oakville Zoning By-Law (ZBL). It is our understanding that all zoning requirements for parking and loading will be met by this application.

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1.0 Introduction

Balbir Sanghera retained C.F. Crozier & Associates Inc. (Crozier) to complete a Transportation Impact Study in support of the proposed mixed-use development located at 118-132 Cross Avenue, in the Town of Oakville, Region of Halton.

1.1 Development Lands

The Subject Lands cover an area of approximately 0.25 ha and currently consist of several single detached residential homes. The property is located southwest of Trafalgar Road and Cross Avenue, part of the Midtown Oakville Growth area. The site is within an existing mixed-use commercial area, and is bound by Cross Avenue to the north, Oakville GO parking to the south, an office to the east, and an Oakville Hydro substation to the west.

Figure 1 illustrates the site location.



Figure 1: Site Location

1.2 Development Proposal

Based on the most recent Site Plan prepared by BDP Quadrangle, the Development Proposal envisions a 38-storey condominium tower with approximately 429 residential units and 580.5 m^2 of commercial use. To facilitate the development, a full moves site access at Cross Avenue is proposed which provides access to the underground parking facilities and at-grade loading area.

Table 1 outlines the site statistics.

Table 1: Proposed Development Breakdown

Land Use	Statistic Type	Total
Residential	3-Bedroom Units	38
	2-Bedroom Units	109
	1-Bedroom/Studio Units[1]	282
Non - Residential	Floor Area	580.5 m^2
Residential Parking	Vehicle	63
	Bicycle	30
Non-residential Parking	Vehicle	21
	Bicycle	2
	Loading	1

Note 1: Including 1 bedroom + den

Figure 2 outlines the proposed most recent Site Plan dated July 27, 2026. It is noted that the analysis was completed using a previous version of the Site Plan, dated November 11, 2025, shown in **Figure 3**. As the unit count in the latest site plan is lower than the unit count used for the analysis, the analysis is considered conservative. **Appendix A** includes the full architectural drawing set for both site plans.

Figure 2 - New Site Plan

SITE PLAN LEGEND

- PROPERTY LINE
- LINE OF UNDER GROUND GARAGE BELOW
- MAIN BUILDING ENTRANCE
- RETAIL ENTRANCE
- EXIT
- VEHICLE / LOADING ENTRANCE / EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- MH — MANHOLE COVER
- AD — AREA DRAIN
- CB — CATCH BASIN
- FD — FLOOR DRAIN (PARKING SLAB)
- FD — FLOOR DRAIN (INTERIOR)
- EXISTING LIGHT
- TYPICAL PARKING SPACE
- TYPICAL B.F. PARKING SPACE
- F.F.E. — FINISH FLOOR ELEVATION
- ### ### — EXISTING ELEVATION
- ### ### — PROPOSED ELEVATION
- 00000 — TOP OF ROOF
- BUILDING ENVELOPE
- FIRE ACCESS ROUTE HEAVY DUTY PAVING. ASSEMBLY TO BE DESIGNED TO MEET THE LOADS IMPOSED BY FIRE FIGHTING EQUIPMENT.
- GREEN ROOF
- TERRACE PAVERS

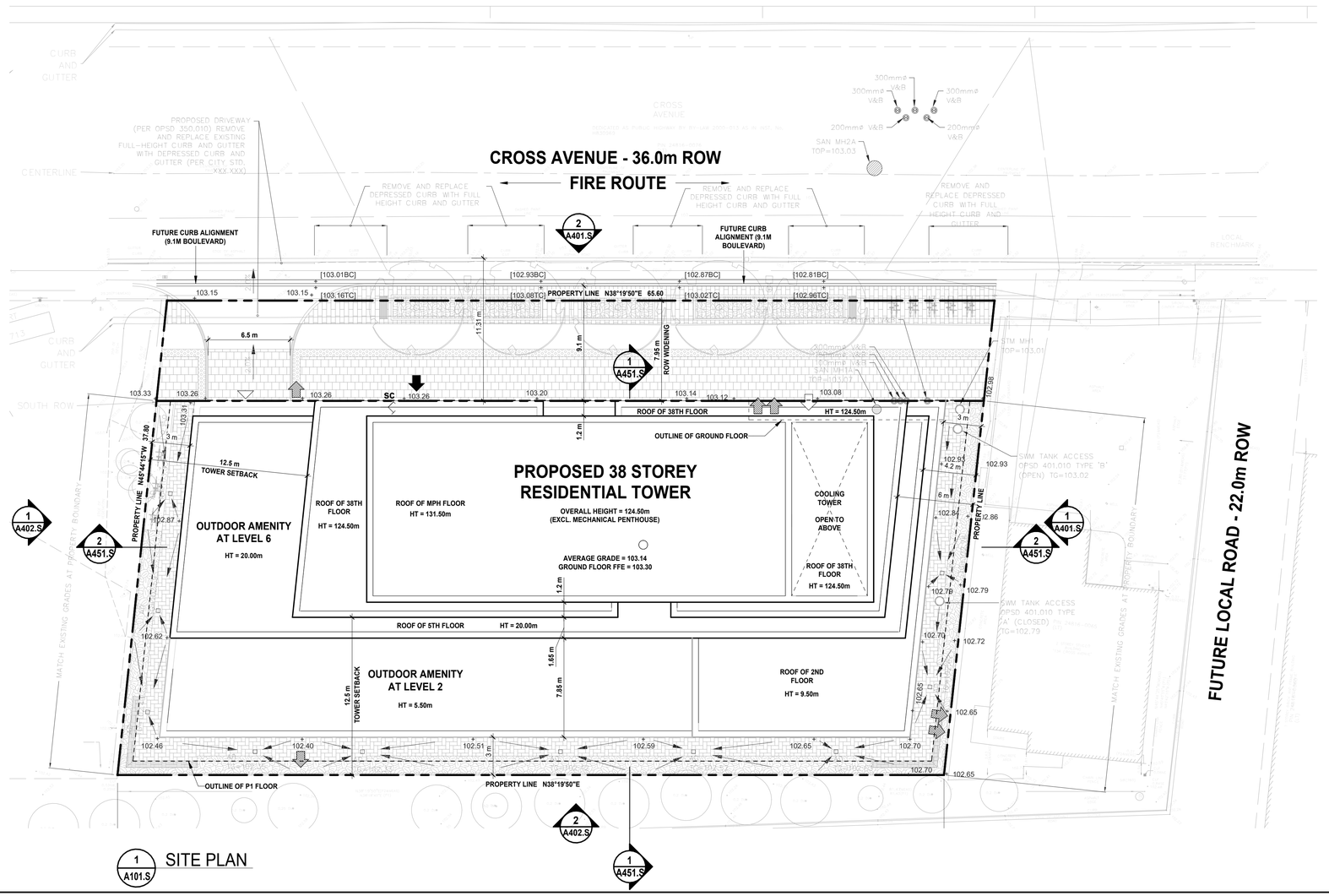
TOPOGRAPHIC LEGEND

BF	DENOTES BOARD FENCE
CB	DENOTES CATCHBASIN
CLF	DENOTES CHAIN LINK FENCE
FG	DENOTES FENCE GATE
G METER	DENOTES GAS METER
GM	DENOTES GAS MARKER
HP	DENOTES HYDRO POLE
HW	DENOTES HANDWELL
LS	DENOTES LIGHT STANDARD
MB	DENOTES MAIL BOX
MH	DENOTES MANHOLE
MW	DENOTES MONITORING WELL
BM	DENOTES BENCHMARK
SP	DENOTES STAND PIPE
TMH	DENOTES TELEPHONE MANHOLE
WELL	DENOTES WELL
WK	DENOTES WATER KEY
WMH	DENOTES WATER MANHOLE
WV	DENOTES WATER VALVE
OC	DENOTES OVERHEAD CABLE
E	DENOTES OVERHEAD HYDRO CABLE
T	DENOTES OVERHEAD TELEPHONE CABLE
	DENOTES SAPLING TREE
	DENOTES SHRUB
	DENOTES DECIDUOUS TREE DIA=DIAMETER OF TRUNK IN METRES
	DENOTES CONIFEROUS TREE DIA=DIAMETER OF TRUNK IN METRES

SURVEY LEGEND

■	DENOTES SURVEY MONUMENT FOUND
■	DENOTES SURVEY MONUMENT SET
SIB	DENOTES STANDARD IRON BAR
SSIB	DENOTES SHORT STANDARD IRON BAR
IB	DENOTES IRON BAR
CC	DENOTES CUT CROSS
NI	DENOTES NOT IDENTIFIABLE
MEAS	DENOTES MEASURED
CLF	DENOTES CHAIN LINK FENCE
P1	DENOTES SRPR BY J.H. GELBLOOM SURVEYING LTD. -DATED AUGUST 27, 2019
P2	DENOTES SRPR BY J.H. GELBLOOM SURVEYING LTD. -DATED SEPTEMBER 27, 2015
D1	DENOTES INSTRUMENT NUMBER 725105
OU	DENOTES ORIGIN UNKNOWN
760	DENOTES K. H. McCONELL O.L.S.
1808	DENOTES J. H. GELBLOOM SURVEYING Ltd., O.L.S.
MTC	DENOTES MINISTRY OF TRANSPORTATION

N=NORTH/S=SOUTH/E=EAST/W=WEST



1 A101.S SITE PLAN

Date	No.	Description
REVISION RECORD		

27-07-2026	Official Plan and Zoning Bylaw Amendment Application

ISSUE RECORD

BDP. Quadrangle

Quadrangle Architects Limited
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t 416 598 1240 www.bdpquadrangle.com

118-132 Cross Avenue

Oakville, ON
for
Batory Planning and Management

23031	1 : 200	WM	SK
PROJECT	SCALE	DRAWN	REVIEWED

Site Plan

A101.S

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and obtain clarification prior to commencing work.

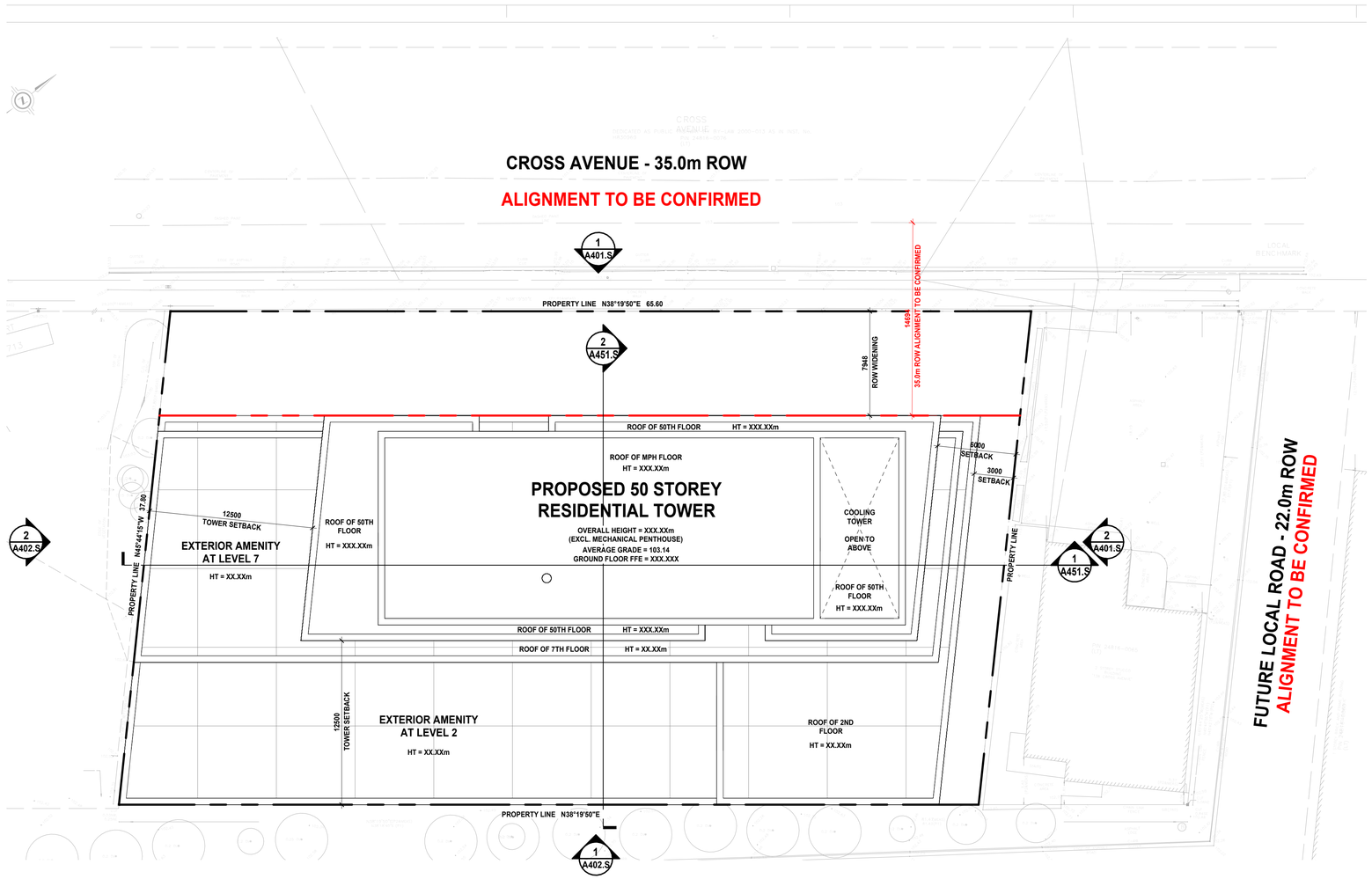
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Figure 3 - Old Site Plan (Used for Analysis)

SITE PLAN LEGEND

- PROPERTY LINE
- LINE OF UNDER GROUND GARAGE BELOW
- MAIN BUILDING ENTRANCE
- RETAIL ENTRANCE
- EXIT
- VEHICLE / LOADING ENTRANCE / EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- MH — MANHOLE COVER
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- CB — CATCH BASIN
- FD — FLOOR DRAIN (PARKING SLAB)
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- GREEN ROOF
- TERRACE PAVERS



1 A101.S SITE PLAN

REVISION RECORD

ISSUE RECORD

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118-132 Cross Avenue

Oakville, ON
for
Client Name TBD

23031	1 : 200	WM	SK
PROJECT	SCALE	DRAWN	REVIEWED

Site Plan

A101.S

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1.3 Study Purpose and Scope

The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the study road network and to recommend or confirm any required mitigation measures, if warranted.

The study has been completed in accordance with the Halton Region Transportation Impact Study Guidelines (January 2015) and the Town of Oakville Transportation Impact Analysis Guidelines (No date).

As confirmed in the Terms of Reference, this Transportation Impact Study considers the following study intersections:

- Cross Avenue/South Service Road East and Trafalgar Road (Regional Road 3)
- Cross Avenue and Lyons Lane (east)/Trafalgar Village Access
- Cross Avenue and Lyons Lane (west)
- Cross Avenue and Oakville GO Access (west)
- Cross Avenue and Argus Road/Oakville GO Access (east)
- Cross Avenue and Cornwall Road/Speers Road
- Proposed Site Access

As confirmed with Town and Region staff, the existing (2025) and future (2030) horizon years were considered herein.

Appendix B includes the agreed upon Terms of Reference for the study.

2.0 Existing Conditions

This section outlines the current conditions of the transportation network in the vicinity of the site. Details of the study road network, including traffic controls, lane configurations, speed limits, transit routes and stops, active transportation infrastructure and other relevant transportation elements are identified. The existing traffic operations are also summarized.

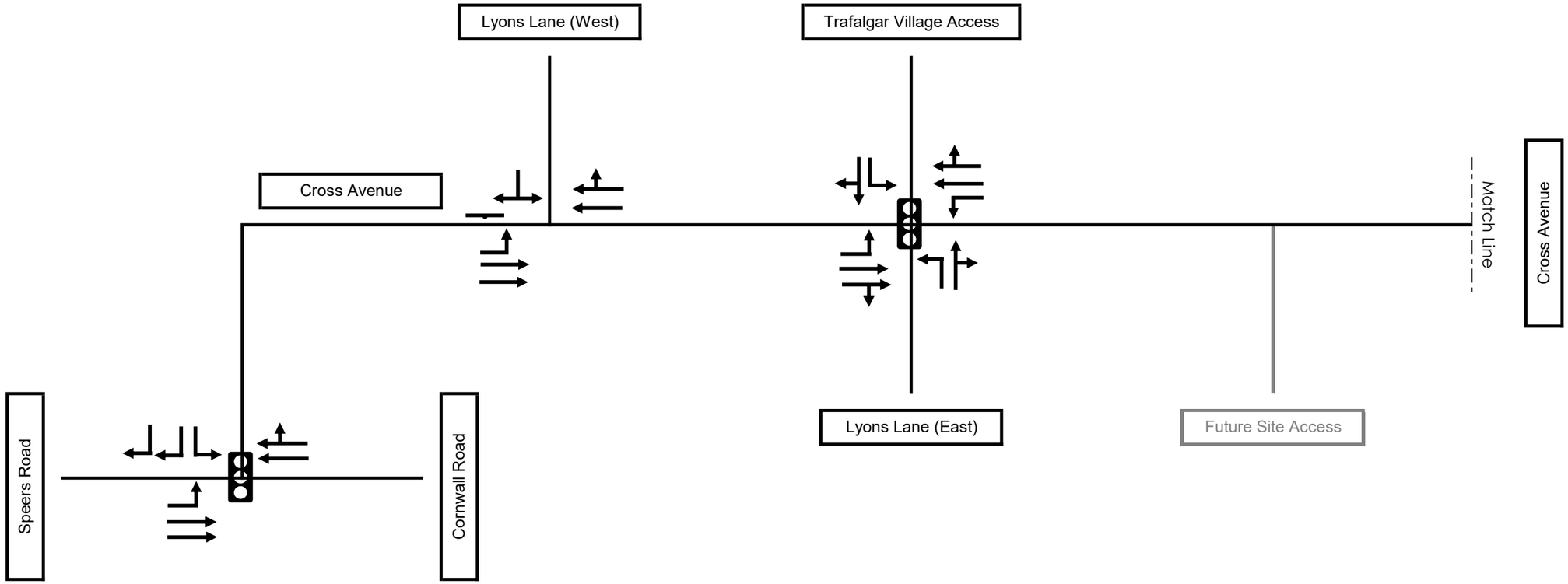
2.1 Study Road Network

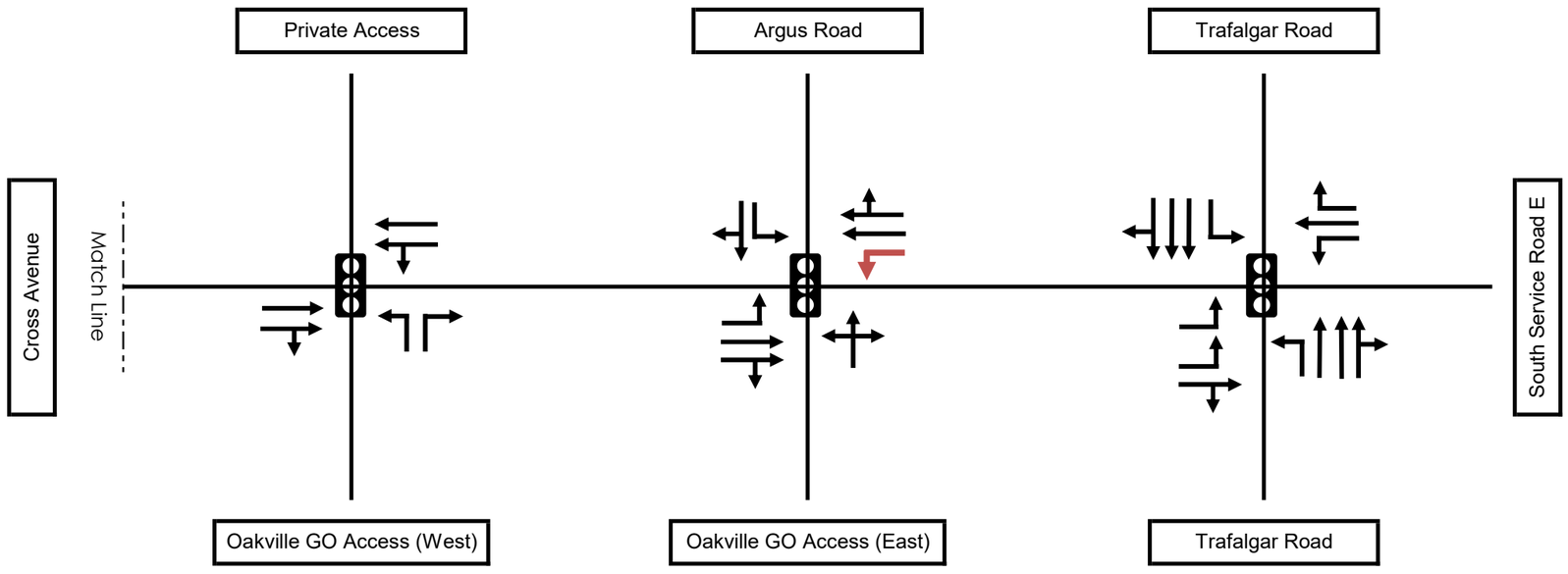
The study road network includes the study intersections and the adjoining roadway segments. **Table 2** outlines the details of the study roadways. **Figure 4** illustrates the study road network, including the lane configurations and intersection control at the study intersections.

Table 2: Study Roadways

Feature	Roadways						
	Cross Avenue	**South Service Road**	**Trafalgar Road (Regional Road 3)**	**Lyons Lane**	**Argus Road**	**Cornwall Road**	**Speers Road**
Direction	Two-way (East-West)	Two-way (East-West)	Two-way (North-South)	Two-way (North-South)	Two-way (Curved)	Two-way (East-West)	Two-way (East-West)
Span	Cornwall Road/Speers Road to Trafalgar Road	Trafalgar Road to Royal Windsor Drive	32 Side Road to Cornwall Road	Oakville/St. Mary's Cemetery Cul-de-Sac to Oakville GO Parking Lot	Trafalgar Road to Cross Avenue	Cross Avenue to Beryl Road	Bronte Road to Cross Avenue
Classification[1]	Minor Arterial	Minor Arterial	Major Arterial	Local Road	Local Road	Multi-Purpose Arterial	Multi-Purpose Arterial
Jurisdiction	Town of Oakville	Town of Oakville	Halton Region	Town of Oakville	Town of Oakville	Town of Oakville	Town of Oakville
Speed Limit	50 km/h	50 km/h	50 km/h	50 km/h[2]	50 km/h[2]	60 km/h	60 km/h
Number of travel lanes	Four	Four	Six	Two	Two	Four	Four
Median type	None	None	Raised	None	None	Raised	Raised
Active Transportation	Sidewalk on both sides	Sidewalk on west side & Asphalt Pathway on east side	Sidewalk on both sides	Sidewalk on one Side	Sidewalk on one side	Sidewalks on both sides	Sidewalks on both sides

Note 1: Based on the Road Network Map from the Town of Oakville Open Data Portal.
Note 2: A jurisdictional speed limit of 50 km/h is assumed on the roadways with no posted speed limit.





Legend

- Signalized Intersection
- Stop Sign
- Bus Only

118-132 Cross Avenue

Study Road Network

CROZIER CONSULTING ENGINEERS

Figure 4

Project No. 2856-7391
Date: 03/12/26
Analyst. Andrew Bader

2.2 Existing Pedestrian and Cycling Operations

Pedestrian facilities are provided along the segments and intersections of the study road network. Each study roadway has a minimum 1.5-meter sidewalk on at least one side, while signalized intersections feature delineated crosswalks with pedestrian signal heads.

Limited cycling facilities are offered throughout the study road network. Cyclists are required to share travel lanes with vehicles.

2.3 Transit Operations

Oakville Transit operates public local transit services within the study area. GO-Transit (Metrolinx) operates regional train and bus services throughout the Greater Toronto Hamilton Area (GTHA). **Table 3** outlines the existing transit routes, direction, days of operation, peak hour headways, and the location of bus stops in the study area. Transit data is included in **Appendix C.**

Table 3: Existing Transit Services

Route	Direction	Span	Days of Operation	Peak Hour Headways	Bus Stops in Study Area
Oakville Transit (Bus)					
1 Trafalgar	North-South	Trafalgar/Hwy 407 Park & Ride to Oakville GO	Mon - Fri	60 mins	Oakville GO (450m; 6-min walk)
4 Speers – Cornwall	East-West	Bronte GO to Clarkson GO	Mon - Sun	15-20 mins	Cross Avenue and Lyons Lane (<50m; 1-min walk)
5 Dundas	East-West	Dundas/Hwy 407 Park & Ride to Oakville GO	Mon - Sun	15-30 mins	Oakville GO (450m; 6-min walk)
10 West Industrial	East-West	Oakville GO to Bronte GO	Mon – Fri (Rush hour Only)	30 mins	Cross Avenue and Lyons Lane (<50m; 1-min walk)
11 Linbrook	East-West	Oakville GO to Clarkson GO	Mon - Fri	60 mins	Oakville GO (450m; 6-min walk)
13 Westoak Trails	East-West	Oakville GO to Bronte GO	Mon - Sun	30 mins	Oakville GO (450m; 6-min walk)
14/14A Lakeshore West	East-West	Oakville GO to Appleby GO	Mon - Sun	30 mins	Cross Avenue and Lyons Lane (<50m; 1-min walk)
15 Bridge	East-West	South Oakville Centre to Oakville GO	Mon - Sun	30-40 mins	Cross Avenue and Lyons Lane (<50m; 1-min walk)
18 Glen Abbey South	East-West	Oakville GO to Bronte GO	Mon - Sun	30 mins	Cross Avenue and Lyons Lane (<50m; 1-min walk)
19 River Oaks	North-South	Uptown Core to Oakville GO	Mon - Sun	30 mins	Oakville GO (450m; 6-min walk)
20 Northridge	North-South	Uptown Core to Oakville GO	Mon - Sun	30 mins	Oakville GO (450m; 6-min walk)
24 South Common	North-South	South Common to Oakville GO	Mon - Sun	20 mins	Oakville GO (450m; 6-min walk)
26 Falgarwood	North-South	Lancaster & Grosvenor to Oakville GO	Mon – Fri (Rush hour Only)	Runs Once per Day	Oakville GO (450m; 6-min walk)
28 Glen Abbey North	East-West	Oakville GO to Bronte GO	Mon - Sun	30 mins	Cross Avenue and Lyons Lane (<50m; 1-min walk)
120 East	North-South	Laird &	Mon – Fri	30 mins	Oakville GO

Route	Direction	Span	Days of Operation	Peak Hour Headways	Bus Stops in Study Area
Oakville Transit (Bus)					
Industrial		Ridgeway to Oakville GO	(Rush hour Only)		(450m; 6-min walk)
190 River Oaks Express	North-South	Glenashton & Trafalgar to Oakville GO	Mon – Fri (Rush hour Only)	30 mins	Oakville GO (450m; 6-min walk)
GO Transit (Bus)					
Route 18 Lakeshore West	East-West	Hamilton GO Centre to Union Station	Mon - Sun	30 mins	Oakville GO (450m; 6-min walk)
Route 22 Milton/Oakville	North-South	Milton GO to Union Station	Mon - Fri	1-2 hr	Oakville GO (450m; 6-min walk)
Route 56 Oshawa/Oakville	East-West	Durham College Oshawa to Oakville GO	Mon - Fri	30 min	Oakville GO (450m; 6-min walk)
GO Transit (Train)					
Lakeshore West (LW)	East-West	Niagara Falls GO to Union Station	Mon - Sun	10-30 mins	Oakville GO (450m; 6-min walk)
Via Rail					
Ontario and Quebec Route	East-West & North-South	Windsor to Quebec City	28 departures per week		VIA Rail Canada Oakville Station (450m; 6-min walk)
Amtrack					
Maple Leaf	East-West & North-South	Toronto to New York	1 departure per day		VIA Rail Canada Oakville Station (450m; 6-min walk)

As shown in **Table 3**, the Subject Site is located in an area with a high level of transit accessibility, serviced by Oakville Transit Busses, GO Busses, GO Trains, VIA Rail and Amtrack. The closest bus stop is less than 50 meters away from the subject site, at the Cross Avenue and Lyons Lane intersection, where six (6) Oakville Transit Routes can be accessed.

Additionally, Oakville GO station transit hub is located 450 meters northeast of the Subject Site. Oakville GO is currently serviced by 16 Oakville Transit routes, three (3) GO Bus routes, the Lakeshore West GO Train route, Via Rail and Amtrack.

The Lakeshore West GO Line offers transit from Union station to Niagara Falls and Hamilton. Using Lakeshore West GO, residents could travel to Union Station in approximately 40-minutes, or 20 minutes during the peak rush hour using the express train services that bypass stations along the route.

At Oakville GO, VIA rail and Amtrack are also available. VIA rail offers nationwide train services, connecting passengers to major cities across Canada, while Amtrack offers rail services between Toronto and New York City with a stop conveniently at Oakville GO.

Accordingly, residents of the proposed development will have access to quick, easily accessible, and direct transit services throughout the Town of Oakville, GTHA and beyond.

2.4 Traffic Data

Turning movement counts (TMC) were conducted by Spectrum Traffic Data Inc. staff at the study intersections on Tuesday, April 8, 2025, between 7:00 a.m. to 10:00 a.m., and 4:00 p.m. to 6:00p.m. to reflect typical commuter peak hours. The traffic count data is included in **Appendix D**.

Intersection analysis was conducted utilizing peak hour factors (PHFs) calculated based on the TMCs for each study intersection for weekday peak periods.

The signal timing plans for the following intersections were obtained from Town/Region staff:

- Cross Avenue/South Service Road East and Trafalgar Road (Halton Region)
- Cross Avenue and Cornwall Road/Speers Road (Town of Oakville)
- Cross Avenue and Lyons Lane (east)/Trafalgar Village Access (Town of Oakville)
- Cross Avenue and Oakville GO Access (west) (Town of Oakville)
- Cross Avenue and Argus Road/Oakville GO Access (east) (Town of Oakville)

2.5 Intersection Modelling

As there are no specific modelling guidelines outlined by Halton Region nor Town of Oakville, default synchro parameters were used, except for PHFs, heavy vehicle percentages, and pedestrian crossing volumes, which were derived from the existing TMCs.

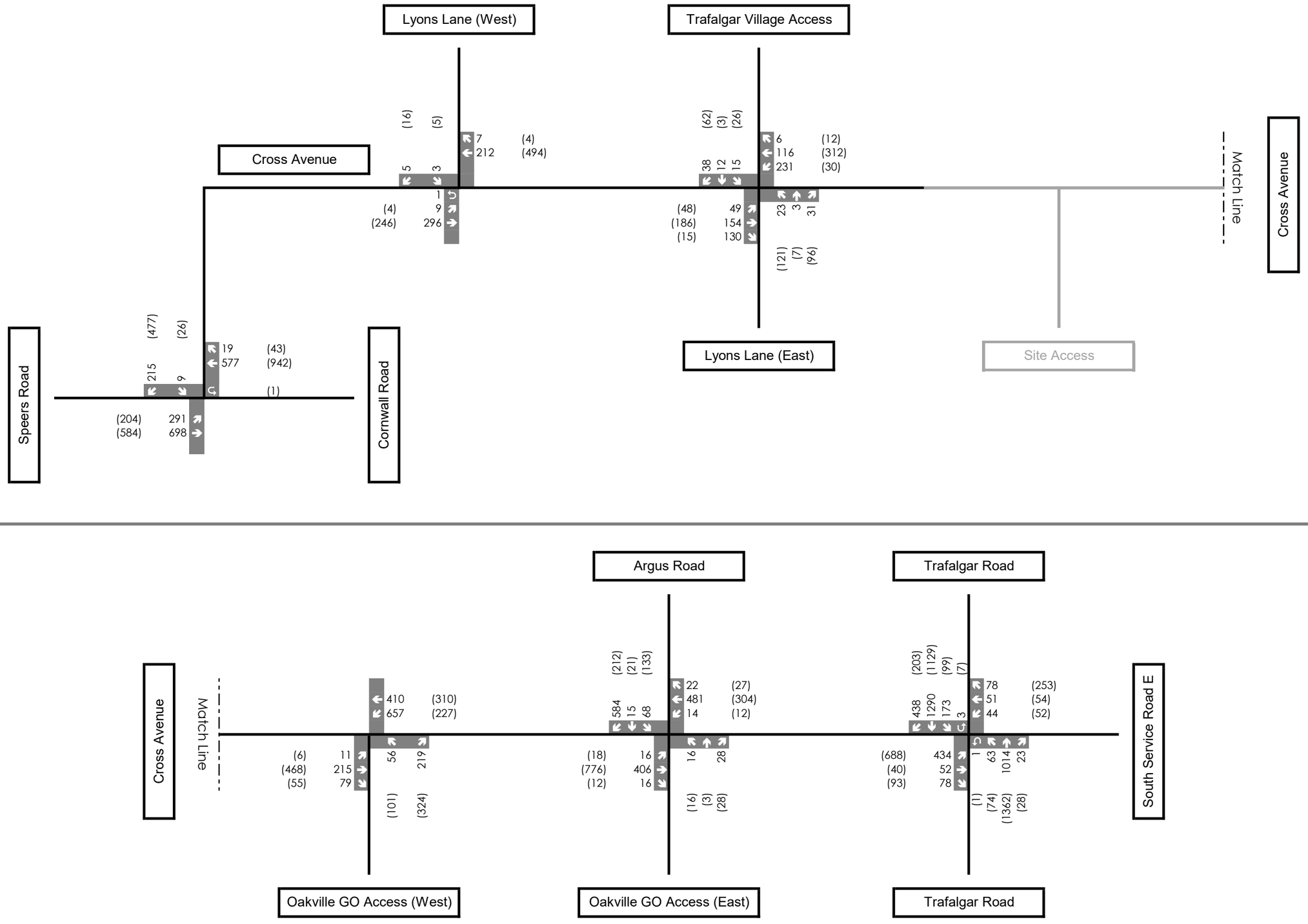
The assessment of intersections is based on the "Highway Capacity Manual (HCM)" methodology. Intersections are assessed using a Level of Service (LOS) metric with ranges of delay assigned a letter from "A" to "F"; "A" representing low delays and "F" representing heavy delays. The LOS definitions are included in **Appendix E.** 95th percentile and average queue lengths at the study intersections were derived from Synchro 12.0. The signal timing plans are included in **Appendix D.**

The Oakville GO access (east) at the Cross Avenue & Argus Road intersection has posted signage prohibiting vehicles from using the access. Accordingly, eastbound right, southbound through, and westbound left turns are restricted for vehicles other than busses. Despite these restrictions, the TMCs observed some passenger vehicles using the access. To accurately reflect existing travel patterns, these prohibited movements were included in the analysis of existing conditions.

2.6 Intersection Operations

The operations of the study intersection were analyzed based on the traffic volumes illustrated in **Figure 5** and the signal timing plans as provided by the Town and Region. **Table 4** outlines the existing traffic level of service (LOS) for the intersection under existing conditions.

LOS definitions are included in **Appendix E.** Detailed capacity analyses are included in **Appendix F.**



Legend

xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes

118-132 Cross Avenue

Existing Traffic Volumes

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Figure 5

Project No. 2856-7391
Date: 03/12/26
Analyst. Andrew Bader

Table 4: 2025 Existing Level of Service

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Trafalgar Road & Cross Avenue/South Service Road East (Signalized)	**Overall**	**C**	**D**	**26.8**	**39.6**	**0.72**	**0.93**
	EBL	D	C	51.6	34.1	0.72	0.66
	EBL2	D	C	51.6	34.1	0.72	0.66
	EBTR	C	B	32.6	15.1	0.40	0.24
	WBL	D	C	40.1	30.0	0.23	0.22
	WBT	**E**	**E**	**72.7**	**64.3**	0.43	0.31
	WBR	B	**E**	15.0	**65.8**	0.43	**0.93**
	NBL	C	C	21.4	33.1	0.42	0.53
	NBT	C	D	24.0	40.2	0.44	0.76
	NBT2	C	D	24.0	40.2	0.44	0.76
	NBTR	C	D	24.0	40.2	0.44	0.76
	SBL	B	D	13.3	48.2	0.46	0.70
	SBT	C	D	22.3	38.4	0.66	0.74
	SBT2	C	D	22.3	38.4	0.66	0.74
	SBTR	C	D	22.3	38.4	0.66	0.74
Lyons Lane (east)/Trafalgar Village Access & Cross Avenue (Signalized)	**Overall**	**A**	**B**	**6.7**	**12.5**	**0.31**	**0.57**
	EBL	A	B	8.3	10.8	0.08	0.10
	EBT	A	A	4.6	9.2	0.17	0.12
	EBTR	A	A	4.6	9.2	0.17	0.12
	WBL	A	A	3.5	4.7	0.31	0.04
	WBT	A	A	3.1	5.8	0.06	0.17
	WBTR	A	A	3.1	5.8	0.06	0.17
	NBL	C	D	33.2	39.2	0.15	0.57
	NBTR	B	A	14.0	9.2	0.16	0.31
	SBL	C	C	32.4	28.7	0.10	0.13
	SBTR	B	A	16.3	9.5	0.23	0.21
Cross Avenue & Lyons Lane (west) (Minor Stop-Controlled)	**Overall**	**A**	**B**	**10.0**	**11.2**	**0.09**	**0.24**
	EBL	A	A	7.7	8.6	0.01	0.00
	EBT	A	A	0.0	0.0	0.09	0.09
	EBT2	A	A	0.0	0.0	0.09	0.09
	WBT	A	A	0.0	0.0	0.09	0.24
	WBTR	A	A	0.0	0.0	0.05	0.12
	SBLR	A	B	10.0	11.2	0.01	0.04
Oakville GO Access (west) & Cross Avenue (Signalized)	**Overall**	**A**	**A**	**9.7**	**8.1**	**0.74**	**0.68**
	EBT	A	A	2.8	4.1	0.14	0.24
	EBTR	A	A	2.8	4.1	0.14	0.24
	WBLT	A	A	9.7	5.5	**1.00dl**	0.40

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
	WBT	A	A	9.7	5.5	**1.00dl**	0.40
	NBL	D	C	35.2	33.3	0.30	0.45
	NBR	B	B	12.1	10.8	0.61	0.68
Oakville GO Access (east)/Argus Road & Cross Avenue (Signalized)	**Overall**	**B**	**B**	**18.5**	**11.5**	**0.89**	**0.57**
	EBL	B	A	10.3	5.3	0.03	0.03
	EBT	B	A	11.5	7.9	0.24	0.39
	EBTR	B	A	11.5	7.9	0.24	0.39
	WBL	B	B	17.9	12.4	0.06	0.07
	WBT	B	A	15.4	9.2	0.30	0.18
	WBTR	B	A	15.4	9.2	0.30	0.18
	NBLTR	B	C	11.9	20.9	0.34	0.33
	SBL	C	D	23.9	37.4	0.19	0.57
	SBTR	C	B	26.1	10.1	**0.89**	0.55
Speers Road/Cornwall Road & Cross Avenue (Signalized)	**Overall**	**A**	**B**	**5.7**	**10.8**	**0.57**	**0.81**
	EBL	A	A	4.1	6.7	0.46	0.50
	EBT	A	A	2.6	3.2	0.25	0.21
	EBT2	A	A	2.6	3.2	0.25	0.21
	WBT	A	A	6.5	9.2	0.25	0.43
	WBTR	A	A	6.5	9.2	0.25	0.43
	SBL	**E**	**E**	**61.6**	**58.8**	0.07	0.17
	SBR	B	C	13.3	22.7	0.57	0.81
	SBR2	B	C	13.3	22.7	0.57	0.81

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle.
Note 2: All v/c ratios above critical thresholds are outlined. All v/c ratios for through movements or shared through/turning movements greater than 0.85 are outlined with red text. All v/c ratios for exclusive movements greater than 0.95 are outlined with red text. The maximum v/c ratio for the weekday a.m. and p.m. peak hours is bolded.
Note 3: At unsignalized intersections, individual movements with an LOS "D" or worse are considered critical.

The intersection of Trafalgar Road & Cross Avenue/South Service Road East operates at an LOS "C" and "D" during the AM and PM peak hours, respectively. The intersection experiences overall control delays of 26.8 and 39.6 seconds during the during the AM and PM peak hours, respectively. Critical movements are observed at the westbound through movement during the AM and PM peak hour, and at the westbound right-turn during the PM peak hour. The intersection has a maximum volume-to-capacity (v/c) ratio of 0.93.

The intersection of Cross Avenue & Argus Road/Oakville GO Access (east) operates at an LOS "B" during the AM and PM peak hours. The intersection is experiences overall control delays of 18.5 and 11.5 seconds during the during the AM and PM peak hours, respectively. One critical movement is observed southbound through-right movement during the AM peak hour. The intersection has a maximum volume-to-capacity (v/c) ratio of 0.89 in the AM peak.

The intersection of Cross Avenue & Speers Road/Cornwall Road operates at an LOS "A" and "B" during the AM and PM peak hours, respectively. The intersection is experiences overall control delays of 5.7 and 10.8 seconds during the during the AM and PM peak hours, respectively. One

critical movement is observed at southbound left-turn during the AM and PM peak hour, with an LOS "E". The intersection has a maximum volume-to-capacity (v/c) ratio of 0.81.

The remaining intersections are observed to operate efficiently with no critical movements.

2.7 Queueing Analysis

Table 5 outlines the queuing analysis under 2025 existing conditions. Detailed capacity analyses are included in **Appendix F.**

Table 5: 2025 Existing Queuing Analysis

Intersection (Control)	Performance Metrics			
	Movement	95th,[50th] Percentile Queue Length (m)		Auxiliary Lane Storage Length (m)
		A.M.	P.M.	
Trafalgar Road & Cross Avenue/South Service Road East	EBL	50	100	128
	WBL	15	20	45
	NBL	15	25	112
	SBL	35	45	55
Lyons Lane (east)/Trafalgar Village Access & Cross Avenue	WBL	15	5	27.5
	NBL	15	40 [25]	30.0
Oakville GO Access (east)/Argus Road & Cross Avenue	EBL	5	5	40
	WBL	10	5	22
	SBL	25 [10]	40 [20]	15
Speers Road/Cornwall Road & Cross Avenue	EBL	20	20	75
	SBL	10	20	40

Note 1: 95th and 50th percentile queue lengths exceeding the storage length are highlighted in red.

At the Cross Avenue & Lyons Lane (east)/Trafalgar Village Access intersection, the 95th percentile queues at the northbound left-turn are expected to exceed the provided storage length, however the average queue length can be accommodated within the storage lane.

At the Cross Avenue & Argus Road/Oakville GO Access (east) intersection, the 95th percentile queues for the southbound left-turn exceed the provided storage length during the AM and PM peak period. The average queues also exceed the storage length during the PM peak period.

The remaining intersections in the study road network are observed to operate without any queuing exceedances.

3.0 Future Background Conditions

3.1 Horizon Years

The subject development is anticipated to be fully built out and operational within 5 years; therefore, a horizon year of 2030 is assumed, as agreed upon in the Terms of Reference with the Town of Oakville staff.

3.2 Future Roadway Improvements

The Town of Oakville carried out a Class Environmental Assessment (EA) for Midtown Oakville to help plan the transportation and municipal stormwater infrastructure necessary to support the area's anticipated growth. The study identified key modifications to both the existing and proposed road network that will be needed to accommodate the planned development in the Midtown Oakville area.

Along with the completion of technical studies and further plan updates, the Town has most recently proposed Official Plan Amendment 70 (OPA 70), dated February 2025 to further advance the development of the Midtown Oakville area. **Figure 6** illustrates Schedule L5, the proposed transportation network. The future road network is illustrated in **Figure 7.**

To accommodate the increases in traffic to and from Midtown Oakville, OPA 70 suggests several roadway improvements along the study road network, including the widening and realignment of existing roadways. The local road network has been revised to support the broader transportation network determined throughout the Midtown Oakville EA. The following changes are outlined in OPA 70 and have been considered in the future modelling throughout the study road network:

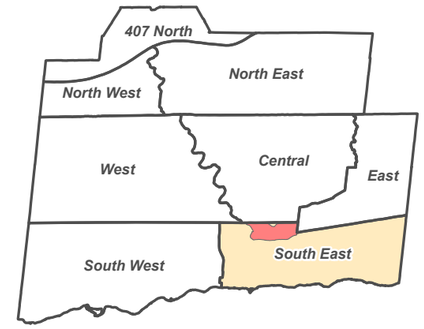
- Cross Avenue is proposed to be a future arterial roadway with a RoW of 36m from Lyons Lane to approximately 600m east of Trafalgar Road. At the time of this study, the cross section of Cross Avenue has not been confirmed, **Appendix B** contains correspondence with the Town of Oakville. Beyond Trafalgar Road, Cross Avenue is proposed to be a minor arterial roadway with a RoW of 30m, spanning to the remainder of the midtown boundary. Future street extension is planned for Cross Avenue east of the Midtown Oakville boundary. The assumed 36m cross-section for Cross Avenue is included in **Appendix H.**

- Lyons Lane is currently offset by about 40m to form two separate intersections at Cross Avenue. As part of OPA 70's proposed transportation network, Lyons Lane at Cross Avenue is proposed to be realigned to form a four-way signalized intersection.

- A local road with a 22m RoW is proposed just east of the subject site, forming a four-way signalized intersection with Cross Avenue. The new local roadway is denoted as "Street A" in the future analysis herein. Street A extends from South Service Road, to south of the subject site. The assumed 22m cross-section for Street A is included in **Appendix H.**

- Similar to Street A, the north leg of the west Oakville GO access is proposed to be a local road with a 20m Row extending to south service road. This local roadway is denoted as "Street C" in the future analysis herein, consistent with the studies completed for nearby background developments.

SCHEDULE L5
MIDTOWN OAKVILLE
TRANSPORTATION NETWORK



- PROTECTED MAJOR TRANSIT STATION AREA / GROWTH AREA BOUNDARY
- PROPOSED TO BE REMOVED
- FUTURE LOCAL ROAD (20M)*
- FUTURE COLLECTOR (26M)*
- FUTURE MINOR ARTERIAL (30M)*
- FUTURE ARTERIAL (36M)*
- FUTURE STREET EXTENSIONS OUTSIDE OF MIDTOWN BOUNDARY
- FUTURE BRIDGE
- FUTURE UNDERPASS
- FUTURE ACTIVE TRANSPORTATION BRIDGE
- BRIDGE AND UNDERPASS ALIGNMENT SUBJECT TO FURTHER STUDY
- POTENTIAL FUTURE RAILWAY GRADE SEPARATION
- OAKVILLE GO STATION
- FUTURE PROTECTED STATION AREA
- TRAFALGAR BRT
- PROPOSED BRT STOP
- ALTERNATE BRT STOP (subject to further study)

*THIS SCHEDULE DEPICTS THE PROPOSED FUTURE STREET NETWORK. FINAL ALIGNMENT SUBJECT TO FURTHER STUDY.

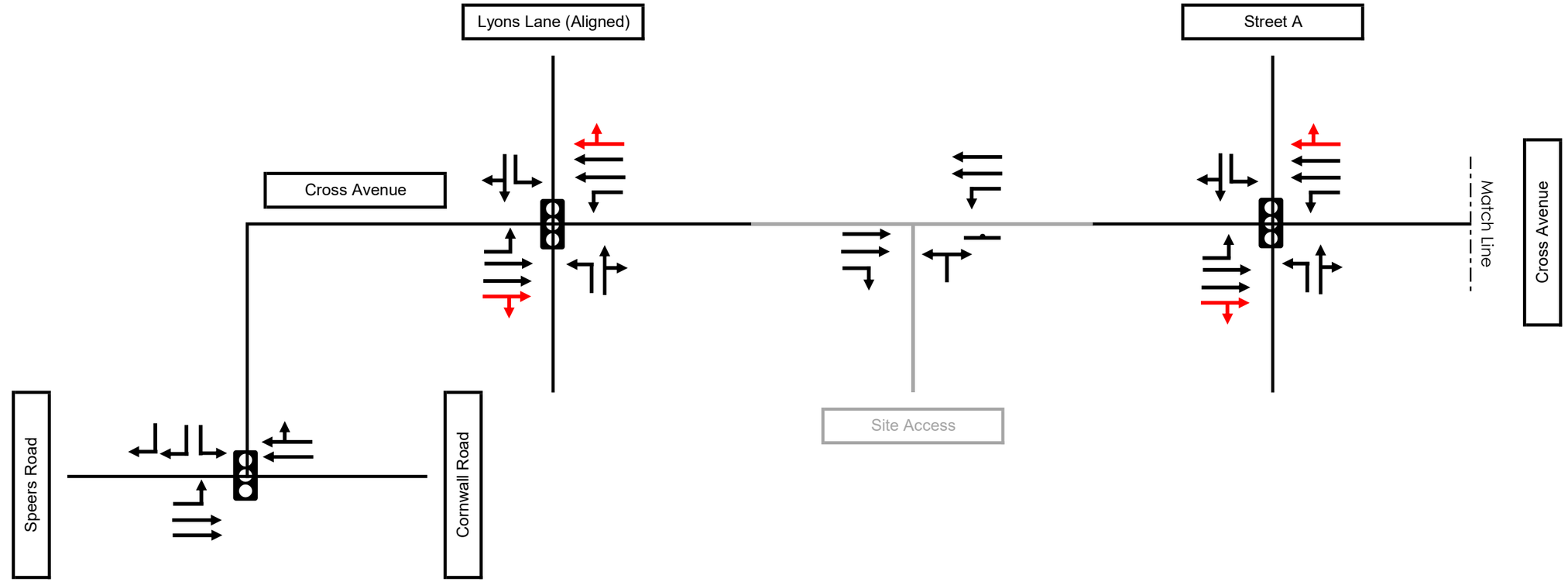
Refer to Part E, Midtown Oakville, for Growth Area Policies

1:6,600

FEBRUARY 2025

Information outside of the growth area boundary is shown for context.

OPA No. 70
Proposed



Legend

- Signalized Intersection
- Stop Sign
- Transit Lane

118-132 Cross Avenue

Future Study Road Network

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Figure 7

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Date: 03/12/26
Analyst. Andrew Bader

3.3 Future Transit Network

As discussed in **Section 2.3,** the subject site is currently well serviced by intra- and inter-regional transit, primarily through GO and Oakville Transit Bus routes.

The Town has the objective of creating a transit supportive community throughout Midtown Oakville by providing a transportation network that connects to, and throughout, Midtown Oakville for public transit, pedestrians, cyclists and vehicles. The Town aims to promote a compact urban environment with high density and high intensity land uses.

3.3.1. Protected Major Transit Station Area

OPA 70 designates the Midtown Oakville lands as a Protected Major Transit Station Area (PMTSA). This designation provides planning certainty by establishing minimum and maximum density targets, as well as policies that ensure future developments do not preclude the implementation of planned transit infrastructure within the Midtown Oakville area.

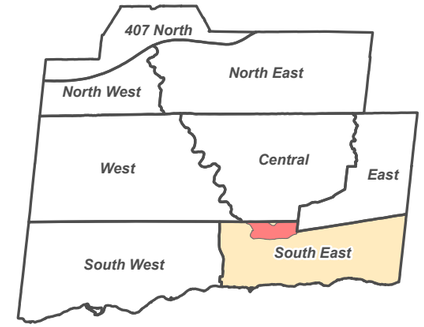
The Oakville GO and VIA Rail stations are the Town's central hub for current and future transit services, and the area is supported by both rail and bus connections. Substantial improvements are planned to strengthen local and inter-regional transit. Planned upgrades include enhancements to the local bus network, expanded express commuter rail service, and new bus rapid transit (BRT) routes originating in Midtown Oakville that will link directly to the Greater Toronto and Hamilton Area (GTHA) transportation system.

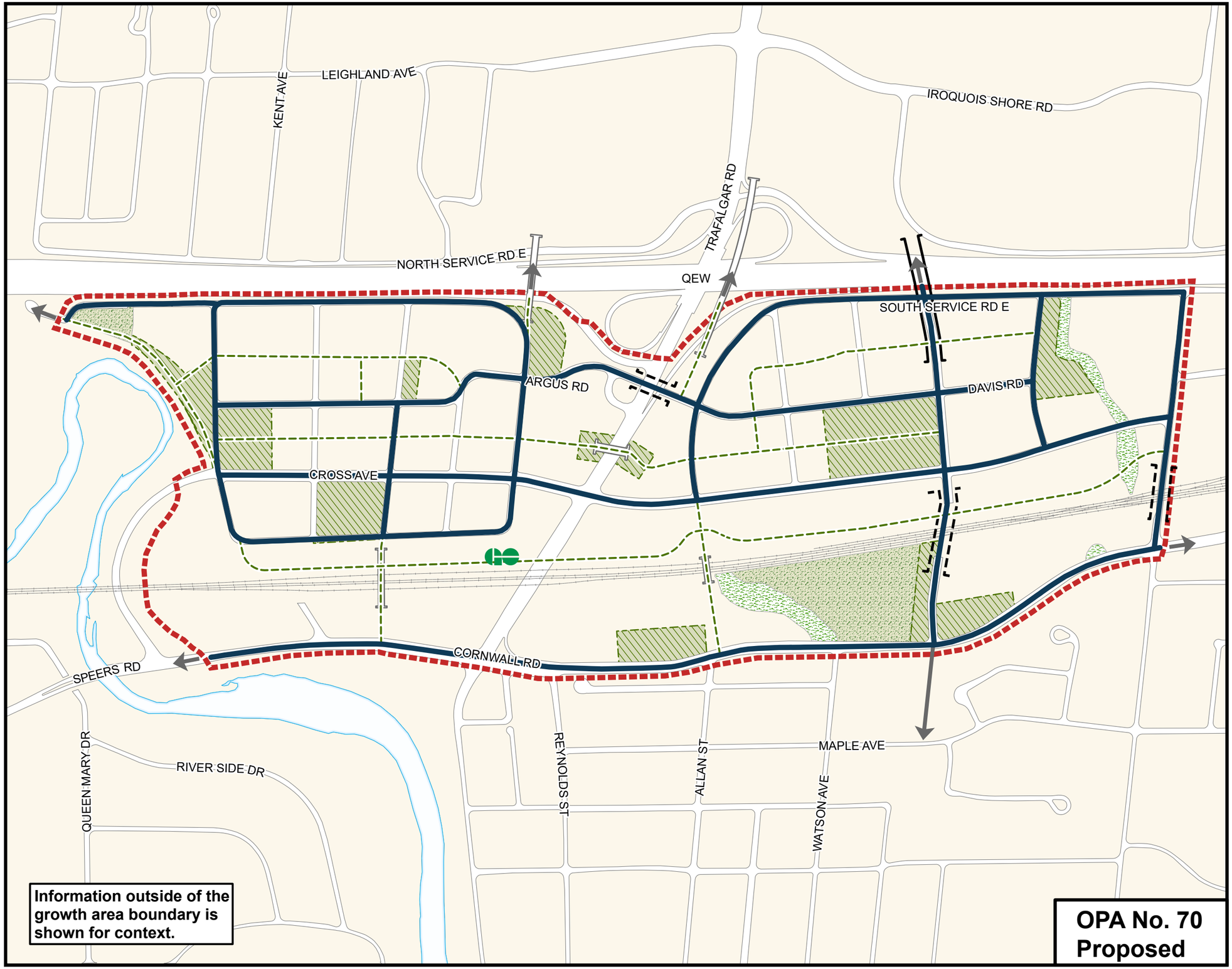
3.4 Future Pedestrian and Cycling Network

To ensure Midtown Oakville is a transit supportive community, the Town aims to design and develop Midtown Oakville in a pedestrian-oriented manner. **Figure 8** includes the midtown Oakville's proposed active transportation map.

It can be noted that cycling facilities are planned within the right-of-way of key roadways such as Cross Avenue, South Service Road, and Cornwall Road, as well as future north-south roadways, to offer excellent cycling connectivity throughout Midtown Oakville. While future cross-sections are not confirmed at the time of writing this report, it is expected that pedestrian facilities will be provided along most roadways. Several active transportation connections are also planned at the boundaries of Midtown Oakville.

SCHEDULE L6
MIDTOWN OAKVILLE
ACTIVE TRANSPORTATION





OPA No. 70
Proposed

- PROTECTED MAJOR TRANSIT STATION AREA / GROWTH AREA BOUNDARY
- OFF-ROAD ACTIVE TRANPORTATION CONNECTION
- CYCLING FACILITY WITHIN RIGHT-OF-WAY
- NATURAL AREA
- PARKS AND OPEN SPACE
- PARK (CONCEPTUAL)
- FUTURE ACTIVE TRANSPORTATION BRIDGE*
- FUTURE BRIDGE*
- FUTURE UNDERPASS*
- POTENTIAL ACTIVE TRANSPORTATION CONNECTION
- OAKVILLE GO STATION

NOTE: WALKING FACILITIES TO BE PROVIDED ON BOTH SIDES OF ALL ROADWAYS

*THIS SCHEDULE DEPICTS THE PROPOSED FUTURE STREET NETWORK. FINAL ALIGNMENT SUBJECT TO FURTHER STUDY. REFER TO SCHEDULE L5 FOR MORE DETAIL.

Refer to Part E, Midtown Oakville, for Growth Area Policies

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FEBRUARY 2025

3.5 Growth Rate

Consistent with transportation studies recently completed in the area, and as confirmed with Town staff during the Terms of Reference, a 2% annual compounded growth rate has been applied to all through movements along Cross Avenue, at the arterial intersections of Speers and Trafalgar Road, a 2% growth rate is applied to all movements.

3.6 Background Developments

Several developments identified near the site, may have forecasted trips travelling throughout the study road network. The development details and respective traffic volume forecasts are discussed in the subsequent sections, and the forecasted volumes have been incorporated into the future background volumes. **Table 6** summarizes the background developments agreed upon during the Terms of Reference.

Table 6: Summary of Background Developments

Development	Land Use	Site Stats	Opening Year	Report
50 Speers Road	Residential	314 units	2026	BA Group (October 2022)
217-227 Cross Avenue & 571-587 Argus Road	Residential[1]	1077 units	Phase 1: 2028 Phase 2: 2033	Paradigm & BA Group (March 2024)
	Retail[1]	690 m^2		
530,550,588 Kerr Street & 131,171 Speers Road (Upper Kerr Village)	Residential	1,845 units	Interim: 2031[2] Ultimate: 2036	BA Group (February 2022)
	Retail	5,318 m^2		
70 Old Mill Road	Residential	154 units	Applied to 2030	Manually generated and distributed trips[3]
166 South Service Road East	Residential[1]	711 units	Phase 1: 2028 Phase 2: 2033	Paradigm & BA Group (April 2024)
	Health/Fitness Club[1]	4,602 m^2		
157 & 167 Cross Avenue	Mixed-use development with residential, office, and commercial units		Applied to 2030	Encompassed within 166 South Service Road Transportation Impact Study Paradigm & BA Group (April 2024)
271 Cornwall Road	Two-mixed use towers with residential, office, and commercial uses.			
570 Argus Road	Two mixed-use towers with residential and commercial uses and a daycare and supermarket.			
590 Argus Road	Three mixed-use towers with residential and commercial uses.			
599 Lyons Road	Residential high-rise.			
320 Davis Road	Pumping station expansion.			
627 Lyons Lane	Residential high-rise.			
349 Davis Road	Mixed-use tower with residential and commercial uses			

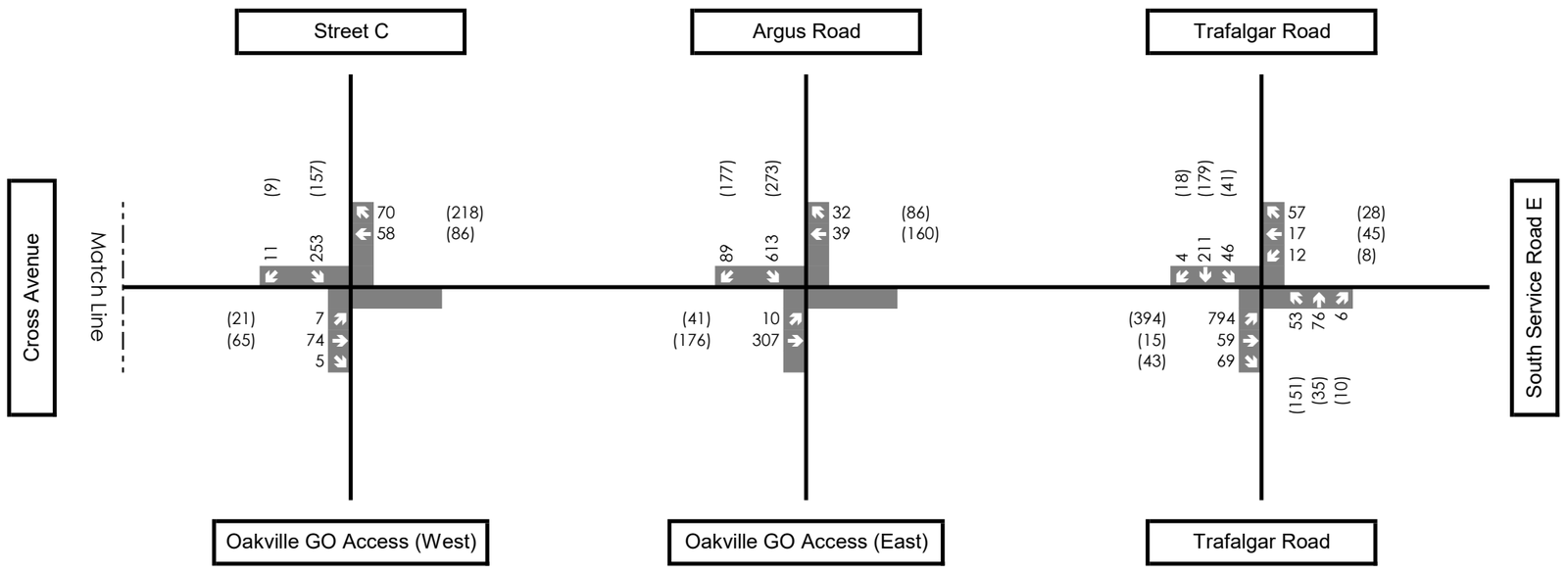
Note 1: Only Phase 1 stats have been included herein as Phase 2 is expected after the study horizon of 2030.
Note 2: The interim 2031 site traffic has conservatively been included for our 2030 study horizon.
Note 3: As the TIS was not available at the time of the analysis, a manual trip generation was completed based on the 154 residential unit development.

For a conservative analysis, the volumes from 2031 interim phases were included in the 2030 future background analysis herein. Furthermore, the 2033 background development traffic volumes from the 166 South Service Road TIS were in the background development volumes, conservatively encompassing the site generated traffic of multiple nearby developments, as outlined in **Table 6**. The 70 Old Mill Road TIS was not available at the time of the future background analysis, accordingly, a manual trip generation and distribution was completed based on the 154 residential unit count. Compared to the site generated volumes of the later received 70 Old Mill TIS, the difference in volumes can be considered negligible.

Figure 9 illustrates the traffic added to the study road network from background developments. **Figure 10** illustrates the 2030 future background volumes.

Appendix G contains excerpts from the background developments considered in the analysis.





Legend

xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes

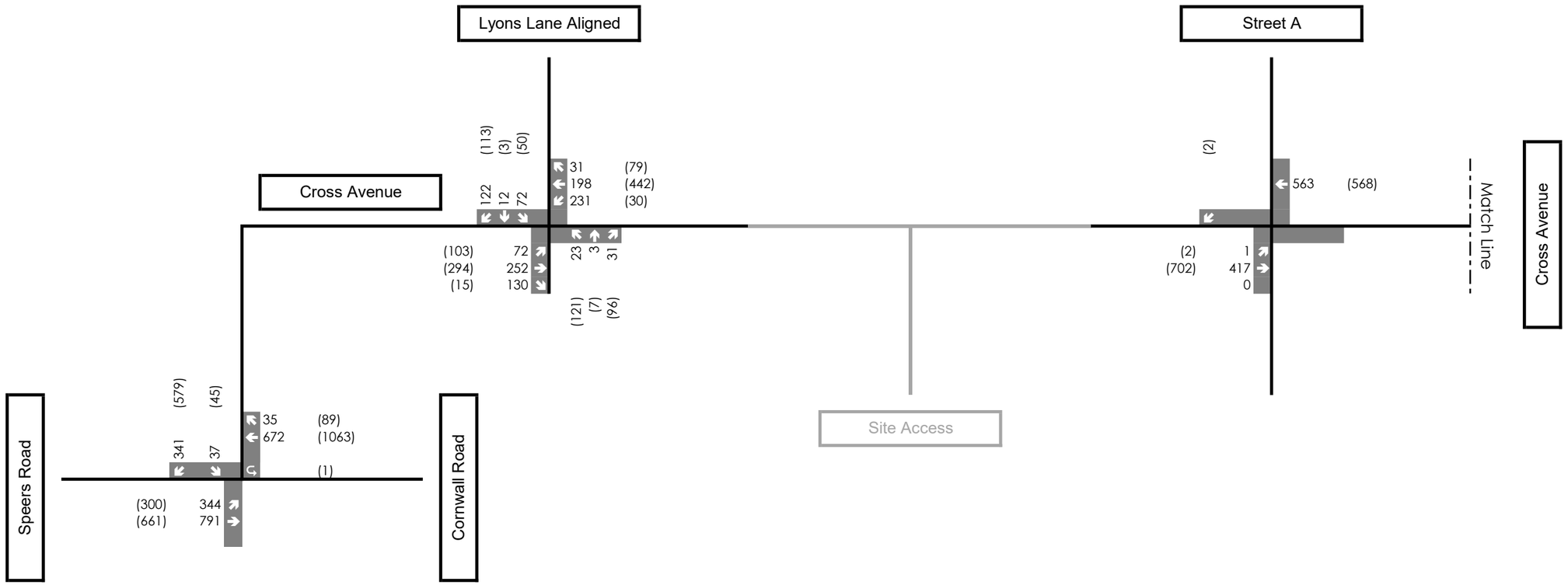
118-132 Cross Avenue

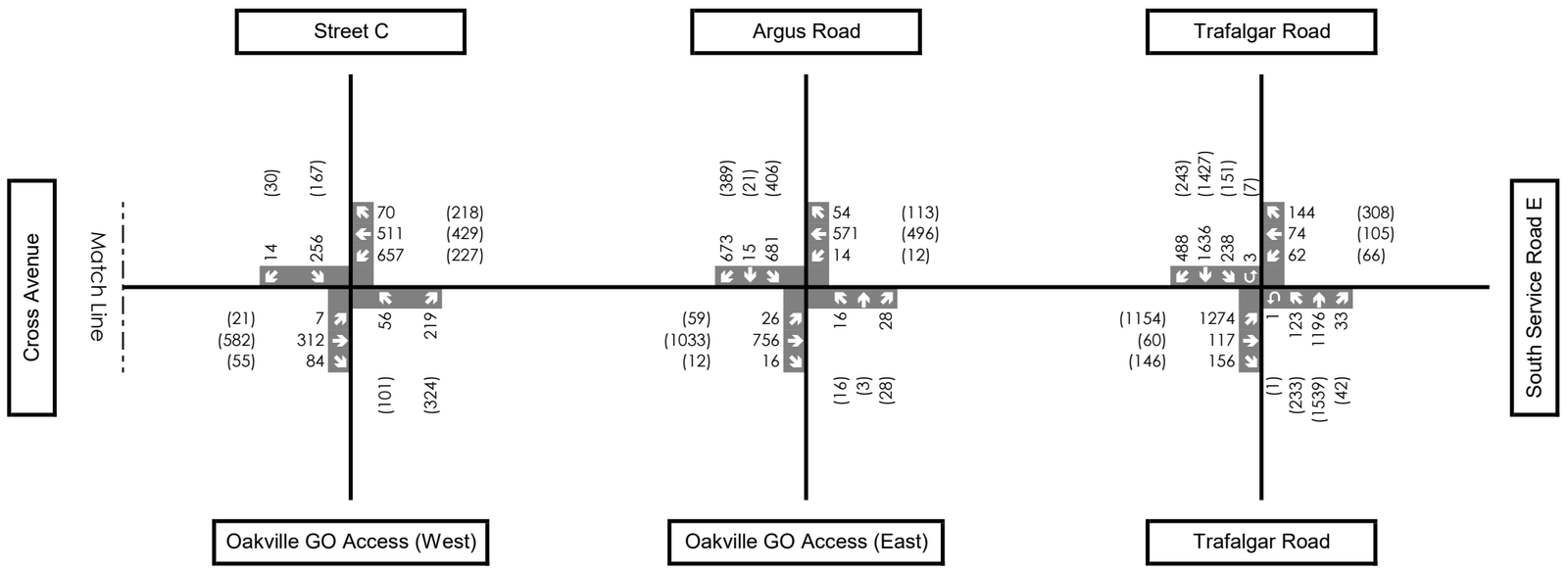
Background Development Traffic Volumes

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Figure 9

Project No. 2856-7391
Date: 03/12/26
Analyst. Andrew Bader





Legend

xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes

118-132 Cross Avenue

2030 Future Background Traffic Volumes

CROZIER CONSULTING ENGINEERS

Figure 10

Project No. 2856-7391
Date: 03/12/26
Analyst. Andrew Bader

3.7 Future Background Automobile Review

This section reviews the future background automobile capacity analysis, with the future background study road network implemented.

3.7.1. Intersection Modelling

For consistency, PHFs and heavy vehicle percentages obtained from the TMCs were applied to the future background analysis. To develop the future background Synchro model, the proposed transportation network for Midtown Oakville was referenced, as illustrated in **Figure 6**. It is understood that Cross Avenue is planned to be widened to a 36-metre right-of-way (ROW). While the final cross-section has not been confirmed by Town staff, it is assumed that Cross Avenue will include two travel lanes and one dedicated transit lane on the outermost lane in each direction.

The future Synchro model reflects the assumed cross-sections by providing two travel lanes along Cross Avenue, with auxiliary right-turn lanes providing minimal storage (10 metres) at intersections. These short-storage right-turn lanes are intended to represent vehicles using the outermost transit lane solely to complete right-turn movements at intersections, consistent with anticipated lane restrictions.

3.7.2. Intersection Operations

Table 7 outlines the 2030 future background traffic operations based on the future background traffic volumes illustrated in **Figure 10**. Detailed capacity analysis worksheets are included in **Appendix F**.

Table 7: 2030 Future Background Level of Services

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Trafalgar Road & Cross Avenue/South Service Road East (Signalized)	**Overall**	**F**	**E**	**146.9**	**76.1**	**2.09**	**1.60**
	EBL	**F**	**F**	**523.8**	**90.3**	**2.09**	**1.09**
	EBL2	**F**	**F**	**523.8**	**90.3**	**2.09**	**1.09**
	EBT	C	B	23.7	11.1	0.42	0.19
	EBTR	C	B	23.7	11.1	0.42	0.19
	WBL	D	C	41.3	31.7	0.32	0.31
	WBT	**E**	**E**	**63.7**	**63.7**	0.31	0.36
	WBT2	**E**	**E**	**63.7**	**63.7**	0.31	0.36
	WBR	C	**F**	31.7	**154.7**	0.69	**1.22**
	NBL	D	**F**	49.9	**322.8**	0.69	**1.60**
	NBT	C	D	34.6	47.2	0.63	**0.89**
	NBT2	C	D	34.6	47.2	0.63	**0.89**
	NBTR	C	D	34.6	47.2	0.63	**0.89**
	SBL	C	**F**	24.4	**102.7**	0.57	**1.00**
	SBT	C	D	34.9	52.7	**0.88**	**0.95**
	SBT2	C	D	34.9	52.7	**0.88**	**0.95**
	SBTR	C	D	34.9	52.7	**0.88**	**0.95**
Lyons Lane & Cross Avenue (Signalized)	**Overall**	**A**	**B**	**9.9**	**11.7**	**0.44**	**0.58**
	EBL	B	B	10.5	12.7	0.09	0.24
	EBT	B	B	10.1	10.1	0.17	0.19
	EBT2	B	B	10.1	10.1	0.17	0.19
	EBR	A	A	4.5	0.1	0.16	0.02
	WBL	A	A	4.7	4.9	0.32	0.05
	WBT	A	A	4.4	6.6	0.11	0.26
	WBT2	A	A	4.4	6.6	0.11	0.26
	WBR	A	A	0.3	3.6	0.01	0.11
	NBL	C	D	32.3	39.9	0.15	0.58
	NBTR	B	A	12.9	9.0	0.14	0.30
	SBL	D	C	39.3	30.8	0.44	0.25
	SBTR	B	A	11.4	8.2	0.44	0.33
Oakville GO Access (west)/Street C & Cross Avenue (Signalized)	**Overall**	**C**	**B**	**33.7**	**14.9**	**1.01**	**0.92**
	EBL	C	A	27.6	7.8	0.06	0.04
	EBT	D	A	35.2	8.0	0.61	0.31
	EBT2	D	A	35.2	8.0	0.61	0.31
	EBR	B	A	11.0	3.9	0.28	0.06
	WBL	D	B	54.0	16.0	**1.01**	0.56
	WBT	A	A	9.5	7.6	0.30	0.24

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
	WBT2	A	A	9.5	7.6	0.30	0.24
	WBR	A	A	3.2	2.1	0.08	0.25
	NBL	C	C	21.9	21.7	0.14	0.35
	NBTR	A	B	0.7	14.4	0.26	0.65
	SBL	**E**	**F**	**78.2**	**91.2**	**0.97**	**0.92**
	SBTR	A	D	0.1	37.5	0.02	0.69
Oakville GO Access (east)/Argus Road & Cross Avenue (Signalized)	**Overall**	**E**	**C**	**77.3**	**25.1**	**1.46**	**0.95**
	EBL	B	B	11.1	11.4	0.07	0.14
	EBT	B	C	17.0	19.3	0.46	0.62
	EBT2	B	C	17.0	19.3	0.46	0.62
	EBR	A	A	2.6	1.6	0.04	0.03
	WBL	C	C	21.1	24.5	0.11	0.16
	WBT	C	C	20.7	20.8	0.40	0.36
	WBT2	C	C	20.7	20.8	0.40	0.36
	WBR	A	B	5.3	11.0	0.09	0.18
	NBL	**E**	C	**71.5**	31.3	0.46	0.19
	NBTR	A	B	0.4	10.3	0.08	0.11
	SBL	**F**	**E**	**244.8**	**66.0**	**1.46**	**0.95**
	SBTR	D	A	38.5	8.7	**0.94**	0.59
Speers Road/Cornwall Road & Cross Avenue (Signalized)	**Overall**	**A**	**C**	**7.5**	**21.7**	**0.68**	**0.87**
	EBL	A	C	6.5	28.2	0.61	0.75
	EBT	A	A	2.8	5.6	0.29	0.26
	EBT2	A	A	2.8	5.6	0.29	0.26
	WBT	A	C	7.5	21.3	0.30	0.63
	WBTR	A	C	7.5	21.3	0.30	0.63
	SBL	**E**	D	**66.5**	51.2	0.29	0.19
	SBR	B	D	12.9	35.5	0.68	**0.87**
	SBR2	B	D	12.9	35.5	0.68	**0.87**
Street A & Cross Avenue (Signalized)	**Overall**	**B**	**B**	**12.2**	**12.8**	**0.54**	**0.62**
	EBL	A	A	8.0	8.5	0.00	0.01
	EBT	B	B	11.4	13.5	0.40	0.62
	EBT2	B	B	11.4	13.5	0.40	0.62
	EBR	B	B	11.4	13.5	0.40	0.62
	WBL	-	-	-	-	-	-
	WBT	B	B	12.9	12.0	0.54	0.50
	WBT2	B	B	12.9	12.0	0.54	0.50
	WBR	-	-	-	-	-	-
	NBL	-	-	-	-	-	-

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
	NBTR	-	-	-	-	-	-
	SBL	-	-	-	-	-	-
	SBTR	-	A	-	0.0	-	0.00

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle.
Note 2: All v/c ratios above critical thresholds are outlined. All v/c ratios for through movements or shared through/turning movements greater than 0.85 are outlined with red text. All v/c ratios for exclusive movements greater than 0.95 are outlined with red text. The maximum v/c ratio for the weekday a.m. and p.m. peak hours is bolded.
Note 3: At unsignalized intersections, individual movements with an LOS "D" or worse are considered critical.

Under 2030 future background conditions, the intersection of Trafalgar Road & Cross Avenue/South Service Road operates at an LOS "F" and "E" during the AM and PM peak hours, respectively. The intersection experiences overall control delays of 146.9 and 76.1 seconds during the during the AM and PM peak hours, respectively. Critical movements are experienced at the eastbound left and westbound through movements during both peak hours. During the PM peak hour only, critical movements exist at the westbound right, northbound left, and southbound left movements.

The signalized intersection of future "Street C" and Cross Avenue, operates at an LOS "C" and "B" during the AM and PM peak periods, respectively. While the intersection is expected to operate with reasonable overall control delays, the southbound left movement is expected to operate critically with a control delay of 78.2 and 91.2 seconds during the AM and PM peak period, respectively. The westbound left movement is expected to operate critically during the AM peak period only, with a theoretical v/c ratio of 1.01.

Similarly, most movements at the Argus Road and Cross Avenue intersection are expected to operate with reasonable control delays, aside from the southbound left movement. The southbound left movement operates with a control delay of 244.8 seconds and 66.0 seconds during the AM and PM peak period, respectively.

The Speers Road/Cornwall Road and Cross Avenue intersection operates efficiently with an LOS "A" and "C" during the AM and PM peak periods, respectively, with a maximum v/c ratio of 0.87. During the AM peak period, the southbound left movement is considered critical as it experiences a control delay of 66.5 seconds.

The remaining intersections operate efficiently with reasonable control delays, no critical movements and with reserve capacity to accommodate future increases in traffic.

3.7.3. Queuing Analysis

Synchro was used to assess the 95th and 50th percentile queues against the available storage lane lengths at the study intersections under 2030 future background conditions, to analyze the potential for queueing exceedances. **Table 8** outlines the queuing analysis.

Table 8: 2030 Future Background Queuing Analysis

Intersection (Control)	Performance Metrics			
	Movement	95th Percentile Queue Length (m)		Auxiliary Lane Storage Length (m)
		A.M.	P.M.	
Trafalgar Road & Cross Avenue/South Service Road East	EBL	300 [280]	210 [170]	128
	WBL	25	25	45
	NBL	45	145 [90]	112
	SBL	65 [35]	85 [35]	55
Lyons Lane (east)/Trafalgar Village Access & Cross Avenue	EBL	15	25	30
	WBL	25	5	27.5
	NBL	15	40 [25]	30
	SBL	25 [15]	20 [10]	15
Oakville GO Access (west)/Street C & Cross Avenue	EBL	5	5	15
	WBL	160 [90]	50 [20]	40
	NBL	20 [10]	25 [15]	15
	SBL	100 [45]	40 [15]	15
Oakville GO Access (east)/Argus Road & Cross Avenue	EBL	10	15 [10]	12
	WBL	10	10	22
	NBL	15	10	15
	SBL	285 [215]	165 [95]	15
Speers Road/Cornwall Road & Cross Avenue	EBL	25	70	75
	SBL	25	25	40
Street A & Cross Avenue	EBL	5	5	15

Note 1: 95th and 50th percentile queue lengths exceeding the storage length are highlighted in red.
Note 2: Transit lanes that were modelled as exclusive right-turn lanes with a reduced storage length to represent transit lane restrictions, were removed from the queuing analysis.

As outlined in **Table 8,** occasional queuing is expected throughout the study road network under future background conditions. While the 95th percentile queues are expected to exceed the provided storage lengths, the average queues can be accommodated at movements. The average queue at the eastbound left-turn at Trafalgar Road and Cross Avenue, as well as the southbound left-turn at the Argus Road and Cross Avenue intersection are expected to exceed their respective storage lengths, accordingly mitigation measures are discussed in **Section 3.8.**

3.8 Future Background Recommendations

The intersections outlined in **Table 9** were reviewed for potential improvements because they exhibit significant operational issues such as, critical movements with v/c ratios exceeding thresholds, excessive control delays, and/or have 95th percentile queue lengths that surpass the available storage lane capacity.

Table 9: Recommended Network Improvements

Horizon	Intersection	Recommended Improvements
2030 Future Background	Trafalgar Road & Cross Avenue/South Service Road	Optimize signal timings to address the elevated delays observed at specific movements. Increase storage length to accommodate expected queues outlined in **Table 11**.
	Street C & Cross Avenue	Optimize signal timings to address the elevated delays observed at the southbound left movement.
	Argus Road & Cross Avenue	Optimize signal timings to address the elevated delays observed at the southbound left movement. Increase storage length to accommodate expected queues outlined in **Table 11**.

3.8.1. Intersection Operations with Improvements

Table 10 outlines the 2030 future background intersection operations with the optimized signal timings.

Table 10: 2030 Future Background Queueing Analysis – Optimized Timings

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Trafalgar Road & Cross Avenue/South Service Road East (Signalized)	**Overall**	**F**	**E**	**98.7**	**77.2**	**1.33**	**1.19**
	EBL	**F**	**F**	**188.9**	**128.7**	**1.33**	**1.19**
	EBL2	**F**	**F**	**188.9**	**128.7**	**1.33**	**1.19**
	EBT	C	B	22.2	11.0	0.27	0.20
	EBTR	C	B	22.2	11.0	0.27	0.20
	WBL	D	C	41.8	32.3	0.42	0.30
	WBT	**E**	**E**	**70.3**	**58.6**	0.38	0.26
	WBT2	**E**	**E**	**70.3**	**58.6**	0.38	0.26
	WBR	B	**E**	17.9	**68.0**	0.61	**0.96**
	NBL	D	**F**	46.1	**97.5**	0.63	**1.00**
	NBT	D	D	44.6	46.1	0.73	**0.87**
	NBT2	D	D	44.6	46.1	0.73	**0.87**
	NBTR	D	D	44.6	46.1	0.73	**0.87**
	SBL	D	**F**	47.2	**83.2**	0.76	**0.91**
	SBT	**F**	**F**	**102.8**	**80.4**	**1.13**	**1.05**
	SBT2	**F**	**F**	**102.8**	**80.4**	**1.13**	**1.05**
	SBTR	**F**	**F**	**102.8**	**80.4**	**1.13**	**1.05**
Oakville GO Access (west)/Street C & Cross Avenue (Signalized)	**Overall**	**C**	**B**	**33.7**	**12.6**	**1.01**	**0.73**
	EBL	C	A	27.6	8.4	0.06	0.05
	EBT	D	A	35.2	8.5	0.61	0.34
	EBT2	D	A	35.2	8.5	0.61	0.34
	EBR	B	A	11.0	4.3	0.28	0.07
	WBL	D	B	54.0	19.8	**1.01**	0.61
	WBT	A	A	9.5	8.1	0.30	0.26
	WBT2	A	A	9.5	8.1	0.30	0.26
	WBR	A	A	3.2	2.4	0.08	0.26
	NBL	C	B	21.9	17.1	0.14	0.33
	NBTR	A	B	0.7	15.2	0.26	0.67
	SBL	**E**	D	**78.2**	45.2	**0.97**	0.73
	SBTR	A	C	0.1	22.3	0.02	0.57
Oakville GO Access (east)/Argus Road & Cross Avenue (Signalized)	**Overall**	**D**	**C**	**35.3**	**21.6**	**1.02**	**0.92**
	EBL	B	B	20.0	10.3	0.10	0.15
	EBT	C	B	30.9	18.3	0.69	0.68
	EBT2	C	B	30.9	18.3	0.69	0.68
	EBR	A	A	3.7	0.6	0.06	0.03
	WBL	D	C	39.8	26.2	0.22	0.18
	WBT	D	C	35.5	20.6	0.64	0.43

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
	WBT2	D	C	35.5	20.6	0.64	0.43
	WBR	A	A	7.6	8.8	0.13	0.21
	NBL	B	C	18.9	22.3	0.18	0.17
	NBTR	A	A	0.8	8.1	0.07	0.11
	SBL	**E**	D	**63.5**	51.8	**1.02**	**0.92**
	SBTR	B	A	16.4	5.6	0.78	0.56

With optimized signal timings applied, the intersection of Trafalgar Road & Cross Avenue/South Service Road still operates at an LOS "F" and "E" during the AM and PM peak hours, respectively. The intersection experiences an improvement in overall control delay, to 98.7 and 72.2 seconds, from 146.9 and 76.6 seconds during the during the AM and PM peak hours, respectively. Significant reductions in control delay are experienced at the southbound and northbound left-turns.

At the intersection of Street C and Cross Avenue, the signal timings were optimized for the PM peak period only. The intersection experienced a slight reduction in overall control delay, from 14.9 seconds to 12.6 seconds. Notably, the control delay at the southbound left-turn improved from 91.2 seconds to 45.2 seconds.

The optimized signal timing plans at the Argus Road and Cross Avenue intersection improve the LOS from "E" and "C" to a "D" and "C" during the AM and PM peak hours, respectively. The most notable improvement is the decrease in control delay at the southbound left-turn during the AM peak, from 244.8 seconds to 63.5 seconds.

Overall, some operational issues experienced under future background conditions can be mitigated through the improvements suggested herein. It is still expected that the Cross Avenue and Trafalgar Road intersection will experience operational issues during the peak hours, but that is typical at major intersections during peak hours in urban areas.

3.8.2. Queuing Analysis with Improvements

Table 11 outlines the 2030 future background queuing analysis with the optimized signal timings.

Table 11: 2030 Future Background Queuing Analysis – Optimized Signal Timings

Intersection (Control)	Performance Metrics			
	Movement	95th Percentile Queue Length (m)		Auxiliary Lane Storage Length (m)
		A.M.	P.M.	
Trafalgar Road & Cross Avenue/South Service Road East	EBL	270 [230]	215 [175]	128
	WBL	25	25	45
	NBL	55	120 [65]	112
	SBL	85 [50]	80 [35]	55
Oakville GO Access (west)/Street C & Cross Avenue	EBL	5	5	15
	WBL	160 [90]	55 [15]	40
	NBL	20 [10]	20 [10]	15
	SBL	100 [45]	25 [10]	15
Oakville GO Access (east)/Argus Road & Cross Avenue	EBL	10	15 [5]	12
	WBL	10	10	22
	NBL	10	10	15
	SBL	225 [155]	125 [65]	15

Note 1: 95th and 50th percentile queue lengths exceeding the storage length are highlighted in red.
Note 2: Transit lanes that were modelled as exclusive right-turn lanes with a reduced storage length to represent transit lane restrictions, were removed from the queuing analysis.

As outlined in **Table 11,** occasional queuing is still expected throughout the study road network under future background conditions, with optimized signal timing plans implemented. The average queue at the eastbound left-turn at Trafalgar Road and Cross Avenue, as well as the southbound left-turn at the Argus Road and Cross Avenue intersection are still expected to exceed their respective storage lengths, however, to a lesser extent. It is recommended that the Town considers including extended storage lanes in the design of Midtown Oakville roadways to accommodate anticipated queues.

4.0 Site Generated Traffic

The proposed mixed-use development will result in additional vehicles on the study road network that previously did not exist. The proposed development will also create additional turning movements at the study intersections.

The site generated traffic forecasting methodology for this study consists of two steps. The first step, trip generation, projects the number of trips that originate or are destined for the proposed development, while the second step, trip distribution and assignment, assigns trips to the study road network based on the expected distribution of trips to catchment areas and expected shortest paths for trips destined for particular locations.

Per **Section 1.2**, it is noted that the analysis was completed using a previous version of the Site Plan, dated November 11, 2025, shown in **Figure 3.** As the unit count in the latest site plan is lower than the unit count used for the analysis, the analysis is considered conservative.

4.1 Trip Generation

Primary Trips

The trip generation of the proposed facility was forecasted using the average rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition for both proposed land uses.

Mixed-Use Internal Trip Reduction

Due to the mixed-use nature of the development, internal trip capture between the residential and retail uses within the development was applied based on ITE's 3rd Edition Trip Generation handbook. Internal trips were reduced from the baseline primary vehicle trips.

Modal Split Vehicle Trip Reductions

As mentioned in **Section 3.3** and **3.4,** OPA 70 designates the Midtown Oakville lands as a Protected Major Transit Station Area, with the goal of creating a pedestrian oriented and transit supportive community. Considering the context of the site, it can be expected that many residents will rely on the various nearby transit options for their daily commute. Furthermore, given that most nearby developments feature first-floor commercial and retail space, residents are likely to walk or bike for everyday errands, such as grocery shopping, banking, and visits to pharmacies.

According to the Draft Midtown Oakville Transportation Plan, dated November 2025, it is estimated that the automobile mode share will be 60%. To forecast the vehicle trip generation of the site, ITE Trip Generation was used to find the person trips of the site. From there, the automobile mode split was applied to find the vehicle trip generation. Since ITE Trip Generation did not have data on retail (LUC 822) person trips, the vehicle trip generation was conservatively used with no modal split reduction.

Table 12 outlines the trip generation for the Site, with the mixed-use and mode split reductions considered.

Table 12: ITE Trip Generation

Land Use (Trip Generation Variable)	ITE Land Use Code	Trip Type	Roadway Peak Hour	Number of Trips		
				Inbound	Outbound	Total
Apartment (569 Units)	LUC 222 Multifamily Housing High-Rise	Person	A.M.	54	139	193
			P.M.	141	120	261
		Modal Split Reduction (60% Auto)[1]	A.M.	-21	-55	-75
			P.M.	-54	-47	-102
		Multi-Use Trip Reduction	A.M.	-1	-1	-2
			P.M.	-6	-2	-8
Retail (8,760 ft^2 GFA)	LUC 822 Strip Retail Plaza	Primary	A.M.	15	12	27
			P.M.	21	21	42
		Multi-Use Trip Reduction	A.M.	-1	-1	-2
			P.M.	-2	-6	-8
Pure Net Site Generated Vehicle Trips			**A.M.**	**46**	**94**	**140**
			P.M.	**100**	**86**	**186**

Note 1: Mode split of 60% automobile use is an estimate from the Draft Midtown Oakville Transportation Plan (November 2025).
Note 2: Minor discrepancies may exist due to rounding.

Accordingly, the proposed development is forecasted to generate 140 and 186 net site vehicle trips during the weekday AM and PM peak hours, respectively. ITE Trip Generation Excerpts and Multi-Use Trip Reduction calculations are included in **Appendix I.**

4.2 Trip Distribution

The trips generated by the proposed development were distributed to the study road network using a combination of existing travel patterns collected from Transportation Tomorrow Surveys (TTS), as well as reasonable assumptions based on the Midtown Oakville proposed transportation network. It is expected that vehicles travelling outside of the Midtown Oakville lands will frequently use Trafalgar Road to get to and from the QEW.

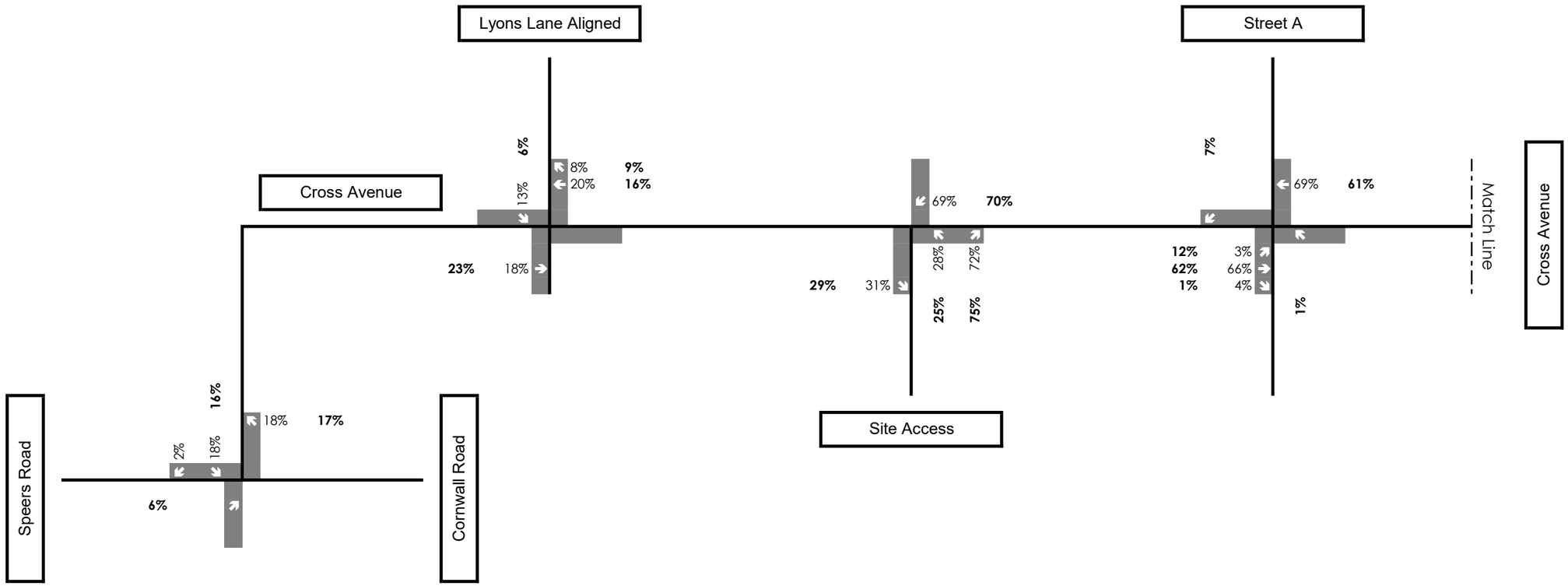
Table 13 summarizes the vehicle trip distribution.

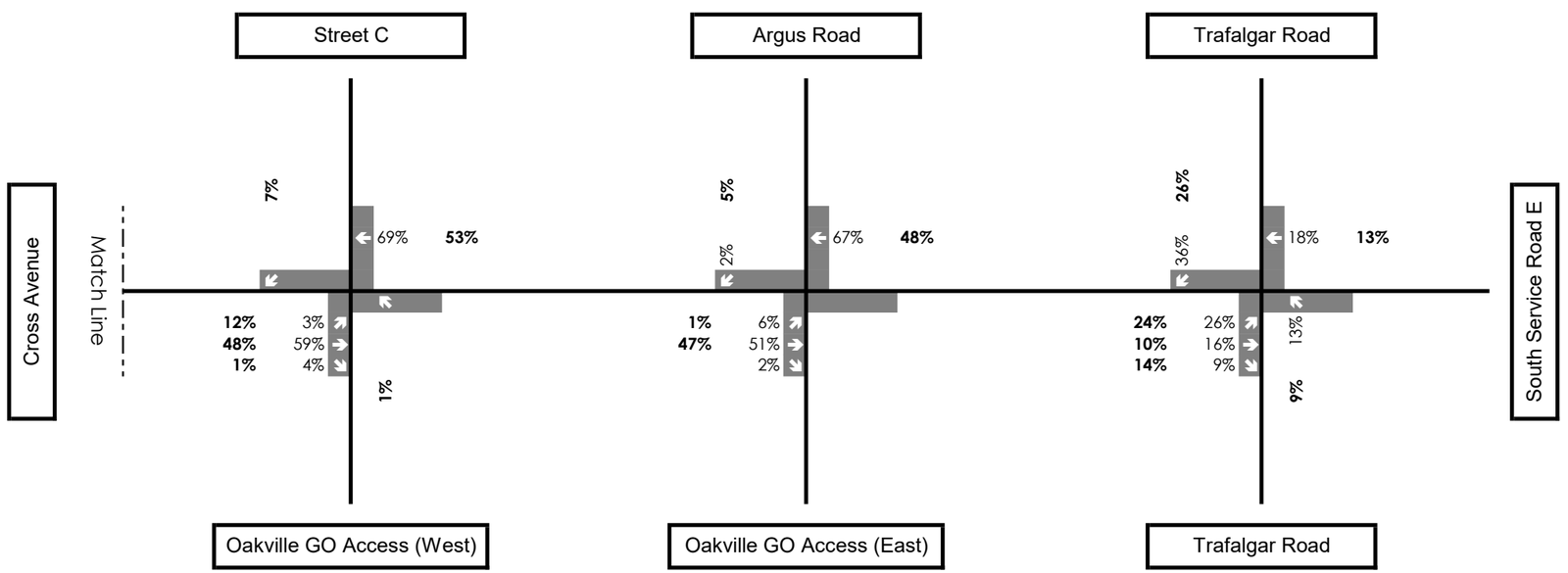
Table 13: Trip Distribution

Direction	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour	
	Inbound	Outbound	Inbound	Outbound
Speers Road West	0%	2%	5%	0%
Cornwall Road East	18%	18%	17%	16%
Lyons Lane North	13%	8%	6%	9%
Argus Road East	2%	6%	5%	1%
Trafalgar Road North	36%	26%	27%	24%
Trafalgar Road South	13%	9%	9%	14%
South Service Road East	18%	15%	13%	10%
Proposed Street A North	0%	3%	7%	12%
Proposed Street C North	0%	3%	7%	12%
Proposed Street A South	0%	4%	1%	1%
Proposed Street C South	0%	4%	1%	1%
Oakville Go Access (E) South	0%	2%	0%	0%
Total[1]	100%	100%	100%	100%

Note 1: Minor discrepancies due to rounding may exist.

Figure 11 and **Figure 12** outline the vehicle trip distribution and assignment for the proposed development, respectively.





Legend

xx% A.M. Peak Hour Traffic Distribution
xx% P.M. Peak Hour Traffic Distribution

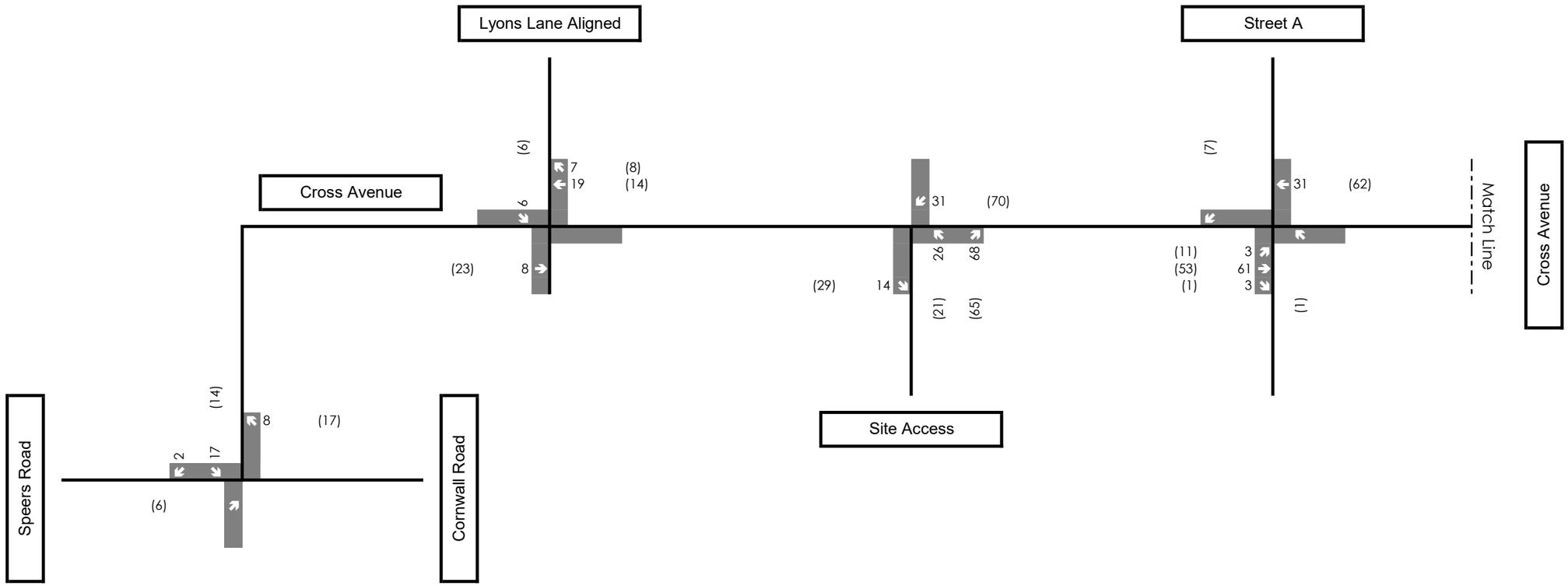
118-132 Cross Avenue

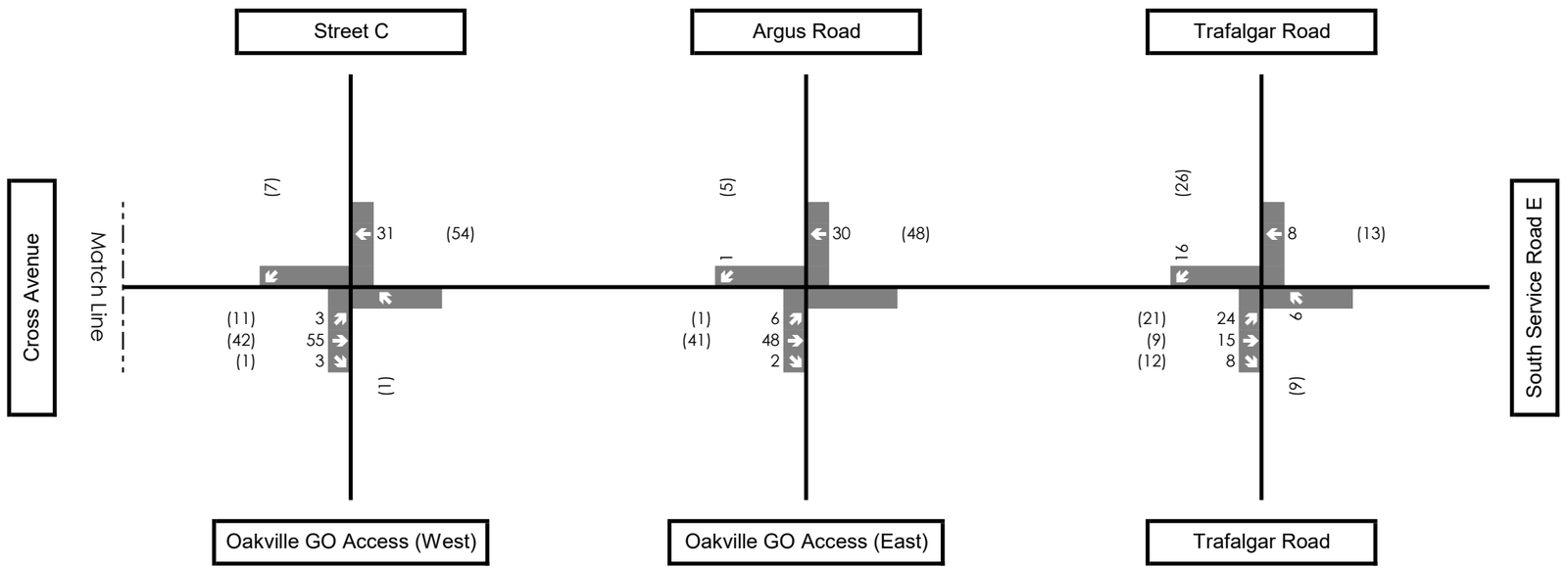
Trip Distribution

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Figure 11

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Date: 03/12/26
Analyst. Andrew Bader





Legend

xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes

118-132 Cross Avenue

Trip Assignment

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Figure 12

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Date: 03/12/26
Analyst. Andrew Bader

5.0 Future Total Conditions

5.1 Basis of Assessment

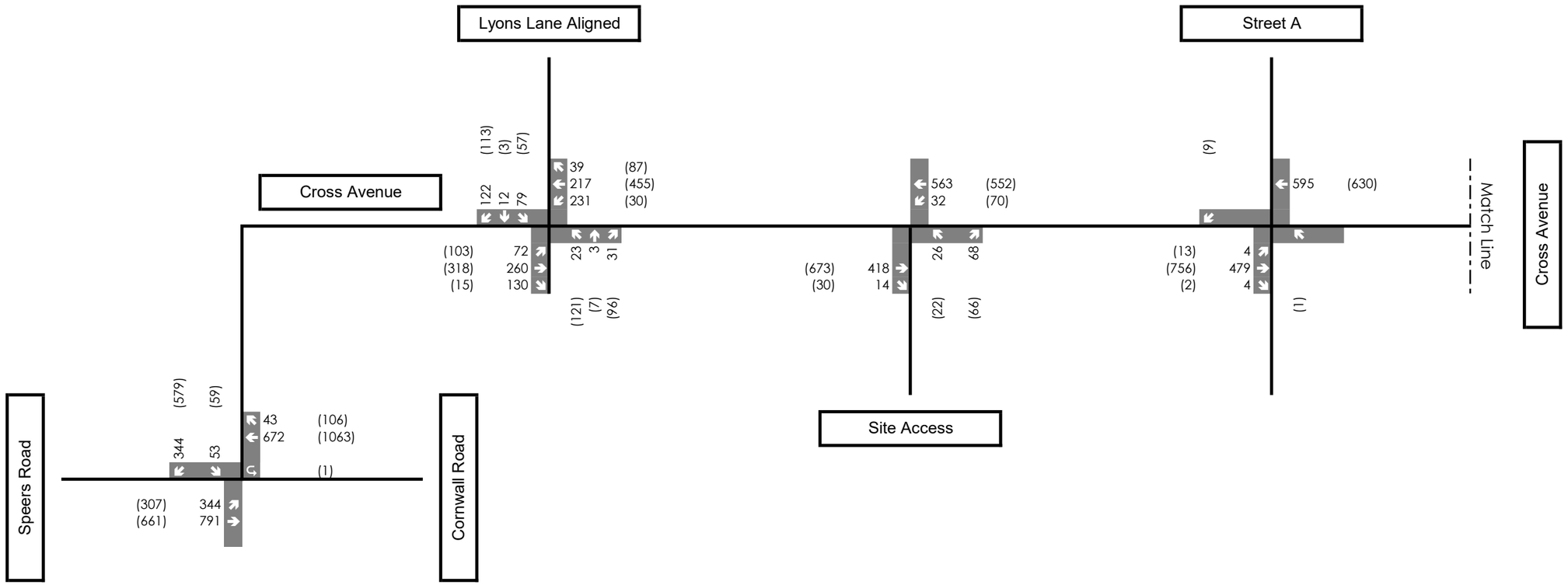
The traffic impacts arising from the proposed development were assessed on the basis of the site generated traffic illustrated in **Figure 12**, superimposed on the future background traffic volumes in **Figure 10.** The resulting future total traffic volumes for the weekday AM and PM peak hours are illustrated **Figure 13** for the 2030 horizon year.

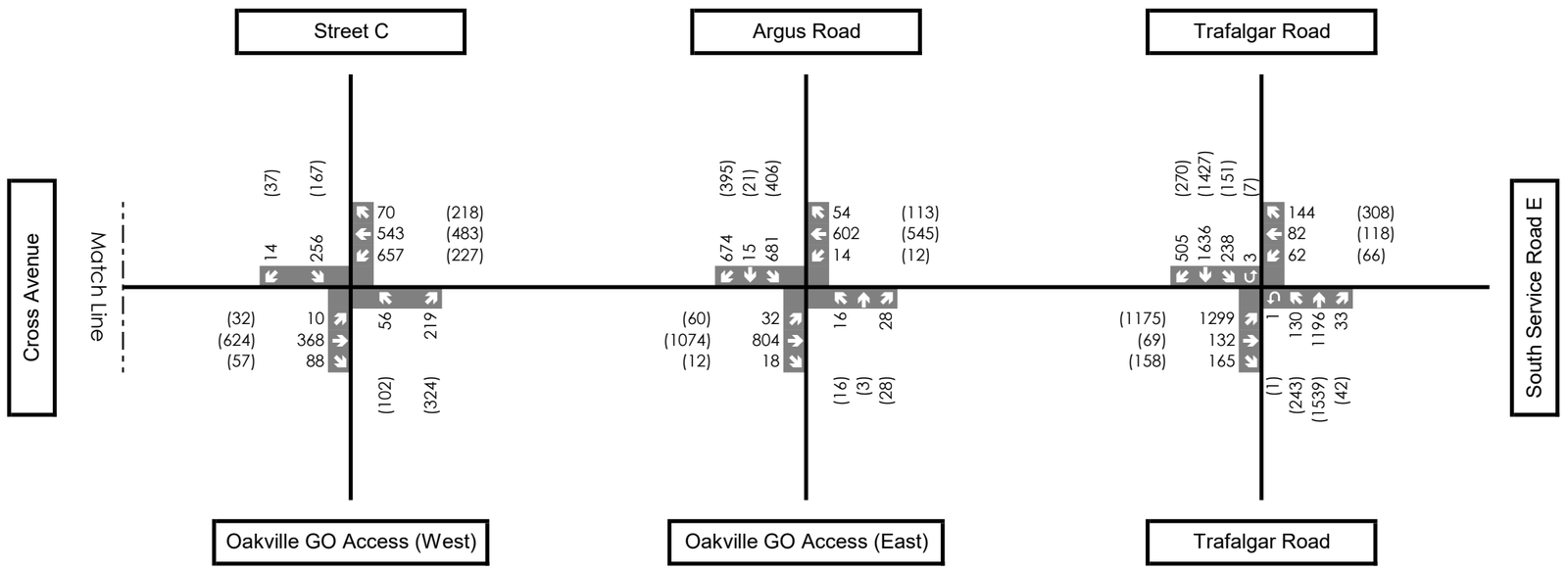
5.2 Intersection Modelling

Consistent with the future background model, PHFs and heavy vehicle percentages obtained from the TMCs were applied to the future total analysis. The proposed transportation network for Midtown Oakville was referenced, as illustrated in **Figure 6**. It is understood that Cross Avenue is planned to be widened to a 36-metre ROW. While the final cross-section has not been confirmed by Town staff, it is assumed that Cross Avenue will include two travel lanes and one dedicated transit lane on the outermost lane in each direction.

The future Synchro model reflects the assumed cross-sections by providing two travel lanes along Cross Avenue, with additional right-turn lanes providing minimal storage (10 metres) at intersections. These short-storage right-turn lanes are intended to represent vehicles using the outermost transit lane solely to complete right-turn movements at intersections, consistent with anticipated lane restrictions.

The signal timing plans used for the optimized future background conditions remain consistent for comparative purposes.





Legend

xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes

118-132 Cross Avenue

2030 Future Total Traffic Volumes

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Figure 13

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Date: 03/12/26
Analyst. Andrew Bader

5.3 Intersection Operations

Table 14 outlines the 2030 future total traffic conditions associated with the study road network, with detailed capacity analyses included in **Appendix F.**

Table 14: 2030 Future Total Level of Service

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Trafalgar Road & Cross Avenue/South Service Road East (Signalized)	**Overall**	**F**	**F**	**102.5**	**81.5**	**1.35**	**1.21**
	EBL	**F**	**F**	**197.6**	**139.1**	**1.35**	**1.21**
	EBL2	**F**	**F**	**197.6**	**139.1**	**1.35**	**1.21**
	EBT	C	B	23.6	11.3	0.29	0.22
	EBTR	C	B	23.6	11.3	0.29	0.22
	WBL	D	C	41.6	32.4	0.42	0.30
	WBT	**E**	**E**	**70.6**	**59.1**	0.40	0.29
	WBT2	**E**	**E**	**70.6**	**59.1**	0.40	0.29
	WBR	B	**E**	17.6	**68.0**	0.60	**0.96**
	NBL	D	**F**	50.2	**108.3**	0.67	**1.04**
	NBT	D	D	44.9	46.1	0.74	**0.87**
	NBT2	D	D	44.9	46.1	0.74	**0.87**
	NBTR	D	D	44.9	46.1	0.74	**0.87**
	SBL	D	**F**	47.9	**83.2**	0.76	**0.91**
	SBT	**F**	**F**	**106.8**	**86.0**	**1.14**	**1.07**
	SBT2	**F**	**F**	**106.8**	**86.0**	**1.14**	**1.07**
	SBTR	**F**	**F**	**106.8**	**86.0**	**1.14**	**1.07**
Lyons Lane & Cross Avenue (Signalized)	**Overall**	**B**	**B**	**10.1**	**11.8**	**0.46**	**0.58**
	EBL	B	B	11.3	12.8	0.14	0.25
	EBT	B	B	10.5	10.2	0.17	0.20
	EBT2	B	B	10.5	10.2	0.17	0.20
	EBR	A	A	4.8	0.1	0.16	0.02
	WBL	A	A	4.9	4.9	0.33	0.05
	WBT	A	A	4.6	6.7	0.12	0.26
	WBT2	A	A	4.6	6.7	0.12	0.26
	WBR	A	A	1.7	3.6	0.05	0.12
	NBL	C	D	32.0	39.9	0.15	0.58
	NBTR	B	A	12.8	9.0	0.14	0.30
	SBL	D	C	39.8	31.5	0.46	0.29
	SBTR	B	A	11.1	8.2	0.43	0.33
Oakville GO Access (west)/Street C & Cross Avenue (Signalized)	**Overall**	**D**	**B**	**37.8**	**13.0**	**1.04**	**0.74**
	EBL	C	A	27.1	8.7	0.07	0.08
	EBT	D	A	35.3	8.9	0.65	0.37
	EBT2	D	A	35.3	8.9	0.65	0.37
	EBR	B	A	10.9	4.5	0.27	0.07
	WBL	**E**	C	**64.5**	22.6	**1.04**	0.65
	WBT	A	A	9.4	8.4	0.32	0.30

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
	WBT2	A	A	9.4	8.4	0.32	0.30
	WBR	A	A	3.3	3.0	0.08	0.27
	NBL	C	B	23.2	17.0	0.15	0.33
	NBTR	A	B	0.7	16.5	0.27	0.68
	SBL	**F**	D	**90.6**	44.3	**1.01**	0.74
	SBTR	A	C	0.1	20.4	0.02	0.54
Oakville GO Access (east)/Argus Road & Cross Avenue (Signalized)	**Overall**	**D**	**C**	**36.6**	**22.2**	**1.03**	**0.93**
	EBL	C	B	20.3	10.3	0.13	0.16
	EBT	C	B	31.7	18.8	0.72	0.71
	EBT2	C	B	31.7	18.8	0.72	0.71
	EBR	A	A	4.5	0.6	0.07	0.03
	WBL	D	C	42.1	27.8	0.24	0.20
	WBT	D	C	35.8	21.1	0.66	0.47
	WBT2	D	C	35.8	21.1	0.66	0.47
	WBR	A	A	7.6	8.8	0.13	0.20
	NBL	B	C	19.7	22.8	0.19	0.18
	NBTR	A	A	0.8	8.1	0.07	0.11
	SBL	**E**	D	**66.4**	52.9	**1.03**	**0.93**
	SBTR	B	A	17.0	6.3	0.78	0.58
Speers Road/Cornwall Road & Cross Avenue (Signalized)	**Overall**	**A**	**C**	**8.1**	**22.8**	**0.68**	**0.86**
	EBL	A	C	6.7	31.5	0.61	0.76
	EBT	A	A	2.9	5.7	0.29	0.26
	EBT2	A	A	2.9	5.7	0.29	0.26
	WBT	A	C	7.8	22.8	0.31	0.66
	WBTR	A	C	7.8	22.8	0.31	0.66
	SBL	**E**	D	**69.8**	52.4	0.40	0.24
	SBR	B	C	12.6	34.8	0.68	**0.86**
	SBR2	B	C	12.6	34.8	0.68	**0.86**
Site Access & Cross Avenue (Unsignalized)	**Overall**	**B**	**B**	**10.7**	**13.4**	**0.18**	**0.22**
	EBT	A	A	0.0	0.0	0.13	0.22
	EBT2	A	A	0.0	0.0	0.13	0.22
	EBR	A	A	0.0	0.0	0.01	0.02
	WBL	A	A	8.3	9.5	0.03	0.09
	WBT	A	A	0.0	0.0	0.18	0.18
	WBT2	A	A	0.0	0.0	0.18	0.18
	NBLR	B	B	10.7	13.4	0.14	0.18
	Overall	**B**	**B**	**12.4**	**12.9**	**0.56**	**0.64**
	EBL	A	A	8.8	9.2	0.02	0.06

Intersection	Movement	LOS		Delay (s)		v/c Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Street A & Cross Avenue (Signalized)	EBT	B	B	11.7	13.7	0.45	0.64
	EBT2	B	B	11.7	13.7	0.45	0.64
	EBR	A	A	0.0	0.0	0.01	0.00
	WBL	-	-	-	-	-	-
	WBT	B	B	12.9	12.2	0.56	0.53
	WBT2	B	B	12.9	12.2	0.56	0.53
	WBR	-	-	-	-	-	-
	NBL	-	A	-	8.0	-	0.00
	NBTR	-	-	-	-	-	-
	SBL	-	-	-	-	-	-
	SBTR	-	A	-	0.0	-	0.01

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped)approach control delay per vehicle.

Note 2: All v/c ratios above critical thresholds are outlined. All v/c ratios for through movements or shared through/turning movements greater than 0.85 are outlined with red text. All v/c ratios for exclusive movements greater than 0.95 are outlined with red text. The maximum v/c ratio for the weekday a.m. and p.m. peak hours is bolded.

Under 2030 future total conditions, the intersection of Trafalgar Road & Cross Avenue/South Service Road is expected to operate at an LOS "F" and "E" during the AM and PM peak hours, respectively. The intersection experiences overall control delays of 102.5 and 81.5 seconds during the AM and PM peak hours, respectively. Critical movements are experienced at the eastbound left, westbound through, and southbound through movements during both peak hours. During the PM peak hour only, critical movements exist at the westbound right, northbound left, and southbound left movements. During peak hours, the intersection is expected to operate with volumes exceeding its theoretical capacity.

The signalized intersection of future "Street C" and Cross Avenue, is expected to operate at an LOS "D" and "B" during the AM and PM peak periods, respectively. While the intersection is expected to operate with reasonable overall control delays, the westbound and southbound left movements are expected to operate critically with a control delay of 64.5 and 90.6 seconds during the AM peak period, respectively. No critical movements are expected during the PM peak period.

Similarly, most movements at the Argus Road and Cross Avenue intersection are expected to operate with reasonable control delays, aside from the southbound left movement during the AM peak hour. The southbound left movement is expected to operate with a control delay of 66.4 seconds and theoretical v/c ratio of 1.03.

The Speers Road/Cornwall Road and Cross Avenue intersection operates efficiently with an LOS "A" and "C" during the AM and PM peak periods, respectively, with a maximum v/c ratio of 0.86. During the PM peak period, the southbound left movement is considered critical as it experiences a control delay of 70.4 seconds.
The remaining intersections operate efficiently with reasonable control delays, no critical movements and with reserve capacity to accommodate future increases in traffic.

5.4 *Queuing Analysis*

Synchro was used to assess the 95th and 50th percentile queues against the available storage lane lengths at the study intersections under 2030 future total conditions, to analyze the potential for queueing exceedances. **Table 15** outlines the queuing analysis.

Table 15: 2030 Future Total Queuing Analysis

Intersection (Control)	Performance Metrics			
	Movement	95th Percentile Queue Length (m)		Auxiliary Lane Storage Length (m)
		A.M.	P.M.	
Trafalgar Road & Cross Avenue/South Service Road East	EBL	275 [240]	225 [185]	128
	WBL	25	25	45
	NBL	65	130 [70]	112
	SBL	85 [50]	80 [35]	55
Lyons Lane (east)/Trafalgar Village Access & Cross Avenue	EBL	15	25	30
	WBL	25	5	27.5
	NBL	15	40 [25]	30
	SBL	30 [15]	20 [10]	15
Oakville GO Access (west)/Street C & Cross Avenue	EBL	10	10	15
	WBL	170 [105]	60 [15]	40
	NBL	20 [10]	20 [10]	15
	SBL	105 [45]	30 [10]	15
Oakville GO Access (east)/Argus Road & Cross Avenue	EBL	15 [5]	15 [5]	12
	WBL	10	10	22
	NBL	10	10	15
	SBL	225 [160]	125 [65]	15
Speers Road/Cornwall Road & Cross Avenue	EBL	25	80 [40]	75
	SBL	30	30	40
Street A & Cross Avenue	EBL	5	5	15

Note 1: 95th and 50th percentile queue lengths exceeding the storage length are highlighted in red.
Note 2: Transit lanes that were modelled as exclusive right-turn lanes with a reduced storage length to represent transit lane restrictions, were removed from the queuing analysis.

As outlined in **Table 15,** occasional queuing exceedances are expected throughout the study road network under future total conditions. While the 95th percentile queues are expected to exceed the provided storage lengths, the average queues can be accommodated for most movements. The average queue at the eastbound left-turn at Trafalgar Road and Cross Avenue, as well as the southbound left-turn at the Argus Road and Cross Avenue intersection are expected to exceed their respective storage lengths. The queuing issues are consistent with the future background conditions, and it is recommended that the Town considers extended storage lanes for the movements expected to have significant queuing.

6.0 Traffic Safety

6.1 Sight Distance Assessment

The available sightlines at the proposed site access on Cross Avenue were measured and compared to the standard set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). Sight distances were measured from the proposed site access using the following assumptions:

- A standard drive eye height of 1.08 metres for a passenger car, and
- A 4.4-5.4 metre setback from the approximate extension of the outer curb to represent a vehicle waiting to exit the site.

Intersection sight distance is calculated using equation 9.9.1 from the GDGCR as outlined below:

$$ISD = 0.278 * V_{major} * t_g$$

Where:

ISD = Intersection Sight Distance
V_{major} = design speed of roadway (km/h)
t_g = assumed time gap for vehicles to turn from stop onto roadway (s)

The design speed of roadway in an urban environment is typically 10 km/h greater than the posted speed limit. As the posted speed limit on Cross Avenue is 50km/h, a design speed of 60 km/h was assumed for the sight distance analysis.

Table 16 below outlines the sight distance analysis for the proposed site access. **Appendix J** contains relevant TAC excerpts.

Table 16: Sight Distance Analysis

Parameter	Cross Avenue Site Access
Access Type	Full Moves
Intersection Control	Case B: Stop Control on Minor Road
Posted Speed Limit	50 km/h (Assumed)
Assumed Design Speed	60 km/h
Base Time Gap	Left Turn: 7.5 seconds Right Turn: 6.5 seconds
Additional Time Gap	Left Turn: 1.5 second[1]
Grade of Roadway	Less than 3%
Horizontal Alignment of Roadway	Straight
Intersection Sight Distance Required[2] (TAC GDGCR Eqn. 9.9.1)	Left Turn: 155 m Right Turn: 110 m
Intersection Sight Distance Available	Left Turn: 155 m+ Right Turn: 110 m

Note 1: Additional time gap of 1.5 seconds based on the assumption that a left-turning vehicle exiting the site will cross the transit lane, and both eastbound travel lanes.

Note 2: Based on the signalized intersection of Lyons Lane and Cross Avenue, a significantly lower required sight distance is expected as vehicles are expected to travel at a low speed around the curve.

As typically seen in urban environments, egressing vehicles are expected to conduct a two-stage egress maneuver. From this perspective, egressing vehicles can observe pedestrians and cyclists without expected sight distance issues while stopped at 4.4 m to 5.4 m from the edge of roadway. Once moved closer to the edge of roadway, drivers are expected to have a clear visual of the roadway.

Although Cross Avenue is curved west of the subject property, adequate sight distance is expected to be achieved. Based on future conditions, it is expected that drivers egressing the site access can look west, beyond the signalized intersection of Lyons Lane and Cross Avenue. Due to the signalized intersection, vehicles turning onto Cross Avenue not expected to reach the posted or design speed, and egressing vehicles have a clear visual of the intersection. Accordingly, no sight distance issues are expected to the west of the Site Access.

Based on the current conditions east of the Site Access along Cross Avenue, it is expected that vehicles will have ample sight distance, beyond the TAC requirements for a left-turn. No site distance issues are expected to the east of the Site Access.

6.2 Site Circulation

Vehicle Turning Diagrams were prepared using a Halton waste collection vehicle, a fire truck, passenger vehicles, and a medium single unit (MSU) truck. The drawings indicate that there is sufficient space for the aforementioned vehicles to manoeuvre in and out of the site access, underground parking spaces, and loading area without conflict. While it is assumed that fire trucks will park on Cross Avenue to service the building, it was demonstrated that fire trucks can traverse in and out of the site safely, if needed.

Vehicle turning diagrams for the design vehicles are included in **Appendix K**.

Accordingly, the proposed development can be supported from a safety perspective.

7.0 Town of Oakville Zoning By-Law Requirements

This section reviews the vehicle, accessible, and bicycle parking requirements, as well as the loading requirements for the proposed development based on the Town of Oakville Zoning By-Law (ZBL). The requirements are based on the Oakville ZBL 2014-014, consolidated to July 10, 2024.

Appendix L Contains ZBL excerpts.

7.1 Potential PMTSA Designation Impacts

As mentioned in **Section 3.3.1,** OPA 70 designates the Midtown Oakville lands as a future site for a PMTSA. Typically in PMTSAs, minimum ZBL vehicle parking rates are often removed to support the intended usage of transit and active transportation as primary modes of travel.

While the proposed development's parking requirements were analyzed against the subject land's current ZBL requirements, it can be expected that the vehicle parking requirements will be removed in the future.

7.2 Vehicle Parking Requirements

The proposed parking supply was assessed against the Oakville ZBL. The minimum parking requirements per Table 5.2.2 of the Oakville ZBL are outlined below in **Table 17**.

Table 17: North Oakville Zoning By-Law Parking Requirements

Land Use	Units	Minimum Vehicle Parking Rate	Required Parking Spaces[1]
Apartment Dwelling – Less than 75m² of Net Floor Area	391 dwelling units	1 space per dwelling unit[2]	391 spaces
Apartment Dwelling – Greater than 75m² of Net Floor Area	38 dwelling units	1.25 spaces per dwelling unit	48 spaces
Retail Store[2]	580.5 m² leasable GFA	1 space per 18 m² of Net Floor Area	33 spaces
Parking Required			**472 spaces**
Parking Supplied			**84 spaces**
Surplus/Deficiency			**- 388 spaces**

Note 1: Fractions above 0.25 are rounded up to the nearest whole number.
Note 2: From Table 5.2.1 in the Oakville ZBL.

As outlined above, the Oakville ZBL requires the proposed development to provide a minimum parking supply of 472 parking spaces. As the Site Plan proposes 84 parking spaces, the development proposes a deficit of 388 spaces in comparison to the Oakville ZBL.

7.3 Visitor Parking Requirements

The proposed visitor parking supply was assessed against the Oakville ZBL. The minimum parking requirements per Note 1 of Table 5.2.2 of the Oakville ZBL are outlined below in **Table 18.**

Table 18: North Oakville Zoning By-Law Visitor Parking Requirements

Land Use	Required Parking Spaces	Visitor Vehicle Parking Rate	Required Visitor Parking Spaces[1]
Apartment Dwelling – Less than 75m² of Net Floor Area	391 spaces	0.25 of the parking spaces required	98 spaces
Apartment Dwelling – Greater than 75m² of Net Floor Area	38 spaces		10 spaces
Visitor Parking Required			**108 spaces**
Visitor Parking Supplied			**21 spaces**
Surplus/Deficiency			**-87 spaces**

Note 1: Fractions above 0.25 are rounded up to the nearest whole number.

As outlined above, the Oakville ZBL requires the proposed development to provide 108 visitor parking spaces, inclusive of the total parking supply. As the Site Plan proposes 21 visitor parking spaces, the development proposes a deficit of 87 spaces in comparison to the Oakville ZBL.

7.4 Accessible Parking Requirements

The proposed accessible parking supply was assessed against the Oakville ZBL. The minimum accessible parking requirements per Table 5.3.1 of the Oakville ZBL are outlined below in **Table 19**.

Table 19: North Oakville Zoning By-Law Accessible Parking Requirements

Total Parking Spaces in all Parking Areas on the Lot	Minimum Rate	Type A Spaces Required	Type B Spaces Required
Between 26-100 parking spaces (84 Spaces)	4% of the total number of parking spaces in the parking area	2 space	2 spaces
Accessible Parking Spaces Proposed		**2 spaces**	**2 spaces**
Surplus/Deficiency		**+0**	**+0**

Note 1: An equal number of Type A and Type B spaces shall be provided when the barrier-free parking requirement is an even number. If the barrier-free parking requirement is an odd number, an extra Type B space shall be provided.

According to the Oakville Zoning By-law, a total of 2 Type A and 2 Type B accessible parking spaces are required. As the Site Plan proposes 2 Type A and 2 Type B accessible spaces, the development meets the ZBL accessible parking requirements.

7.5 Bicycle Parking Requirements

The proposed bicycle parking supply was assessed against the Oakville ZBL. The minimum bicycle parking requirements per Table 5.4.1 of the Oakville ZBL are outlined below in **Table 20**.

Table 20: North Oakville Zoning By-Law Bicycle Parking Requirements

Land Use	Units	Minimum Bicycle Parking Rate	Required Bicycle Parking Spaces
Apartment dwelling	429 dwelling units	1 space per dwelling[1]	429 spaces (108 visitor)
Retail Store	580.5 m^2 leasable GFA	The greater of 2 or 1 space per 1,000 m^2 Net Floor Area	2 spaces
Bicycle Parking Spaces Required[1]			**30 spaces, 8 visitor**
Bicycle Parking Spaces Proposed			**32 spaces, 8 visitor (2 commercial, 6 residential)**
Surplus/Deficiency			**+_2 spaces, 0 visitor**

Note 1: Of the total number of bicycle parking spaces required, 0.25 of the bicycle parking spaces required per dwelling shall be designated as visitors bicycle parking spaces
Note 2: According to Section 5.4.1 note b), in no circumstance shall the number of minimum bicycle parking spaces required on a lot be greater than 30.

The Town of Oakville Zoning By-Law states that in no circumstances shall the number of minimum bicycle parking spaces required on a site be greater than 30, as noted in note 2 of **Table 20**.

Accordingly, a total of 30 bicycle parking spaces are required, with eight (8) of the spaces being visitor spaces (2 commercial, 6 residential). As the development proposes 32 bicycle parking spaces, the development proposes a surplus of 2 spaces in comparison to the Oakville ZBL.

7.6 Loading Requirements

There is no minimum number of loading spaces required by the Town of Oakville Zoning By-law 2014-014. Nonetheless, the development proposes a loading area in support of deliveries and the garbage room located at ground level.

When a loading space is provided, the Town of Oakville requires the loading space to be 3.5 metres in width and 12.0 meters in length, with a minimum vertical clearance of 4.2 meters. As the proposed loading space is 6.0 metres in width and 18.0 meters in length, with a vertical clearance of 7.5 meters, the proposed loading space exceeds the Town's requirements.

8.0 Transportation Demand Management (TDM) Strategies

There are several existing, future, and site-specific Transportation Demand Management (TDM) opportunities in the Town of Oakville and Region of Halton to encourage the use of non-auto transportation, reduce single-occupancy vehicle (SOV) trips and parking demand for the proposed development, and to improve community health.

8.1 Existing TDM Measures

Smart Commute Initiative

The Town of Oakville is participating in the Smart Commute Initiative, Canada's largest ever transportation demand reduction program. Oakville's Smart Commute Initiative offers programs and services to encourage and help town employees get to work by means other than SOV trips including carpooling, cycling, and public transit.

8.2 Future TDM Measures

Transit

As discussed in **Section 2.3,** the subject site is currently well serviced by intra- and inter-regional transit, primarily through GO and Oakville Transit Bus routes.

Section 3.3 outlines the Town's plan to create a transit supportive community throughout Midtown Oakville. The Midtown Oakville lands are designated as a PMTSA, with substantial improvements planned to strengthen the existing GO and VIA Rail stations, as the Town's future hub for transit services. Upgrades to enhance the local bus network, expand commuter rail service, and link BRT routes to the GTHA transportation system are also planned in the midtown Oakville area.

Pedestrian and Cycling

As mentioned in **Section 3.4,** a key focus of the Midtown Oakville development is to implement a transit supportive community, designed in a pedestrian-oriented manner. Cycling facilities are planned within the right-of-way of key roadways such as Cross Avenue, South Service Road, and Cornwall Road, as well as future north-south roadways, to offer excellent cycling connectivity

throughout Midtown Oakville. It is expected that pedestrian facilities will be provided along most roadways. Active transportation connections are also planned at the boundaries of Midtown Oakville.

8.3 Site Specific TDM Opportunities and Recommendations

There are several opportunities for the development to promote TDM measures in support of reduced automobile use. The following measures, outlined in **Table 21**, are recommended for the proponent to undertake, and are expected to contribute to a reduced automobile use and increased sustainable mode share.

Table 21: Site Specific TDM Recommendations

Recommended/Provided TDM Measure	Implementation Summary
TDM Information Package for Residents	TDM information packages can be provided directly to residents upon move-in (and updated periodically), and can comprise of active transportation network maps, transit maps, and transit schedules. This increased awareness and education of convenient transit options has been historically shown to increase transit mode share in similar developments and would be expected to provide similar benefits to the proposed development. Prior to move-in, future residents can be informed of the active transportation and TDM opportunities around the proposed development. Periodic updates can be provided via marketing materials posted in the common area or sent via resident monthly email. TDM Information Packages can also be made available in the lobby or common areas for the retail customers to browse.
Bicycle Repair Station	A bicycle repair station with a toolkit and pump are also recommended. These stations can be provided in close proximity to the bicycle parking provided to promote cycling use. These stations also increase confidence and reliability for prospective cyclists to cycle as their primary mode of transportation.
Excess Secure Bicycle Parking	The development will require 30 bicycle parking spaces, inclusive of 8 visitor bicycle parking spaces. Despite the ZBL's minimum rate, a total of 32 bicycle parking spaces are proposed. Access to safe and secure bicycle parking will increase confidence and reliability for residents to cycle as their primary mode of transportation.
Unbundled Parking	Parking will be unbundled from units and available for purchase on a first come first serve basis. Prospective residents will be advised in advance of parking availability and cost of purchasing a parking space, if available. Potential residents who need a parking space will be required to find an alternative off-site parking space or choose to live at a different development, should resident parking not be available. Potential residents will also be warned of the limited on-street parking in the area. This strategy allows for prospective residents to choose whether they wish to incur the added cost of purchasing a parking space, particularly if parking is not desired.
Pre-loaded Presto Cards	One-time pre-loaded or discounted Presto cards should be provided for residents to encourage transit use as the primary mode to and from the site.
Real-Time Transit Information	Employees and Residents should be encouraged to use the Oakville Transit app to access real-time bus tracking on their smartphone. The Oakville Transit app offers "Track by Text" where users can text their stop number to get the next bus arrival time, as well as "Bus Finder" to view estimated arrival times for a bus stop or to check the map to see exactly where a bus is.

9.0 Conclusion

Balbir Sanghera retained C.F. Crozier & Associates Inc. (Crozier) to complete a Transportation Impact Study in support of the proposed mixed-use development located at 118-132 Cross Avenue, in the Town of Oakville, Region of Halton. The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the study road network and to recommend or confirm any required mitigation measures, if warranted.

Based on the most recent Site Plan prepared by BDP Quadrangle, the Development Proposal envisions a 38-storey condominium tower with approximately 429 residential units and 580.5 m^2 of commercial use. To facilitate the development, a full moves site access at Cross Avenue is proposed which provides access to the underground parking facilities and at-grade loading area.

Existing Conditions

Pedestrian facilities are provided along the segments and intersections of the study road network. Each study roadway has a minimum 1.5-meter sidewalk on at least one side, while signalized intersections feature delineated crosswalks with pedestrian signal heads.

The Subject Site is located in an area with a high level of transit accessibility, serviced by Oakville Transit Busses, GO Busses, GO Trains, VIA Rail and Amtrack. The closest bus stop is less than 50 meters away from the subject site, at the Cross Avenue and Lyons Lane intersection, where six (6) Oakville Transit Routes can be accessed. The Oakville GO Station is also situated approximately 240 metres east of the subject site.

The intersection of Trafalgar Road & Cross Avenue/South Service Road East operates at an LOS "C" and "D" during the AM and PM peak hours, respectively. The intersection of Cross Avenue & Argus Road/Oakville GO Access (east) operates at an LOS "B" during the AM and PM peak hours.

The intersection of Cross Avenue & Speers Road/Cornwall Road operates at an LOS "A" and "B" during the AM and PM peak hours, respectively. The remaining intersections are observed to operate efficiently with no critical movements.

Future Background Conditions

The Town of Oakville carried out a Class Environmental Assessment (EA) for Midtown Oakville to help plan the transportation and municipal stormwater infrastructure necessary to support the area's anticipated growth. The study identified key modifications to both the existing and proposed road network that will be needed to accommodate this planned development.

Under 2030 future background conditions, the intersection of Trafalgar Road & Cross Avenue/South Service Road operates at an LOS "F" and "E" during the AM and PM peak hours, respectively. The signalized intersection of future "Street C" and Cross Avenue, operates at an LOS "C" and "B" during the AM and PM peak periods, respectively. Similarly, most movements at the Argus Road and Cross Avenue intersection are expected to operate with reasonable control delays, aside from the southbound left movement.

The Speers Road/Cornwall Road and Cross Avenue intersection operates efficiently with an LOS "B" during the AM and PM peak period, with a maximum v/c ratio of 0.87. The remaining intersections operate efficiently with reasonable control delays, no critical movements and with reserve capacity

to accommodate future increases in traffic.

With significant operational issues in the future background conditions, it is recommended that the signal timings at the Trafalgar Road & Cross Avenue/South Service Road, Street C & Cross Avenue, and Argus Road & Cross Avenue are optimized to help mitigate the effects of the expected increases in traffic volumes. Additionally, it is recommended that the Town constructs turning lanes with storage capacity to accommodate the 95th percentile queues outlined in this report.

With optimized signal timings applied, the intersection of Trafalgar Road & Cross Avenue/South Service Road still operates at an LOS "F" and "E" during the AM and PM peak hours, respectively, with an improvement in overall control delay at the intersection of Street C and Cross Avenue, the signal timings were optimized for the PM peak period only with an improvement in overall control delay and the southbound and northbound left turns. The optimized signal timing plans at the Argus Road and Cross Avenue intersection improve the LOS from "E" and "C" to a "D" and "C" during the AM and PM peak hours, respectively.

Overall, some operational issues experienced under future background conditions can be mitigated through the improvements suggested herein. It is still expected that the Cross Avenue and Trafalgar Road intersection will experience operational issues during the peak hours, but that is typical at major intersections during peak hours in urban areas.

Future Total Conditions

The proposed development is forecasted to generate 140 and 186 net site vehicle trips during the weekday AM and PM peak hours, respectively. Compared to 2030 background conditions, the future total scenario shows generally consistent control delays and v/c ratios across most intersections, suggesting that operational challenges are primarily driven by background development traffic and the continued growth of existing volumes.

Traffic Safety

Although Cross Avenue is curved west of the subject property, adequate sight distance is expected to be achieved. Based on future conditions, it is expected that drivers egressing the site access can look west, beyond the signalized intersection of Lyons Lane and Cross Avenue. Due to the signalized intersection, vehicles turning onto Cross Avenue not expected to reach the posted or design speed, and egressing vehicles have a clear visual of the intersection. Accordingly, no sight distance issues are expected to the west of the Site Access.

Based on the current conditions east of the Site Access along Cross Avenue, it is expected that vehicles will have ample sight distance, beyond the TAC requirements for a left-turn. No site distance issues are expected to the east of the Site Access. Vehicle Turning Diagrams were prepared to indicate that there is sufficient space for vehicles expected to use the site to maneuver in and out of the site access, underground parking spaces and loading area without conflict.

Parking

The vehicle, accessible, and bicycle parking requirements, as well as the loading requirements were reviewed for the proposed development based on the Town of Oakville Zoning By-Law (ZBL). It is our understanding that all zoning requirements for parking and loading will be met by this application.

The analysis contained within this report was prepared using the most recent Architectural Plans. Any minor changes to the plans are not expected to materially affect the conclusions contained within this report.

In conclusion, the proposed development at 118-132 Cross Avenue can be supported from a transportation engineering perspective.

C.F. CROZIER & ASSOCIATES INC.

Ian Lindley, M.A.Sc., P.Eng.
Project Manager, Transportation

C.F. CROZIER & ASSOCIATES INC.

Aaron Wignall, Associate
Senior Project Manager, Transportation

AB/ak.sa

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APPENDIX A: Architectural Drawing Sets

BDP.
Quadrangle

Quadrangle Architects Limited
The Well, 8 Spadina Avenue, Suite 2100, Toronto, ON M5V 0S8
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118-132 Cross Avenue

Oakville, ON

for
Batory Planning and Management

Project No. 23031
Date 27 JULY 2026
Issued for Official Plan and Zoning Bylaw Amendment Application

ARCHITECTURAL DRAWINGS

A000.S Cover Page
A001.S Visualization Images

A100.S Statistics
A101.S Site Plan
A151.S P3 and P3 Lower Parking Plans
A152.S P1 and P2 Parking Plans

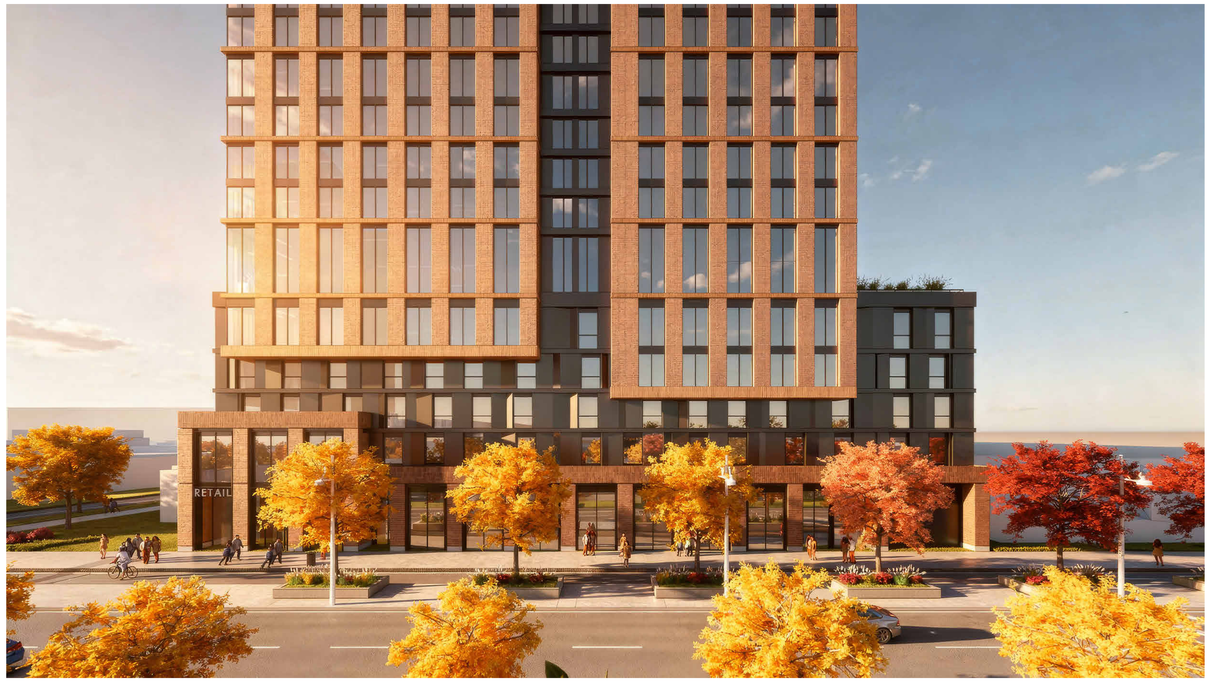
A201.S Ground Floor Plan
A202.S Floors 2 and 3 Plans
A203.S Floors 4 and 5 Plans
A204.S Floor 6 and Typical Tower Floors (L7-L38)
A205.S MPH and Roof Plans

A401.S Building Elevations - North and East
A402.S Building Elevations - South and West

A451.S Building Sections



VIEW 1: LOOKING SOUTH ALONG CROSS AVENUE



VIEW 2: LOOKING SOUTHEAST FROM CROSS AVENUE

Date	No.	Description

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118-132 Cross Avenue

Oakville, ON
for
Batory Planning and Management

23031	ER	SK
PROJECT SCALE	DRAWN	REVIEWED

Visualization Images

A001.S

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BUILDING AREA

Gross Floor Area Summary by Use

Use	GFA
NON-RESIDENTIAL	580.5 m²
RESIDENTIAL	31,399.5 m²
TOTAL GROSS FLOOR AREA	31,980.1 m²

Gross Floor Area Breakdown

Typical Levels	Floor Count	Use	Area per Floor	GFA
FLOORS 7-38	32	RESIDENTIAL	794 m²	25,417.8 m²
FLOOR 7			794 m²	25,417.8 m²
FLOOR 6	1	RESIDENTIAL	794 m²	794.3 m²
FLOOR 6			794 m²	794.3 m²
FLOOR 5	1	RESIDENTIAL	1,077 m²	1,076.9 m²
FLOOR 5			1,077 m²	1,076.9 m²
FLOOR 4	1	RESIDENTIAL	1,049 m²	1,049.1 m²
FLOOR 4			1,049 m²	1,049.1 m²
FLOOR 3	1	RESIDENTIAL	1,027 m²	1,027.3 m²
FLOOR 3			1,027 m²	1,027.3 m²
FLOOR 2	1	NON-RESIDENTIAL	274 m²	274.1 m²
FLOOR 2	1	RESIDENTIAL	814 m²	814.3 m²
FLOOR 2			1,088 m²	1,088.4 m²
GROUND FLOOR	1	NON-RESIDENTIAL	306 m²	306.4 m²
GROUND FLOOR	1	RESIDENTIAL	1,220 m²	1,219.7 m²
GROUND			1,526 m²	1,526.2 m²
TOTAL GROSS FLOOR AREA			7,357 m²	31,980.1 m²

Gross Building Area- Summary*

Name	Floor Count	GBA
GROSS BUILDING AREA	42	37,915.6 m²

* Includes above and below grade levels, with no area exclusions (excludes open to below areas).

Gross Building Area- Above Grade*

Level	Floor Count	Area per Floor	GBA
MECHANICAL PENTHOUSE	1	497.5 m²	497.5 m²
FLOORS 7-38	32	794.3 m²	25,417.8 m²
FLOOR 6	1	794.3 m²	794.3 m²
FLOOR 5	1	1,076.9 m²	1,076.9 m²
FLOOR 4	1	1,049.1 m²	1,049.1 m²
FLOOR 3	1	1,027.3 m²	1,027.3 m²
FLOOR 2	1	1,088.4 m²	1,088.4 m²
GROUND FLOOR	1	1,526.2 m²	1,526.2 m²
TOTAL ABOVE-GRADE GROSS BUILDING AREA	39		32,477.6 m²

* Excludes open to below areas.

Gross Building Area - Below Grade

Level	Floor Count	Area per Floor	GBA
P1	1	1,813 m²	1,812.7 m²
P2	1	1,813 m²	1,812.7 m²
P3	1	1,813 m²	1,812.7 m²
TOTAL BELOW-GRADE GROSS BUILDING AREA	3		5,438.0 m²

Statistics Notes

Floor Area: means the aggregate area of a building contained within the exterior walls, but does not include attic or basement space

GFA: GFA means the total area of all of the floors in a building measured from the exterior faces of the exterior walls, but shall not include an attic, basement or mechanical penthouse (By-Law 2023-065). GFA is used for calulating FSI

NOTE: All open to below areas are excluded in GBA and GFA, unless indicated otherwise.

UNIT COUNT

Unit Mix

Unit Type	Unit Count	Distribution	Saleable Area	Saleable Area (sft)	Average Unit Size	Average Unit Size (sft)
1B	176	41.0%	8,376 m²	90,154 ft²	47.6 m²	512 ft²
1B+D	74	17.2%	4,231 m²	45,537 ft²	57.2 m²	615 ft²
2B	109	25.4%	7,304 m²	78,619 ft²	67.0 m²	721 ft²
3B	38	8.9%	3,234 m²	34,813 ft²	85.1 m²	916 ft²
STUDIO	32	7.5%	1,227 m²	13,213 ft²	38.4 m²	413 ft²
TOTAL UNITS	429	100.0%	24,372 m²	262,335 ft²		

Unit Mix Per Floor

Typical Levels	Unit Type	Units Per Floor	Total Units	Distribution	Saleable Area	Saleable Area (sft)	Average Unit Size	Average Unit Size (sft)
FLOOR 2	1B	1	1	0.2%	46 m²	493 ft²	45.8 m²	493 ft²
FLOOR 2	1B+D	1	1	0.2%	56 m²	599 ft²	55.7 m²	599 ft²
FLOOR 2	2B	1	1	0.2%	65 m²	696 ft²	64.6 m²	696 ft²
FLOOR 2: 3			3	0.7%	166 m²	1,788 ft²	166.1 m²	1788 ft²
FLOOR 3	1B	5	5	1.2%	239 m²	2,571 ft²	47.8 m²	514 ft²
FLOOR 3	1B+D	3	3	0.7%	169 m²	1,817 ft²	56.3 m²	606 ft²
FLOOR 3	2B	4	4	0.9%	296 m²	3,189 ft²	74.1 m²	797 ft²
FLOOR 3	3B	2	2	0.5%	183 m²	1,971 ft²	91.5 m²	985 ft²
FLOOR 3: 14			14	3.3%	887 m²	9,549 ft²	269.7 m²	2903 ft²
FLOOR 4	1B	5	5	1.2%	252 m²	2,716 ft²	50.5 m²	543 ft²
FLOOR 4	1B+D	3	3	0.7%	169 m²	1,816 ft²	56.3 m²	605 ft²
FLOOR 4	2B	4	4	0.9%	305 m²	3,279 ft²	76.1 m²	820 ft²
FLOOR 4	3B	2	2	0.5%	182 m²	1,963 ft²	91.2 m²	981 ft²
FLOOR 4: 14			14	3.3%	908 m²	9,774 ft²	274.0 m²	2950 ft²
FLOOR 5	1B	5	5	1.2%	260 m²	2,800 ft²	52.0 m²	560 ft²
FLOOR 5	1B+D	3	3	0.7%	177 m²	1,906 ft²	59.0 m²	635 ft²
FLOOR 5	2B	4	4	0.9%	305 m²	3,279 ft²	76.1 m²	820 ft²
FLOOR 5	3B	2	2	0.5%	194 m²	2,089 ft²	97.0 m²	1044 ft²
FLOOR 5: 14			14	3.3%	936 m²	10,073 ft²	284.2 m²	3059 ft²
FLOORS 7-38	1B	5	160	37.3%	7,578 m²	81,573 ft²	47.4 m²	510 ft²
FLOORS 7-38	1B+D	2	64	14.9%	3,660 m²	39,398 ft²	57.2 m²	616 ft²
FLOORS 7-38	2B	3	96	22.4%	6,334 m²	68,177 ft²	66.0 m²	710 ft²
FLOORS 7-38	3B	1	32	7.5%	2,675 m²	28,790 ft²	83.6 m²	900 ft²
FLOORS 7-38	STUDIO	1	32	7.5%	1,227 m²	13,213 ft²	38.4 m²	413 ft²
FLOORS 7-38: 12			384	89.5%	21,475 m²	231,151 ft²	292.5 m²	3148 ft²
TOTAL UNITS			429	100.0%	24,372 m²	262,335 ft²		

PARKING / LOADING / WASTE

Provided Car Parking

Level	Type	Count	Designation
P3 - LOWER	2700x5700 Standard	10	Resident
P3	2700x5700 Standard	29	Resident
P3	3650x5700 Barrier Free Type A	1	Resident
P2	2700x5700 Standard	21	Resident
P2	3650x5700 Barrier Free Type B	2	Resident
Resident: 63		63	
P2	2700x5700 Standard	7	Visitor
P1	2700x5700 Standard	13	Visitor
P1	3650x5700 Barrier Free Type A	1	Visitor
Visitor: 21		21	
TOTAL PARKING SPACES: 84		84	

Provided Bicycle Parking

Level	Usage	Type	Energized Parking	Count
GROUND	Commercial	Vertical	No	2
Commercial:				2
GROUND	Residential	Stacked	No	12
GROUND	Residential	Vertical	No	18
Residential:				30
TOTAL BICYCLE SPACES				32

Loading Statistics

RESIDENTIAL			429 UNITS
REQUIRED:	1	PROVIDED:	1

Provided Waste Statistics

Name	Level	Area
WASTE STAGING	GROUND	72 m²
WASTE ROOM	GROUND	119 m²

AMENITY / NOTES

Provided Amenity Areas

Level	Name	Area
INDOOR AMENITY		
GROUND	INDOOR AMENITY	18 m²
FLOOR 2	INDOOR AMENITY	422 m²
FLOOR 6	INDOOR AMENITY	568 m²
		1,008 m²
OUTDOOR AMENITY		
FLOOR 2	OUTDOOR AMENITY	304 m²
FLOOR 6	OUTDOOR AMENITY	231 m²
		535 m²
Total Amenity Provided		1,543 m²

SUMMARY

Project Statistics Summary

Municipal Address:	118-132 Cross Avenue
Zoning Bylaw:	By-law 2023-065
Gross Site Area:	2,466.3 sm
Road Widening	521.4 sm
Net Site Area:	1,944.9 sm
Building Height (Storeys): (excl. Mechanical Penthouse)	38 ST
Building Height above Average Grade:	124.5 m
GFA - Residential Uses	31,400.1 sm
GFA - Non-Residential Uses	580.5 sm
Total Combined Gross Floor Area	31,980.6 sm
Floor Space Index **(FSI)** (Gross Floor Area/Gross Site Area)	12.97
Number of Residential **Units**	429
Residential **Indoor Amenity** Space Provided	1,008 sm
Residential **Outdoor Amenity** Space Provided	535 sm
Vehicular Parking Total Provided	84
Bicycle Parking Total Provided	32
Total **Loading Spaces** Provided	1

Date	No.	Description

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118-132 Cross Avenue

Oakville, ON
for
Batory Planning and Management

23031 1 : 1 SR SK
PROJECT SCALE DRAWN REVIEWED

Statistics

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SITE PLAN LEGEND

- PROPERTY LINE
- LINE OF UNDER GROUND GARAGE BELOW
- MAIN BUILDING ENTRANCE
- RETAIL ENTRANCE
- EXIT
- VEHICLE / LOADING ENTRANCE / EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- MH — MANHOLE COVER
- AD — AREA DRAIN
- CB — CATCH BASIN
- FD — FLOOR DRAIN (PARKING SLAB)
- FD — FLOOR DRAIN (INTERIOR)
- EXISTING LIGHT
- TYPICAL PARKING SPACE
- TYPICAL B.F. PARKING SPACE
- F.F.E. — FINISH FLOOR ELEVATION
- ### ### — EXISTING ELEVATION
- ### ### — PROPOSED ELEVATION
- 00000 — TOP OF ROOF
- BUILDING ENVELOPE
- FIRE ACCESS ROUTE HEAVY DUTY PAVING. ASSEMBLY TO BE DESIGNED TO MEET THE LOADS IMPOSED BY FIRE FIGHTING EQUIPMENT.
- GREEN ROOF
- TERRACE PAVERS

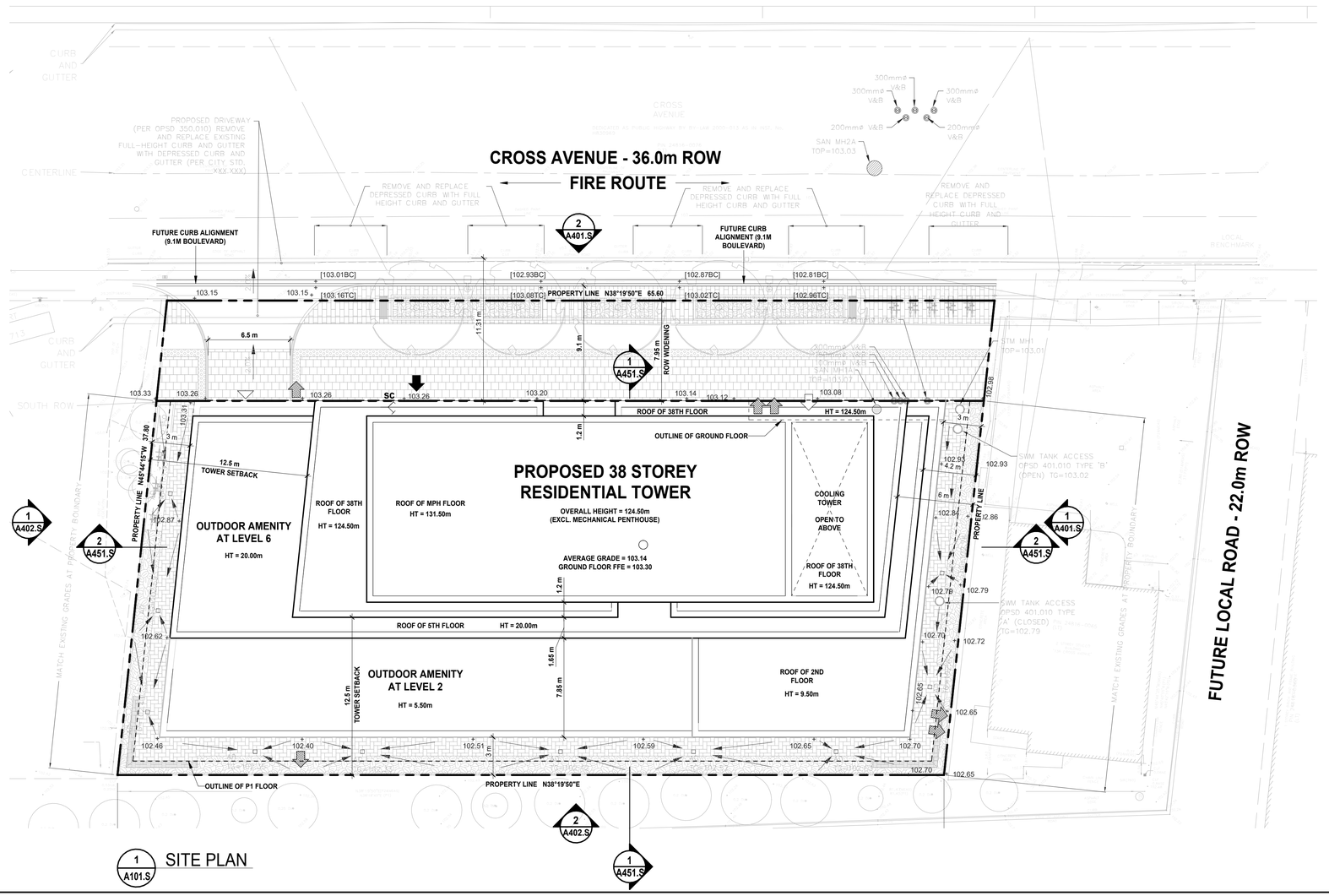
TOPOGRAPHIC LEGEND

BF	DENOTES BOARD FENCE
CB	DENOTES CATCHBASIN
CLF	DENOTES CHAIN LINK FENCE
FG	DENOTES FENCE GATE
G METER	DENOTES GAS METER
GM	DENOTES GAS MARKER
HP	DENOTES HYDRO POLE
HW	DENOTES HANDWELL
LS	DENOTES LIGHT STANDARD
MB	DENOTES MAIL BOX
MH	DENOTES MANHOLE
MW	DENOTES MONITORING WELL
BM	DENOTES BENCHMARK
SP	DENOTES STAND PIPE
TMH	DENOTES TELEPHONE MANHOLE
WELL	DENOTES WELL
WK	DENOTES WATER KEY
WMH	DENOTES WATER MANHOLE
WV	DENOTES WATER VALVE
OC	DENOTES OVERHEAD CABLE
E	DENOTES OVERHEAD HYDRO CABLE
T	DENOTES OVERHEAD TELEPHONE CABLE
	DENOTES SAPLING TREE
	DENOTES SHRUB
	DENOTES DECIDUOUS TREE DIA=DIAMETER OF TRUNK IN METRES
	DENOTES CONIFEROUS TREE DIA=DIAMETER OF TRUNK IN METRES

SURVEY LEGEND

■	DENOTES SURVEY MONUMENT FOUND
■	DENOTES SURVEY MONUMENT SET
SIB	DENOTES STANDARD IRON BAR
SSIB	DENOTES SHORT STANDARD IRON BAR
IB	DENOTES IRON BAR
CC	DENOTES CUT CROSS
NI	DENOTES NOT IDENTIFIABLE
MEAS	DENOTES MEASURED
CLF	DENOTES CHAIN LINK FENCE
P1	DENOTES SRPR BY J.H. GELBLOOM SURVEYING LTD. -DATED AUGUST 27, 2019
P2	DENOTES SRPR BY J.H. GELBLOOM SURVEYING LTD. -DATED SEPTEMBER 27, 2015
D1	DENOTES INSTRUMENT NUMBER 725105
OU	DENOTES ORIGIN UNKNOWN
760	DENOTES K. H. McCONELL O.L.S.
1808	DENOTES J. H. GELBLOOM SURVEYING Ltd., O.L.S.
MTC	DENOTES MINISTRY OF TRANSPORTATION

N=NORTH/S=SOUTH/E=EAST/W=WEST



1 A101.S SITE PLAN

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23031	1 : 200	WM	SK
PROJECT	SCALE	DRAWN	REVIEWED

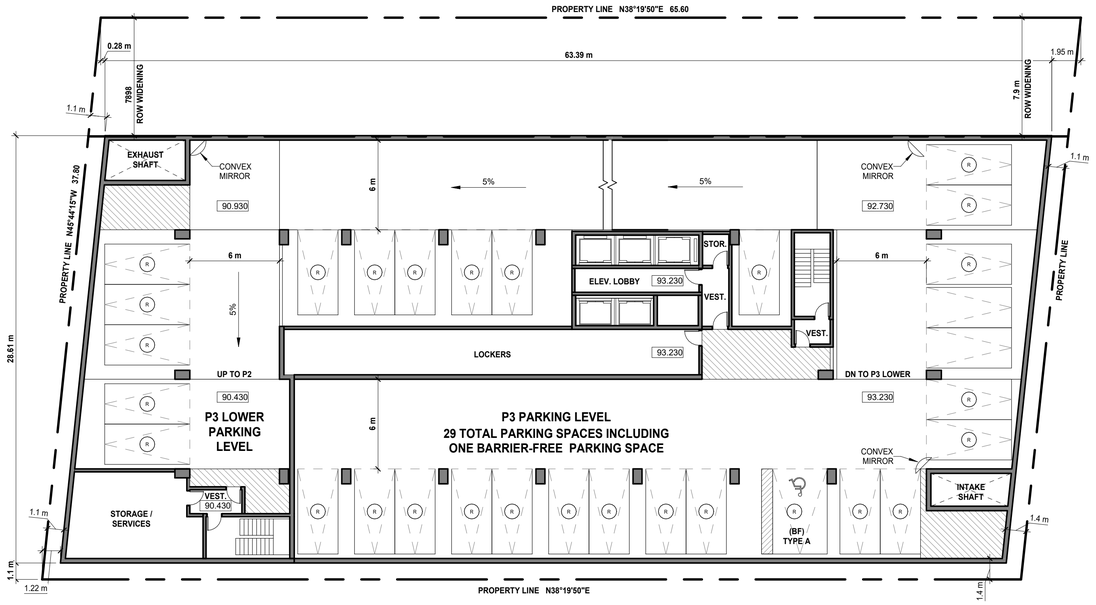
Site Plan

A101.S

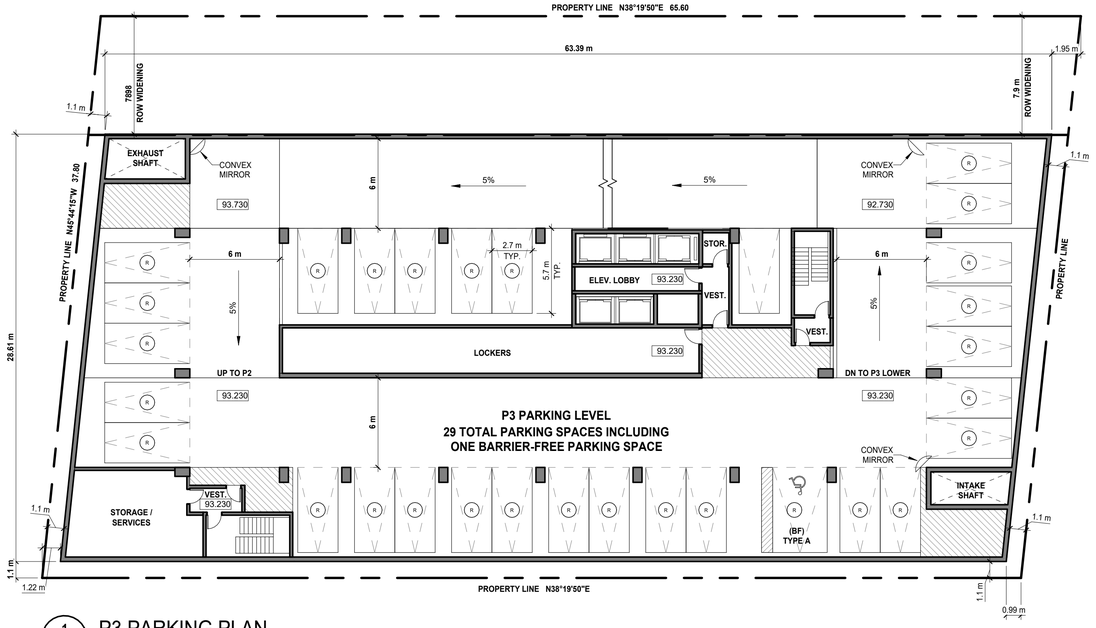
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2 A151.S P3 LOWER PARKING PLAN



1 A151.S P3 PARKING PLAN

PARKING NOTES:

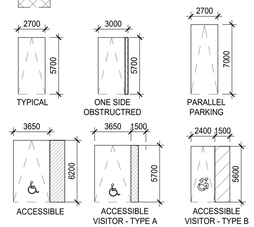
1. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED):
   - 2700mm WIDE X 5700mm LONG (NO SIDES OBSTRUCTED)
   - 3000mm WIDE X 5700mm LONG (ONE SIDE OBSTRUCTED)
   - 3300mm WIDE X 5700mm LONG (TWO SIDES OBSTRUCTED)

2. MAINTAIN MINIMUM DRIVE AISLE WIDTH OF 6000mm UNLESS OTHERWISE NOTED.

3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.

PARKING LEGEND:

- (C) COMMERCIAL PARKING SPACE
- (R) RESIDENTIAL PARKING SPACE
- (V) VISITOR PARKING SPACE
- (E) EXISTING PARKING SPACE
- BIKE LOCKER
- BIKE PARKING (STACKED)
- BIKE PARKING (VERTICAL)
- CONVEX MIRROR
- ELECTRIC VEHICLE
- LS LIGHT STANDARD
- PAINTED LINES
- FIRE-RATED BULKHEAD



Provided Car Parking

Level	Type	Count	Designation
P3 - LOWER	2700x5700 Standard	10	Resident
P3	2700x5700 Standard	29	Resident
P3	3650x5700 Barrier Free Type A	1	Resident
P2	2700x5700 Standard	21	Resident
P2	3650x5700 Barrier Free Type B	2	Resident
Resident: 63		63	
P2	2700x5700 Standard	7	Visitor
P1	2700x5700 Standard	13	Visitor
P1	3650x5700 Barrier Free Type A	1	Visitor
Visitor: 21		21	
TOTAL PARKING SPACES: 84		84	

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23031	1 : 200	WM	SK
PROJECT SCALE		DRAWN	REVIEWED

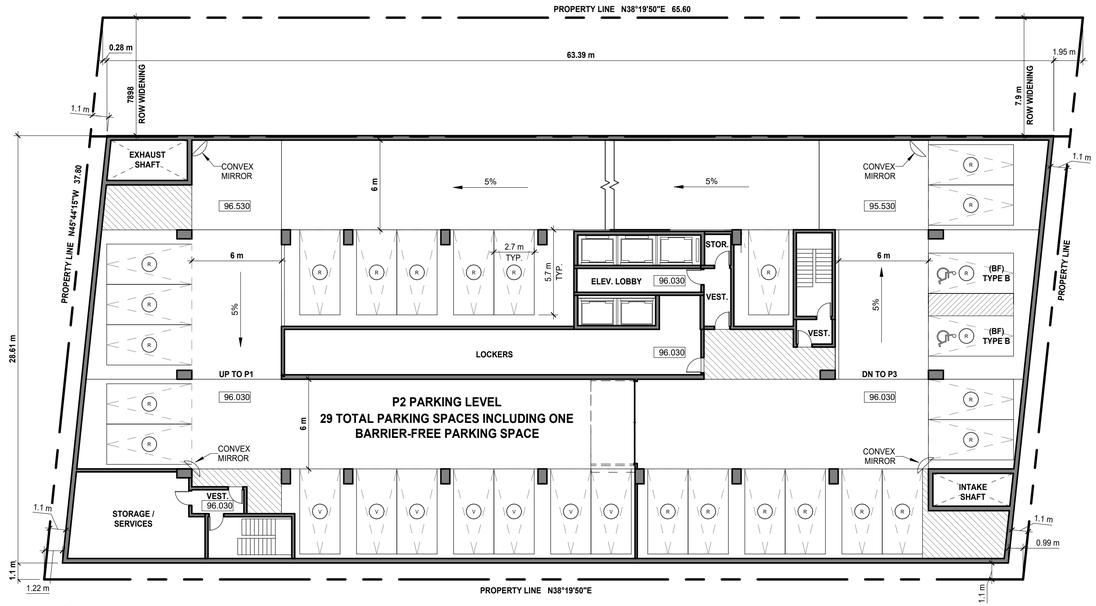
P3 and P3 Lower Parking Plans

A151.S

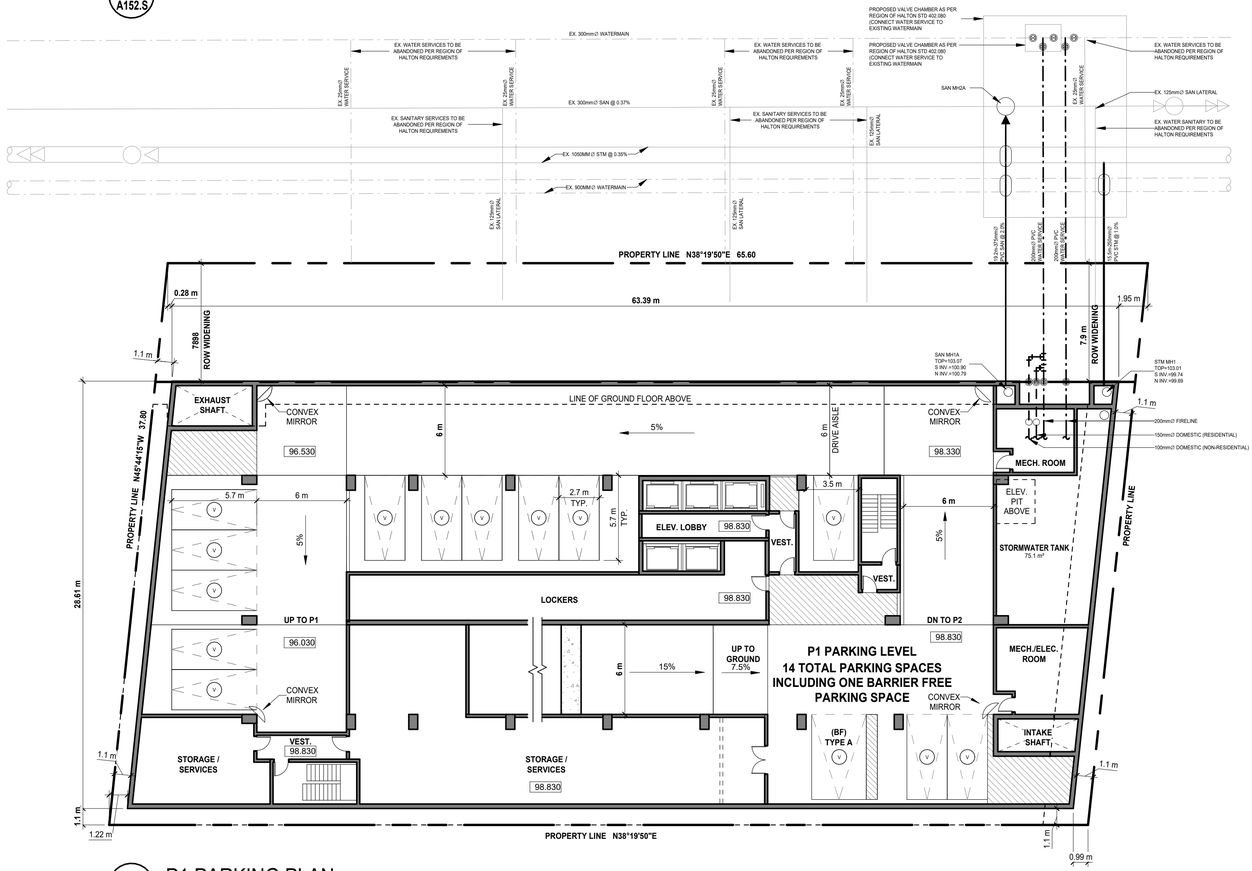
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1 A152.S P2 PARKING PLAN



2 A152.S P1 PARKING PLAN

PARKING NOTES:

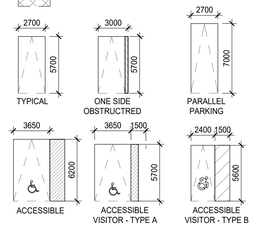
1. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED):
   - 2700mm WIDE X 5700mm LONG (NO SIDES OBSTRUCTED)
   - 3000mm WIDE X 5700mm LONG (ONE SIDE OBSTRUCTED)
   - 3300mm WIDE X 5700mm LONG (TWO SIDES OBSTRUCTED)

2. MAINTAIN MINIMUM DRIVE AISLE WIDTH OF 6000mm UNLESS OTHERWISE NOTED.

3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.

PARKING LEGEND:

- (C) COMMERCIAL PARKING SPACE
- (R) RESIDENTIAL PARKING SPACE
- (V) VISITOR PARKING SPACE
- (E) EXISTING PARKING SPACE
- BIKE LOCKER
- BIKE PARKING (STACKED)
- BIKE PARKING (VERTICAL)
- CONVEX MIRROR
- ELECTRIC VEHICLE
- LS LIGHT STANDARD
- PAINTED LINES
- FIRE-RATED BULKHEAD



Provided Car Parking

Level	Type	Count	Designation
P3 - LOWER	2700x5700 Standard	10	Resident
P3	2700x5700 Standard	29	Resident
P3	3650x5700 Barrier Free Type A	1	Resident
P2	2700x5700 Standard	21	Resident
P2	3650x5700 Barrier Free Type B	2	Resident
Resident: 63		63	
P2	2700x5700 Standard	7	Visitor
P1	2700x5700 Standard	13	Visitor
P1	3650x5700 Barrier Free Type A	1	Visitor
Visitor: 21		21	
TOTAL PARKING SPACES: 84		84	

Date	No.	Description

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Oakville, ON
for
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23031	1 : 200	WM	SK
PROJECT	SCALE	DRAWN	REVIEWED

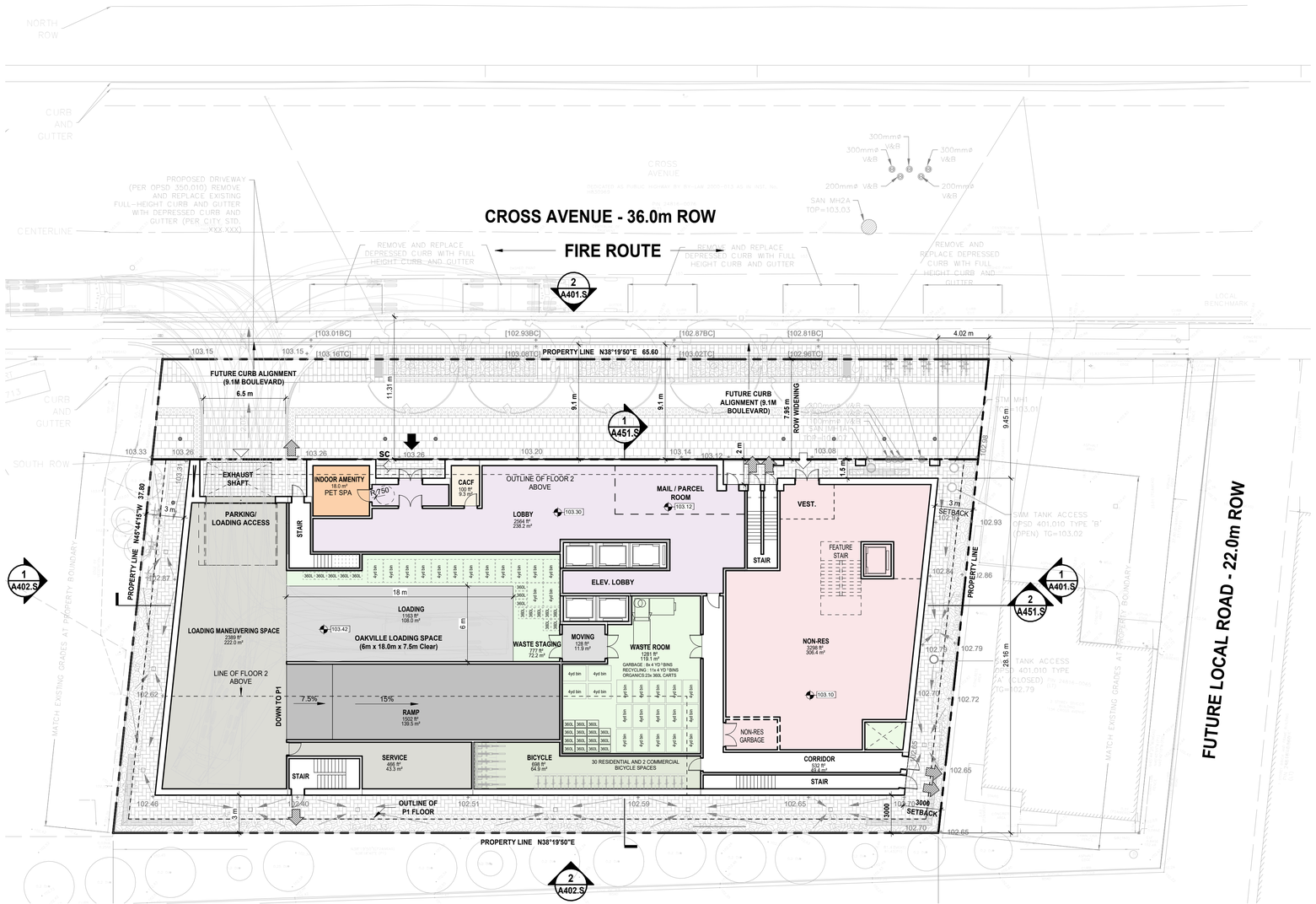
P1 and P2 Parking Plans

A152.S

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1 A201.S GROUND FLOOR PLAN

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PROJECT	SCALE	DRAWN	REVIEWED

Ground Floor Plan

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2 A202.S FLOOR 3

1 A202.S FLOOR 2

Date	No.	Description
REVISION RECORD		

27-07-2026	Official Plan and Zoning Bylaw Amendment Application
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PROJECT	SCALE	DRAWN	REVIEWED

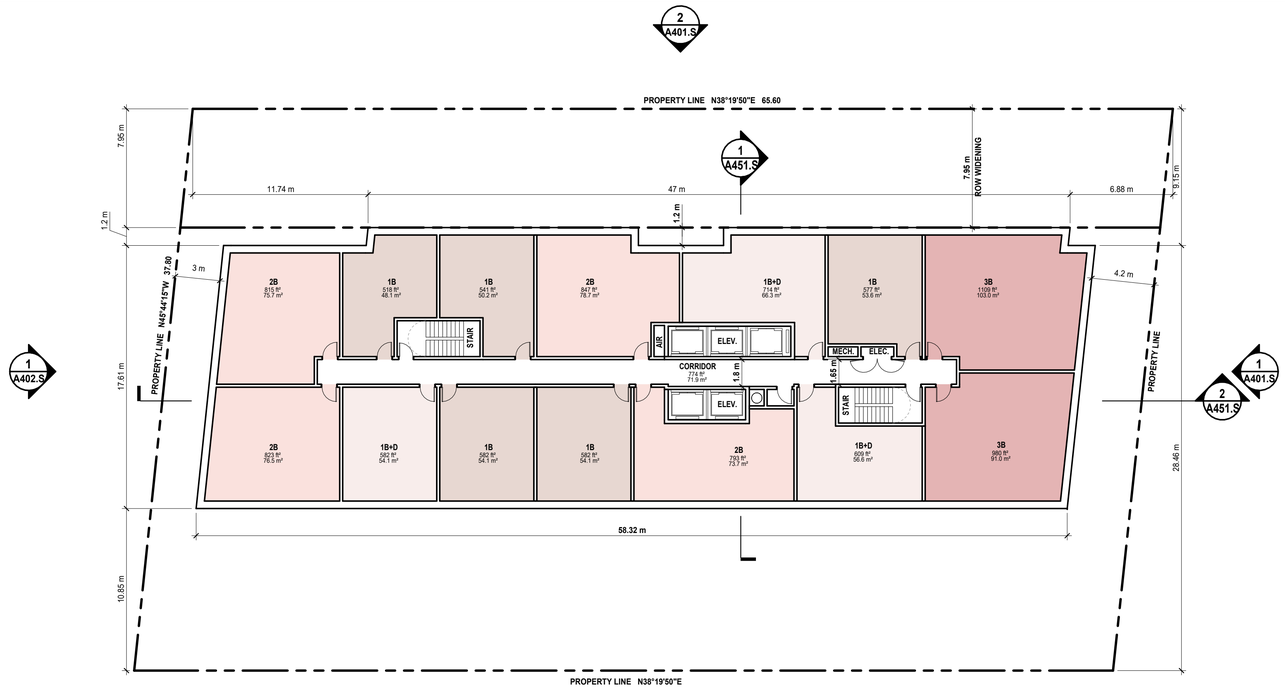
Floors 2 and 3 Plans

A202.S

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3 A203.S FLOOR 5



1 A203.S FLOOR 4

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23031	1 : 200	WM	SK
PROJECT SCALE		DRAWN	REVIEWED

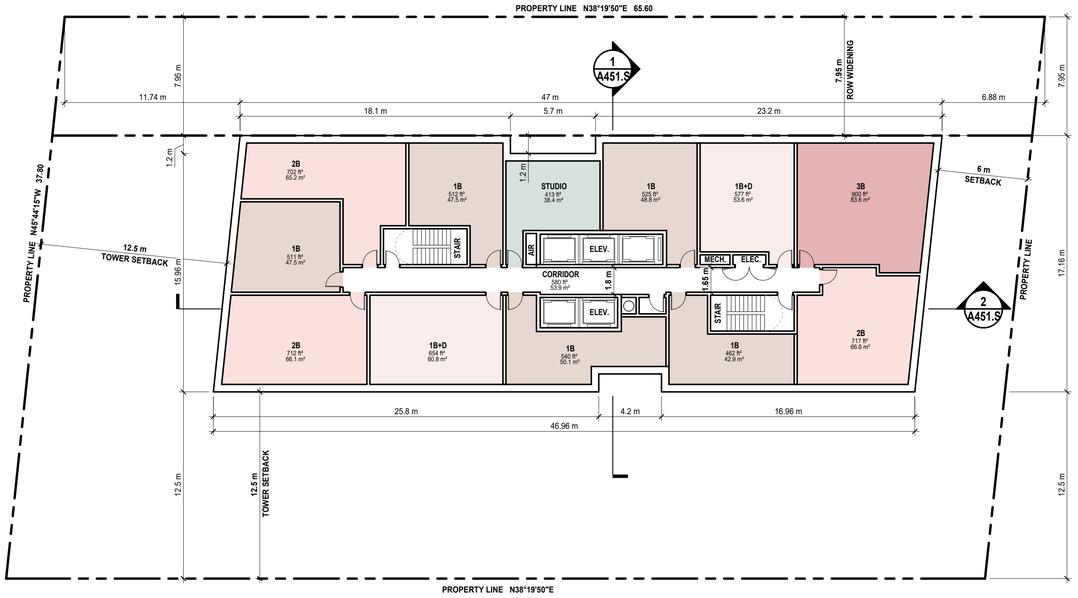
Floors 4 and 5 Plans

A203.S

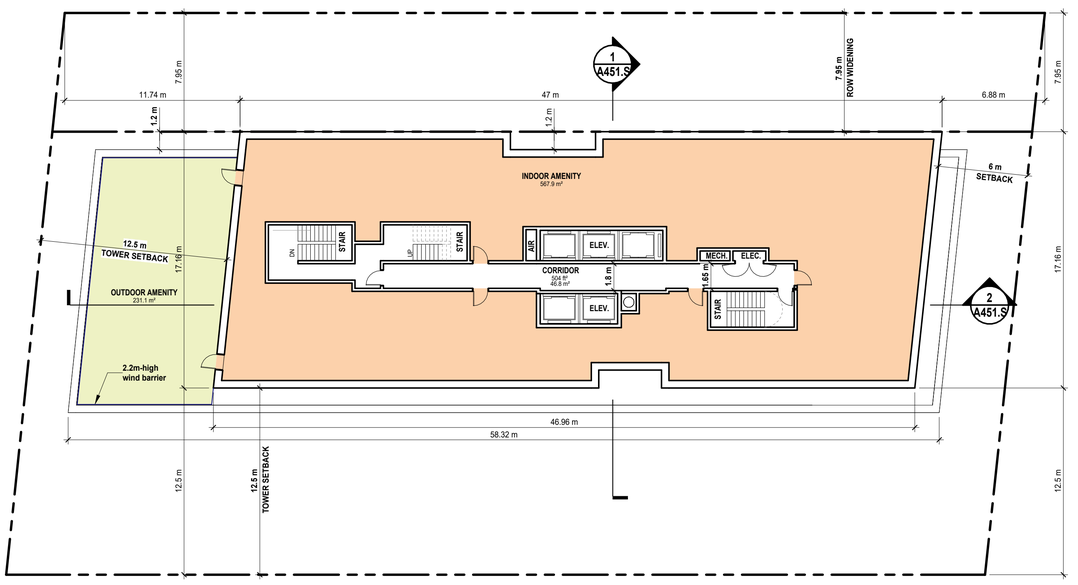
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2 A204.S TYPICAL TOWER PLAN (LEVELS 7-50)



1 A204.S FLOOR 6 - AMENITY

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PROJECT SCALE		DRAWN	REVIEWED

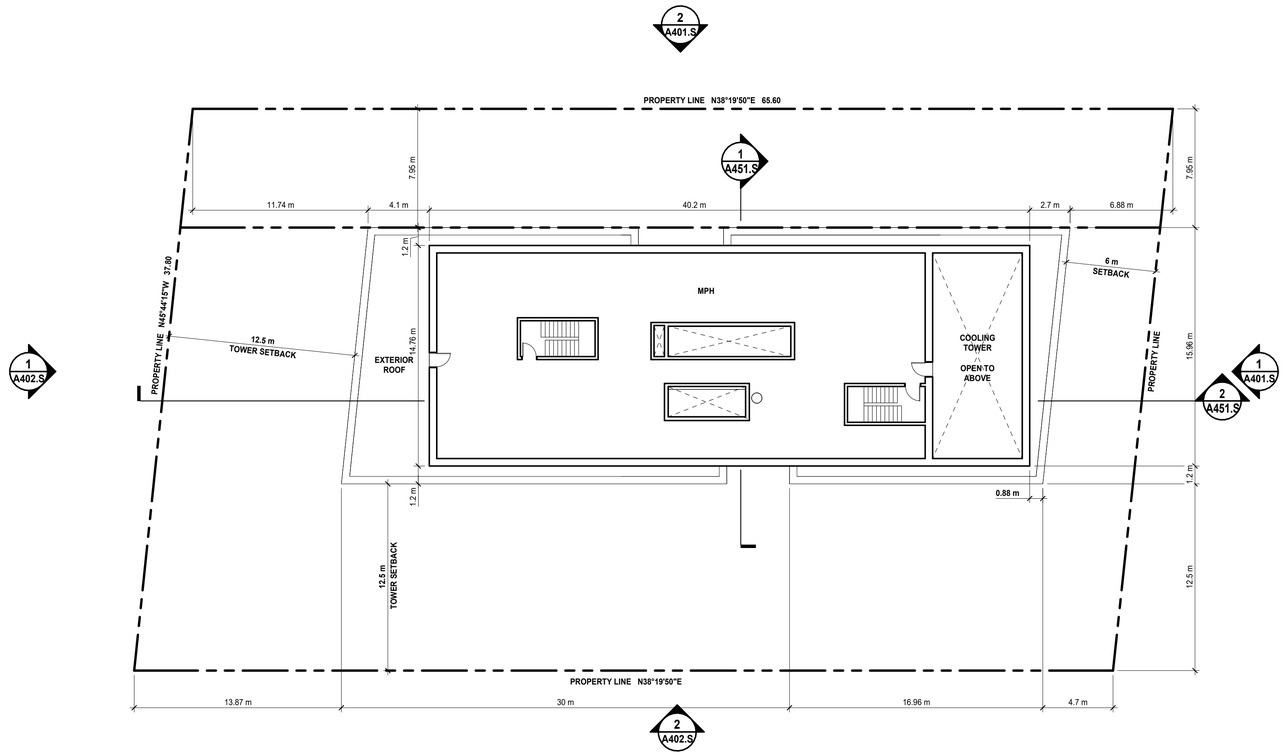
Floor 6 and Typical Tower Floors (L7-L38)

A204.S

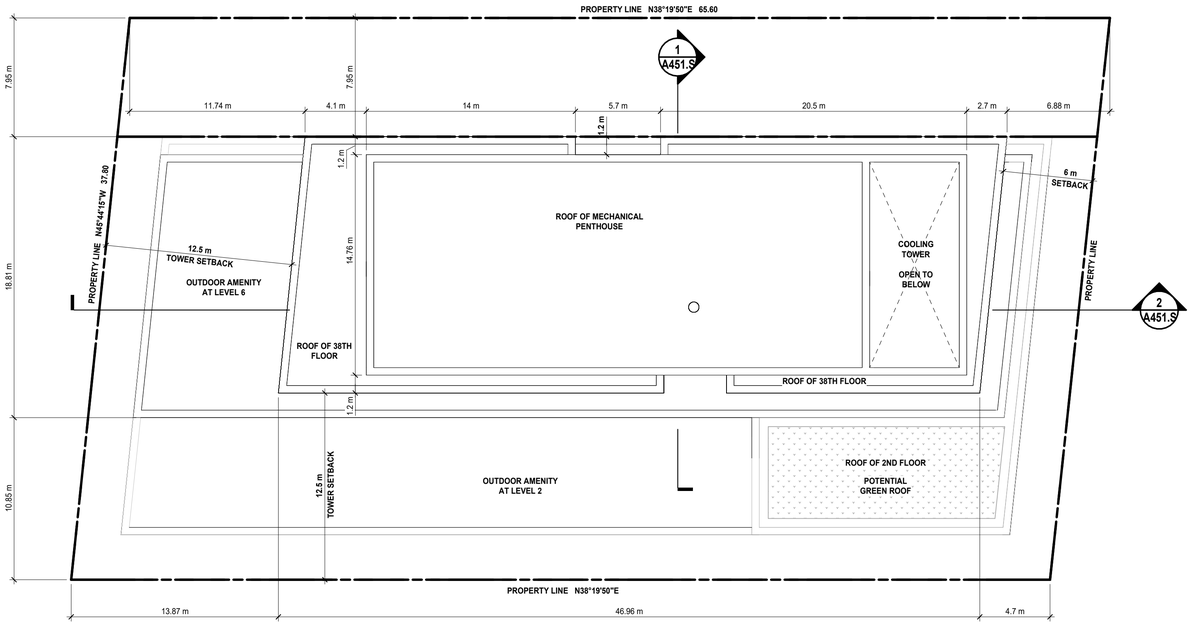
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1 A205.S MPH PLAN



2 A205.S ROOF PLAN

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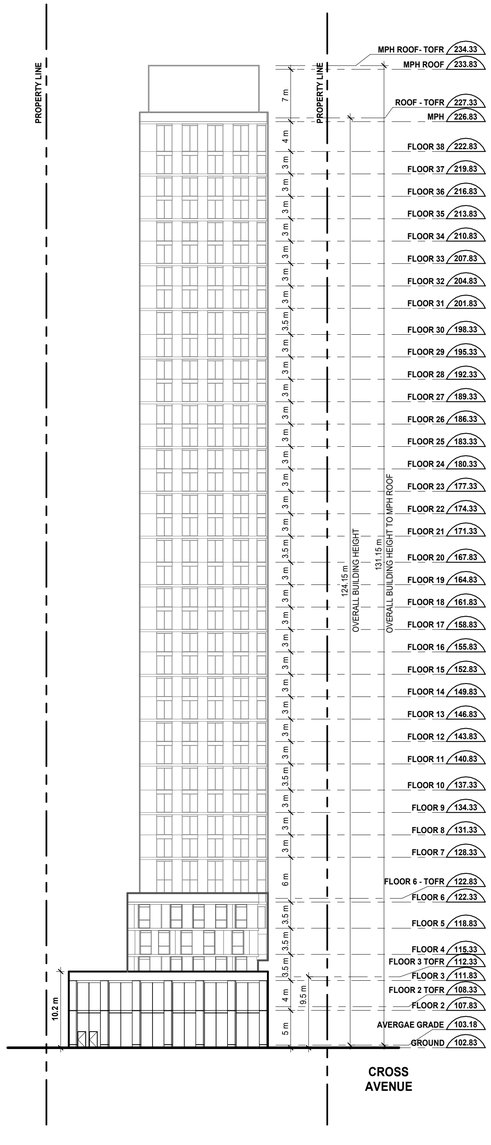
MPH and Roof Plans

A205.S

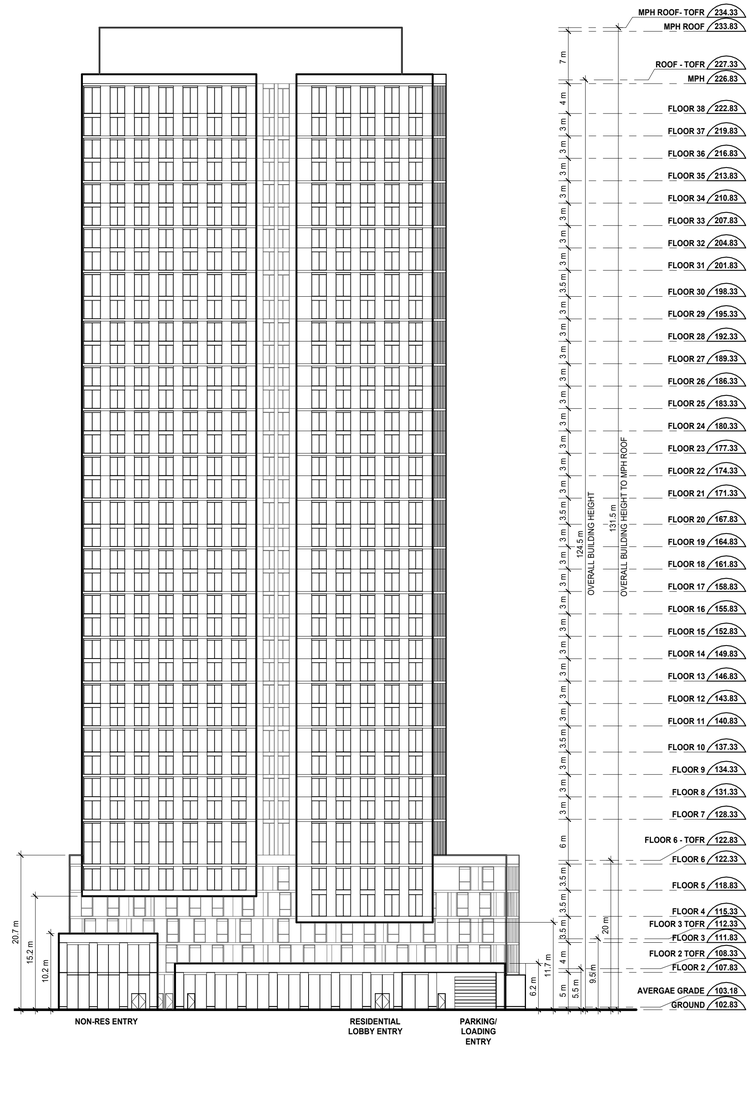
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1 A401.S EAST ELEVATION



2 A401.S NORTH ELEVATION

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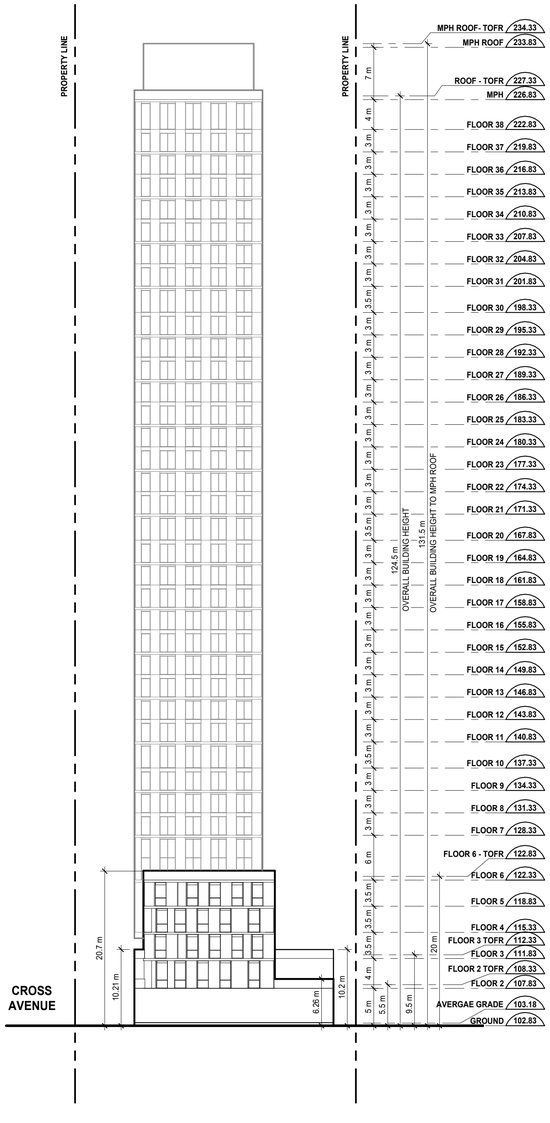
23031	1 : 400	WM	SK
PROJECT	SCALE	DRAWN	REVIEWED

Building Elevations - North and East

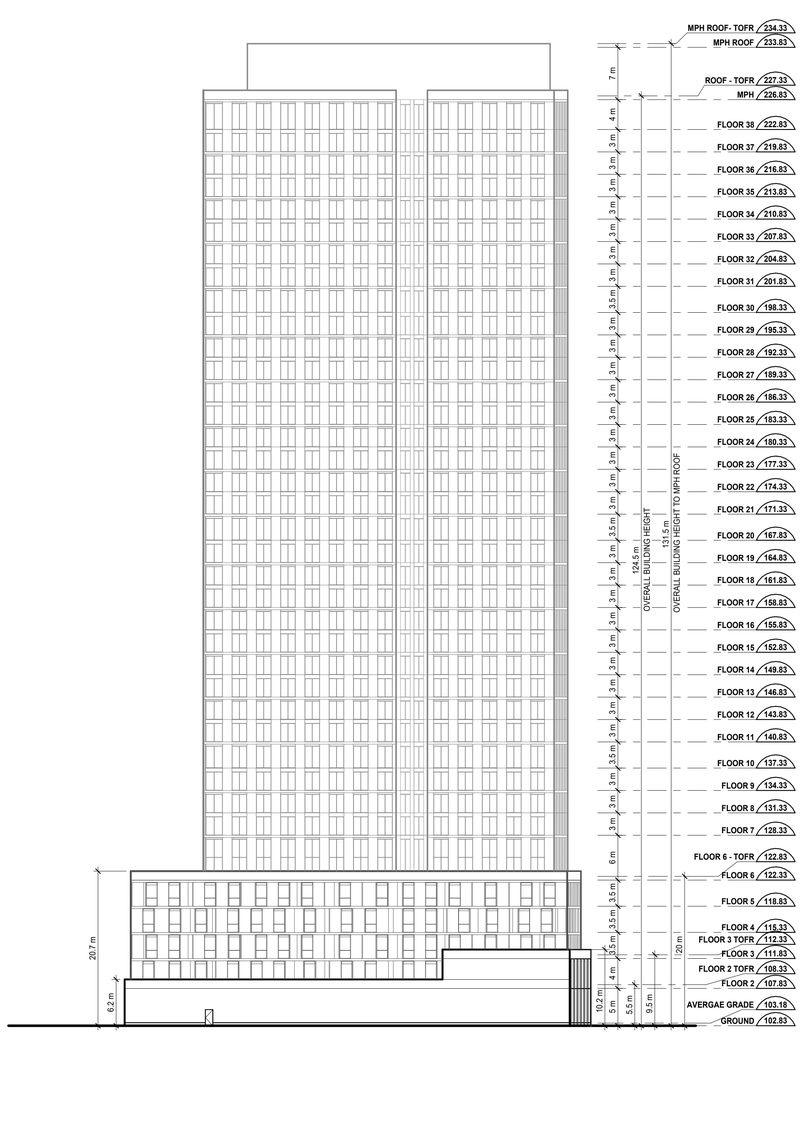
A401.S

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1 A402.S WEST ELEVATION



2 A402.S SOUTH ELEVATION

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PROJECT SCALE DRAWN REVIEWED

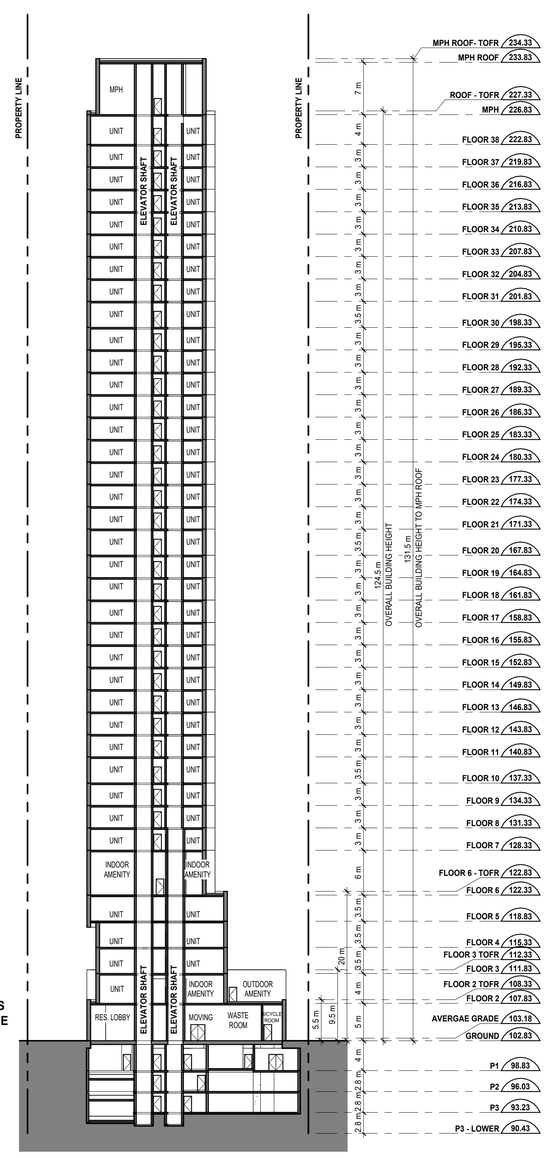
Building Elevations - South and West

A402.S

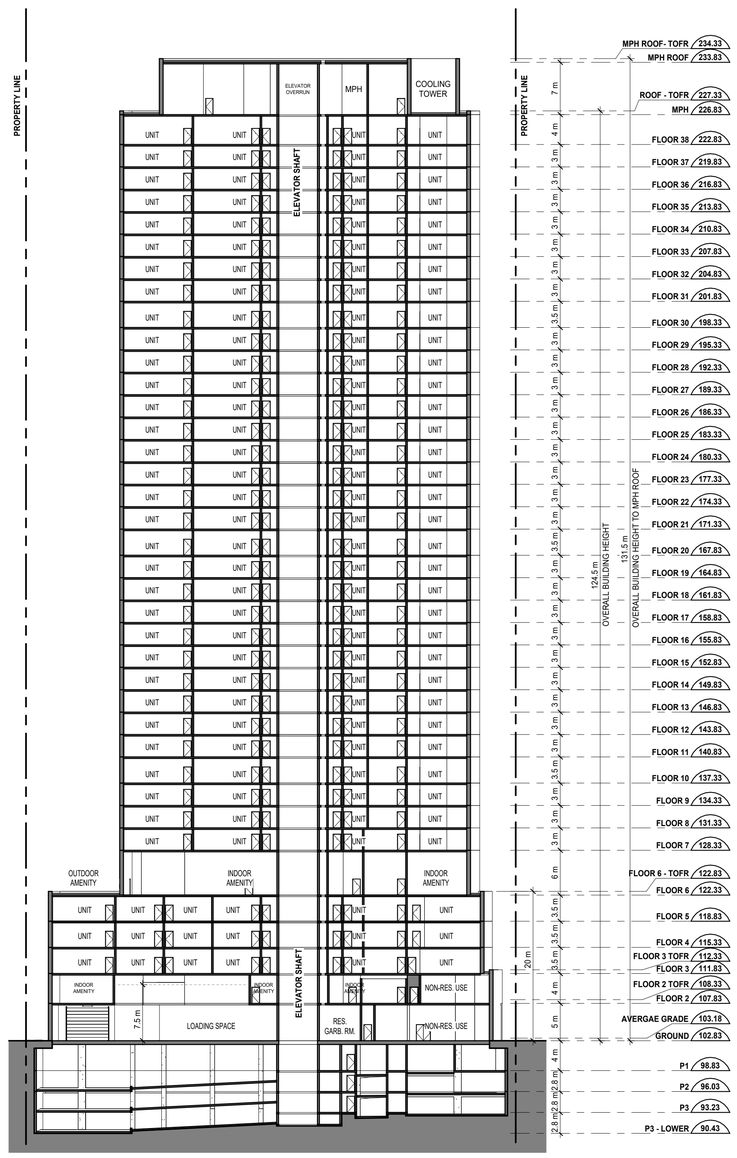
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1 A451.S NORTH-SOUTH SECTION



2 A451.S EAST-WEST SECTION

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Building Sections

A451.S

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for
Client Name TBD

Project No. 23031
Date
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ARCHITECTURAL DRAWINGS

A000.S Cover Page

A100.S Statistics
A101.S Site Plan
A151.S P3 and P3 Lower Parking Plans
A152.S P1 and P2 Parking Plans

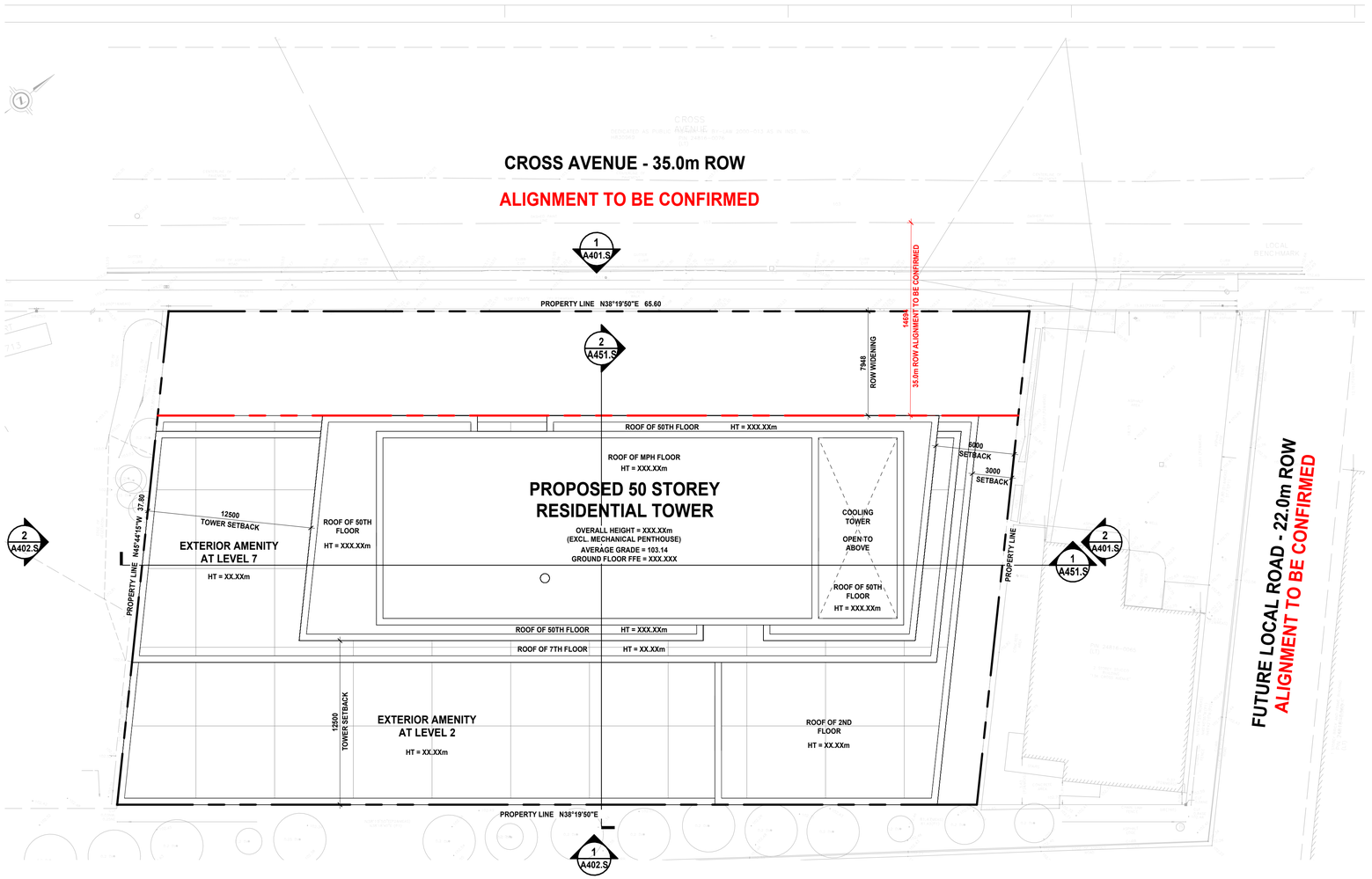
A201.S Ground Floor Plan
A202.S Mezzanine and Floor 2 Plans
A203.S Floor 3 and Typical Podium Floor (L4-L6) Plans
A204.S Floor 7 and Typical Tower Floor (L8-L50) Plans
A205.S Mechanical Penthouse and Roof Plans

A401.S Building Elevations - North and East
A402.S Building Elevations - South and West

A451.S Building Sections

SITE PLAN LEGEND

- PROPERTY LINE
- LINE OF UNDER GROUND GARAGE BELOW
- MAIN BUILDING ENTRANCE
- RETAIL ENTRANCE
- EXIT
- VEHICLE / LOADING ENTRANCE / EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- MH — MANHOLE COVER
- AD — AREA DRAIN
- CB — CATCH BASIN
- FD — FLOOR DRAIN (PARKING SLAB)
- FD — FLOOR DRAIN (INTERIOR)
- EXISTING LIGHT
- TYPICAL PARKING SPACE
- TYPICAL B.F. PARKING SPACE
- F.F.E. — FINISH FLOOR ELEVATION
- ###.### — EXISTING ELEVATION
- ###.### — PROPOSED ELEVATION
- 00000 — TOP OF ROOF
- BUILDING ENVELOPE
- FIRE ACCESS ROUTE HEAVY DUTY PAVING. ASSEMBLY TO BE DESIGNED TO MEET THE LOADS IMPOSED BY FIRE FIGHTING EQUIPMENT.
- GREEN ROOF
- TERRACE PAVERS



1 A101.S SITE PLAN

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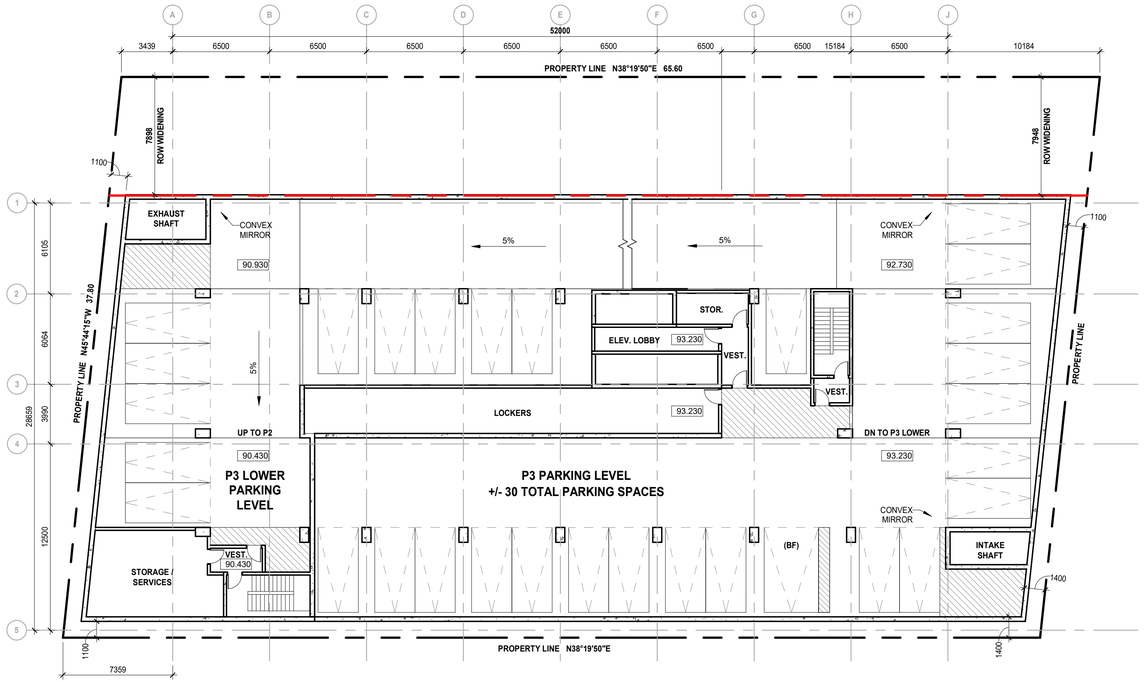
Site Plan

A101.S

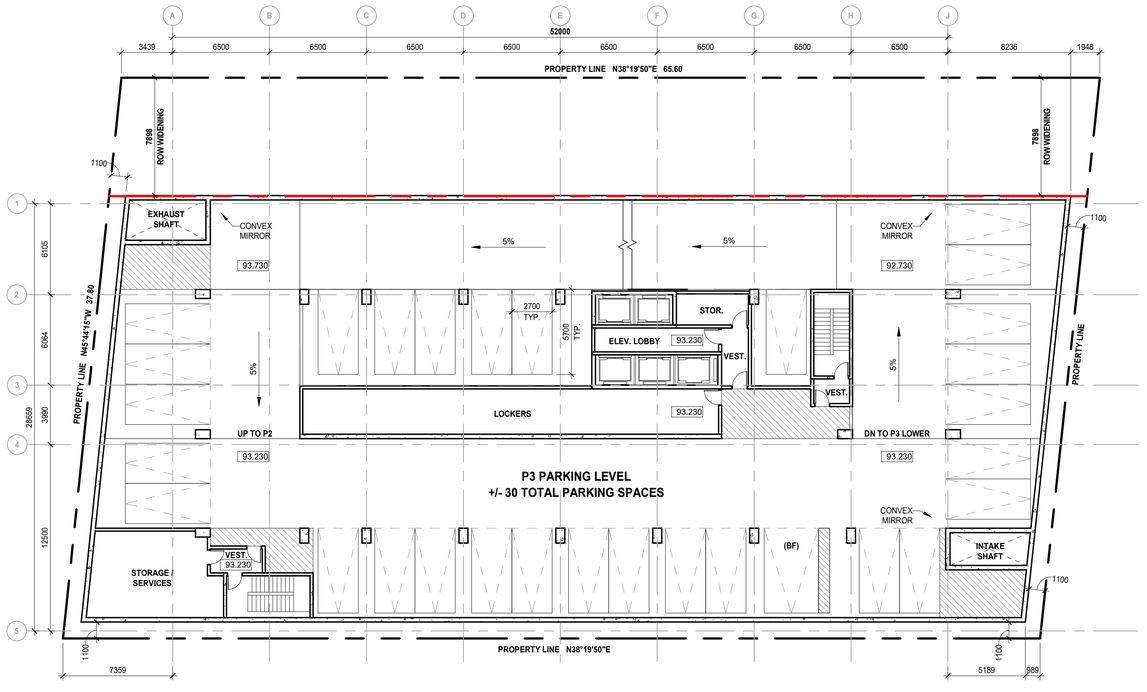
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2 / A151.S P3 LOWER PARKING PLAN



1 / A151.S P3 PARKING PLAN

PARKING NOTES:

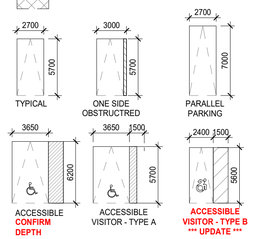
1. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED):
   - 2700mm WIDE X 5700mm LONG (NO SIDES OBSTRUCTED)
   - 3000mm WIDE X 5700mm LONG (ONE SIDE OBSTRUCTED)
   - 3300mm WIDE X 5700mm LONG (TWO SIDES OBSTRUCTED)

2. MAINTAIN MINIMUM DRIVE AISLE WIDTH OF 6000mm UNLESS OTHERWISE NOTED.

3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.

PARKING LEGEND:

- (C) COMMERCIAL PARKING SPACE
- (R) RESIDENTIAL PARKING SPACE
- (V) VISITOR PARKING SPACE
- (E) EXISTING PARKING SPACE
- BIKE LOCKER
- BIKE PARKING (STACKED)
- BIKE PARKING (VERTICAL)
- CONVEX MIRROR
- ELECTRIC VEHICLE
- LS LIGHT STANDARD
- PAINTED LINES
- FIRE-RATED BULKHEAD



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PROJECT	SCALE	DRAWN	REVIEWED

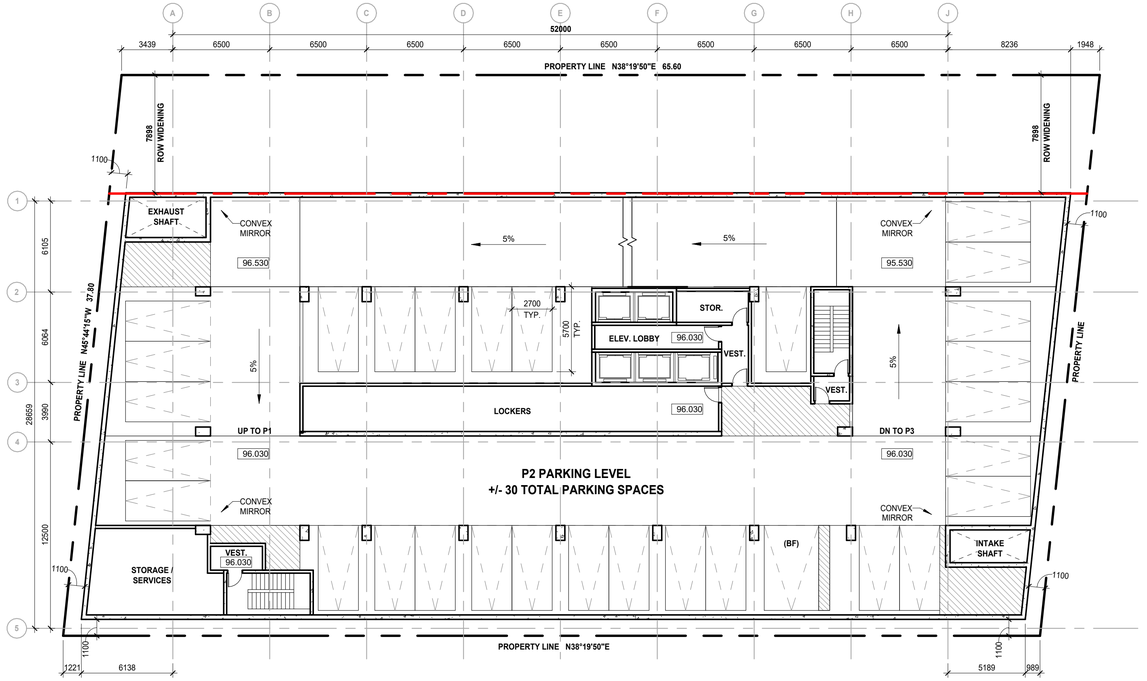
P3 and P3 Lower Parking Plans

A151.S

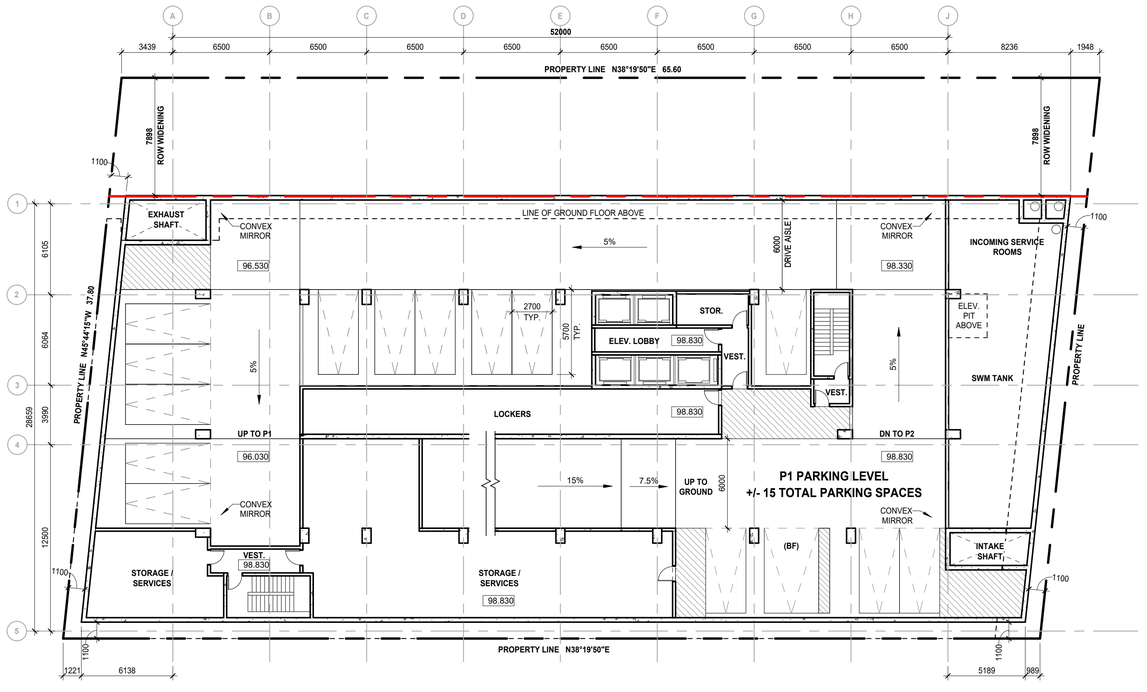
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1 A152.S P2 PARKING PLAN



2 A152.S P1 PARKING PLAN

PARKING NOTES:

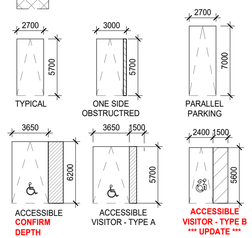
1. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED):
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   - 3000mm WIDE X 5700mm LONG (ONE SIDE OBSTRUCTED)
   - 3300mm WIDE X 5700mm LONG (TWO SIDES OBSTRUCTED)

2. MAINTAIN MINIMUM DRIVE AISLE WIDTH OF 6000mm UNLESS OTHERWISE NOTED.

3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.

PARKING LEGEND:

- (C) COMMERCIAL PARKING SPACE
- (R) RESIDENTIAL PARKING SPACE
- (V) VISITOR PARKING SPACE
- (E) EXISTING PARKING SPACE
- BIKE LOCKER
- BIKE PARKING (STACKED)
- BIKE PARKING (VERTICAL)
- CONVEX MIRROR
- ELECTRIC VEHICLE
- LS LIGHT STANDARD
- PAINTED LINES
- FIRE-RATED BULKHEAD



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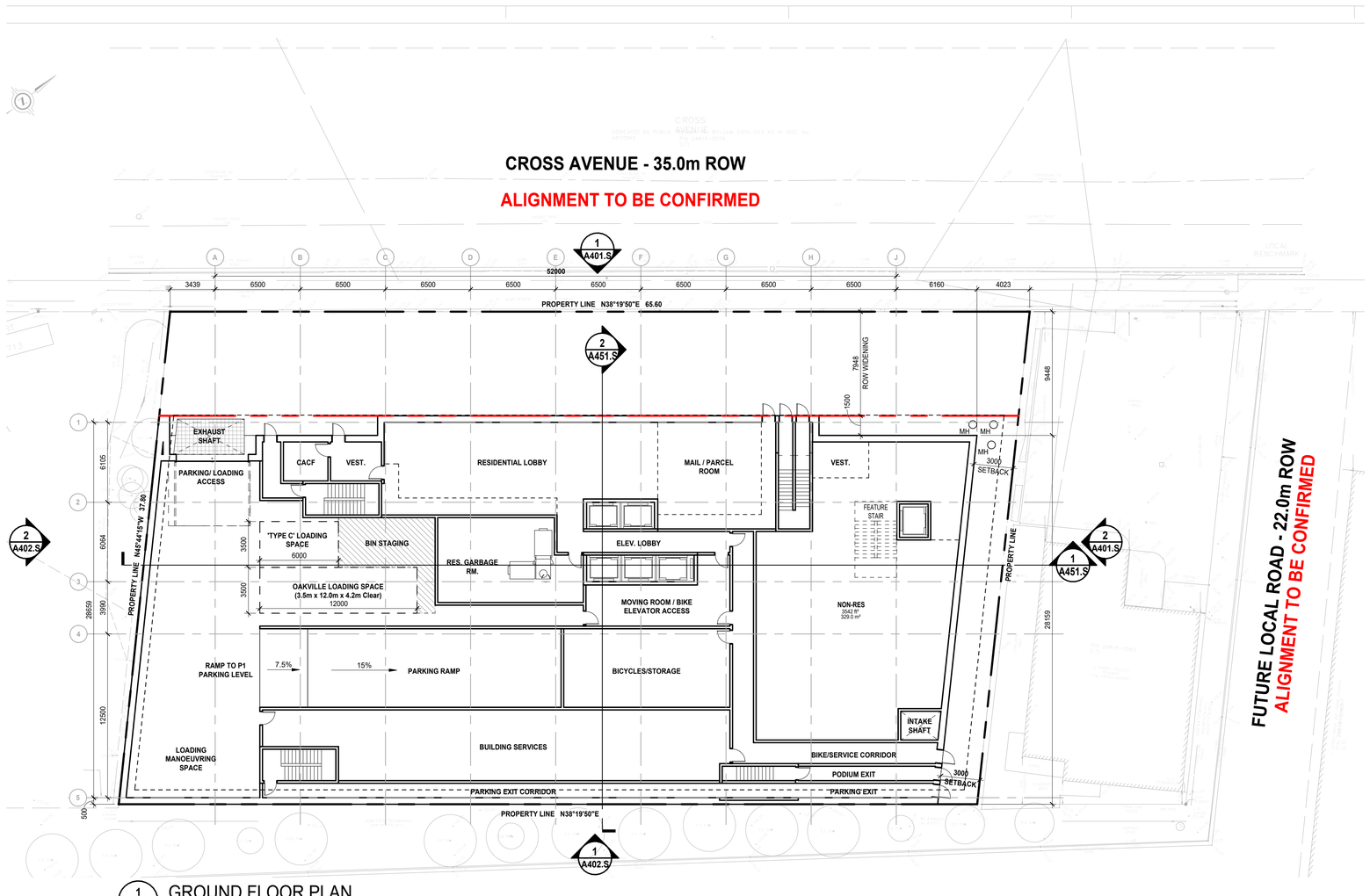
P1 and P2 Parking Plans

A152.S

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1 A201.S GROUND FLOOR PLAN

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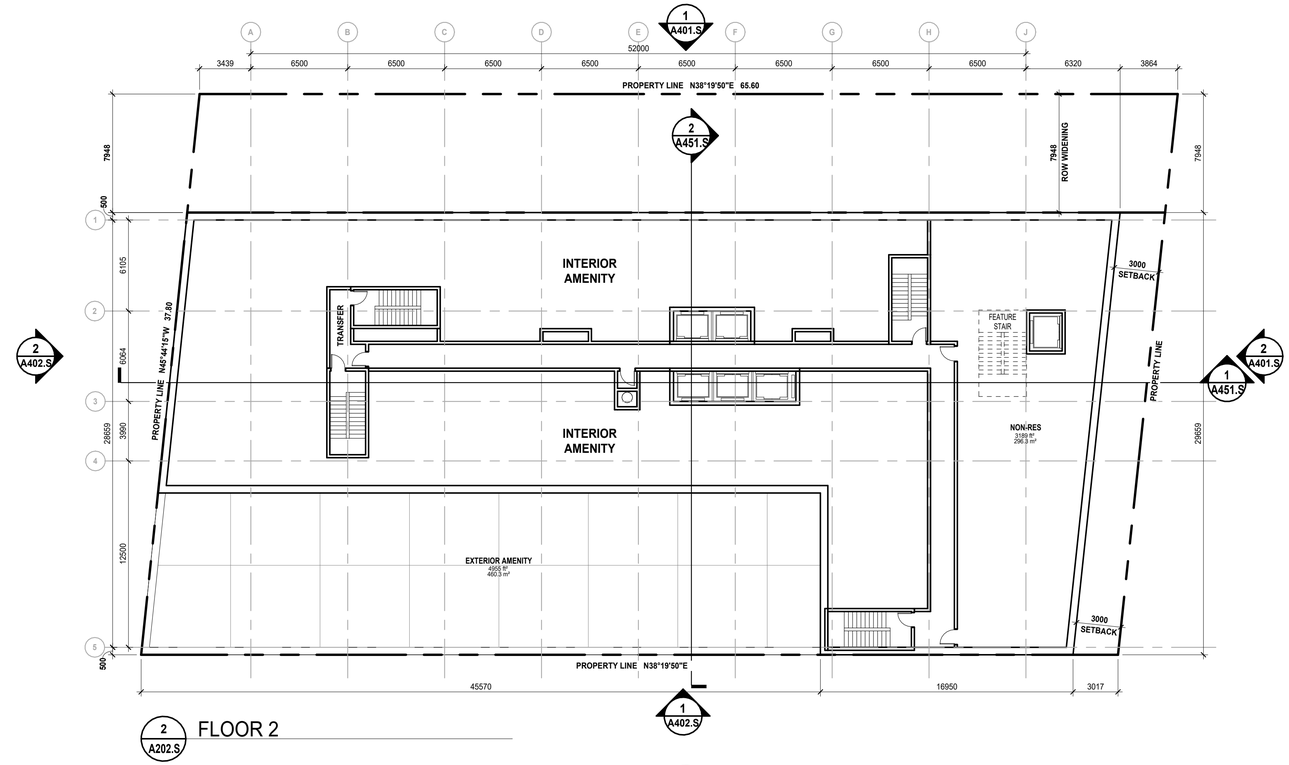
Ground Floor Plan

A201.S

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2 A202.S FLOOR 2

1 A202.S MEZZANINE FLOOR PLAN

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PROJECT	SCALE	DRAWN	REVIEWED

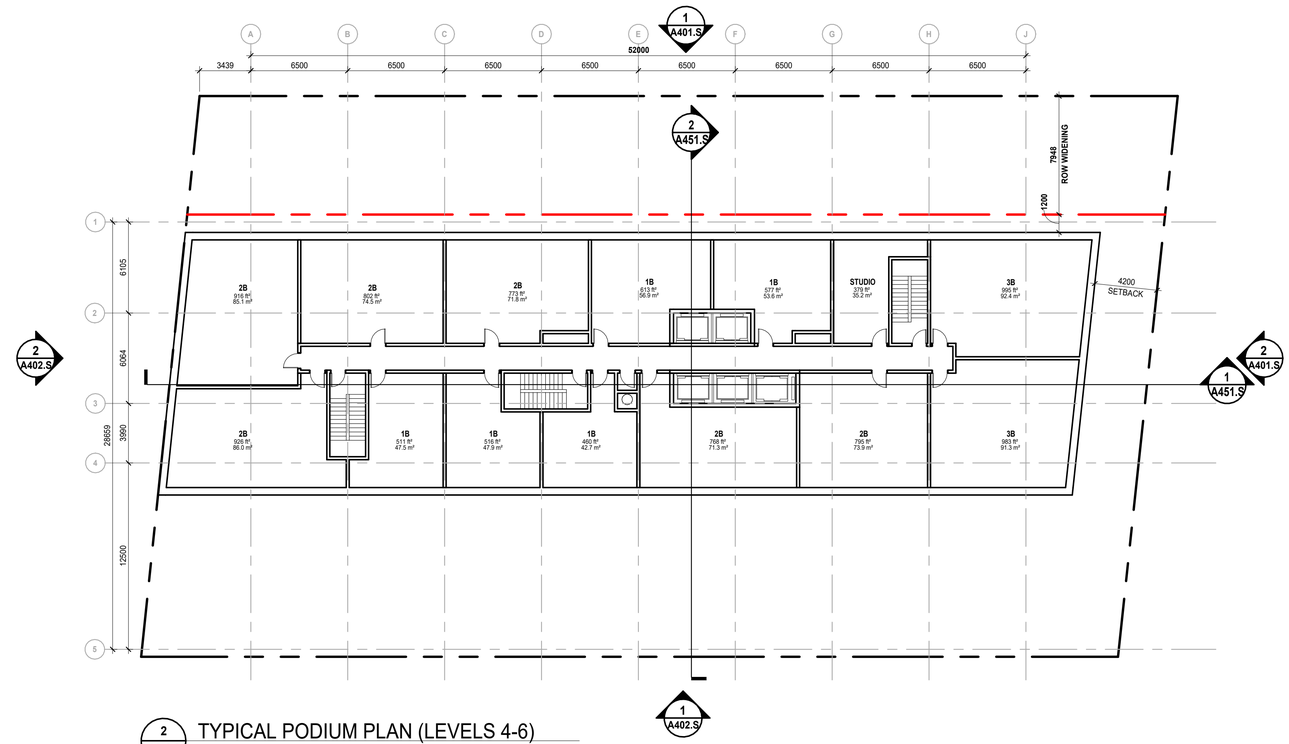
Mezzanine and Floor 2 Plans

A202.S

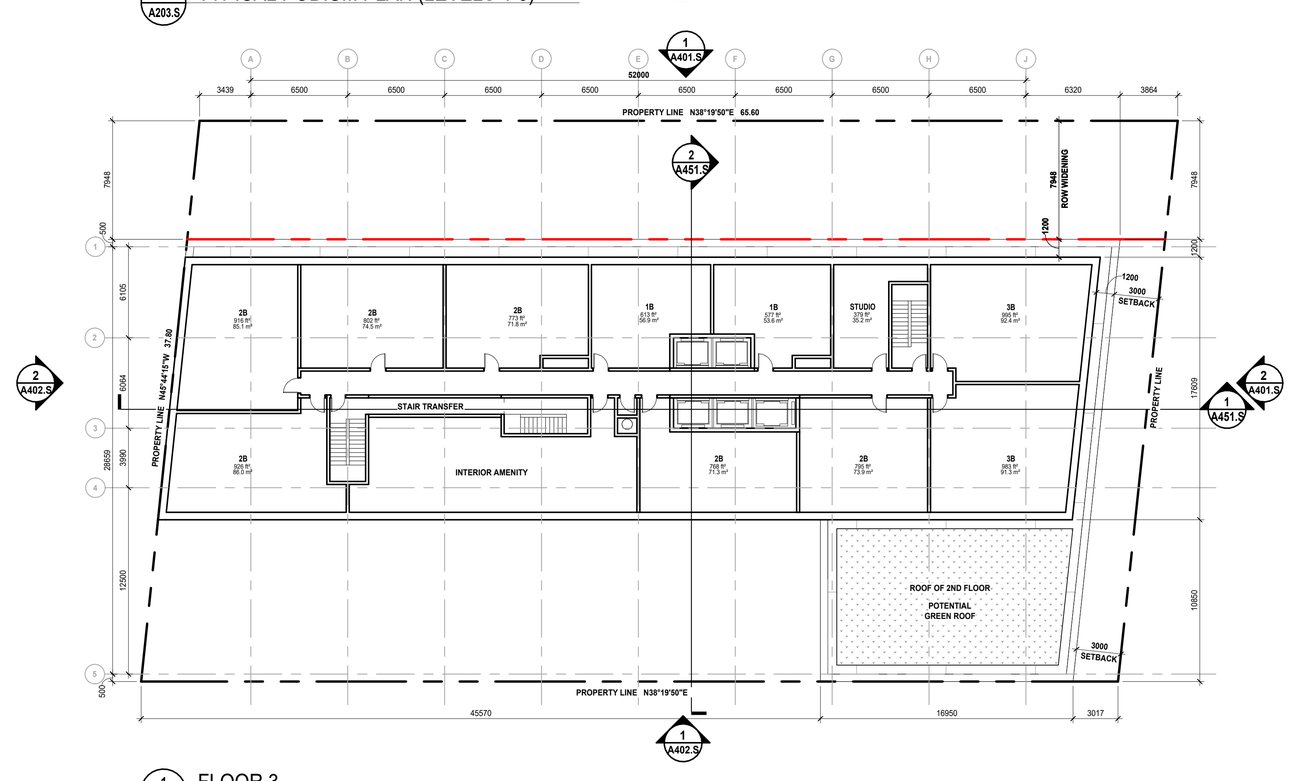
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2 A203.S TYPICAL PODIUM PLAN (LEVELS 4-6)



1 A203.S FLOOR 3

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118-132 Cross Avenue

Oakville, ON
for
Client Name TBD

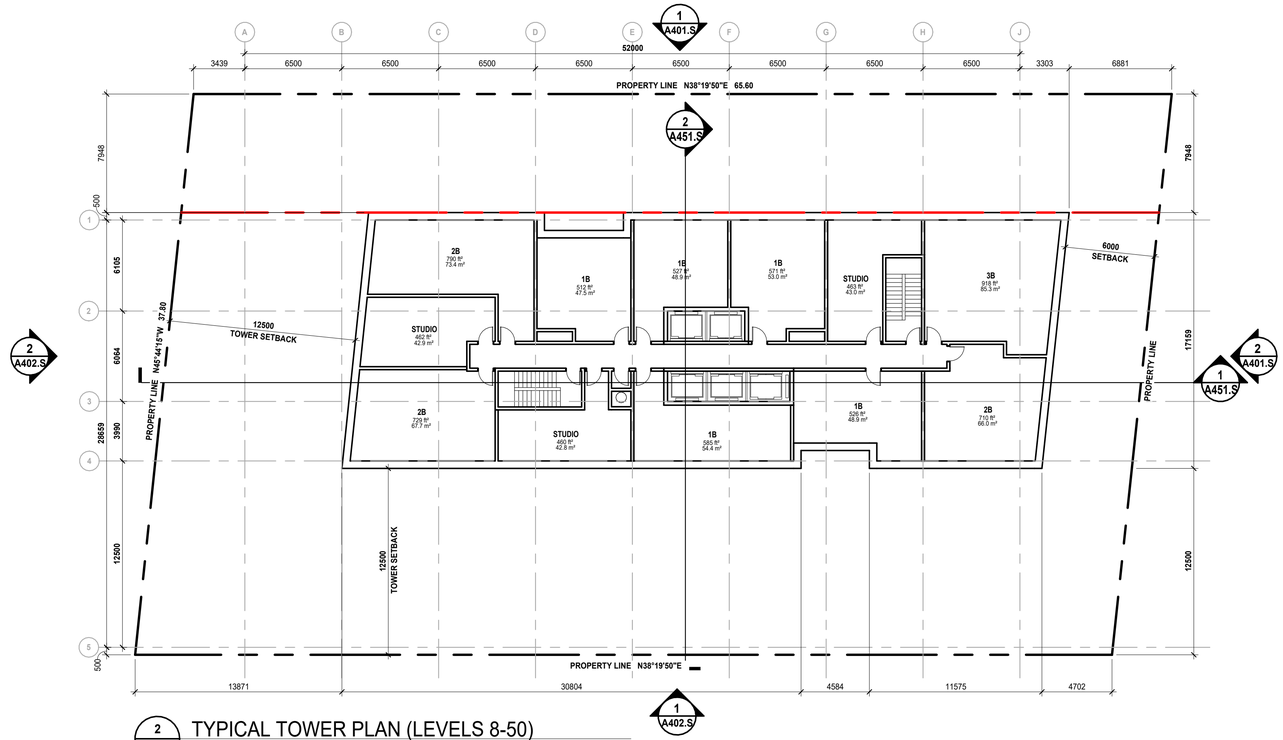
23031	1 : 200	WM	SK
PROJECT	SCALE	DRAWN	REVIEWED

Floor 3 and Typical Podium Floor (L4-L6) Plans

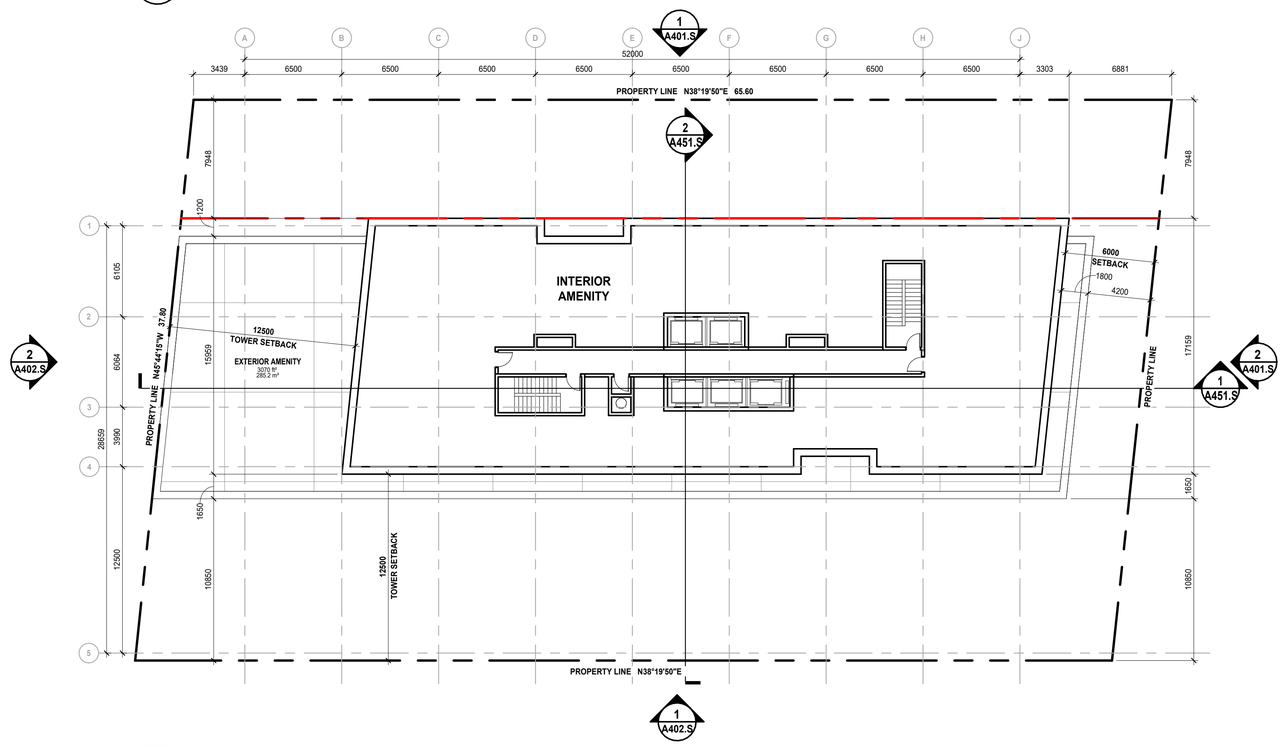
A203.S

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2 A204.S TYPICAL TOWER PLAN (LEVELS 8-50)



1 A204.S FLOOR 7 - AMENITY

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23031 PROJECT 1 : 200 SCALE WM DRAWN SK REVIEWED

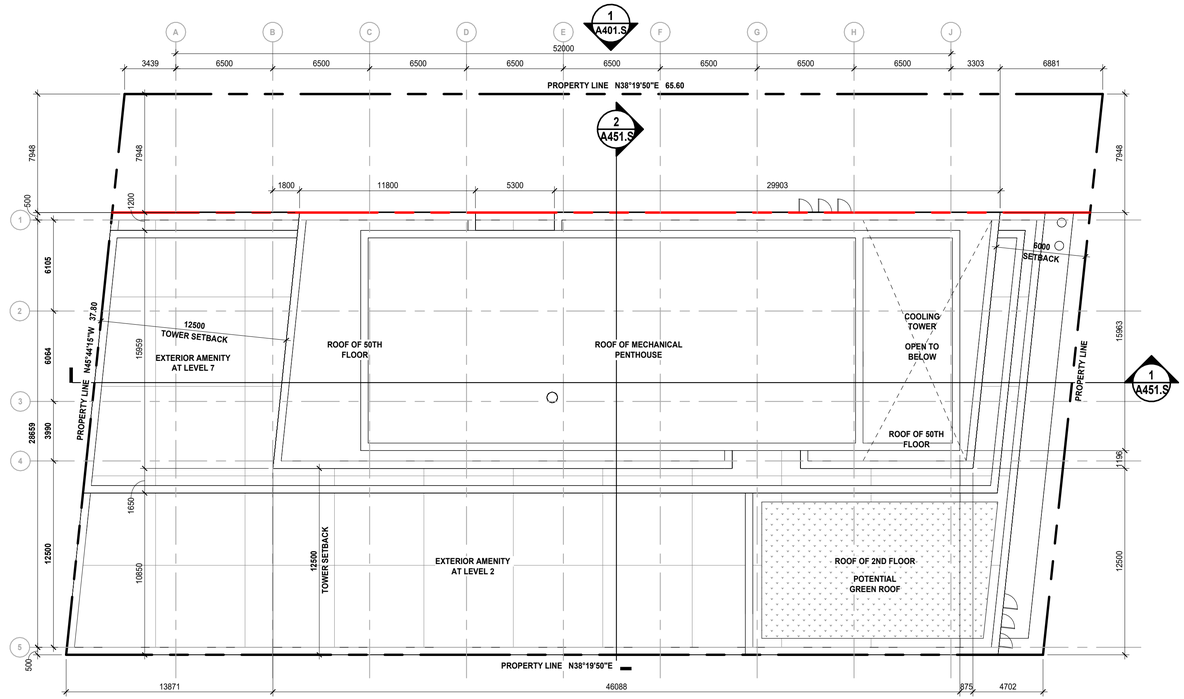
Floor 7 and Typical Tower Floor (L8-L50) Plans

A204.S

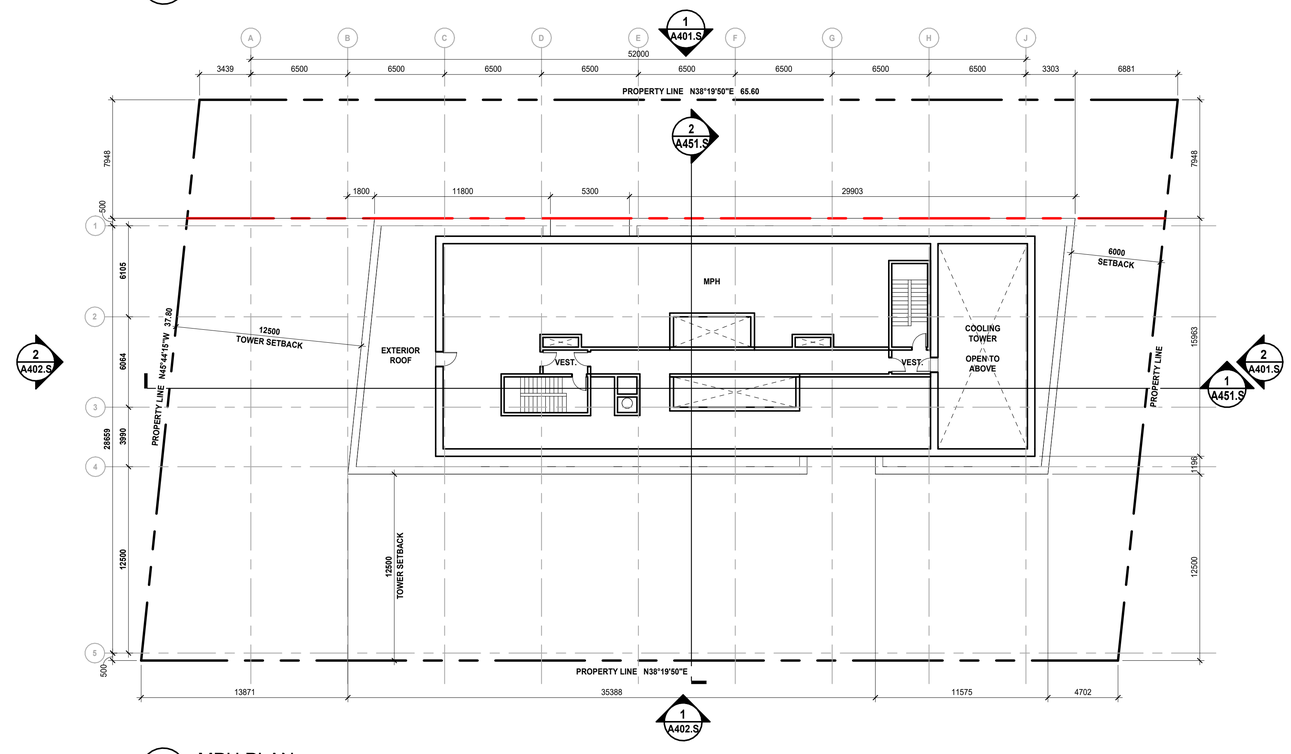
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2 A205.S ROOF PLAN



1 A205.S MPH PLAN

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Client Name TBD

23031	1 : 200	WM	SK
PROJECT	SCALE	DRAWN	REVIEWED

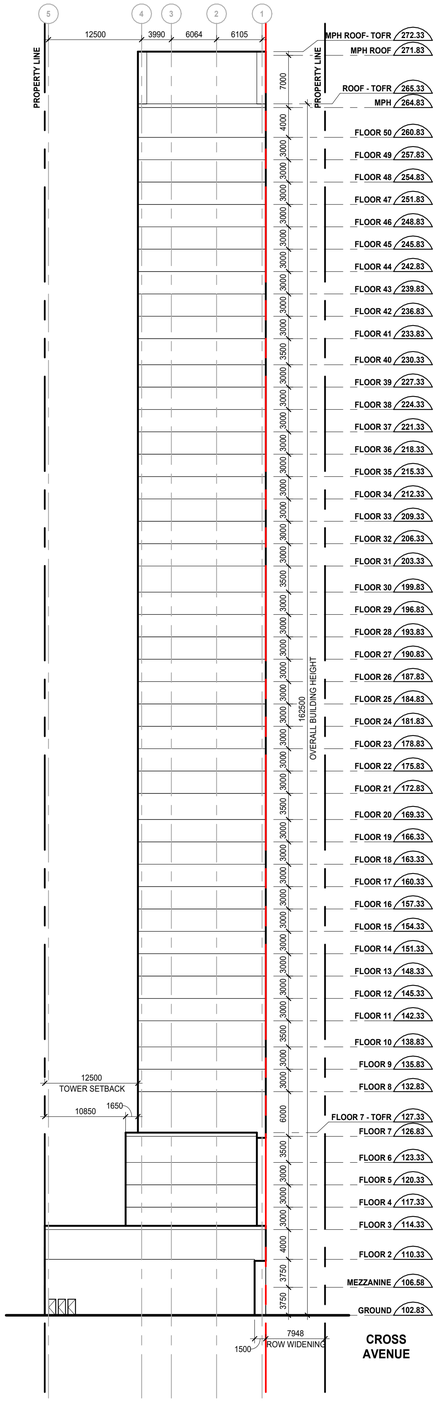
Mechanical Penthouse and Roof Plans

A205.S

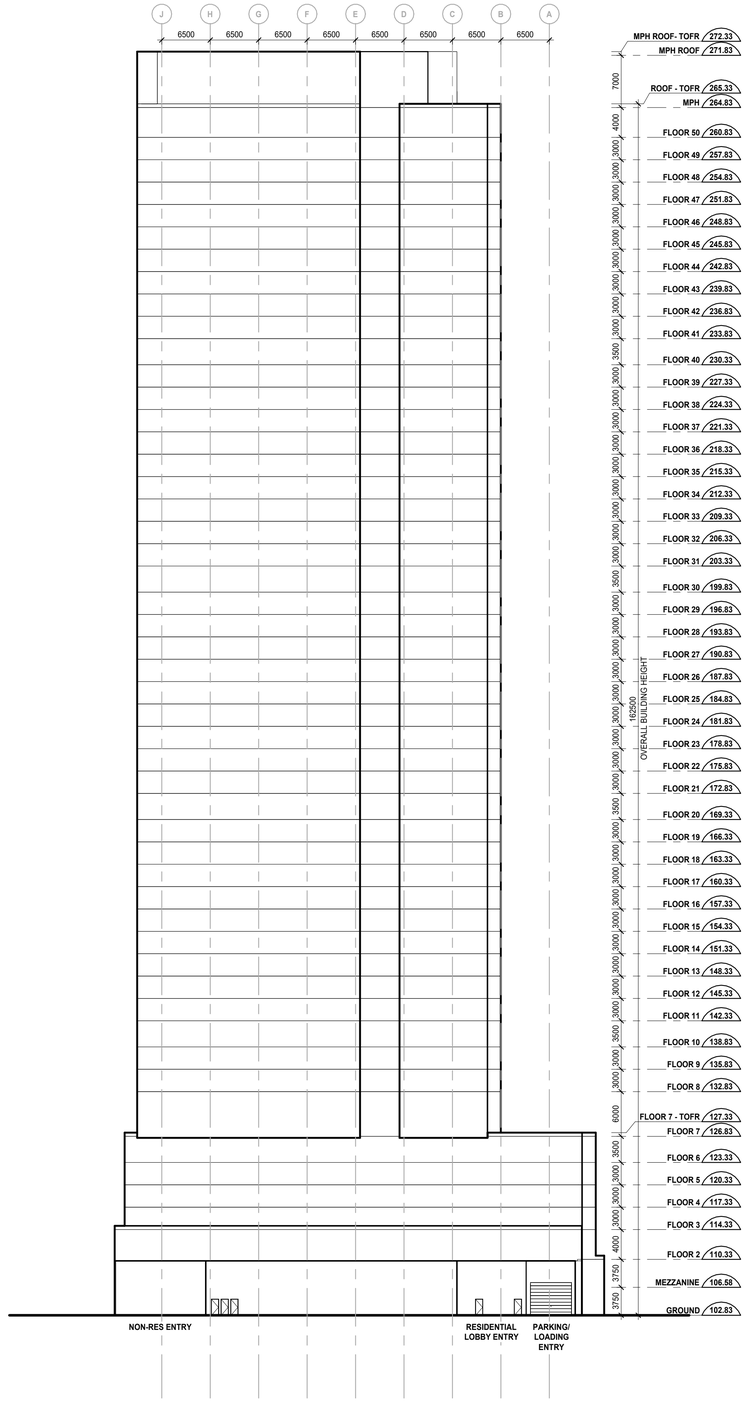
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2 A401.S EAST ELEVATION



1 A401.S NORTH ELEVATION

LEGEND:

- BR1.1 — BRICK - COLOUR 1
- BR1.2 — BRICK - COLOUR 2
- PC1.1 — PRECAST
- PC1.2 — BRICK-EMBEDDED PRECAST
- FC1.1 — FIBRE-CEMENT CLADDING SYSTEM
- MT1.1 — PLATE ALUM CLADDING SYSTEM - COLOUR 1
- MT1.2 — BALCONY SLAB EDGE COVER
- MT1.3 — BALCONY AND TERRACE RAILING HANDRAILS AND PRIVACY SCREEN SUPPORT POSTS, HANDRAILS AND
- MT1.4 — METAL FLASHING AND PARAPET CAP FLASHING
- MT1.5 — SHEET STEEL CLADDING SYSTEM
- WP1.1 — WINDOW SYSTEM METAL SPANDREL PROJECTING PANEL
- WP1.2 — WINDOW SYSTEM METAL SPANDREL FLUSH PANEL
- WP1.3 — WINDOW SYSTEM METAL SPANDREL RECESSED PANEL
- VG1.1 — RESIDENTIAL VISION GLASS - IGU
- VG1.2 — RESIDENTIAL VISION GLASS VG-1 WITH BIRD FRIENDLY FRIT PATTERN
- VG1.3 — RETAIL VISION GLASS WITH BIRD FRIENDLY FRIT PATTERN
- SG1.1 — SPANDREL GLASS - COLOUR 1
- GL1.1 — RAILING GLASS
- GL1.2 — RAILING GLASS WITH BIRD FRIENDLY FRIT PATTERN
- GL1.3 — PRIVACY SCREEN GLASS
- LW1.1 — RESIDENTIAL AND STOREFRONT WINDOW SYSTEM LOUVRE
- LW1.2 — ARCHITECTURAL LOUVRE
- PT1.1 — ELASTOMERIC COATING AT BALCONY UNDERSIDE
- PT1.2 — EXTERIOR HOLLOW METAL DOOR AND FRAME PAINT COLOUR
- EF1.1 — EIFS
- EF1.2 — STUCCO FINISH

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118-132 Cross Avenue

Oakville, ON
for
Client Name TBD

23031 1 : 400 WM SK
PROJECT SCALE DRAWN REVIEWED

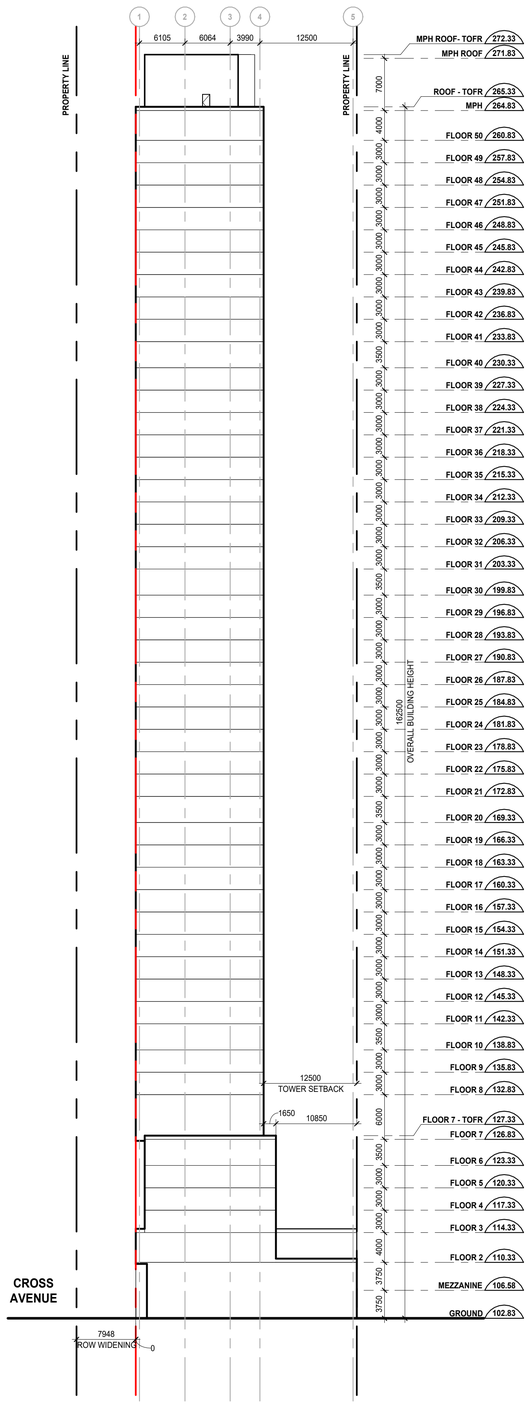
Building Elevations - North and East

A401.S

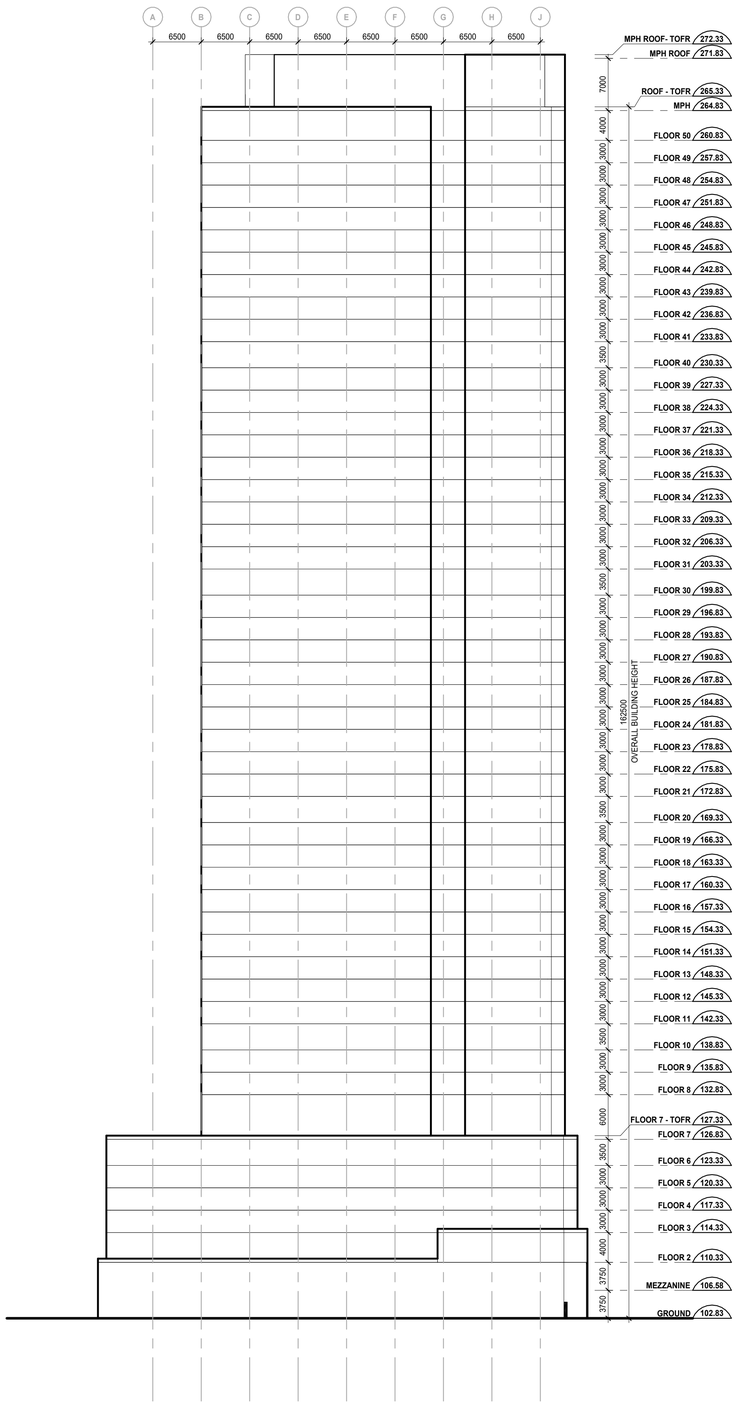
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2 A402.S WEST ELEVATION



1 A402.S SOUTH ELEVATION

LEGEND:

BR-1	BRICK - COLOUR 1
BR-2	BRICK - COLOUR 2
PC-1	PRECAST
PC-2	BRICK-EMBEDDED PRECAST
FC-1	FIBRE-CEMENT CLADDING SYSTEM
MT-1	PLATE ALUM CLADDING SYSTEM - COLOUR 1
MT-2	BALCONY SLAB EDGE COVER
MT-3	BALCONY AND TERRACE RAILING HANDRAILS AND PRIVACY SCREEN SUPPORT POSTS, HANDRAILS AND
MT-4	METAL FLASHING AND PARAPET CAP FLASHING
MT-5	SHEET STEEL CLADDING SYSTEM
WP-1	WINDOW SYSTEM METAL SPANDREL PROJECTING PANEL
WP-2	WINDOW SYSTEM METAL SPANDREL FLUSH PANEL
WP-3	WINDOW SYSTEM METAL SPANDREL RECESSED PANEL
VG-1	RESIDENTIAL VISION GLASS - IGU
VG-2	RESIDENTIAL VISION GLASS VG-1 WITH BIRD FRIENDLY FRIT PATTERN
VG-3	RETAIL VISION GLASS WITH BIRD FRIENDLY FRIT PATTERN
SG-1	SPANDREL GLASS - COLOUR 1
GL-1	RAILING GLASS
GL-2	RAILING GLASS WITH BIRD FRIENDLY FRIT PATTERN
GL-3	PRIVACY SCREEN GLASS
LV-1	RESIDENTIAL AND STOREFRONT WINDOW SYSTEM LOUVRE
LV-2	ARCHITECTURAL LOUVRE
PT-1	ELASTOMERIC COATING AT BALCONY UNDERSIDE
PT-2	EXTERIOR HOLLOW METAL DOOR AND FRAME PAINT COLOUR
EF-1	EIFS
EF-2	STUCCO FINISH

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Oakville, ON
for
Client Name TBD

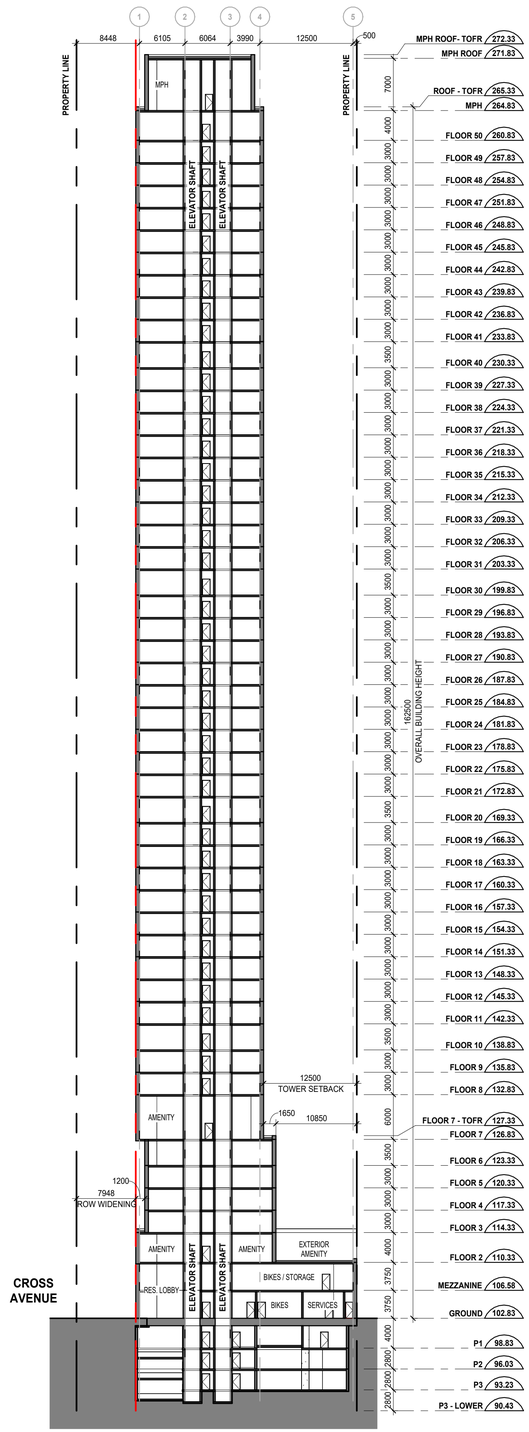
23031 1 : 400 WM SK
PROJECT SCALE DRAWN REVIEWED

Building Elevations - South and West

A402.S

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8448
6105
6064
3990
12500
500
PROPERTY LINE
PROPERTY LINE
MPH
ELEVATOR SHAFT
ELEVATOR SHAFT
12500
TOWER SETBACK
1650
10850
AMENITY
1200
7948
ROW WIDENING
AMENITY
ELEVATOR SHAFT
AMENITY
EXTERIOR AMENITY
BIKES / STORAGE
RES. LOBBY
BIKES
SERVICES
CROSS AVENUE
MPH ROOF- TOFR 272.33
MPH ROOF 271.83
ROOF - TOFR 265.33
MPH 264.83
FLOOR 50 260.83
FLOOR 49 257.83
FLOOR 48 254.83
FLOOR 47 251.83
FLOOR 46 248.83
FLOOR 45 245.83
FLOOR 44 242.83
FLOOR 43 239.83
FLOOR 42 236.83
FLOOR 41 233.83
FLOOR 40 230.33
FLOOR 39 227.33
FLOOR 38 224.33
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FLOOR 36 218.33
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FLOOR 30 199.83
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FLOOR 28 193.83
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FLOOR 26 187.83
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FLOOR 19 166.33
FLOOR 18 163.33
FLOOR 17 160.33
FLOOR 16 157.33
FLOOR 15 154.33
FLOOR 14 151.33
FLOOR 13 148.33
FLOOR 12 145.33
FLOOR 11 142.33
FLOOR 10 138.83
FLOOR 9 135.83
FLOOR 8 132.83
FLOOR 7 - TOFR 127.33
FLOOR 7 126.83
FLOOR 6 123.33
FLOOR 5 120.33
FLOOR 4 117.33
FLOOR 3 114.33
FLOOR 2 110.33
MEZZANINE 106.58
GROUND 102.83
P1 98.83
P2 96.03
P3 93.23
P3 - LOWER 90.43
7000
4000
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23031 - 118-132 Cross Avenue
2025-11-11

	Floor	Floor Area (GBA / Floor)	No. of Floors	Oakville By-Law 2014-014 Residential Floor Area sm	Oakville By-Law 2014-014 Commercial Floor Area sm	Indoor Amenity sm	Outdoor Amenity sm	Unit Breakdown ST	1B	2B	3B	Total Units	Res Saleable Area (sf)	Notes:
TOWER / PODIUM	Mech Penthouse	429.3	-	-	-			-	-	-	-			
	Typical Tower - Floor 8-50	794.3	43	34,154.9	0.0			129	215	129	43	516	0	
	Amenity - Floor 7	794.3	1	794.3	0.0	597.3	285.2	0	0	0	0	0	-	
	Podium - Floor 6	1,080.5	1	1,080.5	0.0			1	5	6	2	14	0	
	Podium - Floor 5	1,080.5	1	1,080.5	0.0			1	5	6	2	14	0	
	Podium - Floor 4	1,080.5	1	1,080.5	0.0			1	5	6	2	14	0	
	Amenity - Floor 3	1,080.5	1	1,080.5	0.0	109.5	0.0	1	2	6	2	11	0	
	Amenity - Floor 2	1,367.0	1	1,367.0	296.3	765.9	460.3	0	0	0	0	0	-	
	Mezzanine	1,803.7	-	1,803.7	0.0			0	0	0	0	0	-	Incl. Non-Res Open to Below?
	Ground	1,803.7	1	1,474.7	329.0			0	0	0	0	0	-	
	Sub TOTAL		**50**	**43,916.6**	**625.3**	**1472.7**	**745.5**							
BELOW GRADE	P1	1,812.7	0											
	P2	1,812.7	0											
	P3	1,812.7	0											
TOTALS													*0*	*sf*
	Total Above Grade Floor Area			44,541.9 sm				133	232	153	51	569		
				479,449.0 sf										
								23%	41%	27%	9%	100%	**% of Unit Type**	

Site Area & FSI			Confirm					
	Gross Site Area	2,466.3 sm	X	X	X	X		**Average Unit Size by Unit Type**
	Net Site Area (ROW Widening TBC)	**0.0** sm						
	Lot Coverage %	0.0 %						
	Gross Floor Area ***(By-law 2023-065)***	44,541.9 sm						
	FSI (Gross Floor Area / Gross Site Area)	18.1						

Floor Area: *means the aggregate area of a building contained within the exterior walls, but does not include attic or basement space*

Residential Floor Area: *means the aggregate area of a residential building containing a dwelling measured from the exterior of the outside walls, but shall not include a private garage, basement, or attic.*

Net Floor Area: **means the total area of all floors of a building measured from the interior faces of the exterior walls or demising walls, but does not include the area of stair wells, elevators, escalators, ventilation shafts, attics, concourses, washrooms, attached enclosed and covered loading docks and related enclosed corridors used for loading purposes, above and below grade parking structures, storage rooms, rooms for garbage containment and mechanical rooms.*

GFA: *means the total area of all of the floors in a building measured from the exterior faces of the exterior walls, but shall not include an attic, basement or mechanical penthouse (By-Law 2023-065). GFA is used for calulating FSI*

FSI: *means the gross floor area of all buildings on a lot divided by the lot area (By-Law 2023-065).*

NOTE: *All open to below areas are <u>included</u> in Floor Area and Net Floor Area, unless otherwise indicated in the Notes column above.*

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23031 - 118-132 Cross Avenue
2025-11-11

The Statistics below are based on requirements as per the Oakville Zoning By-law 2014-014

VEHICULAR PARKING

				Required	Provided
Refer to Traffic Report prepared by XXX, for additional information.					**75**
TBC by Traffic Consultant					
Residential *(1 space/unit <75sm)*	1.0	x	X	#VALUE!	X
Residential *(1.5 spaces/unit >75sm)*	1.5	x	X	#VALUE!	X
Visitor *(0.25 of parking spaces allocated to visitor - included in above)*				#VALUE!	X
Accessible Parking Spaces *(included in Total Parking)*				XX	X
TOTAL PARKING				#VALUE!	0

BICYCLE PARKING

				Required	Provided
Residential	(1.0/unit) 1	x	569	569	X
	TBC by Traffic Consultant				
Visitor	(0.25/residential total) 0.25	x	569	143	X
	(included in the required total)				
	TBC by Traffic Consultant				
TOTAL BICYCLES				712	0

LOADING / GARBAGE

Loading Spaces	Provided
Refer to Traffic Report prepared by XXX, for additional information.	
Residential *(Loading Space 3.5m x 12m, 4.2m vertical clearance)*	1
Loading Req's TBC by Traffic Consultant	
TOTAL LOADING SPACES	1

	Target (sm)	
Garbage Room Size	159.9	**65.8**
Bulk Waste Storage Room	10.0	**0.0**
Garbage Staging Area	56.9	**32.9**

NOTE: Toronto Standard Targets Applied

AMENITY AREA

	Target	Provided
Indoor Amenity		1,472.7 sm
Outdoor Amenity		745.5 sm
TOTAL Amenity Provided	2,276.0 sm	2,218.2 sm
3.90 sm/unit	(4.0 sm/unit)	

APPENDIX B: Terms of Reference and Correspondence

Andrew Bader

From: Martin Chan <Martin.Chan@oakville.ca>
Sent: Friday, October 24, 2025 6:36 PM
To: Andrew Bader
Cc: Ian Lindley; Aaron Wignall
Subject: FW: [EXTERNAL] 118-135 Cross Avenue: Terms of Reference

Hi Andrew,

In addition to the list (with my updated response – see below), please add **420 South Service Road** to your background analysis.

Thanks,
Martin

Martin Chan
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 4740 | www.oakville.ca

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From: Andrew Bader <abader@cfcrozier.ca>
Sent: Wednesday, October 22, 2025 3:53 PM
To: Martin Chan <Martin.Chan@oakville.ca>
Cc: Ian Lindley <ilindley@cfcrozier.ca>; Aaron Wignall <awignall@cfcrozier.ca>
Subject: FW: [EXTERNAL] 118-135 Cross Avenue: Terms of Reference

Hi Martin,

We are also looking to confirm which background developments should be included in our TIS at 118 Cross Avenue. I am wondering if you can assist with this, I have pasted my original confirmation request below:

We are continuing work on the TIS for the mixed-use residential development at 118–135 Cross Avenue.

Earlier this year, we confirmed our Terms of Reference for the study. Before proceeding with future modeling, we would like to confirm which background developments should be included.

Based on the Town of Oakville Active Development Applications website, we plan to include the following developments:

- 157 & 167 Cross Avenue
- 590 Argus Road
- 166 South Service Road East
- 50 Speers Road
- 217, 227 Cross Avenue & 571, 581, 587–595 Argus Road
- 627 Lyons Lane

- 530, 550, 588 Kerr Street & 131, 171 Speers Road
- 349 Davis Road

OK.

We were unable to access a TIS for the following developments. If available, could you or a colleague provide the studies, or confirm if they can be excluded from our initial submission?

- 271 Cornwall Road – See 166 South Service Road TIS
- 570 Argus Road - See 166 South Service Road TIS
- 599 Lyons Lane - See 166 South Service Road TIS
- 320 Davis Road - See 166 South Service Road TIS
- 70 Old Mill Road – 154 Unit Apartment

Appreciate your assistance, feel free to reach out with any questions. Have a great long weekend.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Andrew Bader <abader@cfcrozier.ca>
Sent: Friday, October 17, 2025 2:26 PM
To: Syed Rizvi <syed.rizvi@oakville.ca>; Khalil Barakzai <khalil.barakzai@oakville.ca>
Cc: Ian Lindley <ilindley@cfcrozier.ca>; Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: [EXTERNAL] 118-135 Cross Avenue: Terms of Reference

Good afternoon,

Just following up on this request. We are looking to confirm which background developments should be included in our study.

Have a great weekend.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Andrew Bader <abader@cfcrozier.ca>
Sent: Friday, October 10, 2025 4:24 PM
To: Syed Rizvi <syed.rizvi@oakville.ca>; Khalil Barakzai <khalil.barakzai@oakville.ca>
Cc: Ian Lindley <ilindley@cfcrozier.ca>; Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: [EXTERNAL] 118-135 Cross Avenue: Terms of Reference

Good afternoon,

We are continuing work on the TIS for the mixed-use residential development at 118–135 Cross Avenue.

Earlier this year, we confirmed our Terms of Reference for the study. Before proceeding with future modeling, we would like to confirm which background developments should be included.

Based on the Town of Oakville Active Development Applications website, we plan to include the following developments:

- 157 & 167 Cross Avenue
- 590 Argus Road
- 166 South Service Road East
- 50 Speers Road
- 217, 227 Cross Avenue & 571, 581, 587–595 Argus Road
- 627 Lyons Lane
- 530, 550, 588 Kerr Street & 131, 171 Speers Road
- 349 Davis Road

We were unable to access a TIS for the following developments. If available, could you or a colleague provide the studies, or confirm if they can be excluded from our initial submission?

- 271 Cornwall Road
- 570 Argus Road
- 599 Lyons Lane
- 320 Davis Road
- 70 Old Mill Road

Appreciate your assistance, feel free to reach out with any questions. Have a great long weekend.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
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From: Martin Chan <mchan@cfcrozier.ca>
Sent: Friday, March 28, 2025 4:18 PM
To: Syed Rizvi <syed.rizvi@oakville.ca>
Cc: Kierra Harper <kharper@cfcrozier.ca>
Subject: RE: [EXTERNAL] 118-135 Cross Avenue: Terms of Reference

Thank you for the confirmation, Syed.

Would you or your colleague have access to the background TIS for the following properties? If not, can we exclude them from our initial submission?

- 271 Cornwall Road
- 570 Argus Road
- 599 Lyons Lane
- 320 Davis Road
- 70 Old Mill Road

Best regards,
Martin
Martin Chan, P.Eng.
Project Manager, Transportation
DID: 416.842.0028

From: Syed Rizvi <syed.rizvi@oakville.ca>
Sent: March 24, 2025 9:22 AM
To: Martin Chan <mchan@cfcrozier.ca>
Cc: Kierra Harper <kharper@cfcrozier.ca>
Subject: RE: [EXTERNAL] 118-135 Cross Avenue: Terms of Reference

Hi Martin,

Thanks for the email, I agree with the TOR's and have no comments at this time.

Regards,
Syed

Syed Rizvi, **M.Sc., P. Eng**
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 3981 | www.oakville.ca

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From: Martin Chan <mchan@cfcrozier.ca>
Sent: Wednesday, March 19, 2025 11:54 AM
To: Syed Rizvi <syed.rizvi@oakville.ca>
Cc: Kierra Harper <kharper@cfcrozier.ca>
Subject: [EXTERNAL] 118-135 Cross Avenue: Terms of Reference

Good morning Syed,

Hope you are doing well. Crozier has been retained to prepare a TIS in support of the OPA and ZBA for the proposed residential development located at 118-135 Cross Avenue in the Town of Oakville, Region of Halton. The current development proposal consists of a high-rise mixed-use residential tower with approximately 560 units and 955 m^2 of commercial area. Please note the development is still in its conceptual stage and the exact site stats may subject to change.

The study will be prepared in general conformance with the Town of Oakville's Transportation Impact Analysis (n.d.). We propose the following terms of reference:

Study Intersections

- Cross Avenue/South Service Road East and Trafalgar Road (Regional Road 3)
- Cross Avenue and Lyons Lane (south)/Trafalgar Village Access
- Cross Avenue and Lyons Lane (north)
- Cross Avenue and Oakville GO Access (west)
- Cross Avenue and Argus Road/Oakville GO Access (east)
- Cross Avenue and Cornwall Road/Speers Road
- Proposed Site Access

Existing Conditions

The existing traffic conditions will be analyzed based on new peak hour traffic counts using Synchro 12.0 software. Level of Service, control delays, maximum v/c ratios and queue lengths will be evaluated for each study intersection. The following study horizon and analysis periods are proposed:

- Existing conditions (2025)
- 5 years from the date of study (2030)
- Weekday a.m. and p.m. peak (7:00 a.m. to 9:00 a.m. & 4:00 p.m. to 7:00 p.m.).

Roadway Improvements

Based on the Halton Region Construction Projects website and the Oakville Transportation and Roads Construction Projects website, there are no planned construction projects or infrastructure improvements within the study area. It is noted that road widening, and other infrastructure improvements are planned outside of the study area.

Please confirm if there are any improvements that should be accounted for in the study.

Background Developments

Based on the Town of Oakville Active Development Applications website, the following background developments will be included:

- 157 & 167 Cross Avenue
- 590 Argus Road
- 166 South Service Road East
- 50 Speers Road
- 217, 227 Cross Avenue & 571, 581, 587-595 Argus Road

- 627 Lyons Lane
- 530,550,588 Kerr Street & 131, 171 Speers Road
- 349 Davis Road

We have not been able to find the reports for the following developments. **If they are required to be included within our TIS, can you kindly share the applicable TIS:**

- 271 Cornwall Road
- 570 Argus Road
- 599 Lyons Lane
- 320 Davis Road
- 70 Old Mill Road

Please advise if any additional developments or roadway improvements should be included in our analysis.

Growth Rates

- A 2% annual compounded growth rate is proposed, consistent with background TIS (i.e., 157 & 167 Cross Avenue, 217, 227 Cross Avenue & 571, 581, 587-595 Argus Road, 627 Lyons Lane, and more).

Future Conditions

- Trip Generation will be based on ITE Trip Gen 11th Edition.
- Trip Distribution will be based on TTS and/or existing travel patterns.
- Future background and future total conditions will be compared to identify if capacity and queueing issues are forecasted and if mitigation measures are required.

Traffic Safety

- The available sight distance at the site access will be compared to standards set out by TAC Geometric Design Guide for Canadian Roads.

Parking & Loading Review

- Vehicle and bicycle parking and loading requirements will be assessed based on the ZBL 2014-014.
- Vehicle Turning Diagrams will be prepared for:
    - Halton Waste Collection Vehicles
    - Fire Trucks
    - Delivery Vehicles (MSU Truck)
    - P-car

TDM

- Site Specific TDM opportunities will be recommended to reduce single-occupancy vehicle trips and promote sustainable transportation.
- Cost and implementation timeline will also be shown, if info is available.

Should you have any questions or concerns, please feel free to reach out.

Martin
Martin Chan, P.Eng.
Project Manager, Transportation
Office: 416.842.0028
Collingwood | Milton | Toronto | Bradford | Guelph

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Andrew Bader

From: Martin Chan <Martin.Chan@oakville.ca>
Sent: Thursday, October 23, 2025 9:43 AM
To: Aaron Wignall; Andrew Bader
Subject: RE: [EXTERNAL] Cross Avenue RoW Confirmation

Hi Aaron,

You can refer to OPA 70, which has been approved. It shows the proposed road network within Midtown, as well as the Right-of-way requirements for each road.

Prior to submission, it is recommended that the applicant engage with the Town through the pre-consultation. During this stage, various Town departments will have about 1 to 2 weeks to review the Concept Plan and provide preliminary comments, if necessary. This includes the Midtown team.

Martin

Martin Chan
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 4740 | www.oakville.ca

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From: Aaron Wignall <awignall@cfcrozier.ca>
Sent: Wednesday, October 22, 2025 3:25 PM
To: Martin Chan <Martin.Chan@oakville.ca>; Andrew Bader <abader@cfcrozier.ca>
Subject: Re: [EXTERNAL] Cross Avenue RoW Confirmation

Hi Martin,

As we progress our plan for application purposes what should we be showing/connecting to on Cross Ave? Just show existing with the future ROW as a dashed line??

Regards,
Aaron Wignall | Associate
Senior Project Manager, Transportation
Office: 905.693.7834
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Martin Chan <Martin.Chan@oakville.ca>
Sent: Wednesday, October 22, 2025 3:22 PM
To: Andrew Bader <abader@cfcrozier.ca>
Cc: Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: [EXTERNAL] Cross Avenue RoW Confirmation

Hi Andrew,

We don't have the drawings. There are still major changes been made at the higher level which may impact the detailed design.

Martin

Martin Chan
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 4740 | www.oakville.ca

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From: Andrew Bader <abader@cfcrozier.ca>
Sent: Wednesday, October 22, 2025 2:53 PM
To: Martin Chan <Martin.Chan@oakville.ca>
Cc: Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: [EXTERNAL] Cross Avenue RoW Confirmation

Hi Martin,

I understand the Midtown Transportation Plan is still under review. However, I was wondering if you could share what the Town wants within the Cross Avenue RoW near our site at this time.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
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From: Martin Chan <Martin.Chan@oakville.ca>
Sent: Wednesday, October 22, 2025 2:37 PM
To: Andrew Bader <abader@cfcrozier.ca>
Cc: Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: [EXTERNAL] Cross Avenue RoW Confirmation

Hi Andrew,

What is your specific question? Is it regarding the right-of-way widths? Lane configurations?

The draft Midtown Transportation Plan is still being reviewed and revised by the Town's consultants. The report is expected to be presented to Council for approval by November/December.

Thanks,
Martin

Martin Chan
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 4740 | www.oakville.ca

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From: Andrew Bader <abader@cfcrozier.ca>
Sent: Wednesday, October 22, 2025 2:23 PM
To: Martin Chan <Martin.Chan@oakville.ca>
Cc: Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: [EXTERNAL] Cross Avenue RoW Confirmation

You don't often get email from abader@cfcrozier.ca. Learn why this is important

Hi Martin,

Hope all is well, just following up on this.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Andrew Bader <abader@cfcrozier.ca>
Sent: Wednesday, October 15, 2025 3:35 PM
To: Martin Chan <Martin.Chan@oakville.ca>
Cc: Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: [EXTERNAL] Cross Avenue RoW Confirmation

Hi Martin,

We are just looking to confirm the RoW to assume for Cross Avenue as we move forward with the project.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
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From: Martin Chan <Martin.Chan@oakville.ca>
Sent: Wednesday, October 15, 2025 3:26 PM
To: Andrew Bader <abader@cfcrozier.ca>
Cc: Aaron Wignall <awignall@cfcrozier.ca>
Subject: RE: [EXTERNAL] Cross Avenue RoW Confirmation

Hi Andrew,

Hope you are doing well too.

The draft Midtown Transportation Plan is still being reviewed and revised. The report is expected to be presented to Council for approval by November/December.

Is there a specific comment or concern related to the cross section?

Martin

Martin Chan
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 4740 | www.oakville.ca

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From: Andrew Bader <abader@cfcrozier.ca>
Sent: Wednesday, October 15, 2025 1:58 PM
To: Martin Chan <Martin.Chan@oakville.ca>
Cc: Aaron Wignall <awignall@cfcrozier.ca>
Subject: [EXTERNAL] Cross Avenue RoW Confirmation

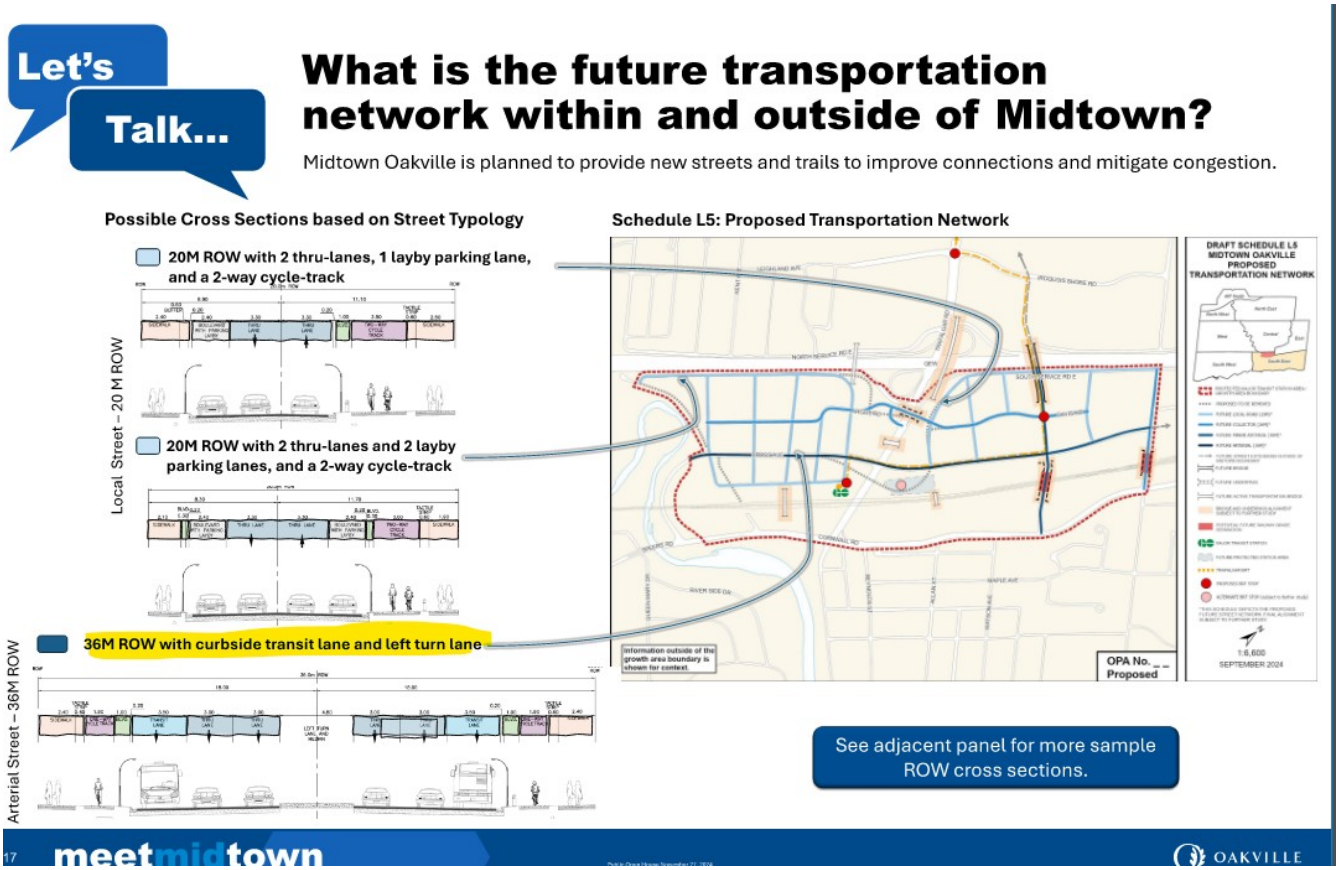
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Hi Martin,

Hope you are doing well!

We're continuing our work on the 118 Cross Avenue development and I wanted to confirm whether the 36 m ROW cross-section shown in the screenshot below is still applicable for Cross Avenue (highlighted).

Thanks,
Andrew



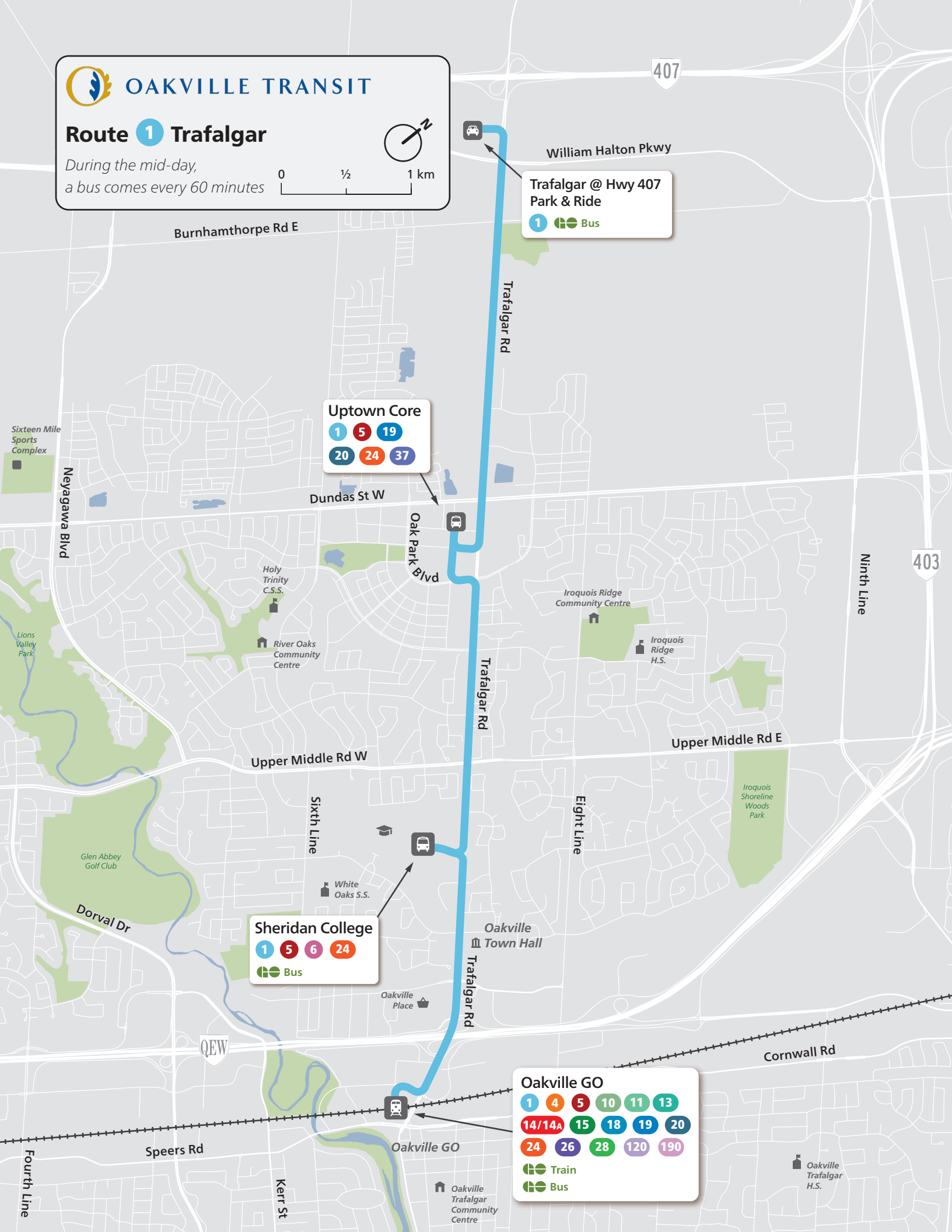
Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
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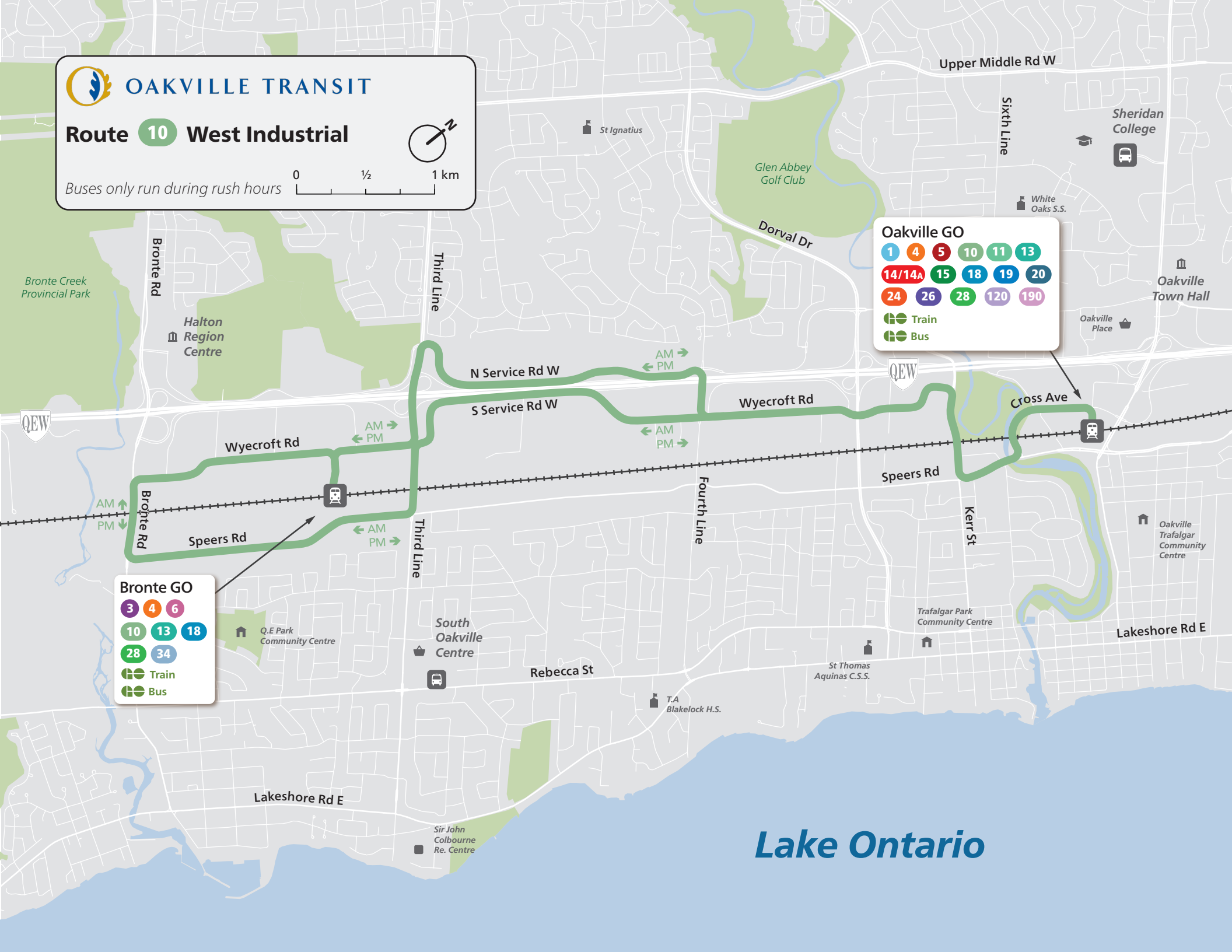
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APPENDIX C: Transit Data

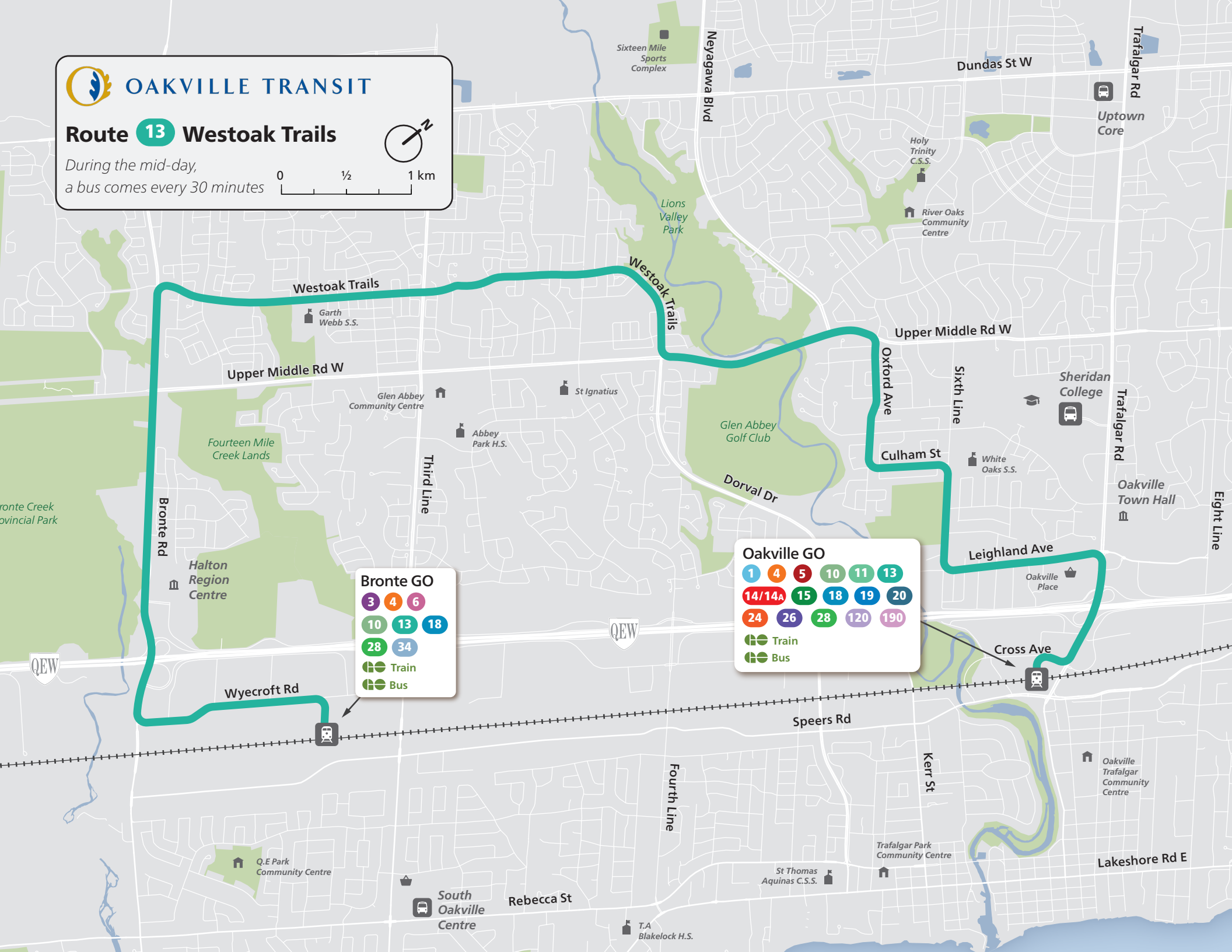

OAKVILLE TRANSIT
Route 1 Trafalgar
During the mid-day,
a bus comes every 60 minutes
0
½
1 km
N
407
William Halton Pkwy
Trafalgar @ Hwy 407
Park & Ride
1 Bus
Burnhamthorpe Rd E
Trafalgar Rd
Uptown Core
1 5 19
20 24 37
Sixteen Mile
Sports
Complex
Neyagawa Blvd
Dundas St W
Oak Park Blvd
Holy
Trinity
C.S.S.
River Oaks
Community
Centre
Lions
Valley
Park
Iroquois Ridge
Community Centre
Iroquois
Ridge
H.S.
Ninth Line
403
Upper Middle Rd W
Upper Middle Rd E
Sixth Line
Eight Line
Iroquois
Shoreline
Woods
Park
Glen Abbey
Golf Club
White
Oaks S.S.
Dorval Dr
Sheridan College
1 5 6 24
Bus
Oakville
Town Hall
Oakville
Place
QEW
Cornwall Rd
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Speers Rd
Oakville GO
Fourth Line
Kerr St
Oakville
Trafalgar
Community
Centre
Oakville
Trafalgar
H.S.


OAKVILLE TRANSIT
Route 4 Speers - Cornwall
During the mid-day,
a bus comes every 30 minutes
0
1
2 km
Bronte GO
3 4 6
10 13 18
28 34
Train
Bus
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Clarkson GO
4 11 12
MiWay
Train
Bus
Dundas St W
Trafalgar Rd
Laird Rd
Ninth Line
403
Bristol Circle
Winston Park Dr
Bristol Cricle
Erin Mills Pkwy
N Sheridan Way
Winston Churchill Blvd
Royal Windsor Dr
Cornwall Rd
Cross Ave
Speers Rd
Wyecroft Rd
Upper Middle Rd W
Third Line
Sixth Line
Eight Line
Bronte Rd
Dorval Dr
Glen Abbey Golf Club
Lions Valley Park
Uptown Core
Holy Trinity C.S.S.
River Oaks Community Centre
Iroquois Ridge Community Centre
Iroquois Ridge H.S.
Garth Webb S.S.
Glen Abbey Community Centre
St Ignatius
Abbey Park H.S.
Fourteen Mile Creek Lands
Halton Region Centre
White Oaks S.S.
Oakville Town Hall
Oakville Place
QEW
Oakville GO
Oakville Trafalgar Community Centre
Oakville Trafalgar H.S.
Trafalgar Park Community Centre
Kerr St
Fourth Line
Ford Dr
Mississauga
Southdown Rd
Lakeshore Rd W
Lakeshore Rd E
Rebecca St
Q.E Park Community Centre
South Oakville Centre
T.A Blakelock H.S.
St Thomas Aquinas C.S.S.
Sir John Colbourne Re. Centre
Lake Ontario

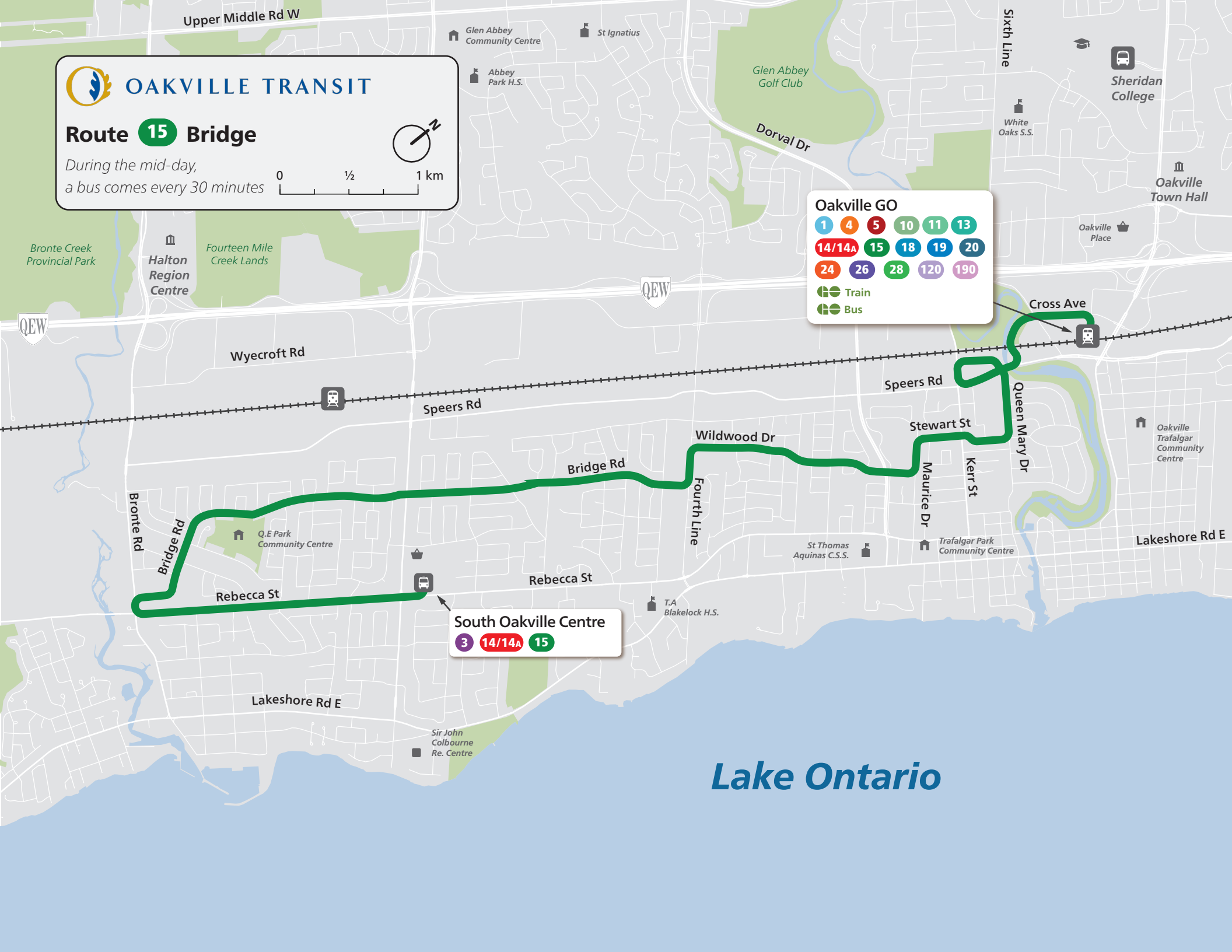

OAKVILLE TRANSIT
Route 5 Dundas
During the mid-day,
a bus comes every 30 minutes
0
1
2 km
Dundas @ Hwy 407
Park & Ride
5
Bus
Uptown Core
1 5 19
20 24 37
Sheridan College
1 5 6 24
Bus
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
407
QEW
Dundas St
Dundas St W
Sixteen Mile Dr
Upper Middle Rd
Upper Middle Rd W
Mainway
Wyecroft Rd
Harvester Rd
New St
Lakeshore Rd
Lakeshore Rd E
Guelph Line
Walkers Line
Appleby Line
Burlington
Bronte Rd
Third Line
Neyagawa Blvd
Trafalgar Rd
Eight Line
Sixth Line
Fourth Line
Kerr St
Burloak Dr
Oakville Trafalgar Memorial Hospital
Sixteen Mile Sports Complex
Lions Valley Park
Fourteen Mile Creek Lands
Bronte Creek Provincial Park
Halton Region Centre
Garth Webb S.S.
Glen Abbey Community Centre
Abbey Park H.S.
St Ignatius
Holy Trinity C.S.S.
River Oaks Community Centre
Iroquois Ridge Community Centre
Iroquois Ridge H.S.
White Oaks S.S.
Oakville Place
Oakville Town Hall
Oakville Trafalgar Community Centre
Trafalgar Park Community Centre
St Thomas Aquinas C.S.S.
T.A Blakelock H.S.
Q.E Park Community Centre
Appleby GO
Bronte GO
Rebecca St
South Oakville Centre
Sir John Colbourne Re. Centre
Lake Ontario

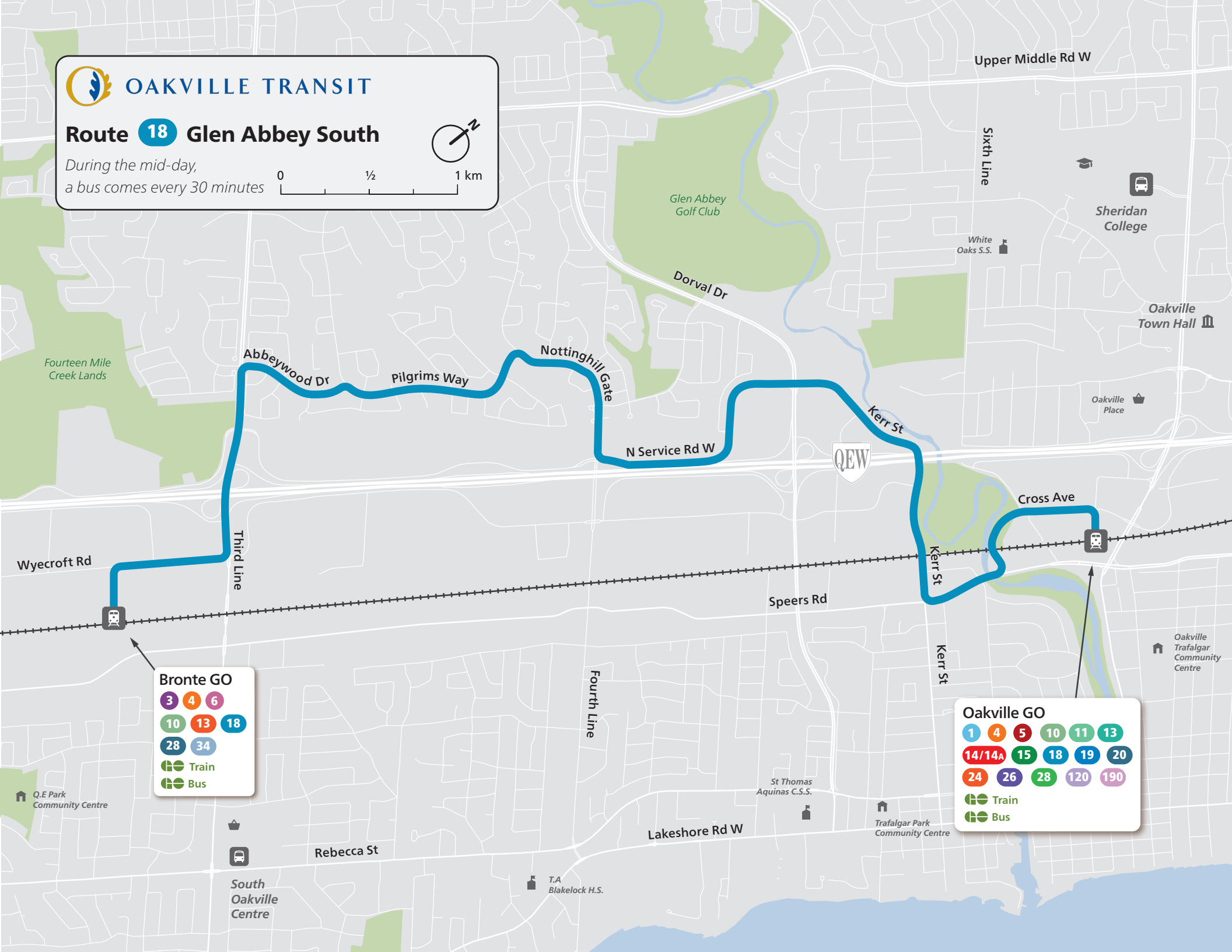

OAKVILLE TRANSIT
Route 10 West Industrial
Buses only run during rush hours
0
½
1 km
N
Upper Middle Rd W
Sixth Line
Sheridan College
St Ignatius
Glen Abbey Golf Club
White Oaks S.S.
Dorval Dr
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Oakville Town Hall
Oakville Place
Bronte Creek Provincial Park
Bronte Rd
Halton Region Centre
Third Line
N Service Rd W
S Service Rd W
Wyecroft Rd
AM
PM
QEW
Cross Ave
Speers Rd
Fourth Line
Kerr St
Oakville Trafalgar Community Centre
Bronte GO
3 4 6
10 13 18
28 34
Train
Bus
Q.E Park Community Centre
South Oakville Centre
Rebecca St
Trafalgar Park Community Centre
St Thomas Aquinas C.S.S.
Lakeshore Rd E
T.A Blakelock H.S.
Sir John Colbourne Re. Centre
Lake Ontario

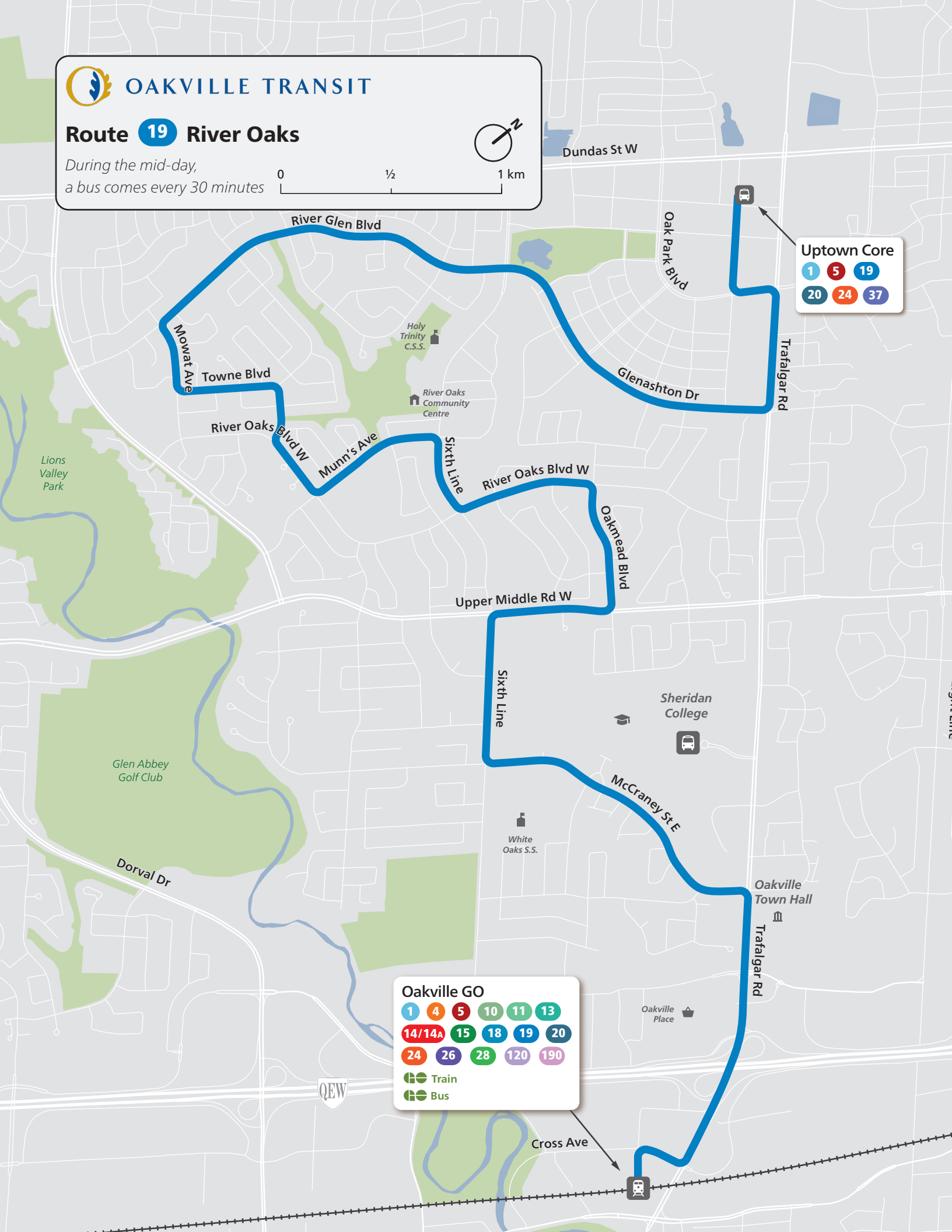

OAKVILLE TRANSIT
Route 11 Linbrook
During the mid-day,
a bus comes every 60 minutes
0
½
1 km
N
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Clarkson GO
4 11 12
MiWay
Train
Bus
Iroquois Ridge H.S.
Upper Middle Rd E
QEW
N Sheridan Way
Erin Mills Pkwy
Iroquois Shoreline Woods Park
Sixth Line
Sheridan College
White Oaks S.S.
Oakville Town Hall
Oakville Place
Winston Churchill Blvd
Royal Windsor Dr
Cornwall Rd
Cross Ave
Maple Ave
MacDonald Rd
Linbrook
Morrison
Maple Grove
Devon
Chartwell
Reynolds St
Oakville Trafalgar Community Centre
Oakville Trafalgar H.S.
Ford Dr
Devon
Mississauga
Southdown Rd
Kerr St
Lakeshore Rd E
Lakeshore Rd W
Lake Ontario

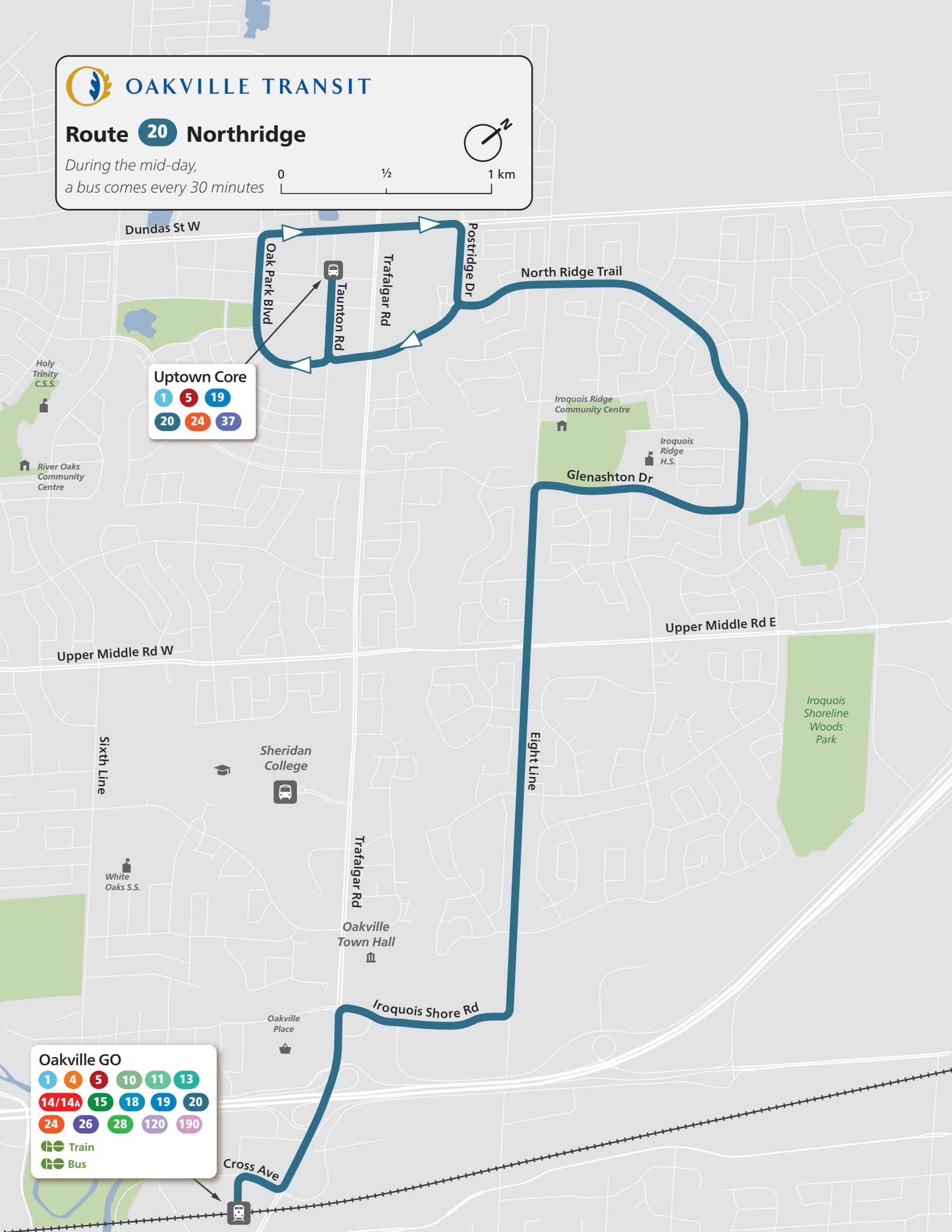

OAKVILLE TRANSIT
Route 13 Westoak Trails
During the mid-day,
a bus comes every 30 minutes
0
½
1 km
N
Sixteen Mile Sports Complex
Neyagawa Blvd
Dundas St W
Trafalgar Rd
Uptown Core
Holy Trinity C.S.S.
River Oaks Community Centre
Lions Valley Park
Westoak Trails
Garth Webb S.S.
Upper Middle Rd W
Glen Abbey Community Centre
St Ignatius
Abbey Park H.S.
Glen Abbey Golf Club
Oxford Ave
Sixth Line
Sheridan College
Fourteen Mile Creek Lands
Third Line
Culham St
White Oaks S.S.
Dorval Dr
Oakville Town Hall
Eight Line
Bronte Creek Provincial Park
Bronte Rd
Halton Region Centre
Bronte GO
3 4 6
10 13 18
28 34
Train
Bus
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Leighland Ave
Oakville Place
QEW
Cross Ave
Wyecroft Rd
Speers Rd
Fourth Line
Kerr St
Oakville Trafalgar Community Centre
Q.E Park Community Centre
South Oakville Centre
Rebecca St
Trafalgar Park Community Centre
St Thomas Aquinas C.S.S.
Lakeshore Rd E
T.A Blakelock H.S.

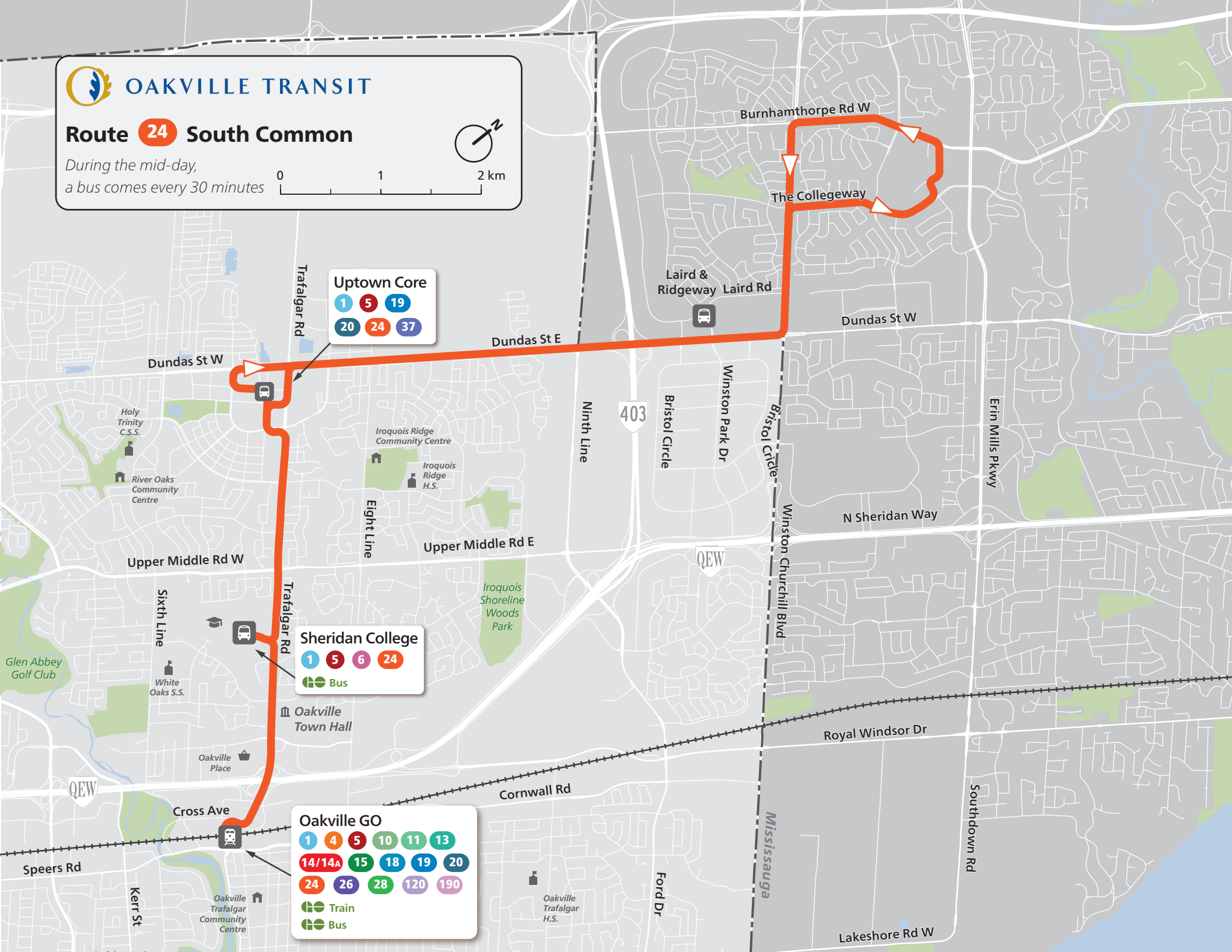

OAKVILLE TRANSIT
Route 14 Lakeshore West
Dashed line represents Route 14A
During the mid-day,
a bus comes every 30 minutes
0
1
2 km
N
Oakville Trafalgar Memorial Hospital
Dundas St W
Neyagawa Blvd
Holy Trinity C.S.S.
Uptown Core
Lions Valley Park
River Oaks Community Centre
Iroquois Ridge Community Centre
Third Line
Garth Webb S.S.
Upper Middle Rd W
Glen Abbey Community Centre
St Ignatius
Abbey Park H.S.
Glen Abbey Golf Club
Sixth Line
Trafalgar Rd
Eight Line
White Oaks S.S.
Upper Middle Rd
Fourteen Mile Creek Lands
Bronte Creek Provincial Park
Burlington
Appleby Line
Mainway
Bronte Rd
Halton Region Centre
Oakville Place
Oakville Town Hall
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
QEW
Wyecroft Rd
Cross Ave
Speers Rd
Harvester Rd
Burloak Dr
Kerr St
Oakville Trafalgar Community Centre
Fairview St
Fourth Line
Q.E Park Community Centre
Randall Church
Lakeshore Rd E
Rebecca St
St Thomas Aquinas C.S.S.
Trafalgar Park Community Centre
T.A Blakelock H.S.
Appleby GO
14
Train
Bus
New St
14A
Great Lakes Blvd
Third Line
South Oakville Centre
3 14/14A 15
Lakeshore Rd E
Sir John Colbourne Re. Centre
Lakeshore Rd
Lake Ontario

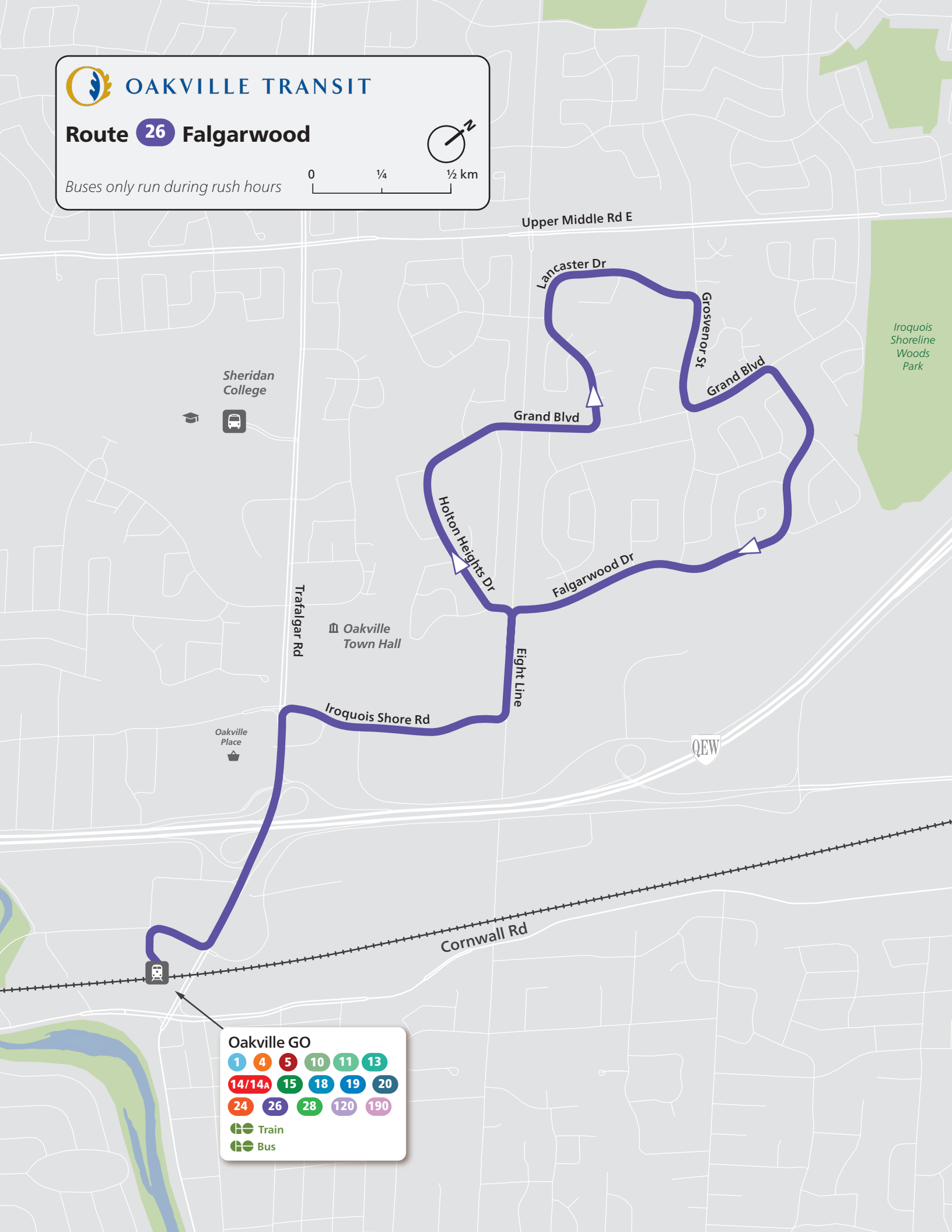

OAKVILLE TRANSIT
Route 15 Bridge
During the mid-day,
a bus comes every 30 minutes
0
½
1 km
N
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
South Oakville Centre
3 14/14A 15
Upper Middle Rd W
Glen Abbey Community Centre
St Ignatius
Abbey Park H.S.
Glen Abbey Golf Club
Sixth Line
Sheridan College
White Oaks S.S.
Dorval Dr
Oakville Town Hall
Oakville Place
Bronte Creek Provincial Park
Halton Region Centre
Fourteen Mile Creek Lands
QEW
Wyecroft Rd
Speers Rd
Cross Ave
Queen Mary Dr
Stewart St
Wildwood Dr
Bridge Rd
Fourth Line
Maurice Dr
Kerr St
Oakville Trafalgar Community Centre
Bronte Rd
Q.E Park Community Centre
Rebecca St
St Thomas Aquinas C.S.S.
Trafalgar Park Community Centre
Lakeshore Rd E
T.A Blakelock H.S.
Sir John Colbourne Re. Centre
Lake Ontario

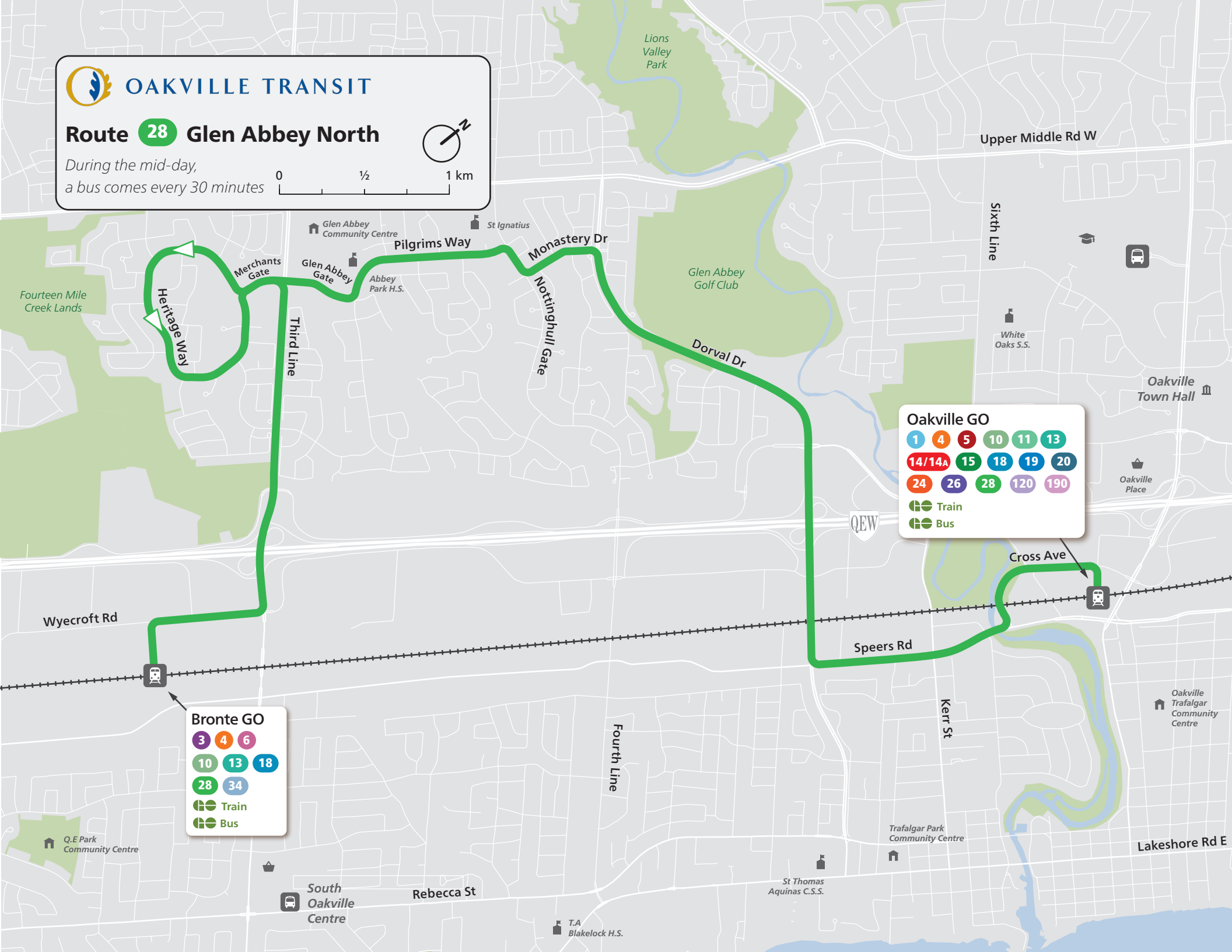

OAKVILLE TRANSIT
Route 18 Glen Abbey South
During the mid-day,
a bus comes every 30 minutes
0
½
1 km
N
Upper Middle Rd W
Sixth Line
Glen Abbey
Golf Club
Sheridan
College
White
Oaks S.S.
Dorval Dr
Oakville
Town Hall
Fourteen Mile
Creek Lands
Abbeywood Dr
Pilgrims Way
Nottinghill Gate
N Service Rd W
QEW
Kerr St
Oakville
Place
Cross Ave
Wyecroft Rd
Third Line
Speers Rd
Kerr St
Oakville
Trafalgar
Community
Centre
Bronte GO
3 4 6
10 13 18
28 34
Train
Bus
Fourth Line
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Q.E Park
Community Centre
St Thomas
Aquinas C.S.S.
Trafalgar Park
Community Centre
Lakeshore Rd W
Rebecca St
South
Oakville
Centre
T.A
Blakelock H.S.

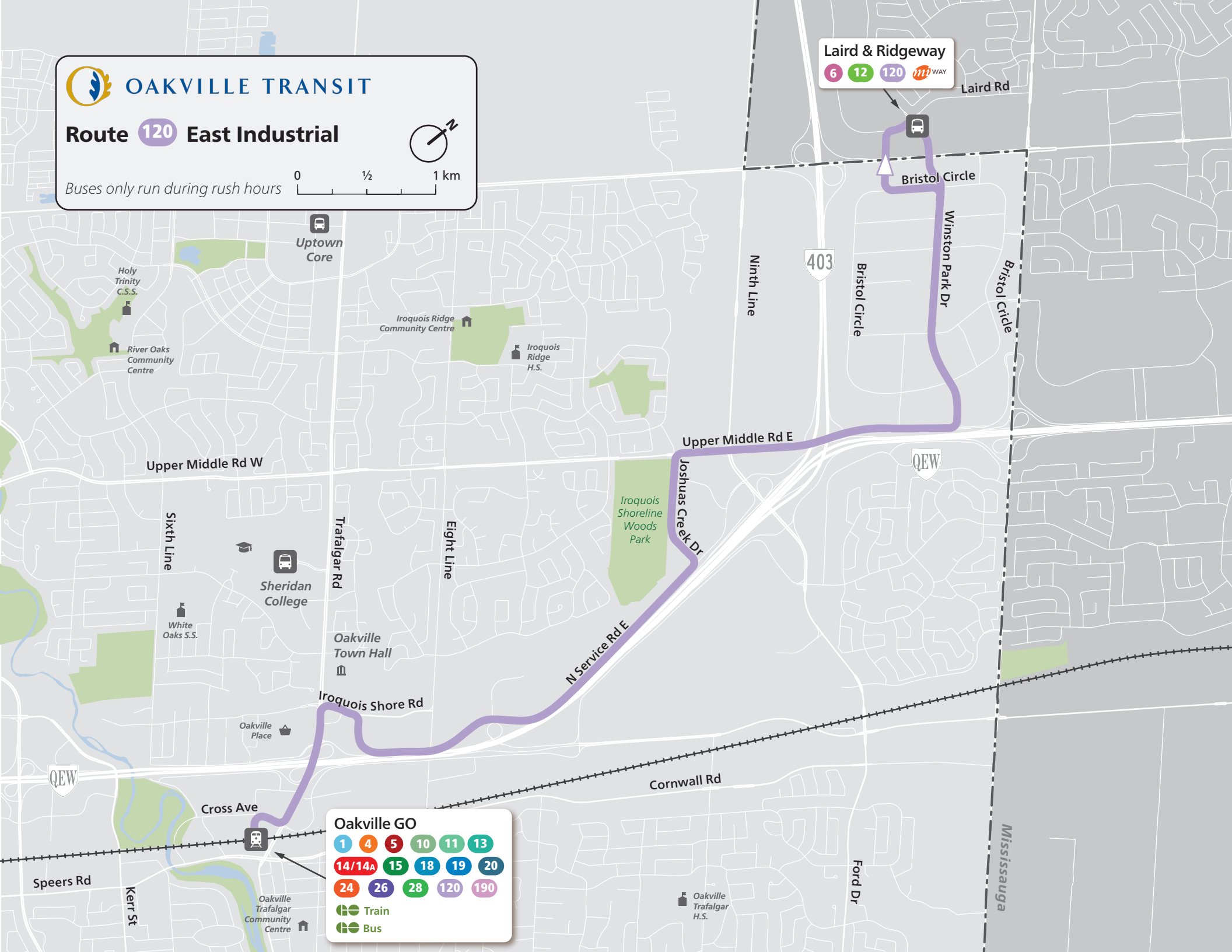

OAKVILLE TRANSIT
Route 19 River Oaks
During the mid-day,
a bus comes every 30 minutes
0
½
1 km
N
Dundas St W
River Glen Blvd
Oak Park Blvd
Uptown Core
1 5 19
20 24 37
Mowat Ave
Towne Blvd
Holy Trinity C.S.S.
River Oaks Community Centre
Glenashton Dr
Trafalgar Rd
River Oaks Blvd W
Munn's Ave
Sixth Line
River Oaks Blvd W
Oakmead Blvd
Lions Valley Park
Upper Middle Rd W
Sixth Line
Sheridan College
Glen Abbey Golf Club
McCraney St E
White Oaks S.S.
Dorval Dr
Oakville Town Hall
Trafalgar Rd
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Oakville Place
QEW
Cross Ave


OAKVILLE TRANSIT
Route 20 Northridge
During the mid-day,
a bus comes every 30 minutes
0
½
1 km
N
Dundas St W
Oak Park Blvd
Taunton Rd
Trafalgar Rd
Postridge Dr
North Ridge Trail
Uptown Core
1 5 19
20 24 37
Holy Trinity C.S.S.
River Oaks Community Centre
Iroquois Ridge Community Centre
Iroquois Ridge H.S.
Glenashton Dr
Upper Middle Rd E
Upper Middle Rd W
Iroquois Shoreline Woods Park
Sixth Line
Sheridan College
Eight Line
Trafalgar Rd
White Oaks S.S.
Oakville Town Hall
Iroquois Shore Rd
Oakville Place
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Cross Ave


OAKVILLE TRANSIT
Route 24 South Common
During the mid-day,
a bus comes every 30 minutes
0
1
2 km
Uptown Core
1 5 19
20 24 37
Sheridan College
1 5 6 24
Bus
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Burnhamthorpe Rd W
The Collegeway
Laird & Ridgeway
Laird Rd
Dundas St W
Dundas St E
Trafalgar Rd
Ninth Line
403
Bristol Circle
Winston Park Dr
Erin Mills Pkwy
N Sheridan Way
Upper Middle Rd E
Upper Middle Rd W
Eight Line
Sixth Line
Winston Churchill Blvd
QEW
Royal Windsor Dr
Cornwall Rd
Cross Ave
Speers Rd
Kerr St
Ford Dr
Southdown Rd
Lakeshore Rd W
Mississauga
Holy Trinity C.S.S.
River Oaks Community Centre
Iroquois Ridge Community Centre
Iroquois Ridge H.S.
Iroquois Shoreline Woods Park
Glen Abbey Golf Club
White Oaks S.S.
Oakville Town Hall
Oakville Place
Oakville Trafalgar Community Centre
Oakville Trafalgar H.S.


OAKVILLE TRANSIT
Route 26 Falgarwood
Buses only run during rush hours
0
¼
½ km
N
Upper Middle Rd E
Lancaster Dr
Grosvenor St
Grand Blvd
Grand Blvd
Iroquois Shoreline Woods Park
Sheridan College
Holton Heights Dr
Falgarwood Dr
Trafalgar Rd
Oakville Town Hall
Eight Line
Iroquois Shore Rd
Oakville Place
QEW
Cornwall Rd
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus


OAKVILLE TRANSIT
Route 28 Glen Abbey North
During the mid-day,
a bus comes every 30 minutes
0
½
1 km
N
Lions Valley Park
Upper Middle Rd W
Sixth Line
Glen Abbey Community Centre
St Ignatius
Pilgrims Way
Monastery Dr
Merchants Gate
Glen Abbey Gate
Abbey Park H.S.
Glen Abbey Golf Club
Fourteen Mile Creek Lands
Heritage Way
Third Line
Nottinghull Gate
Dorval Dr
White Oaks S.S.
Oakville Town Hall
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Oakville Place
QEW
Cross Ave
Wyecroft Rd
Speers Rd
Bronte GO
3 4 6
10 13 18
28 34
Train
Bus
Fourth Line
Kerr St
Oakville Trafalgar Community Centre
Q.E Park Community Centre
South Oakville Centre
Rebecca St
Trafalgar Park Community Centre
St Thomas Aquinas C.S.S.
Lakeshore Rd E
T.A Blakelock H.S.


OAKVILLE TRANSIT
Route 120 East Industrial
Buses only run during rush hours
0
½
1 km
N
Laird & Ridgeway
6 12 120 MiWay
Laird Rd
Bristol Circle
Winston Park Dr
Bristol Cricle
Bristol Circle
Ninth Line
403
Uptown Core
Holy Trinity C.S.S.
River Oaks Community Centre
Iroquois Ridge Community Centre
Iroquois Ridge H.S.
Upper Middle Rd E
Upper Middle Rd W
QEW
Joshuas Creek Dr
Iroquois Shoreline Woods Park
Sixth Line
Trafalgar Rd
Eight Line
Sheridan College
White Oaks S.S.
Oakville Town Hall
N Service Rd E
Iroquois Shore Rd
Oakville Place
QEW
Cross Ave
Cornwall Rd
Oakville GO
1 4 5 10 11 13
14/14A 15 18 19 20
24 26 28 120 190
Train
Bus
Speers Rd
Kerr St
Oakville Trafalgar Community Centre
Oakville Trafalgar H.S.
Ford Dr
Mississauga


Bus Routes
Solid lines indicate regular service
Wider lines indicate more frequent service
Dashed lines indicate rush hour or limited service
Visit oakvilletransit.ca for information on schedules, fares and other services.
During the mid-day, a bus comes every...
30 minutes (15-20 min rush hour)
4 5 14 24
30 minutes
3 12 13 15 18 19 20 28
45-60 minutes
1 6 11
Rush hour only
10 26 34 37 120 190
Trafalgar @ Hwy 407 Park & Ride
1 Bus
Route 24 continues to South Common Centre
Connections:
MiWay
Uptown Core
1 5 19 20 24 37
Laird & Ridgeway
6 12 120 MiWay
Route 5/5A continues to Dundas @ Hwy 407 Park & Ride
Connections:
Burlington Transit Bus
Route 14 continues to Appleby GO
Connections:
Burlington Transit Bus
Train
Bronte GO
3 4 6 10 13 18 28 34
Train
Bus
South Oakville Centre
3 14/14A 15
Sheridan College
1 5 6 24
Bus
Oakville GO
1 4 5 10 11 13 14/14A 15 18 19 20 24 26 28 120 190
Train
Bus
Routes 4, 11, 12 continue to Clarkson GO
Connections:
MiWay
Train
Bus
Oakville Trafalgar Memorial Hospital
Sixteen Mile Sports Complex
Iroquois Ridge Community Centre
Glenashton Park
Iroquois Ridge H.S.
Bayshire Woods Park
Iroquois Shoreline Woods Park
Holy Trinity C.S.S.
River Oaks Community Centre
Lions Valley Park
Garth Webb S.S.
Glen Abbey
St Ignatius
Abbey Park H.S.
Glen Abbey Golf Club
White Oaks S.S.
Oakville Place
Halton Region Centre
Fourteen Mile Creek Lands
Bronte Creek Provincial Park
Q.E Park Community Centre
South Oakville Centre
Trafalgar Park Community Centre
St Thomas Aquinas C.S.S.
T.A Blakelock H.S.
Sir John Colbourne Re. Centre
Oakville Trafalgar Community Centre
Oakville Trafalgar H.S.
Randall Church
Lake Ontario
Dundas W
Dundas E
Upper Middle W
Upper Middle E
Speers
Wyecroft
Rebecca
Lakeshore W
Lakeshore E
Linbrook
Devon
Cornwall
Kingsway
Sheridan Garden
Royal Windsor
Westoak Trails
Pine Glen
Heritage
Pilgrims
Monastery
Gate
Wildwood
Bridge
Stewart
Maurice
Queen Mary
Kerr
Culham
Leighland
Lancaster
Grosvenor
Grand
Falgarwood
N Service
S Service
Oakmead
Mowat Towne
Munn's
River Glen
Nevagawa
Sixth Line
Third Line
Fourth Line
Eight Line
Ninth Line
Trafalgar
Dorval
Oxford
Proudfoot
Postmaster
Colonel William
Bronte
Burloak
Great Lakes
Burlington
Mississauga
Winston Churchill
Bristol Circle
Winston Park
Buckingham
Laird
Ford
Watson
Chartwell
Morrison
Maple Grove
White Oaks
North Ridge
McCraney
0 ½ 1 2 km

Regional buses
Bus régionaux

Regional bus services
Services d'autobus régionaux

Core
Principaux

16 17 19 25
27 29 32 33
36B 40 41 47
48 52 54 56
66 67 92 94
96

Scheduled buses that connect areas not served by the train network
Bus réguliers qui relient les zones non desservies par le réseau train

Rail-support
Soutien ferroviaire

11 12 15 18
22 21
30 31 37 38
61
65 68
70B 71
88 90

Buses that connect to train stations to support or extend service on train lines
Bus qui se connectent aux gares pour soutenir ou prolonger le service sur les lignes trains

Corresponding train line
Ligne de train correspondante

LW Lakeshore West Line
MI Milton Line
KI Kitchener Line
RH Richmond Hill Line
BR Barrie Line
ST Stouffville Line
LE Lakeshore East Line

Not all bus stops and branches shown.
Check gotransit.com for full schedules.

Tous les arrêts de bus et toutes les lignes ne sont pas indiqués.
Consultez gotransit.com/fr pour connaître les horaires complets.

Legend
Légende

Regional buses
Bus régionaux
Bus stop
Arrêt de bus
31 Route number
Numéro du trajet
Interchange station
Station de correspondance
96z Seasonal service
Service saisonnier

Trains
Train station
Gare
BR Train line
Ligne de train

On-street pedestrian connection (<5 minute walk)
Correspondance piétonne sur rue (<5 minutes de marche)
Subway/light rail connection
Correspondance du métro/métro léger
Airport
Aéroport

LAKE SIMCOE
LAC SIMCOE

Barrie Transit Terminal
Allandale Waterfront
Barrie South
Bradford
East Gwillimbury
Newmarket
Aurora
Newmarket Bus Terminal
Davis Dr @ Eagle St
Hwy 9 @ Hwy 400 Park & Ride
Major Mackenzie Dr @ Hwy 400 Park & Ride
Major Mackenzie West Bus Terminal
Canada's Wonderland
King City
Maple
Rutherford
Bloomington
Gormley
Richmond Hill
Langstaff
Keswick
Woodbine Av @ Hwy 404 Park & Ride
Queensville Sdrd @ Hwy 404 Park & Ride
Davis Dr @ Hwy 404 Park & Ride
Wellington St E @ Hwy 404 Park & Ride
Major Mackenzie Dr E @ Hwy 404 Park & Ride
Uxbridge
Railway St @ Albert St
Goodwood
Hwy 47 @ Front St
Old Elm
Stouffville
Mount Joy
Markham
Centennial
Unionville
Milliken
Agincourt
Scarborough Centre
Toronto Zoo
Cornell Terminal
Baldwin St @ Hwy 407 Park & Ride
Brock Rd @ Hwy 407 Park & Ride
Ontario Tech University/ Durham College
Dundas St @ Hwy 412 Park & Ride
Consumers Rd @ William Sylvester Dr
Trent University
Peterborough Bus Terminal
Crawford Dr @ Harper Rd Park & Ride
Cavan/Millbrook
Peterborough Rd 10 @ Hwy 115 Park & Ride
Hwy 35 @ Hwy 115 Park & Ride
Newcastle
Hwy 2 @ Hwy 35/115 Park & Ride
Bowmanville
King St E @ Liberty St
Centre St S @ Athol St W/ Simcoe St S @ Athol St E
First Av @ Front St Park & Ride
Courtice
Courtice Rd @ Baseline Rd Park & Ride
Clarington Blvd @ Durham Hwy 2 Park & Ride
Ajax
Whitby
Durham College Oshawa
Pickering
Kennedy
Centennial College
University of Toronto Scarborough
Guildwood
Rouge Hill
Eglinton
Scarborough
Danforth
Orangeville
Town Line @ Mill St Park & Ride
Caledon
Hurontario St @ Travelled Rd
Victoria
Hurontario St @ King St
Trinity Common Mall
Williams Pkwy @ Hwy 410 Park & Ride
Bramalea Bus Terminal
Bolton
Mayfield Rd @ Hwy 50 Park & Ride
University of Waterloo
Wilfrid Laurier University
Kitchener
Sportsworld Dr @ Hwy 8 Park & Ride
Cambridge
Hespeler Rd @ Pinebush Rd
Guelph Central
Acton
Georgetown
Mount Pleasant
Brampton Innovation District
Rockwood
Alma St @ Inkerman St
Norval
Guelph St @ King St
Main St N @ Bovaird Dr W
Shoppers World
University of Guelph
Aberfoyle
Brock Rd @ McLean Rd Park & Ride
Milton Carpool
Regional Road 25 @ Hwy 401 Park & Ride
Toronto Premium Outlets
Steeles Av @ Trafalgar Rd
Meadowvale
Milton
Lisgar
Meadowvale Town Centre
Meadowvale Business Park
Syntex Ct @ Financial Dr
Streetsville
Erindale
Winston Churchill Transitway
Erin Mills Transitway
Hurontario St @ Hwy 407 Park & Ride
Bramalea
Malton
Etobicoke North
Keele St @ Hwy 401
Downsview Park
Pearson Airport
Terminal 1
Aéroport Pearson
Aérogare 1
Dixie Transitway
Renforth Transitway
Weston
Bloor
Yorkdale
Finch
Sheppard–Yonge
York Mills
See North York inset
Voir l'encart de North York
Highway 407
Richmond Hill Centre
Old Cummer
Oriole
Square One
Cooksville
Dixie
Kipling
Union
Brantford Bus Terminal
McMaster University
Hamilton
Aldershot
Burlington
Bronte
Appleby
Trafalgar Rd @ Hwy 407 Park & Ride
Bronte Rd @ Hwy 407 Park & Ride
Dundas St @ Hwy 407 Park & Ride
Sheridan College
Oakville
Clarkson
Port Credit
Long Branch
Mimico
Exhibition
West Harbour
Confederation
Centennial Pkwy N @ QEW Park & Ride
Casablanca Blvd @ QEW Park & Ride
Ontario St @ QEW Park & Ride
St Catharines
St Catharines Fairview Mall
Niagara College
Stanley Av @ Hwy 420 Park & Ride
Niagara Falls Bus Terminal
Niagara Falls
Brock University
Billy Bishop Airport
Aéroport Billy Bishop
LAKE ONTARIO
LAC ONTARIO
NIAGARA FALLS
CHUTES NIAGARA

Regional buses in North York
Autobus régionaux à North York

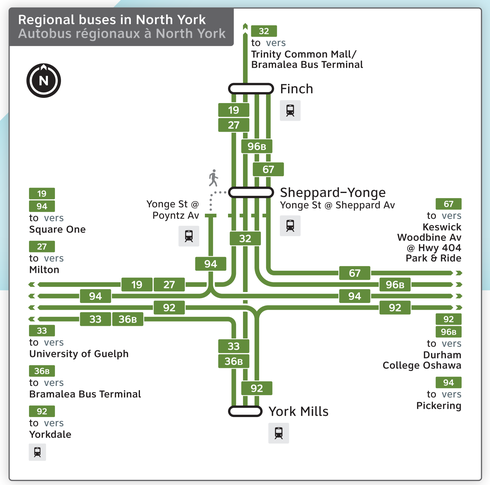


Diagram is not to scale
Le diagramme n'est pas à l'échelle

Version: April 2024
Version : Avril 2024

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gotransit.com
@GOtransit
@GOtransitFR
@GOtransitBus
@GOtransitBus_FR

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

01 -11-18 Route numbers / Numéros des trajets Lakeshore West



CONTACT US

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

gotransit.com/schedules

@GOtransitLW

See Something?
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

Lakeshore West

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

METROLINX

LW **11** **18**

- Niagara Falls
- St. Catharines
- West Harbour GO
- Hamilton (King & Dundurn)
- Hamilton GO Centre
- Aldershot GO
- Burlington GO
- Appleby GO
- Bronte GO
- Oakville GO
- Clarkson GO
- Port Credit GO
- Long Branch GO
- Mimico GO
- Exhibition GO
- Union Station

Daily / Quotidiennement

Includes GO Bus routes 11 & 18 / Inclut les trajets 11 & 18 d'autobus GO

Effective / À partir de:

5 APRIL AVRIL 2025

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.

Notes

h Trip holds for connection from bus.

M-Th Trip operates Monday to Thursday only.

Fri Trip operates on Fridays only.

Sat Trip operates on Saturdays only.

Sun Trip operates on Sundays only.

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.

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

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.

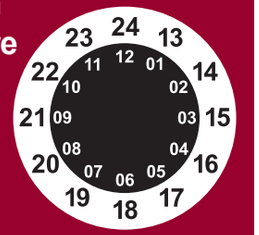
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

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.

Notes

h Attentes des trajets pour les connexions d'autobus.

M-Th Service offert du lundi au jeudi seulement.

Fri Service offert les vendredis seulement.

Sat Service offert les samedis seulement.

Sun Service offert les dimanches seulement.

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.

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

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

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→		Niagara Falls 84 Dp	St. Catharines 83	St. Catharines 83	St. Catharines 83	Beamsville 82	Grimsby 81		Hamilton 18 Dp	Hamilton 18 Dp	Hamilton 18	Burlington 17 Ar		Burlington 17 Dp	Burlington 16	Burlington 15	Oakville 14	Oakville 13	Oakville 12	Mississauga 10	Mississauga 10	Etobicoke 59	Etobicoke 79	Toronto 2 Ar	Toronto 2 Ar
	Exception			Niagara Falls GO	Brock University	St. Catharines Downtown Terminal	St. Catharines GO	Ontario St. @ QEW	Casablanca Blvd. @ QEW	Centennial Pkwy. N. @ QEW	West Harbour GO	Hamilton GO Centre	King St. W. @ Dundurn St. N.	Aldershot GO	Transfer - Correspondances	Aldershot GO	Burlington GO	Appleby GO	Bronte GO	Oakville GO	Clarkson GO	Port Credit GO	Long Branch GO	Mimico GO	Exhibition GO	Union Station
18G	18020											04 15	04 22	04 30	→	04 30	04 40	→	→	04 55↓	→	→	→	→	→	05 25
18H																				05 00h	05 10	05 20	→	→	→	05 45
															1004	04 52	04 59	05 05	05 11	05 17	05 24	05 30	05 37	05 44	05 51	06 00
	1704										05 11	→	→	05 23	→	05 23	05 29	05 35	05 41	05 47	05 54	06 00	06 07	06 14	06 21	06 30
															1006	05 52	05 59	06 05	06 11	06 17	06 24	06 30	06 37	06 44	06 51	07 00
	1854											05 48	→	06 04	→	06 04	06 11	06 17	06 23	06 29	06 36	→	→	→	→	07 02
	1756										06 08	→	→	06 20	→	06 20	06 26	06 32	06 38	06 44	06 51	→	→	→	→	07 17
															1306					06 51	06 58	07 04	07 11	07 18	07 25	07 34
	1856											06 18	→	06 34	→	06 34	06 41	06 47	06 53	06 59	07 06	→	→	→	→	07 32
	1256													06 49	→	06 49	06 56	07 02	07 08	07 14	07 21	→	→	→	→	07 47
															1108					07 21	07 28	07 34	07 41	07 48	07 55	08 04
	1858											06 48	→	07 04	→	07 04	07 11	07 17	07 23	07 29	07 36	→	→	→	→	08 02
	1758										07 09	→	→	07 21	→	07 21	07 27	07 33	07 39	07 45	07 52	→	→	→	→	08 18
															1308					07 51	07 58	08 04	08 12	08 18	08 25	08 34
	1860											07 18	→	07 34	→	07 34	07 41	07 47	07 53	07 59	08 06	→	→	→	→	08 32
															1258	07 49	07 56	08 02	08 08	08 14	08 21	→	→	→	→	08 47
															1110					08 21	08 28	08 34	08 41	08 48	08 55	09 04
	1960			06 30	→	→	06 55	→	→	→	07 55	→	→	08 07	→	08 07	08 13	08 19	08 25	08 31	08 38	→	→	→	→	09 04
															1310					08 37	08 45	08 51	08 57	09 04	09 11	09 20
	1710										08 25	→	→	08 37	→	08 37	08 43	08 49	08 55	09 01	09 08	09 14	09 21	09 29	09 36	09 45
18	18340											08 34	08 41	08 51	1012	09 06	09 13	09 19	09 25	09 31	09 38	09 44	09 51	09 59	10 06	10 15
	1712										09 25	→	→	09 37	→	09 37	09 43	09 49	09 55	10 01	10 08	10 14	10 21	10 29	10 36	10 45
															1014	10 06	10 13	10 19	10 25	10 31	10 38	10 44	10 51	10 59	11 06	11 15
	1714										10 25	→	→	10 37	→	10 37	10 43	10 49	10 55	11 01	11 08	11 14	11 21	11 29	11 36	11 45
11	11440			09 01	09 15	→	09 37	09 48	10 02		10 20	10 31	10 38	10 51	1016	11 06	11 13	11 19	11 25	11 31	11 38	11 44	11 51	11 59	12 06	12 15
	1716										11 25	→	→	11 37	→	11 37	11 43	11 49	11 55	12 01	12 08	12 14	12 21	12 29	12 36	12 45
11	11490			10 01	10 15	→	10 37	10 48	11 02		11 20	11 31	11 38	11 51	1018	12 06	12 13	12 19	12 25	12 31	12 38	12 44	12 51	12 59	13 06	13 15
	1718										12 25	→	→	12 37	→	12 37	12 43	12 49	12 55	13 01	13 08	13 14	13 21	13 29	13 36	13 45
															1020	13 06	13 13	13 19	13 25	13 31	13 38	13 44	13 51	13 59	14 06	14 15
	1720										13 25	→	→	13 37	→	13 37	13 43	13 49	13 55	14 01	14 08	14 14	14 21	14 29	14 36	14 45

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

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Exception	Zone→	Niagara Falls 84 Dp	St. Catharines 83	St. Catharines 83	St. Catharines 83	Beamsville 82	Grimsby 81		Hamilton 18 Dp	Hamilton 18 Dp	Hamilton 18	Burlington 17 Ar	Transfer - Correspondances	Burlington 17 Dp	Burlington 16	Burlington 15	Oakville 14	Oakville 13	Mississauga 12	Mississauga 10	Etobicoke 59	Etobicoke 79	Toronto 2 Ar	Toronto 2 Ar
				Niagara Falls GO	Brock University	St. Catharines Downtown Terminal	St. Catharines GO	Ontario St. @ QEW	Casablanca Blvd. @ QEW	Centennial Pkwy. N. @ QEW	West Harbour GO	Hamilton GO Centre	King St. W. @ Dundurn St. N.	Aldershot GO	Trip Number - Numéro du parcours	Aldershot GO	Burlington GO	Appleby GO	Bronte GO	Oakville GO	Clarkson GO	Port Credit GO	Long Branch GO	Mimico GO	Exhibition GO	Union Station
11	11570				12 01	12 15	→	12 37	12 48	13 02	13 20	13 31	13 38	13 51	1022	14 06	14 13	14 19	14 25	14 31	14 38	14 44	14 51	14 59	15 06	15 15
	1972			13 09	→	→	13 34	→	→	→	→	→	→	14 30	→	14 30	14 37	→	→	14 50	→	15 02	→	→	15 18	15 27
	1722										14 25	→	→	14 37	→	14 37	14 43	14 49	14 55	15 01	15 08	15 15	15 21	15 29	15 36	15 45
18	18610											14 31	14 38	14 51	1024	15 06	15 13	15 19	15 25	15 31	15 38	15 44	15 51	15 59	16 06	16 15
	1724										15 26	→	→	15 38	→	15 38	15 44	15 50	15 56	16 02	16 09	16 15	16 22	16 29	16 36	16 45
11	11650				14 02	14 16	→	14 38	14 49	15 03	15 21	15 32	15 39	15 52	1026	16 07	16 14	16 20	16 26	16 32	16 39	16 45	16 52	16 59	17 06	17 15
	1726										16 23	→	→	16 35	→	16 35	16 42	16 48	16 54	17 00	17 07	17 14	17 21	17 28	17 36	17 45
18	18690											16 28	16 35	16 48	1028	17 03	17 10	17 17	17 24	17 31	17 39	17 45	17 52	17 59	18 06	18 15
	1728										17 23	→	→	17 35	→	17 35	17 42	17 48	17 54	18 00	18 07	18 14	18 21	18 28	18 36	18 45
11	11730				15 53	16 07	→	16 29	16 42	16 58	17 16	17 27	17 35	17 48	1030	18 03	18 11	18 17	18 23	18 30	18 37	18 43	18 50	18 58	19 06	19 15
	1730										18 25	→	→	18 37	→	18 37	18 43	18 49	18 55	19 01	19 08	19 14	19 21	19 28	19 36	19 45
11	11770				16 55	17 09	→	17 31	17 44	18 00	18 18	18 29	18 37	18 50	1032	19 05	19 12	19 18	19 24	19 30	19 37	19 43	19 50	19 58	20 06	20 15
	1732										19 24	→	→	19 36	→	19 36	19 42	19 48	19 54	20 00	20 07	20 13	20 20	20 28	20 36	20 45
11	11830				18 00	18 14	→	18 36	18 47	19 01	19 19	19 30	19 37	19 50	1034	20 05	20 12	20 18	20 24	20 30	20 37	20 43	20 50	20 58	21 06	21 15
	1734										20 24	→	→	20 36	→	20 36	20 42	20 48	20 54	21 00	21 07	21 13	21 20	21 28	21 36	21 45
															1036	21 05	21 12	21 18	21 24	21 30	21 37	21 43	21 50	21 58	22 06	22 15
	1736										21 24	→	→	21 36	→	21 36	21 42	21 48	21 54	22 00	22 07	22 13	22 20	22 28	22 36	22 45
11	11880				20 05	20 18	→	20 40	20 51	21 05	21 23	21 33	21 40	21 50	1038	22 05	22 12	22 18	22 24	22 30	22 37	22 43	22 50	22 58	23 06	23 15
	1988			20 52	→	→	21 17	→	→	→	→	→	→	22 13	→	22 13	22 20	→	→	22 34	22 43	22 49	22 56	23 03	23 11	23 20
18E	18880	M-Th									22 10	→	→	22 25	→	22 25	22 35	22 45	22 55	23 05	23 15	23 25	→	→	→	25 50
	1738	Fri									22 24	→	→	22 36	→	22 36	22 42	22 48	22 54	23 00	23 07	23 13	23 20	23 28	23 36	23 45
															1040	23 05	23 12	23 18	23 24	23 30	23 37	23 43	23 50	23 58	00 06	00 15
18E	18900	M-Th									23 10	→	→	23 25	→	23 25	23 35h	23 45	23 55	00 05	00 15	00 25	→	→	→	00 50
	1740	Fri									23 24	→	→	23 36	→	23 36	23 42	23 48	23 54	00 01	00 07	00 13	00 20	00 28	00 36	00 45

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

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Exception	Zone→	Toronto 2 Dp	Toronto 2	Etobicoke 79	Etobicoke 59	Mississauga 10	Mississauga 12	Oakville 13 Ar	Oakville 14	Burlington 15	Burlington 16	Burlington 17 Ar	Transfer - Correspondances	Trip Number - Numéro du parcours	Burlington 17 Dp	Hamilton 18	Hamilton 18	Hamilton 18 Ar	Stoney Creek 80 Ar	Grimsby 81	Beamsville 82	St. Catharines 83	St. Catharines 83	St. Catharines 83	Niagara Falls 84 Ar
				Union Station	Exhibition GO	Mimico GO	Long Branch GO	Port Credit GO	Clarkson GO	Oakville GO	Bronte GO	Appleby GO	Burlington GO	Aldershot GO			Aldershot GO	Main St. W. @ Longwood Rd. S.	Hamilton GO Centre	West Harbour GO	Centennial Pkwy. N. @ QEW	Casablanca Blvd. @ QEW	Ontario St. @ QEW	St. Catharines GO	St. Catharines Downtown Terminal	Brock University	Niagara Falls GO
11																11061	06 11	06 19	6 29**h**	06 38	06 55	07 08	07 17	→	07 39	07 56	
18C	18051			05 24	→	→	→	05 44	05 57	06 11	06 22	06 32	06 44	06 54	→		06 54	07 01	07 14								
11	1005			06 12	06 19	06 26	06 32	06 38	06 45	06 52	06 58	07 04	07 10	07 18	11071		07 26**h**	07 36	07 49	07 58	08 15	08 28	08 37	→	08 59	09 16	
	1705			06 42	06 49	06 56	07 02	07 08	07 15	07 22	07 28	07 34	07 40	07 47	→		07 47	→	→	08 01							
18	1007			07 17	07 24	07 31	07 37	07 44	07 51	07 58	08 04	08 10	08 17	08 25	18121		08 33**h**	08 43	08 56								
	1707			07 47	07 54	08 01	08 07	08 14	08 21	08 28	08 34	08 40	08 47	08 54	→		08 54	→	→	09 08							
11	1009			08 17	08 24	08 31	08 37	08 44	08 51	08 58	09 04	09 10	09 17	09 25	11161		09 33**h**	09 43	09 56	10 05	10 22	10 35	10 44	→	11 06	11 23	
	1709			08 47	08 54	09 02	09 08	09 15	09 22	09 29	09 35	09 41	09 48	09 55	→		09 55	→	→	10 09							
	1961			09 10	09 18	→	→	09 32	→	09 43	→	→	09 56	10 03	→		10 03	→	→	→	→	→	→	10 58		→	11 26
	1011			09 17	09 24	09 32	09 38	09 45	09 52	09 59	10 05	10 11	10 18	10 26													
	1711			09 47	09 54	10 02	10 08	10 15	10 22	10 29	10 35	10 41	10 48	10 55	→		10 55	→	→	11 09							
11	1013			10 17	10 24	10 32	10 38	10 45	10 52	10 59	11 05	11 11	11 18	11 26	11201		11 34**h**	11 44	11 57	12 06	12 23	12 36	12 45	→	13 07	13 24	
	1713			10 47	10 54	11 02	11 08	11 15	11 22	11 29	11 35	11 41	11 48	11 55	→		11 55	→	→	12 09							
	1015			11 17	11 24	11 32	11 38	11 45	11 52	11 59	12 05	12 11	12 18	12 26													
	1715			11 47	11 54	12 02	12 08	12 15	12 22	12 29	12 35	12 41	12 48	12 55	→		12 55	→	→	13 09							
11	1017			12 17	12 24	12 32	12 38	12 45	12 52	12 59	13 05	13 11	13 18	13 26	11281		13 34**h**	13 42	13 52	14 01	14 18	14 31	14 40	→	15 00	15 19	
	1717			12 47	12 54	13 02	13 08	13 15	13 22	13 29	13 35	13 41	13 48	13 55	→		13 55	→	→	14 09							
11	1019			13 17	13 24	13 32	13 38	13 45	13 52	13 59	14 05	14 11	14 18	14 26	11371		14 34**h**	14 44	14 56	15 05	15 22	15 35	15 44	→	16 05	16 24	
	1719			13 47	13 54	14 02	14 08	14 15	14 22	14 29	14 35	14 41	14 48	14 55	→		14 55	→	→	15 09							
11	1021			14 17	14 24	14 32	14 38	14 45	14 52	14 59	15 05	15 11	15 18	15 26	11451		15 34**h**	15 44	15 56	16 06	16 23	16 36	16 45	→	17 08	17 29	
	1721			14 47	14 54	15 02	15 08	15 15	15 22	15 29	15 35	15 41	15 48	15 55	→		15 55	→	→	16 09							
18	1023			15 17	15 24	15 32	15 38	15 45	15 52	15 59	16 05	16 11	16 18	16 26	18541		16 34**h**	16 46	17 01								
	1323			15 36	15 43	15 50	15 56	16 03	16 10	16 19																	
	1873			15 51	→	→	→	→	16 16	16 23	16 29	16 35	16 42	16 49	→		16 49	→	17 06								
	1775			16 00	→	→	→	→	16 25	16 32	16 38	16 44	16 51	16 58	→		16 58	→	→	17 12							
	1125			16 06	16 13	16 20	16 26	16 33	16 40	16 49																	

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

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Exception	Zone→	Toronto 2 Dp	Toronto 2	Etobicoke 79	Etobicoke 59	Mississauga 10	Mississauga 12	Oakville 13 Ar	Oakville 14	Burlington 15	Burlington 16	Burlington 17 Ar	Transfer - Correspondances	Trip Number - Numéro du parcours	Burlington 17 Dp	Hamilton 18	Hamilton 18	Hamilton 18 Ar	Stoney Creek 80 Ar	Grimsby 81	Beamsville 82	St. Catharines 83	St. Catharines 83	St. Catharines 83	Niagara Falls 84 Ar
				Union Station	Exhibition GO	Mimico GO	Long Branch GO	Port Credit GO	Clarkson GO	Oakville GO	Bronte GO	Appleby GO	Burlington GO	Aldershot GO			Aldershot GO	Main St. W. @ Longwood Rd. S.	Hamilton GO Centre	West Harbour GO	Centennial Pkwy. N. @ QEW	Casablanca Blvd. @ QEW	Ontario St. @ QEW	St. Catharines GO	St. Catharines Downtown Terminal	Brock University	Niagara Falls GO
	1875			16 21	→	→	→	→	16 46	16 53	16 59	17 05	17 12	17 19	→		17 19	→	17 36								
11	1075			16 30	→	→	→	→	16 55	17 03	17 09	17 15	17 22	17 30	11571		17 38**h**	17 50	18 05	18 15	18 32	18 45	18 54	→	19 17	19 33	
	1325			16 36	16 43	16 50	16 56	17 03	17 10	17 19																	
	1877			16 51	→	→	→	→	17 16	17 23	17 29	17 35	17 42	17 49	→		17 49	→	18 06								
	1777			17 00	→	→	→	→	17 25	17 32	17 38	17 44	17 51	17 58	→		17 58	→	→	18 12							
	1127			17 06	17 13	17 20	17 26	17 33	17 40	17 49																	
	1977			17 21	→	→	→	→	17 46	17 53	17 59	18 05	18 12	18 19	→		18 19	→	→	18 32	→	→	→	19 31	→	→	19 59
18	1077			17 30	→	→	→	→	17 55	18 03	18 09	18 15	18 22	18 30	18641		18 38**h**	18 50	19 05								
	1327			17 36	17 43	17 50	17 56	18 03	18 10	18 19																	
	1879			17 51	→	→	→	→	18 16	18 23	18 29	18 35	18 42	18 49	→		18 49	→	19 06								
	1727			17 53	18 00	18 07	18 13	18 20	18 27	18 34	18 40	18 46	18 53	19 00	→		19 00	→	→	19 14							
18	1029			18 17	18 25	18 33	18 39	18 46	18 53	19 00	19 06	19 12	19 19	19 27	18721		19 35**h**	19 45	19 57								
	1729			18 47	18 55	19 03	19 09	19 16	19 23	19 30	19 36	19 42	19 49	19 56	→		19 56	→	→	20 10							
	1031			19 17	19 25	19 33	19 39	19 46	19 53	20 00	20 06	20 12	20 19	20 27													
	1731			19 47	19 55	20 03	20 09	20 16	20 23	20 30	20 36	20 42	20 49	20 56	→		20 56	→	→	21 10							
18	1033			20 17	20 25	20 33	20 39	20 46	20 53	21 00	21 06	21 12	21 19	21 27	18841		21 35**h**	21 42	21 54								
	1733			20 47	20 55	21 03	21 09	21 16	21 23	21 30	21 36	21 42	21 49	21 56	→		21 56	→	→	22 10							
	1035			21 17	21 25	21 33	21 39	21 46	21 53	22 00	22 06	22 12	22 19	22 27													
	1735			21 47	21 55	22 03	22 09	22 16	22 23	22 30	22 36	22 42	22 49	22 56	→		22 56	→	→	23 10							
	1987			22 07	22 15	→	→	22 30	→	22 43	→	→	22 57	23 04	→		23 04	→	→	→	→	→	→	23 59	→	→	00 27
18	1037			22 17	22 25	22 33	22 39	22 46	22 53	23 00	23 06	23 12	23 19	23 27	18901		23 35**h**	23 42	23 52								
	1737			22 47	22 55	23 03	23 09	23 16	23 23	23 30	23 36	23 42	23 49	23 56	→		23 56	→	→	00 10							
	1039		M-Th	23 04	23 12	23 20	23 26	23 33	23 40	23 48	23 54	00 01	00 07	00 15													
	1039		Fri	23 17	23 25	23 33	23 39	23 46	23 53	00 01	00 06	00 12	00 19	00 27													
	1739			23 47	23 55	00 03	00 09	00 16	00 23	00 30	00 36	00 42	00 49	00 56	→		00 56	→	→	01 10							
18	1041		Fri	00 17	00 25	00 33	00 39	00 46	00 53	01 00	01 06	01 12	01 19	01 27	18941		01 39**h**	01 46	01 54								
18H	18921		M-Th	00 20	→	→	→	00 43	00 55	01 05↓																	
18F	18931		M-Th	00 40	→	→	→	→	→	01 10**h**	01 18	01 28	01 40	01 50	→		01 50	01 57	02 05								
	1741		Fri	00 47	00 55	01 03	01 09	01 16	01 23	01 30	01 36	01 42	01 49	01 56	→		01 56	→	→	02 10							
18J	18951		M-Th	01 10	→	→	→	01 28	01 40	01 50	01 58	02 08	02 20	02 30	→		02 30	02 37	02 45	02 55							
18H	18983		Fri	01 20	→	→	→	01 43	01 55	02 05↓																	
18F	18985		Fri	01 40	→	→	→	→	→	02 10**h**	02 18	02 28	02 40	02 50	→		02 50	02 57	03 05								
18C	18991			02 30	→	→	→	02 53	03 05	03 17	03 25	03 35	03 43	03 53	→		03 53	04 00	04 10								

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Exception	Niagara Falls 84 Dp	Niagara Falls GO	St. Catharines 83	St. Catharines GO	Hamilton 18 Dp	West Harbour GO	Hamilton 18 Dp	Hamilton GO Centre	Hamilton 18 Dp	King St. W. @ Dundurn St. N.	Burlington 17 Ar	Aldershot GO	Transfer - Correspondances	Trip Number - Numéro du parcours	Burlington 17 Dp	Aldershot GO	Burlington 16 Dp	Burlington GO	Burlington 15 Dp	Appleby GO	Oakville 14 Dp	Bronte GO	Oakville 13 Dp	Oakville GO	Mississauga 12 Dp	Clarkson GO	Mississauga 10 Dp	Port Credit GO	Etobicoke 59 Dp	Long Branch GO	Etobicoke 79 Dp	Mimico GO	Toronto 2 Dp	Exhibition GO	Toronto 2 Ar	Union Station
18B	18050									04 30	04 37	04 45				→		04 45		04 55		→	→	05 10	05 20	05 30		→	→	→	05 55
18J	18060							05 05	05 10	05 17	05 25					→		05 25	05 37	05 47	05 57	06 07	06 17	06 27		→	→	→	06 55
18J	18070							05 30	05 38	05 45	05 53					→		05 53	06 05	06 15	06 25	06 35	06 45	06 55		→	→	→	07 25
18J	18080							05 55	06 03	06 10	06 18					→		06 18	06 30	06 40	06 50	07 00	07 10	07 20		→	→	→	07 55
18A	18090							06 25	06 33	06 40	06 48					→		06 48	07 00	07 10	07 20	07 30	→	→		→	→	→	08 10
	1708							07 24	→	→	07 36					→		07 36	07 42	07 48	07 54	08 01	08 08	08 14	08 21	08 28	08 36	08 45									
																	1010	08 05	08 12	08 18	08 24	08 31	08 38	08 44	08 51	08 58	09 06	09 15									
	1710							08 24	→	→	08 36					→		08 36	08 42	08 48	08 54	09 01	09 08	09 14	09 21	09 28	09 36	09 45									
18	18300								08 33	08 40	08 50					1012		09 05	09 12	09 18	09 24	09 31	09 38	09 44	09 51	09 58	10 06	10 15									
	1712							09 24	→	→	09 36					→		09 36	09 42	09 48	09 54	10 01	10 08	10 14	10 21	10 28	10 36	10 45									
																	1014	10 05	10 12	10 18	10 24	10 31	10 38	10 44	10 51	10 58	11 06	11 15									
	1714							10 24	→	→	10 36					→		10 36	10 42	10 48	10 54	11 01	11 08	11 14	11 21	11 28	11 36	11 45									
18	18420								10 33	10 40	10 50					1016		11 05	11 12	11 18	11 24	11 31	11 38	11 44	11 51	11 58	12 06	12 15									
	1716							11 24	→	→	11 36					→		11 36	11 42	11 48	11 54	12 01	12 08	12 14	12 21	12 28	12 36	12 45									
																	1018	12 05	12 12	12 18	12 24	12 31	12 38	12 44	12 51	12 58	13 06	13 15									
	1718							12 24	→	→	12 36					→		12 36	12 42	12 48	12 54	13 01	13 08	13 14	13 21	13 28	13 36	13 45									
18	18510								12 30	12 39	12 50					1020		13 05	13 12	13 18	13 24	13 31	13 38	13 44	13 51	13 58	14 06	14 15									
	1970			12 08	12 34	→	→	→	→	→	13 30					→		13 30	13 38	→	→	13 51	→	14 03	→	→	14 19	14 28									
	1720					13 24	→	→	13 36							→		13 36	13 42	13 48	13 54	14 01	14 08	14 14	14 21	14 28	14 36	14 45									
																	1022	14 05	14 12	14 18	14 24	14 31	14 38	14 44	14 51	14 58	15 06	15 15									
																	1322					14 46	14 53	14 59	15 06	15 13	15 21	15 30									

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Exception	Niagara Falls 84 Dp	Niagara Falls GO	St. Catharines 83	St. Catharines GO	Hamilton 18 Dp	West Harbour GO	Hamilton 18 Dp	Hamilton GO Centre	Hamilton 18 Dp	King St. W. @ Dundurn St. N.	Burlington 17 Ar	Aldershot GO	Transfer - Correspondances	Trip Number - Numéro du parcours	Burlington 17 Dp	Aldershot GO	Burlington 16 Dp	Burlington GO	Burlington 15 Dp	Appleby GO	Oakville 14 Dp	Bronte GO	Oakville 13 Dp	Oakville GO	Mississauga 12 Dp	Clarkson GO	Mississauga 10 Dp	Port Credit GO	Etobicoke 59 Dp	Long Branch GO	Etobicoke 79 Dp	Mimico GO	Toronto 2 Dp	Exhibition GO	Toronto 2 Ar	Union Station
	1722									14 24	→	→	14 36			→		14 36	14 42	14 48	14 54	15 01	15 08	15 14	15 21	15 28	15 36	15 45									
																	1124										15 16	15 23	15 29	15 36	15 43	15 51	16 00				
18	18590										14 30	14 39	14 50				1024	15 05	15 12	15 18	15 24	15 31	15 38	15 44	15 51	15 58	16 06	16 15									
																	1324					15 46	15 53	15 59	16 06	16 13	16 21	16 30									
	1724									15 24	→	→	15 36			→		15 36	15 42	15 48	15 54	16 01	16 08	16 14	16 21	16 28	16 36	16 45									
																	1126					16 16	16 23	16 29	16 36	16 43	16 51	17 00									
																	1026	16 05	16 12	16 18	16 24	16 31	16 38	16 44	16 51	16 58	17 06	17 15									
																	1326					16 46	16 53	16 59	17 06	17 13	17 21	17 30									
	1726									16 24	→	→	16 36			→		16 36	16 42	16 48	16 54	17 01	17 08	17 14	17 21	17 28	17 36	17 45									
																	1128					17 16	17 23	17 29	17 36	17 43	17 51	18 00									
18	18670										16 30	16 39	16 50				1028	17 05	17 12	17 18	17 24	17 31	17 38	17 44	17 51	17 58	18 06	18 15									
	1978					16 04	16 30	→	→	→	17 27					→		17 27	17 35	→	→	17 48	→	18 00	→	→	18 16	18 25									
																	1328					17 46	17 53	17 59	18 06	18 13	18 21	18 30									
	1728									17 24	→	→	17 36			→		17 36	17 42	17 48	17 54	18 01	18 08	18 14	18 21	18 28	18 36	18 45									
																	1130					18 16	18 23	18 29	18 36	18 43	18 51	19 00									
																	1030	18 05	18 12	18 18	18 24	18 31	18 38	18 44	18 51	18 58	19 06	19 15									
																	1330					18 46	18 53	18 59	19 06	19 13	19 21	19 30									
	1730									18 24	→	→	18 36			→		18 36	18 42	18 48	18 54	19 01	19 08	19 14	19 21	19 28	19 36	19 45									
																	1132					19 16	19 23	19 29	19 36	19 43	19 51	20 00									
18	18750										18 27	18 36	18 47				1032	19 02	19 09	19 15	19 21	19 28	19 35	19 41	19 48	19 55	20 03	20 12									
																	1332					19 46	19 53	19 59	20 06	20 13	20 21	20 30									
	1732									19 24	→	→	19 36			→		19 36	19 42	19 48	19 54	20 01	20 08	20 14	20 21	20 28	20 36	20 45									
																	1134					20 16	20 23	20 29	20 36	20 43	20 51	21 00									
																	1034	20 05	20 12	20 18	20 24	20 31	20 38	20 44	20 51	20 58	21 06	21 15									
																	1334					20 46	20 53	20 59	21 06	21 13	21 21	21 30									
	1734									20 24	→	→	20 36			→		20 36	20 42	20 48	20 54	21 01	21 08	21 14	21 21	21 28	21 36	21 45									
																	1136					21 16	21 23	21 29	21 36	21 43	21 51	22 00									
18	18820										20 30	20 39	20 50				1036	21 05	21 12	21 18	21 24	21 31	21 38	21 44	21 51	21 58	22 06	22 15									
																	1336					21 46	21 53	21 59	22 06	22 13	22 21	22 30									
	1986		Sun	20 17	20 43	→	→	→	21 40					→		→	→	22 01	→	22 12	→	→	22 28	22 37															
	1736							21 24	→	→	21 36			→		21 36	21 42	21 48	21 54	22 01	22 08	22 14	22 21	22 28	22 36	22 45									
																	1138					22 16	22 23	22 29	22 36	22 43	22 51	23 00									
																	1038	22 05	22 12	22 18	22 24	22 31	22 38	22 24	22 51	22 58	23 06	23 15									
	1988		Sat	21 06	21 32	→	→	→	22 28					→		→	→	22 48	→	22 59	→	→	23 15	23 24															
																	1338					22 46	22 53	22 59	23 06	23 13	23 21	23 30									
	1738							22 24	→	→	22 36			→		22 36	22 42	22 48	22 54	23 01	23 08	23 14	23 21	23 28	23 36	23 45									
																	1040	23 05	23 12	23 18	23 24	23 31	23 38	23 44	23 51	23 58	00 06	00 15									
18E	18900		Sun					23 00	→	→	→	→	23 13	23 27	23 38	23 48	23 58	00 08	00 20	→	→	→	00 50															
	1740		Sat					23 24	→	→	23 36	→	23 36	23 42	23 48	23 54	00 01	00 08	00 14	00 21	00 28	00 36	00 45															

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number Numéro du trajet	Trip Number Numéro du parcours	Exception	Toronto 2 Dp Union Station	Toronto 2 Exhibition GO	Toronto 79 Mimico GO	Toronto 59 Long Branch GO	Mississauga 10 Port Credit GO	Mississauga 12 Clarkson GO	Oakville 13 Oakville GO	Oakville 14 Bronte GO	Burlington 15 Appleby GO	Burlington 16 Burlington GO	Burlington 17 Ar Aldershot GO	Transfer - Correspondances Trip Number - Numéro du parcours	Burlington 17 Dp Aldershot GO	Hamilton 18 Main St. W. @ Longwood Rd. S.	Hamilton 18 Ar Hamilton GO Centre	Hamilton 18 Ar West Harbour GO	St. Catharines 83 St. Catharines GO	Niagara Falls 84 Ar Niagara Falls GO
18J	18061		06 40	→	→	→	07 01	07 16	07 28	07 39	07 50	08 03	08 15	→	08 15	08 22	08 34	08 45		
18J	18091		07 15	→	→	→	07 36	07 51	08 03	08 14	08 25	08 38	08 50	→	08 50	08 57	09 09	09 20		
18J	18101		07 45	→	→	→	08 06	08 21	08 33	08 44	08 55	09 08	09 20	→	09 20	09 27	09 39	09 50		
18A	18111		08 15	→	→	→	→	→	08 47	08 58	09 10	09 25	09 35	→	09 35	09 42	09 55	10 05		
18H	18113		08 25	→	→	→	08 48	09 05	09 20											
	1709		08 47	08 55	09 03	09 09	09 15	09 22	09 29	09 35	09 41	09 48	09 55	→	09 55	→	→	10 09		
	1961		09 05	09 14	→	→	09 29	→	09 41	→	→	09 55	10 03	→	10 03	→	→	→	10 58	11 26
18	1011		09 17	09 25	09 33	09 39	09 45	09 52	09 59	10 05	10 11	10 18	10 26	18171	10 34**h**	10 42	10 54			
	1711		09 47	09 55	10 03	10 09	10 15	10 22	10 29	10 35	10 41	10 48	10 55	→	10 55	→	→	11 09		
	1013		10 17	10 25	10 33	10 39	10 45	10 52	10 59	11 05	11 11	11 18	11 26							
	1713		10 47	10 55	11 03	11 09	11 15	11 22	11 29	11 35	11 41	11 48	11 55	→	11 55	→	→	12 09		
18	1015		11 17	11 25	11 33	11 39	11 45	11 52	11 59	12 05	12 11	12 18	12 26	18241	12 34**h**	12 42	12 54			
	1715		11 47	11 55	12 03	12 09	12 15	12 22	12 29	12 35	12 41	12 48	12 55	→	12 55	→	→	13 09		
	1017		12 17	12 25	12 33	12 39	12 45	12 52	12 59	13 05	13 11	13 18	13 26							
	1717		12 47	12 55	13 03	13 09	13 15	13 22	13 29	13 35	13 41	13 48	13 55	→	13 55	→	→	14 09		
	1969		13 05	13 14	→	→	13 29	→	13 40	→	→	13 54	14 01	→	14 01	→	→	→	14 56	15 24
18	1019		13 17	13 25	13 33	13 39	13 45	13 52	13 59	14 05	14 11	14 18	14 26	18331	14 34**h**	14 42	14 54			
	1719		13 47	13 55	14 03	14 09	14 15	14 22	14 29	14 35	14 41	14 48	14 55	→	14 55	→	→	15 09		
	1021		14 17	14 25	14 33	14 39	14 45	14 52	14 59	15 05	15 11	15 18	15 26							
	1721		14 47	14 55	15 03	15 09	15 15	15 22	15 29	15 35	15 41	15 48	15 55	→	15 55	→	→	16 09		
18	1023		15 17	15 25	15 33	15 39	15 45	15 52	15 59	16 05	16 11	16 18	16 26	18491	16 34**h**	16 42	16 54			
	1123		15 32	15 40	15 48	15 54	16 00	16 07	16 16											
	1723		15 47	15 55	16 03	16 09	16 15	16 22	16 29	16 35	16 41	16 48	16 55	→	16 55	→	→	17 09		
	1323		16 02	16 10	16 18	16 24	16 30	16 37	16 44											
	1025		16 17	16 25	16 33	16 39	16 45	16 52	16 59	17 05	17 11	17 18	17 26							
	1125		16 32	16 40	16 48	16 54	17 00	17 07	17 16											

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number Numéro du trajet	Trip Number Numéro du parcours	Exception	Toronto 2 Dp Union Station	Toronto 2 Exhibition GO	Toronto 79 Mimico GO	Toronto 59 Long Branch GO	Mississauga 10 Port Credit GO	Mississauga 12 Clarkson GO	Oakville 13 Oakville GO	Oakville 14 Bronte GO	Burlington 15 Appleby GO	Burlington 16 Burlington GO	Burlington 17 Ar Aldershot GO	Transfer - Correspondances Trip Number - Numéro du parcours	Burlington 17 Dp Aldershot GO	Hamilton 18 Main St. W. @ Longwood Rd. S.	Hamilton 18 Ar Hamilton GO Centre	Hamilton 18 Ar West Harbour GO	St. Catharines 83 St. Catharines GO	Niagara Falls 84 Ar Niagara Falls GO
	1725		16 47	16 55	17 03	17 09	17 15	17 22	17 29	17 35	17 41	17 48	17 55	→	17 55	→	→	18 09		
	1325		17 02	17 10	17 18	17 24	17 30	17 37	17 44											
	1977	Sun	17 05	17 14	→	→	17 28	→	17 39	→	→	17 53	18 00	→	18 00	→	→	→	18 55	19 23
18	1027		17 17	17 25	17 33	17 39	17 45	17 52	18 00	18 06	18 12	18 19	18 27	18641	18 35**h**	18 43	18 55			
	1127		17 32	17 40	17 48	17 54	18 00	18 07	18 16											
	1727		17 47	17 55	18 03	18 09	18 15	18 22	18 30	18 36	18 42	18 49	18 56	→	18 56	→	→	19 10		
	1327		18 02	18 10	18 18	18 24	18 30	18 37	18 44											
	1029		18 17	18 25	18 33	18 39	18 45	18 52	19 00	19 06	19 12	19 19	19 27							
	1979	Sat	18 21	18 29	→	→	18 44	→	18 55	→	→	19 09	19 16	→	19 16	→	→	→	20 11	20 39
	1129		18 32	18 40	18 48	18 54	19 00	19 07	19 16											
	1729		18 47	18 55	19 03	19 09	19 15	19 22	19 30	19 36	19 42	19 49	19 56	→	19 56	→	→	20 10		
	1329		19 02	19 10	19 18	19 24	19 30	19 37	19 44											
18	1031		19 17	19 25	19 33	19 39	19 45	19 52	20 00	20 06	20 12	20 19	20 27	18781	20 35**h**	20 43	20 55			
	1131		19 32	19 40	19 48	19 54	20 00	20 07	20 16											
	1731		19 47	19 55	20 03	20 09	20 15	20 22	20 30	20 36	20 42	20 49	20 56	→	20 56	→	→	21 10		
	1331		20 02	20 10	20 18	20 24	20 30	20 37	20 44											
	1033		20 17	20 25	20 33	20 39	20 45	20 52	21 00	21 06	21 12	21 19	21 27							
	1133		20 32	20 40	20 48	20 54	21 00	21 07	21 16											
	1733		20 47	20 55	21 03	21 09	21 15	21 22	21 30	21 36	21 42	21 49	21 56	→	21 56	→	→	22 10		
	1333		21 02	21 10	21 18	21 24	21 30	21 37	21 44											
18	1035		21 17	21 25	21 33	21 39	21 45	21 52	22 00	22 06	22 12	22 19	22 27	18871	22 35**h**	22 43	22 55			
	1135		21 32	21 40	21 48	21 54	22 00	22 07	22 16											
	1735		21 47	21 55	22 03	22 09	22 15	22 22	22 30	22 36	22 42	22 49	22 56	→	22 56	→	→	23 10		
	1335		22 02	22 10	22 18	22 24	22 30	22 37	22 44											
	1037		22 17	22 25	22 33	22 39	22 45	22 52	23 00	23 06	23 12	23 19	23 27							
	1137		22 32	22 40	22 48	22 54	23 00	23 07	23 16											
	1737		22 47	22 55	23 03	23 09	23 15	23 22	23 30	23 36	23 42	23 49	23 56	→	23 56	→	→	00 10		
	1337		23 02	23 10	23 18	23 24	23 30	23 37	23 46											
18	1039		23 17	23 25	23 33	23 39	23 46	23 54	00 02	00 08	00 14	00 21	00 29	18931	00 37**h**	00 44	00 54			
	1739		23 47	23 55	00 03	00 09	00 16	00 24	00 32	00 38	00 44	00 51	00 58	→	00 58	→	→	01 12		
18	1041		00 17	00 25	00 33	00 39	00 46	00 54	01 02	01 08	01 14	01 21	01 29	18961	01 41**h**	01 48	01 58			
18	1741	Sat	00 47	00 55	01 03	01 09	01 16	01 24	01 32	01 38	01 44	01 51	01 58	→	01 58	→	→	02 12		
18J	18973	Sun	01 05	→	→	→	01 25	01 38	01 52	02 00	02 10	02 20	02 30	→	02 30	02 37	02 45	02 55		
18D	18983	Sat	01 30	→	→	→	01 55	02 10												
18F	18985	Sat	01 30	→	→	→	→	→	02 07	02 15	02 27	02 38	02 50	→	02 50	02 57	03 10			
18D	18993	Sat	02 30	→	→	→	02 55	03 10												
18F	18995	Sat	02 30	→	→	→	→	→	03 04	03 12	03 22	03 30	03 40	→	03 40	03 47	04 00			
18C	18991	Sun	02 30	→	→	→	02 53	03 05	03 17	03 25	03 35	03 43	03 53	→	03 53	04 00	04 10			

22

Route number
Nombre d'itinéraire

Milton/Oakville



CONTACT US

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

gotransit.com/schedules

@GOtransitBus

See Something?
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

Milton/ Oakville

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

METROLINX

22 MI

- Milton GO
- Trafalgar Rd. @ Hwy. 407 Park & Ride
- Sheridan College
- Oakville GO
- Union Station

Daily / Quotidiennement

Includes GO Bus routes 17 / Inclut les routes 17 d'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.

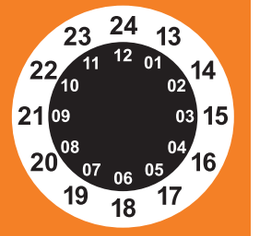
Step 3
Look across the rows for available departure times.

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

Bus trips

→ Trip does not serve this location.

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

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.

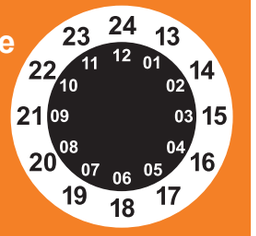
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

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 autobus

→ Trajet ne sert pas cette station.

Service d'autobus GO accessible aux personnes utilisant des aides 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

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→	Milton 24 Dp	Oakville 13	Oakville 12	Oakville 13	Transfer - Correspondances	Oakville 13	Toronto 2 Ar
			Milton GO	Trafalgar Rd. @ Hwy. 407	Sheridan College	Oakville GO	Trip Number - Numéro du parcours	Oakville GO	Union Station
22	22130		07 04	07 29	07 39	07 49	1860	07 59	08 32
22	22220		08 01	08 26	08 38	08 46	1710	09 01	09 45
22	22300		10 06	10 28	10 38	10 46	1714	11 01	11 45
22	22380		12 06	12 28	12 38	12 46	1718	13 01	13 45
22	22460		14 06	14 28	14 38	14 46	1722	15 01	15 45
22	22570		16 06	16 31	16 43	16 51	1726	17 00	17 45
22	22680		18 05	18 27	18 37	18 45	1730	19 00	19 45

NORTHBOUND / EN DIRECTION NORD

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Toronto 2 Dp	Oakville 13	Transfer - Correspondances	Oakville 13	Oakville 12	Oakville 13	Milton 24 Ar
			Union Station	Oakville GO	Trip Number - Numéro du parcours	Oakville GO	Sheridan College	Trafalgar Rd. @ Hwy. 407	Milton GO
22	1007		07 17	07 58	22191	08 08**h**	08 16	08 28	08 53
22	1009		08 17	08 58	22261	09 08**h**	09 16	09 28	09 53
22	1013		10 17	10 59	22341	11 09**h**	11 17	11 27	11 49
22	1017		12 17	12 59	22421	13 09**h**	13 17	13 29	13 54
22	1021		14 17	14 59	22511	15 06**h**	15 15	15 29	15 56
22	1125		16 06	16 49	22631	17 01**h**	17 10	17 24	17 51
22	1029		18 17	19 00	22721	19 10**h**	19 18	19 30	19 55

PRESTO

SAVE WITH PRESTO!

You can load money onto your PRESTO card:

- At **prestocard.ca**
- By creating a My PRESTO Account and setting up Autoload
- With a PRESTO self-serve machine
- At select Shoppers Drug Mart locations in the GTHA or select Fortinos locations in Hamilton.
- At ticket counters in GO stations, GO Bus terminals, and at participating ticket agencies
- By phone at 1-877-378-6123

ÉCONOMISEZ AVEC PRESTO!

Vous pouvez ajouter des fonds à votre carte PRESTO :

- À **cartepresto.ca**
- En créant un compte PRESTO et en configurant le chargement automatique
- À partir d'une borne de rechargement libre-service PRESTO
- Dans certains magasins Shoppers Drug Mart dans la RGTH ou dans certains établissements Fortinos à Hamilton
- À une billetterie dans une gare GO ou une station d'autobus GO, ou à une billetterie participante
- Par téléphone au 1-877-378-6123

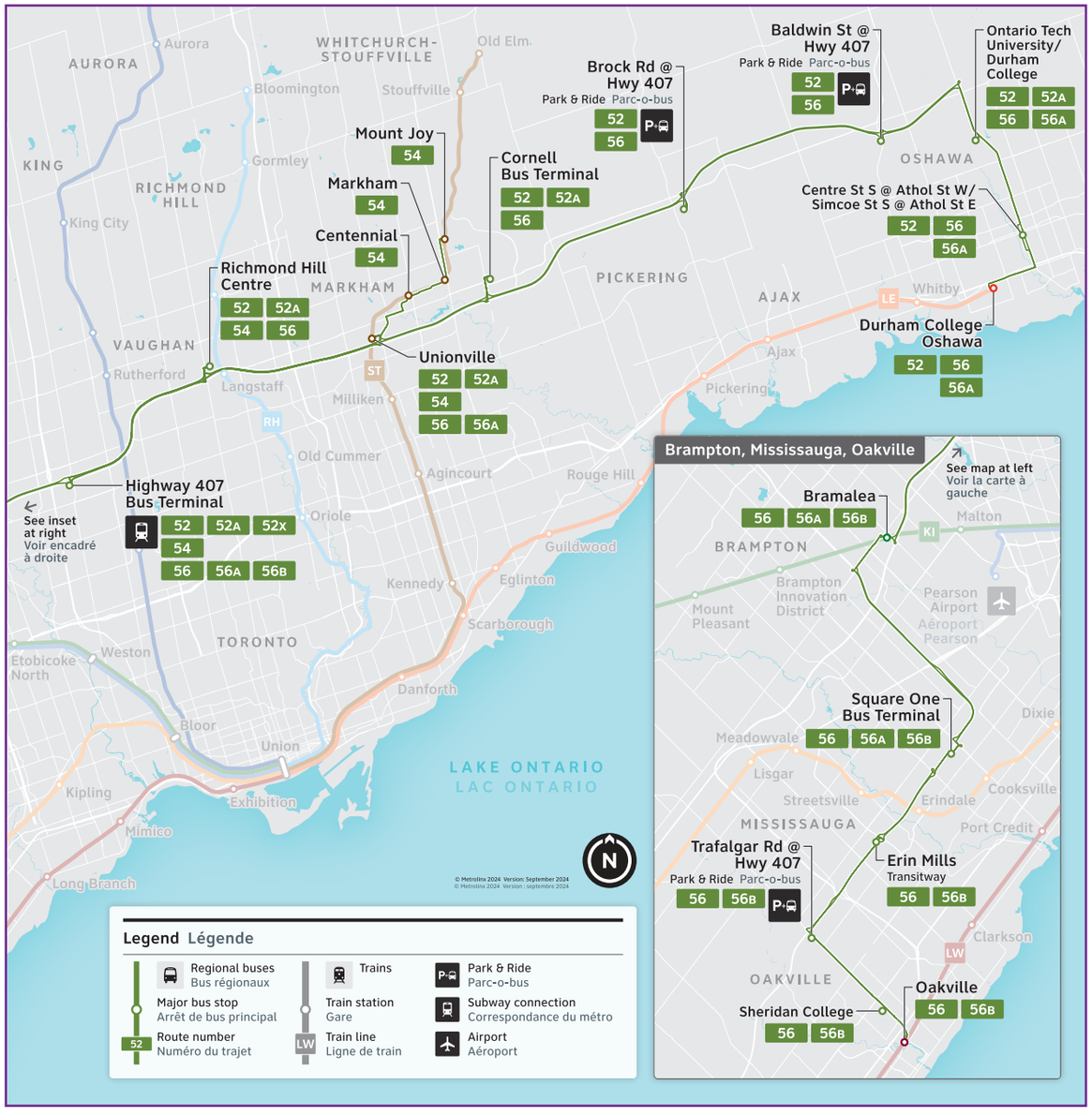
For more information please visit
gotransit.com/PRESTO

Pour en savoir davantage, veuillez visiter le site
gotransit.com/fr/PRESTO

52-54-56

Route number
Numéro du trajet

Oshawa/Oakville



CONTACT US

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

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Oshawa/ Oakville

GO Bus Schedule/
Horaire des autobus GO

METROLINX

52 **54** **56**

- Oshawa
- Whitby
- Pickering
- Markham
- Richmond Hill
- Hwy. 407 Bus Terminal
- Brampton
- Mississauga
- Oakville

Daily / Quotidiennement
Includes GO Bus routes 52, 54, 56 / Inclut les trajets 52, 54, 56 d'autobus GO

Effective / À partir de:
5 APRIL AVRIL **2025**

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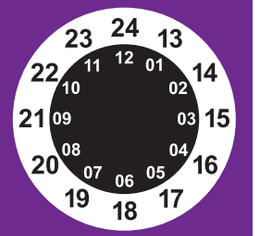
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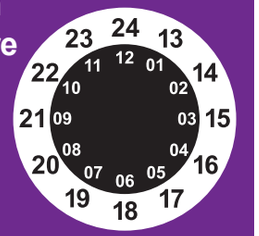
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Légende

Horaire des autobus

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Stationnement disponible.

Notes

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.

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

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

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Oshawa 94 Dp	Oshawa 94	Oshawa 88	Whitby 51	Pickering 86	Markham 73	Markham 72	Markham 72	Markham 86	Markham 71	Richmond Hill 60	Vaughan 19 Ar	Vaughan 19 Dp	Brampton 32	Mississauga 20	Mississauga 21	Oakville 13	Oakville 13	Oakville 13 Ar
			Durham College Oshawa GO	Simcoe St. S. @ Athol St. E.	Ontario Tech University/Durham College	Baldwin St. @ Hwy. 407	Brock Rd. @ Hwy. 407	Mount Joy GO	Main St. N. @ Station St. - Markham GO	Bullock Dr. @ McCowan Rd. - Centennial GO	Cornell Bus Terminal	Unionville GO	Richmond Hill Centre	Hwy. 407 Bus Terminal	Hwy. 407 Bus Terminal	Bramalea GO	Square One	Erin Mills Transitway Station	Trafalgar Rd. @ Hwy. 407	Sheridan College	Oakville GO
56	56000		03 45	03 53	04 05	04 17	04 28	→	→	→	04 40	04 50	05 02	05 15	05 20	05 35	05 55	06 03	06 13	06 22	06 30
56	56010		04 35	04 43	04 55	05 07	05 18	→	→	→	05 30	05 40	05 52	06 05	06 10	06 25	06 50	06 58	07 08	07 22	07 30
56	56030		05 05	05 13	05 25	05 37	05 48	→	→	→	06 00	06 10	06 22	06 35	06 40	06 57	07 25	07 33	07 43	07 57	08 05
54	54080							06 10	06 14	06 18	→	06 25	06 37	06 50							
56	56050		05 30	05 38	05 50	06 02	06 13	→	→	→	06 27	06 40	06 52	07 05	07 10	07 27	07 52	08 00	08 10	08 24	08 35
56	56060		05 55	06 05	06 18	06 30	06 43	→	→	→	06 57	07 10	07 22	07 35	07 40	07 57	08 22	08 30	08 40	08 54	09 05
54	54130							07 05	07 10	07 17	→	07 30	07 42	07 55							
56	56100		06 25	06 35	06 48	07 00	07 13	→	→	→	07 27	07 40	07 52	08 05	08 10	08 27	08 52	09 00	09 10	09 24	09 35
56	56120		07 00	07 10	07 23	07 35	07 48	→	→	→	08 02	08 15	08 27	08 40	08 45	09 02	09 27	09 35	09 45	09 59	10 10
54	54180							07 55	08 00	08 09	→	08 25	08 37	08 50							
56	56150		07 25	07 35	07 48	08 00	08 13	→	→	→	08 28	08 43	08 55	09 08	09 13	09 30	09 55	10 03	10 13	10 22	10 30
54	54240							08 55	09 00	09 07	→	09 20	09 32	09 45							
56	56180		07 55	08 05	08 18	08 30	08 43	→	→	→	08 58	09 13	09 25	09 38	09 43	10 00	10 25	10 33	10 43	10 52	11 00
56	56220		08 30	08 40	08 53	09 05	09 18	→	→	→	09 33	09 48	10 00	10 13	10 18	10 35	11 00	11 08	11 18	11 27	11 35
54	54280							10 00	10 05	10 12	→	10 25	10 37	10 50							
56	56230		09 00	09 10	09 23	09 35	09 48	→	→	→	10 03	10 18	10 30	10 43	10 48	11 05	11 30	11 38	11 48	11 57	12 05
54	54320							11 05	11 10	11 15	→	11 25	11 37	11 50							
56	56250		09 30	09 40	09 53	10 05	10 18	→	→	→	10 33	10 48	11 00	11 13	11 18	11 35	12 00	12 08	12 18	12 27	12 35
56	56270		10 00	10 10	10 23	10 35	10 48	→	→	→	11 03	11 18	11 30	11 43	11 48	12 05	12 30	12 38	12 48	12 57	13 05
56	56290		10 30	10 40	10 53	11 05	11 18	→	→	→	11 33	11 48	12 00	12 13	12 18	12 35	13 00	13 08	13 18	13 27	13 35
56	56310		10 55	11 05	11 21	11 33	11 46	→	→	→	12 01	12 13	12 25	12 38	12 43	13 00	13 25	13 33	13 43	13 54	14 00
56	56340		11 25	11 35	11 51	12 03	12 16	→	→	→	12 31	12 43	12 55	13 08	13 13	13 30	13 55	14 03	14 13	14 24	14 35
56	56350		11 55	12 05	12 21	12 33	12 46	→	→	→	13 01	13 13	13 25	13 38	13 43	14 00	14 25	14 33	14 43	14 52	15 00
54	54400							13 05	13 10	13 15	→	13 25	13 37	13 50							
56	56380		12 25	12 35	12 51	13 03	13 16	→	→	→	13 31	13 43	13 55	14 08	14 13	14 30	14 55	15 03	15 13	15 22	15 30
56	56390		12 55	13 05	13 18	13 30	13 43	→	→	→	13 58	14 13	14 25	14 38	14 43	15 00	15 25	15 33	15 43	15 57	16 05
56	56420		13 25	13 35	13 48	14 00	14 13	→	→	→	14 28	14 43	14 55	15 08	15 13	15 30	15 55	16 03	16 13	16 27	16 35
56A	56422		13 45	13 55	14 10	→	→	→	→	→	14 40	→	15 00	→	15 20	15 50					
56	56430		14 00	14 10	14 25	14 37	14 50	→	→	→	15 05	15 20	15 32	15 45	15 50	16 07	16 35	16 43	16 55	17 09	17 20
54	54480							15 05	15 10	15 17	→	15 30	15 42	15 55							
56	56450		14 20	14 30	14 45	14 57	15 10	→	→	→	15 25	15 40	15 52	16 05	16 10	16 27	16 55	17 03	17 15	17 29	17 40
56	56470		14 50	15 00	15 15	15 27	15 40	→	→	→	15 55	16 10	16 22	16 35	16 40	17 00	17 30	17 38	17 50	18 04	18 15
54	54540							16 05	16 10	16 17	→	16 30	16 42	16 55							
56	56500		15 20	15 30	15 45	15 57	16 10	→	→	→	16 25	16 40	16 52	17 05	17 10	17 30	18 00	18 08	18 20	18 34	18 45
56A	56512		15 35	15 45	16 02	→	→	→	→	→	→	16 35	→	16 55	→	17 15	17 50				
56	56530		15 50	16 00	16 17	16 29	16 42	→	→	→	16 57	17 10	17 22	17 35	17 40	18 00	18 30	18 38	18 50	19 04	19 15
54	54600							17 10	17 15	17 22	→	17 35	17 47	18 00							
56	56560		16 20	16 30	16 47	16 59	17 12	→	→	→	17 27	17 40	17 52	18 05	18 10	18 30	18 55	19 03	19 15	19 29	19 40
56A	56582		16 35	16 45	17 03	→	→	→	→	→	→	17 35	→	17 55	→	18 15	18 40				
56	56590		16 50	17 00	17 17	17 29	17 42	→	→	→	17 57	18 10	18 22	18 35	18 40	19 00	19 25	19 33	19 43	19 57	20 05
54	54660							18 10	18 15	18 20	→	18 30	18 42	18 55							
56	56630		17 20	17 30	17 47	17 59	18 12	→	→	→	18 27	18 40	18 52	19 05	19 10	19 25	19 50	19 58	20 10	20 19	20 30
56	56650		17 55	18 05	18 22	18 34	18 47	→	→	→	19 02	19 15	19 27	19 40	19 45	20 00	20 25	20 33	20 45	20 54	21 05
56	56680		18 30	18 40	18 57	19 09	19 22	→	→	→	19 37	19 50	20 02	20 15	20 20	20 35	21 00	21 08	21 18	21 27	21 35
54	54740							20 10	20 15	20 20	→	20 30	20 42	20 55							
56	56720		19 30	19 40	19 55	20 07	20 20	→	→	→	20 35	20 45	20 57	21 10	21 15	21 30	21 50	21 58	22 08	22 17	22 25
56	56760		20 35	20 45	21 00	21 12	21 25	→	→	→	21 40	21 50	22 02	22 15	22 20	22 35	22 55	23 03	23 13	23 22	23 30
56	56830		22 35	22 45	22 59	23 11	23 24	→	→	→	23 37	23 47	23 59	00 12	00 17	00 32	00 52	01 00	01 08	01 17	01 25

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

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Oakville 13 Dp	Oakville 13	Oakville 13	Mississauga 21	Mississauga 20	Brampton 32	Vaughan 19 Ar	Vaughan 19 Dp	Richmond Hill 60	Markham 71	Markham 86	Markham 72	Markham 72	Markham 73 Ar	Pickering 86	Whitby 51	Oshawa 88	Oshawa 94	Oshawa 94 Ar
			Oakville GO	Sheridan College	Trafalgar Rd. @ Hwy. 407	Erin Mills Transitway Station	Square One	Bramalea GO	Hwy. 407 Bus Terminal	Hwy. 407 Bus Terminal	Richmond Hill Centre	Unionville GO	Cornell Bus Terminal	Bullock Dr. @ McCowan Rd. - Centennial GO	Main St. N. @ Ramona Blvd. - Markham GO	Mount Joy GO	Brock Rd. @ Hwy. 407	Baldwin St. @ Hwy. 407	Ontario Tech University/Durham College	Centre St. S. @ Athol St. W.	Durham College Oshawa GO
56	56041		05 10	05 15	05 24	05 32	05 45	06 02	06 20	06 25	06 35	06 50	07 04	→	→	→	07 19	07 31	07 45	07 55	08 10
56A	56071						06 05	06 22	06 43	→	→	07 00	→	→	→	→	→	→	07 30	07 40	07 55
56	56061		05 45	05 50	05 59	06 07	06 20	06 37	06 55	07 00	07 10	07 25	07 39	→	→	→	07 54	08 06	08 20	08 30	08 45
56A	56073						06 35	06 55	07 15	→	→	07 32	→	→	→	→	→	→	08 05	08 15	08 30
54	54141									07 10	07 20	07 35	→	07 42	07 48	07 55					
56A	56093						07 05	07 25	07 45	→	→	08 02	→	→	→	→	→	→	08 35	08 45	09 00
56	56081		06 15	06 23	06 34	06 42	06 55	07 15	07 35	07 40	07 50	08 05	08 19	→	→	→	08 34	08 46	09 00	09 10	09 25
56	56111		06 40	06 48	06 59	07 09	07 22	07 45	08 05	08 10	08 20	08 35	08 49	→	→	→	09 04	09 16	09 30	09 40	09 55
56	56131		07 10	07 18	07 29	07 39	07 52	08 12	08 32	08 37	08 47	09 02	09 16	→	→	→	09 29	09 41	09 55	10 05	10 20
54	54241									09 10	09 20	09 35	→	09 42	09 48	09 55					
56	56171		07 40	07 48	07 59	08 09	08 22	08 42	09 02	09 07	09 17	09 32	09 46	→	→	→	09 59	10 11	10 25	10 35	10 50
56	56201		08 10	08 18	08 29	08 39	08 52	09 12	09 32	09 37	09 47	10 02	10 16	→	→	→	10 29	10 41	10 55	11 05	11 20
56	56221		08 45	08 53	09 04	09 14	09 27	09 44	10 02	10 07	10 17	10 32	10 46	→	→	→	10 59	11 11	11 25	11 35	11 50
56	56251		09 15	09 23	09 34	09 44	09 57	10 14	10 32	10 37	10 47	11 02	11 16	→	→	→	11 29	11 41	11 55	12 05	12 20
56	56271		09 45	09 53	10 04	10 14	10 27	10 44	11 02	11 07	11 17	11 32	11 46	→	→	→	11 59	12 11	12 25	12 35	12 50
54	54321									11 10	11 20	11 35	→	11 42	11 48	11 55					
56	56291		10 15	10 23	10 34	10 44	10 57	11 14	11 32	11 37	11 47	12 02	12 16	→	→	→	12 29	12 41	12 55	13 05	13 20
56	56311		10 50	10 58	11 09	11 19	11 32	11 49	12 07	12 12	12 22	12 37	12 51	→	→	→	13 04	13 16	13 30	13 40	13 55
56	56331		11 15	11 23	11 34	11 42	11 55	12 12	12 30	12 35	12 45	13 00	13 14	→	→	→	13 29	13 41	13 55	14 05	14 20
54	54401									13 10	13 20	13 35	→	13 43	13 50	14 00					
56	56351		11 45	11 53	12 04	12 12	12 25	12 45	13 05	13 10	13 20	13 35	13 49	→	→	→	14 04	14 16	14 30	14 40	14 55
56	56371		12 15	12 23	12 34	12 42	12 55	13 15	13 35	13 40	13 50	14 05	14 19	→	→	→	14 34	14 46	15 00	15 10	15 25
54	54441									14 10	14 20	14 35	→	14 43	14 50	15 00					
56	56391		12 45	12 53	13 04	13 12	13 25	13 45	14 05	14 10	14 20	14 35	14 49	→	→	→	15 04	15 16	15 30	15 40	15 55
56	56411		13 15	13 23	13 37	13 45	13 58	14 18	14 38	14 43	14 53	15 08	15 22	→	→	→	15 37	15 49	16 03	16 15	16 30
54	54491									15 00	15 10	15 25	→	15 33	15 40	15 50					
54	54551									16 05	16 15	16 30	→	16 39	16 48	17 00					
56	56431		13 45	13 53	14 07	14 15	14 28	14 48	15 08	15 13	15 23	15 38	15 52	→	→	→	16 07	16 19	16 33	16 45	17 00
56	56441		14 15	14 23	14 39	14 47	15 00	15 20	15 40	15 45	15 57	16 12	16 27	→	→	→	16 42	16 54	17 08	17 20	17 35
56	56471		14 45	14 53	15 09	15 17	15 30	15 50	16 10	16 15	16 27	16 42	16 57	→	→	→	17 12	17 24	17 38	17 50	18 05
56	56481		15 15	15 23	15 39	15 49	16 02	16 22	16 42	16 47	16 59	17 14	17 29	→	→	→	17 42	17 54	18 08	18 20	18 35
56	56511		15 40	15 48	16 04	16 14	16 27	16 47	17 07	17 12	17 24	17 39	17 54	→	→	→	18 04	18 17	18 33	18 45	19 00
54	54611									17 15	17 25	17 40	→	17 52	18 03	18 15					
56C	56525		16 00	16 09	16 25	16 35	16 48	17 10	17 30	17 30	17 40	17 55									
56	56541		16 10	16 19	16 35	16 45	16 58	17 23	17 43	17 48	18 00	18 15	18 29	→	→	→	18 42	18 54	19 08	19 20	19 35
56	56571		16 45	16 54	17 10	17 20	17 33	17 55	18 15	18 20	18 30	18 45	18 59	→	→	→	19 12	19 24	19 38	19 50	20 05
54	54661									18 15	18 25	18 40	→	18 48	18 55	19 05					
56	56601		17 15	17 24	17 40	17 50	18 03	18 25	18 45	18 50	19 00	19 15	19 29	→	→	→	19 42	19 54	20 08	20 20	20 35
54	54701									19 15	19 25	19 40	→	19 48	19 55	20 05					
56	56641		17 45	17 54	18 10	18 20	18 33	18 53	19 13	19 18	19 28	19 43	19 54	→	→	→	20 07	20 19	20 33	20 45	21 00
56	56671		18 10	18 19	18 35	18 45	18 58	19 17	19 35	19 40	19 50	20 05	20 16	→	→	→	20 29	20 41	20 55	21 05	21 20
56	56691		18 40	18 48	19 02	19 10	19 23	19 42	20 00	20 05	20 15	20 30	20 41	→	→	→	20 54	21 06	21 20	21 30	21 45
56	56711		19 10	19 18	19 29	19 37	19 50	20 07	20 25	20 30	20 40	20 55	21 06	→	→	→	21 19	21 31	21 45	21 55	22 10
56	56731		19 50	19 58	20 09	20 17	20 30	20 47	21 05	21 10	21 20	21 35	21 46	→	→	→	21 59	22 11	22 25	22 35	22 45
54	54781									21 10	21 20	21 35	→	21 42	21 48	21 55					
56	56771		20 50	20 58	21 09	21 17	21 30	21 47	22 05	22 10	22 20	22 35	22 46	→	→	→	22 56	23 08	23 20	23 30	23 40
54	54821									22 10	22 20	22 35	→	22 42	22 48	22 55					
56	56811		21 50	21 58	22 09	22 17	22 30	22 47	23 05	23 10	23 20	23 35	23 46	→	→	→	23 56	00 08	00 20	00 30	00 40
56	56841		22 50	22 58	23 09	23 17	23 30	23 47	00 05	00 10	00 20	00 35	00 46	→	→	→	00 56	01 08	01 20	01 30	01 40

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro de route	Trip Number / Numéro du parcours	Zone→	Oshawa 94	Oshawa 94	Oshawa 88	Whitby 51	Pickering 86	Markham 86	Markham 71	Richmond Hill 60	Vaughan 19
			Dp								
			Ⓟ ♿ Durham College Oshawa GO	♿ Simcoe St. S. @ Athol St. E.	♿ Ontario Tech University/Durham College	Baldwin St. @ Hwy. 407	Ⓟ ♿ Brock Rd. @ Hwy. 407 P&R	Ⓟ ♿ Cornell Bus Terminal	Ⓟ ♿ Unionville GO	♿ Richmond Hill Centre	Ⓟ ♿ Hwy. 407 Bus Terminal
52	52210		06 35	06 45	06 57	07 07	07 18	07 30	07 40	07 52	08 05
52	52360		08 30	08 40	08 53	09 03	09 15	09 27	09 40	09 52	10 05
52	52490		10 25	10 35	10 48	10 59	11 12	11 27	11 40	11 52	12 05
52	52520		11 25	11 35	11 48	11 59	12 12	12 27	12 40	12 52	13 05
52	52560		12 25	12 35	12 48	12 59	13 12	13 27	13 40	13 52	14 05
52	52610		13 25	13 35	13 48	13 59	14 12	14 27	14 40	14 52	15 05
52	52670		14 25	14 35	14 48	14 59	15 12	15 27	15 40	15 52	16 05
52	52720		15 25	15 35	15 48	15 59	16 12	16 27	16 40	16 52	17 05
52	52790		16 25	16 35	16 48	16 59	17 12	17 27	17 40	17 52	18 05
52	52810		17 25	17 35	17 48	17 59	18 12	18 27	18 40	18 52	19 05
52	52840		18 25	18 35	18 48	18 59	19 12	19 27	19 40	19 52	20 05
52	52860		19 30	19 40	19 53	20 03	20 15	20 27	20 40	20 52	21 05
52	52900		21 30	21 40	21 53	22 03	22 15	22 27	22 40	22 52	23 05

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro de route	Trip Number / Numéro du parcours	Zone→	Vaughan 19	Richmond Hill 60	Markham 71	Markham 86	Pickering 86	Whitby 51	Oshawa 88	Oshawa 94	Oshawa 94
											Ar
			Ⓟ ♿ Hwy. 407 Bus Terminal	♿ Richmond Hill Centre	Ⓟ ♿ Unionville GO	Ⓟ ♿ Cornell Bus Terminal	Ⓟ ♿ Brock Rd. @ Hwy. 407 P&R	Baldwin St. @ Hwy. 407	♿ Ontario Tech University/Durham College	♿ Centre St. S. @ Athol St. W.	Ⓟ ♿ Durham College Oshawa GO
52	52151		08 25	08 35	08 50	09 01	09 14	09 25	09 37	09 47	10 00
52	52281		10 25	10 35	10 50	11 01	11 14	11 26	11 40	11 50	12 05
52	52351		12 25	12 35	12 50	13 01	13 14	13 26	13 40	13 50	14 05
52	52391		13 25	13 35	13 50	14 01	14 14	14 26	14 40	14 50	15 05
52	52431		14 25	14 35	14 50	15 01	15 14	15 26	15 40	15 50	16 05
52	52531		15 25	15 35	15 50	16 01	16 14	16 26	16 40	16 50	17 05
52	52621		16 25	16 35	16 50	17 01	17 14	17 26	17 40	17 50	18 05
52	52711		17 25	17 35	17 50	18 01	18 14	18 26	18 40	18 50	19 05
52	52801		18 25	18 35	18 50	19 01	19 14	19 26	19 40	19 50	20 05
52	52831		19 25	19 35	19 50	20 01	20 14	20 25	20 37	20 47	21 00
52	52861		20 25	20 35	20 50	21 00	21 10	21 21	21 32	21 42	21 55
52	52891		21 25	21 35	21 50	22 00	22 10	22 21	22 32	22 42	22 55
52	52951		23 25	23 35	23 50	00 00	00 10	00 21	00 32	00 42	00 55

APPENDIX D: Traffic Data

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**************************************
*   ECONOLITE CONTROL PRODUCTS, INC.   *
*                                      *
*               COBALT-1000            *
*       Copyright (C)  2012-2016       *
*                                      *
*               Cornwall Rd @ Cross Ave*
*                                      *
*  CITY....   0  INTERSECTION..     0  *
*                                      *
* SOFTWARE.................. 32.65.00 *
*                                      *
*                                      *
* EXTENDED FEATURES........Dual Walk T *
* CONFIG.........................L3000 *
**************************************
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SOFTWARE MODULES

NAME	PART NUMBER	VERSION
EB U-BOOT	119-1046-204	05.04.03
O/S	119-1047-205	06.05.00
APPLICATION	119-1051-265	32.65.00
CONFIGURATION	100-1049-001	L3000,19
EB CONTROLLER	119-1049-205	07.05.00
BGC CONTROLLER	140-1020-205	09.05.00
BGC RESOURCE	140-1033-203	18.03.00
PIO CONTROLLER	140-1021-203	10.03.00
PS CONTROLLER	140-1022-204	11.04.00
AGC U-BOOT	140-1023-200	12.00.05
AGC O/S	140-1024-212	13.12.00
AGC APPLICATION	140-1025-265	14.65.00
TELEMETRY	100-1032-501	V1.00.00

CONTROLLER SEQUENCE [1]

SEQUENCE COMMANDS . HW ALT SEQ ENA. NO

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC-B	-	B	-	B	-	B	-	B	-	-	-	-	-	-	-	B
R1-	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
R2-	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
R3-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
R4-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

R1-R4=RING 1-4, DATA ENTRY, PHASES 1-16

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PD OL 10 . . . . . .
PD OL 11 . . . . . .
PD OL 12 . . . . . .
PD OL 13 . . . . . .
PD OL 14 . . . . . .
PD OL 15 . . . . . .
PD OL 16 . . . . . .


GUARANTEED MINIMUM TIME DATA
  PHASE  A01 B02 C03 D04 E05 F06 G07 H08
MIN GRN    5   5   5   5   5   5   5   5
WALK       0   0   0   0   0   0   0   0
PED CLR    7   7   7   7   7   7   7   7
YELLOW   3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
RED CLR  0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
OVL GRN    5   5   5   5   5   5   5   5
  PHASE  I09 J10 K11 L12 M13 N14 O15 P16
MIN GRN    5   5   5   5   5   5   5   5
WALK       0   0   0   0   0   0   0   0
PED CLR    7   7   7   7   7   7   7   7
YELLOW   3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
RED CLR  0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
OVL GRN    5   5   5   5   5   5   5   5


START/FLASH DATA
------START UP--------------------------
         1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE    . Y . . . Y . . . . . . . . . .
         A B C D E F G H I J K L M N O P
OVERLAP  X X X X . . . . . . . . . . . .
FLASH>MON. NO FL TIME..  0 ALL RED...  0
PWR START SEQ..  1 MUTCD-> NO
------AUTOMATIC FLASH-----------------------
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
ENTRY    . . . . . . . . . . . . . . . .
EXIT     . . . . . . . . . . . . . . . .
OVERLAP  A B C D E F G H I J K L M N O P
EXIT     X X X X . . . . . . . . . . . .
FLASH>MON. NO EXIT FL.  W MIN FLASH.   8
MINIMUM RECALL. NO  CYCLE THRU PHASE. NO


CONTROLLER OPTIONS
PED CLEAR PROTECT . UNIT RED REVERT  2.0
MUTCD 3 SECONDS DONT WALK ..........  NO
           PHASE  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
FLASHING GRN PH.  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
GUAR PASSAGE....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
```

```
NON-ACT I.......  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
NON-ACT II......  .  .  .  X  .  .  .  .  .  .  .  .  .  .  .  .
DUAL ENTRY......  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
COND SERVICE....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
COND RESERVICE..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED RESERVICE...  .  .  .  .  .  X  .  .  .  .  .  .  .  .  .  .
REST IN WALK....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
FLASHING WALK...  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED CLR>YELLOW..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED CLR>RED.....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
IGRN + VEH EXT..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .


PRE-TIMED MODE

ENABLE PRE-TIMED MODE.............  NO
FREE INPUT DISABLES PRE-TIMED........ NO
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PRETIMED . . . . . . . . . . . . . . . .


PHASE RECALL OPTIONS
TIMING PLAN NUMBER [ 1]
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
LOCK DET . . . . . . . . . . . . . . . .
VE RCALL . X . . . X . . . . . . . . . .
PD RCALL . . . . . . . . . . . . . . . .
MX RCALL . . . . . . . . . . . . . . . .
SF RCALL . . . . . . . . . . . . . . . .
NO REST  . . . . . . . . . . . . . . . .
AI CALC  . . . . . . . . . . . . . . . .




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*                                      *
*               Cornwall Rd @ Cross Ave*
*                                      *
*  CITY....   0  INTERSECTION..     0  *
*                                      *
* SOFTWARE.................. 32.65.00 *
*                                      *
*                                      *
* EXTENDED FEATURES........Dual Walk T *
* CONFIG.......................L3000 *
```

```
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*                                      *
*         CROSS AVE @  ARGUS RD        *
*                                      *
*  CITY....   0  INTERSECTION..   711  *
*                                      *
* SOFTWARE.................. 32.68.40 *
*                                      *
*                                      *
*                                      *
* CONFIG.......................L3000 *
****************************************
```

SOFTWARE MODULES

NAME	PART NUMBER	VERSION
EB U-BOOT	119-1046-206	05.06.00
O/S	119-1047-218	06.18.00
APPLICATION	119-1051-268	32.68.40
CONFIGURATION	100-1049-001	L3000,19
EB CONTROLLER	119-1049-208	07.08.00
BGC CONTROLLER	140-1020-208	09.08.00
BGC RESOURCE	140-1033-204	18.04.00
PIO CONTROLLER	140-1021-204	10.04.00
PS CONTROLLER	140-1022-204	11.04.00
TELEMETRY	N/A	N/A

CONTROLLER SEQUENCE [1]

SEQUENCE COMMANDS . HW ALT SEQ ENA. NO

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC-	B	-	B	-	B	-	B	-	B	-	-	-	-	-	-	B
R1-	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
R2-	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
R3-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
R4-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

R1-R4=RING 1-4, DATA ENTRY, PHASES 1-16
BC=BARRIER CONTROL, VALUES: B,C
B=BARRIER MODE
C=COMPATIBILITY MODE

```
PD OL 11 . . . . . .
PD OL 12 . . . . . .
PD OL 13 . . . . . .
PD OL 14 . . . . . .
PD OL 15 . . . . . .
PD OL 16 . . . . . .


GUARANTEED MINIMUM TIME DATA
  PHASE  A01 B02 C03 D04 E05 F06 G07 H08
MIN GRN    5   5   5   5   5   5   5   5
WALK       0   0   0   0   0   0   0   0
PED CLR    7   7   7   7   7   7   7   7
YELLOW   3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
RED CLR  0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
OVL GRN    5   5   5   5   5   5   5   5
  PHASE  I09 J10 K11 L12 M13 N14 O15 P16
MIN GRN    5   5   5   5   5   5   5   5
WALK       0   0   0   0   0   0   0   0
PED CLR    7   7   7   7   7   7   7   7
YELLOW   3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
RED CLR  0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
OVL GRN    5   5   5   5   5   5   5   5


START/FLASH DATA
------START UP--------------------------
         1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE    . Y . . . Y . . . . . . . . . .
         A B C D E F G H I J K L M N O P
OVERLAP  . . . . . . . . . . . . . . . .
FLASH>MON.YES FL TIME..  0 ALL RED...  9
PWR START SEQ..  1 MUTCD-> NO
------AUTOMATIC FLASH-----------------------
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
ENTRY    . X . . . X . . . . . . . . . .
EXIT     . X . . . X . . . . . . . . . .
OVERLAP  A B C D E F G H I J K L M N O P
EXIT     X X X X . . . . . . . . . . . .
FLASH>MON.YES EXIT FL.  W MIN FLASH.   8
MINIMUM RECALL. NO  CYCLE THRU PHASE. NO


CONTROLLER OPTIONS
PED CLEAR PROTECT . UNIT RED REVERT  2.0
MUTCD 3 SECONDS DONT WALK .........  NO
           PHASE  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
FLASHING GRN PH.  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
GUAR PASSAGE....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
NON-ACT I.......  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
```

```
NON-ACT II.....  .  .  .  X  .  .  .  X  .  .  .  .  .  .  .  .
DUAL ENTRY.....  .  X  .  X  .  X  .  X  .  .  .  .  .  .  .  .
COND SERVICE....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
COND RESERVICE..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED RESERVICE...  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
REST IN WALK....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
FLASHING WALK...  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED CLR>YELLOW..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED CLR>RED.....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
IGRN + VEH EXT..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .


PRE-TIMED MODE

ENABLE PRE-TIMED MODE.............  NO
FREE INPUT DISABLES PRE-TIMED..... NO
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PRETIMED . . . . . . . . . . . . . . . .


PHASE RECALL OPTIONS
TIMING PLAN NUMBER [ 1]
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
LOCK DET . . . . . . . . . . . . . . . .
VE RCALL . X . . . X . . . . . . . . . .
PD RCALL . . . . . . . . . . . . . . . .
MX RCALL . . . . . . . . . . . . . . . .
SF RCALL . . . . . . . . . . . . . . . .
NO REST  . . . . . . . . . . . . . . . .
AI CALC  . . . . . . . . . . . . . . . .




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*         CROSS AVE @  ARGUS RD        *
*                                      *
*  CITY....   0  INTERSECTION..   711  *
*                                      *
* SOFTWARE.................. 32.68.40 *
*                                      *
*                                      *
*                                      *
* CONFIG.......................L3000 *
**************************************
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*          CROSS AVE @ LYONS LANE      *
*                                      *
*  CITY....   0  INTERSECTION..   713  *
*                                      *
* SOFTWARE.................. 32.68.40 *
*                                      *
*                                      *
*                                      *
* CONFIG.......................L3000 *
**************************************
```

SOFTWARE MODULES

NAME	PART NUMBER	VERSION
EB U-BOOT	119-1046-206	05.06.00
O/S	119-1047-218	06.18.00
APPLICATION	119-1051-268	32.68.40
CONFIGURATION	100-1049-001	L3000,19
EB CONTROLLER	119-1049-208	07.08.00
BGC CONTROLLER	140-1020-208	09.08.00
BGC RESOURCE	140-1033-204	18.04.00
PIO CONTROLLER	140-1021-204	10.04.00
PS CONTROLLER	140-1022-204	11.04.00
TELEMETRY	N/A	N/A

CONTROLLER SEQUENCE [1]

SEQUENCE COMMANDS . HW ALT SEQ ENA. NO

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC-B	-	B	-	B	-	B	-	B	-	-	-	-	-	-	-	B
R1-	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
R2-	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
R3-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
R4-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

R1-R4=RING 1-4, DATA ENTRY, PHASES 1-16
BC=BARRIER CONTROL, VALUES: B,C
B=BARRIER MODE
C=COMPATIBILITY MODE

```
PD OL 11 . . . . . .
PD OL 12 . . . . . .
PD OL 13 . . . . . .
PD OL 14 . . . . . .
PD OL 15 . . . . . .
PD OL 16 . . . . . .


GUARANTEED MINIMUM TIME DATA
  PHASE  A01 B02 C03 D04 E05 F06 G07 H08
MIN GRN    5   5   5   5   5   5   5   5
WALK       0   0   0   0   0   0   0   0
PED CLR    7   7   7   7   7   7   7   7
YELLOW   3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
RED CLR  0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
OVL GRN    5   5   5   5   5   5   5   5
  PHASE  I09 J10 K11 L12 M13 N14 O15 P16
MIN GRN    5   5   5   5   5   5   5   5
WALK       0   0   0   0   0   0   0   0
PED CLR    7   7   7   7   7   7   7   7
YELLOW   3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
RED CLR  0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
OVL GRN    5   5   5   5   5   5   5   5


START/FLASH DATA
------START UP--------------------------
         1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE    . Y . . . Y . . . . . . . . . .
         A B C D E F G H I J K L M N O P
OVERLAP  X X X X . . . . . . . . . . . .
FLASH>MON. NO FL TIME..  0 ALL RED...  0
PWR START SEQ..  1 MUTCD-> NO
------AUTOMATIC FLASH-----------------------
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
ENTRY    . X . . . X . . . . . . . . . .
EXIT     . X . . . X . . . . . . . . . .
OVERLAP  A B C D E F G H I J K L M N O P
EXIT     X X X X . . . . . . . . . . . .
FLASH>MON. NO EXIT FL.  W MIN FLASH.   8
MINIMUM RECALL. NO  CYCLE THRU PHASE. NO


CONTROLLER OPTIONS
PED CLEAR PROTECT . UNIT RED REVERT  2.0
MUTCD 3 SECONDS DONT WALK .........  NO
           PHASE  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
FLASHING GRN PH.  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
GUAR PASSAGE....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
NON-ACT I.......  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
```

```
NON-ACT II.....  .  .  .  X  .  .  .  X  .  .  .  .  .  .  .  .
DUAL ENTRY.....  .  X  .  X  .  X  .  X  .  .  .  .  .  .  .  .
COND SERVICE....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
COND RESERVICE..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED RESERVICE...  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
REST IN WALK....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
FLASHING WALK...  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED CLR>YELLOW..  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
PED CLR>RED.....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
IGRN + VEH EXT..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .


PRE-TIMED MODE

ENABLE PRE-TIMED MODE.............  NO
FREE INPUT DISABLES PRE-TIMED..... NO
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PRETIMED . . . . . .


PHASE RECALL OPTIONS
TIMING PLAN NUMBER [ 1]
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
LOCK DET . . . . . X X X X
VE RCALL . X . . . X . . . . . .
PD RCALL . . . . . .
MX RCALL . . . . . .
SF RCALL . . . . . .
NO REST  . . . . . .
AI CALC  . . . . . .




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*          CROSS AVE @ LYONS LANE      *
*                                      *
*  CITY....   0  INTERSECTION..   713  *
*                                      *
* SOFTWARE.................. 32.68.40 *
*                                      *
*                                      *
*                                      *
* CONFIG.....................L3000 *
****************************************
```

```
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*                                      *
*     Dual Walk Term & Call Next Thru  *
*                                      *
*  CITY....   0  INTERSECTION..     0  *
*                                      *
* SOFTWARE.................. 32.68.40 *
*                                      *
*                                      *
* EXTENDED FEATURES........Dual Walk T *
* CONFIG.........................L3000 *
**************************************
```

SOFTWARE MODULES

NAME	PART NUMBER	VERSION
EB U-BOOT	119-1046-206	05.06.00
O/S	119-1047-218	06.18.00
APPLICATION	119-1051-268	32.68.40
CONFIGURATION	100-1049-001	L3000,19
EB CONTROLLER	119-1049-208	07.08.00
BGC CONTROLLER	140-1020-208	09.08.00
BGC RESOURCE	140-1033-204	18.04.00
PIO CONTROLLER	140-1021-204	10.04.00
PS CONTROLLER	140-1022-204	11.04.00
TELEMETRY	N/A	N/A

CONTROLLER SEQUENCE [1]

SEQUENCE COMMANDS . HW ALT SEQ ENA. NO

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC-	B	-	B	-	B	-	B	-	B	-	-	-	-	-	-	B
R1-	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
R2-	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
R3-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
R4-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

R1-R4=RING 1-4, DATA ENTRY, PHASES 1-16
BC=BARRIER CONTROL, VALUES: B,C
B=BARRIER MODE
C=COMPATIBILITY MODE

```
PD OL 16 . . . . . .


GUARANTEED MINIMUM TIME DATA
  PHASE  A01 B02 C03 D04 E05 F06 G07 H08
MIN GRN    5   5   5   5   5   5   5   5
WALK       0   0   0   0   0   0   0   0
PED CLR    7   7   7   7   7   7   7   7
YELLOW   3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
RED CLR  0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
OVL GRN    5   5   5   5   5   5   5   5
  PHASE  I09 J10 K11 L12 M13 N14 O15 P16
MIN GRN    5   5   5   5   5   5   5   5
WALK       0   0   0   0   0   0   0   0
PED CLR    7   7   7   7   7   7   7   7
YELLOW   3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
RED CLR  0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
OVL GRN    5   5   5   5   5   5   5   5


START/FLASH DATA
------START UP--------------------------
         1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE    . R . . . R . . . . . . . . . .
         A B C D E F G H I J K L M N O P
OVERLAP  X X X X . . . . . . . . . . . .
FLASH>MON. NO FL TIME..  3 ALL RED...  3
PWR START SEQ..  1 MUTCD->YES   Y->G: NO
------AUTOMATIC FLASH-----------------------
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
ENTRY    . X . . . X . . . . . . . . . .
EXIT     . X . . . X . . . . . . . . . .
OVERLAP  A B C D E F G H I J K L M N O P
EXIT     X X X X . . . . . . . . . . . .
FLASH>MON. NO EXIT FL.  W MIN FLASH.   8
MINIMUM RECALL.YES  CYCLE THRU PHASE.YES


CONTROLLER OPTIONS
PED CLEAR PROTECT . UNIT RED REVERT  2.0
MUTCD 3 SECONDS DONT WALK .........  NO
           PHASE  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
FLASHING GRN PH.  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
GUAR PASSAGE....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
NON-ACT I.......  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
NON-ACT II......  .  .  .  X  .  .  .  X  .  .  .  .  .  .  .  .
DUAL ENTRY......  .  X  .  X  .  X  .  X  .  .  .  .  .  .  .  .
COND SERVICE....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
COND RESERVICE..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED RESERVICE...  .  X  .  .  .  X  .  .  .  .  .  .  .  .  .  .
```

```
REST IN WALK....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
FLASHING WALK...  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED CLR>YELLOW..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
PED CLR>RED.....  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
IGRN + VEH EXT..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .


PRE-TIMED MODE

ENABLE PRE-TIMED MODE..............  NO
FREE INPUT DISABLES PRE-TIMED........ NO
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PRETIMED . . . . . . . . . . . . . . . .


PHASE RECALL OPTIONS
TIMING PLAN NUMBER [ 1]
   PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
LOCK DET . . . . . . . . . . . . . . . .
VE RCALL . X . . . X . . . . . . . . . .
PD RCALL . . . . . . . . . . . . . . . .
MX RCALL . . . . . . . . . . . . . . . .
SF RCALL . . . . . . . . . . . . . . . .
NO REST  . . . . . . . . . . . . . . . .
AI CALC  . . . . . . . . . . . . . . . .




****************************************
*   ECONOLITE CONTROL PRODUCTS, INC.   *
*                                      *
*               COBALT-1000            *
*       Copyright (C)       2021       *
*                                      *
*     Dual Walk Term & Call Next Thru  *
*                                      *
*  CITY....   0  INTERSECTION..     0  *
*                                      *
* SOFTWARE.................. 32.68.40 *
*                                      *
*                                      *
* EXTENDED FEATURES........Dual Walk T *
* CONFIG.......................L3000 *
****************************************


SOFTWARE MODULES
NAME            PART NUMBER   VERSION
```

Date: 6-Dec-2024
Intersection: Trafalgar Rd @ Cross Ave_SSR

8 Phase Basic Timing Sheet

	1	2	3	4	5	6	7	8	2 Ped	4 Ped	6 Ped	8 Ped
Phases in use	x	x	x	x	x	x	x	x	x	x	x	x
Direction	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB				
Min Green	7	20	7	10	7	20	10	10				
Veh Ext.	3	5	3.5	4	3	5	3	4				
Yellow	3	3.6	3	3.5	3	3.6	4	3.5				
Red	1	2.7	1	3.8	2	2.7	3	3.8				
Walk		10		10		10		10				
Don't Walk		22		34		22		34				
Max 1	7	41	15	44	11	36	36	20				
Max 2												
Max 3												
Veh Recall		x				x						
Ped Recall												

Notes: Sync Reference 3:15

Pattern 1
Time: 6:00-9:00 AM Peak
Cycle Length: 140
Offset (%): 24%

Direction	SBLT	NB	WBLT	EB
Phase	*1*	*2*	*3*	*4*
%	12%	32%	16%	40%
Direction	**NBLT**	**SB**	**EBLT**	**WB**
Phase	*5*	*6*	*7*	*8*
%	10%	34%	19%	37%

Pattern 2
Time: 9:00-15:00/19:00-22:00 OFF Peak
Cycle Length: 130
Offset (%): 42%

Direction	SBLT	NB	WBLT	EB
Phase	*1*	*2*	*3*	*4*
%	8%	37%	15%	40%
Direction	**NBLT**	**SB**	**EBLT**	**WB**
Phase	*5*	*6*	*7*	*8*
%	12%	33%	33%	22%

Pattern 3
Time: 15:00-19:00 PM Peak
Cycle Length: 140
Offset (%): 12%

Direction	SBLT	NB	WBLT	EB
Phase	*1*	*2*	*3*	*4*
%	10%	43%	10%	37%
Direction	**NBLT**	**SB**	**EBLT**	**WB**
Phase	*5*	*6*	*7*	*8*
%	10%	43%	33%	14%

Pattern 4
Time: 6:00-21:30 SAT&SUN
Cycle Length: 130
Offset (%): 2%

Direction	SBLT	NB	WBLT	EB
Phase	*1*	*2*	*3*	*4*
%	8%	37%	15%	40%
Direction	**NBLT**	**SB**	**EBLT**	**WB**
Phase	*5*	*6*	*7*	*8*
%	10%	35%	25%	30%

Pattern 5
Time:
Cycle Length:
Offset (%):

Direction	SBLT	NB	WBLT	EB
Phase	*1*	*2*	*3*	*4*
%				
Direction	**NBLT**	**SB**	**EBLT**	**WB**
Phase	5	6	7	8
%				

Pattern 6
Time:
Cycle Length:
Offset (%):

Direction				
Phase	*1*	*2*	*3*	*4*
%				
Direction				
Phase	5	6	7	8
%				

Spectrum

Turning Movement Count
Location Name: CROSS AVE & ARGUS RD / OAKVILLE GO ACCESS (EAST)
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (5 . CROSS AVE & ARGUS RD / OAKVILLE GO ACCESS (EAST))

Start Time	N Approach ARGUS ROAD						E Approach CROSS AVENUE						S Approach GO BUS STATION						W Approach CROSS AVENUE						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		
2025-04-08 07:00:00	98	3	7	0	0	108	2	105	4	0	1	111	9	0	4	0	1	13	4	85	2	0	1	91	323	
2025-04-08 07:15:00	116	5	7	0	0	128	11	78	1	0	3	90	4	0	4	0	5	8	2	80	1	0	5	83	309	
2025-04-08 07:30:00	140	4	20	0	0	164	2	108	3	0	3	113	9	0	6	0	0	15	6	84	2	0	4	92	384	
2025-04-08 07:45:00	142	3	21	0	0	166	2	119	9	0	5	130	4	0	3	0	2	7	2	109	4	0	5	115	418	1434
2025-04-08 08:00:00	159	4	20	0	0	183	12	128	1	0	6	141	10	0	5	0	4	15	4	103	5	0	3	112	451	1562
2025-04-08 08:15:00	143	4	7	0	2	154	6	126	1	0	3	133	5	0	2	0	0	7	4	110	5	0	6	119	413	1666
2025-04-08 08:30:00	77	6	14	0	0	97	3	74	3	0	6	80	9	0	8	0	0	17	6	97	5	0	5	108	302	1584
2025-04-08 08:45:00	89	4	13	0	1	106	6	75	5	0	2	86	3	2	2	0	2	7	3	68	4	0	6	75	274	1440
BREAK																										
2025-04-08 16:00:00	41	8	47	0	6	96	6	79	3	0	7	88	6	1	2	0	3	9	5	162	2	0	5	169	362	
2025-04-08 16:15:00	58	4	34	0	3	96	4	63	2	0	2	69	6	0	6	0	0	12	1	167	2	0	8	170	347	
2025-04-08 16:30:00	35	5	35	0	3	75	6	67	2	1	5	76	4	0	2	0	1	6	6	183	6	0	6	195	352	
2025-04-08 16:45:00	62	3	31	0	1	96	9	78	5	0	14	92	7	0	7	0	2	14	2	139	6	0	8	147	349	1410
2025-04-08 17:00:00	45	9	29	0	2	83	6	86	1	0	7	93	9	0	1	0	0	10	3	243	2	0	5	248	434	1482
2025-04-08 17:15:00	60	3	34	0	2	97	5	75	1	0	15	81	9	1	4	0	1	14	3	152	3	0	8	158	350	1485
2025-04-08 17:30:00	45	6	39	0	2	90	7	65	5	0	4	77	3	2	4	0	2	9	4	242	7	0	7	253	429	1562
2025-04-08 17:45:00	41	3	35	0	2	79	8	66	2	0	7	76	8	0	4	0	1	12	3	108	1	0	6	112	279	1492
Grand Total	1351	74	393	0	24	1818	95	1392	48	1	90	1536	105	6	64	0	24	175	58	2132	57	0	88	2247	**5776**	-
Approach%	74.3%	4.1%	21.6%	0%		-	6.2%	90.6%	3.1%	0.1%		-	60%	3.4%	36.6%	0%		-	2.6%	94.9%	2.5%	0%		-	-	-
Totals %	23.4%	1.3%	6.8%	0%		31.5%	1.6%	24.1%	0.8%	0%		26.6%	1.8%	0.1%	1.1%	0%		3%	1%	36.9%	1%	0%		38.9%	-	-
Heavy	3	74	1	0		-	2	9	45	0		-	102	5	64	0		-	57	14	0	0		-	-	-
Heavy %	0.2%	100%	0.3%	0%		-	2.1%	0.6%	93.8%	0%		-	97.1%	83.3%	100%	0%		-	98.3%	0.7%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: CROSS AVE & ARGUS RD / OAKVILLE GO ACCESS (EAST)
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Broken Clouds (-5 °C)

Start Time	N Approach ARGUS ROAD						E Approach CROSS AVENUE						S Approach GO BUS STATION						W Approach CROSS AVENUE						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	
2025-04-08 07:30:00	140	4	20	0	0	164	2	108	3	0	3	113	9	0	6	0	0	15	6	84	2	0	4	92	384
2025-04-08 07:45:00	142	3	21	0	0	166	2	119	9	0	5	130	4	0	3	0	2	7	2	109	4	0	5	115	418
2025-04-08 08:00:00	159	4	20	0	0	183	12	128	1	0	6	141	10	0	5	0	4	15	4	103	5	0	3	112	451
2025-04-08 08:15:00	143	4	7	0	2	154	6	126	1	0	3	133	5	0	2	0	0	7	4	110	5	0	6	119	413
Grand Total	584	15	68	0	2	667	22	481	14	0	17	517	28	0	16	0	6	44	16	406	16	0	18	438	**1666**
Approach%	87.6%	2.2%	10.2%	0%		-	4.3%	93%	2.7%	0%		-	63.6%	0%	36.4%	0%		-	3.7%	92.7%	3.7%	0%		-	**-**
Totals %	35.1%	0.9%	4.1%	0%		40%	1.3%	28.9%	0.8%	0%		31%	1.7%	0%	1%	0%		2.6%	1%	24.4%	1%	0%		26.3%	**-**
PHF	0.92	0.94	0.81	0		0.91	0.46	0.94	0.39	0		0.92	0.7	0	0.67	0		0.73	0.67	0.92	0.8	0		0.92	0.92
Heavy	0	15	0	0		15	1	4	13	0		18	27	0	16	0		43	15	7	0	0		22	98
Heavy %	0%	100%	0%	0%		2.2%	4.5%	0.8%	92.9%	0%		3.5%	96.4%	0%	100%	0%		97.7%	93.8%	1.7%	0%	0%		5%	5.9%
Lights	584	0	68	0		652	21	477	1	0		499	1	0	0	0		1	1	399	16	0		416	1568
Lights %	100%	0%	100%	0%		97.8%	95.5%	99.2%	7.1%	0%		96.5%	3.6%	0%	0%	0%		2.3%	6.3%	98.3%	100%	0%		95%	94.1%
Single-Unit Trucks	0	0	0	0		0	1	3	0	0		4	0	0	0	0		0	0	5	0	0		5	9
Single-Unit Trucks %	0%	0%	0%	0%		0%	4.5%	0.6%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	0.5%
Buses	0	15	0	0		15	0	0	13	0		13	27	0	16	0		43	15	1	0	0		16	87
Buses %	0%	100%	0%	0%		2.2%	0%	0%	92.9%	0%		2.5%	96.4%	0%	100%	0%		97.7%	93.8%	0.2%	0%	0%		3.7%	5.2%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	2
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0.1%
Pedestrians	-	-	-	-	2	-	-	-	-	-	17	-	-	-	-	-	6	-	-	-	-	-	18	-	**-**
Pedestrians%	-	-	-	-	4.7%		-	-	-	-	39.5%		-	-	-	-	14%		-	-	-	-	41.9%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: CROSS AVE & ARGUS RD / OAKVILLE GO ACCESS (EAST)
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

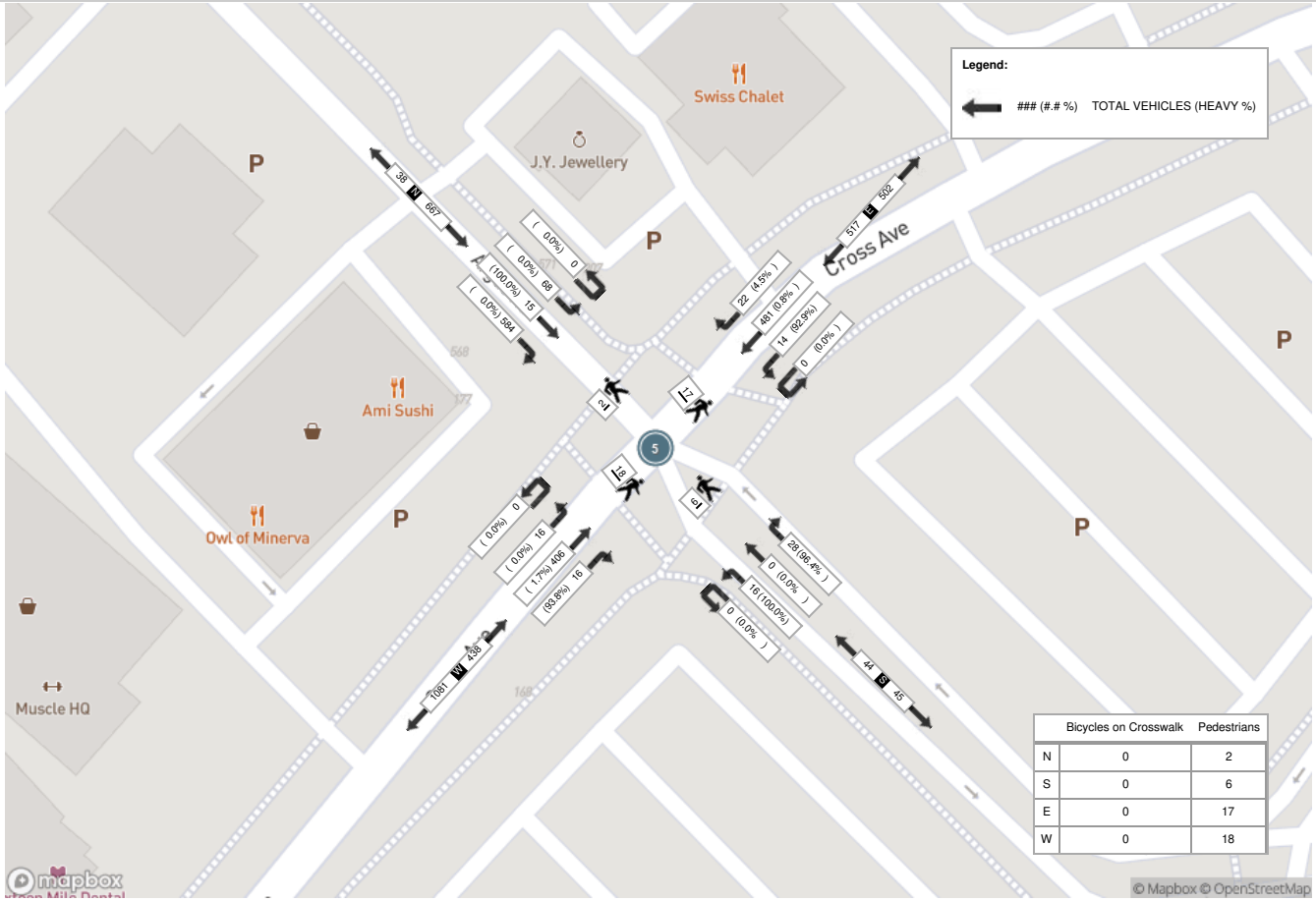
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (1 °C)

Start Time	N Approach ARGUS ROAD						E Approach CROSS AVENUE						S Approach GO BUS STATION						W Approach CROSS AVENUE						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	
2025-04-08 16:45:00	62	3	31	0	1	96	9	78	5	0	14	92	7	0	7	0	2	14	2	139	6	0	8	147	349
2025-04-08 17:00:00	45	9	29	0	2	83	6	86	1	0	7	93	9	0	1	0	0	10	3	243	2	0	5	248	434
2025-04-08 17:15:00	60	3	34	0	2	97	5	75	1	0	15	81	9	1	4	0	1	14	3	152	3	0	8	158	350
2025-04-08 17:30:00	45	6	39	0	2	90	7	65	5	0	4	77	3	2	4	0	2	9	4	242	7	0	7	253	429
Grand Total	212	21	133	0	7	366	27	304	12	0	40	343	28	3	16	0	5	47	12	776	18	0	28	806	**1562**
Approach%	57.9%	5.7%	36.3%	0%		-	7.9%	88.6%	3.5%	0%		-	59.6%	6.4%	34%	0%		-	1.5%	96.3%	2.2%	0%		-	**-**
Totals %	13.6%	1.3%	8.5%	0%		23.4%	1.7%	19.5%	0.8%	0%		22%	1.8%	0.2%	1%	0%		3%	0.8%	49.7%	1.2%	0%		51.6%	**-**
PHF	0.85	0.58	0.85	0		0.94	0.75	0.88	0.6	0		0.92	0.78	0.38	0.57	0		0.84	0.75	0.8	0.64	0		0.8	0.9
Heavy	3	21	0	0		24	0	1	11	0		12	28	2	16	0		46	12	1	0	0		13	95
Heavy %	1.4%	100%	0%	0%		6.6%	0%	0.3%	91.7%	0%		3.5%	100%	66.7%	100%	0%		97.9%	100%	0.1%	0%	0%		1.6%	6.1%
Lights	209	0	133	0		342	27	303	1	0		331	0	1	0	0		1	0	775	18	0		793	1467
Lights %	98.6%	0%	100%	0%		93.4%	100%	99.7%	8.3%	0%		96.5%	0%	33.3%	0%	0%		2.1%	0%	99.9%	100%	0%		98.4%	93.9%
Single-Unit Trucks	1	0	0	0		1	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	3
Single-Unit Trucks %	0.5%	0%	0%	0%		0.3%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0.2%
Buses	2	21	0	0		23	0	0	11	0		11	28	2	16	0		46	12	0	0	0		12	92
Buses %	0.9%	100%	0%	0%		6.3%	0%	0%	91.7%	0%		3.2%	100%	66.7%	100%	0%		97.9%	100%	0%	0%	0%		1.5%	5.9%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	6	-	-	-	-	-	39	-	-	-	-	-	5	-	-	-	-	-	28	-	**-**
Pedestrians%	-	-	-	-	7.5%		-	-	-	-	48.8%		-	-	-	-	6.3%		-	-	-	-	35%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	1.3%		-	-	-	-	1.3%		-	-	-	-	0%		-	-	-	-	0%		**-**

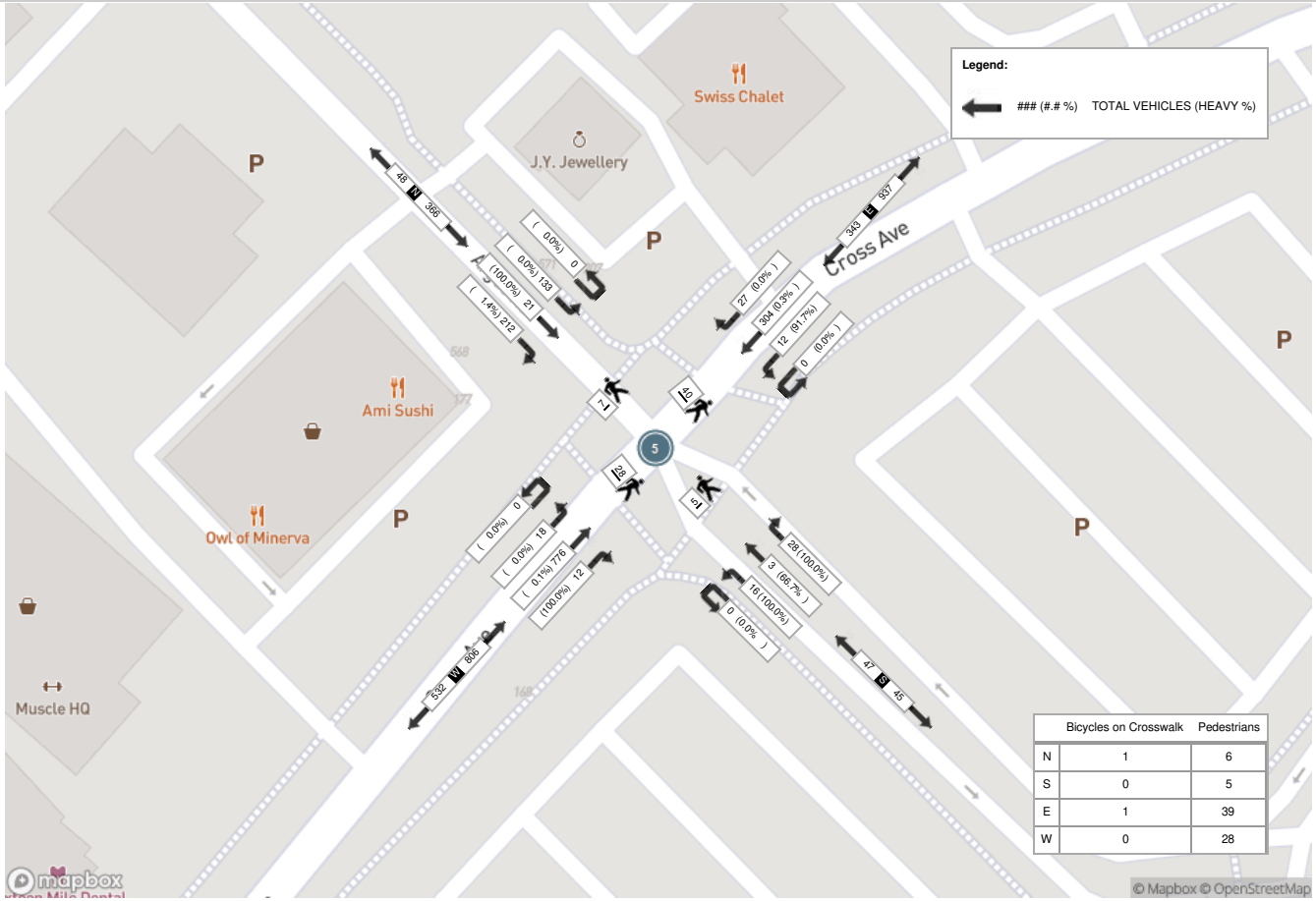
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Broken Clouds (-5 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Overcast Clouds (1 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (6 . CROSS AVE & CORNWALL RD / SPEERS RD)

Start Time	N Approach CROSS AVE					E Approach CORNWALL RD					W Approach SPEERS RD					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		
2025-04-08 07:00:00	12	2	0	2	14	0	37	0	0	37	93	47	0	0	140	191	
2025-04-08 07:15:00	26	0	0	1	26	2	71	0	0	73	122	48	0	0	170	269	
2025-04-08 07:30:00	35	1	0	2	36	5	60	0	0	65	152	83	0	0	235	336	
2025-04-08 07:45:00	37	4	0	2	41	2	108	0	0	110	194	73	0	0	267	418	1214
2025-04-08 08:00:00	49	3	0	2	52	4	115	0	0	119	184	89	0	0	273	444	1467
2025-04-08 08:15:00	49	1	0	2	50	2	142	0	0	144	199	84	0	0	283	477	1675
2025-04-08 08:30:00	53	2	0	1	55	5	161	0	0	166	172	55	0	0	227	448	1787
2025-04-08 08:45:00	64	3	0	2	67	8	159	0	0	167	143	63	0	0	206	440	1809
BREAK																	
2025-04-08 16:00:00	122	3	0	1	125	7	203	0	0	210	143	61	0	0	204	539	
2025-04-08 16:15:00	111	8	0	3	119	2	239	0	3	241	146	53	0	0	199	559	
2025-04-08 16:30:00	117	3	0	1	120	5	213	0	0	218	158	65	0	0	223	561	
2025-04-08 16:45:00	94	4	0	1	98	4	198	0	0	202	161	49	0	0	210	510	2169
2025-04-08 17:00:00	133	11	0	6	144	3	242	1	0	246	166	44	0	0	210	600	2230
2025-04-08 17:15:00	95	4	0	4	99	20	254	0	0	274	135	51	0	0	186	559	2230
2025-04-08 17:30:00	155	7	0	2	162	16	248	0	0	264	122	60	0	0	182	608	2277
2025-04-08 17:45:00	109	5	0	2	114	7	184	0	0	191	120	49	1	0	170	475	2242
Grand Total	1261	61	0	34	1322	92	2634	1	3	2727	2410	974	1	0	3385	**7434**	-
Approach%	95.4%	4.6%	0%		-	3.4%	96.6%	0%		-	71.2%	28.8%	0%		-	**-**	-
Totals %	17%	0.8%	0%		17.8%	1.2%	35.4%	0%		36.7%	32.4%	13.1%	0%		45.5%	**-**	-
Heavy	68	2	0		-	0	56	0		-	44	65	0		-	**-**	-
Heavy %	5.4%	3.3%	0%		-	0%	2.1%	0%		-	1.8%	6.7%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-5 °C)

Start Time	N Approach CROSS AVE					E Approach CORNWALL RD					W Approach SPEERS RD					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2025-04-08 08:00:00	49	3	0	2	52	4	115	0	0	119	184	89	0	0	273	444
2025-04-08 08:15:00	49	1	0	2	50	2	142	0	0	144	199	84	0	0	283	477
2025-04-08 08:30:00	53	2	0	1	55	5	161	0	0	166	172	55	0	0	227	448
2025-04-08 08:45:00	64	3	0	2	67	8	159	0	0	167	143	63	0	0	206	440
Grand Total	215	9	0	7	224	19	577	0	0	596	698	291	0	0	989	**1809**
Approach%	96%	4%	0%		-	3.2%	96.8%	0%		-	70.6%	29.4%	0%		-	**-**
Totals %	11.9%	0.5%	0%		12.4%	1.1%	31.9%	0%		32.9%	38.6%	16.1%	0%		54.7%	**-**
PHF	0.84	0.75	0		0.84	0.59	0.9	0		0.89	0.88	0.82	0		0.87	0.95
Heavy	19	0	0		19	0	22	0		22	15	19	0		34	75
Heavy %	8.8%	0%	0%		8.5%	0%	3.8%	0%		3.7%	2.1%	6.5%	0%		3.4%	4.1%
Lights	196	9	0		205	19	555	0		574	683	272	0		955	1734
Lights %	91.2%	100%	0%		91.5%	100%	96.2%	0%		96.3%	97.9%	93.5%	0%		96.6%	95.9%
Single-Unit Trucks	1	0	0		1	0	11	0		11	9	1	0		10	22
Single-Unit Trucks %	0.5%	0%	0%		0.4%	0%	1.9%	0%		1.8%	1.3%	0.3%	0%		1%	1.2%
Buses	18	0	0		18	0	8	0		8	6	17	0		23	49
Buses %	8.4%	0%	0%		8%	0%	1.4%	0%		1.3%	0.9%	5.8%	0%		2.3%	2.7%
Articulated Trucks	0	0	0		0	0	3	0		3	0	1	0		1	4
Articulated Trucks %	0%	0%	0%		0%	0%	0.5%	0%		0.5%	0%	0.3%	0%		0.1%	0.2%
Bicycles on Road	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%
Pedestrians	-	-	-	7	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	100%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

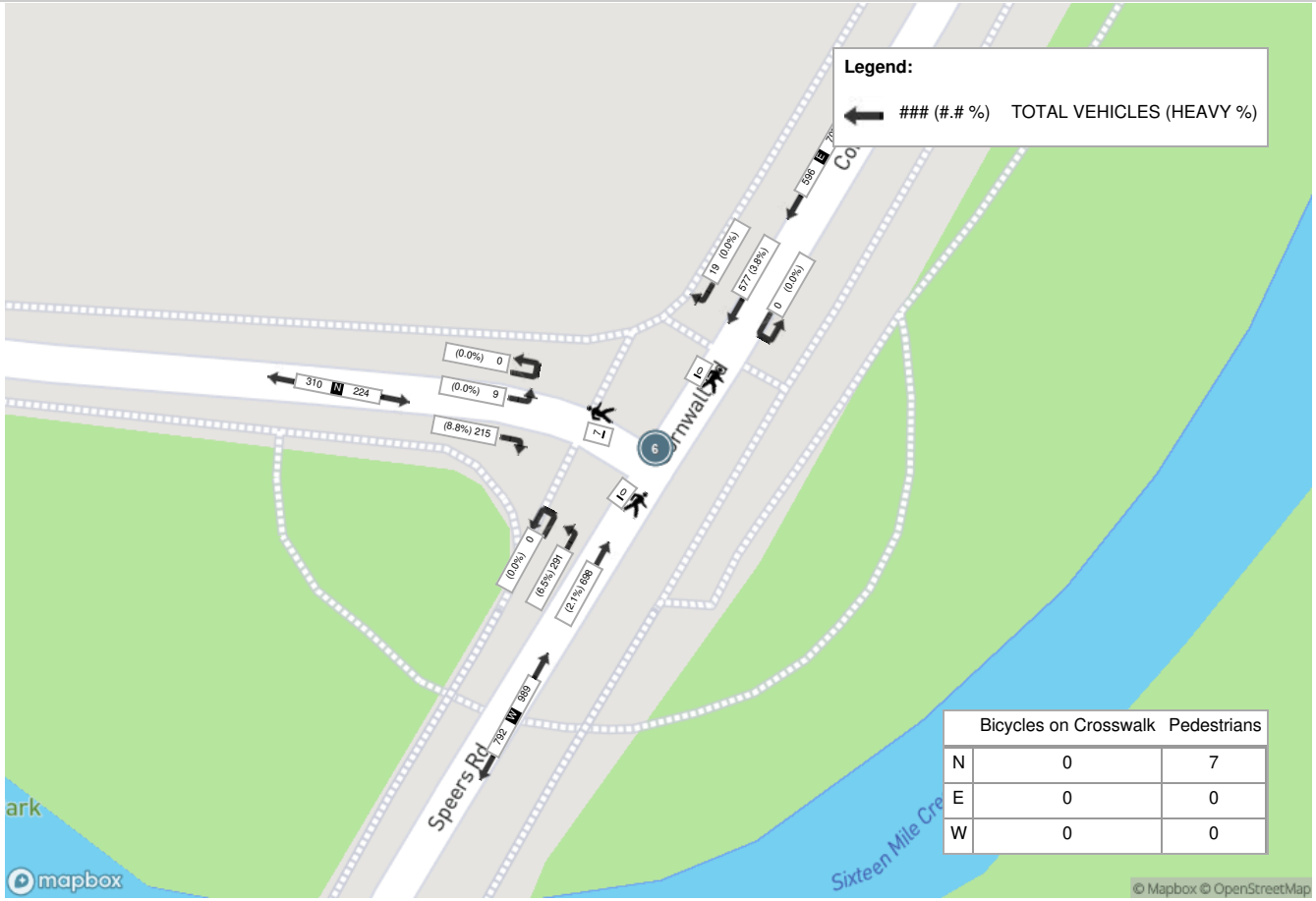
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (1 °C)

Start Time	N Approach CROSS AVE					E Approach CORNWALL RD					W Approach SPEERS RD					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2025-04-08 16:45:00	94	4	0	1	98	4	198	0	0	202	161	49	0	0	210	510
2025-04-08 17:00:00	133	11	0	6	144	3	242	1	0	246	166	44	0	0	210	600
2025-04-08 17:15:00	95	4	0	4	99	20	254	0	0	274	135	51	0	0	186	559
2025-04-08 17:30:00	155	7	0	2	162	16	248	0	0	264	122	60	0	0	182	608
Grand Total	477	26	0	13	503	43	942	1	0	986	584	204	0	0	788	**2277**
Approach%	94.8%	5.2%	0%		-	4.4%	95.5%	0.1%		-	74.1%	25.9%	0%		-	**-**
Totals %	20.9%	1.1%	0%		22.1%	1.9%	41.4%	0%		43.3%	25.6%	9%	0%		34.6%	**-**
PHF	0.77	0.59	0		0.78	0.54	0.93	0.25		0.9	0.88	0.85	0		0.94	0.94
Heavy	18	0	0		18	0	5	0		5	2	14	0		16	39
Heavy %	3.8%	0%	0%		3.6%	0%	0.5%	0%		0.5%	0.3%	6.9%	0%		2%	1.7%
Lights	459	26	0		485	43	937	1		981	580	190	0		770	2236
Lights %	96.2%	100%	0%		96.4%	100%	99.5%	100%		99.5%	99.3%	93.1%	0%		97.7%	98.2%
Single-Unit Trucks	1	0	0		1	0	1	0		1	1	0	0		1	3
Single-Unit Trucks %	0.2%	0%	0%		0.2%	0%	0.1%	0%		0.1%	0.2%	0%	0%		0.1%	0.1%
Buses	17	0	0		17	0	4	0		4	0	14	0		14	35
Buses %	3.6%	0%	0%		3.4%	0%	0.4%	0%		0.4%	0%	6.9%	0%		1.8%	1.5%
Articulated Trucks	0	0	0		0	0	0	0		0	1	0	0		1	1
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.2%	0%	0%		0.1%	0%
Bicycles on Road	0	0	0		0	0	0	0		0	2	0	0		2	2
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0.3%	0%	0%		0.3%	0.1%
Pedestrians	-	-	-	13	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	100%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

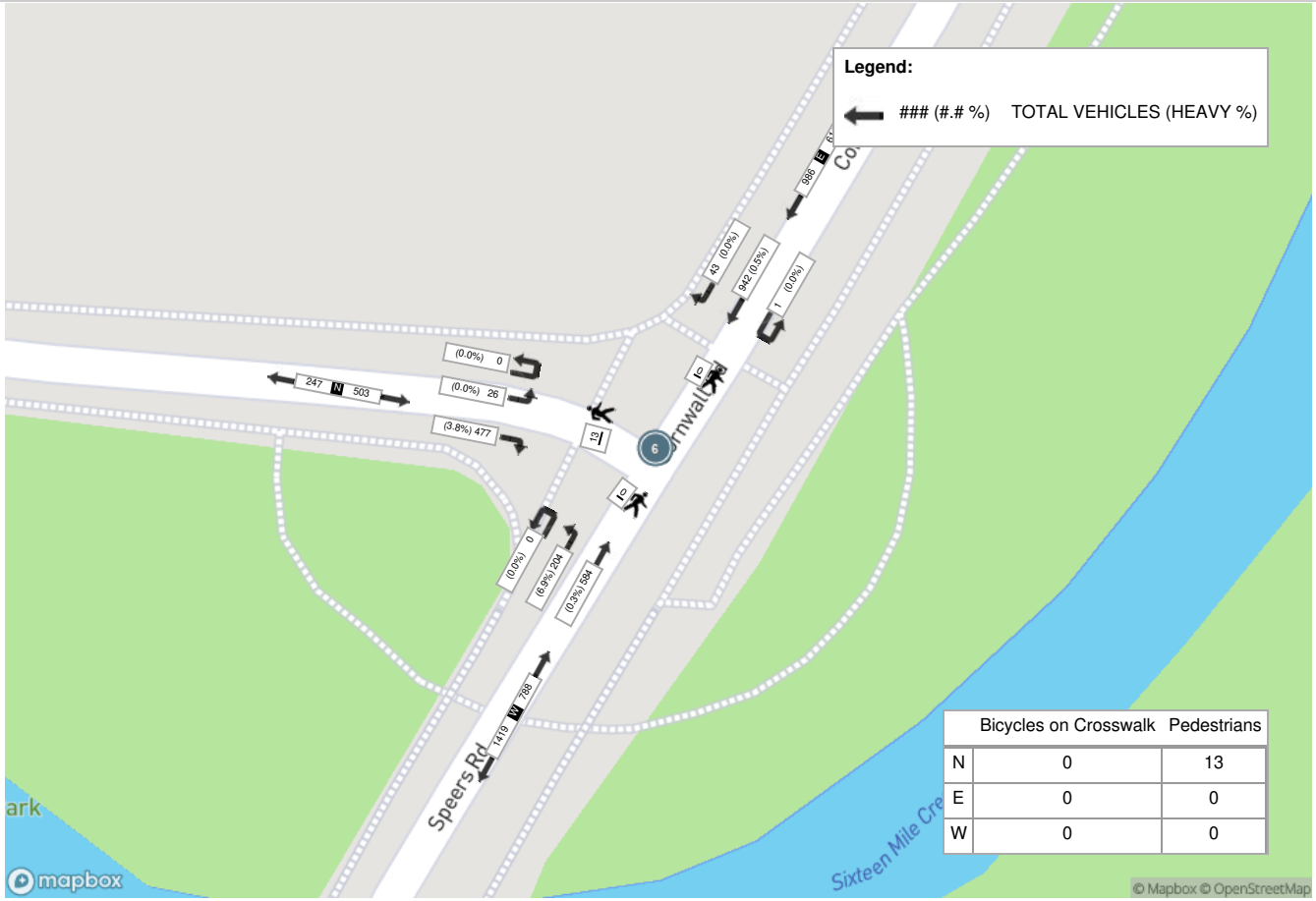
Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-5 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	7
E	0	0
W	0	0

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (1 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	13
E	0	0
W	0	0

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (3 . CROSS AVE & LYONS LN (NORTH))

Start Time	N Approach LYONS LANE					E Approach CROSS AVENUE					W Approach CROSS AVENUE					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		
2025-04-08 07:00:00	1	0	0	0	1	0	14	0	0	14	46	1	0	0	47	62	
2025-04-08 07:15:00	0	1	0	2	1	0	29	0	2	29	48	0	0	0	48	78	
2025-04-08 07:30:00	1	2	0	1	3	0	33	0	0	33	85	3	0	0	88	124	
2025-04-08 07:45:00	0	1	0	0	1	0	42	0	0	42	74	1	0	0	75	118	382
2025-04-08 08:00:00	1	1	0	3	2	2	53	0	1	55	83	3	0	0	86	143	463
2025-04-08 08:15:00	1	0	0	2	1	1	46	0	0	47	86	1	1	0	88	136	521
2025-04-08 08:30:00	2	2	0	1	4	2	54	0	0	56	57	3	0	0	60	120	517
2025-04-08 08:45:00	1	0	0	2	1	2	59	0	0	61	70	2	0	0	72	134	533
BREAK																	
2025-04-08 16:00:00	5	2	0	3	7	1	112	0	1	113	64	2	0	0	66	186	
2025-04-08 16:15:00	3	1	0	0	4	1	128	0	0	129	56	0	0	0	56	189	
2025-04-08 16:30:00	1	2	0	3	3	1	106	0	0	107	64	2	0	0	66	176	
2025-04-08 16:45:00	6	0	0	0	6	2	104	0	0	106	53	2	0	0	55	167	718
2025-04-08 17:00:00	4	3	0	1	7	1	125	0	0	126	50	0	0	0	50	183	715
2025-04-08 17:15:00	2	0	0	3	2	0	112	0	0	112	67	1	0	0	68	182	708
2025-04-08 17:30:00	4	2	0	2	6	1	153	0	0	154	76	1	0	0	77	237	769
2025-04-08 17:45:00	6	1	0	1	7	2	100	0	0	102	55	0	0	0	55	164	766
Grand Total	38	18	0	24	56	16	1270	0	4	1286	1034	22	1	0	1057	**2399**	-
Approach%	67.9%	32.1%	0%		-	1.2%	98.8%	0%		-	97.8%	2.1%	0.1%		-	**-**	-
Totals %	1.6%	0.8%	0%		2.3%	0.7%	52.9%	0%		53.6%	43.1%	0.9%	0%		44.1%	**-**	-
Heavy	0	0	0		-	1	69	0		-	65	0	0		-	**-**	-
Heavy %	0%	0%	0%		-	6.3%	5.4%	0%		-	6.3%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Crozier & Associates
SUITE 301 211 YONGE STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-5 °C)

Start Time	N Approach LYONS LANE					E Approach CROSS AVENUE					W Approach CROSS AVENUE					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2025-04-08 08:00:00	1	1	0	3	2	2	53	0	1	55	83	3	0	0	86	143
2025-04-08 08:15:00	1	0	0	2	1	1	46	0	0	47	86	1	1	0	88	136
2025-04-08 08:30:00	2	2	0	1	4	2	54	0	0	56	57	3	0	0	60	120
2025-04-08 08:45:00	1	0	0	2	1	2	59	0	0	61	70	2	0	0	72	134
Grand Total	5	3	0	8	8	7	212	0	1	219	296	9	1	0	306	**533**
Approach%	62.5%	37.5%	0%		-	3.2%	96.8%	0%		-	96.7%	2.9%	0.3%		-	**-**
Totals %	0.9%	0.6%	0%		1.5%	1.3%	39.8%	0%		41.1%	55.5%	1.7%	0.2%		57.4%	**-**
PHF	0.63	0.38	0		0.5	0.88	0.9	0		0.9	0.86	0.75	0.25		0.87	0.93
Heavy	0	0	0		0	1	19	0		20	19	0	0		19	39
Heavy %	0%	0%	0%		0%	14.3%	9%	0%		9.1%	6.4%	0%	0%		6.2%	7.3%
Lights	5	2	0		7	6	193	0		199	277	9	1		287	493
Lights %	100%	66.7%	0%		87.5%	85.7%	91%	0%		90.9%	93.6%	100%	100%		93.8%	92.5%
Single-Unit Trucks	0	0	0		0	1	1	0		2	1	0	0		1	3
Single-Unit Trucks %	0%	0%	0%		0%	14.3%	0.5%	0%		0.9%	0.3%	0%	0%		0.3%	0.6%
Buses	0	0	0		0	0	18	0		18	17	0	0		17	35
Buses %	0%	0%	0%		0%	0%	8.5%	0%		8.2%	5.7%	0%	0%		5.6%	6.6%
Articulated Trucks	0	0	0		0	0	0	0		0	1	0	0		1	1
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.3%	0%	0%		0.3%	0.2%
Bicycles on Road	0	1	0		1	0	0	0		0	0	0	0		0	1
Bicycles on Road %	0%	33.3%	0%		12.5%	0%	0%	0%		0%	0%	0%	0%		0%	0.2%
Pedestrians	-	-	-	8	-	-	-	-	1	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	88.9%		-	-	-	11.1%		-	-	-	0%		**-**

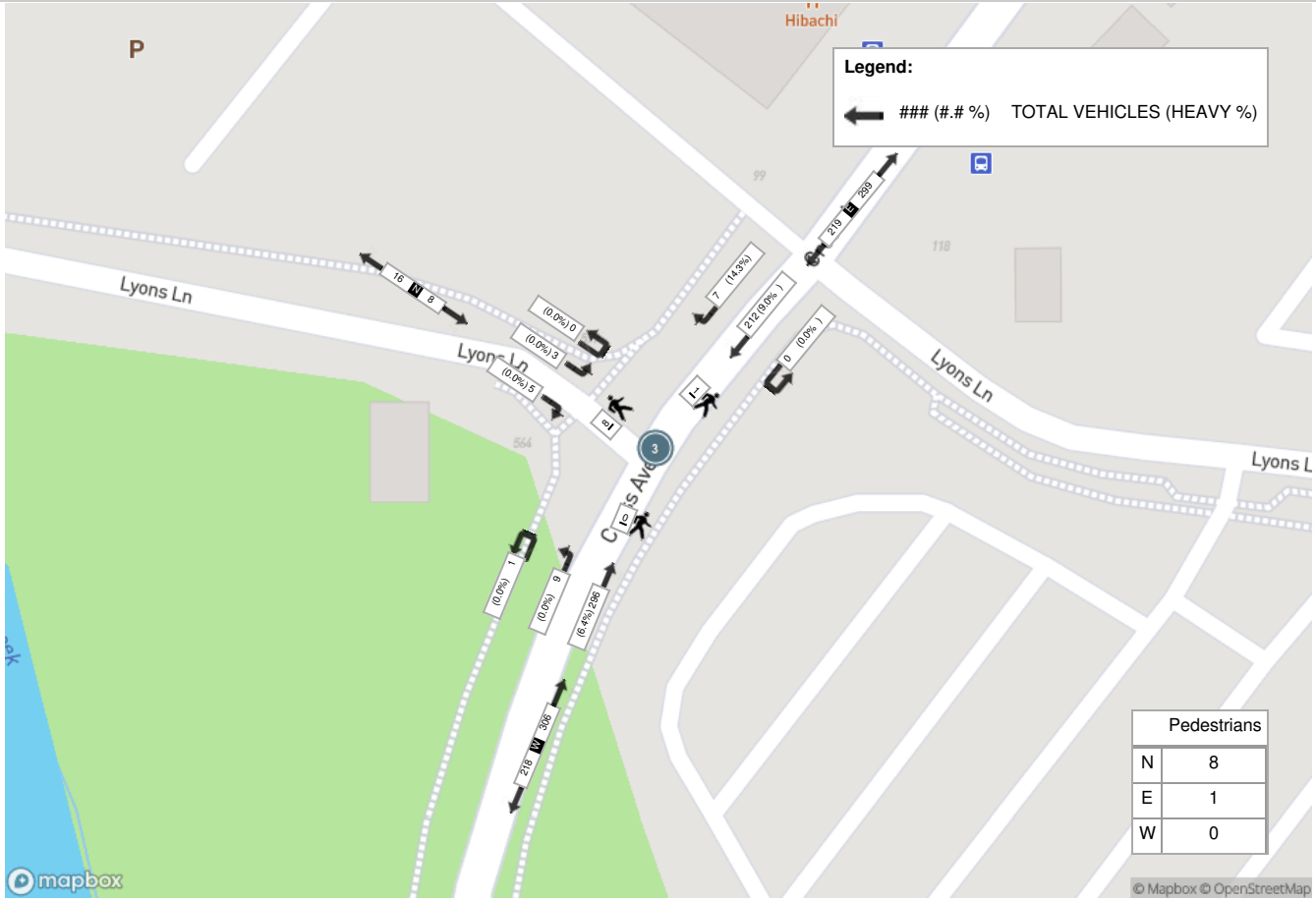
Crozier & Associates
SUITE 301 211 YONGE STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (1 °C)

Start Time	N Approach LYONS LANE					E Approach CROSS AVENUE					W Approach CROSS AVENUE					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2025-04-08 16:45:00	6	0	0	0	6	2	104	0	0	106	53	2	0	0	55	167
2025-04-08 17:00:00	4	3	0	1	7	1	125	0	0	126	50	0	0	0	50	183
2025-04-08 17:15:00	2	0	0	3	2	0	112	0	0	112	67	1	0	0	68	182
2025-04-08 17:30:00	4	2	0	2	6	1	153	0	0	154	76	1	0	0	77	237
Grand Total	16	5	0	6	21	4	494	0	0	498	246	4	0	0	250	**769**
Approach%	76.2%	23.8%	0%		-	0.8%	99.2%	0%		-	98.4%	1.6%	0%		-	**-**
Totals %	2.1%	0.7%	0%		2.7%	0.5%	64.2%	0%		64.8%	32%	0.5%	0%		32.5%	**-**
PHF	0.67	0.42	0		0.75	0.5	0.81	0		0.81	0.81	0.5	0		0.81	0.81
Heavy	0	0	0		0	0	18	0		18	13	0	0		13	31
Heavy %	0%	0%	0%		0%	0%	3.6%	0%		3.6%	5.3%	0%	0%		5.2%	4%
Lights	15	5	0		20	3	476	0		479	233	4	0		237	736
Lights %	93.8%	100%	0%		95.2%	75%	96.4%	0%		96.2%	94.7%	100%	0%		94.8%	95.7%
Single-Unit Trucks	0	0	0		0	0	1	0		1	0	0	0		0	1
Single-Unit Trucks %	0%	0%	0%		0%	0%	0.2%	0%		0.2%	0%	0%	0%		0%	0.1%
Buses	0	0	0		0	0	17	0		17	13	0	0		13	30
Buses %	0%	0%	0%		0%	0%	3.4%	0%		3.4%	5.3%	0%	0%		5.2%	3.9%
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Bicycles on Road	1	0	0		1	1	0	0		1	0	0	0		0	2
Bicycles on Road %	6.3%	0%	0%		4.8%	25%	0%	0%		0.2%	0%	0%	0%		0%	0.3%
Pedestrians	-	-	-	6	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	100%		-	-	-	0%		-	-	-	0%		**-**

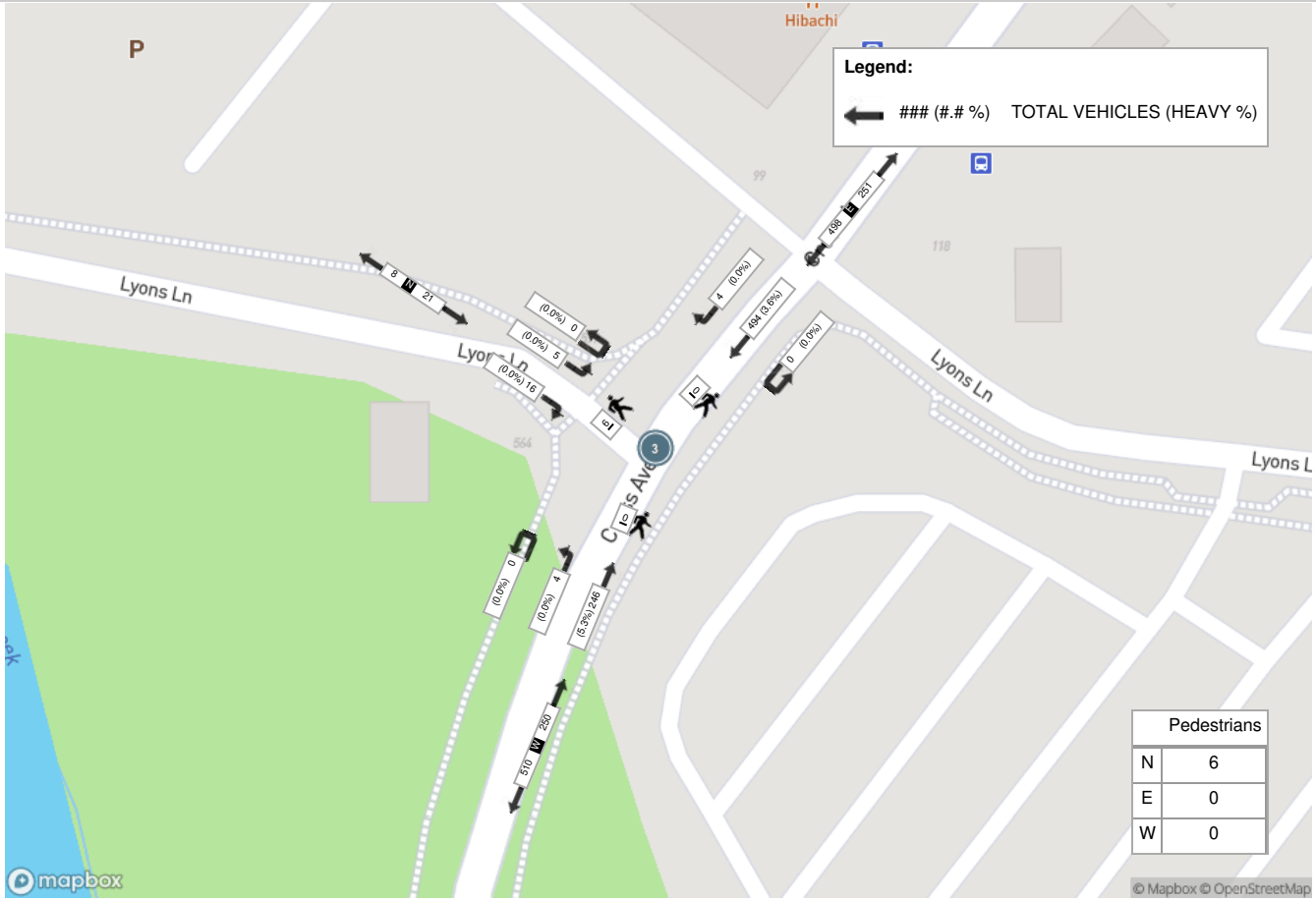
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-5 °C)



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (1 °C)



Spectrum

Turning Movement Count
Location Name: CROSS AVE & LYONS LN (SOUTH)/TRAFALGAR VILLAGE ACCESS
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (2 . CROSS AVE & LYONS LN (SOUTH)/TRAFALGAR VILLAGE ACCESS)

Start Time	N Approach PLAZA ENTRANCE						E Approach CROSS AVENUE						S Approach LYONS LANE						W Approach CROSS AVENUE						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		
2025-04-08 07:00:00	5	1	3	0	0	9	1	9	24	0	0	34	5	1	1	0	2	7	14	24	8	0	0	46	96	
2025-04-08 07:15:00	4	1	4	0	1	9	1	23	21	0	3	45	3	0	1	0	2	4	12	31	6	0	1	49	107	
2025-04-08 07:30:00	10	1	2	0	2	13	1	15	50	0	2	66	6	0	9	0	0	15	43	34	10	0	0	87	181	
2025-04-08 07:45:00	12	3	4	0	0	19	3	21	56	0	0	80	10	0	8	0	0	18	27	38	10	0	0	75	192	576
2025-04-08 08:00:00	11	5	3	0	1	19	0	41	78	0	1	119	8	1	3	0	0	12	31	38	15	0	1	84	234	714
2025-04-08 08:15:00	5	3	6	0	3	14	2	39	47	0	3	88	7	2	3	0	0	12	29	44	14	0	1	87	201	808
2025-04-08 08:30:00	12	0	5	0	1	17	1	45	18	0	0	64	4	1	1	0	1	6	8	37	13	0	0	58	145	772
2025-04-08 08:45:00	14	0	1	0	2	15	5	45	18	0	1	68	0	0	1	0	0	1	13	51	8	0	0	72	156	736
BREAK																										
2025-04-08 16:00:00	20	2	4	0	2	26	5	86	0	0	2	91	11	1	6	0	0	18	1	49	17	0	1	67	202	
2025-04-08 16:15:00	32	0	2	0	3	34	2	83	2	1	2	88	23	2	17	0	0	42	4	42	11	0	2	57	221	
2025-04-08 16:30:00	22	0	6	0	3	28	3	76	0	0	0	79	6	1	8	0	0	15	1	50	15	0	3	66	188	
2025-04-08 16:45:00	19	2	7	0	0	28	5	71	9	0	1	85	12	1	18	0	1	31	2	41	7	0	1	50	194	805
2025-04-08 17:00:00	6	0	7	0	2	13	1	85	6	0	0	92	32	1	31	0	0	64	2	40	13	0	1	55	224	827
2025-04-08 17:15:00	10	1	10	0	4	21	3	69	12	0	1	84	27	2	34	0	0	63	3	49	13	0	0	65	233	839
2025-04-08 17:30:00	27	0	2	0	0	29	3	87	3	0	1	93	25	3	38	0	0	66	8	56	15	0	0	79	267	918
2025-04-08 17:45:00	14	1	1	0	1	16	1	60	1	0	1	62	13	0	29	0	0	42	8	35	14	0	1	57	177	901
Grand Total	223	20	67	0	25	310	37	855	345	1	18	1238	192	16	208	0	6	416	206	659	189	0	12	1054	**3018**	-
Approach%	71.9%	6.5%	21.6%	0%		-	3%	69.1%	27.9%	0.1%		-	46.2%	3.8%	50%	0%		-	19.5%	62.5%	17.9%	0%		-	-	-
Totals %	7.4%	0.7%	2.2%	0%		10.3%	1.2%	28.3%	11.4%	0%		41%	6.4%	0.5%	6.9%	0%		13.8%	6.8%	21.8%	6.3%	0%		34.9%	-	-
Heavy	3	0	3	0		-	3	67	0	0		-	0	0	0	0		-	0	64	1	0		-	-	-
Heavy %	1.3%	0%	4.5%	0%		-	8.1%	7.8%	0%	0%		-	0%	0%	0%	0%		-	0%	9.7%	0.5%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: CROSS AVE & LYONS LN (SOUTH)/TRAFALGAR VILLAGE ACCESS
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Broken Clouds (-5 °C)**

Start Time	N Approach PLAZA ENTRANCE						E Approach CROSS AVENUE						S Approach LYONS LANE						W Approach CROSS AVENUE						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	
2025-04-08 07:30:00	10	1	2	0	2	13	1	15	50	0	2	66	6	0	9	0	0	15	43	34	10	0	0	87	181
2025-04-08 07:45:00	12	3	4	0	0	19	3	21	56	0	0	80	10	0	8	0	0	18	27	38	10	0	0	75	192
2025-04-08 08:00:00	11	5	3	0	1	19	0	41	78	0	1	119	8	1	3	0	0	12	31	38	15	0	1	84	234
2025-04-08 08:15:00	5	3	6	0	3	14	2	39	47	0	3	88	7	2	3	0	0	12	29	44	14	0	1	87	201
Grand Total	38	12	15	0	6	65	6	116	231	0	6	353	31	3	23	0	0	57	130	154	49	0	2	333	**808**
Approach%	58.5%	18.5%	23.1%	0%		-	1.7%	32.9%	65.4%	0%		-	54.4%	5.3%	40.4%	0%		-	39%	46.2%	14.7%	0%		-	**-**
Totals %	4.7%	1.5%	1.9%	0%		8%	0.7%	14.4%	28.6%	0%		43.7%	3.8%	0.4%	2.8%	0%		7.1%	16.1%	19.1%	6.1%	0%		41.2%	**-**
PHF	0.79	0.6	0.63	0		0.86	0.5	0.71	0.74	0		0.74	0.78	0.38	0.64	0		0.79	0.76	0.88	0.82	0		0.96	0.86
Heavy	1	0	1	0		2	1	18	0	0		19	0	0	0	0		0	0	20	0	0		20	41
Heavy %	2.6%	0%	6.7%	0%		3.1%	16.7%	15.5%	0%	0%		5.4%	0%	0%	0%	0%		0%	0%	13%	0%	0%		6%	5.1%
Lights	37	12	14	0		63	5	98	231	0		334	31	3	23	0		57	128	134	49	0		311	765
Lights %	97.4%	100%	93.3%	0%		96.9%	83.3%	84.5%	100%	0%		94.6%	100%	100%	100%	0%		100%	98.5%	87%	100%	0%		93.4%	94.7%
Single-Unit Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	5
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		0.9%	0.6%
Buses	1	0	0	0		1	0	16	0	0		16	0	0	0	0		0	0	17	0	0		17	34
Buses %	2.6%	0%	0%	0%		1.5%	0%	13.8%	0%	0%		4.5%	0%	0%	0%	0%		0%	0%	11%	0%	0%		5.1%	4.2%
Articulated Trucks	0	0	1	0		1	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	2
Articulated Trucks %	0%	0%	6.7%	0%		1.5%	16.7%	0%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.2%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	2	0	0	0		2	2
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	1.5%	0%	0%	0%		0.6%	0.2%
Pedestrians	-	-	-	-	6	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	42.9%		-	-	-	-	42.9%		-	-	-	-	0%		-	-	-	-	14.3%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: CROSS AVE & LYONS LN (SOUTH)/TRAFALGAR VILLAGE ACCESS
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (1 °C)

Start Time	N Approach PLAZA ENTRANCE						E Approach CROSS AVENUE						S Approach LYONS LANE						W Approach CROSS AVENUE						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	
2025-04-08 16:45:00	19	2	7	0	0	28	5	71	9	0	1	85	12	1	18	0	1	31	2	41	7	0	1	50	194
2025-04-08 17:00:00	6	0	7	0	2	13	1	85	6	0	0	92	32	1	31	0	0	64	2	40	13	0	1	55	224
2025-04-08 17:15:00	10	1	10	0	4	21	3	69	12	0	1	84	27	2	34	0	0	63	3	49	13	0	0	65	233
2025-04-08 17:30:00	27	0	2	0	0	29	3	87	3	0	1	93	25	3	38	0	0	66	8	56	15	0	0	79	267
Grand Total	62	3	26	0	6	91	12	312	30	0	3	354	96	7	121	0	1	224	15	186	48	0	2	249	**918**
Approach%	68.1%	3.3%	28.6%	0%		-	3.4%	88.1%	8.5%	0%		-	42.9%	3.1%	54%	0%		-	6%	74.7%	19.3%	0%		-	**-**
Totals %	6.8%	0.3%	2.8%	0%		9.9%	1.3%	34%	3.3%	0%		38.6%	10.5%	0.8%	13.2%	0%		24.4%	1.6%	20.3%	5.2%	0%		27.1%	**-**
PHF	0.57	0.38	0.65	0		0.78	0.6	0.9	0.63	0		0.95	0.75	0.58	0.8	0		0.85	0.47	0.83	0.8	0		0.79	0.86
Heavy	0	0	1	0		1	1	18	0	0		19	0	0	0	0		0	0	13	0	0		13	33
Heavy %	0%	0%	3.8%	0%		1.1%	8.3%	5.8%	0%	0%		5.4%	0%	0%	0%	0%		0%	0%	7%	0%	0%		5.2%	3.6%
Lights	62	3	25	0		90	11	294	30	0		335	96	7	120	0		223	15	173	48	0		236	884
Lights %	100%	100%	96.2%	0%		98.9%	91.7%	94.2%	100%	0%		94.6%	100%	100%	99.2%	0%		99.6%	100%	93%	100%	0%		94.8%	96.3%
Single-Unit Trucks	0	0	1	0		1	1	1	0	0		2	0	0	0	0		0	0	0	0	0		0	3
Single-Unit Trucks %	0%	0%	3.8%	0%		1.1%	8.3%	0.3%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.3%
Buses	0	0	0	0		0	0	17	0	0		17	0	0	0	0		0	0	13	0	0		13	30
Buses %	0%	0%	0%	0%		0%	0%	5.4%	0%	0%		4.8%	0%	0%	0%	0%		0%	0%	7%	0%	0%		5.2%	3.3%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0.8%	0%		0.4%	0%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	41.7%		-	-	-	-	25%		-	-	-	-	8.3%		-	-	-	-	16.7%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	8.3%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Broken Clouds (-5 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Overcast Clouds (1 °C)**



	Bicycles on Crosswalk	Pedestrians
N	1	5
S	0	1
E	0	3
W	0	2

Spectrum

Turning Movement Count
Location Name: CROSS AVE & OAKVILLE GO ACCESS (WEST)
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (4 . CROSS AVE & OAKVILLE GO ACCESS (WEST))

Start Time	E Approach CROSS AVE						S Approach OAKVILLE GO PARKING MAIN ACCESS CROSS						W Approach CROSS AVE						N Approach NORTH DRIVEWAY						Int. Total (15 min)	Int. Total (1 hr)
	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	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total		
2025-04-08 07:00:00	1	46	151	0	0	198	55	0	9	0	1	64	15	36	0	0	0	51	0	0	0	0	0	0	313	
2025-04-08 07:15:00	5	53	151	0	1	209	45	0	13	0	1	58	21	35	1	0	1	57	0	0	2	0	2	2	326	
2025-04-08 07:30:00	7	78	151	0	1	236	51	0	9	0	0	60	18	45	4	0	0	67	0	0	0	0	1	0	363	
2025-04-08 07:45:00	5	96	166	0	0	267	62	0	11	0	0	73	19	48	3	0	0	70	0	0	0	0	2	0	410	1412
2025-04-08 08:00:00	5	115	177	0	5	297	66	0	23	0	1	89	26	52	2	0	1	80	2	0	2	0	2	4	470	1569
2025-04-08 08:15:00	5	99	163	0	0	267	40	0	13	0	1	53	16	70	2	0	0	88	1	0	1	0	1	2	410	1653
2025-04-08 08:30:00	11	82	88	0	5	181	42	0	16	0	1	58	13	63	0	0	3	76	1	0	3	0	6	4	319	1609
2025-04-08 08:45:00	7	94	68	0	1	169	24	0	6	0	0	30	12	57	6	0	1	75	1	0	2	0	5	3	277	1476
BREAK																										
2025-04-08 16:00:00	5	81	35	0	3	121	59	0	17	0	1	76	10	93	2	0	7	105	13	0	10	0	14	23	325	
2025-04-08 16:15:00	2	82	46	0	1	130	75	0	23	0	3	98	14	103	3	0	4	120	1	0	4	0	9	5	353	
2025-04-08 16:30:00	3	61	40	0	5	104	68	0	24	0	4	92	15	103	2	0	2	120	4	0	9	0	8	13	329	
2025-04-08 16:45:00	6	72	69	0	2	147	48	0	23	0	3	71	10	101	1	0	4	112	4	0	5	0	9	9	339	1346
2025-04-08 17:00:00	7	83	43	0	3	133	102	0	26	0	0	128	11	134	2	0	1	147	8	0	2	0	7	10	418	1439
2025-04-08 17:15:00	4	72	59	0	2	135	57	0	19	0	2	76	17	116	1	0	3	134	5	0	3	0	7	8	353	1439
2025-04-08 17:30:00	3	63	56	0	3	122	117	0	33	0	1	150	17	117	2	0	4	136	4	0	0	0	7	4	412	1522
2025-04-08 17:45:00	4	49	64	0	0	117	47	0	15	0	0	62	9	74	0	0	1	83	6	0	3	0	1	9	271	1454
Grand Total	80	1226	1527	0	32	2833	958	0	280	0	19	1238	243	1247	31	0	32	1521	50	0	46	0	81	96	**5688**	-
Approach%	2.8%	43.3%	53.9%	0%		-	77.4%	0%	22.6%	0%		-	16%	82%	2%	0%		-	52.1%	0%	47.9%	0%		-	-	-
Totals %	1.4%	21.6%	26.8%	0%		49.8%	16.8%	0%	4.9%	0%		21.8%	4.3%	21.9%	0.5%	0%		26.7%	0.9%	0%	0.8%	0%		1.7%	-	-
Heavy	1	74	1	0		-	1	0	0	0		-	1	71	0	0		-	1	0	0	0		-	-	-
Heavy %	1.3%	6%	0.1%	0%		-	0.1%	0%	0%	0%		-	0.4%	5.7%	0%	0%		-	2%	0%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: CROSS AVE & OAKVILLE GO ACCESS (WEST)
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Broken Clouds (-5 °C)

Start Time	E Approach CROSS AVE						S Approach OAKVILLE GO PARKING MAIN ACCESS CROSS						W Approach CROSS AVE						N Approach NORTH DRIVEWAY						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	
2025-04-08 07:30:00	7	78	151	0	1	236	51	0	9	0	0	60	18	45	4	0	0	67	0	0	0	0	1	0	363
2025-04-08 07:45:00	5	96	166	0	0	267	62	0	11	0	0	73	19	48	3	0	0	70	0	0	0	0	2	0	410
2025-04-08 08:00:00	5	115	177	0	5	297	66	0	23	0	1	89	26	52	2	0	1	80	2	0	2	0	2	4	470
2025-04-08 08:15:00	5	99	163	0	0	267	40	0	13	0	1	53	16	70	2	0	0	88	1	0	1	0	1	2	410
Grand Total	22	388	657	0	6	1067	219	0	56	0	2	275	79	215	11	0	1	305	3	0	3	0	6	6	**1653**
Approach%	2.1%	36.4%	61.6%	0%		-	79.6%	0%	20.4%	0%		-	25.9%	70.5%	3.6%	0%		-	50%	0%	50%	0%		-	**-**
Totals %	1.3%	23.5%	39.7%	0%		64.5%	13.2%	0%	3.4%	0%		16.6%	4.8%	13%	0.7%	0%		18.5%	0.2%	0%	0.2%	0%		0.4%	**-**
PHF	0.79	0.84	0.93	0		0.9	0.83	0	0.61	0		0.77	0.76	0.77	0.69	0		0.87	0.38	0	0.38	0		0.38	0.88
Heavy	0	21	0	0		21	1	0	0	0		1	1	21	0	0		22	0	0	0	0		0	44
Heavy %	0%	5.4%	0%	0%		2%	0.5%	0%	0%	0%		0.4%	1.3%	9.8%	0%	0%		7.2%	0%	0%	0%	0%		0%	2.7%
Lights	22	367	657	0		1046	218	0	56	0		274	78	194	11	0		283	3	0	3	0		6	1609
Lights %	100%	94.6%	100%	0%		98%	99.5%	0%	100%	0%		99.6%	98.7%	90.2%	100%	0%		92.8%	100%	0%	100%	0%		100%	97.3%
Single-Unit Trucks	0	4	0	0		4	1	0	0	0		1	1	4	0	0		5	0	0	0	0		0	10
Single-Unit Trucks %	0%	1%	0%	0%		0.4%	0.5%	0%	0%	0%		0.4%	1.3%	1.9%	0%	0%		1.6%	0%	0%	0%	0%		0%	0.6%
Buses	0	16	0	0		16	0	0	0	0		0	0	16	0	0		16	0	0	0	0		0	32
Buses %	0%	4.1%	0%	0%		1.5%	0%	0%	0%	0%		0%	0%	7.4%	0%	0%		5.2%	0%	0%	0%	0%		0%	1.9%
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	2
Articulated Trucks %	0%	0.3%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.3%	0%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	6	-	**-**
Pedestrians%	-	-	-	-	40%		-	-	-	-	13.3%		-	-	-	-	6.7%		-	-	-	-	40%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: CROSS AVE & OAKVILLE GO ACCESS (WEST)
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (1 °C)

Start Time	E Approach CROSS AVE						S Approach OAKVILLE GO PARKING MAIN ACCESS CROSS						W Approach CROSS AVE						N Approach NORTH DRIVEWAY						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	
2025-04-08 16:45:00	6	72	69	0	2	147	48	0	23	0	3	71	10	101	1	0	4	112	4	0	5	0	9	9	339
2025-04-08 17:00:00	7	83	43	0	3	133	102	0	26	0	0	128	11	134	2	0	1	147	8	0	2	0	7	10	418
2025-04-08 17:15:00	4	72	59	0	2	135	57	0	19	0	2	76	17	116	1	0	3	134	5	0	3	0	7	8	353
2025-04-08 17:30:00	3	63	56	0	3	122	117	0	33	0	1	150	17	117	2	0	4	136	4	0	0	0	7	4	412
Grand Total	20	290	227	0	10	537	324	0	101	0	6	425	55	468	6	0	12	529	21	0	10	0	30	31	**1522**
Approach%	3.7%	54%	42.3%	0%		-	76.2%	0%	23.8%	0%		-	10.4%	88.5%	1.1%	0%		-	67.7%	0%	32.3%	0%		-	**-**
Totals %	1.3%	19.1%	14.9%	0%		35.3%	21.3%	0%	6.6%	0%		27.9%	3.6%	30.7%	0.4%	0%		34.8%	1.4%	0%	0.7%	0%		2%	**-**
PHF	0.71	0.87	0.82	0		0.91	0.69	0	0.77	0		0.71	0.81	0.87	0.75	0		0.9	0.66	0	0.5	0		0.78	0.91
Heavy	0	20	0	0		20	0	0	0	0		0	0	13	0	0		13	0	0	0	0		0	33
Heavy %	0%	6.9%	0%	0%		3.7%	0%	0%	0%	0%		0%	0%	2.8%	0%	0%		2.5%	0%	0%	0%	0%		0%	2.2%
Lights	20	270	227	0		517	324	0	101	0		425	55	455	6	0		516	21	0	10	0		31	1489
Lights %	100%	93.1%	100%	0%		96.3%	100%	0%	100%	0%		100%	100%	97.2%	100%	0%		97.5%	100%	0%	100%	0%		100%	97.8%
Single-Unit Trucks	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	3
Single-Unit Trucks %	0%	0.7%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0.2%
Buses	0	18	0	0		18	0	0	0	0		0	0	12	0	0		12	0	0	0	0		0	30
Buses %	0%	6.2%	0%	0%		3.4%	0%	0%	0%	0%		0%	0%	2.6%	0%	0%		2.3%	0%	0%	0%	0%		0%	2%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	10	-	-	-	-	-	6	-	-	-	-	-	12	-	-	-	-	-	29	-	**-**
Pedestrians%	-	-	-	-	17.2%		-	-	-	-	10.3%		-	-	-	-	20.7%		-	-	-	-	50%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	1.7%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Broken Clouds (-5 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	6
S	0	2
E	0	6
W	0	1

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Overcast Clouds (1 °C)**



Spectrum

Turning Movement Count
Location Name: CROSS AVE & SOUTH SERVICE RD EAST/TRAFALGAR ROAD
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (1 . CROSS AVE & SOUTH SERVICE RD EAST/TRAFALGAR ROAD)

Start Time	N Approach TRAFALGAR RD						E Approach SOUTH SERVICE RD E						S Approach TRAFALGAR RD						W Approach CROSS AVE						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		
2025-04-08 07:00:00	118	169	19	0	0	306	5	1	3	0	1	9	3	133	11	0	1	147	14	5	88	0	1	107	569	
2025-04-08 07:15:00	104	230	33	3	0	370	3	8	4	0	0	15	2	159	9	0	0	170	16	5	70	0	1	91	646	
2025-04-08 07:30:00	131	229	40	1	0	401	15	10	8	0	4	33	8	173	14	0	0	195	19	7	70	0	2	96	725	
2025-04-08 07:45:00	142	327	39	1	0	509	10	7	9	0	1	26	7	197	13	0	0	217	17	12	123	0	2	152	904	2844
2025-04-08 08:00:00	133	316	42	2	0	493	18	10	11	0	2	39	4	265	16	0	0	285	18	12	111	0	2	141	958	3233
2025-04-08 08:15:00	105	351	46	0	0	502	16	14	10	0	1	40	7	268	19	1	0	295	23	16	102	0	0	141	978	3565
2025-04-08 08:30:00	58	296	46	0	0	400	34	20	14	0	2	68	5	284	15	0	1	304	20	12	98	0	0	130	902	3742
2025-04-08 08:45:00	45	294	45	0	0	384	41	19	22	0	0	82	8	265	22	0	0	295	17	10	64	0	0	91	852	3690
BREAK																										
2025-04-08 16:00:00	58	299	37	2	0	396	68	15	20	0	4	103	8	379	14	0	1	401	27	7	170	0	1	204	1104	
2025-04-08 16:15:00	45	258	27	2	0	332	69	12	7	0	3	88	9	328	18	1	5	356	20	7	172	0	2	199	975	
2025-04-08 16:30:00	46	316	19	2	0	383	67	11	14	0	4	92	5	272	20	0	4	297	23	14	228	0	3	265	1037	
2025-04-08 16:45:00	54	256	16	1	0	327	49	16	11	0	1	76	6	383	22	0	0	411	23	12	118	0	1	153	967	4083
2025-04-08 17:00:00	52	269	16	3	0	340	81	20	18	0	2	119	2	212	21	0	2	235	20	22	288	0	3	330	1024	4003
2025-04-08 17:15:00	59	256	22	2	0	339	52	18	22	0	0	92	5	327	15	1	0	348	37	9	163	0	4	209	988	4016
2025-04-08 17:30:00	52	255	25	3	0	335	57	15	13	0	2	85	6	185	14	0	1	205	27	15	267	0	1	309	934	3913
2025-04-08 17:45:00	65	294	22	4	0	385	58	11	10	0	0	79	2	319	17	0	1	338	19	5	141	0	2	165	967	3913
Grand Total	1267	4415	494	26	0	6202	643	207	196	0	27	1046	87	4149	260	3	16	4499	340	170	2273	0	25	2783	**14530**	-
Approach%	20.4%	71.2%	8%	0.4%		-	61.5%	19.8%	18.7%	0%		-	1.9%	92.2%	5.8%	0.1%		-	12.2%	6.1%	81.7%	0%		-	-	-
Totals %	8.7%	30.4%	3.4%	0.2%		42.7%	4.4%	1.4%	1.3%	0%		7.2%	0.6%	28.6%	1.8%	0%		31%	2.3%	1.2%	15.6%	0%		19.2%	-	-
Heavy	31	61	10	0		-	13	4	6	0		-	2	79	18	0		-	19	3	96	0		-	-	-
Heavy %	2.4%	1.4%	2%	0%		-	2%	1.9%	3.1%	0%		-	2.3%	1.9%	6.9%	0%		-	5.6%	1.8%	4.2%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: CROSS AVE & SOUTH SERVICE RD EAST/TRAFALGAR ROAD
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Broken Clouds (-5 °C)

Start Time	N Approach TRAFALGAR RD						E Approach SOUTH SERVICE RD E						S Approach TRAFALGAR RD						W Approach CROSS AVE						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	
2025-04-08 07:45:00	142	327	39	1	0	509	10	7	9	0	1	26	7	197	13	0	0	217	17	12	123	0	2	152	904
2025-04-08 08:00:00	133	316	42	2	0	493	18	10	11	0	2	39	4	265	16	0	0	285	18	12	111	0	2	141	958
2025-04-08 08:15:00	105	351	46	0	0	502	16	14	10	0	1	40	7	268	19	1	0	295	23	16	102	0	0	141	978
2025-04-08 08:30:00	58	296	46	0	0	400	34	20	14	0	2	68	5	284	15	0	1	304	20	12	98	0	0	130	902
Grand Total	438	1290	173	3	0	1904	78	51	44	0	6	173	23	1014	63	1	1	1101	78	52	434	0	4	564	**3742**
Approach%	23%	67.8%	9.1%	0.2%		-	45.1%	29.5%	25.4%	0%		-	2.1%	92.1%	5.7%	0.1%		-	13.8%	9.2%	77%	0%		-	**-**
Totals %	11.7%	34.5%	4.6%	0.1%		50.9%	2.1%	1.4%	1.2%	0%		4.6%	0.6%	27.1%	1.7%	0%		29.4%	2.1%	1.4%	11.6%	0%		15.1%	**-**
PHF	0.77	0.92	0.94	0.38		0.94	0.57	0.64	0.79	0		0.64	0.82	0.89	0.83	0.25		0.91	0.85	0.81	0.88	0		0.93	0.96
Heavy	9	32	3	0		44	8	2	4	0		14	2	37	7	0		46	6	1	27	0		34	138
Heavy %	2.1%	2.5%	1.7%	0%		2.3%	10.3%	3.9%	9.1%	0%		8.1%	8.7%	3.6%	11.1%	0%		4.2%	7.7%	1.9%	6.2%	0%		6%	3.7%
Lights	429	1258	170	3		1860	70	49	40	0		159	21	977	56	1		1055	72	51	407	0		530	3604
Lights %	97.9%	97.5%	98.3%	100%		97.7%	89.7%	96.1%	90.9%	0%		91.9%	91.3%	96.4%	88.9%	100%		95.8%	92.3%	98.1%	93.8%	0%		94%	96.3%
Single-Unit Trucks	1	17	3	0		21	6	1	0	0		7	0	15	2	0		17	0	1	3	0		4	49
Single-Unit Trucks %	0.2%	1.3%	1.7%	0%		1.1%	7.7%	2%	0%	0%		4%	0%	1.5%	3.2%	0%		1.5%	0%	1.9%	0.7%	0%		0.7%	1.3%
Buses	7	11	0	0		18	0	1	4	0		5	2	21	4	0		27	6	0	22	0		28	78
Buses %	1.6%	0.9%	0%	0%		0.9%	0%	2%	9.1%	0%		2.9%	8.7%	2.1%	6.3%	0%		2.5%	7.7%	0%	5.1%	0%		5%	2.1%
Articulated Trucks	1	4	0	0		5	2	0	0	0		2	0	1	1	0		2	0	0	2	0		2	11
Articulated Trucks %	0.2%	0.3%	0%	0%		0.3%	2.6%	0%	0%	0%		1.2%	0%	0.1%	1.6%	0%		0.2%	0%	0%	0.5%	0%		0.4%	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	45.5%		-	-	-	-	9.1%		-	-	-	-	27.3%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	9.1%		-	-	-	-	0%		-	-	-	-	9.1%		**-**

Spectrum

Turning Movement Count
Location Name: CROSS AVE & SOUTH SERVICE RD EAST/TRAFALGAR ROAD
Date: Tue, Apr 08, 2025 Deployment Lead: Rey Fernandez

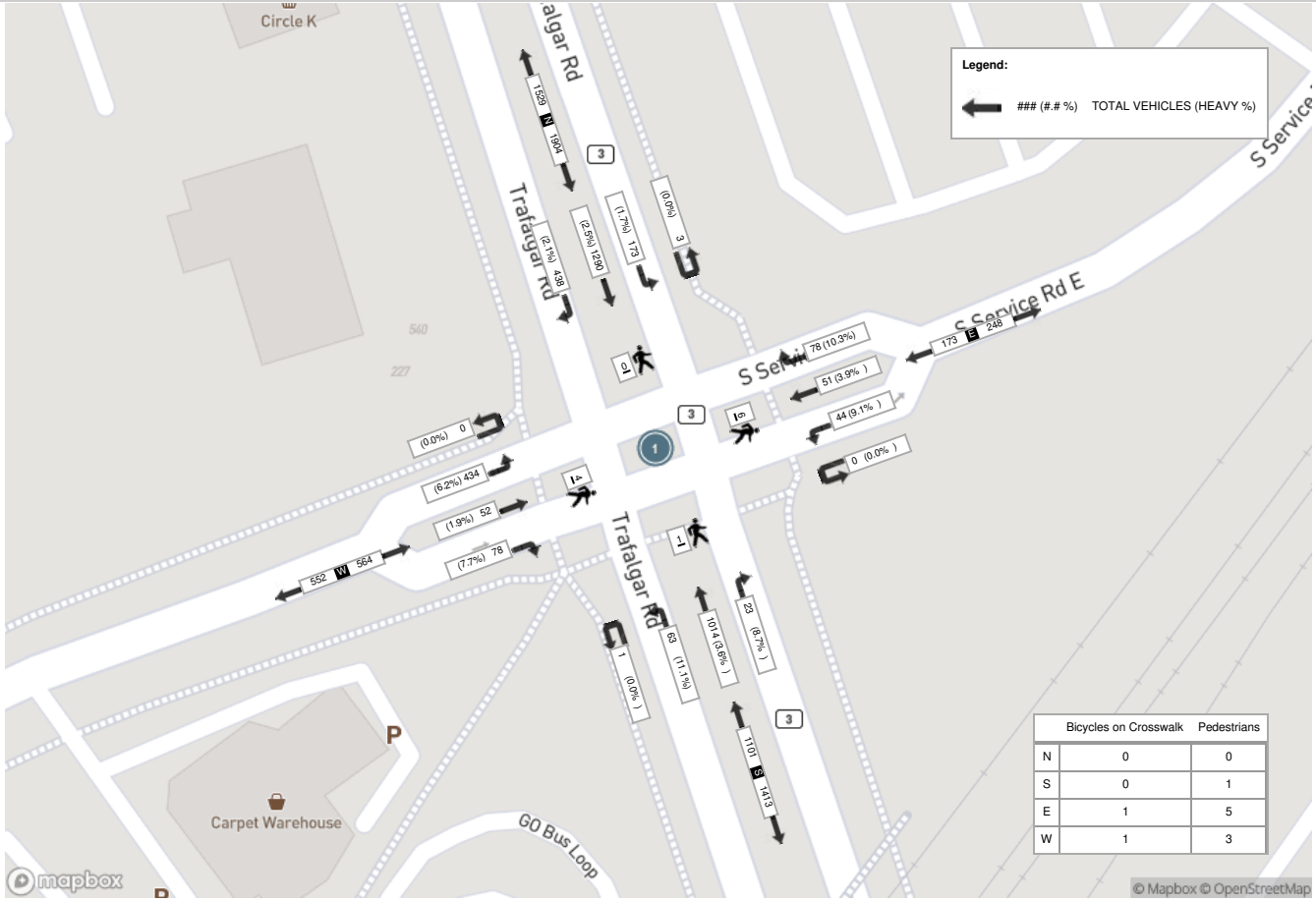
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (1 °C)

Start Time	N Approach TRAFALGAR RD						E Approach SOUTH SERVICE RD E						S Approach TRAFALGAR RD						W Approach CROSS AVE						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	
2025-04-08 16:00:00	58	299	37	2	0	396	68	15	20	0	4	103	8	379	14	0	1	401	27	7	170	0	1	204	1104
2025-04-08 16:15:00	45	258	27	2	0	332	69	12	7	0	3	88	9	328	18	1	5	356	20	7	172	0	2	199	975
2025-04-08 16:30:00	46	316	19	2	0	383	67	11	14	0	4	92	5	272	20	0	4	297	23	14	228	0	3	265	1037
2025-04-08 16:45:00	54	256	16	1	0	327	49	16	11	0	1	76	6	383	22	0	0	411	23	12	118	0	1	153	967
Grand Total	203	1129	99	7	0	1438	253	54	52	0	12	359	28	1362	74	1	10	1465	93	40	688	0	7	821	**4083**
Approach%	14.1%	78.5%	6.9%	0.5%		-	70.5%	15%	14.5%	0%		-	1.9%	93%	5.1%	0.1%		-	11.3%	4.9%	83.8%	0%		-	**-**
Totals %	5%	27.7%	2.4%	0.2%		35.2%	6.2%	1.3%	1.3%	0%		8.8%	0.7%	33.4%	1.8%	0%		35.9%	2.3%	1%	16.9%	0%		20.1%	**-**
PHF	0.88	0.89	0.67	0.88		0.91	0.92	0.84	0.65	0		0.87	0.78	0.89	0.84	0.25		0.89	0.86	0.71	0.75	0		0.77	0.92
Heavy	7	9	6	0		22	2	0	0	0		2	0	15	5	0		20	2	0	23	0		25	69
Heavy %	3.4%	0.8%	6.1%	0%		1.5%	0.8%	0%	0%	0%		0.6%	0%	1.1%	6.8%	0%		1.4%	2.2%	0%	3.3%	0%		3%	1.7%
Lights	196	1120	93	7		1416	251	54	52	0		357	28	1347	69	1		1445	91	40	665	0		796	4014
Lights %	96.6%	99.2%	93.9%	100%		98.5%	99.2%	100%	100%	0%		99.4%	100%	98.9%	93.2%	100%		98.6%	97.8%	100%	96.7%	0%		97%	98.3%
Single-Unit Trucks	1	1	4	0		6	1	0	0	0		1	0	7	0	0		7	0	0	2	0		2	16
Single-Unit Trucks %	0.5%	0.1%	4%	0%		0.4%	0.4%	0%	0%	0%		0.3%	0%	0.5%	0%	0%		0.5%	0%	0%	0.3%	0%		0.2%	0.4%
Buses	6	8	0	0		14	0	0	0	0		0	0	4	5	0		9	2	0	21	0		23	46
Buses %	3%	0.7%	0%	0%		1%	0%	0%	0%	0%		0%	0%	0.3%	6.8%	0%		0.6%	2.2%	0%	3.1%	0%		2.8%	1.1%
Articulated Trucks	0	0	2	0		2	1	0	0	0		1	0	4	0	0		4	0	0	0	0		0	7
Articulated Trucks %	0%	0%	2%	0%		0.1%	0.4%	0%	0%	0%		0.3%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0.2%
Pedestrians	-	-	-	-	0	-	-	-	-	-	12	-	-	-	-	-	10	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	41.4%		-	-	-	-	34.5%		-	-	-	-	24.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

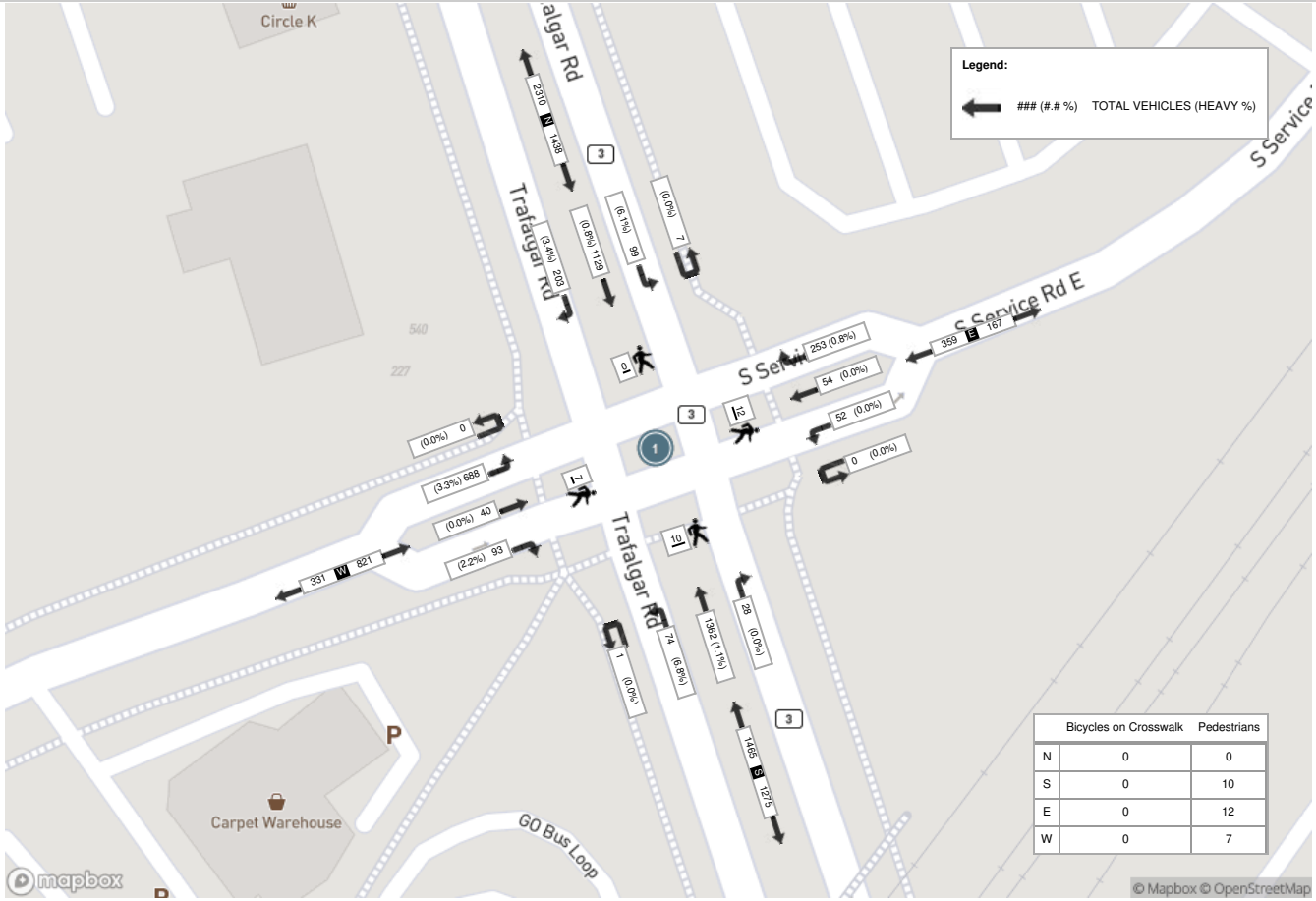
Peak Hour: 07:45 AM - 08:45 AM **Weather: Broken Clouds (-5 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	1
E	1	5
W	1	3

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STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:00 PM - 05:00 PM **Weather: Overcast Clouds (1 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	10
E	0	12
W	0	7

APPENDIX E: LOS Definitions

Level of Service Definitions

Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

APPENDIX F: Detailed Capacity Analyses



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	434	52	78	44	51	78	1	63	1014	23	3	173
Future Volume (vph)	434	52	78	44	51	78	1	63	1014	23	3	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	128.0		0.0	45.0		0.0		112.0		0.0		55.0
Storage Lanes	1		0	1		1		1		0		1
Taper Length (m)	28.0			40.0				35.0				20.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99		1.00					1.00			
Frt		0.910				0.850			0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3236	1605	0	1623	1807	1439	0	1596	4907	0	0	1751
Flt Permitted	0.428			0.671				0.083				0.192
Satd. Flow (perm)	1458	1605	0	1144	1807	1439	0	139	4907	0	0	354
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		59				96			2			
Link Speed (k/h)		50			50				50			
Link Distance (m)		221.1			159.5				228.7			
Travel Time (s)		15.9			11.5				16.5			
Confl. Peds. (#/hr)			1	1				4		6		6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	2%	8%	10%	4%	11%	0%	12%	4%	9%	0%	2%
Adj. Flow (vph)	452	54	81	46	53	81	1	66	1056	24	3	180
Shared Lane Traffic (%)												
Lane Group Flow (vph)	452	135	0	46	53	81	0	67	1080	0	0	183
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(m)		7.0			7.0				3.5			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		4.9			4.9				4.9			
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)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7			28.7				28.7			
Detector 2 Size(m)		1.8			1.8				1.8			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1290	438
Future Volume (vph)	1290	438
Ideal Flow (vphpl)	1900	1900
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor	0.99	
Frt	0.962	
Flt Protected		
Satd. Flow (prot)	4765	0
Flt Permitted		
Satd. Flow (perm)	4765	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	62	
Link Speed (k/h)	50	
Link Distance (m)	348.6	
Travel Time (s)	25.1	
Confl. Peds. (#/hr)		4
Peak Hour Factor	0.96	0.96
Heavy Vehicles (%)	3%	3%
Adj. Flow (vph)	1344	456
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1800	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	3.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	4.9	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	30.5	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	1.8	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	28.7	
Detector 2 Size(m)	1.8	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	pm+pt	NA		Perm	pm+pt
Protected Phases	7	4		3	8			5	2			1
Permitted Phases	4			8		8	2	2			6	6
Detector Phase	7	4		3	8	8	2	5	2		6	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.3		9.5	25.3	25.3	24.3	10.0	24.3		24.3	9.5
Total Split (s)	26.6	56.0		22.4	51.8	51.8	44.8	14.0	44.8		47.6	16.8
Total Split (%)	19.0%	40.0%		16.0%	37.0%	37.0%	32.0%	10.0%	32.0%		34.0%	12.0%
Maximum Green (s)	19.6	48.7		18.4	44.5	44.5	38.5	9.0	38.5		41.3	12.8
Yellow Time (s)	4.0	3.5		3.0	3.5	3.5	3.6	3.0	3.6		3.6	3.0
All-Red Time (s)	3.0	3.8		1.0	3.8	3.8	2.7	2.0	2.7		2.7	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	7.0	7.3		4.0	7.3	7.3		5.0	6.3			4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	None	C-Max		C-Max	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0		7.0		7.0	
Flash Don't Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0		11.0	
Pedestrian Calls (#/hr)	0	0			0	0	0		0		0	
Act Effct Green (s)	36.4	25.5		21.3	9.5	9.5		79.0	70.1			92.6
Actuated g/C Ratio	0.26	0.18		0.15	0.07	0.07		0.56	0.50			0.66
v/c Ratio	0.72	0.40		0.23	0.43	0.43		0.42	0.44			0.46
Control Delay (s/veh)	51.6	32.6		40.1	72.7	15.0		21.4	24.0			13.3
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay (s/veh)	51.6	32.6		40.1	72.7	15.0		21.4	24.0			13.3
LOS	D	C		D	E	B		C	C			B
Approach Delay (s/veh)		47.2			38.4				23.8			
Approach LOS		D			D				C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 14 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 26.8		Intersection LOS: C	
Intersection Capacity Utilization 76.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Trafalgar Road & Cross Avenue/South Service Road East





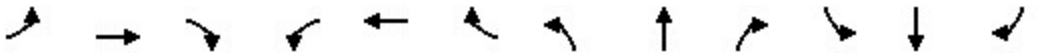
Lane Group	SBT	SBR
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	24.3	
Total Split (s)	47.6	
Total Split (%)	34.0%	
Maximum Green (s)	41.3	
Yellow Time (s)	3.6	
All-Red Time (s)	2.7	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.3	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Don't Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	79.8	
Actuated g/C Ratio	0.57	
v/c Ratio	0.66	
Control Delay (s/veh)	22.3	
Queue Delay	0.0	
Total Delay (s/veh)	22.3	
LOS	C	
Approach Delay (s/veh)	21.5	
Approach LOS	C	

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	452	135	46	53	81	67	1080	183	1800
v/c Ratio	0.72	0.40	0.23	0.43	0.43	0.42	0.44	0.46	0.66
Control Delay (s/veh)	51.6	32.6	40.1	72.7	15.0	21.4	24.0	13.3	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.6	32.6	40.1	72.7	15.0	21.4	24.0	13.3	22.3
Queue Length 50th (m)	55.8	18.6	9.5	14.4	0.0	6.3	68.8	17.9	121.2
Queue Length 95th (m)	70.2	39.1	18.9	27.9	11.6	14.7	91.5	29.8	151.2
Internal Link Dist (m)		197.1		135.5			204.7		324.6
Turn Bay Length (m)	128.0		45.0			112.0		55.0	
Base Capacity (vph)	627	596	317	574	522	175	2456	402	2744
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.23	0.15	0.09	0.16	0.38	0.44	0.46	0.66

Intersection Summary

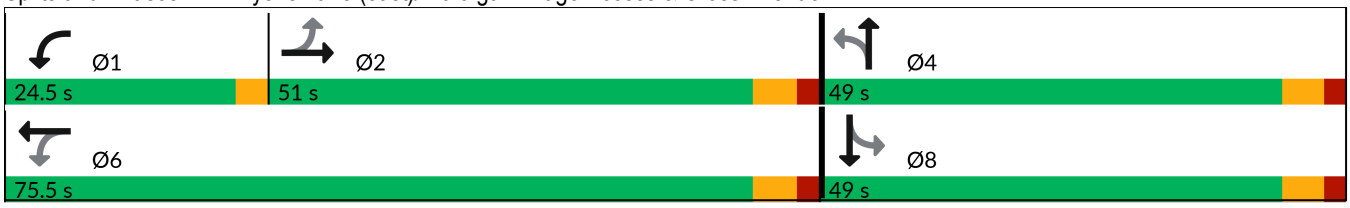


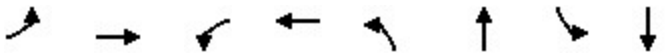
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	154	130	231	116	6	23	3	31	15	12	38
Future Volume (vph)	49	154	130	231	116	6	23	3	31	15	12	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	27.5		0.0	30.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.6			20.0			35.0			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				1.00		1.00	0.98		0.99	0.99	
Frt		0.931			0.993			0.862			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3105	0	1785	3049	0	1785	1583	0	1668	1608	0
Flt Permitted	0.662			0.518			0.719			0.732		
Satd. Flow (perm)	1223	3105	0	973	3049	0	1346	1583	0	1270	1608	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		151			7			36			44	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		36.7			249.4			187.2			81.9	
Travel Time (s)		2.6			18.0			13.5			5.9	
Confl. Peds. (#/hr)	6					6	2		6	6		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	13%	0%	0%	16%	17%	0%	0%	0%	7%	0%	3%
Adj. Flow (vph)	57	179	151	269	135	7	27	3	36	17	14	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	330	0	269	142	0	27	39	0	17	58	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	16.8		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		15.0			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	35.0	35.0		8.0	35.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0		22.5	41.0		28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0		24.5	75.5		49.0	49.0		49.0	49.0	
Total Split (%)	41.0%	41.0%		19.7%	60.6%		39.4%	39.4%		39.4%	39.4%	
Maximum Green (s)	45.0	45.0		21.5	69.5		43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		0.0	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		3.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	45.4	45.4		60.2	58.7		10.2	10.2		10.2	10.2	
Actuated g/C Ratio	0.60	0.60		0.80	0.78		0.13	0.13		0.13	0.13	
v/c Ratio	0.08	0.17		0.31	0.06		0.15	0.16		0.10	0.23	
Control Delay (s/veh)	8.3	4.6		3.5	3.1		33.2	14.0		32.4	16.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	8.3	4.6		3.5	3.1		33.2	14.0		32.4	16.3	
LOS	A	A		A	A		C	B		C	B	
Approach Delay (s/veh)		5.1			3.4			21.8			20.0	
Approach LOS		A			A			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.5			
Actuated Cycle Length: 75.6			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay (s/veh): 6.7		Intersection LOS: A	
Intersection Capacity Utilization 82.9%		ICU Level of Service E	
Analysis Period (min) 15			

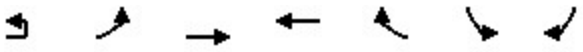
Splits and Phases: 2: Lyons Lane (east)/Trafalgar Village Access & Cross Avenue





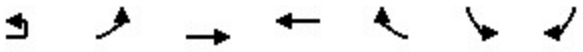
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	57	330	269	142	27	39	17	58
v/c Ratio	0.08	0.17	0.31	0.06	0.15	0.16	0.10	0.23
Control Delay (s/veh)	8.3	4.6	3.5	3.1	33.2	14.0	32.4	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.3	4.6	3.5	3.1	33.2	14.0	32.4	16.3
Queue Length 50th (m)	3.5	5.7	8.7	2.5	3.6	0.4	2.3	1.9
Queue Length 95th (m)	8.4	11.1	14.1	4.5	10.3	8.0	7.5	11.1
Internal Link Dist (m)		12.7		225.4		163.2		57.9
Turn Bay Length (m)			27.5		30.0			
Base Capacity (vph)	734	1925	1008	2756	772	924	729	941
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	0.08	0.17	0.27	0.05	0.03	0.04	0.02	0.06

Intersection Summary



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	9	296	212	7	3	5
Future Volume (vph)	1	9	296	212	7	3	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		10.0			0.0	0.0	0.0
Storage Lanes		1			0	1	0
Taper Length (m)		25.0				7.6	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor							
Frt				0.995		0.916	
Flt Protected		0.950				0.982	
Satd. Flow (prot)	0	1785	3336	3253	0	1690	0
Flt Permitted		0.950				0.982	
Satd. Flow (perm)	0	1785	3336	3253	0	1690	0
Link Speed (k/h)			50	50		50	
Link Distance (m)			318.9	36.7		217.3	
Travel Time (s)			23.0	2.6		15.6	
Confl. Peds. (#/hr)		8			8	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	7%	9%	15%	0%	0%
Adj. Flow (vph)	1	10	318	228	8	3	5
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	11	318	236	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(m)			3.5	3.5		3.5	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			4.9	4.9		4.9	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Sign Control			Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	9	296	212	7	3	5
Future Volume (Veh/h)	1	9	296	212	7	3	5
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	10	318	228	8	3	5
Pedestrians				1		8	
Lane Width (m)				3.5		3.5	
Walking Speed (m/s)				1.1		1.1	
Percent Blockage				0		1	
Right turn flare (veh)							
Median type			None	None			
Median storage veh)							
Upstream signal (m)				37			
pX, platoon unblocked	0.00						
vC, conflicting volume	0	244				420	126
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	244				420	126
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	99				99	99
cM capacity (veh/h)	0	1324				558	901

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	10	159	159	152	84	8
Volume Left	10	0	0	0	0	3
Volume Right	0	0	0	0	8	5
cSH	1324	1700	1700	1700	1700	732
Volume to Capacity	0.01	0.09	0.09	0.09	0.05	0.01
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	0.3
Control Delay (s/veh)	7.7	0.0	0.0	0.0	0.0	10.0
Lane LOS	A					A
Approach Delay (s/veh)	0.2			0.0		10.0
Approach LOS						A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

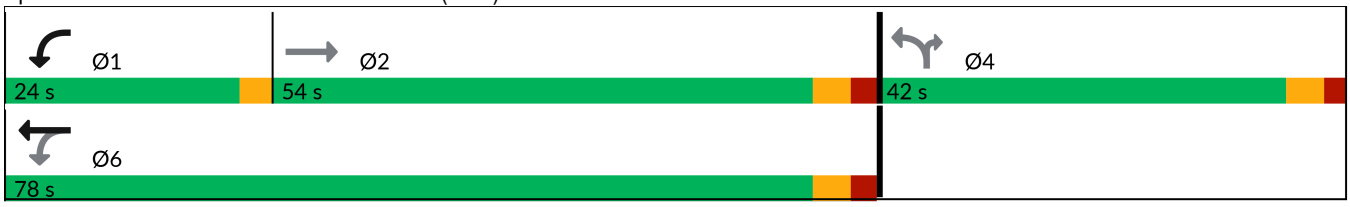
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	215	79	657	410	56	219
Future Volume (vph)	215	79	657	410	56	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99			1.00	1.00	0.98
Frt	0.960					0.850
Flt Protected				0.970	0.950	
Satd. Flow (prot)	3156	0	0	3385	1785	1581
Flt Permitted				0.644	0.950	
Satd. Flow (perm)	3156	0	0	2243	1782	1547
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	53					249
Link Speed (k/h)	50			50	40	
Link Distance (m)	249.4			129.0	115.8	
Travel Time (s)	18.0			9.3	10.4	
Confl. Peds. (#/hr)		2	2		1	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	10%	2%	0%	6%	0%	1%
Adj. Flow (vph)	244	90	747	466	64	249
Shared Lane Traffic (%)						
Lane Group Flow (vph)	334	0	0	1213	64	249
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	30.5		6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8		6.1	1.8	6.1	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Perm	Perm
Protected Phases			1	6		
Permitted Phases	2		6		4	4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		1	6	4	4
Switch Phase						
Minimum Initial (s)	22.0		7.0	22.0	5.0	5.0
Minimum Split (s)	27.6		10.0	27.6	27.3	27.3
Total Split (s)	54.0		24.0	78.0	42.0	42.0
Total Split (%)	45.0%		20.0%	65.0%	35.0%	35.0%
Maximum Green (s)	48.4		21.0	72.4	36.7	36.7
Yellow Time (s)	3.3		3.0	3.3	3.3	3.3
All-Red Time (s)	2.3		0.0	2.3	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.6			5.6	5.3	5.3
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	15.0			15.0	15.0	15.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	53.3			53.3	8.9	8.9
Actuated g/C Ratio	0.73			0.73	0.12	0.12
v/c Ratio	0.14			1.00dl	0.30	0.61
Control Delay (s/veh)	2.8			9.7	35.2	12.1
Queue Delay	0.0			0.1	0.0	0.0
Total Delay (s/veh)	2.8			9.8	35.2	12.1
LOS	A			A	D	B
Approach Delay (s/veh)	2.8			9.8	16.9	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 73.3			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 9.7		Intersection LOS: A	
Intersection Capacity Utilization 75.2%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Oakville GO Access (west) & Cross Avenue

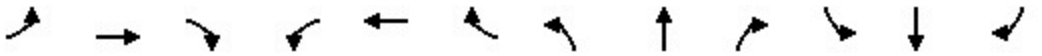




Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	334	1213	64	249
v/c Ratio	0.14	1.00dl	0.30	0.61
Control Delay (s/veh)	2.8	9.7	35.2	12.1
Queue Delay	0.0	0.1	0.0	0.0
Total Delay (s/veh)	2.8	9.8	35.2	12.1
Queue Length 50th (m)	4.6	39.8	7.5	0.0
Queue Length 95th (m)	9.4	72.7	22.3	19.1
Internal Link Dist (m)	225.4	105.0	91.8	
Turn Bay Length (m)				
Base Capacity (vph)	2309	2130	911	912
Starvation Cap Reductn	0	148	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.61	0.07	0.27

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

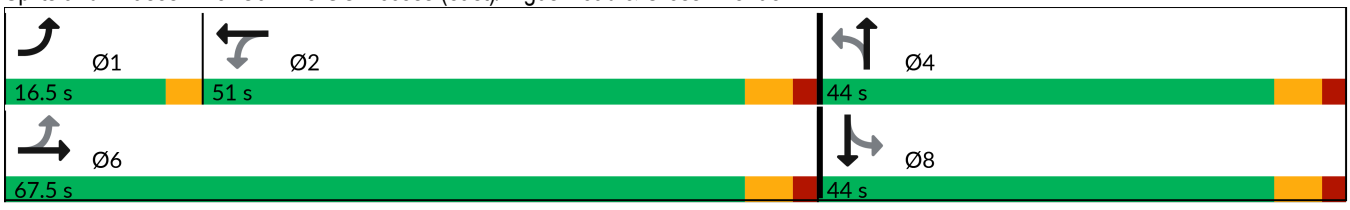


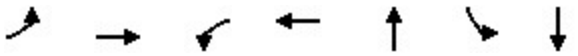
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	406	16	14	481	22	16	0	28	68	15	584
Future Volume (vph)	16	406	16	14	481	22	16	0	28	68	15	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	22.0		0.0	0.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	35.0			25.0			7.6			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00			0.98		0.98	0.96	
Frt		0.994			0.993			0.914			0.854	
Flt Protected	0.950			0.950				0.982		0.950		
Satd. Flow (prot)	1785	3362	0	925	3500	0	0	832	0	1785	1509	0
Flt Permitted	0.398			0.488				0.378		0.726		
Satd. Flow (perm)	746	3362	0	471	3500	0	0	320	0	1332	1509	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			5			59			404	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.0			221.1			107.9			135.0	
Travel Time (s)		9.3			15.9			7.8			9.7	
Confl. Peds. (#/hr)	2		6	6		2	18		17	17		18
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%	2%	94%	93%	1%	5%	100%	0%	97%	0%	100%	0%
Adj. Flow (vph)	17	441	17	15	523	24	17	0	30	74	16	635
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	458	0	15	547	0	0	47	0	74	651	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	30.0		22.0	22.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.5	36.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	16.5	67.5		51.0	51.0		44.0	44.0		44.0	44.0	
Total Split (%)	14.8%	60.5%		45.7%	45.7%		39.5%	39.5%		39.5%	39.5%	
Maximum Green (s)	13.5	61.5		45.0	45.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	53.1	50.0		46.3	46.3			26.7		26.7	26.7	
Actuated g/C Ratio	0.60	0.56		0.52	0.52			0.30		0.30	0.30	
v/c Ratio	0.03	0.24		0.06	0.30			0.34		0.19	0.89	
Control Delay (s/veh)	10.3	11.5		17.9	15.4			11.9		23.9	26.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay (s/veh)	10.3	11.5		17.9	15.4			11.9		23.9	26.1	
LOS	B	B		B	B			B		C	C	
Approach Delay (s/veh)		11.5			15.5			11.9			25.9	
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 111.5			
Actuated Cycle Length: 89			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay (s/veh): 18.5		Intersection LOS: B	
Intersection Capacity Utilization 73.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Oakville GO Access (east)/Argus Road & Cross Avenue

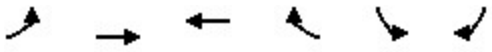




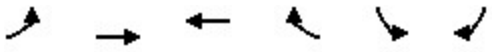
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	17	458	15	547	47	74	651
v/c Ratio	0.03	0.24	0.06	0.30	0.34	0.19	0.89
Control Delay (s/veh)	10.3	11.5	17.9	15.4	11.9	23.9	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.3	11.5	17.9	15.4	11.9	23.9	26.1
Queue Length 50th (m)	1.1	20.0	1.1	24.5	0.0	8.4	37.9
Queue Length 95th (m)	4.5	35.2	6.1	52.4	7.2	20.5	#105.1
Internal Link Dist (m)		105.0		197.1	83.9		111.0
Turn Bay Length (m)	40.0		22.0			15.0	
Base Capacity (vph)	607	2391	244	1823	173	585	889
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.19	0.06	0.30	0.27	0.13	0.73

Intersection Summary

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



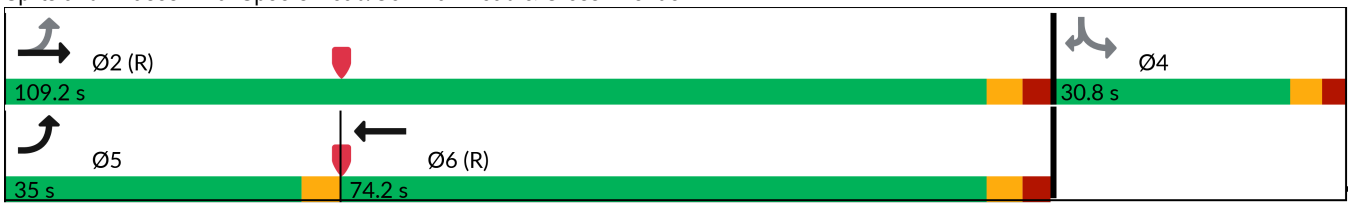
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	291	698	577	19	9	215
Future Volume (vph)	291	698	577	19	9	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0			0.0	40.0	0.0
Storage Lanes	1			0	1	2
Taper Length (m)	25.0				50.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.88
Ped Bike Factor	1.00		1.00			
Frt			0.995			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1668	3466	3416	0	1785	2579
Flt Permitted	0.392				0.950	
Satd. Flow (perm)	685	3466	3416	0	1785	2579
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3			226
Link Speed (k/h)		60	60		50	
Link Distance (m)		161.4	196.6		130.4	
Travel Time (s)		9.7	11.8		9.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	3%	4%	0%	0%	9%
Adj. Flow (vph)	306	735	607	20	9	226
Shared Lane Traffic (%)						
Lane Group Flow (vph)	306	735	627	0	9	226
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

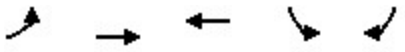


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2				4	4
Detector Phase	5	2	6		4	4
Switch Phase						
Minimum Initial (s)	6.0	38.0	38.0		10.0	10.0
Minimum Split (s)	12.0	47.6	47.6		33.8	33.8
Total Split (s)	35.0	109.2	74.2		30.8	30.8
Total Split (%)	25.0%	78.0%	53.0%		22.0%	22.0%
Maximum Green (s)	31.0	102.6	67.6		25.0	25.0
Yellow Time (s)	4.0	3.7	3.7		3.3	3.3
All-Red Time (s)	0.0	2.9	2.9		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	6.6	6.6		5.8	5.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.5	5.0	5.0		3.0	3.0
Recall Mode	None	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		31.0	31.0		18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	120.0	117.4	102.8		10.2	10.2
Actuated g/C Ratio	0.86	0.84	0.73		0.07	0.07
v/c Ratio	0.46	0.25	0.25		0.07	0.57
Control Delay (s/veh)	4.1	2.6	6.5		61.6	13.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	4.1	2.6	6.5		61.6	13.3
LOS	A	A	A		E	B
Approach Delay (s/veh)		3.0	6.5		15.2	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 35 (25%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 5.7		Intersection LOS: A	
Intersection Capacity Utilization 72.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Speers Road/Cornwall Road & Cross Avenue





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	306	735	627	9	226
v/c Ratio	0.46	0.25	0.25	0.07	0.57
Control Delay (s/veh)	4.1	2.6	6.5	61.6	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.1	2.6	6.5	61.6	13.3
Queue Length 50th (m)	11.0	17.0	26.1	2.4	0.0
Queue Length 95th (m)	17.1	22.5	36.9	8.2	13.7
Internal Link Dist (m)		137.4	172.6	106.4	
Turn Bay Length (m)	75.0			40.0	
Base Capacity (vph)	804	2905	2509	318	646
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.25	0.25	0.03	0.35

Intersection Summary

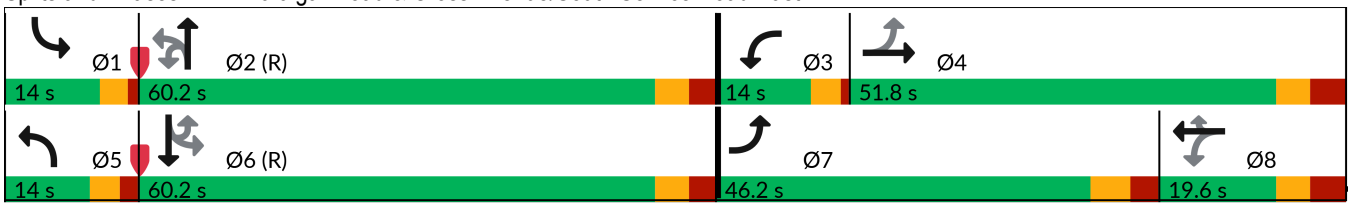
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	688	40	93	52	54	253	1	74	1362	28	7	99
Future Volume (vph)	688	40	93	52	54	253	1	74	1362	28	7	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	128.0		0.0	45.0		0.0		112.0		0.0		55.0
Storage Lanes	1		0	1		1		1		0		1
Taper Length (m)	28.0			40.0				35.0				20.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Ped Bike Factor		0.98		0.98					1.00			
Frt		0.895				0.850			0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3330	1607	0	1785	1879	1581	0	1670	5009	0	0	1676
Flt Permitted	0.490			0.665				0.079				0.073
Satd. Flow (perm)	1717	1607	0	1226	1879	1581	0	139	5009	0	0	129
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		89				150			2			
Link Speed (k/h)		50			50				50			
Link Distance (m)		221.1			159.5				228.7			
Travel Time (s)		15.9			11.5				16.5			
Confl. Peds. (#/hr)			10	10				7		12		12
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%	0%	3%	0%	0%	1%	0%	7%	2%	0%	0%	7%
Adj. Flow (vph)	748	43	101	57	59	275	1	80	1480	30	8	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	748	144	0	57	59	275	0	81	1510	0	0	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(m)		7.0			7.0				3.5			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		4.9			4.9				4.9			
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)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7			28.7				28.7			
Detector 2 Size(m)		1.8			1.8				1.8			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1129	203
Future Volume (vph)	1129	203
Ideal Flow (vphpl)	1900	1900
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor	1.00	
Frt	0.977	
Flt Protected		
Satd. Flow (prot)	4918	0
Flt Permitted		
Satd. Flow (perm)	4918	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	30	
Link Speed (k/h)	50	
Link Distance (m)	348.6	
Travel Time (s)	25.1	
Confl. Peds. (#/hr)		7
Peak Hour Factor	0.92	0.92
Heavy Vehicles (%)	1%	4%
Adj. Flow (vph)	1227	221
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1448	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	3.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	4.9	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	30.5	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	1.8	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	28.7	
Detector 2 Size(m)	1.8	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	pm+pt	NA		Perm	pm+pt
Protected Phases	7	4		3	8			5	2			1
Permitted Phases	4			8		8	2	2			6	6
Detector Phase	7	4		3	8	8	2	5	2		6	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.3		9.5	25.3	25.3	24.3	10.0	24.3		24.3	9.5
Total Split (s)	46.2	51.8		14.0	19.6	19.6	60.2	14.0	60.2		60.2	14.0
Total Split (%)	33.0%	37.0%		10.0%	14.0%	14.0%	43.0%	10.0%	43.0%		43.0%	10.0%
Maximum Green (s)	39.2	44.5		10.0	12.3	12.3	53.9	9.0	53.9		53.9	10.0
Yellow Time (s)	4.0	3.5		3.0	3.5	3.5	3.6	3.0	3.6		3.6	3.0
All-Red Time (s)	3.0	3.8		1.0	3.8	3.8	2.7	2.0	2.7		2.7	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	7.0	7.3		4.0	7.3	7.3		5.0	6.3			4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	None	C-Max		C-Max	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0		7.0		7.0	
Flash Don't Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0		11.0	
Pedestrian Calls (#/hr)	0	0			0	0	0		0		0	
Act Effct Green (s)	58.1	47.7		25.6	14.2	14.2		64.7	55.2			67.1
Actuated g/C Ratio	0.42	0.34		0.18	0.10	0.10		0.46	0.39			0.48
v/c Ratio	0.66	0.24		0.22	0.31	0.93		0.53	0.76			0.70
Control Delay (s/veh)	34.1	15.1		30.0	64.3	65.8		33.1	40.2			48.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay (s/veh)	34.1	15.1		30.0	64.3	65.8		33.1	40.2			48.2
LOS	C	B		C	E	E		C	D			D
Approach Delay (s/veh)		31.0			60.4				39.8			
Approach LOS		C			E				D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 14 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay (s/veh): 39.6		Intersection LOS: D	
Intersection Capacity Utilization 88.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Trafalgar Road & Cross Avenue/South Service Road East





Lane Group	SBT	SBR
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	24.3	
Total Split (s)	60.2	
Total Split (%)	43.0%	
Maximum Green (s)	53.9	
Yellow Time (s)	3.6	
All-Red Time (s)	2.7	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.3	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Don't Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	55.4	
Actuated g/C Ratio	0.40	
v/c Ratio	0.74	
Control Delay (s/veh)	38.4	
Queue Delay	0.0	
Total Delay (s/veh)	38.4	
LOS	D	
Approach Delay (s/veh)	39.1	
Approach LOS	D	

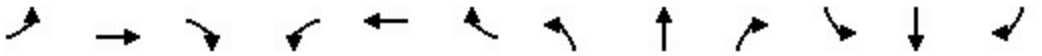
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	748	144	57	59	275	81	1510	116	1448
v/c Ratio	0.66	0.24	0.22	0.31	0.93	0.53	0.76	0.70	0.74
Control Delay (s/veh)	34.1	15.1	30.0	64.3	65.8	33.1	40.2	48.2	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.1	15.1	30.0	64.3	65.8	33.1	40.2	48.2	38.4
Queue Length 50th (m)	79.0	10.5	9.0	15.6	36.6	11.7	133.7	16.8	124.2
Queue Length 95th (m)	97.6	27.4	17.5	30.3	#94.9	22.7	152.3	#41.8	142.5
Internal Link Dist (m)		197.1		135.5			204.7		324.6
Turn Bay Length (m)	128.0		45.0			112.0		55.0	
Base Capacity (vph)	1163	606	281	191	295	163	1975	172	1962
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.24	0.20	0.31	0.93	0.50	0.76	0.67	0.74

Intersection Summary

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

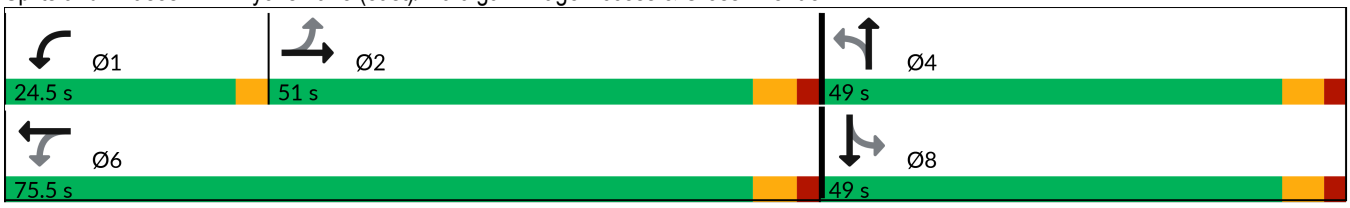


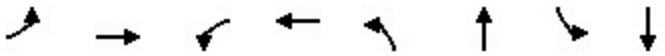
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	186	15	30	312	12	121	7	96	26	3	62
Future Volume (vph)	48	186	15	30	312	12	121	7	96	26	3	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	27.5		0.0	30.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.6			20.0			35.0			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Frt		0.989			0.994			0.860			0.856	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3310	0	1785	3340	0	1785	1590	0	1785	1582	0
Flt Permitted	0.528			0.569			0.708			0.680		
Satd. Flow (perm)	982	3310	0	1067	3340	0	1326	1590	0	1272	1582	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			5			112			72	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		36.7			249.4			187.2			81.9	
Travel Time (s)		2.6			18.0			13.5			5.9	
Confl. Peds. (#/hr)	6		1	1		6	2		3	3		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	7%	0%	0%	6%	9%	0%	0%	0%	0%	4%	0%
Adj. Flow (vph)	56	216	17	35	363	14	141	8	112	30	3	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	233	0	35	377	0	141	120	0	30	75	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	35.0	35.0		8.0	35.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0		22.5	41.0		28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0		24.5	75.5		49.0	49.0		49.0	49.0	
Total Split (%)	41.0%	41.0%		19.7%	60.6%		39.4%	39.4%		39.4%	39.4%	
Maximum Green (s)	45.0	45.0		21.5	69.5		43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		0.0	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		3.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		0.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0		0.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.6	45.6		54.7	51.7		14.8	14.8		14.8	14.8	
Actuated g/C Ratio	0.58	0.58		0.70	0.66		0.19	0.19		0.19	0.19	
v/c Ratio	0.10	0.12		0.04	0.17		0.57	0.31		0.13	0.21	
Control Delay (s/veh)	10.8	9.2		4.7	5.8		39.2	9.2		28.7	9.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.8	9.2		4.7	5.8		39.2	9.2		28.7	9.5	
LOS	B	A		A	A		D	A		C	A	
Approach Delay (s/veh)		9.5			5.7			25.4			15.0	
Approach LOS		A			A			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.5			
Actuated Cycle Length: 78.7			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 12.5		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

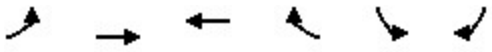
Splits and Phases: 2: Lyons Lane (east)/Trafalgar Village Access & Cross Avenue





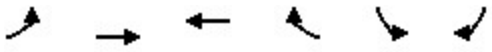
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	56	233	35	377	141	120	30	75
v/c Ratio	0.10	0.12	0.04	0.17	0.57	0.31	0.13	0.21
Control Delay (s/veh)	10.8	9.2	4.7	5.8	39.2	9.2	28.7	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.8	9.2	4.7	5.8	39.2	9.2	28.7	9.5
Queue Length 50th (m)	4.0	8.5	1.3	9.6	20.7	1.1	4.0	0.4
Queue Length 95th (m)	10.7	15.7	4.5	17.8	36.1	12.3	10.4	9.6
Internal Link Dist (m)		12.7		225.4		163.2		57.9
Turn Bay Length (m)			27.5		30.0			
Base Capacity (vph)	569	1922	941	2959	734	931	704	909
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	0.10	0.12	0.04	0.13	0.19	0.13	0.04	0.08

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	246	494	4	5	16
Future Volume (vph)	4	246	494	4	5	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	10.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	25.0				7.6	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.896	
Flt Protected	0.950				0.989	
Satd. Flow (prot)	1785	3368	3430	0	1665	0
Flt Permitted	0.950				0.989	
Satd. Flow (perm)	1785	3368	3430	0	1665	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		318.9	36.7		217.3	
Travel Time (s)		23.0	2.6		15.6	
Confl. Peds. (#/hr)	6			6		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	6%	4%	0%	0%	0%
Adj. Flow (vph)	5	304	610	5	6	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	304	615	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	246	494	4	5	16
Future Volume (Veh/h)	4	246	494	4	5	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	5	304	610	5	6	20
Pedestrians					6	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			37			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	621				781	314
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	531				697	212
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	97
cM capacity (veh/h)	1003				362	766

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	5	152	152	407	208	26
Volume Left	5	0	0	0	0	6
Volume Right	0	0	0	0	5	20
cSH	1003	1700	1700	1700	1700	609
Volume to Capacity	0.00	0.09	0.09	0.24	0.12	0.04
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	1.0
Control Delay (s/veh)	8.6	0.0	0.0	0.0	0.0	11.2
Lane LOS	A					B
Approach Delay (s/veh)	0.1			0.0		11.2
Approach LOS						B

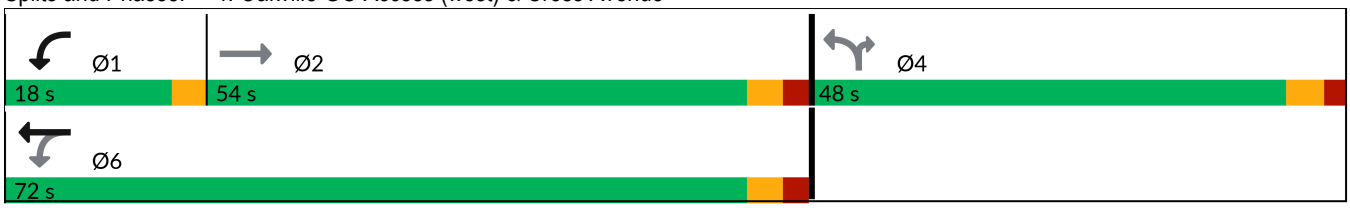
Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	23.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	468	55	227	310	101	324
Future Volume (vph)	468	55	227	310	101	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00			1.00	0.98	0.97
Frt	0.984					0.850
Flt Protected				0.979	0.950	
Satd. Flow (prot)	3408	0	0	3359	1785	1597
Flt Permitted				0.621	0.950	
Satd. Flow (perm)	3408	0	0	2126	1750	1552
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	12					356
Link Speed (k/h)	50			50	40	
Link Distance (m)	249.4			129.0	115.8	
Travel Time (s)	18.0			9.3	10.4	
Confl. Peds. (#/hr)		6	6		12	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	0%	0%	7%	0%	0%
Adj. Flow (vph)	514	60	249	341	111	356
Shared Lane Traffic (%)						
Lane Group Flow (vph)	574	0	0	590	111	356
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	30.5		6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8		6.1	1.8	6.1	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Perm	Perm
Protected Phases			1	6		
Permitted Phases	2		6		4	4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		1	6	4	4
Switch Phase						
Minimum Initial (s)	22.0		7.0	22.0	5.0	5.0
Minimum Split (s)	27.6		10.0	27.6	27.3	27.3
Total Split (s)	54.0		18.0	72.0	48.0	48.0
Total Split (%)	45.0%		15.0%	60.0%	40.0%	40.0%
Maximum Green (s)	48.4		15.0	66.4	42.7	42.7
Yellow Time (s)	3.3		3.0	3.3	3.3	3.3
All-Red Time (s)	2.3		0.0	2.3	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.6			5.6	5.3	5.3
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)	15.0		0.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	48.5			48.5	9.7	9.7
Actuated g/C Ratio	0.70			0.70	0.14	0.14
v/c Ratio	0.24			0.40	0.45	0.68
Control Delay (s/veh)	4.1			5.5	33.3	10.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay (s/veh)	4.1			5.5	33.3	10.8
LOS	A			A	C	B
Approach Delay (s/veh)	4.1			5.5	16.1	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 69.1			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 8.1		Intersection LOS: A	
Intersection Capacity Utilization 59.6%		ICU Level of Service B	
Analysis Period (min) 15			

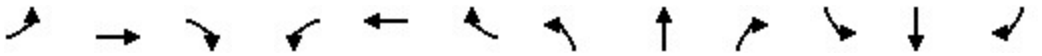
Splits and Phases: 4: Oakville GO Access (west) & Cross Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	574	590	111	356
v/c Ratio	0.24	0.40	0.45	0.68
Control Delay (s/veh)	4.1	5.5	33.3	10.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.1	5.5	33.3	10.8
Queue Length 50th (m)	10.8	13.1	13.4	0.0
Queue Length 95th (m)	19.4	24.8	26.9	20.7
Internal Link Dist (m)	225.4	105.0	91.8	
Turn Bay Length (m)				
Base Capacity (vph)	2394	2044	1083	1096
Starvation Cap Reductn	0	92	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.30	0.10	0.32

Intersection Summary

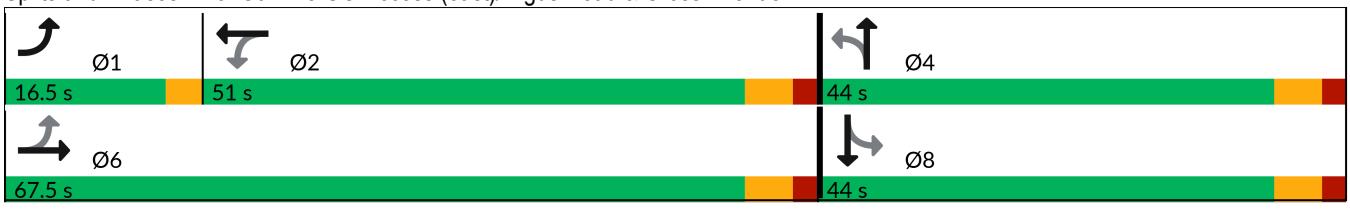


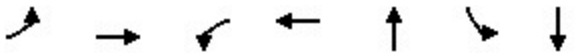
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	776	12	12	304	27	16	3	28	133	21	212
Future Volume (vph)	18	776	12	12	304	27	16	3	28	133	21	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	22.0		0.0	0.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	35.0			25.0			7.6			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00			0.95		0.95	0.95	
Frt		0.998			0.988			0.920			0.863	
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1785	3475	0	930	3485	0	0	822	0	1785	1395	0
Flt Permitted	0.500			0.324				0.788		0.723		
Satd. Flow (perm)	931	3475	0	316	3485	0	0	654	0	1285	1395	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			10			31			236	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.0			221.1			107.9			135.0	
Travel Time (s)		9.3			15.9			7.8			9.7	
Confl. Peds. (#/hr)	7		5	5		7	28		40	40		28
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%	1%	100%	92%	1%	0%	100%	67%	100%	0%	100%	2%
Adj. Flow (vph)	20	862	13	13	338	30	18	3	31	148	23	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	875	0	13	368	0	0	52	0	148	259	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	30.0		22.0	22.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.5	36.0		29.0	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	16.5	67.5		51.0	51.0		44.0	44.0		44.0	44.0	
Total Split (%)	14.8%	60.5%		45.7%	45.7%		39.5%	39.5%		39.5%	39.5%	
Maximum Green (s)	13.5	61.5		45.0	45.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	52.6	49.6		45.8	45.8			15.8		15.8	15.8	
Actuated g/C Ratio	0.68	0.64		0.59	0.59			0.20		0.20	0.20	
v/c Ratio	0.03	0.39		0.07	0.18			0.33		0.57	0.55	
Control Delay (s/veh)	5.3	7.9		12.4	9.2			20.9		37.4	10.1	
Queue Delay	0.0	0.1		0.0	0.0			0.0		0.0	0.0	
Total Delay (s/veh)	5.3	8.0		12.4	9.2			20.9		37.4	10.1	
LOS	A	A		B	A			C		D	B	
Approach Delay (s/veh)		7.9			9.3			20.9			20.0	
Approach LOS		A			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 111.5			
Actuated Cycle Length: 77.6			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 11.5		Intersection LOS: B	
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

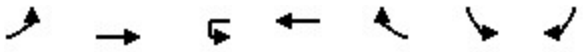
Splits and Phases: 5: Oakville GO Access (east)/Argus Road & Cross Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	20	875	13	368	52	148	259
v/c Ratio	0.03	0.39	0.07	0.18	0.33	0.57	0.55
Control Delay (s/veh)	5.3	7.9	12.4	9.2	20.9	37.4	10.1
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.3	8.0	12.4	9.2	20.9	37.4	10.1
Queue Length 50th (m)	0.8	27.5	0.6	9.4	2.4	18.0	2.5
Queue Length 95th (m)	3.5	51.4	4.6	26.8	12.5	39.9	22.2
Internal Link Dist (m)		105.0		197.1	83.9		111.0
Turn Bay Length (m)	40.0		22.0			15.0	
Base Capacity (vph)	782	2801	186	2059	341	639	813
Starvation Cap Reductn	0	682	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.41	0.07	0.18	0.15	0.23	0.32

Intersection Summary

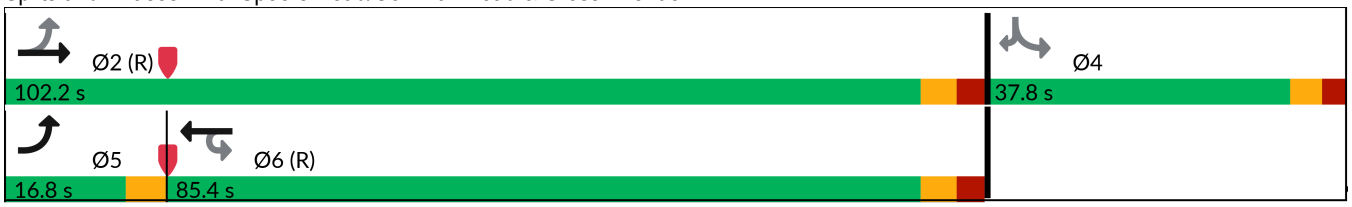


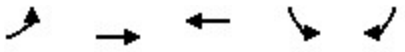
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	204	584	1	942	43	26	477
Future Volume (vph)	204	584	1	942	43	26	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0		0.0	40.0	0.0
Storage Lanes	1		0		0	1	2
Taper Length (m)	25.0		7.6			50.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.88
Ped Bike Factor	1.00			1.00			
Frt				0.993			0.850
Flt Protected	0.950					0.950	
Satd. Flow (prot)	1668	3535	0	3505	0	1785	2703
Flt Permitted	0.235			0.955		0.950	
Satd. Flow (perm)	411	3535	0	3347	0	1785	2703
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				5			415
Link Speed (k/h)		60		60		50	
Link Distance (m)		161.4		196.6		130.4	
Travel Time (s)		9.7		11.8		9.4	
Confl. Peds. (#/hr)	13				13		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	1%	0%	1%	0%	0%	4%
Adj. Flow (vph)	217	621	1	1002	46	28	507
Shared Lane Traffic (%)							
Lane Group Flow (vph)	217	621	0	1049	0	28	507
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	Left	Right
Median Width(m)		3.5		3.5		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		4.9		4.9		4.9	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14		14	24	14
Number of Detectors	1	2	1	2		1	1
Detector Template	Left	Thru	Left	Thru		Left	Right
Leading Detector (m)	6.1	30.5	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7		28.7			
Detector 2 Size(m)		1.8		1.8			
Detector 2 Type		Cl+Ex		Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)		0.0		0.0			

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	Perm	NA		Perm	Perm
Protected Phases	5	2		6			
Permitted Phases	2		6			4	4
Detector Phase	5	2	6	6		4	4
Switch Phase							
Minimum Initial (s)	6.0	38.0	38.0	38.0		10.0	10.0
Minimum Split (s)	12.0	47.6	47.6	47.6		33.8	33.8
Total Split (s)	16.8	102.2	85.4	85.4		37.8	37.8
Total Split (%)	12.0%	73.0%	61.0%	61.0%		27.0%	27.0%
Maximum Green (s)	12.8	95.6	78.8	78.8		32.0	32.0
Yellow Time (s)	4.0	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	0.0	2.9	2.9	2.9		2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.0	6.6		6.6		5.8	5.8
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.5	5.0	5.0	5.0		3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0	10.0		10.0	10.0
Flash Don't Walk (s)		31.0	31.0	31.0		18.0	18.0
Pedestrian Calls (#/hr)		0	0	0		0	0
Act Effct Green (s)	117.1	114.5		100.9		13.1	13.1
Actuated g/C Ratio	0.84	0.82		0.72		0.09	0.09
v/c Ratio	0.50	0.21		0.43		0.17	0.81
Control Delay (s/veh)	6.7	3.2		9.2		58.8	22.7
Queue Delay	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	6.7	3.2		9.2		58.8	22.7
LOS	A	A		A		E	C
Approach Delay (s/veh)		4.1		9.2		24.6	
Approach LOS		A		A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 35 (25%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 10.8		Intersection LOS: B	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Speers Road/Cornwall Road & Cross Avenue





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	217	621	1049	28	507
v/c Ratio	0.50	0.21	0.43	0.17	0.81
Control Delay (s/veh)	6.7	3.2	9.2	58.8	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.7	3.2	9.2	58.8	22.7
Queue Length 50th (m)	7.8	14.5	51.4	7.4	14.0
Queue Length 95th (m)	18.8	27.6	87.6	16.3	33.7
Internal Link Dist (m)		137.4	172.6	106.4	
Turn Bay Length (m)	75.0			40.0	
Base Capacity (vph)	458	2891	2412	408	937
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.21	0.43	0.07	0.54

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	1274	117	156	62	74	144	1	123	1196	33	3	238
Future Volume (vph)	1274	117	156	62	74	144	1	123	1196	33	3	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	128.0		10.0	45.0		0.0		112.0		0.0		55.0
Storage Lanes	1		1	1		1		1		0		1
Taper Length (m)	28.0			40.0				35.0				20.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99		1.00					1.00			
Frt		0.914				0.850			0.996			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3236	3069	0	1623	3433	1439	0	1595	4903	0	0	1750
Flt Permitted	0.429			0.577				0.070				0.114
Satd. Flow (perm)	1461	3069	0	984	3433	1439	0	118	4903	0	0	210
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		163				124			3			
Link Speed (k/h)		50			50				50			
Link Distance (m)		221.1			159.5				228.7			
Travel Time (s)		15.9			11.5				16.5			
Confl. Peds. (#/hr)			1	1				4		6		6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	2%	8%	10%	4%	11%	0%	12%	4%	9%	0%	2%
Adj. Flow (vph)	1327	122	163	65	77	150	1	128	1246	34	3	248
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1327	285	0	65	77	150	0	129	1280	0	0	251
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(m)		7.0			7.0				3.5			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		4.9			4.9				4.9			
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)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7			28.7				28.7			
Detector 2 Size(m)		1.8			1.8				1.8			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1636	488
Future Volume (vph)	1636	488
Ideal Flow (vphpl)	1900	1900
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor	1.00	
Frt	0.966	
Flt Protected		
Satd. Flow (prot)	4787	0
Flt Permitted		
Satd. Flow (perm)	4787	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	54	
Link Speed (k/h)	50	
Link Distance (m)	348.6	
Travel Time (s)	25.1	
Confl. Peds. (#/hr)		4
Peak Hour Factor	0.96	0.96
Heavy Vehicles (%)	3%	3%
Adj. Flow (vph)	1704	508
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2212	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	3.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	4.9	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	30.5	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	1.8	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	28.7	
Detector 2 Size(m)	1.8	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases	4			8		8	2	2			6	6
Detector Phase	7	4		3	8	8	5	5	2		1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.3		9.5	25.3	25.3	10.0	10.0	24.3		9.5	9.5
Total Split (s)	26.6	56.0		22.4	51.8	51.8	14.0	14.0	44.8		16.8	16.8
Total Split (%)	19.0%	40.0%		16.0%	37.0%	37.0%	10.0%	10.0%	32.0%		12.0%	12.0%
Maximum Green (s)	19.6	48.7		18.4	44.5	44.5	9.0	9.0	38.5		12.8	12.8
Yellow Time (s)	4.0	3.5		3.0	3.5	3.5	3.0	3.0	3.6		3.0	3.0
All-Red Time (s)	3.0	3.8		1.0	3.8	3.8	2.0	2.0	2.7		1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	7.0	7.3		4.0	7.3	7.3		5.0	6.3			4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None		None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0			7.0	7.0			7.0			
Flash Don't Walk (s)	11.0	11.0			11.0	11.0			11.0			
Pedestrian Calls (#/hr)	0	0			0	0			0			
Act Effct Green (s)	37.0	25.1		23.0	10.1	10.1		71.3	57.9			92.0
Actuated g/C Ratio	0.26	0.18		0.16	0.07	0.07		0.51	0.41			0.66
v/c Ratio	2.09	0.42		0.32	0.31	0.69		0.69	0.63			0.57
Control Delay (s/veh)	523.8	23.7		41.3	63.7	31.7		49.9	34.6			24.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay (s/veh)	523.8	23.7		41.3	63.7	31.7		49.9	34.6			24.4
LOS	F	C		D	E	C		D	C			C
Approach Delay (s/veh)		435.4			42.3				36.0			
Approach LOS		F			D				D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 14 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.09			
Intersection Signal Delay (s/veh): 146.9		Intersection LOS: F	
Intersection Capacity Utilization 111.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Trafalgar Road & Cross Avenue/South Service Road East





Lane Group	SBT	SBR
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	24.3	
Total Split (s)	47.6	
Total Split (%)	34.0%	
Maximum Green (s)	41.3	
Yellow Time (s)	3.6	
All-Red Time (s)	2.7	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.3	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Don't Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	72.6	
Actuated g/C Ratio	0.52	
v/c Ratio	0.88	
Control Delay (s/veh)	34.9	
Queue Delay	0.0	
Total Delay (s/veh)	34.9	
LOS	C	
Approach Delay (s/veh)	33.9	
Approach LOS	C	

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1327	285	65	77	150	129	1280	251	2212
v/c Ratio	2.09	0.42	0.32	0.31	0.69	0.69	0.63	0.57	0.88
Control Delay (s/veh)	523.8	23.7	41.3	63.7	31.7	49.9	34.6	24.4	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	523.8	23.7	41.3	63.7	31.7	49.9	34.6	24.4	34.9
Queue Length 50th (m)	~276.0	15.8	13.7	11.0	7.0	19.4	97.2	31.8	183.2
Queue Length 95th (m)	#296.2	28.8	23.8	18.3	28.5	42.2	127.1	64.5	#265.7
Internal Link Dist (m)		197.1		135.5			204.7		324.6
Turn Bay Length (m)	128.0		45.0			112.0		55.0	
Base Capacity (vph)	634	1173	307	1091	541	188	2028	444	2508
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.09	0.24	0.21	0.07	0.28	0.69	0.63	0.57	0.88

Intersection Summary

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

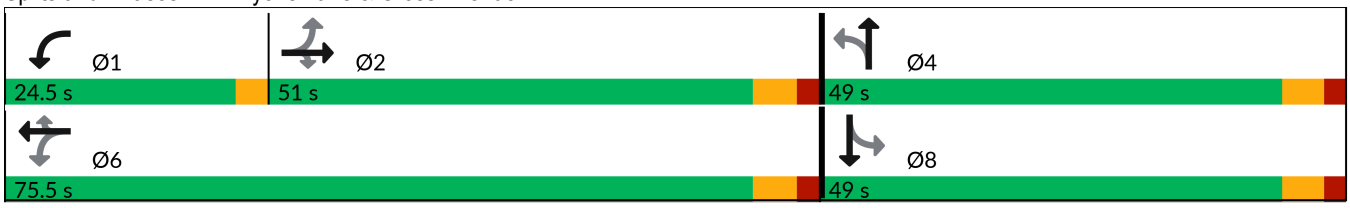
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

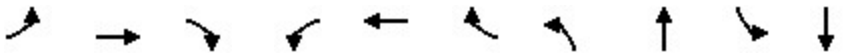
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	252	130	231	198	31	23	3	31	72	12	122
Future Volume (vph)	72	252	130	231	198	31	23	3	31	72	12	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		10.0	27.5		10.0	30.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			20.0			35.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					0.96	1.00	0.98		0.99	0.99	
Frt			0.850			0.850		0.862			0.863	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3159	1597	1785	3077	1365	1785	1583	0	1668	1555	0
Flt Permitted	0.608			0.537			0.627			0.732		
Satd. Flow (perm)	1125	3159	1597	1009	3077	1310	1174	1583	0	1270	1555	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103			36		36			142	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		354.1			65.3			187.2			182.6	
Travel Time (s)		25.5			4.7			13.5			13.1	
Confl. Peds. (#/hr)	6					6	2		6	6		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	13%	0%	0%	16%	17%	0%	0%	0%	7%	0%	3%
Adj. Flow (vph)	84	293	151	269	230	36	27	3	36	84	14	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	293	151	269	230	36	27	39	0	84	156	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left		Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	16.8	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		15.0			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	35.0	35.0	35.0	8.0	35.0	35.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0	41.0	22.5	41.0	41.0	28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0	51.0	24.5	75.5	75.5	49.0	49.0		49.0	49.0	
Total Split (%)	41.0%	41.0%	41.0%	19.7%	60.6%	60.6%	39.4%	39.4%		39.4%	39.4%	
Maximum Green (s)	45.0	45.0	45.0	21.5	69.5	69.5	43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	Max	Max	Max	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)	45.1	45.1	45.1	60.4	57.4	57.4	12.5	12.5		12.5	12.5	
Actuated g/C Ratio	0.55	0.55	0.55	0.74	0.70	0.70	0.15	0.15		0.15	0.15	
v/c Ratio	0.14	0.17	0.16	0.32	0.11	0.04	0.15	0.14		0.44	0.44	
Control Delay (s/veh)	10.8	10.1	4.5	4.7	4.4	1.8	32.3	12.9		39.3	11.4	
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.8	10.1	4.5	5.0	4.4	1.8	32.3	12.9		39.3	11.4	
LOS	B	B	A	A	A	A	C	B		D	B	
Approach Delay (s/veh)		8.6			4.5			20.8			21.2	
Approach LOS		A			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.5			
Actuated Cycle Length: 81.9			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay (s/veh): 9.8		Intersection LOS: A	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			

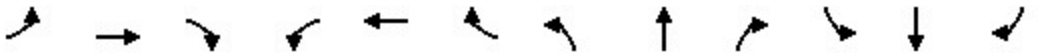
Splits and Phases: 2: Lyons Lane & Cross Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	293	151	269	230	36	27	39	84	156
v/c Ratio	0.14	0.17	0.16	0.32	0.11	0.04	0.15	0.14	0.44	0.44
Control Delay (s/veh)	10.8	10.1	4.5	4.7	4.4	1.8	32.3	12.9	39.3	11.4
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.8	10.1	4.5	5.0	4.4	1.8	32.3	12.9	39.3	11.4
Queue Length 50th (m)	5.7	10.6	3.1	10.0	4.9	0.0	3.7	0.4	11.9	1.9
Queue Length 95th (m)	14.5	19.7	12.1	20.4	9.6	2.5	10.4	7.6	24.7	15.7
Internal Link Dist (m)		330.1			41.3			163.2		158.6
Turn Bay Length (m)	30.0		10.0	27.5		10.0	30.0		15.0	
Base Capacity (vph)	619	1739	925	948	2616	1119	617	849	668	885
Starvation Cap Reductn	0	0	0	271	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	0.14	0.17	0.16	0.40	0.09	0.03	0.04	0.05	0.13	0.18

Intersection Summary



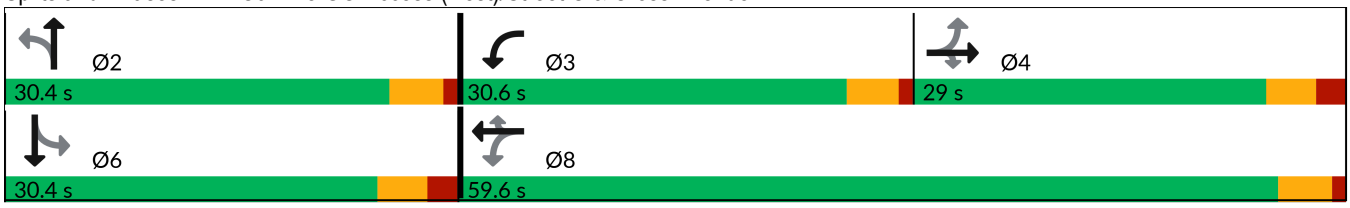
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	312	84	657	511	70	56	0	219	256	0	14
Future Volume (vph)	7	312	84	657	511	70	56	0	219	256	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00	0.98				
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	3245	1566	1785	3368	1566	1785	1548	0	1750	1566	0
Flt Permitted	0.433			0.352			0.748			0.501		
Satd. Flow (perm)	798	3245	1528	660	3368	1566	1404	1548	0	923	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			59		658			319	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		115.8			129.0			115.8			306.6	
Travel Time (s)		8.3			9.3			10.4			22.1	
Confl. Peds. (#/hr)			2	2			1		6			
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	0%	6%	2%	0%	2%	1%	2%	2%	2%
Adj. Flow (vph)	8	355	95	747	581	76	64	0	249	278	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	355	95	747	581	76	64	249	0	278	15	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			-12.5	
Crosswalk Width(m)		4.9			4.9			4.9			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

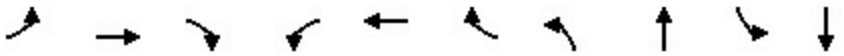
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	27.3	27.3	27.3	9.5	22.5	22.5	22.5	22.5		27.3	27.3	
Total Split (s)	29.0	29.0	29.0	30.6	59.6	59.6	30.4	30.4		30.4	30.4	
Total Split (%)	32.2%	32.2%	32.2%	34.0%	66.2%	66.2%	33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	23.7	23.7	23.7	26.1	55.1	55.1	25.9	25.9		25.1	25.1	
Yellow Time (s)	3.3	3.3	3.3	3.5	3.5	3.5	3.5	3.5		3.3	3.3	
All-Red Time (s)	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3	5.3	4.5	4.5	4.5	4.5	4.5		5.3	5.3	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0	15.0		11.0	11.0	11.0	11.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)	14.5	14.5	14.5	45.9	45.9	45.9	25.9	25.9		25.1	25.1	
Actuated g/C Ratio	0.18	0.18	0.18	0.57	0.57	0.57	0.32	0.32		0.31	0.31	
v/c Ratio	0.06	0.61	0.28	1.01	0.30	0.08	0.14	0.26		0.97	0.02	
Control Delay (s/veh)	27.6	35.2	11.0	54.0	9.5	3.2	21.9	0.7		78.2	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	27.6	35.2	11.0	54.0	9.5	3.2	21.9	0.7		78.2	0.1	
LOS	C	D	B	D	A	A	C	A		E	A	
Approach Delay (s/veh)		30.1			32.8			5.0			74.2	
Approach LOS		C			C			A			E	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 80.9
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay (s/veh): 33.7 Intersection LOS: C
Intersection Capacity Utilization 90.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 4: Oakville GO Access (west)/Street C & Cross Avenue



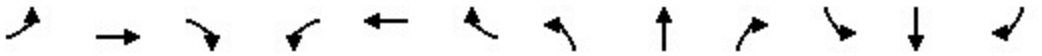


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	355	95	747	581	76	64	249	278	15
v/c Ratio	0.06	0.61	0.28	1.01	0.30	0.08	0.14	0.26	0.97	0.02
Control Delay (s/veh)	27.6	35.2	11.0	54.0	9.5	3.2	21.9	0.7	78.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.6	35.2	11.0	54.0	9.5	3.2	21.9	0.7	78.2	0.1
Queue Length 50th (m)	1.0	26.7	1.7	~87.0	22.5	1.1	6.9	0.0	41.3	0.0
Queue Length 95th (m)	4.5	38.5	12.5	#156.4	30.2	6.1	16.7	0.0	#96.2	0.0
Internal Link Dist (m)		91.8			105.0			91.8		282.6
Turn Bay Length (m)	15.0		10.0	40.0		10.0	15.0		15.0	
Base Capacity (vph)	234	952	506	738	2298	1087	450	943	286	706
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	0.03	0.37	0.19	1.01	0.25	0.07	0.14	0.26	0.97	0.02

Intersection Summary

~ 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.



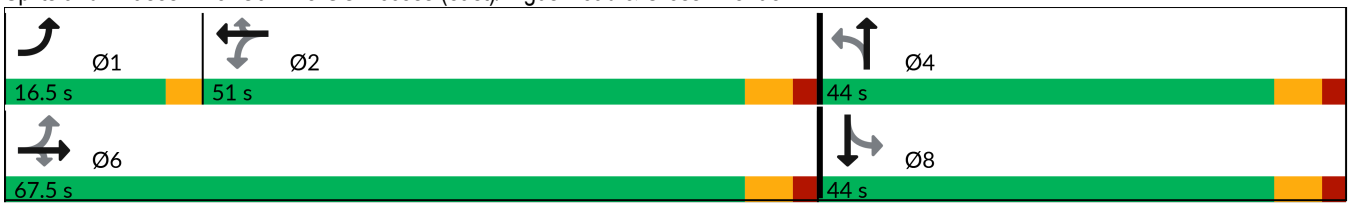
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	756	16	14	571	54	16	0	28	681	15	673
Future Volume (vph)	26	756	16	14	571	54	16	0	28	681	15	673
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0		10.0	22.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			25.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98		0.96		0.98	0.96	
Frt			0.850			0.850		0.850			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3500	823	925	3535	1521	892	781	0	1785	1511	0
Flt Permitted	0.332			0.325			0.105			0.738		
Satd. Flow (perm)	623	3500	795	315	3535	1483	99	781	0	1354	1511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			29			59		149			361	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.0			221.1			107.9			135.0	
Travel Time (s)		9.3			15.9			7.8			9.7	
Confl. Peds. (#/hr)	2		6	6		2	18		17	17		18
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%	2%	94%	93%	1%	5%	100%	0%	97%	0%	100%	0%
Adj. Flow (vph)	28	822	17	15	621	59	17	0	30	740	16	732
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	822	17	15	621	59	17	30	0	740	748	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

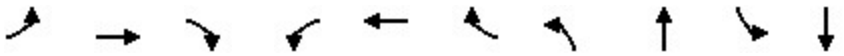
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	1	6	6	2	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	30.0	30.0	22.0	22.0	22.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	12.5	36.0	36.0	29.0	29.0	29.0	29.0	29.0		29.0	29.0	
Total Split (s)	16.5	67.5	67.5	51.0	51.0	51.0	44.0	44.0		44.0	44.0	
Total Split (%)	14.8%	60.5%	60.5%	45.7%	45.7%	45.7%	39.5%	39.5%		39.5%	39.5%	
Maximum Green (s)	13.5	61.5	61.5	45.0	45.0	45.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	2.5	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	None	None	None	Max	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	54.5	51.5	51.5	45.1	45.1	45.1	38.1	38.1		38.1	38.1	
Actuated g/C Ratio	0.54	0.51	0.51	0.44	0.44	0.44	0.38	0.38		0.38	0.38	
v/c Ratio	0.07	0.46	0.04	0.11	0.40	0.09	0.46	0.08		1.46	0.94	
Control Delay (s/veh)	11.1	17.0	2.6	21.1	20.7	5.3	71.5	0.4		244.8	38.5	
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	11.1	17.4	2.6	21.1	20.7	5.3	71.5	0.4		244.8	38.5	
LOS	B	B	A	C	C	A	E	A		F	D	
Approach Delay (s/veh)		16.9			19.4			26.1			141.1	
Approach LOS		B			B			C			F	

Intersection Summary

Area Type: Other
Cycle Length: 111.5
Actuated Cycle Length: 101.6
Natural Cycle: 100
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.46
Intersection Signal Delay (s/veh): 77.3 Intersection LOS: E
Intersection Capacity Utilization 102.5% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 5: Oakville GO Access (east)/Argus Road & Cross Avenue



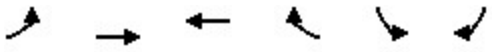


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	822	17	15	621	59	17	30	740	748
v/c Ratio	0.07	0.46	0.04	0.11	0.40	0.09	0.46	0.08	1.46	0.94
Control Delay (s/veh)	11.1	17.0	2.6	21.1	20.7	5.3	71.5	0.4	244.8	38.5
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.1	17.4	2.6	21.1	20.7	5.3	71.5	0.4	244.8	38.5
Queue Length 50th (m)	2.5	52.5	0.0	1.8	46.0	0.0	2.7	0.0	~214.3	91.3
Queue Length 95th (m)	6.4	67.2	2.1	6.4	60.5	7.4	#14.3	0.0	#283.6	#174.4
Internal Link Dist (m)		105.0			197.1			83.9		111.0
Turn Bay Length (m)	12.0		10.0	22.0		10.0	15.0		15.0	
Base Capacity (vph)	488	2124	493	139	1570	691	37	385	507	792
Starvation Cap Reductn	0	720	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	0.06	0.59	0.03	0.11	0.40	0.09	0.46	0.08	1.46	0.94

Intersection Summary

~ 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.

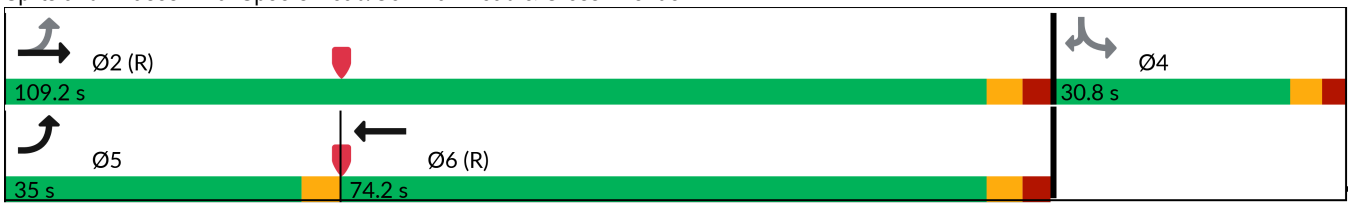


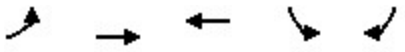
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	344	791	672	35	37	341
Future Volume (vph)	344	791	672	35	37	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0			0.0	40.0	0.0
Storage Lanes	1			0	1	2
Taper Length (m)	25.0				50.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.88
Ped Bike Factor	1.00		1.00			
Frt			0.993			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1668	3466	3410	0	1785	2579
Flt Permitted	0.340				0.950	
Satd. Flow (perm)	595	3466	3410	0	1785	2579
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			5			359
Link Speed (k/h)		60	60		50	
Link Distance (m)		161.4	196.6		130.4	
Travel Time (s)		9.7	11.8		9.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	3%	4%	0%	0%	9%
Adj. Flow (vph)	362	833	707	37	39	359
Shared Lane Traffic (%)						
Lane Group Flow (vph)	362	833	744	0	39	359
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2				4	4
Detector Phase	5	2	6		4	4
Switch Phase						
Minimum Initial (s)	6.0	38.0	38.0		10.0	10.0
Minimum Split (s)	12.0	47.6	47.6		33.8	33.8
Total Split (s)	35.0	109.2	74.2		30.8	30.8
Total Split (%)	25.0%	78.0%	53.0%		22.0%	22.0%
Maximum Green (s)	31.0	102.6	67.6		25.0	25.0
Yellow Time (s)	4.0	3.7	3.7		3.3	3.3
All-Red Time (s)	0.0	2.9	2.9		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	6.6	6.6		5.8	5.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.5	5.0	5.0		3.0	3.0
Recall Mode	None	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		31.0	31.0		18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	119.6	117.0	101.2		10.6	10.6
Actuated g/C Ratio	0.85	0.84	0.72		0.08	0.08
v/c Ratio	0.61	0.29	0.30		0.29	0.68
Control Delay (s/veh)	6.5	2.8	7.5		66.5	12.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	6.5	2.8	7.5		66.5	12.9
LOS	A	A	A		E	B
Approach Delay (s/veh)		3.9	7.5		18.1	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 35 (25%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 7.5		Intersection LOS: A	
Intersection Capacity Utilization 75.2%		ICU Level of Service D	
Analysis Period (min) 15			

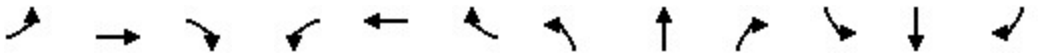
Splits and Phases: 6: Speers Road/Cornwall Road & Cross Avenue





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	362	833	744	39	359
v/c Ratio	0.61	0.29	0.30	0.29	0.68
Control Delay (s/veh)	6.5	2.8	7.5	66.5	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.5	2.8	7.5	66.5	12.9
Queue Length 50th (m)	13.5	19.9	33.4	10.5	0.0
Queue Length 95th (m)	23.3	29.0	50.5	21.9	16.0
Internal Link Dist (m)		137.4	172.6	106.4	
Turn Bay Length (m)	75.0			40.0	
Base Capacity (vph)	745	2896	2465	318	755
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.29	0.30	0.12	0.48

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	417	0	0	563	0	0	0	0	0	0	0
Future Volume (vph)	1	417	0	0	563	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.5		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			45.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected	0.950											
Satd. Flow (prot)	1750	3500	1842	1842	3500	1842	1842	1842	0	1842	1842	0
Flt Permitted	0.375											
Satd. Flow (perm)	691	3500	1842	1842	3500	1842	1842	1842	0	1842	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		68.4			115.8			120.3			301.3	
Travel Time (s)		4.9			8.3			8.7			21.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	453	0	0	612	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	453	0	0	612	0	0	0	0	0	0	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)		1.6			1.6			1.6			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	12.9	12.9			12.9							
Actuated g/C Ratio	0.32	0.32			0.32							
v/c Ratio	0.00	0.40			0.54							
Control Delay (s/veh)	8.0	11.4			12.9							
Queue Delay	0.0	0.0			0.0							
Total Delay (s/veh)	8.0	11.4			12.9							
LOS	A	B			B							
Approach Delay (s/veh)		11.4			12.9							
Approach LOS		B			B							

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 40.1			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 12.2		Intersection LOS: B	
Intersection Capacity Utilization 19.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Street A & Cross Avenue





Lane Group	EBL	EBT	WBT
Lane Group Flow (vph)	1	453	612
v/c Ratio	0.00	0.40	0.54
Control Delay (s/veh)	8.0	11.4	12.9
Queue Delay	0.0	0.0	0.0
Total Delay (s/veh)	8.0	11.4	12.9
Queue Length 50th (m)	0.1	12.1	17.3
Queue Length 95th (m)	0.6	20.0	27.3
Internal Link Dist (m)		44.4	91.8
Turn Bay Length (m)	15.0		
Base Capacity (vph)	311	1579	1579
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.00	0.29	0.39

Intersection Summary



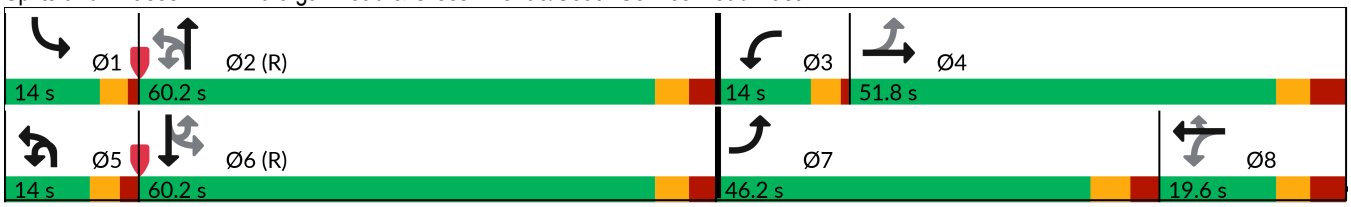
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	1154	60	146	66	105	308	1	233	1539	42	7	151
Future Volume (vph)	1154	60	146	66	105	308	1	233	1539	42	7	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	128.0		10.0	45.0		0.0		112.0		0.0		55.0
Storage Lanes	1		1	1		1		1		0		1
Taper Length (m)	28.0			40.0				35.0				20.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Ped Bike Factor		0.98		0.98					1.00			
Frt		0.894				0.850			0.996			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3330	3048	0	1785	3570	1581	0	1669	5006	0	0	1673
Flt Permitted	0.443			0.612				0.075				0.075
Satd. Flow (perm)	1553	3048	0	1130	3570	1581	0	132	5006	0	0	132
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		159				150			3			
Link Speed (k/h)		50			50				50			
Link Distance (m)		221.1			159.5				228.7			
Travel Time (s)		15.9			11.5				16.5			
Confl. Peds. (#/hr)			10	10				7		12		12
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%	0%	3%	0%	0%	1%	0%	7%	2%	0%	0%	7%
Adj. Flow (vph)	1254	65	159	72	114	335	1	253	1673	46	8	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1254	224	0	72	114	335	0	254	1719	0	0	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(m)		7.0			7.0				3.5			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		4.9			4.9				4.9			
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)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7			28.7				28.7			
Detector 2 Size(m)		1.8			1.8				1.8			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1427	243
Future Volume (vph)	1427	243
Ideal Flow (vphpl)	1900	1900
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor	1.00	
Frt	0.978	
Flt Protected		
Satd. Flow (prot)	4925	0
Flt Permitted		
Satd. Flow (perm)	4925	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	28	
Link Speed (k/h)	50	
Link Distance (m)	348.6	
Travel Time (s)	25.1	
Confl. Peds. (#/hr)		7
Peak Hour Factor	0.92	0.92
Heavy Vehicles (%)	1%	4%
Adj. Flow (vph)	1551	264
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1815	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	3.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	4.9	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	30.5	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	1.8	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	28.7	
Detector 2 Size(m)	1.8	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	pm+pt	NA		Perm	pm+pt
Protected Phases	7	4		3	8		5	5	2			1
Permitted Phases	4			8		8	2	2			6	6
Detector Phase	7	4		3	8	8	5	5	2		6	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.3		9.5	25.3	25.3	10.0	10.0	24.3		24.3	9.5
Total Split (s)	46.2	51.8		14.0	19.6	19.6	14.0	14.0	60.2		60.2	14.0
Total Split (%)	33.0%	37.0%		10.0%	14.0%	14.0%	10.0%	10.0%	43.0%		43.0%	10.0%
Maximum Green (s)	39.2	44.5		10.0	12.3	12.3	9.0	9.0	53.9		53.9	10.0
Yellow Time (s)	4.0	3.5		3.0	3.5	3.5	3.0	3.0	3.6		3.6	3.0
All-Red Time (s)	3.0	3.8		1.0	3.8	3.8	2.0	2.0	2.7		2.7	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	7.0	7.3		4.0	7.3	7.3		5.0	6.3			4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None		None	None	None	None	None	C-Max		C-Max	None
Walk Time (s)	7.0	7.0			7.0	7.0			7.0		7.0	
Flash Don't Walk (s)	11.0	11.0			11.0	11.0			11.0		11.0	
Pedestrian Calls (#/hr)	0	0			0	0			0		0	
Act Effct Green (s)	58.8	48.1		24.1	12.3	12.3		64.2	53.9			66.2
Actuated g/C Ratio	0.42	0.34		0.17	0.09	0.09		0.46	0.39			0.47
v/c Ratio	1.09	0.19		0.31	0.36	1.22		1.60	0.89			1.00
Control Delay (s/veh)	90.3	11.1		31.7	63.7	154.7		322.8	47.2			102.7
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay (s/veh)	90.3	11.1		31.7	63.7	154.7		322.8	47.2			102.7
LOS	F	B		C	E	F		F	D			F
Approach Delay (s/veh)		78.3			117.8				82.7			
Approach LOS		E			F				F			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 14 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.60			
Intersection Signal Delay (s/veh): 76.1		Intersection LOS: E	
Intersection Capacity Utilization 111.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Trafalgar Road & Cross Avenue/South Service Road East





Lane Group	SBT	SBR
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	24.3	
Total Split (s)	60.2	
Total Split (%)	43.0%	
Maximum Green (s)	53.9	
Yellow Time (s)	3.6	
All-Red Time (s)	2.7	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.3	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Don't Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	53.9	
Actuated g/C Ratio	0.39	
v/c Ratio	0.95	
Control Delay (s/veh)	52.7	
Queue Delay	0.0	
Total Delay (s/veh)	52.7	
LOS	D	
Approach Delay (s/veh)	57.1	
Approach LOS	E	

Intersection Summary

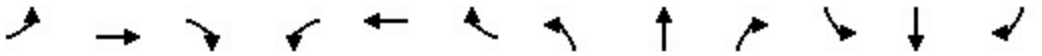


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1254	224	72	114	335	254	1719	172	1815
v/c Ratio	1.09	0.19	0.31	0.36	1.22	1.60	0.89	1.00	0.95
Control Delay (s/veh)	90.3	11.1	31.7	63.7	154.7	322.8	47.2	102.7	52.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	90.3	11.1	31.7	63.7	154.7	322.8	47.2	102.7	52.7
Queue Length 50th (m)	~168.0	6.5	11.4	15.9	~73.3	~85.6	161.9	32.7	175.2
Queue Length 95th (m)	#209.3	16.2	21.2	26.1	#133.9	#140.3	182.8	#80.8	#207.9
Internal Link Dist (m)		197.1		135.5			204.7		324.6
Turn Bay Length (m)	128.0		45.0			112.0		55.0	
Base Capacity (vph)	1149	1150	253	313	275	159	1929	172	1913
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.19	0.28	0.36	1.22	1.60	0.89	1.00	0.95

Intersection Summary

~ 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.

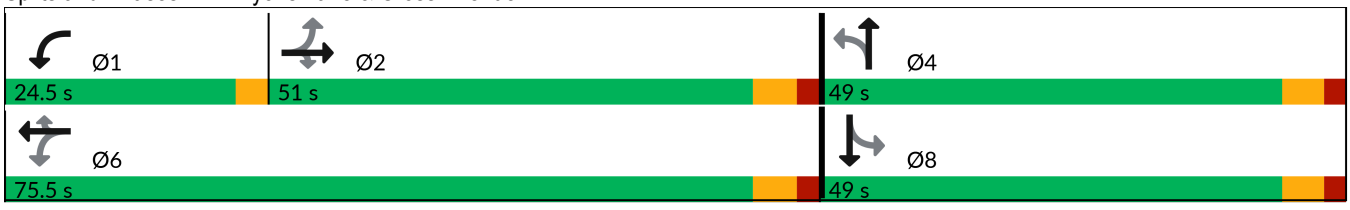


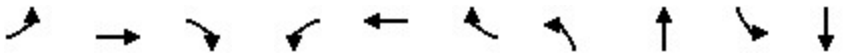
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	294	15	30	442	79	121	7	96	50	3	113
Future Volume (vph)	103	294	15	30	442	79	121	7	96	50	3	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		10.0	27.5		10.0	30.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			20.0			35.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.98	1.00		0.96	1.00	0.98		1.00	0.99	
Frt			0.850			0.850		0.860			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3159	1597	1785	3077	1365	1785	1590	0	1668	1534	0
Flt Permitted	0.462			0.513			0.671			0.680		
Satd. Flow (perm)	861	3159	1561	962	3077	1315	1257	1590	0	1189	1534	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			53			51		112			131	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		354.1			65.3			187.2			182.6	
Travel Time (s)		25.5			4.7			13.5			13.1	
Confl. Peds. (#/hr)	6		1	1		6	2		3	3		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	13%	0%	0%	16%	17%	0%	0%	0%	7%	0%	3%
Adj. Flow (vph)	120	342	17	35	514	92	141	8	112	58	3	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	342	17	35	514	92	141	120	0	58	134	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left		Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	16.8	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		15.0			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	35.0	35.0	35.0	8.0	35.0	35.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0	41.0	22.5	41.0	41.0	28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0	51.0	24.5	75.5	75.5	49.0	49.0		49.0	49.0	
Total Split (%)	41.0%	41.0%	41.0%	19.7%	60.6%	60.6%	39.4%	39.4%		39.4%	39.4%	
Maximum Green (s)	45.0	45.0	45.0	21.5	69.5	69.5	43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	Max	Max	Max	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	0.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0	15.0	0.0	15.0	15.0	15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	45.7	45.7	45.7	54.8	51.7	51.7	15.4	15.4		15.4	15.4	
Actuated g/C Ratio	0.58	0.58	0.58	0.69	0.65	0.65	0.19	0.19		0.19	0.19	
v/c Ratio	0.24	0.19	0.02	0.05	0.26	0.11	0.58	0.30		0.25	0.33	
Control Delay (s/veh)	12.7	10.1	0.1	4.9	6.6	3.6	39.9	9.0		30.8	8.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	12.7	10.1	0.1	4.9	6.6	3.6	39.9	9.0		30.8	8.2	
LOS	B	B	A	A	A	A	D	A		C	A	
Approach Delay (s/veh)		10.4			6.1			25.6			15.0	
Approach LOS		B			A			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.5			
Actuated Cycle Length: 79.3			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 11.7		Intersection LOS: B	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Lyons Lane & Cross Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	342	17	35	514	92	141	120	58	134
v/c Ratio	0.24	0.19	0.02	0.05	0.26	0.11	0.58	0.30	0.25	0.33
Control Delay (s/veh)	12.7	10.1	0.1	4.9	6.6	3.6	39.9	9.0	30.8	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.7	10.1	0.1	4.9	6.6	3.6	39.9	9.0	30.8	8.2
Queue Length 50th (m)	9.6	13.8	0.0	1.4	14.7	1.9	20.8	1.1	8.0	0.4
Queue Length 95th (m)	21.9	23.7	0.0	4.8	26.1	7.6	36.3	12.2	17.2	12.1
Internal Link Dist (m)		330.1			41.3			163.2		158.6
Turn Bay Length (m)	30.0		10.0	27.5		10.0	30.0		15.0	
Base Capacity (vph)	496	1819	921	890	2711	1164	691	925	654	903
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	0.24	0.19	0.02	0.04	0.19	0.08	0.20	0.13	0.09	0.15

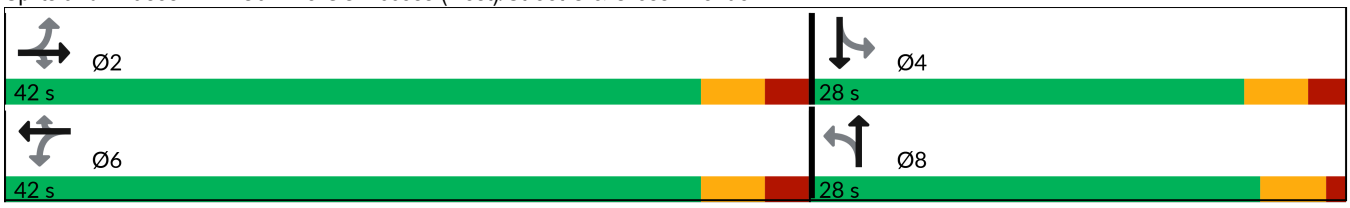
Intersection Summary

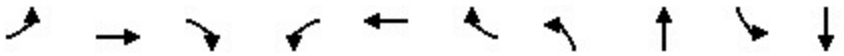
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	582	55	227	429	218	101	0	324	167	0	30
Future Volume (vph)	21	582	55	227	429	218	101	0	324	167	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.98		0.97	1.00		0.93	0.99	0.98		0.99	0.99	
Frt			0.850			0.850		0.850			0.954	
Flt Protected	0.950			0.950			0.950			0.950	0.967	
Satd. Flow (prot)	1785	3466	1597	1785	3336	1597	1785	1560	0	1696	1635	0
Flt Permitted	0.482			0.406			0.684			0.286	0.315	
Satd. Flow (perm)	883	3466	1550	760	3336	1490	1272	1560	0	508	530	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44			240		211			41	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		115.8			129.0			115.8			306.6	
Travel Time (s)		8.3			9.3			10.4			22.1	
Confl. Peds. (#/hr)	30		6	6		30	12		10	10		12
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%	3%	0%	0%	7%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	23	640	60	249	471	240	111	0	356	184	0	33
Shared Lane Traffic (%)										40%		
Lane Group Flow (vph)	23	640	60	249	471	240	111	356	0	110	107	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			-12.5	
Crosswalk Width(m)		4.9			4.9			4.9			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	22.0	22.0	22.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	27.6	27.6	27.6	27.6	27.6	27.6	22.5	22.5		27.3	27.3	
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	28.0	28.0		28.0	28.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	36.4	36.4	36.4	36.4	36.4	36.4	23.5	23.5		22.7	22.7	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.5		3.3	3.3	
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3	2.3	1.0	1.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	4.5	4.5		5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0	15.0	15.0	15.0	15.0	11.0	11.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	36.7	36.7	36.7	36.7	36.7	36.7	15.5	15.5		14.7	14.7	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59	0.59	0.25	0.25		0.24	0.24	
v/c Ratio	0.04	0.31	0.06	0.56	0.24	0.25	0.35	0.65		0.92	0.69	
Control Delay (s/veh)	7.8	8.0	3.9	16.0	7.6	2.1	21.7	14.4		91.2	37.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	7.8	8.0	3.9	16.0	7.6	2.1	21.7	14.4		91.2	37.5	
LOS	A	A	A	B	A	A	C	B		F	D	
Approach Delay (s/veh)		7.7			8.4			16.2			64.7	
Approach LOS		A			A			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.4			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 14.9		Intersection LOS: B	
Intersection Capacity Utilization 85.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Oakville GO Access (west)/Street C & Cross Avenue

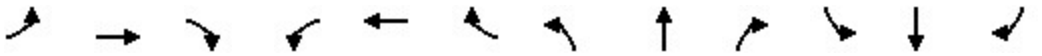




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	640	60	249	471	240	111	356	110	107
v/c Ratio	0.04	0.31	0.06	0.56	0.24	0.25	0.35	0.65	0.92	0.69
Control Delay (s/veh)	7.8	8.0	3.9	16.0	7.6	2.1	21.7	14.4	91.2	37.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.8	8.0	3.9	16.0	7.6	2.1	21.7	14.4	91.2	37.5
Queue Length 50th (m)	1.0	17.5	0.7	15.7	12.2	0.0	10.4	13.7	12.9	6.9
Queue Length 95th (m)	4.6	34.2	5.7	47.2	24.9	9.1	21.8	35.8	#37.7	#25.5
Internal Link Dist (m)		91.8			105.0			91.8		282.6
Turn Bay Length (m)	15.0		10.0	40.0		10.0	15.0		15.0	
Base Capacity (vph)	520	2040	930	447	1964	976	483	723	186	220
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	0.04	0.31	0.06	0.56	0.24	0.25	0.23	0.49	0.59	0.49

Intersection Summary

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

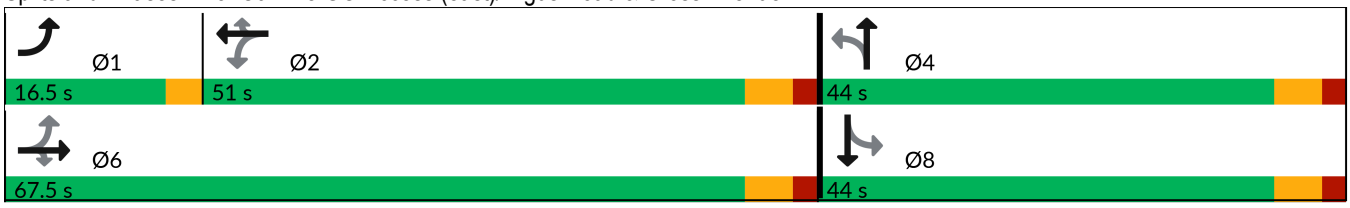


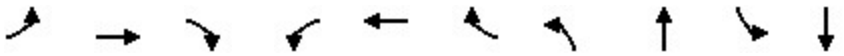
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	1033	12	12	496	113	16	3	28	406	21	389
Future Volume (vph)	59	1033	12	12	496	113	16	3	28	406	21	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0		10.0	22.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			25.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00		0.96	0.99	0.94		0.94	0.95	
Frt			0.850			0.850		0.863			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3535	799	930	3535	1597	892	771	0	1785	1433	0
Flt Permitted	0.370			0.194			0.280			0.735		
Satd. Flow (perm)	691	3535	773	189	3535	1539	260	771	0	1304	1433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			29			59		31			385	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.0			221.1			107.9			135.0	
Travel Time (s)		9.3			15.9			7.8			9.7	
Confl. Peds. (#/hr)	7		5	5		7	28		40	40		28
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%	1%	100%	92%	1%	0%	100%	67%	100%	0%	100%	2%
Adj. Flow (vph)	66	1148	13	13	551	126	18	3	31	451	23	432
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	1148	13	13	551	126	18	34	0	451	455	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	1	6	6	2	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	30.0	30.0	22.0	22.0	22.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	15.5	36.0	36.0	29.0	29.0	29.0	29.0	29.0		29.0	29.0	
Total Split (s)	16.5	67.5	67.5	51.0	51.0	51.0	44.0	44.0		44.0	44.0	
Total Split (%)	14.8%	60.5%	60.5%	45.7%	45.7%	45.7%	39.5%	39.5%		39.5%	39.5%	
Maximum Green (s)	13.5	61.5	61.5	45.0	45.0	45.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	2.5	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	None	None	None	Max	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	57.8	54.8	54.8	46.1	46.1	46.1	38.1	38.1		38.1	38.1	
Actuated g/C Ratio	0.55	0.52	0.52	0.44	0.44	0.44	0.36	0.36		0.36	0.36	
v/c Ratio	0.14	0.62	0.03	0.16	0.36	0.18	0.19	0.11		0.95	0.59	
Control Delay (s/veh)	11.4	19.3	1.6	24.5	20.8	11.0	31.3	10.3		66.0	8.7	
Queue Delay	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	11.4	20.7	1.6	24.5	20.8	11.0	31.3	10.3		66.0	8.7	
LOS	B	C	A	C	C	B	C	B		E	A	
Approach Delay (s/veh)		20.0			19.1			17.5			37.2	
Approach LOS		B			B			B			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 111.5			
Actuated Cycle Length: 104.9			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 25.1		Intersection LOS: C	
Intersection Capacity Utilization 88.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Oakville GO Access (east)/Argus Road & Cross Avenue

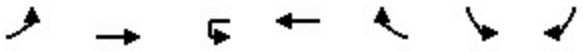




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	66	1148	13	13	551	126	18	34	451	455
v/c Ratio	0.14	0.62	0.03	0.16	0.36	0.18	0.19	0.11	0.95	0.59
Control Delay (s/veh)	11.4	19.3	1.6	24.5	20.8	11.0	31.3	10.3	66.0	8.7
Queue Delay	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.4	20.7	1.6	24.5	20.8	11.0	31.3	10.3	66.0	8.7
Queue Length 50th (m)	6.0	83.2	0.0	1.6	39.8	8.1	2.5	0.4	90.3	9.7
Queue Length 95th (m)	11.9	102.9	1.2	6.3	53.1	19.3	9.3	7.5	#164.8	41.2
Internal Link Dist (m)		105.0			197.1			83.9		111.0
Turn Bay Length (m)	12.0		10.0	22.0		10.0	15.0		15.0	
Base Capacity (vph)	521	2077	466	83	1552	709	94	300	473	765
Starvation Cap Reductn	0	666	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	0.13	0.81	0.03	0.16	0.36	0.18	0.19	0.11	0.95	0.59

Intersection Summary

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

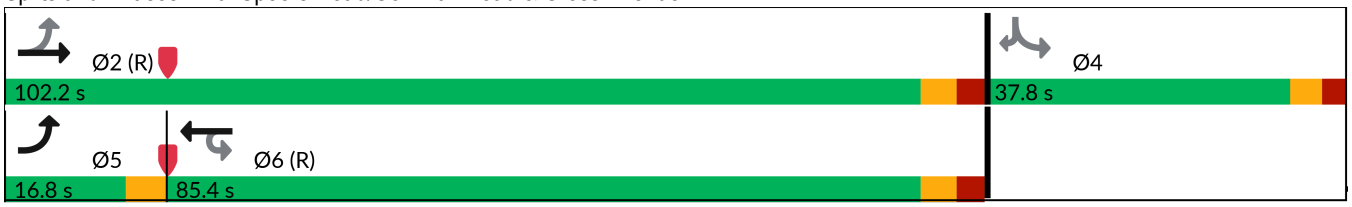


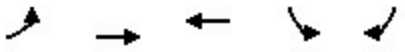
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	300	661	1	1063	89	45	579
Future Volume (vph)	300	661	1	1063	89	45	579
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0		0.0	40.0	0.0
Storage Lanes	1		0		0	1	2
Taper Length (m)	25.0		7.6			50.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.88
Ped Bike Factor	1.00			1.00			
Frt				0.988			0.850
Flt Protected	0.950					0.950	
Satd. Flow (prot)	1668	3535	0	3483	0	1785	2703
Flt Permitted	0.149			0.955		0.950	
Satd. Flow (perm)	261	3535	0	3327	0	1785	2703
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				10			375
Link Speed (k/h)		60		60		50	
Link Distance (m)		161.4		196.6		130.4	
Travel Time (s)		9.7		11.8		9.4	
Confl. Peds. (#/hr)	13				13		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	1%	2%	1%	0%	0%	4%
Adj. Flow (vph)	319	703	1	1131	95	48	616
Shared Lane Traffic (%)							
Lane Group Flow (vph)	319	703	0	1227	0	48	616
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	Left	Right
Median Width(m)		3.5		3.5		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		4.9		4.9		4.9	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14		14	24	14
Number of Detectors	1	2	1	2		1	1
Detector Template	Left	Thru	Left	Thru		Left	Right
Leading Detector (m)	6.1	30.5	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7		28.7			
Detector 2 Size(m)		1.8		1.8			
Detector 2 Type		Cl+Ex		Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)		0.0		0.0			

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	Perm	NA		Perm	Perm
Protected Phases	5	2		6			
Permitted Phases	2		6			4	4
Detector Phase	5	2	6	6		4	4
Switch Phase							
Minimum Initial (s)	6.0	38.0	38.0	38.0		10.0	10.0
Minimum Split (s)	12.0	47.6	47.6	47.6		33.8	33.8
Total Split (s)	16.8	102.2	85.4	85.4		37.8	37.8
Total Split (%)	12.0%	73.0%	61.0%	61.0%		27.0%	27.0%
Maximum Green (s)	12.8	95.6	78.8	78.8		32.0	32.0
Yellow Time (s)	4.0	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	0.0	2.9	2.9	2.9		2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.0	6.6		6.6		5.8	5.8
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.5	5.0	5.0	5.0		3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0	10.0		10.0	10.0
Flash Don't Walk (s)		31.0	31.0	31.0		18.0	18.0
Pedestrian Calls (#/hr)		0	0	0		0	0
Act Effct Green (s)	110.1	107.5		81.8		20.1	20.1
Actuated g/C Ratio	0.79	0.77		0.58		0.14	0.14
v/c Ratio	0.75	0.26		0.63		0.19	0.87
Control Delay (s/veh)	28.2	5.6		21.3		51.2	35.5
Queue Delay	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	28.2	5.6		21.3		51.2	35.5
LOS	C	A		C		D	D
Approach Delay (s/veh)		12.7		21.3		36.6	
Approach LOS		B		C		D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 35 (25%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 21.7		Intersection LOS: C	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Speers Road/Cornwall Road & Cross Avenue

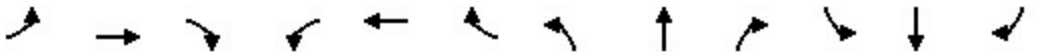




Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	319	703	1227	48	616
v/c Ratio	0.75	0.26	0.63	0.19	0.87
Control Delay (s/veh)	28.2	5.6	21.3	51.2	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.2	5.6	21.3	51.2	35.5
Queue Length 50th (m)	32.7	25.5	116.8	11.9	39.3
Queue Length 95th (m)	#69.0	44.0	141.2	22.0	59.2
Internal Link Dist (m)		137.4	172.6	106.4	
Turn Bay Length (m)	75.0			40.0	
Base Capacity (vph)	423	2714	1948	408	907
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.26	0.63	0.12	0.68

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	702	0	0	568	0	0	0	0	0	0	2
Future Volume (vph)	2	702	0	0	568	0	0	0	0	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.5		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			45.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt											0.850	
Flt Protected	0.950											
Satd. Flow (prot)	1750	3500	1842	1842	3500	1842	1842	1842	0	1842	1566	0
Flt Permitted	0.376											
Satd. Flow (perm)	693	3500	1842	1842	3500	1842	1842	1842	0	1842	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											143	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		68.4			115.8			120.3			301.3	
Travel Time (s)		4.9			8.3			8.7			21.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	763	0	0	617	0	0	0	0	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	763	0	0	617	0	0	0	0	0	2	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)		1.6			1.6			1.6			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm			Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	14.7	14.7			14.7						18.1	
Actuated g/C Ratio	0.35	0.35			0.35						0.43	
v/c Ratio	0.01	0.62			0.50						0.00	
Control Delay (s/veh)	8.5	13.5			12.0						0.0	
Queue Delay	0.0	0.0			0.0						0.0	
Total Delay (s/veh)	8.5	13.5			12.0						0.0	
LOS	A	B			B						A	
Approach Delay (s/veh)		13.5			12.0							
Approach LOS		B			B							

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 41.9			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 12.8		Intersection LOS: B	
Intersection Capacity Utilization 31.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Street A & Cross Avenue





Lane Group	EBL	EBT	WBT	SBT
Lane Group Flow (vph)	2	763	617	2
v/c Ratio	0.01	0.62	0.50	0.00
Control Delay (s/veh)	8.5	13.5	12.0	0.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.5	13.5	12.0	0.0
Queue Length 50th (m)	0.1	22.7	17.4	0.0
Queue Length 95th (m)	1.0	35.2	27.6	0.0
Internal Link Dist (m)		44.4	91.8	277.3
Turn Bay Length (m)	15.0			
Base Capacity (vph)	299	1512	1512	758
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.01	0.50	0.41	0.00

Intersection Summary

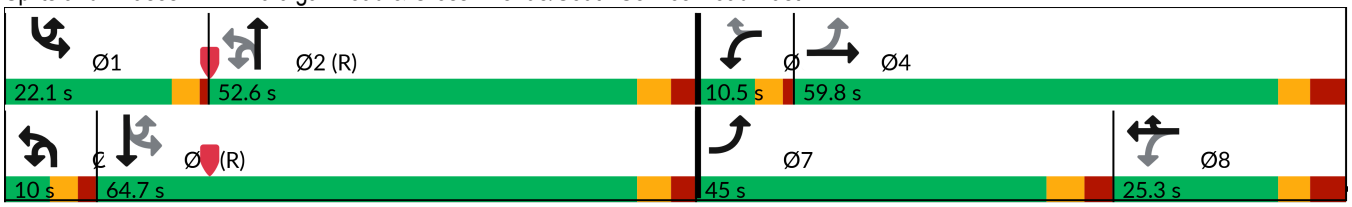
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	1299	132	165	62	82	144	1	130	1196	33	3	238
Future Volume (vph)	1299	132	165	62	82	144	1	130	1196	33	3	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	128.0		10.0	45.0		0.0		112.0		0.0		55.0
Storage Lanes	1		1	1		1		1		0		1
Taper Length (m)	28.0			40.0				35.0				20.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99		1.00					1.00			
Frt		0.917				0.850			0.996			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3236	3083	0	1623	3433	1439	0	1595	4903	0	0	1750
Flt Permitted	0.408			0.563				0.079				0.088
Satd. Flow (perm)	1390	3083	0	960	3433	1439	0	133	4903	0	0	162
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		120				146			3			
Link Speed (k/h)		50			50				50			
Link Distance (m)		221.1			159.5				228.7			
Travel Time (s)		15.9			11.5				16.5			
Confl. Peds. (#/hr)			1	1				4		6		6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	2%	8%	10%	4%	11%	0%	12%	4%	9%	0%	2%
Adj. Flow (vph)	1353	138	172	65	85	150	1	135	1246	34	3	248
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1353	310	0	65	85	150	0	136	1280	0	0	251
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(m)		7.0			7.0				3.5			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		4.9			4.9				4.9			
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)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7			28.7				28.7			
Detector 2 Size(m)		1.8			1.8				1.8			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1636	505
Future Volume (vph)	1636	505
Ideal Flow (vphpl)	1900	1900
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor	0.99	
Frt	0.965	
Flt Protected		
Satd. Flow (prot)	4781	0
Flt Permitted		
Satd. Flow (perm)	4781	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	64	
Link Speed (k/h)	50	
Link Distance (m)	348.6	
Travel Time (s)	25.1	
Confl. Peds. (#/hr)		4
Peak Hour Factor	0.96	0.96
Heavy Vehicles (%)	3%	3%
Adj. Flow (vph)	1704	526
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2230	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	3.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	4.9	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	30.5	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	1.8	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	28.7	
Detector 2 Size(m)	1.8	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Type	pm+pt	NA		pm+pt	NA	custom	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases	7	4		3	8	8	5	5	2		1	1
Permitted Phases	4			8		3	2	2			6	6
Detector Phase	7	4		3	8	8	5	5	2		1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.3		9.5	25.3	25.3	10.0	10.0	24.3		9.5	9.5
Total Split (s)	45.0	59.8		10.5	25.3	25.3	10.0	10.0	52.6		22.1	22.1
Total Split (%)	31.0%	41.2%		7.2%	17.4%	17.4%	6.9%	6.9%	36.3%		15.2%	15.2%
Maximum Green (s)	38.0	52.5		6.5	18.0	18.0	5.0	5.0	46.3		18.1	18.1
Yellow Time (s)	4.0	3.5		3.0	3.5	3.5	3.0	3.0	3.6		3.0	3.0
All-Red Time (s)	3.0	3.8		1.0	3.8	3.8	2.0	2.0	2.7		1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	7.0	7.3		4.0	7.3	7.3		5.0	6.3			4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None		None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0			7.0	7.0			7.0			
Flash Don't Walk (s)	11.0	11.0			11.0	11.0			11.0			
Pedestrian Calls (#/hr)	0	0			0	0			0			
Act Effct Green (s)	54.3	45.6		18.7	9.0	11.5		66.5	51.2			78.6
Actuated g/C Ratio	0.37	0.31		0.13	0.06	0.08		0.46	0.35			0.54
v/c Ratio	1.35	0.29		0.42	0.40	0.60		0.67	0.74			0.76
Control Delay (s/veh)	197.6	23.6		41.6	70.6	17.6		50.2	44.9			47.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay (s/veh)	197.6	23.6		41.6	70.6	17.6		50.2	44.9			47.9
LOS	F	C		D	E	B		D	D			D
Approach Delay (s/veh)		165.2			37.8				45.4			
Approach LOS		F			D				D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
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: 1.35			
Intersection Signal Delay (s/veh): 102.5		Intersection LOS: F	
Intersection Capacity Utilization 112.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Trafalgar Road & Cross Avenue/South Service Road East





Lane Group	SBT	SBR
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	24.3	
Total Split (s)	64.7	
Total Split (%)	44.6%	
Maximum Green (s)	58.4	
Yellow Time (s)	3.6	
All-Red Time (s)	2.7	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.3	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Don't Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	58.4	
Actuated g/C Ratio	0.40	
v/c Ratio	1.14	
Control Delay (s/veh)	106.8	
Queue Delay	0.0	
Total Delay (s/veh)	106.8	
LOS	F	
Approach Delay (s/veh)	100.9	
Approach LOS	F	

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1353	310	65	85	150	136	1280	251	2230
v/c Ratio	1.35	0.29	0.42	0.40	0.60	0.67	0.74	0.76	1.14
Control Delay (s/veh)	197.6	23.6	41.6	70.6	17.6	50.2	44.9	47.9	106.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	197.6	23.6	41.6	70.6	17.6	50.2	44.9	47.9	106.8
Queue Length 50th (m)	~236.3	21.5	11.7	12.5	0.7	23.6	119.3	49.0	~268.7
Queue Length 95th (m)	#273.0	33.5	21.3	21.4	14.6	#60.4	142.3	80.5	#296.4
Internal Link Dist (m)		197.1		135.5			204.7		324.6
Turn Bay Length (m)	128.0		45.0			112.0		55.0	
Base Capacity (vph)	1004	1192	154	426	329	202	1733	336	1963
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.35	0.26	0.42	0.20	0.46	0.67	0.74	0.75	1.14

Intersection Summary

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

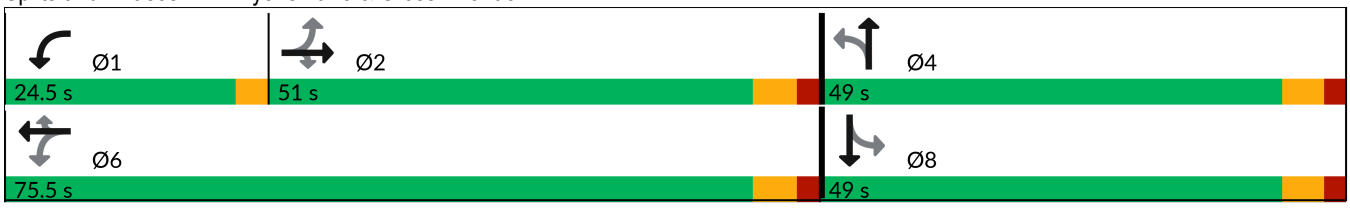
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

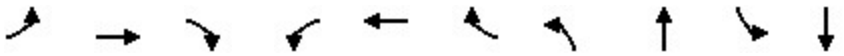
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	260	130	231	217	39	23	3	31	79	12	122
Future Volume (vph)	72	260	130	231	217	39	23	3	31	79	12	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		10.0	27.5		10.0	30.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			20.0			35.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.96	1.00	0.98		0.99	0.99	
Frt			0.850			0.850		0.862			0.863	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3159	1597	1785	3077	1365	1785	1583	0	1668	1555	0
Flt Permitted	0.596			0.532			0.627			0.732		
Satd. Flow (perm)	1103	3159	1597	1000	3077	1310	1174	1583	0	1270	1555	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			45		36			142	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		354.1			65.3			187.2			182.6	
Travel Time (s)		25.5			4.7			13.5			13.1	
Confl. Peds. (#/hr)	6					6	2		6	6		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	13%	0%	0%	16%	17%	0%	0%	0%	7%	0%	3%
Adj. Flow (vph)	84	302	151	269	252	45	27	3	36	92	14	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	302	151	269	252	45	27	39	0	92	156	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left		Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	16.8	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		15.0			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	35.0	35.0	35.0	8.0	35.0	35.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0	41.0	22.5	41.0	41.0	28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0	51.0	24.5	75.5	75.5	49.0	49.0		49.0	49.0	
Total Split (%)	41.0%	41.0%	41.0%	19.7%	60.6%	60.6%	39.4%	39.4%		39.4%	39.4%	
Maximum Green (s)	45.0	45.0	45.0	21.5	69.5	69.5	43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	Max	Max	Max	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)	45.1	45.1	45.1	60.6	57.6	57.6	13.0	13.0		13.0	13.0	
Actuated g/C Ratio	0.55	0.55	0.55	0.73	0.70	0.70	0.16	0.16		0.16	0.16	
v/c Ratio	0.14	0.17	0.16	0.33	0.12	0.05	0.15	0.14		0.46	0.43	
Control Delay (s/veh)	11.3	10.5	4.8	4.9	4.6	1.7	32.0	12.8		39.8	11.1	
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	11.3	10.5	4.8	5.3	4.6	1.7	32.0	12.8		39.8	11.1	
LOS	B	B	A	A	A	A	C	B		D	B	
Approach Delay (s/veh)		9.0			4.7			20.7			21.8	
Approach LOS		A			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.5			
Actuated Cycle Length: 82.6			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay (s/veh): 10.1		Intersection LOS: B	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			

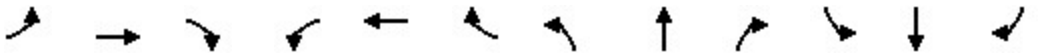
Splits and Phases: 2: Lyons Lane & Cross Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	302	151	269	252	45	27	39	92	156
v/c Ratio	0.14	0.17	0.16	0.33	0.12	0.05	0.15	0.14	0.46	0.43
Control Delay (s/veh)	11.3	10.5	4.8	4.9	4.6	1.7	32.0	12.8	39.8	11.1
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.3	10.5	4.8	5.3	4.6	1.7	32.0	12.8	39.8	11.1
Queue Length 50th (m)	5.8	11.2	3.4	10.3	5.6	0.0	3.7	0.4	13.2	1.9
Queue Length 95th (m)	14.9	20.8	12.8	21.3	10.8	2.9	10.4	7.7	26.6	15.6
Internal Link Dist (m)		330.1			41.3			163.2		158.6
Turn Bay Length (m)	30.0		10.0	27.5		10.0	30.0		15.0	
Base Capacity (vph)	603	1726	918	938	2597	1112	613	843	663	880
Starvation Cap Reductn	0	0	0	267	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	0.14	0.17	0.16	0.40	0.10	0.04	0.04	0.05	0.14	0.18

Intersection Summary

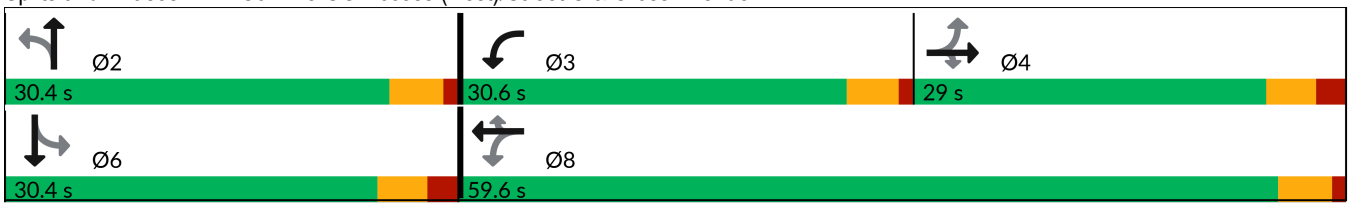


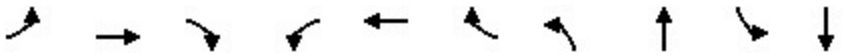
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	368	88	657	543	70	56	0	219	256	0	14
Future Volume (vph)	10	368	88	657	543	70	56	0	219	256	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00	0.98				
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	3245	1566	1785	3368	1566	1785	1548	0	1750	1566	0
Flt Permitted	0.418			0.311			0.748			0.493		
Satd. Flow (perm)	770	3245	1528	583	3368	1566	1404	1548	0	908	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			56		634			295	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		115.8			129.0			115.8			306.6	
Travel Time (s)		8.3			9.3			10.4			22.1	
Confl. Peds. (#/hr)			2	2			1		6			
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	0%	6%	2%	0%	2%	1%	2%	2%	2%
Adj. Flow (vph)	11	418	100	747	617	76	64	0	249	278	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	418	100	747	617	76	64	249	0	278	15	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			-12.5	
Crosswalk Width(m)		4.9			4.9			4.9			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	27.3	27.3	27.3	9.5	22.5	22.5	22.5	22.5		27.3	27.3	
Total Split (s)	29.0	29.0	29.0	30.6	59.6	59.6	30.4	30.4		30.4	30.4	
Total Split (%)	32.2%	32.2%	32.2%	34.0%	66.2%	66.2%	33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	23.7	23.7	23.7	26.1	55.1	55.1	25.9	25.9		25.1	25.1	
Yellow Time (s)	3.3	3.3	3.3	3.5	3.5	3.5	3.5	3.5		3.3	3.3	
All-Red Time (s)	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3	5.3	4.5	4.5	4.5	4.5	4.5		5.3	5.3	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0	15.0		11.0	11.0	11.0	11.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)	16.6	16.6	16.6	48.0	48.0	48.0	26.0	26.0		25.2	25.2	
Actuated g/C Ratio	0.20	0.20	0.20	0.58	0.58	0.58	0.31	0.31		0.30	0.30	
v/c Ratio	0.07	0.65	0.27	1.04	0.32	0.08	0.15	0.27		1.01	0.02	
Control Delay (s/veh)	27.1	35.3	10.9	64.5	9.4	3.3	23.2	0.7		90.6	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	27.1	35.3	10.9	64.5	9.4	3.3	23.2	0.7		90.6	0.1	
LOS	C	D	B	E	A	A	C	A		F	A	
Approach Delay (s/veh)		30.5			37.7			5.3			85.9	
Approach LOS		C			D			A			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 83			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay (s/veh): 37.8		Intersection LOS: D	
Intersection Capacity Utilization 92.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: Oakville GO Access (west)/Street C & Cross Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	418	100	747	617	76	64	249	278	15
v/c Ratio	0.07	0.65	0.27	1.04	0.32	0.08	0.15	0.27	1.01	0.02
Control Delay (s/veh)	27.1	35.3	10.9	64.5	9.4	3.3	23.2	0.7	90.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.1	35.3	10.9	64.5	9.4	3.3	23.2	0.7	90.6	0.1
Queue Length 50th (m)	1.4	32.1	2.3	~103.0	24.3	1.2	7.2	0.0	~44.5	0.0
Queue Length 95th (m)	5.5	44.8	13.3	#167.5	32.1	6.1	17.4	0.0	#101.5	0.0
Internal Link Dist (m)		91.8			105.0			91.8		282.6
Turn Bay Length (m)	15.0		10.0	40.0		10.0	15.0		15.0	
Base Capacity (vph)	220	928	495	715	2240	1060	438	919	275	680
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	0.05	0.45	0.20	1.04	0.28	0.07	0.15	0.27	1.01	0.02

Intersection Summary

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

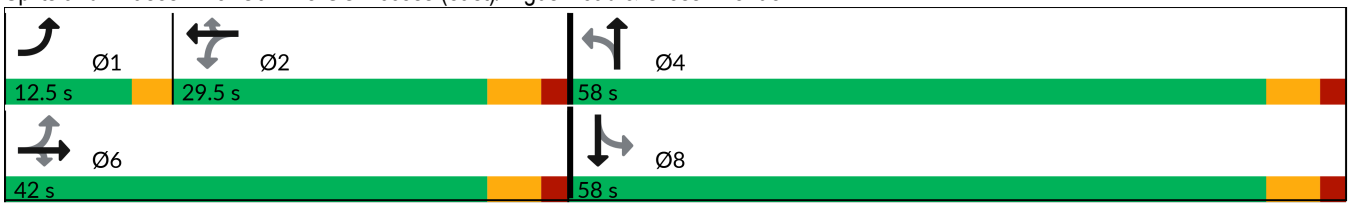
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

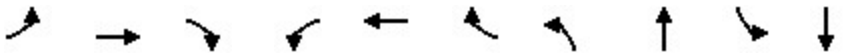
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	804	18	14	602	54	16	0	28	681	15	674
Future Volume (vph)	32	804	18	14	602	54	16	0	28	681	15	674
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0		10.0	22.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			25.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98		0.97		0.98	0.97	
Frt			0.850			0.850		0.850			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3500	823	925	3535	1521	892	783	0	1785	1515	0
Flt Permitted	0.219			0.227			0.178			0.738		
Satd. Flow (perm)	411	3500	796	220	3535	1484	167	783	0	1357	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			65		65			331	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.0			221.1			107.9			135.0	
Travel Time (s)		9.3			15.9			7.8			9.7	
Confl. Peds. (#/hr)	2		6	6		2	18		17	17		18
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%	2%	94%	93%	1%	5%	100%	0%	97%	0%	100%	0%
Adj. Flow (vph)	35	874	20	15	654	59	17	0	30	740	16	733
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	874	20	15	654	59	17	30	0	740	749	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	1	6	6	2	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	30.0	30.0	22.0	22.0	22.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	12.5	36.0	36.0	29.0	29.0	29.0	29.0	29.0		29.0	29.0	
Total Split (s)	12.5	42.0	42.0	29.5	29.5	29.5	58.0	58.0		58.0	58.0	
Total Split (%)	12.5%	42.0%	42.0%	29.5%	29.5%	29.5%	58.0%	58.0%		58.0%	58.0%	
Maximum Green (s)	9.5	36.0	36.0	23.5	23.5	23.5	52.0	52.0		52.0	52.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	2.5	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	None	None	None	Max	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	37.1	34.1	34.1	27.6	27.6	27.6	52.0	52.0		52.0	52.0	
Actuated g/C Ratio	0.38	0.35	0.35	0.28	0.28	0.28	0.53	0.53		0.53	0.53	
v/c Ratio	0.13	0.72	0.07	0.24	0.66	0.13	0.19	0.07		1.03	0.78	
Control Delay (s/veh)	20.3	31.7	4.5	42.1	35.8	7.6	19.7	0.8		66.4	17.0	
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.3	33.4	4.5	42.1	35.8	7.6	19.7	0.8		66.4	17.0	
LOS	C	C	A	D	D	A	B	A		E	B	
Approach Delay (s/veh)		32.2			33.7			7.6			41.6	
Approach LOS		C			C			A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 98.1			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay (s/veh): 36.6		Intersection LOS: D	
Intersection Capacity Utilization 102.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 5: Oakville GO Access (east)/Argus Road & Cross Avenue



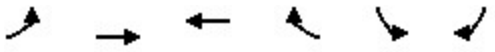


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	874	20	15	654	59	17	30	740	749
v/c Ratio	0.13	0.72	0.07	0.24	0.66	0.13	0.19	0.07	1.03	0.78
Control Delay (s/veh)	20.3	31.7	4.5	42.1	35.8	7.6	19.7	0.8	66.4	17.0
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.3	33.4	4.5	42.1	35.8	7.6	19.7	0.8	66.4	17.0
Queue Length 50th (m)	4.2	75.1	0.0	2.4	61.5	0.0	1.7	0.0	~157.0	65.0
Queue Length 95th (m)	10.3	96.5	3.2	9.0	81.2	8.6	6.7	1.0	#224.8	121.2
Internal Link Dist (m)		105.0			197.1			83.9		111.0
Turn Bay Length (m)	12.0		10.0	22.0		10.0	15.0		15.0	
Base Capacity (vph)	288	1285	313	62	994	463	88	445	719	958
Starvation Cap Reductn	0	237	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	0.12	0.83	0.06	0.24	0.66	0.13	0.19	0.07	1.03	0.78

Intersection Summary

~ 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.

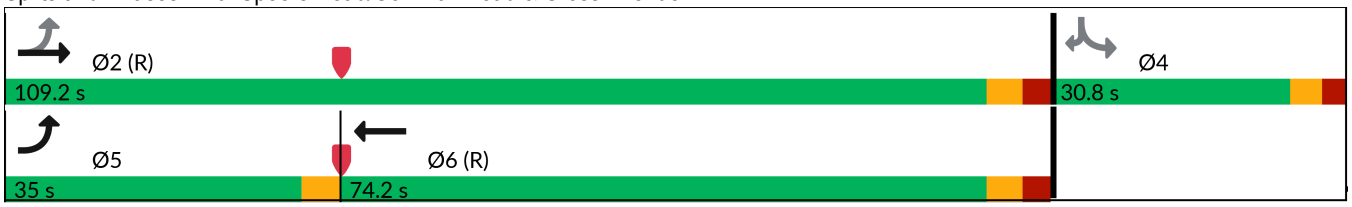


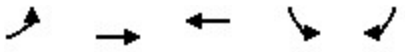
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	344	791	672	43	53	344
Future Volume (vph)	344	791	672	43	53	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0			0.0	40.0	0.0
Storage Lanes	1			0	1	2
Taper Length (m)	25.0				50.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.88
Ped Bike Factor	1.00		1.00			
Frt			0.991			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1668	3466	3403	0	1785	2579
Flt Permitted	0.336				0.950	
Satd. Flow (perm)	588	3466	3403	0	1785	2579
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			6			362
Link Speed (k/h)		60	60		50	
Link Distance (m)		161.4	196.6		130.4	
Travel Time (s)		9.7	11.8		9.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	3%	4%	0%	0%	9%
Adj. Flow (vph)	362	833	707	45	56	362
Shared Lane Traffic (%)						
Lane Group Flow (vph)	362	833	752	0	56	362
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2				4	4
Detector Phase	5	2	6		4	4
Switch Phase						
Minimum Initial (s)	6.0	38.0	38.0		10.0	10.0
Minimum Split (s)	12.0	47.6	47.6		33.8	33.8
Total Split (s)	35.0	109.2	74.2		30.8	30.8
Total Split (%)	25.0%	78.0%	53.0%		22.0%	22.0%
Maximum Green (s)	31.0	102.6	67.6		25.0	25.0
Yellow Time (s)	4.0	3.7	3.7		3.3	3.3
All-Red Time (s)	0.0	2.9	2.9		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	6.6	6.6		5.8	5.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.5	5.0	5.0		3.0	3.0
Recall Mode	None	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		31.0	31.0		18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	119.2	116.6	100.6		11.0	11.0
Actuated g/C Ratio	0.85	0.83	0.72		0.08	0.08
v/c Ratio	0.61	0.29	0.31		0.40	0.68
Control Delay (s/veh)	6.7	2.9	7.8		69.8	12.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	6.7	2.9	7.8		69.8	12.6
LOS	A	A	A		E	B
Approach Delay (s/veh)		4.1	7.8		20.2	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 35 (25%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 8.1		Intersection LOS: A	
Intersection Capacity Utilization 75.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Speers Road/Cornwall Road & Cross Avenue





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	362	833	752	56	362
v/c Ratio	0.61	0.29	0.31	0.40	0.68
Control Delay (s/veh)	6.7	2.9	7.8	69.8	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.7	2.9	7.8	69.8	12.6
Queue Length 50th (m)	13.5	19.9	33.7	15.1	0.0
Queue Length 95th (m)	24.0	29.8	52.6	28.6	16.1
Internal Link Dist (m)		137.4	172.6	106.4	
Turn Bay Length (m)	75.0			40.0	
Base Capacity (vph)	739	2887	2447	318	757
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.29	0.31	0.18	0.48

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	418	14	32	563	26	68
Future Volume (vph)	418	14	32	563	26	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		10.0	10.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			15.0		2.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.902	
Flt Protected			0.950		0.986	
Satd. Flow (prot)	3500	1566	1750	3500	1638	0
Flt Permitted			0.950		0.986	
Satd. Flow (perm)	3500	1566	1750	3500	1638	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	65.3			68.4	86.9	
Travel Time (s)	4.7			4.9	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	454	15	35	612	28	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	454	15	35	612	102	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

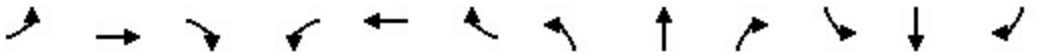
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	418	14	32	563	26	68
Future Volume (Veh/h)	418	14	32	563	26	68
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)	454	15	35	612	28	74
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	65			68		
pX, platoon unblocked			0.97		0.88	0.97
vC, conflicting volume			469		830	227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			380		355	130
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		95	91
cM capacity (veh/h)			1135		525	866

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	227	227	15	35	306	306	102
Volume Left	0	0	0	35	0	0	28
Volume Right	0	0	15	0	0	0	74
cSH	1700	1700	1700	1135	1700	1700	735
Volume to Capacity	0.13	0.13	0.01	0.03	0.18	0.18	0.14
Queue Length 95th (m)	0.0	0.0	0.0	0.7	0.0	0.0	3.7
Control Delay (s/veh)	0.0	0.0	0.0	8.3	0.0	0.0	10.7
Lane LOS				A			B
Approach Delay (s/veh)	0.0			0.4			10.7
Approach LOS							B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		



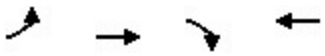
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	479	4	0	595	0	0	0	0	0	0	0
Future Volume (vph)	4	479	4	0	595	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.5		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			45.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									
Flt Protected	0.950											
Satd. Flow (prot)	1750	3500	1566	1842	3500	1842	1842	1842	0	1842	1842	0
Flt Permitted	0.351											
Satd. Flow (perm)	647	3500	1566	1842	3500	1842	1842	1842	0	1842	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36									
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		68.4			115.8			120.3			301.3	
Travel Time (s)		4.9			8.3			8.7			21.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	521	4	0	647	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	521	4	0	647	0	0	0	0	0	0	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)		1.6			1.6			1.6			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	13.5	13.5	13.5		13.5							
Actuated g/C Ratio	0.33	0.33	0.33		0.33							
v/c Ratio	0.02	0.45	0.01		0.56							
Control Delay (s/veh)	8.8	11.7	0.0		12.9							
Queue Delay	0.0	0.0	0.0		0.0							
Total Delay (s/veh)	8.8	11.7	0.0		12.9							
LOS	A	B	A		B							
Approach Delay (s/veh)		11.6			12.9							
Approach LOS		B			B							

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 40.7			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 12.4		Intersection LOS: B	
Intersection Capacity Utilization 20.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Street A & Cross Avenue





Lane Group	EBL	EBT	EBR	WBT
Lane Group Flow (vph)	4	521	4	647
v/c Ratio	0.02	0.45	0.01	0.56
Control Delay (s/veh)	8.8	11.7	0.0	12.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.8	11.7	0.0	12.9
Queue Length 50th (m)	0.2	14.3	0.0	18.5
Queue Length 95th (m)	1.4	23.1	0.0	29.1
Internal Link Dist (m)		44.4		91.8
Turn Bay Length (m)	15.0		10.0	
Base Capacity (vph)	288	1559	717	1559
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.01	0.33	0.01	0.42

Intersection Summary

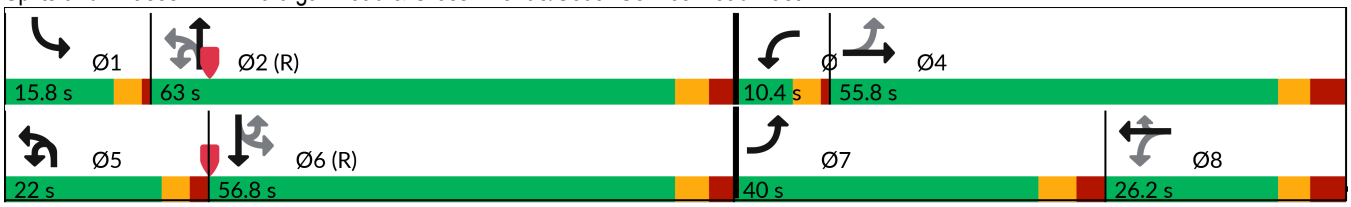
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	1175	69	158	66	118	308	1	243	1539	42	7	151
Future Volume (vph)	1175	69	158	66	118	308	1	243	1539	42	7	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	128.0		10.0	45.0		0.0		112.0		0.0		55.0
Storage Lanes	1		1	1		1		1		0		1
Taper Length (m)	28.0			40.0				35.0				20.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Ped Bike Factor		0.98		0.98					1.00			
Frt		0.896				0.850			0.996			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3330	3055	0	1785	3570	1581	0	1669	5006	0	0	1673
Flt Permitted	0.484			0.599				0.072				0.079
Satd. Flow (perm)	1696	3055	0	1106	3570	1581	0	126	5006	0	0	139
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		172				175			3			
Link Speed (k/h)		50			50				50			
Link Distance (m)		221.1			159.5				228.7			
Travel Time (s)		15.9			11.5				16.5			
Confl. Peds. (#/hr)			10	10				7		12		12
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%	0%	3%	0%	0%	1%	0%	7%	2%	0%	0%	7%
Adj. Flow (vph)	1277	75	172	72	128	335	1	264	1673	46	8	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1277	247	0	72	128	335	0	265	1719	0	0	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(m)		7.0			7.0				3.5			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		4.9			4.9				4.9			
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)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7			28.7				28.7			
Detector 2 Size(m)		1.8			1.8				1.8			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1427	270
Future Volume (vph)	1427	270
Ideal Flow (vphpl)	1900	1900
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor	1.00	
Frt	0.976	
Flt Protected		
Satd. Flow (prot)	4911	0
Flt Permitted		
Satd. Flow (perm)	4911	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	29	
Link Speed (k/h)	50	
Link Distance (m)	348.6	
Travel Time (s)	25.1	
Confl. Peds. (#/hr)		7
Peak Hour Factor	0.92	0.92
Heavy Vehicles (%)	1%	4%
Adj. Flow (vph)	1551	293
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1844	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	3.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	4.9	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	30.5	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	1.8	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	28.7	
Detector 2 Size(m)	1.8	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	pm+pt	NA		Perm	pm+pt
Protected Phases	7	4		3	8		5	5	2			1
Permitted Phases	4			8		8	2	2			6	6
Detector Phase	7	4		3	8	8	5	5	2		6	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.3		9.5	25.3	25.3	10.0	10.0	24.3		24.3	9.5
Total Split (s)	40.0	55.8		10.4	26.2	26.2	22.0	22.0	63.0		56.8	15.8
Total Split (%)	27.6%	38.5%		7.2%	18.1%	18.1%	15.2%	15.2%	43.4%		39.2%	10.9%
Maximum Green (s)	33.0	48.5		6.4	18.9	18.9	17.0	17.0	56.7		50.5	11.8
Yellow Time (s)	4.0	3.5		3.0	3.5	3.5	3.0	3.0	3.6		3.6	3.0
All-Red Time (s)	3.0	3.8		1.0	3.8	3.8	2.0	2.0	2.7		2.7	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	7.0	7.3		4.0	7.3	7.3		5.0	6.3			4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None		None	None	None	None	None	C-Max		C-Max	None
Walk Time (s)	7.0	7.0			7.0	7.0			7.0		7.0	
Flash Don't Walk (s)	11.0	11.0			11.0	11.0			11.0		11.0	
Pedestrian Calls (#/hr)	0	0			0	0			0		0	
Act Effct Green (s)	58.4	47.7		27.7	18.1	18.1		74.6	57.4			64.8
Actuated g/C Ratio	0.40	0.33		0.19	0.12	0.12		0.51	0.40			0.45
v/c Ratio	1.21	0.22		0.30	0.29	0.96		1.04	0.87			0.91
Control Delay (s/veh)	139.1	11.3		32.4	59.1	68.0		108.3	46.1			83.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay (s/veh)	139.1	11.3		32.4	59.1	68.0		108.3	46.1			83.2
LOS	F	B		C	E	E		F	D			F
Approach Delay (s/veh)		118.4			61.1				54.4			
Approach LOS		F			E				D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.21			
Intersection Signal Delay (s/veh): 81.5		Intersection LOS: F	
Intersection Capacity Utilization 112.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Trafalgar Road & Cross Avenue/South Service Road East





Lane Group	SBT	SBR
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	24.3	
Total Split (s)	56.8	
Total Split (%)	39.2%	
Maximum Green (s)	50.5	
Yellow Time (s)	3.6	
All-Red Time (s)	2.7	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.3	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Don't Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	50.5	
Actuated g/C Ratio	0.35	
v/c Ratio	1.07	
Control Delay (s/veh)	86.0	
Queue Delay	0.0	
Total Delay (s/veh)	86.0	
LOS	F	
Approach Delay (s/veh)	85.8	
Approach LOS	F	

Intersection Summary

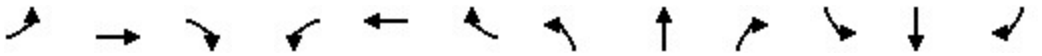


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1277	247	72	128	335	265	1719	172	1844
v/c Ratio	1.21	0.22	0.30	0.29	0.96	1.04	0.87	0.91	1.07
Control Delay (s/veh)	139.1	11.3	32.4	59.1	68.0	108.3	46.1	83.2	86.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	139.1	11.3	32.4	59.1	68.0	108.3	46.1	83.2	86.0
Queue Length 50th (m)	~180.5	7.7	12.2	17.7	48.7	~69.9	166.3	34.2	~211.8
Queue Length 95th (m)	#222.0	17.6	22.3	28.1	#107.7	#126.1	186.9	#78.9	#241.0
Internal Link Dist (m)		197.1		135.5			204.7		324.6
Turn Bay Length (m)	128.0		45.0			112.0		55.0	
Base Capacity (vph)	1054	1136	242	465	358	255	1982	188	1729
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.21	0.22	0.30	0.28	0.94	1.04	0.87	0.91	1.07

Intersection Summary

~ 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.

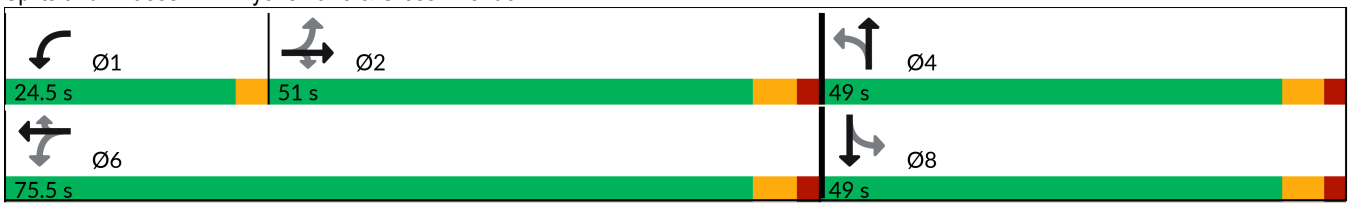


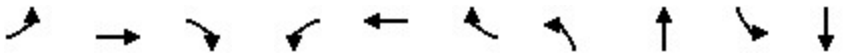
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	318	15	30	455	87	121	7	96	57	3	113
Future Volume (vph)	103	318	15	30	455	87	121	7	96	57	3	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		10.0	27.5		10.0	30.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			20.0			35.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.98	1.00		0.96	1.00	0.98		1.00	0.99	
Frt			0.850			0.850		0.860			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3159	1597	1785	3077	1365	1785	1590	0	1668	1534	0
Flt Permitted	0.456			0.499			0.671			0.680		
Satd. Flow (perm)	850	3159	1561	936	3077	1315	1257	1590	0	1189	1534	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			53			55		112			131	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		354.1			65.3			187.2			182.6	
Travel Time (s)		25.5			4.7			13.5			13.1	
Confl. Peds. (#/hr)	6		1	1		6	2		3	3		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	13%	0%	0%	16%	17%	0%	0%	0%	7%	0%	3%
Adj. Flow (vph)	120	370	17	35	529	101	141	8	112	66	3	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	370	17	35	529	101	141	120	0	66	134	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left		Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	16.8	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		15.0			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	35.0	35.0	35.0	8.0	35.0	35.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0	41.0	22.5	41.0	41.0	28.0	28.0		28.0	28.0	
Total Split (s)	51.0	51.0	51.0	24.5	75.5	75.5	49.0	49.0		49.0	49.0	
Total Split (%)	41.0%	41.0%	41.0%	19.7%	60.6%	60.6%	39.4%	39.4%		39.4%	39.4%	
Maximum Green (s)	45.0	45.0	45.0	21.5	69.5	69.5	43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	Max	Max	Max	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	0.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0	15.0	0.0	15.0	15.0	15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	45.7	45.7	45.7	54.8	51.7	51.7	15.4	15.4		15.4	15.4	
Actuated g/C Ratio	0.58	0.58	0.58	0.69	0.65	0.65	0.19	0.19		0.19	0.19	
v/c Ratio	0.25	0.20	0.02	0.05	0.26	0.12	0.58	0.30		0.29	0.33	
Control Delay (s/veh)	12.8	10.2	0.1	4.9	6.7	3.6	39.9	9.0		31.5	8.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	12.8	10.2	0.1	4.9	6.7	3.6	39.9	9.0		31.5	8.2	
LOS	B	B	A	A	A	A	D	A		C	A	
Approach Delay (s/veh)		10.5			6.1			25.6			15.9	
Approach LOS		B			A			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.5			
Actuated Cycle Length: 79.3			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 11.8		Intersection LOS: B	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Lyons Lane & Cross Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	370	17	35	529	101	141	120	66	134
v/c Ratio	0.25	0.20	0.02	0.05	0.26	0.12	0.58	0.30	0.29	0.33
Control Delay (s/veh)	12.8	10.2	0.1	4.9	6.7	3.6	39.9	9.0	31.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.8	10.2	0.1	4.9	6.7	3.6	39.9	9.0	31.5	8.2
Queue Length 50th (m)	9.6	15.1	0.0	1.4	15.3	2.2	20.8	1.1	9.2	0.4
Queue Length 95th (m)	22.1	25.6	0.0	4.8	27.0	8.2	36.3	12.2	19.0	12.1
Internal Link Dist (m)		330.1			41.3			163.2		158.6
Turn Bay Length (m)	30.0		10.0	27.5		10.0	30.0		15.0	
Base Capacity (vph)	489	1819	921	880	2711	1165	691	925	654	903
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	0.25	0.20	0.02	0.04	0.20	0.09	0.20	0.13	0.10	0.15

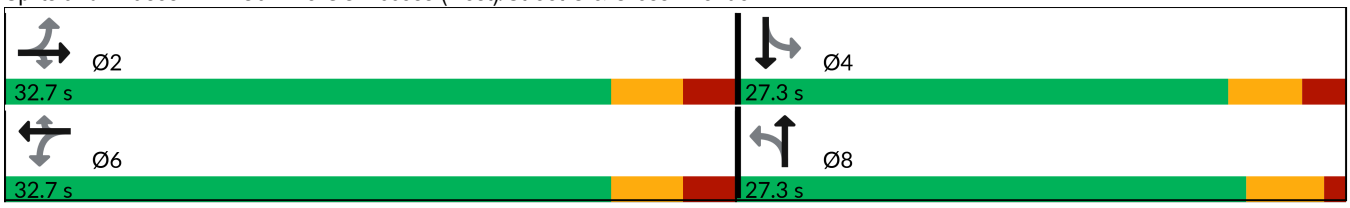
Intersection Summary

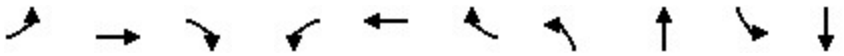
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	624	57	227	483	218	102	0	324	167	0	37
Future Volume (vph)	32	624	57	227	483	218	102	0	324	167	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.98		0.97	1.00		0.94	0.99	0.98		0.99	0.99	
Frt			0.850			0.850		0.850			0.945	
Flt Protected	0.950			0.950			0.950			0.950	0.969	
Satd. Flow (prot)	1785	3466	1597	1785	3336	1597	1785	1562	0	1696	1621	0
Flt Permitted	0.455			0.385			0.682			0.348	0.407	
Satd. Flow (perm)	838	3466	1552	721	3336	1501	1271	1562	0	618	679	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44			218		143			47	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		115.8			129.0			115.8			306.6	
Travel Time (s)		8.3			9.3			10.4			22.1	
Confl. Peds. (#/hr)	30		6	6		30	12		10	10		12
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%	3%	0%	0%	7%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	35	686	63	249	531	240	112	0	356	184	0	41
Shared Lane Traffic (%)										38%		
Lane Group Flow (vph)	35	686	63	249	531	240	112	356	0	114	111	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			-12.5	
Crosswalk Width(m)		4.9			4.9			4.9			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	22.0	22.0	22.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	27.6	27.6	27.6	27.6	27.6	27.6	22.5	22.5		27.3	27.3	
Total Split (s)	32.7	32.7	32.7	32.7	32.7	32.7	27.3	27.3		27.3	27.3	
Total Split (%)	54.5%	54.5%	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%		45.5%	45.5%	
Maximum Green (s)	27.1	27.1	27.1	27.1	27.1	27.1	22.8	22.8		22.0	22.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.5		3.3	3.3	
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3	2.3	1.0	1.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	4.5	4.5		5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0	15.0	15.0	15.0	15.0	11.0	11.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	27.4	27.4	27.4	27.4	27.4	27.4	13.8	13.8		13.0	13.0	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.27	0.27		0.25	0.25	
v/c Ratio	0.08	0.37	0.07	0.65	0.30	0.27	0.33	0.68		0.74	0.54	
Control Delay (s/veh)	8.7	8.9	4.5	22.6	8.4	3.0	17.0	16.5		44.3	20.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	8.7	8.9	4.5	22.6	8.4	3.0	17.0	16.5		44.3	20.4	
LOS	A	A	A	C	A	A	B	B		D	C	
Approach Delay (s/veh)		8.5			10.6			16.6			32.5	
Approach LOS		A			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 51.4			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 13.0		Intersection LOS: B	
Intersection Capacity Utilization 85.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Oakville GO Access (west)/Street C & Cross Avenue

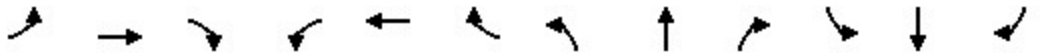




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	686	63	249	531	240	112	356	114	111
v/c Ratio	0.08	0.37	0.07	0.65	0.30	0.27	0.33	0.68	0.74	0.54
Control Delay (s/veh)	8.7	8.9	4.5	22.6	8.4	3.0	17.0	16.5	44.3	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.7	8.9	4.5	22.6	8.4	3.0	17.0	16.5	44.3	20.4
Queue Length 50th (m)	1.4	16.7	0.7	14.2	12.3	0.8	8.1	16.3	10.0	5.0
Queue Length 95th (m)	6.4	37.3	6.3	#57.3	28.6	11.3	17.8	36.7	25.1	17.4
Internal Link Dist (m)		91.8			105.0			91.8		282.6
Turn Bay Length (m)	15.0		10.0	40.0		10.0	15.0		15.0	
Base Capacity (vph)	447	1849	848	384	1779	902	570	779	267	320
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	0.08	0.37	0.07	0.65	0.30	0.27	0.20	0.46	0.43	0.35

Intersection Summary

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

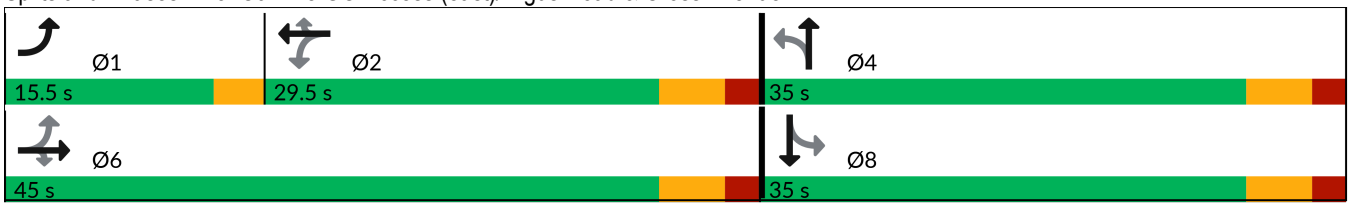


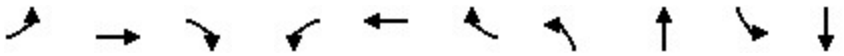
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1074	12	12	545	113	16	3	28	406	21	395
Future Volume (vph)	60	1074	12	12	545	113	16	3	28	406	21	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0		10.0	22.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			25.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.97	0.99	0.95		0.96	0.96	
Frt			0.850			0.850		0.863			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3535	799	930	3535	1597	892	783	0	1785	1448	0
Flt Permitted	0.319			0.182			0.303			0.735		
Satd. Flow (perm)	597	3535	776	178	3535	1546	281	783	0	1326	1448	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41			82		31			421	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.0			221.1			107.9			135.0	
Travel Time (s)		9.3			15.9			7.8			9.7	
Confl. Peds. (#/hr)	7		5	5		7	28		40	40		28
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%	1%	100%	92%	1%	0%	100%	67%	100%	0%	100%	2%
Adj. Flow (vph)	67	1193	13	13	606	126	18	3	31	451	23	439
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	1193	13	13	606	126	18	34	0	451	462	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	1	6	6	2	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	30.0	30.0	22.0	22.0	22.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	15.5	36.0	36.0	29.0	29.0	29.0	29.0	29.0		29.0	29.0	
Total Split (s)	15.5	45.0	45.0	29.5	29.5	29.5	35.0	35.0		35.0	35.0	
Total Split (%)	19.4%	56.3%	56.3%	36.9%	36.9%	36.9%	43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	12.5	39.0	39.0	23.5	23.5	23.5	29.0	29.0		29.0	29.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	2.5	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	None	None	None	Max	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	40.0	37.0	37.0	28.4	28.4	28.4	28.5	28.5		28.5	28.5	
Actuated g/C Ratio	0.52	0.48	0.48	0.37	0.37	0.37	0.37	0.37		0.37	0.37	
v/c Ratio	0.16	0.71	0.03	0.20	0.47	0.20	0.18	0.11		0.93	0.58	
Control Delay (s/veh)	10.3	18.8	0.6	27.8	21.1	8.8	22.8	8.1		52.9	6.3	
Queue Delay	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.3	20.0	0.6	27.8	21.1	8.8	22.8	8.1		52.9	6.3	
LOS	B	B	A	C	C	A	C	A		D	A	
Approach Delay (s/veh)		19.3			19.1			13.2			29.3	
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 77.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay (s/veh): 22.2		Intersection LOS: C	
Intersection Capacity Utilization 89.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Oakville GO Access (east)/Argus Road & Cross Avenue

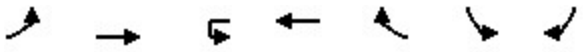




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	1193	13	13	606	126	18	34	451	462
v/c Ratio	0.16	0.71	0.03	0.20	0.47	0.20	0.18	0.11	0.93	0.58
Control Delay (s/veh)	10.3	18.8	0.6	27.8	21.1	8.8	22.8	8.1	52.9	6.3
Queue Delay	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.3	20.0	0.6	27.8	21.1	8.8	22.8	8.1	52.9	6.3
Queue Length 50th (m)	4.7	70.0	0.0	1.4	37.4	4.4	1.8	0.3	65.0	4.0
Queue Length 95th (m)	10.4	92.0	0.5	6.4	52.1	15.4	7.1	5.9	#121.0	25.7
Internal Link Dist (m)		105.0			197.1			83.9		111.0
Turn Bay Length (m)	12.0		10.0	22.0		10.0	15.0		15.0	
Base Capacity (vph)	500	1785	412	65	1296	618	105	313	497	806
Starvation Cap Reductn	0	350	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	0.13	0.83	0.03	0.20	0.47	0.20	0.17	0.11	0.91	0.57

Intersection Summary

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

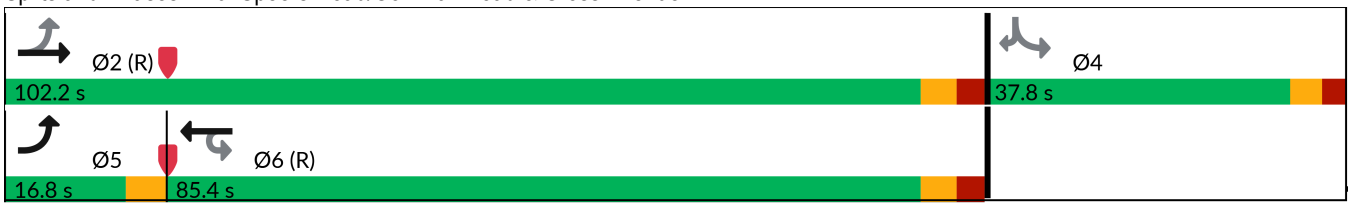


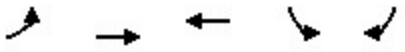
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	307	661	1	1063	106	59	579
Future Volume (vph)	307	661	1	1063	106	59	579
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	75.0		0.0		0.0	40.0	0.0
Storage Lanes	1		0		0	1	2
Taper Length (m)	25.0		7.6			50.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.88
Ped Bike Factor	1.00			1.00			
Frt				0.986			0.850
Flt Protected	0.950					0.950	
Satd. Flow (prot)	1668	3535	0	3475	0	1785	2703
Flt Permitted	0.139			0.955		0.950	
Satd. Flow (perm)	243	3535	0	3319	0	1785	2703
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				12			375
Link Speed (k/h)		60		60		50	
Link Distance (m)		161.4		196.6		130.4	
Travel Time (s)		9.7		11.8		9.4	
Confl. Peds. (#/hr)	13				13		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	1%	2%	1%	0%	0%	4%
Adj. Flow (vph)	327	703	1	1131	113	63	616
Shared Lane Traffic (%)							
Lane Group Flow (vph)	327	703	0	1245	0	63	616
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	Left	Right
Median Width(m)		3.5		3.5		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		4.9		4.9		4.9	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14		14	24	14
Number of Detectors	1	2	1	2		1	1
Detector Template	Left	Thru	Left	Thru		Left	Right
Leading Detector (m)	6.1	30.5	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7		28.7			
Detector 2 Size(m)		1.8		1.8			
Detector 2 Type		Cl+Ex		Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)		0.0		0.0			

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	Perm	NA		Perm	Perm
Protected Phases	5	2		6			
Permitted Phases	2		6			4	4
Detector Phase	5	2	6	6		4	4
Switch Phase							
Minimum Initial (s)	6.0	38.0	38.0	38.0		10.0	10.0
Minimum Split (s)	12.0	47.6	47.6	47.6		33.8	33.8
Total Split (s)	16.8	102.2	85.4	85.4		37.8	37.8
Total Split (%)	12.0%	73.0%	61.0%	61.0%		27.0%	27.0%
Maximum Green (s)	12.8	95.6	78.8	78.8		32.0	32.0
Yellow Time (s)	4.0	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	0.0	2.9	2.9	2.9		2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.0	6.6		6.6		5.8	5.8
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.5	5.0	5.0	5.0		3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0	10.0		10.0	10.0
Flash Don't Walk (s)		31.0	31.0	31.0		18.0	18.0
Pedestrian Calls (#/hr)		0	0	0		0	0
Act Effct Green (s)	110.1	107.5		79.8		20.1	20.1
Actuated g/C Ratio	0.79	0.77		0.57		0.14	0.14
v/c Ratio	0.76	0.26		0.66		0.25	0.87
Control Delay (s/veh)	31.3	5.6		22.7		52.7	35.5
Queue Delay	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	31.3	5.6		22.7		52.7	35.5
LOS	C	A		C		D	D
Approach Delay (s/veh)		13.8		22.7		37.1	
Approach LOS		B		C		D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 35 (25%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 22.9		Intersection LOS: C	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Speers Road/Cornwall Road & Cross Avenue





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	327	703	1245	63	616
v/c Ratio	0.76	0.26	0.66	0.25	0.87
Control Delay (s/veh)	31.3	5.6	22.7	52.7	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.3	5.6	22.7	52.7	35.5
Queue Length 50th (m)	39.1	25.5	120.8	15.8	39.3
Queue Length 95th (m)	#110.9	44.0	144.5	27.3	59.2
Internal Link Dist (m)		137.4	172.6	106.4	
Turn Bay Length (m)	75.0			40.0	
Base Capacity (vph)	431	2714	1897	408	907
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.26	0.66	0.15	0.68

Intersection Summary

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	673	30	70	552	22	66
Future Volume (vph)	673	30	70	552	22	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		10.0	10.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			15.0		2.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.899	
Flt Protected			0.950		0.988	
Satd. Flow (prot)	3500	1566	1750	3500	1636	0
Flt Permitted			0.950		0.988	
Satd. Flow (perm)	3500	1566	1750	3500	1636	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	65.3			68.4	86.9	
Travel Time (s)	4.7			4.9	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	732	33	76	600	24	72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	732	33	76	600	96	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

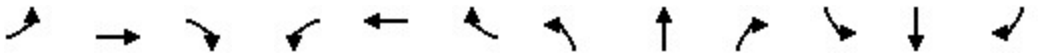
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	673	30	70	552	22	66
Future Volume (Veh/h)	673	30	70	552	22	66
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)	732	33	76	600	24	72
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	65			68		
pX, platoon unblocked			0.96		0.89	0.96
vC, conflicting volume			765		1184	366
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			664		743	247
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		92	90
cM capacity (veh/h)			881		286	721

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	366	366	33	76	300	300	96
Volume Left	0	0	0	76	0	0	24
Volume Right	0	0	33	0	0	0	72
cSH	1700	1700	1700	881	1700	1700	522
Volume to Capacity	0.22	0.22	0.02	0.09	0.18	0.18	0.18
Queue Length 95th (m)	0.0	0.0	0.0	2.1	0.0	0.0	5.1
Control Delay (s/veh)	0.0	0.0	0.0	9.5	0.0	0.0	13.4
Lane LOS				A			B
Approach Delay (s/veh)	0.0			1.1			13.4
Approach LOS							B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		



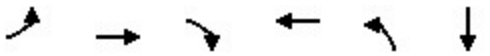
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	756	2	0	630	0	1	0	0	0	0	9
Future Volume (vph)	13	756	2	0	630	0	1	0	0	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.5		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			45.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850								0.850	
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1750	3500	1566	1842	3500	1842	1750	1842	0	1842	1566	0
Flt Permitted	0.335						0.751					
Satd. Flow (perm)	617	3500	1566	1842	3500	1842	1383	1842	0	1842	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36								113	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		68.4			115.8			120.3			301.3	
Travel Time (s)		4.9			8.3			8.7			21.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	822	2	0	685	0	1	0	0	0	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	822	2	0	685	0	1	0	0	0	10	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)		1.6			1.6			1.6			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm			Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	15.8	15.8	15.8		15.8		18.1				18.1	
Actuated g/C Ratio	0.37	0.37	0.37		0.37		0.42				0.42	
v/c Ratio	0.06	0.64	0.00		0.53		0.00				0.01	
Control Delay (s/veh)	9.2	13.7	0.0		12.2		8.0				0.0	
Queue Delay	0.0	0.0	0.0		0.0		0.0				0.0	
Total Delay (s/veh)	9.2	13.7	0.0		12.2		8.0				0.0	
LOS	A	B	A		B		A				A	
Approach Delay (s/veh)		13.6			12.2			8.0				
Approach LOS		B			B			A				

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 42.9			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 12.9		Intersection LOS: B	
Intersection Capacity Utilization 32.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Street A & Cross Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	SBT
Lane Group Flow (vph)	14	822	2	685	1	10
v/c Ratio	0.06	0.64	0.00	0.53	0.00	0.01
Control Delay (s/veh)	9.2	13.7	0.0	12.2	8.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.2	13.7	0.0	12.2	8.0	0.0
Queue Length 50th (m)	0.6	25.0	0.0	19.8	0.1	0.0
Queue Length 95th (m)	3.1	38.5	0.0	31.1	0.6	0.0
Internal Link Dist (m)		44.4		91.8		277.3
Turn Bay Length (m)	15.0		10.0		15.0	
Base Capacity (vph)	259	1474	680	1474	582	725
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	0.05	0.56	0.00	0.46	0.00	0.01

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	1274	117	156	62	74	144	1	123	1196	33	3	238
Future Volume (vph)	1274	117	156	62	74	144	1	123	1196	33	3	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	128.0		10.0	45.0		0.0		112.0		0.0		55.0
Storage Lanes	1		1	1		1		1		0		1
Taper Length (m)	28.0			40.0				35.0				20.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99		1.00					1.00			
Frt		0.914				0.850			0.996			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3236	3069	0	1623	3433	1439	0	1595	4903	0	0	1750
Flt Permitted	0.406			0.577				0.079				0.089
Satd. Flow (perm)	1383	3069	0	984	3433	1439	0	133	4903	0	0	164
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		120				146			3			
Link Speed (k/h)		50			50				50			
Link Distance (m)		221.1			159.5				228.7			
Travel Time (s)		15.9			11.5				16.5			
Confl. Peds. (#/hr)			1	1				4		6		6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	2%	8%	10%	4%	11%	0%	12%	4%	9%	0%	2%
Adj. Flow (vph)	1327	122	163	65	77	150	1	128	1246	34	3	248
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1327	285	0	65	77	150	0	129	1280	0	0	251
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(m)		7.0			7.0				3.5			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		4.9			4.9				4.9			
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)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7			28.7				28.7			
Detector 2 Size(m)		1.8			1.8				1.8			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			

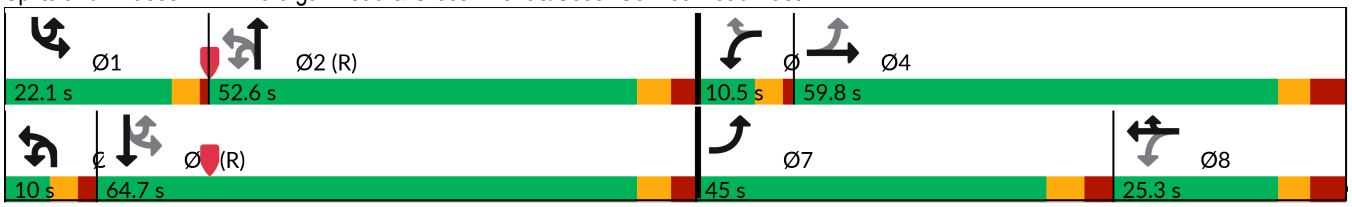
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1636	488
Future Volume (vph)	1636	488
Ideal Flow (vphpl)	1900	1900
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor	1.00	
Frt	0.966	
Flt Protected		
Satd. Flow (prot)	4787	0
Flt Permitted		
Satd. Flow (perm)	4787	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	62	
Link Speed (k/h)	50	
Link Distance (m)	348.6	
Travel Time (s)	25.1	
Confl. Peds. (#/hr)		4
Peak Hour Factor	0.96	0.96
Heavy Vehicles (%)	3%	3%
Adj. Flow (vph)	1704	508
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2212	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	3.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	4.9	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	30.5	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	1.8	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	28.7	
Detector 2 Size(m)	1.8	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Type	pm+pt	NA		pm+pt	NA	custom	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases	7	4		3	8	8	5	5	2		1	1
Permitted Phases	4			8		3	2	2			6	6
Detector Phase	7	4		3	8	8	5	5	2		1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.3		9.5	25.3	25.3	10.0	10.0	24.3		9.5	9.5
Total Split (s)	45.0	59.8		10.5	25.3	25.3	10.0	10.0	52.6		22.1	22.1
Total Split (%)	31.0%	41.2%		7.2%	17.4%	17.4%	6.9%	6.9%	36.3%		15.2%	15.2%
Maximum Green (s)	38.0	52.5		6.5	18.0	18.0	5.0	5.0	46.3		18.1	18.1
Yellow Time (s)	4.0	3.5		3.0	3.5	3.5	3.0	3.0	3.6		3.0	3.0
All-Red Time (s)	3.0	3.8		1.0	3.8	3.8	2.0	2.0	2.7		1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	7.0	7.3		4.0	7.3	7.3		5.0	6.3			4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None		None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0			7.0	7.0			7.0			
Flash Don't Walk (s)	11.0	11.0			11.0	11.0			11.0			
Pedestrian Calls (#/hr)	0	0			0	0			0			
Act Effct Green (s)	54.0	45.3		18.4	8.7	11.2		67.1	51.5			78.9
Actuated g/C Ratio	0.37	0.31		0.13	0.06	0.08		0.46	0.36			0.54
v/c Ratio	1.33	0.27		0.42	0.38	0.61		0.63	0.73			0.76
Control Delay (s/veh)	188.9	22.2		41.8	70.3	17.9		46.1	44.6			47.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay (s/veh)	188.9	22.2		41.8	70.3	17.9		46.1	44.6			47.2
LOS	F	C		D	E	B		D	D			D
Approach Delay (s/veh)		159.4			37.0				44.7			
Approach LOS		F			D				D			

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 145
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: 1.33
Intersection Signal Delay (s/veh): 98.7 Intersection LOS: F
Intersection Capacity Utilization 111.3% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Trafalgar Road & Cross Avenue/South Service Road East





Lane Group	SBT	SBR
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	24.3	
Total Split (s)	64.7	
Total Split (%)	44.6%	
Maximum Green (s)	58.4	
Yellow Time (s)	3.6	
All-Red Time (s)	2.7	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.3	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Don't Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	58.4	
Actuated g/C Ratio	0.40	
v/c Ratio	1.13	
Control Delay (s/veh)	102.8	
Queue Delay	0.0	
Total Delay (s/veh)	102.8	
LOS	F	
Approach Delay (s/veh)	97.1	
Approach LOS	F	

Intersection Summary

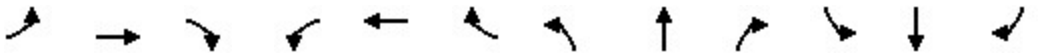


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1327	285	65	77	150	129	1280	251	2212
v/c Ratio	1.33	0.27	0.42	0.38	0.61	0.63	0.73	0.76	1.13
Control Delay (s/veh)	188.9	22.2	41.8	70.3	17.9	46.1	44.6	47.2	102.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	188.9	22.2	41.8	70.3	17.9	46.1	44.6	47.2	102.8
Queue Length 50th (m)	~229.8	18.5	11.8	11.4	0.7	20.9	118.7	48.6	~264.8
Queue Length 95th (m)	#265.9	30.0	21.4	19.7	14.6	#54.3	142.3	80.1	#292.6
Internal Link Dist (m)		197.1		135.5			204.7		324.6
Turn Bay Length (m)	128.0		45.0			112.0		55.0	
Base Capacity (vph)	1000	1187	154	426	329	206	1742	337	1965
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.33	0.24	0.42	0.18	0.46	0.63	0.73	0.74	1.13

Intersection Summary

~ 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.

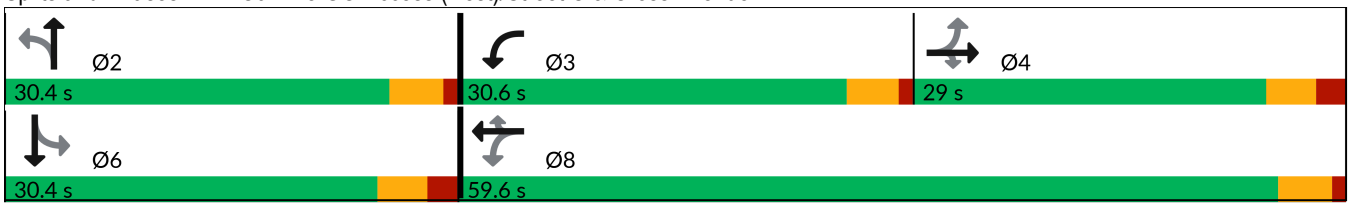


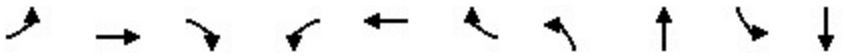
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	312	84	657	511	70	56	0	219	256	0	14
Future Volume (vph)	7	312	84	657	511	70	56	0	219	256	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00	0.98				
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	3245	1566	1785	3368	1566	1785	1548	0	1750	1566	0
Flt Permitted	0.433			0.352			0.748			0.501		
Satd. Flow (perm)	798	3245	1528	660	3368	1566	1404	1548	0	923	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			59		658			319	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		115.8			129.0			115.8			306.6	
Travel Time (s)		8.3			9.3			10.4			22.1	
Confl. Peds. (#/hr)			2	2			1		6			
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	0%	6%	2%	0%	2%	1%	2%	2%	2%
Adj. Flow (vph)	8	355	95	747	581	76	64	0	249	278	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	355	95	747	581	76	64	249	0	278	15	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			-12.5	
Crosswalk Width(m)		4.9			4.9			4.9			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	27.3	27.3	27.3	9.5	22.5	22.5	22.5	22.5		27.3	27.3	
Total Split (s)	29.0	29.0	29.0	30.6	59.6	59.6	30.4	30.4		30.4	30.4	
Total Split (%)	32.2%	32.2%	32.2%	34.0%	66.2%	66.2%	33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	23.7	23.7	23.7	26.1	55.1	55.1	25.9	25.9		25.1	25.1	
Yellow Time (s)	3.3	3.3	3.3	3.5	3.5	3.5	3.5	3.5		3.3	3.3	
All-Red Time (s)	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3	5.3	4.5	4.5	4.5	4.5	4.5		5.3	5.3	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0	15.0		11.0	11.0	11.0	11.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)	14.5	14.5	14.5	45.9	45.9	45.9	25.9	25.9		25.1	25.1	
Actuated g/C Ratio	0.18	0.18	0.18	0.57	0.57	0.57	0.32	0.32		0.31	0.31	
v/c Ratio	0.06	0.61	0.28	1.01	0.30	0.08	0.14	0.26		0.97	0.02	
Control Delay (s/veh)	27.6	35.2	11.0	54.0	9.5	3.2	21.9	0.7		78.2	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	27.6	35.2	11.0	54.0	9.5	3.2	21.9	0.7		78.2	0.1	
LOS	C	D	B	D	A	A	C	A		E	A	
Approach Delay (s/veh)		30.1			32.8			5.0			74.2	
Approach LOS		C			C			A			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 80.9			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay (s/veh): 33.7		Intersection LOS: C	
Intersection Capacity Utilization 90.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Oakville GO Access (west)/Street C & Cross Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	355	95	747	581	76	64	249	278	15
v/c Ratio	0.06	0.61	0.28	1.01	0.30	0.08	0.14	0.26	0.97	0.02
Control Delay (s/veh)	27.6	35.2	11.0	54.0	9.5	3.2	21.9	0.7	78.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.6	35.2	11.0	54.0	9.5	3.2	21.9	0.7	78.2	0.1
Queue Length 50th (m)	1.0	26.7	1.7	~87.0	22.5	1.1	6.9	0.0	41.3	0.0
Queue Length 95th (m)	4.5	38.5	12.5	#156.4	30.2	6.1	16.7	0.0	#96.2	0.0
Internal Link Dist (m)		91.8			105.0			91.8		282.6
Turn Bay Length (m)	15.0		10.0	40.0		10.0	15.0		15.0	
Base Capacity (vph)	234	952	506	738	2298	1087	450	943	286	706
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	0.03	0.37	0.19	1.01	0.25	0.07	0.14	0.26	0.97	0.02

Intersection Summary

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

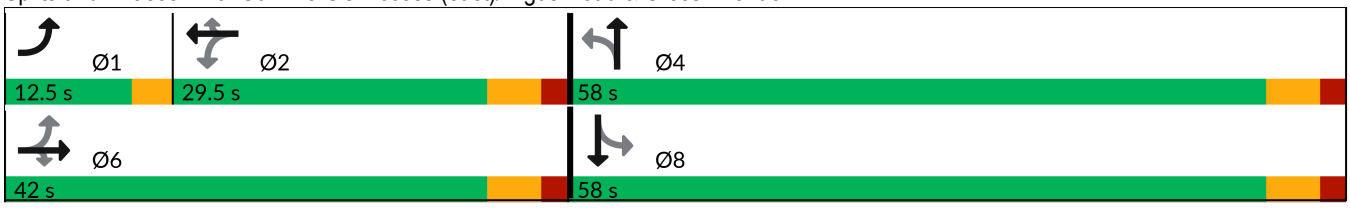
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

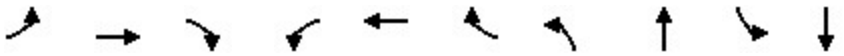
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	756	16	14	571	54	16	0	28	681	15	673
Future Volume (vph)	26	756	16	14	571	54	16	0	28	681	15	673
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0		10.0	22.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			25.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98		0.97		0.98	0.97	
Frt			0.850			0.850		0.850			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3500	823	925	3535	1521	892	783	0	1785	1515	0
Flt Permitted	0.236			0.258			0.183			0.738		
Satd. Flow (perm)	443	3500	796	250	3535	1484	172	783	0	1357	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			65		65			335	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.0			221.1			107.9			135.0	
Travel Time (s)		9.3			15.9			7.8			9.7	
Confl. Peds. (#/hr)	2		6	6		2	18		17	17		18
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%	2%	94%	93%	1%	5%	100%	0%	97%	0%	100%	0%
Adj. Flow (vph)	28	822	17	15	621	59	17	0	30	740	16	732
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	822	17	15	621	59	17	30	0	740	748	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	1	6	6	2	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	30.0	30.0	22.0	22.0	22.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	12.5	36.0	36.0	29.0	29.0	29.0	29.0	29.0		29.0	29.0	
Total Split (s)	12.5	42.0	42.0	29.5	29.5	29.5	58.0	58.0		58.0	58.0	
Total Split (%)	12.5%	42.0%	42.0%	29.5%	29.5%	29.5%	58.0%	58.0%		58.0%	58.0%	
Maximum Green (s)	9.5	36.0	36.0	23.5	23.5	23.5	52.0	52.0		52.0	52.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	2.5	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	None	None	None	Max	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	36.3	33.2	33.2	26.8	26.8	26.8	52.0	52.0		52.0	52.0	
Actuated g/C Ratio	0.37	0.34	0.34	0.28	0.28	0.28	0.53	0.53		0.53	0.53	
v/c Ratio	0.10	0.69	0.06	0.22	0.64	0.13	0.18	0.07		1.02	0.78	
Control Delay (s/veh)	20.0	30.9	3.7	39.8	35.5	7.6	18.9	0.8		63.5	16.4	
Queue Delay	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.0	31.8	3.7	39.8	35.5	7.6	18.9	0.8		63.5	16.4	
LOS	B	C	A	D	D	A	B	A		E	B	
Approach Delay (s/veh)		30.9			33.2			7.4			39.8	
Approach LOS		C			C			A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 97.3			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay (s/veh): 35.3		Intersection LOS: D	
Intersection Capacity Utilization 102.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 5: Oakville GO Access (east)/Argus Road & Cross Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	822	17	15	621	59	17	30	740	748
v/c Ratio	0.10	0.69	0.06	0.22	0.64	0.13	0.18	0.07	1.02	0.78
Control Delay (s/veh)	20.0	30.9	3.7	39.8	35.5	7.6	18.9	0.8	63.5	16.4
Queue Delay	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.0	31.8	3.7	39.8	35.5	7.6	18.9	0.8	63.5	16.4
Queue Length 50th (m)	3.3	69.2	0.0	2.3	57.7	0.0	1.6	0.0	~152.4	61.5
Queue Length 95th (m)	8.7	89.6	2.4	8.7	76.7	8.6	6.6	1.0	#224.8	119.9
Internal Link Dist (m)		105.0			197.1			83.9		111.0
Turn Bay Length (m)	12.0		10.0	22.0		10.0	15.0		15.0	
Base Capacity (vph)	296	1296	315	68	973	455	92	449	725	965
Starvation Cap Reductn	0	217	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	0.09	0.76	0.05	0.22	0.64	0.13	0.18	0.07	1.02	0.78

Intersection Summary

~ 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.

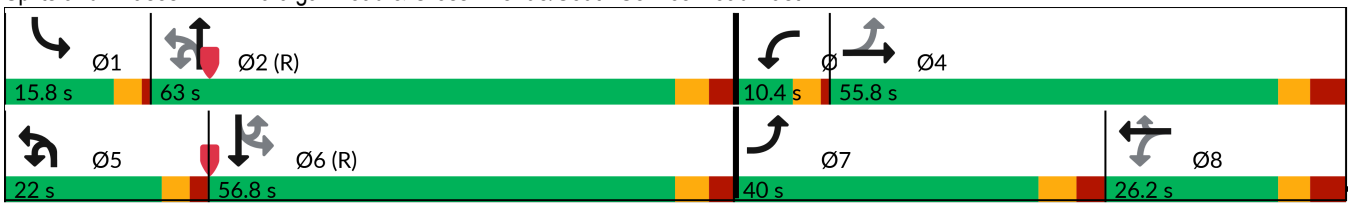
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	1154	60	146	66	105	308	1	233	1539	42	7	151
Future Volume (vph)	1154	60	146	66	105	308	1	233	1539	42	7	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	128.0		10.0	45.0		0.0		112.0		0.0		55.0
Storage Lanes	1		1	1		1		1		0		1
Taper Length (m)	28.0			40.0				35.0				20.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Ped Bike Factor		0.97		0.98					1.00			
Frt		0.894				0.850			0.996			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3330	3046	0	1785	3570	1581	0	1669	5006	0	0	1673
Flt Permitted	0.490			0.612				0.072				0.079
Satd. Flow (perm)	1717	3046	0	1130	3570	1581	0	126	5006	0	0	139
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		159				175			3			
Link Speed (k/h)		50			50				50			
Link Distance (m)		221.1			159.5				228.7			
Travel Time (s)		15.9			11.5				16.5			
Confl. Peds. (#/hr)			10	10				7		12		12
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%	0%	3%	0%	0%	1%	0%	7%	2%	0%	0%	7%
Adj. Flow (vph)	1254	65	159	72	114	335	1	253	1673	46	8	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1254	224	0	72	114	335	0	254	1719	0	0	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(m)		7.0			7.0				3.5			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		4.9			4.9				4.9			
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)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	6.1	30.5		6.1	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	6.1	1.8		6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7			28.7				28.7			
Detector 2 Size(m)		1.8			1.8				1.8			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1427	243
Future Volume (vph)	1427	243
Ideal Flow (vphpl)	1900	1900
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor	1.00	
Frt	0.978	
Flt Protected		
Satd. Flow (prot)	4925	0
Flt Permitted		
Satd. Flow (perm)	4925	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	25	
Link Speed (k/h)	50	
Link Distance (m)	348.6	
Travel Time (s)	25.1	
Confl. Peds. (#/hr)		7
Peak Hour Factor	0.92	0.92
Heavy Vehicles (%)	1%	4%
Adj. Flow (vph)	1551	264
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1815	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	3.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	4.9	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	30.5	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	1.8	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	28.7	
Detector 2 Size(m)	1.8	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	pm+pt	NA		Perm	pm+pt
Protected Phases	7	4		3	8		5	5	2			1
Permitted Phases	4			8		8	2	2			6	6
Detector Phase	7	4		3	8	8	5	5	2		6	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.3		9.5	25.3	25.3	10.0	10.0	24.3		24.3	9.5
Total Split (s)	40.0	55.8		10.4	26.2	26.2	22.0	22.0	63.0		56.8	15.8
Total Split (%)	27.6%	38.5%		7.2%	18.1%	18.1%	15.2%	15.2%	43.4%		39.2%	10.9%
Maximum Green (s)	33.0	48.5		6.4	18.9	18.9	17.0	17.0	56.7		50.5	11.8
Yellow Time (s)	4.0	3.5		3.0	3.5	3.5	3.0	3.0	3.6		3.6	3.0
All-Red Time (s)	3.0	3.8		1.0	3.8	3.8	2.0	2.0	2.7		2.7	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	7.0	7.3		4.0	7.3	7.3		5.0	6.3			4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None		None	None	None	None	None	C-Max		C-Max	None
Walk Time (s)	7.0	7.0			7.0	7.0			7.0		7.0	
Flash Don't Walk (s)	11.0	11.0			11.0	11.0			11.0		11.0	
Pedestrian Calls (#/hr)	0	0			0	0			0		0	
Act Effct Green (s)	58.4	47.7		27.7	18.1	18.1		74.6	57.4			64.8
Actuated g/C Ratio	0.40	0.33		0.19	0.12	0.12		0.51	0.40			0.45
v/c Ratio	1.19	0.20		0.30	0.26	0.96		1.00	0.87			0.91
Control Delay (s/veh)	128.7	11.0		32.3	58.6	68.0		97.5	46.1			83.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay (s/veh)	128.7	11.0		32.3	58.6	68.0		97.5	46.1			83.2
LOS	F	B		C	E	E		F	D			F
Approach Delay (s/veh)		110.9			61.0				52.7			
Approach LOS		F			E				D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay (s/veh): 77.2		Intersection LOS: E	
Intersection Capacity Utilization 111.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Trafalgar Road & Cross Avenue/South Service Road East





Lane Group	SBT	SBR
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	24.3	
Total Split (s)	56.8	
Total Split (%)	39.2%	
Maximum Green (s)	50.5	
Yellow Time (s)	3.6	
All-Red Time (s)	2.7	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.3	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Don't Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	50.5	
Actuated g/C Ratio	0.35	
v/c Ratio	1.05	
Control Delay (s/veh)	80.4	
Queue Delay	0.0	
Total Delay (s/veh)	80.4	
LOS	F	
Approach Delay (s/veh)	80.6	
Approach LOS	F	

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1254	224	72	114	335	254	1719	172	1815
v/c Ratio	1.19	0.20	0.30	0.26	0.96	1.00	0.87	0.91	1.05
Control Delay (s/veh)	128.7	11.0	32.3	58.6	68.0	97.5	46.1	83.2	80.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	128.7	11.0	32.3	58.6	68.0	97.5	46.1	83.2	80.4
Queue Length 50th (m)	~172.3	6.6	12.2	15.7	48.7	~63.3	166.3	34.2	~205.4
Queue Length 95th (m)	#213.8	16.2	22.3	25.5	#107.7	#119.4	186.9	#78.9	#234.9
Internal Link Dist (m)		197.1		135.5			204.7		324.6
Turn Bay Length (m)	128.0		45.0			112.0		55.0	
Base Capacity (vph)	1058	1124	245	465	358	255	1982	188	1731
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.20	0.29	0.25	0.94	1.00	0.87	0.91	1.05

Intersection Summary

~ 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.

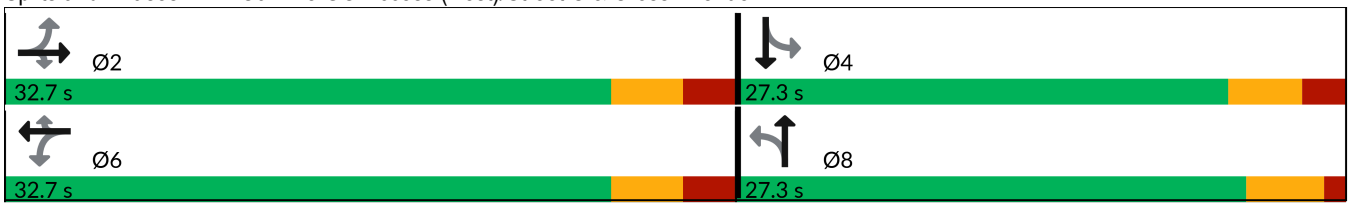
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	582	55	227	429	218	101	0	324	167	0	30
Future Volume (vph)	21	582	55	227	429	218	101	0	324	167	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		10.0	40.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.98		0.97	1.00		0.94	0.99	0.98		0.99	0.99	
Frt			0.850			0.850		0.850			0.954	
Flt Protected	0.950			0.950			0.950			0.950	0.967	
Satd. Flow (prot)	1785	3466	1597	1785	3336	1597	1785	1562	0	1696	1636	0
Flt Permitted	0.482			0.409			0.684			0.342	0.370	
Satd. Flow (perm)	887	3466	1552	766	3336	1501	1274	1562	0	607	624	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45			240		164			47	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		115.8			129.0			115.8			306.6	
Travel Time (s)		8.3			9.3			10.4			22.1	
Confl. Peds. (#/hr)	30		6	6		30	12		10	10		12
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%	3%	0%	0%	7%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	23	640	60	249	471	240	111	0	356	184	0	33
Shared Lane Traffic (%)										40%		
Lane Group Flow (vph)	23	640	60	249	471	240	111	356	0	110	107	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			-12.5	
Crosswalk Width(m)		4.9			4.9			4.9			1.6	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

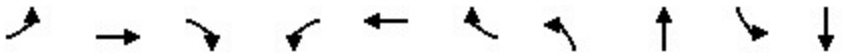
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	22.0	22.0	22.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	27.6	27.6	27.6	27.6	27.6	27.6	22.5	22.5		27.3	27.3	
Total Split (s)	32.7	32.7	32.7	32.7	32.7	32.7	27.3	27.3		27.3	27.3	
Total Split (%)	54.5%	54.5%	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%		45.5%	45.5%	
Maximum Green (s)	27.1	27.1	27.1	27.1	27.1	27.1	22.8	22.8		22.0	22.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.5		3.3	3.3	
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3	2.3	1.0	1.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	4.5	4.5		5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0	15.0	15.0	15.0	15.0	11.0	11.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	27.4	27.4	27.4	27.4	27.4	27.4	13.4	13.4		12.6	12.6	
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.54	0.54	0.26	0.26		0.25	0.25	
v/c Ratio	0.05	0.34	0.07	0.61	0.26	0.26	0.33	0.67		0.73	0.57	
Control Delay (s/veh)	8.4	8.5	4.3	19.8	8.1	2.4	17.1	15.2		45.2	22.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	8.4	8.5	4.3	19.8	8.1	2.4	17.1	15.2		45.2	22.3	
LOS	A	A	A	B	A	A	B	B		D	C	
Approach Delay (s/veh)		8.2			9.7			15.7			33.9	
Approach LOS		A			A			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 51.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay (s/veh): 12.6 Intersection LOS: B
Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 4: Oakville GO Access (west)/Street C & Cross Avenue

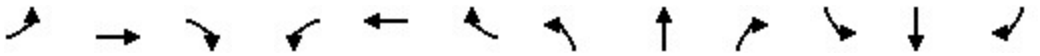




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	640	60	249	471	240	111	356	110	107
v/c Ratio	0.05	0.34	0.07	0.61	0.26	0.26	0.33	0.67	0.73	0.57
Control Delay (s/veh)	8.4	8.5	4.3	19.8	8.1	2.4	17.1	15.2	45.2	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.4	8.5	4.3	19.8	8.1	2.4	17.1	15.2	45.2	22.3
Queue Length 50th (m)	0.9	14.9	0.6	13.3	10.3	0.0	8.0	14.5	9.5	4.7
Queue Length 95th (m)	4.7	34.5	5.9	#54.9	25.2	9.7	17.6	34.1	24.6	17.3
Internal Link Dist (m)		91.8			105.0			91.8		282.6
Turn Bay Length (m)	15.0		10.0	40.0		10.0	15.0		15.0	
Base Capacity (vph)	476	1860	853	410	1790	916	575	795	264	298
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	0.05	0.34	0.07	0.61	0.26	0.26	0.19	0.45	0.42	0.36

Intersection Summary

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



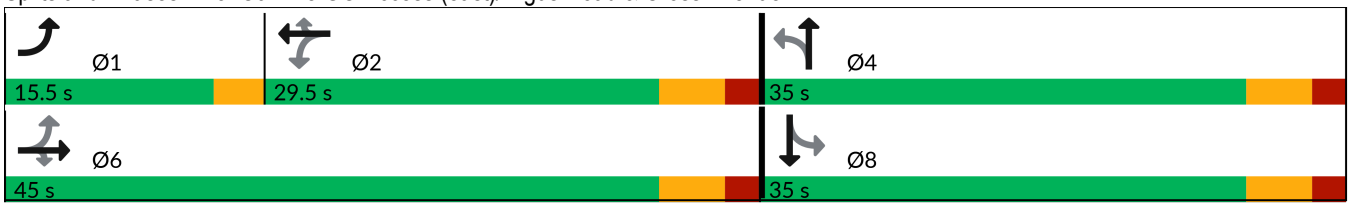
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	1033	12	12	496	113	16	3	28	406	21	389
Future Volume (vph)	59	1033	12	12	496	113	16	3	28	406	21	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0		10.0	22.0		10.0	15.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	30.0			25.0			30.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.97	0.99	0.95		0.96	0.96	
Frt			0.850			0.850		0.863			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3535	799	930	3535	1597	892	783	0	1785	1449	0
Flt Permitted	0.352			0.201			0.314			0.735		
Satd. Flow (perm)	658	3535	776	196	3535	1546	291	783	0	1326	1449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41			82		31			432	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.0			221.1			107.9			135.0	
Travel Time (s)		9.3			15.9			7.8			9.7	
Confl. Peds. (#/hr)	7		5	5		7	28		40	40		28
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%	1%	100%	92%	1%	0%	100%	67%	100%	0%	100%	2%
Adj. Flow (vph)	66	1148	13	13	551	126	18	3	31	451	23	432
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	1148	13	13	551	126	18	34	0	451	455	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)		4.9			4.9			4.9			4.9	
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)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

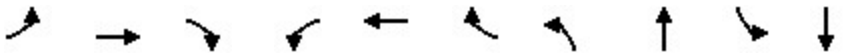
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	1	6	6	2	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	30.0	30.0	22.0	22.0	22.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	15.5	36.0	36.0	29.0	29.0	29.0	29.0	29.0		29.0	29.0	
Total Split (s)	15.5	45.0	45.0	29.5	29.5	29.5	35.0	35.0		35.0	35.0	
Total Split (%)	19.4%	56.3%	56.3%	36.9%	36.9%	36.9%	43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	12.5	39.0	39.0	23.5	23.5	23.5	29.0	29.0		29.0	29.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	2.5	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Recall Mode	None	None	None	Max	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	39.6	36.6	36.6	28.0	28.0	28.0	28.5	28.5		28.5	28.5	
Actuated g/C Ratio	0.51	0.47	0.47	0.36	0.36	0.36	0.37	0.37		0.37	0.37	
v/c Ratio	0.15	0.68	0.03	0.18	0.43	0.21	0.17	0.11		0.92	0.56	
Control Delay (s/veh)	10.3	18.3	0.6	26.2	20.6	8.8	22.3	8.1		51.8	5.6	
Queue Delay	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.3	19.2	0.6	26.2	20.6	8.8	22.3	8.1		51.8	5.6	
LOS	B	B	A	C	C	A	C	A		D	A	
Approach Delay (s/veh)		18.6			18.6			13.0			28.6	
Approach LOS		B			B			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 77.1
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.92
Intersection Signal Delay (s/veh): 21.6 Intersection LOS: C
Intersection Capacity Utilization 88.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 5: Oakville GO Access (east)/Argus Road & Cross Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	66	1148	13	13	551	126	18	34	451	455
v/c Ratio	0.15	0.68	0.03	0.18	0.43	0.21	0.17	0.11	0.92	0.56
Control Delay (s/veh)	10.3	18.3	0.6	26.2	20.6	8.8	22.3	8.1	51.8	5.6
Queue Delay	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.3	19.2	0.6	26.2	20.6	8.8	22.3	8.1	51.8	5.6
Queue Length 50th (m)	4.6	66.2	0.0	1.4	33.4	4.4	1.8	0.3	65.0	2.2
Queue Length 95th (m)	10.3	87.1	0.5	6.2	47.1	15.4	7.1	5.9	#121.0	22.0
Internal Link Dist (m)		105.0			197.1			83.9		111.0
Turn Bay Length (m)	12.0		10.0	22.0		10.0	15.0		15.0	
Base Capacity (vph)	521	1795	414	71	1283	613	109	314	500	815
Starvation Cap Reductn	0	358	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	0.13	0.80	0.03	0.18	0.43	0.21	0.17	0.11	0.90	0.56

Intersection Summary

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

APPENDIX G: Background Development Excerpts

50 Speers Road
Proposed Residential Development
Traffic Impact Study

Town of Oakville

Version 1

Prepared For: Helberg Properties Limited

October 14, 2022



The TTS travel data demonstrates that site study area has an auto driver mode share in the order of 57% for morning outbound and 64% for afternoon inbound home-based trips, during the peak travel periods. Non-auto trips (i.e. transit, walking and cycling) account for approximately 29% of all home-based trips made in the morning outbound and 28% in the afternoon inbound, during the peak travel periods.

9.4.3 Total Site Vehicle Trip Forecast

Total automobile trips associated with the site are summarized in **Table 26**, including trips associated with residential uses, as well as the removal of trips associated with the existing site.

TABLE 26 VEHICLE TRIP GENERATION

Site	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Adopted Residential Vehicle Trip Generation Rate (per Unit)	**0.06**	**0.17**	**0.23**	**0.17**	**0.11**	**0.28**
Total New Residential Vehicle Trips (314 Units)	20	55	75	55	35	90
Total New Site Trips (number of vehicles)	**20**	**55**	**75**	**55**	**35**	**90**
Existing Site Trips to be Removed	0	-20	-20	-25	-10	-35
Net New Site Traffic Volumes (number of vehicles)	**20**	**35**	**55**	**30**	**25**	**55**

The redevelopment of the site is forecasted to have a net impact of approximately 55 two-way vehicle trips during both the weekday morning and afternoon peak hours.

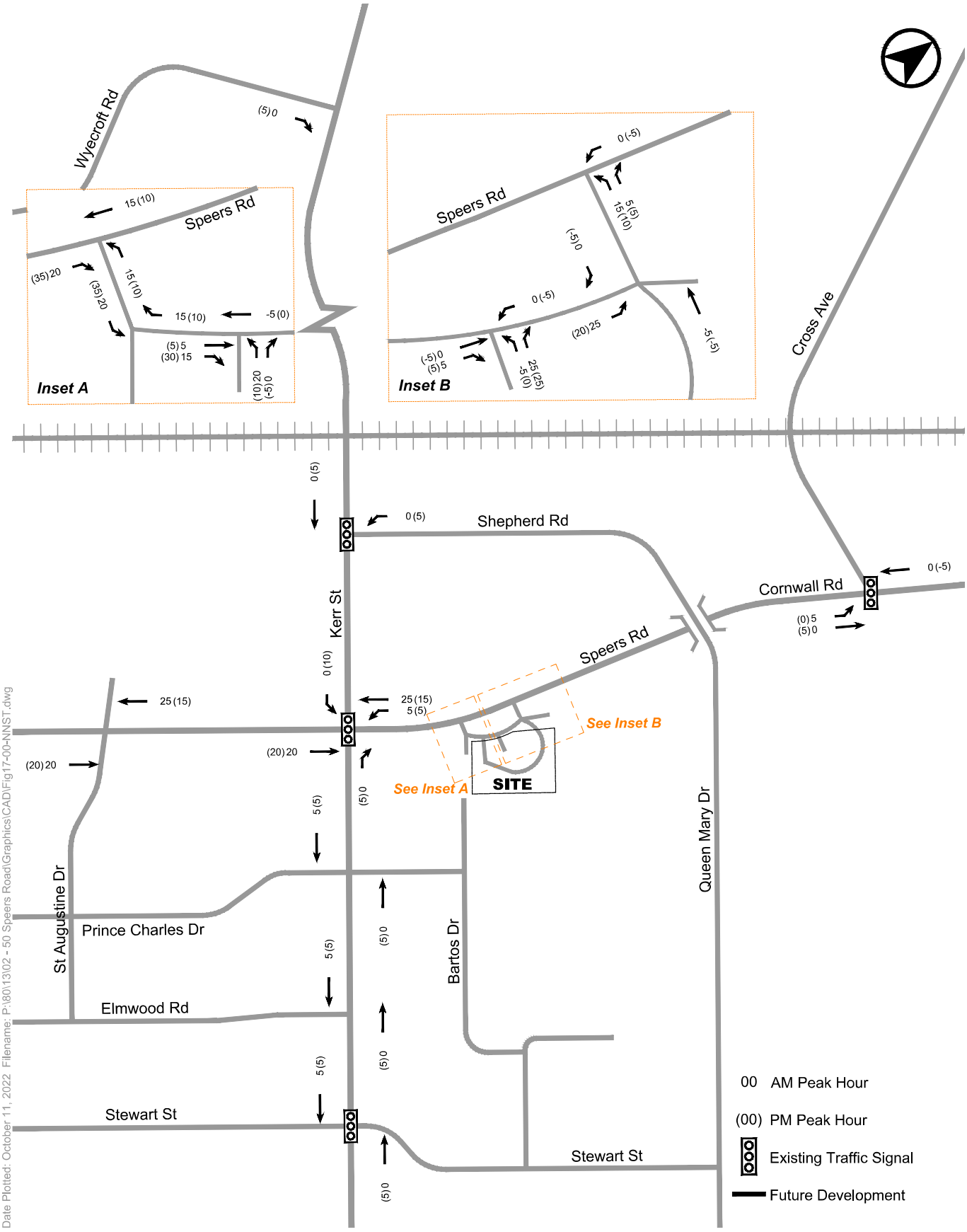


FIGURE 17 NET NEW SITE TRAFFIC VOLUMES

10.0 TRAFFIC OPERATIONS ANALYSIS

The traffic operations analysis has been undertaken during the weekday morning and afternoon street peak hours under the following traffic conditions:

- Existing conditions (2022);
- Future background conditions (2026) – with corridor growth and area background development traffic;
- Future total conditions (2026) – at build-out of site and inclusive of site generated traffic;
- Future total conditions (2031) – 5 years beyond build-out with site-generated traffic.

A brief overview of the software, analysis parameters and assumptions is provided below.

10.1 ANALYSIS METHODOLOGY AND ASSUMPTIONS

10.1.1 Intersection Capacity Analysis Methodology

The traffic operations analysis has been completed using the Synchro (Version 11) software package in accordance with the methodologies outlined in the *Highway Capacity Manual* (*HCM 2000*).

The key performance indicator of the signalized intersection evaluation is an intersection performance index (volume to capacity, or v/c), where the v/c index of 1.00 indicates 'at or near capacity' conditions.

The key performance indicator of unsignalized intersection / driveway analyses is the average delay per vehicle (in seconds) and a level of service (LOS) designation, ranging from LOS A (little delay) to LOS F (extended delay), with respect to the relative time for a motorist to complete a travel movement at an intersection or driveway.

10.1.2 Base Saturation Flow Rates

A base saturation flow rate of 1,900 passenger cars per hour of green time per lane (pcphgpl) has been adopted as the base assumption within all Synchro analysis detailed in this study.

10.1.3 Heavy Vehicle Assumptions

Heavy and medium truck percentage incorporated into the analysis were based upon information obtained from the existing intersection turning movement counts.

10.1.4 Traffic Signal Timing Plans

Existing traffic signal timing plans for all signalized intersections within the study area were obtained from the Town of Oakville. Analyses were undertaken using these signal timing plans for existing, future background and future total traffic conditions. Where necessary, traffic signal timing plans were optimized in the future scenarios.

The existing traffic signal timing plans are provide in **Appendix G**.

166 South Service Road East, Oakville
Transportation Impact & Parking Study
(2nd Submission)

Paradigm Transportation Solutions Limited
BA Consulting Group Ltd

2024-04
210590

ptsl.com

4 Development Proposal Review

4.1 Proposed Development Programme Elements

Since the previous submission made to the City in June 2022, the development scheme for the three towers has been revised to replace office use with commercial use, decrease the retail use, and an increase in the overall unit count, vehicle/bicycle parking supply, and loading supply. The parking supply change and its appropriateness is further discussed in **Section 5.0**. Loading space provisions for the development is consistent with the previous submission and is further discussed in **Section 6.0**. Bicycle parking provisions have also been revised and are discussed in **Section 7.0**.

It is noted that the design of the site access driveway, parking arrangements, loading arrangements and vehicular circulation routes for the site have generally remained unchanged when compared to the previous June 2022 submission. Reduced architectural plans are attached in **Appendix C**.

A comparison of the site development statistics associated with each application submission is summarized in **Table 4.1**.

TABLE 4.1: DEVELOPMENT PROGRAMME

Land Use		June 2022 Submission[1]	Current Submission[2]	Net Change
Residential Use	<75m / unit	1,534 units	1,721 units (107 studio units)	+187 units
	>75m / unit	72 units	130 units	+58 units
	Total Units	1,606 units	1,851 units	+245 units
Non-Residential Use	Retail	2,014 m2 GFA	1,252 m2 GFA	-762 m2 GFA
	Office	3,891 m2 GFA	0 m2 GFA	-3,891 m2 GFA
	Daycare	0 m2 GFA	4,602 m2 GFA	+4,602 m2 GFA
Transportaion Services	Parking Supply	1,191 spaces	1,297 spaces	+89 spaces
		(805 residential spaces and 386 non-residential spaces)	(872 residential spaces and 425 non-residential spaces)	(+67 residential spaces and +39 non-residential spaces)
	Loading Supply	5 loading spaces	6 loading spaces	+1 loading space
		(1 refuse collection space, 1 typical space, and 3 auxiliary spaces)	(1 refuse collection space, 2 typical spaces, and 3 auxiliary spaces)	(+1 typical space)
	Bicycle Parking Supply	1,613 spaces	1,858 spaces	+244 spaces
		(1,209 long-term spaces and 404 short-term spaces)	(1,395 long-term spaces and 463 short-term spaces)	(+186 long-term spaces and +59 short-term spaces)

Note:

1 Site statistics are based on architectural plans prepared by Sweeny&Co Architects dated June 2022

2 Site statistics are based on architectural plans prepared by Sweeny&Co Architects dated March 2024

9 Development Concept Travel Forecasts

The development proposal for the site envisions a large-scale development of three towers with proposed heights of 52, 56, and 44 storeys, with Towers 2 and 3 on top of a mutual podium.

The development proposes 1,851 residential units, approximately 1,252 square metres (13,477 square feet) of retail Net Floor Area (NFA), and about 4,602 square metres (49,534 square feet) of health/fitness club NFA. Vehicle access will be provided through two driveway connections: South Service Road East (North Access) and a new north-south local road (East Access) connecting South Service Road East to Cross Avenue.

It is assumed that the site will be developed in two phases:

- Phase 1 will open in 2028 and will include Tower 1, while
- Phase 2 will open in 2033 and consist of Towers 2 and 3.

It is also assumed the North Access will be the only access until 2038, when the new north-south local road is assumed to be constructed.

Table 9.1 summarizes the development land uses for each tower.

TABLE 9.1: DEVELOPMENT LAND USES

Tower	Units	Health/Fitness Club (m^2)	Retail (m^2)
1	711	4,602	--
2 + 3	1,140	--	1,252
Total	**1,851**	**4,602**	**1,252**

originate from the on-site residential units, requiring only a walking trip. The detailed calculations are provided in **Appendix E**.

ITE data suggests an internal capture rate of 2% - 15% for the respective peak hours.

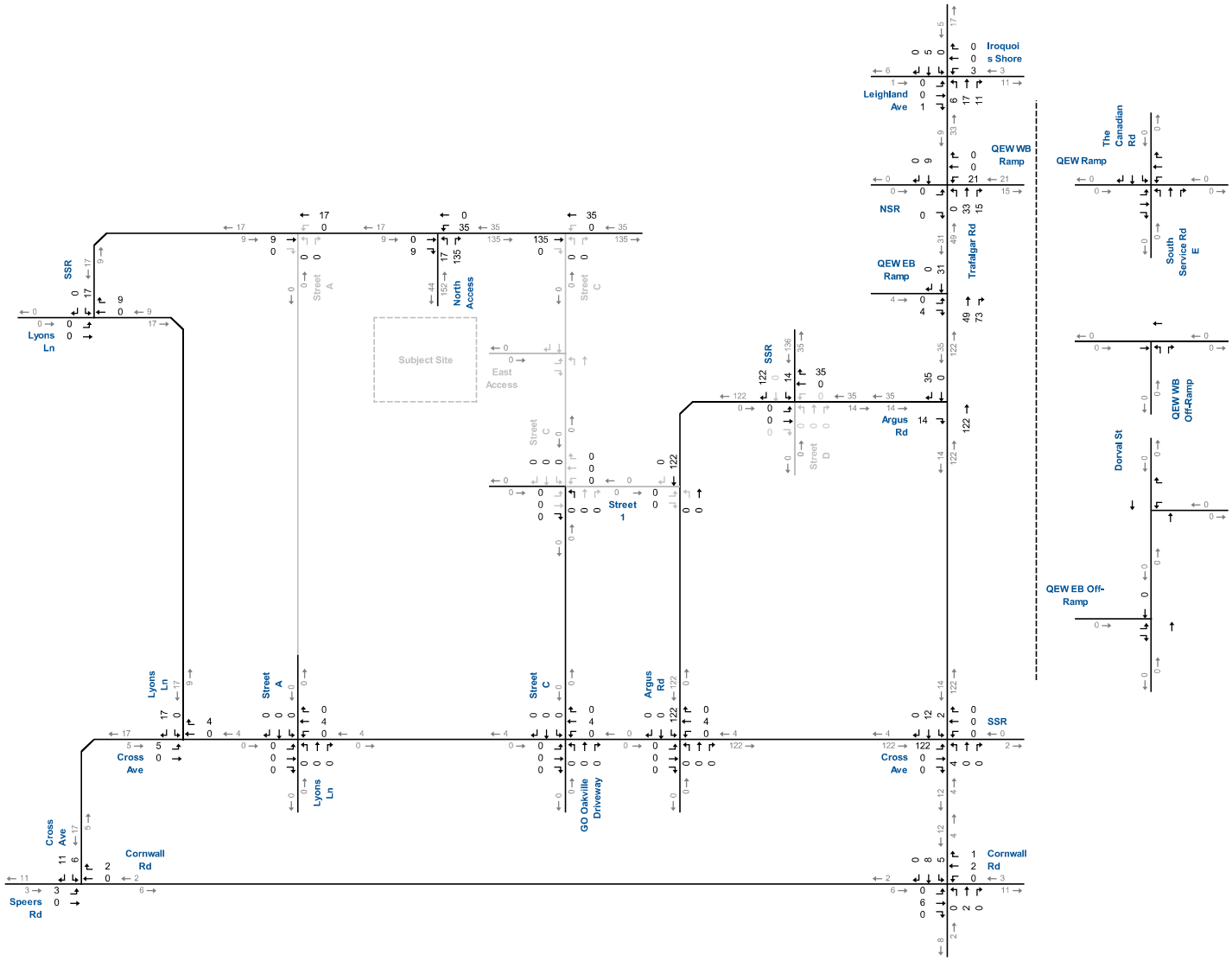
9.1.2 Net Trip Generations Estimates

Table 9.2 summarize the projected trip generation associated with the build-out of the development. As noted earlier, these estimates were based on the standardized ITE rates with internal credits.

The estimated trip generation for the Development indicates that 453 new trips are forecasted to be generated during the AM peak hour and 476 new trips during the PM peak hour.

TABLE 9.2: TRIP GENERATION

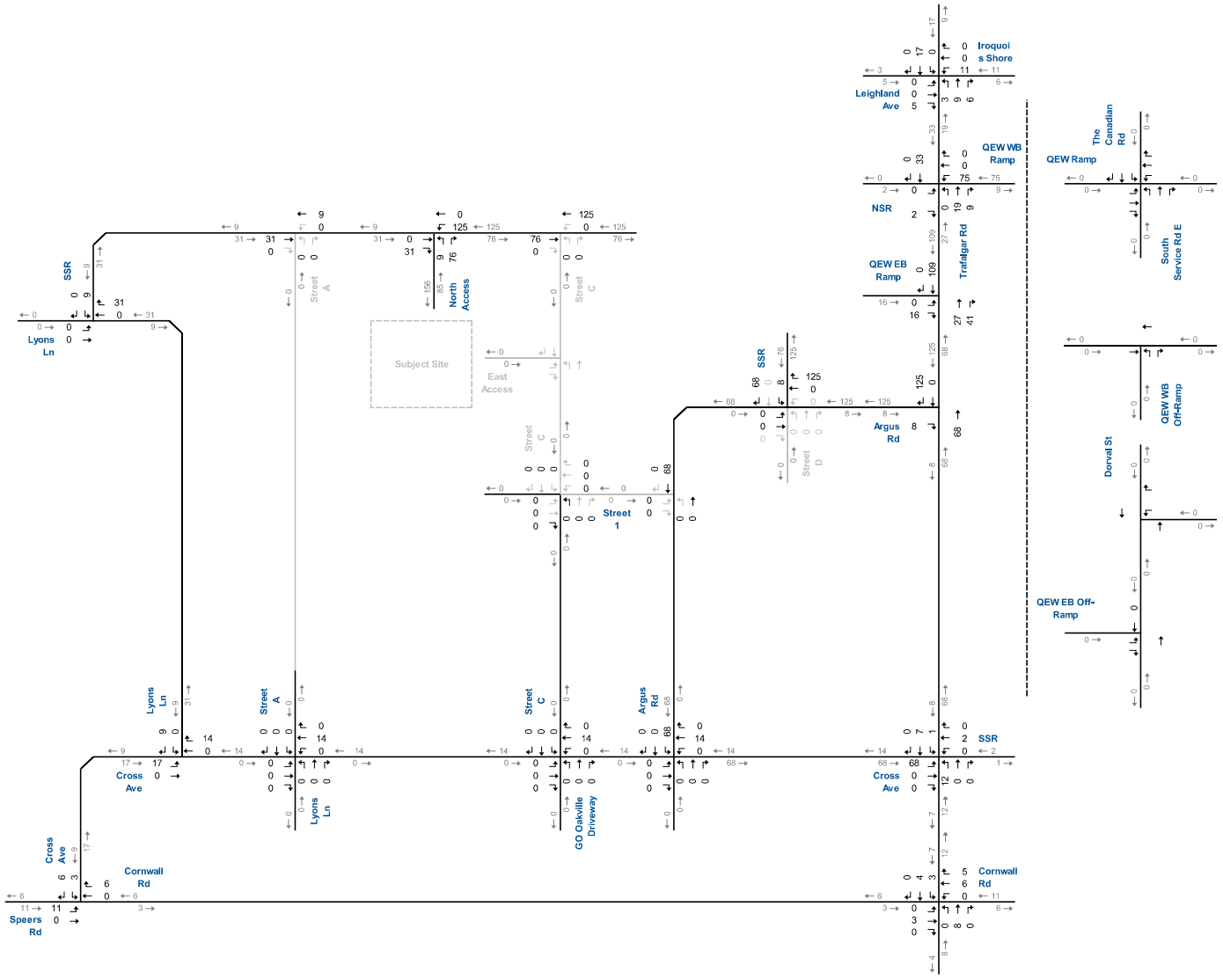
Phase	Tower	ITE Land Use Code / Number of Units	Trips	AM Peak Hour				PM Peak Hour			
				Rate	In	Out	Sum	Rate	In	Out	Sum
1	1	222 - Multifamily Housing (High-Rise) 711 Units	Total	0.22	15	124	139	0.19	80	36	116
			Internal	3%	1	3	4	14%	11	5	16
			New	97%	14	121	135	86%	69	31	100
		492 - Health/Fitness Club 49,534 sq.ft	Total	1.31	33	32	65	3.45	97	74	171
			Internal	6%	3	1	4	18%	10	20	30
			New	94%	30	31	61	82%	87	54	141
Phase 1 Total			**Total**	-	**48**	**156**	**204**	-	**177**	**110**	**287**
			Internal	4%	**4**	**4**	**8**	16%	**21**	**25**	**46**
			New	**96%**	**44**	**152**	**196**	**84%**	**156**	**85**	**241**
2	2	222 - Multifamily Housing (High-Rise) 646 Units	Total	0.22	14	113	127	0.19	74	33	107
			Internal	0%	0	0	0	15%	11	5	16
			New	100%	14	113	127	85%	63	28	91
		822 - Strip Retail Plaza 5,230 sq.ft	Total	2.36	7	5	12	6.59	17	17	34
			Internal	0%	0	0	0	21%	2	5	7
			New	100%	7	5	12	79%	15	12	27
	3	222 - Multifamily Housing (High-Rise) 494 Units	Total	0.22	11	88	99	0.19	58	26	84
			Internal	0%	0	0	0	15%	9	4	13
			New	100%	11	88	99	85%	49	22	71
		822 - Strip Retail Plaza 8,247 sq.ft	Total	2.36	12	7	19	6.59	27	27	54
			Internal	0%	0	0	0	15%	2	6	8
			New	100%	12	7	19	85%	25	21	46
Phase 2 Total			**Total**	-	**44**	**213**	**257**	-	**176**	**103**	**279**
			Internal	0%	**0**	**0**	**0**	16%	**24**	**20**	**44**
			New	**100%**	**44**	**213**	**257**	**84%**	**152**	**83**	**235**
Full-Build Out Total			**Total**	-	**92**	**369**	**461**	-	**353**	**213**	**566**
			Internal	2%	**4**	**4**	**8**	16%	**45**	**45**	**90**
			New	**98%**	**88**	**365**	**453**	**84%**	**308**	**168**	**476**



Site Generated Traffic Volumes
Phase 1 - AM Peak Hour

166 South Service Road East, Oakville
210590

Figure 9.1A



Site Generated Traffic Volumes
Phase 1 - PM Peak Hour

166 South Service Road East, Oakville
210590

Figure 9.1B

10.3.1 Background Developments

The following background developments are planned within the study horizon and are included in the background traffic:

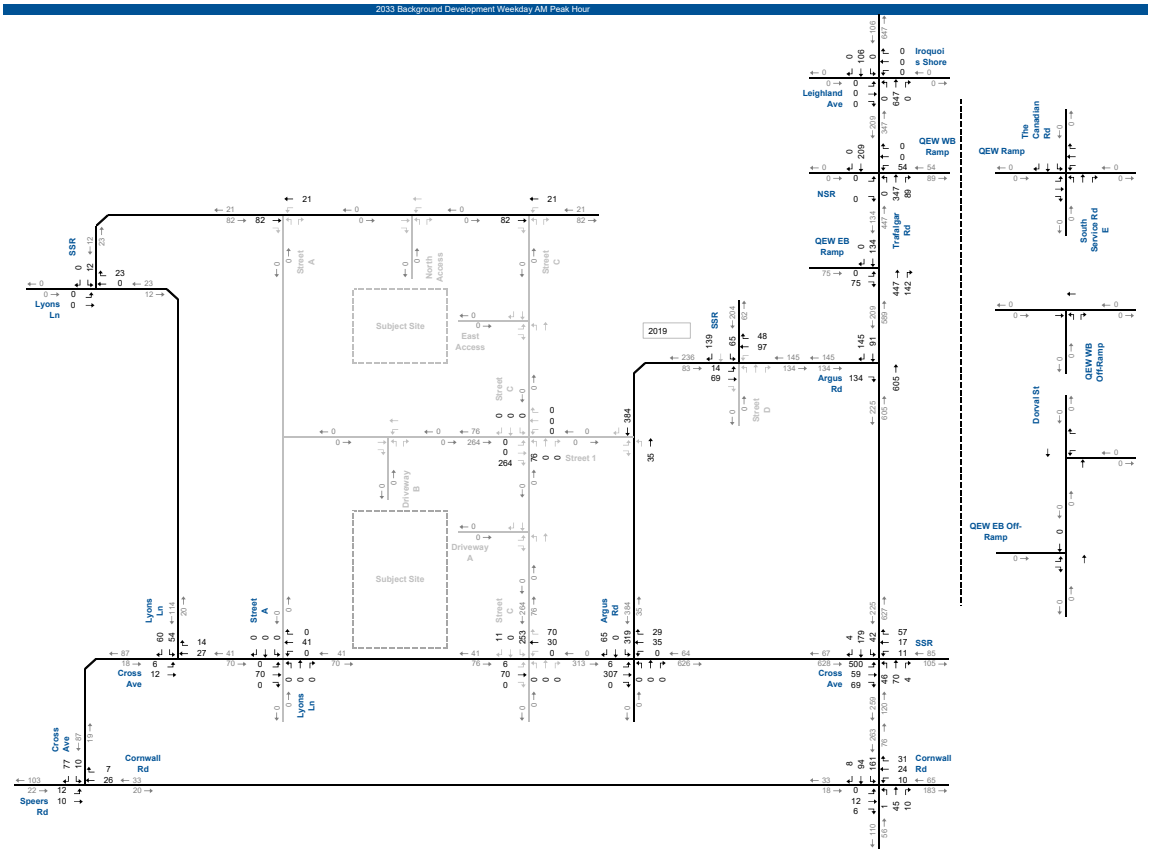
The following background developments are planned within the study horizon and are included in the background traffic:

- 157-167 Cross Avenue – Located west of the Oakville GO Station Parking Access, the proposed Development is a mixed-use development with residential, office, and commercial units.
- 271 Cornwall Road – Located east of Trafalgar Road at Cornwall Road, the proposed development is two-mixed use towers with residential, office, and commercial uses.
- 570 Argus Road – Located north of Argus Road at Cross Avenue, the proposed development is two mixed-use towers with residential and commercial uses and a daycare and supermarket.
- 590 Argus Road – Located north of Argus Road, south of South Service Road, the proposed development is three mixed-use towers with residential and commercial uses.
- 599 Lyons Lane – The proposed development is a residential high-rise located north of Lyons Lane at Cross Avenue.
- 627 Lyons Lane – Located east of South Service Road East at Lyons Lane, the proposed development is a residential high-rise.
- 349 Davis Road – Located east of South Service Road and south of Davis Road, the proposed development is a mixed-use tower with residential and commercial uses.
- 320 Davis Road - Located south of David Road and east of South Service Road, the proposed development is a pumping station expansion.
- 271 Cornwall Road - Located east of Trafalgar Road, north of Cornwall Road, the proposed development is two mixed-use towers with residential and commercial.

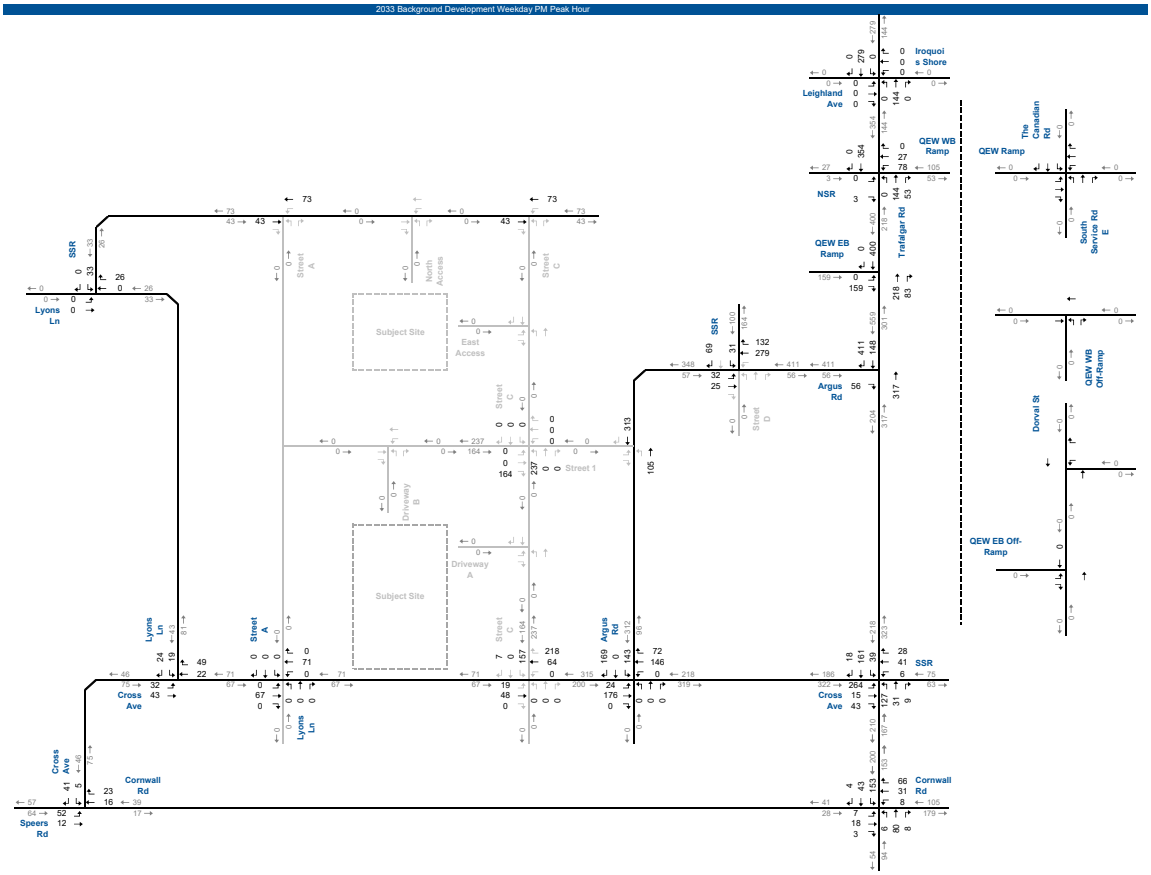
Appendix F includes the background development traffic.

The Background traffic volumes for 2028, 2033, 2038 and 2043 are illustrated in **Figures 10.2 to 10.5**.

2033 Background Development Weekday AM Peak Hour



2033 Background Development Weekday PM Peak Hour



217-227 Cross Avenue and 571-587 Argus Road, Oakville
Transportation Impact Assessment & Parking Study
(2nd Submission)

Paradigm Transportation Solutions Limited
BA Consulting Group Ltd

March 2024
210403

ptsl.com

4 Development Proposal Review

4.1 Proposed Development Programme Elements

Since the previous submission made to the City in May 2022, the development scheme has been revised as part of the ongoing application process. It is noted that the design of the site access driveway, parking arrangements, loading arrangements and vehicular circulation routes for the site have generally remained unchanged when compared to the previous May 2022 submission. Reduced architectural plans are attached in **Appendix C**.

A comparison of the site development statistics associated with each application submission is summarized in **Table 4.1**.

TABLE 4.1: DEVELOPMENT PROGRAMME

Land Use		May 2022 Submission[1]	Current Submission[2]	Net Change
Residential Use	<75m / unit	1,678 units	1,804 units (98 Studio units)	+126 units
	>75m / unit	70 units	134 units	+64 units
	Total Units	1,748 units	1,938 units	+190 units
Non-Residential Use	Retail	2,375 m^2 NFA	1,565 m^2 GFA	-810 m^2 GFA
	Office	2,269 m^2 NFA	2,694 m^2 GFA	+425 m^2 GFA
	Daycare	442 m^2 NFA	0 m^2 GFA	-442 m^2 GFA
Transportaion Services	Parking Supply	1,285 spaces (876 residential spaces and 409 non-residential spaces)	1,246 spaces (920 residential spaces and 326 non-residential spaces)	-39 spaces
	Loading Supply	6 loading spaces (2 refuse collection spaces and 4 auxiliary spaces)	5 loading spaces (2 refuse collection space and 3 auxiliary spaces)	-1 auxiliary space
	Bicycle Parking Supply	1,754 spaces (1,317 long-term spaces and 437 short-term spaces)	1,944 spaces (1,459 long-term spaces and 485 short-term spaces)	+190 spaces

Note:

1 Site statistics are based on architectural plans prepared by Quadrangle Architects Limited dated May 2022

2 Site statistics are based on architectural plans prepared by Quadrangle Architects Limited dated March 2024

9 Development Concept Travel Forecasts

The development proposal for the site envisions a large-scale development of three towers. Tower A and B are proposed to be 37 and 49 storeys, respectively, on a mutual 6-storey podium. Tower C is proposed to be 65 storeys on top of a 7-storey podium. A total of 1,938 residential units are proposed. The proposed site also includes a total of 1,565m^2 (16,845 sq. ft) of retail space and 2,694m^2 (28,998 sq.ft) for office space.

Vehicle access will be provided through two driveway connections: one to Argus Road and one to a new north-south local road connecting to Cross Avenue. The timing of the north-south local route between Cross Avenue and Argus Road is currently a long-term plan. For this analysis, it is assumed to only connect to Cross Avenue.

It is assumed that the site will be developed in two phases:

- Phase 1 will open in 2028 and will include Tower A and B, while
- Phase 2 will open in 2033 and will consist of Tower C.

Table 9.1 summarizes the development land uses for each tower.

TABLE 9.1: DEVELOPMENT LAND USES

Tower	Units	Retail (m^2)	Office (m^2)
A + B	1,077	690	--
C	861	875	2,694
Total	**1,938**	**1,565**	**2,694**

originate from the on-site residential units, requiring only a walking trip. The detailed calculations are provided in **Appendix E**.

ITE data suggests an internal capture rate of 3% - 11% for the respective peak hours.

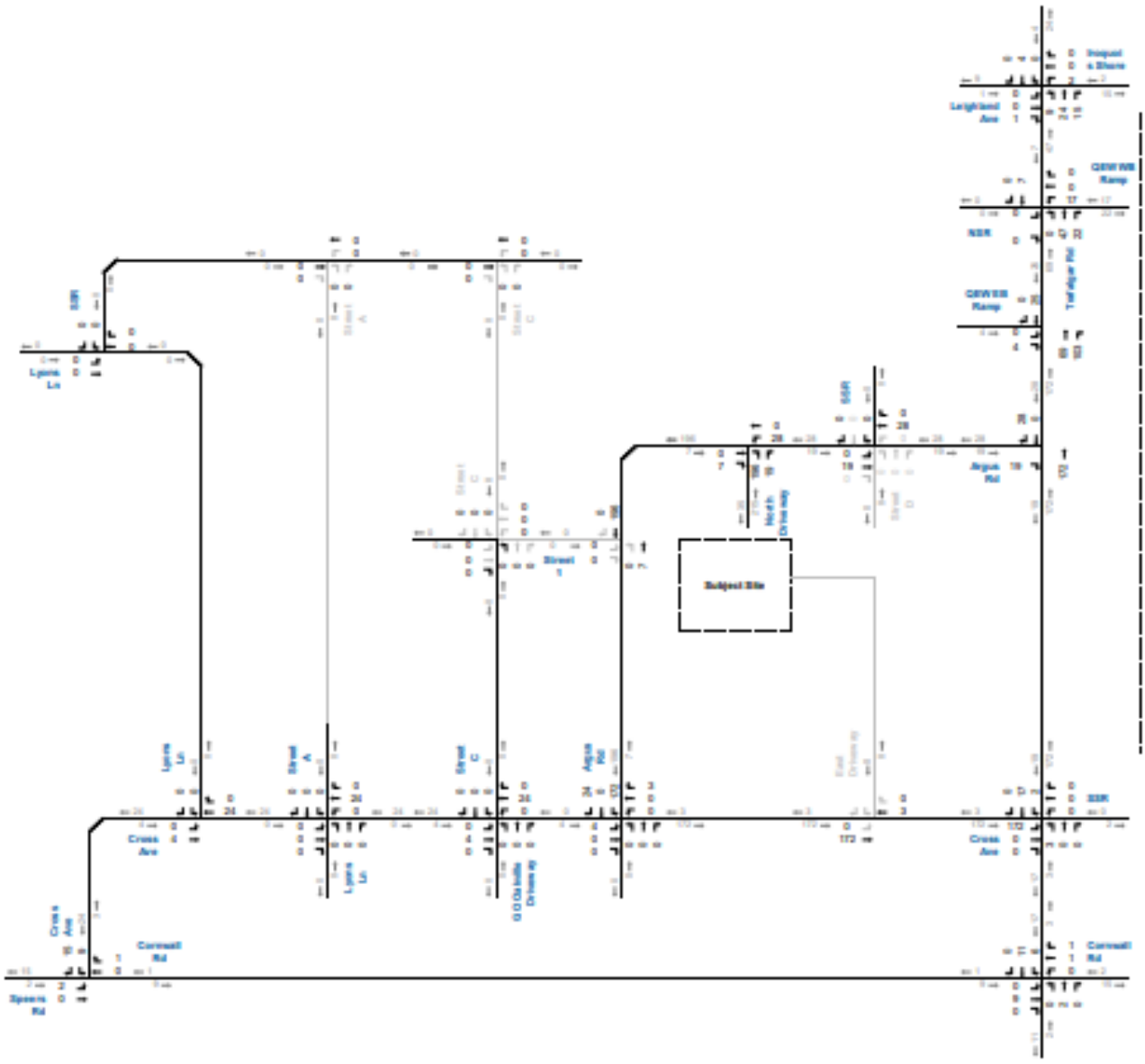
9.1.2 Net Trip Generations Estimates

Table 9.2 summarize the projected trip generation associated with the build-out of the development. As noted earlier, these estimates were based on the standardized ITE rates with internal credits.

The estimated trip generation for the Development indicates that 474 new trips are forecasted to be generated during the AM peak hour and 449 new trips during the PM peak hour.

TABLE 9.2: TRIP GENERATION

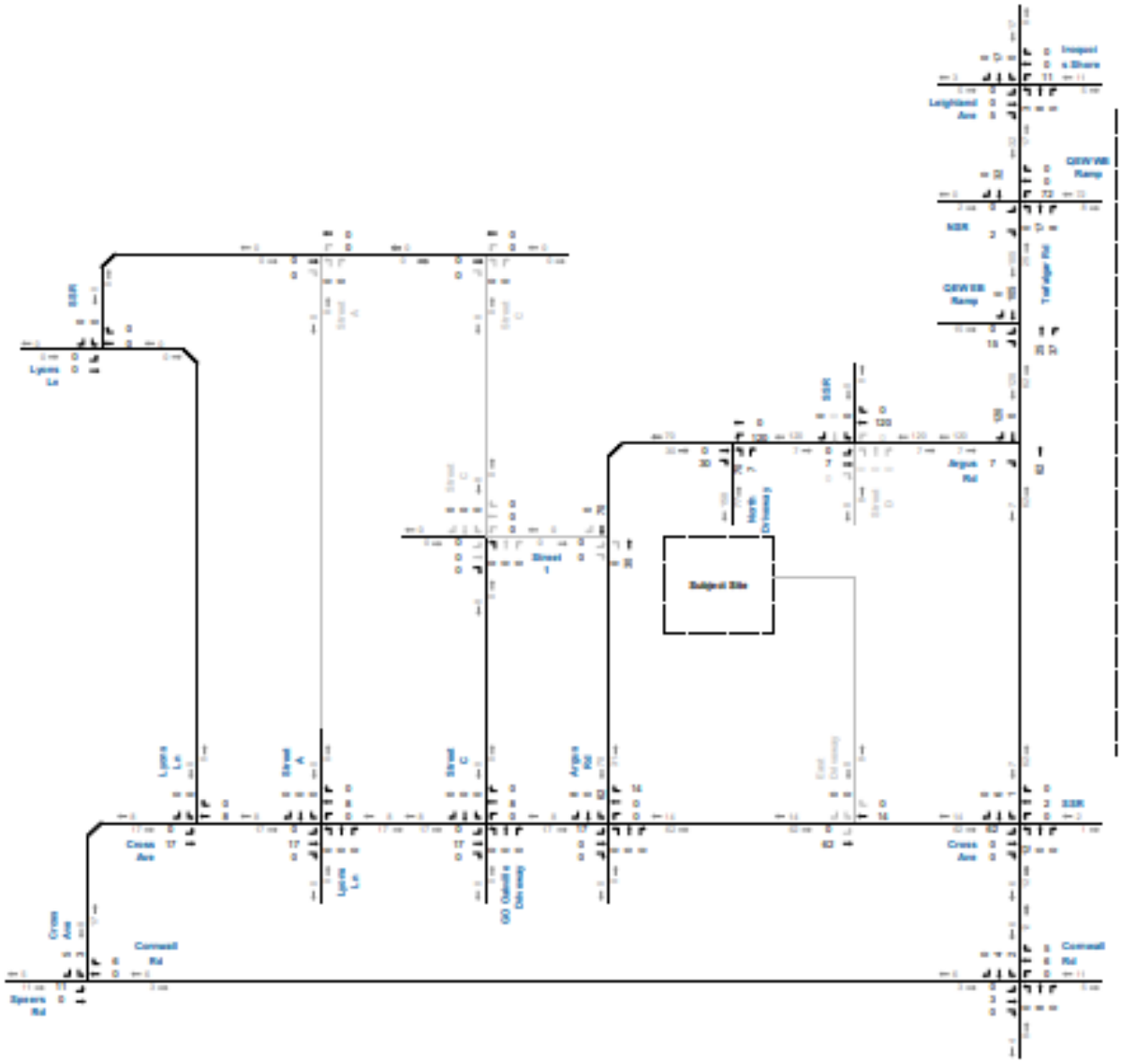
Phase	Tower	ITE Land Use Code / Number of Units	Trips	AM Peak Hour				PM Peak Hour			
				Rate	In	Out	Sum	Rate	In	Out	Sum
1	A	222 - Multifamily Housing (High-Rise) 453 Units	Total	0.22	11	89	100	0.19	59	27	86
			Internal	1%	0	1	1	8%	5	2	7
			New	99%	11	88	99	92%	54	25	79
		822 - Strip Retail Plaza 4,951 sq.ft	Total	2.36	7	5	12	6.59	16	17	33
			Internal	17%	1	1	2	21%	3	4	7
			New	83%	6	4	10	79%	13	13	26
	B	222 - Multifamily Housing (High-Rise) 624 Units	Total	0.22	15	122	137	0.19	82	37	119
			Internal	1%	0	1	1	6%	5	2	7
			New	99%	15	121	136	94%	77	35	112
		822 - Strip Retail Plaza 2,476 sq.ft	Total	2.36	4	2	6	6.59	8	8	16
			Internal	17%	1	0	1	38%	2	4	6
			New	83%	3	2	5	63%	6	4	10
Phase 1 Total			**Total**	-	**37**	**218**	**255**	-	**165**	**89**	**254**
			Internal	2%	**2**	**3**	**5**	11%	**15**	**12**	**27**
			New	**98%**	**35**	**215**	**250**	**89%**	**150**	**77**	**227**
	C	222 - Multifamily Housing (High-Rise) 861 Units	Total	0.22	21	168	189	0.19	113	51	164
			Internal	2%	1	3	4	5%	5	4	9
			New	98%	20	165	185	95%	108	47	155
		710 - General Office 28,998 sq.ft	Total	0.84	21	3	24	0.87	4	21	25
			Internal	13%	2	1	3	28%	3	4	7
			New	88%	19	2	21	72%	1	17	18
		822 - Strip Retail Plaza 9,418 sq.ft	Total	2.36	13	9	22	6.59	31	31	62
			Internal	18%	3	1	4	21%	5	8	13
			New	82%	10	8	18	79%	26	23	49
Phase 2 Total			**Total**	-	**55**	**180**	**235**	-	**148**	**103**	**251**
			Internal	5%	**6**	**5**	**11**	12%	**13**	**16**	**29**
			New	**95%**	**49**	**175**	**224**	**88%**	**135**	**87**	**222**
Full-Build Out Total			**Total**	-	**92**	**398**	**490**	-	**313**	**192**	**505**
			Internal	3%	**8**	**8**	**16**	11%	**28**	**28**	**56**
			New	**97%**	**84**	**390**	**474**	**89%**	**285**	**164**	**449**



Site Generated Phase 1 AM Peak Hour

217-227 Cross Avenue and 571-578 Argus Road, Oakville
210403

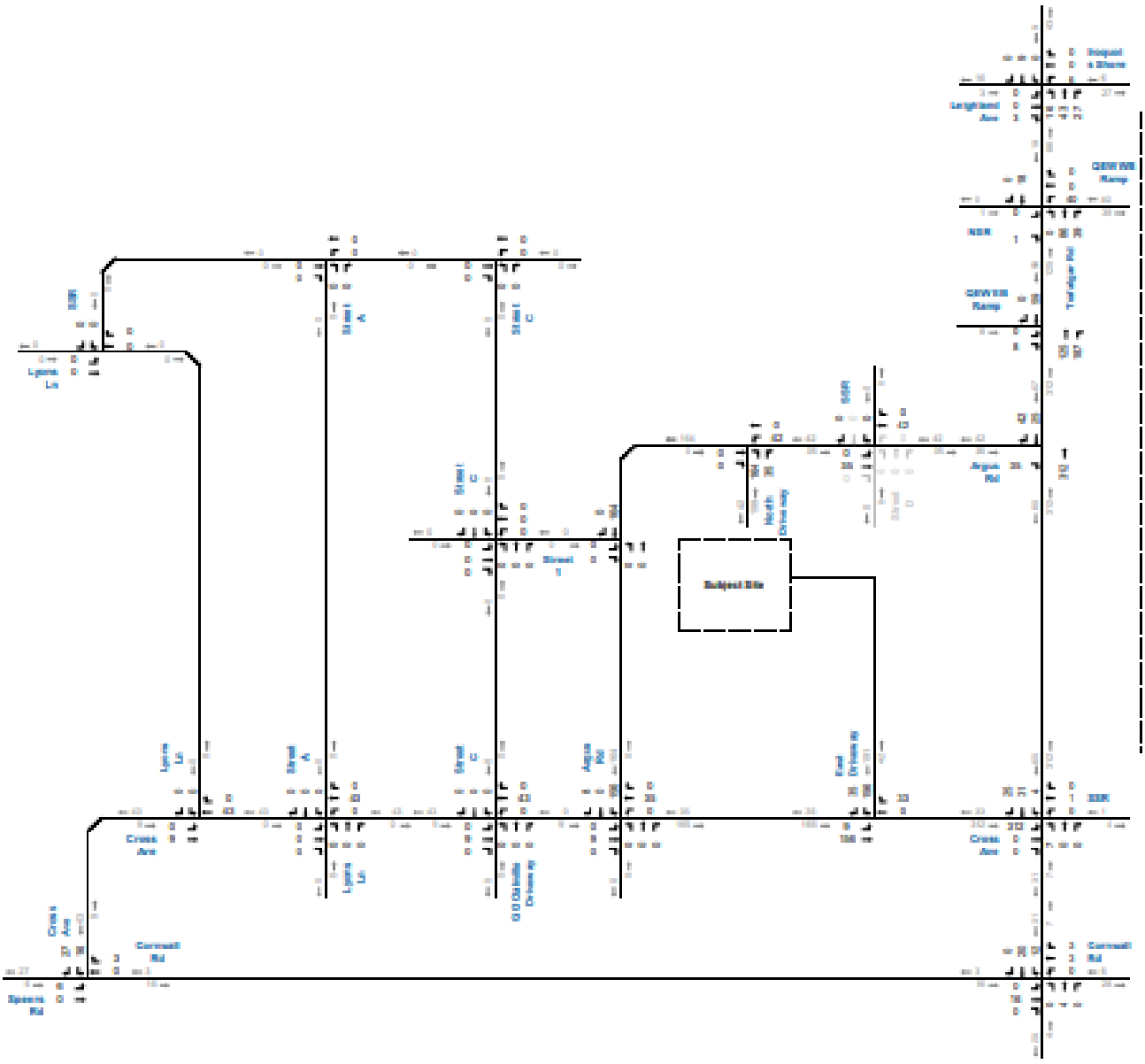
Figure 9.1A



Site Generated Phase 1 PM Peak Hour

217-227 Cross Avenue and 571-578 Argus Road, Oakville
210403

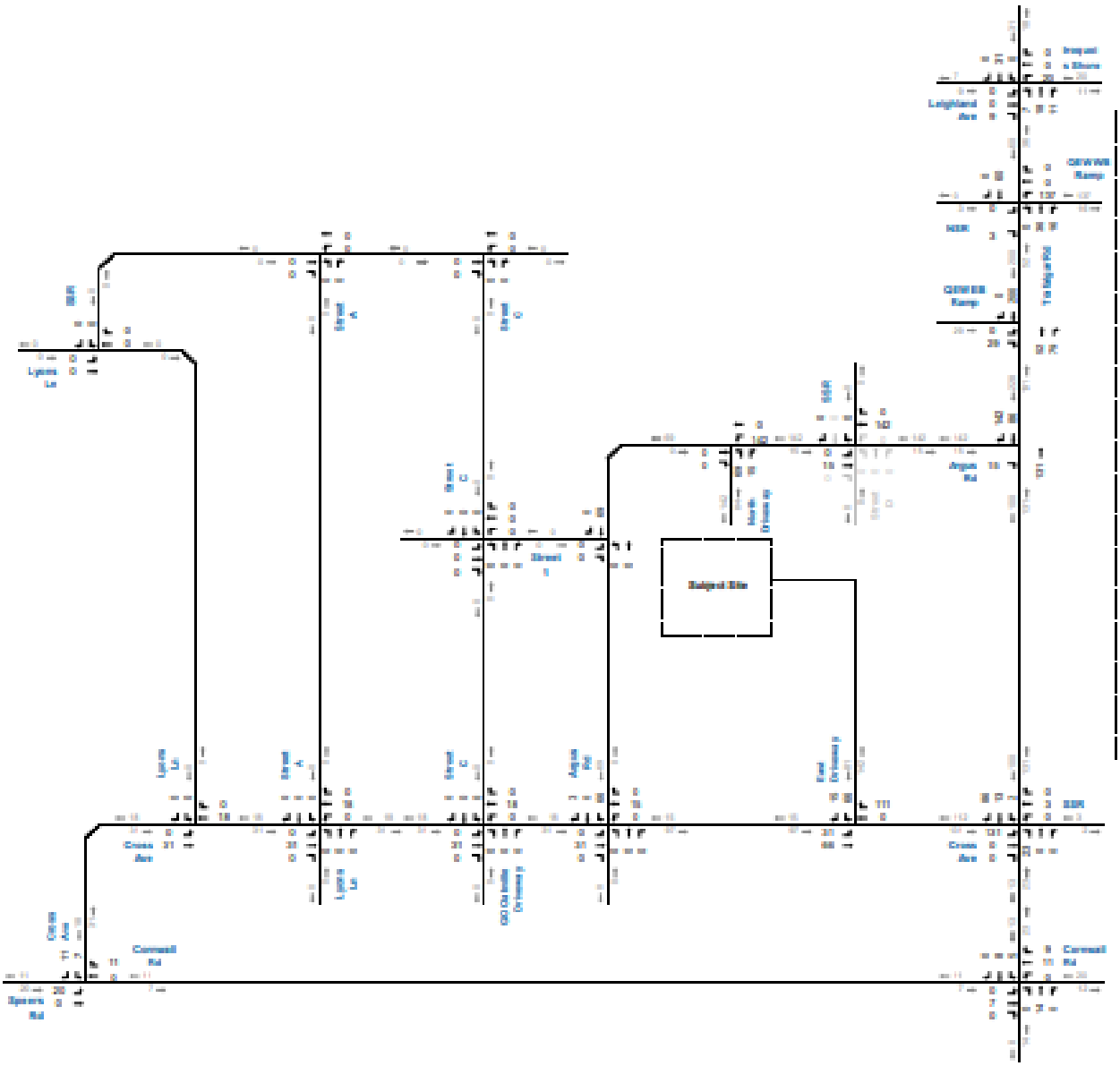
Figure 9.1B



Site Generated Full-Build Out AM Peak Hour

217-227 Cross Avenue and 571-578 Argus Road, Oakville
210403

Figure 9.2A



Site Generated Full-Build Out PM Peak Hour

217-227 Cross Avenue and 571-578 Argus Road, Oakville
210403

Figure 9.2B

UPPER KERR VILLAGE
PART 2 TRANSPORTATION ASSESSMENT - OFFICIAL PLAN AMENDMENT

Transportation Considerations Report

Prepared For: Urban Strategies Inc.

February 2, 2022



Table 5 presents the vehicular traffic generation estimates associated with the major land uses within the Upper Kerr Village per the Draft OPA provisions. Note that only the commercial GFA located within the SE corner of the Subject Site was assigned external traffic volumes given the anticipated internalized nature of traffic associated with the ground floor retail amongst the balance of the Subject Site

TABLE 5 FORECAST VEHICLE TRIP GENERATION - UPPER KERR VILLAGE

VEHICLE TRIP GENERATION

Parameter	Scale	AM			PM		
		In	Out	2-Way	In	Out	2-Way
Residential Vehicle Trips	1,845 units	100	270	370	225	140	365
Residential Vehicle Trip Rate	**1,845 units**	**0.05**	**0.15**	**0.20**	**0.12**	**0.08**	**0.20**
Retail Vehicle Trips	57,244 sf	20	15	35	55	40	95
Retail Vehicle Trip Rate	**57,244 sf**	**0.35**	**0.26**	**0.61**	**0.96**	**0.70**	**1.66**
Pass-by Trips	*30%*	*0*	*0*	*0*	*15*	*15*	*30*
Primary Trips	*70%*	*20*	*15*	*35*	*40*	*25*	*65*

7.6.2 Travel Distribution

Vehicular distribution was estimated based upon a review of the 2016 TTS origin and destination (OD) data sets for the area west of Sixteen Mile Creek. A further review of general traffic patterns and land use distribution within Kerr Village and surrounding areas was also included to estimate the likely travel patterns of residential land uses situated in this area of the Town of Oakville. **Table 6** summarizes the vehicular distribution adopted for analyses purposes.

TABLE 6 VEHICULAR TRIP DISTRIBUTION ASSUMPTIONS – UPPER KERR VILLAGE SITE TRAFFIC

Route	Residential		Retail	
	Outbound	Inbound	Outbound	Inbound
To/From East on Highway 403	38%	31%	13%	21%
To/From West on Highway 403	21%	10%	10%	4%
To/From North on Kerr St	7%	9%	13%	7%
To/From South on Kerr St	8%	10%	13%	6%
To/From South on Dorval Dr	6%	2%	19%	1%
To/From East on Speers Rd	8%	16%	15%	26%
To/From West on Speers Rd	4%	12%	5%	15%
To/From West on Wyecroft Rd	4%	5%	1%	14%
To/From South on Queen Mary Dr	4%	5%	11%	6%

7.6.3 Subject Site Traffic Assignments

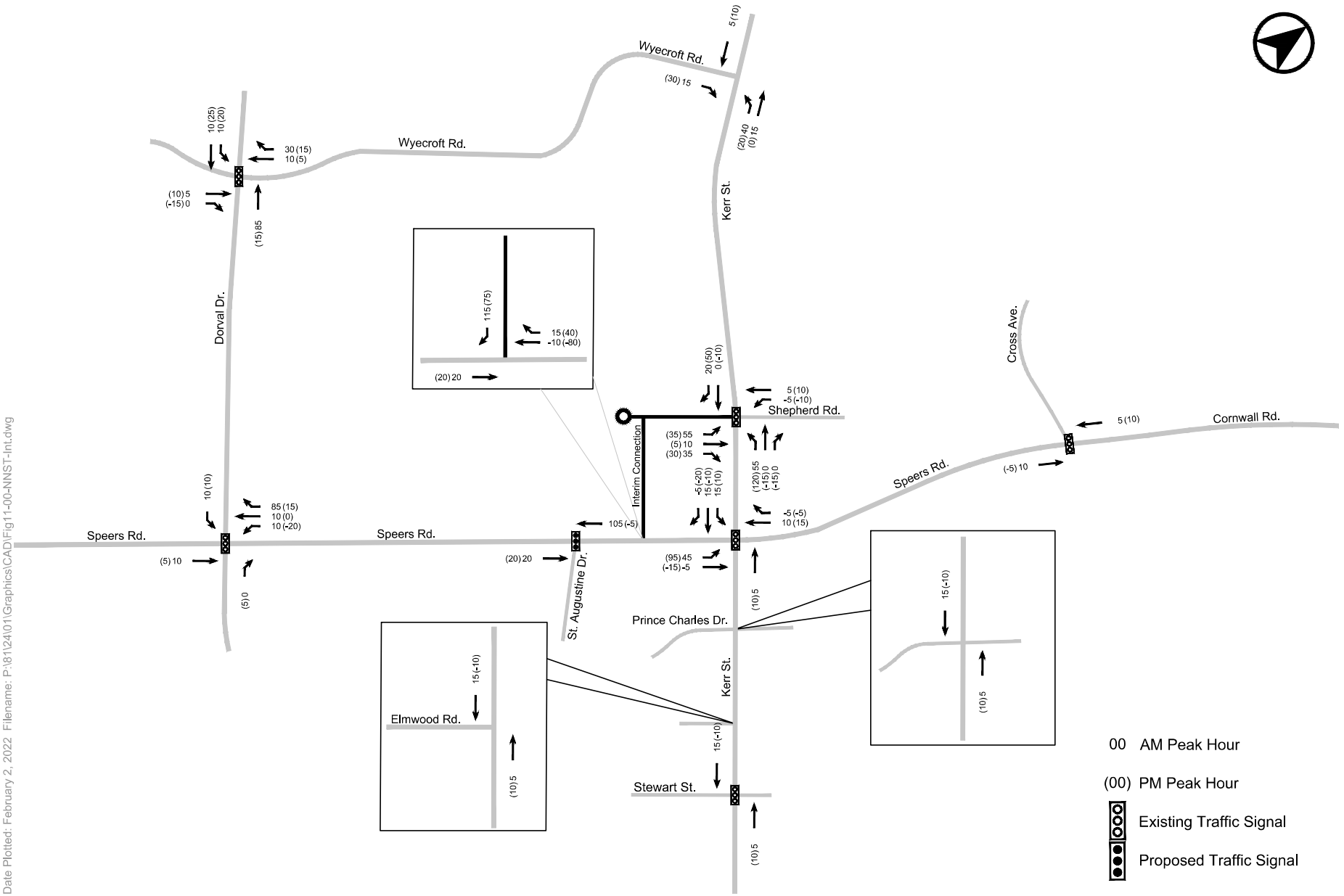
7.6.3.1 Development Phasing Characteristics

Vehicular traffic assignments have been prepared to represent two future conditions:

- An Interim Condition (2031) – where 171 Speers Road lands are assumed to NOT redevelop; and,
- An Ultimate Condition (2036) – where all of the Subject Site are assumed to redevelop.

These two conditions examine the resulting operating conditions in response to potential redevelopment decisions associated with 171 Speers Road. We note that the Subject Site can be configured in response to this condition given the "private street" proposed within the Subject Site. The private street provides flexibility through an interim public park configuration. The private street on the east side of the public park could be initially connected to Speers Road offering a phased introduction of a street network that can respond to the collective needs of development (from both accessibility and circulation perspectives), prior to the 171 Speers Road property being redeveloped. Implementing segments of the Private Street – given an overall street network plan to work towards – would be more efficiently and cost effectively undertaken given the flexibility of the private Local Street.

These conditions are carried through the analyses.

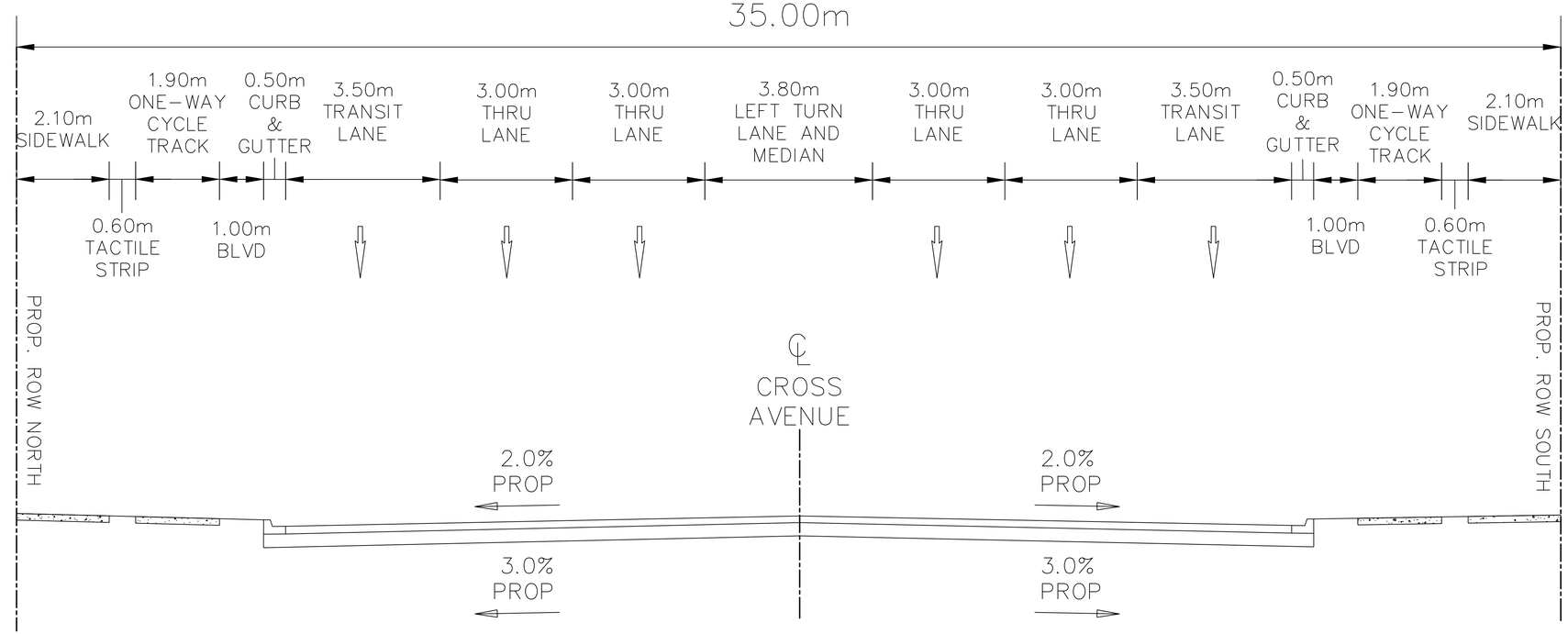


Date Plotted: February 2, 2022 Filename: P:\8124\01\Graphics\CAD\Fig11-00-NNST-Int.dwg

FIGURE 11 NET NEW SITE TRAFFIC VOLUMES (INTERIM)

APPENDIX H: Assumed Cross Sections





TYPICAL CROSS SECTION
35m CROSS AVENUE ROW
ARTERIAL ROAD

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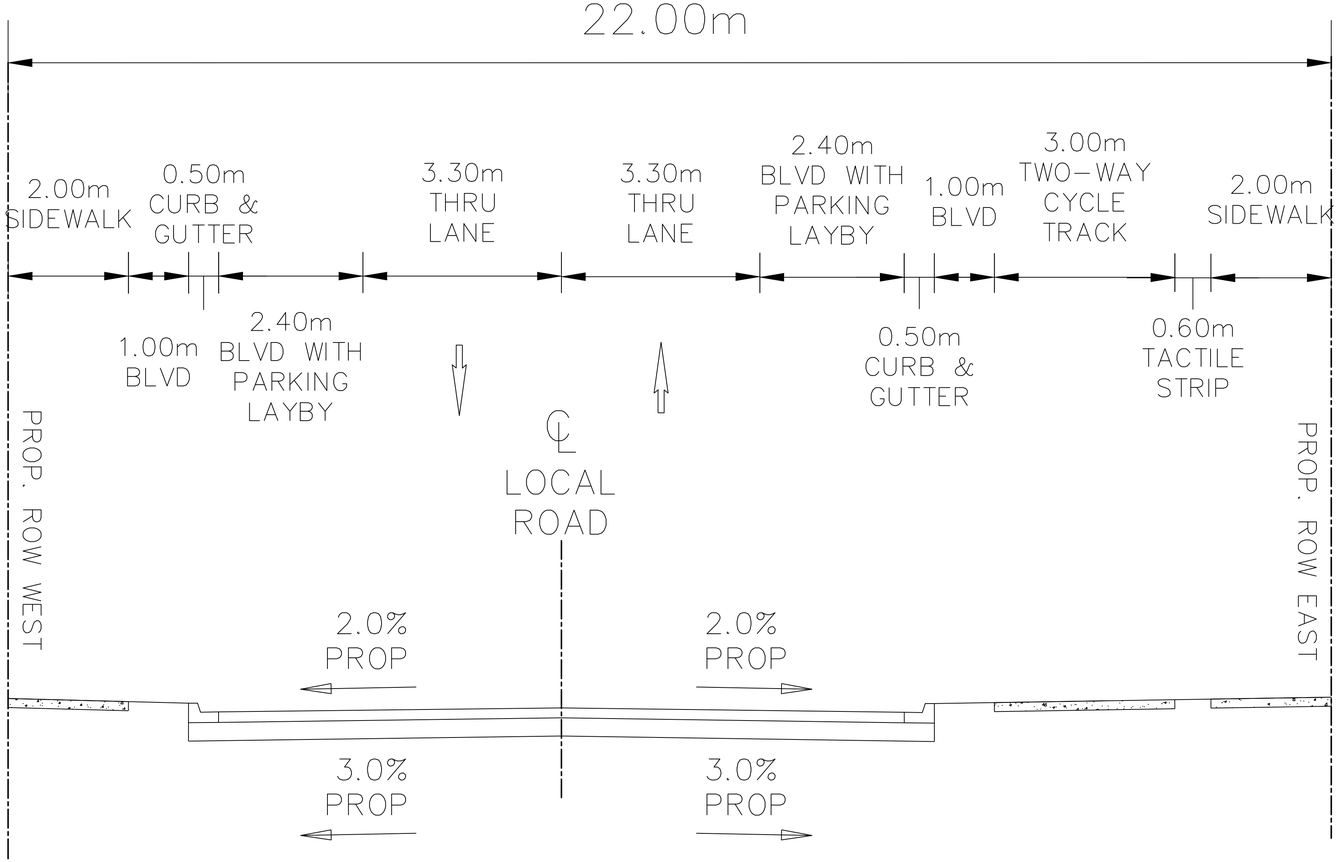
Project
CITY OF OAKVILLE
118 CROSS AVENUE

Drawing
32m CROSS AVENUE ROW
TYPICAL

CROZIER
CONSULTING ENGINEERS

Drawn By	Drawn By	Project	
I.M.			2856–7391
Check By	Check By	Scale	Drawing
A.B./A.W.	A.B./A.W.	N.T.S.	T101





N.T.S.

TYPICAL CROSS SECTION
22m LOCAL ROAD ROW

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Project
CITY OF OAKVILLE
118 CROSS AVENUE

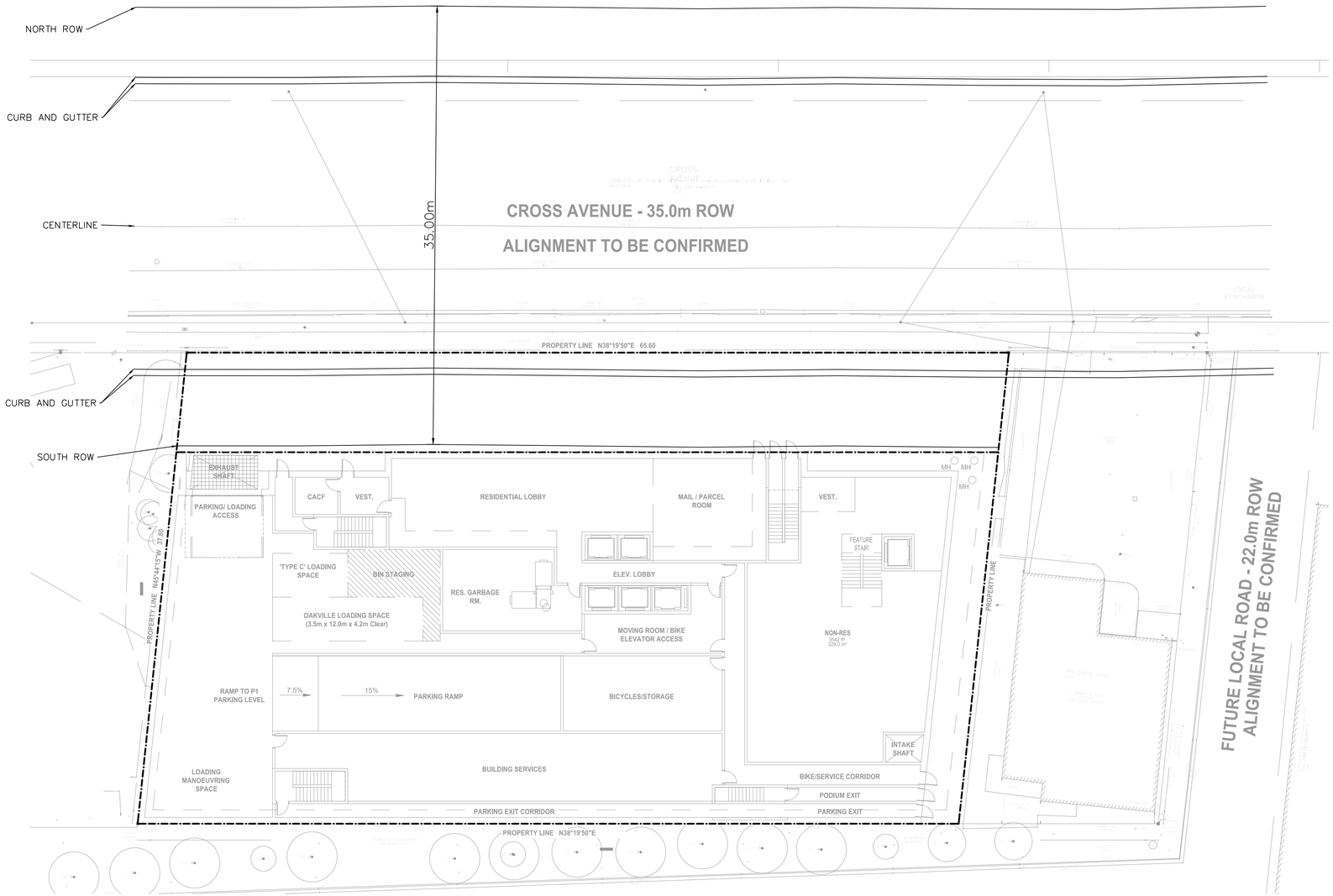
Drawing
22m LOCAL ROAD ROW
TYPICAL

CROZIER CONSULTING ENGINEERS

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I.M.			2856-7391
Check By	Check By	Scale	Drawing
A.B./A.W.	A.B./A.W.	N.T.S.	T102

LEGEND

PROPOSED ROW



N



5 0m 5 10 15
SCALE: 1:200

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0	ISSUED FOR REVIEW	12/01/2025

Engineer

Engineer

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Project
CITY OF OAKVILLE
118 CROSS AVENUE

Drawing
CROSS AVENUE 35m ROW & CURBS

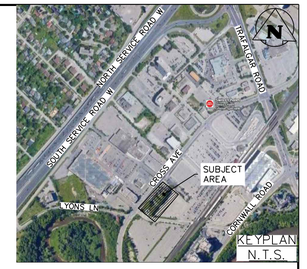
CROZIER CONSULTING ENGINEERS

Drawn By I.M.	Drawn By	Project	2856–7391
Check By A.B./A.W.	Check By A.B./A.W.	Scale 1:200	Drawing T103

\\Crozier-Files\Projects\2800\2856 - Gurd and Pav Sanghera\7391 - 118-132 Cross Ave\CAD\Transportation\Sheets\7391_TT.dwg, Mon Dec 1 09:45:24 2025, AutoCAD PDF (General Documentation).pc3

LEGEND

PROPOSED ROW



N

CROSS AVENUE - 35.0m ROW

ALIGNMENT TO BE CONFIRMED

CURB AND GUTTER
CENTERLINE
CURB AND GUTTER
WEST ROW
EAST ROW
22.00m

FUTURE LOCAL ROAD - 22.0m ROW
ALIGNMENT TO BE CONFIRMED

PROPERTY LINE N38°19'50"E 65.60

EXHAUST SHAFT
PARKING/ LOADING ACCESS
CACF
VEST.
RESIDENTIAL LOBBY
MAIL / PARCEL ROOM
VEST.
MH
MH
MH
FEATURE STAIR
'TYPE C' LOADING SPACE
BIN STAGING
RES. GARBAGE RM.
ELEV. LOBBY
OAKVILLE LOADING SPACE (3.5m x 12.0m x 4.2m Clear)
MOVING ROOM / BIKE ELEVATOR ACCESS
NON-RES 3942 ft² 329.0 m²
RAMP TO P1 PARKING LEVEL
7.5%
15%
PARKING RAMP
BICYCLES/STORAGE
INTAKE SHAFT
LOADING MANOEUVRING SPACE
BUILDING SERVICES
BIKE/SERVICE CORRIDOR
PODIUM EXIT
PARKING EXIT
PARKING EXIT CORRIDOR
PROPERTY LINE N38°19'50"E
PROPERTY LINE N54°44'15"W 37.80
PROPERTY LINE

5 0m 5 10 15
SCALE: 1:200

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Engineer

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Project
CITY OF OAKVILLE
118 CROSS AVENUE

Drawing
FUTURE LOCAL ROAD 22m ROW & CURBS

CROZIER CONSULTING ENGINEERS

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I.M.			
Check By	Check By	Scale	Drawing
A.B./A.W.	A.B./A.W.	1:200	T104

APPENDIX I: Trip Generation Excerpts

Land Use: 222
Multifamily Housing (High-Rise)

Description

High-rise multifamily housing is a residential building with more than 10 floors (levels) of residence. Access to individual dwelling units is through an outside building entrance, a lobby, elevators, and a set of hallways.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the 12 sites for which both the number of residents and the number of occupied dwelling units were available, there was an average of 1.6 residents per occupied dwelling unit.

For the 26 sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 98 percent of the total dwelling units were occupied.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 2000s and the 2010s in California, District of Columbia, New York, Ontario (CAN), Oregon, and Virginia.

Source Numbers

818, 862, 901, 910, 949, 963, 964, 966, 967, 1056, 1057, 1076, 1077

AM

Query | Filter

DATA SOURCE: Trip Generation Manual, 12th Ed

SEARCH BY LAND USE CODE: 222

LAND USE GROUP: (200-299) Residential

LAND USE : 222 - Multifamily Housing (High-Rise)

LAND USE SUBCATEGORY: Not Close to Rail Transit

SETTING/LOCATION: General Urban/Suburban

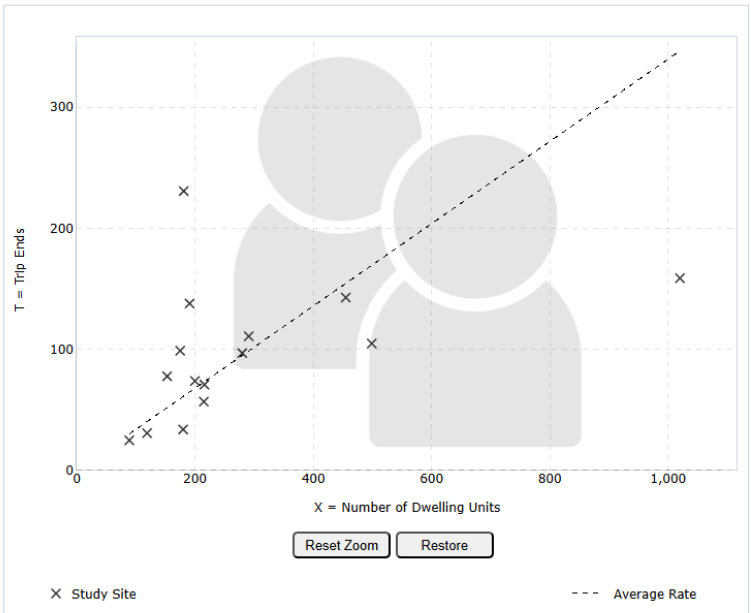
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday, Peak Hour of Adjacent Stre

TRIP TYPE: Person

ENTER IV VALUE TO CALCULATE TRIPS: Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Multifamily Housing (High-Rise) - Not Close to Rail Transit (222) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Person

Number of Studies:
15

Avg. Num. of Dwelling Units:
284

Average Rate:
0.34

Range of Rates:
0.16 - 1.28

Standard Deviation:
0.25

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
28% entering, 72% exiting

PM

Query | Filter

DATA SOURCE: Trip Generation Manual, 12th Ed

SEARCH BY LAND USE CODE: 222

LAND USE GROUP: (200-299) Residential

LAND USE : 222 - Multifamily Housing (High-Rise)

LAND USE SUBCATEGORY: Not Close to Rail Transit

SETTING/LOCATION: General Urban/Suburban

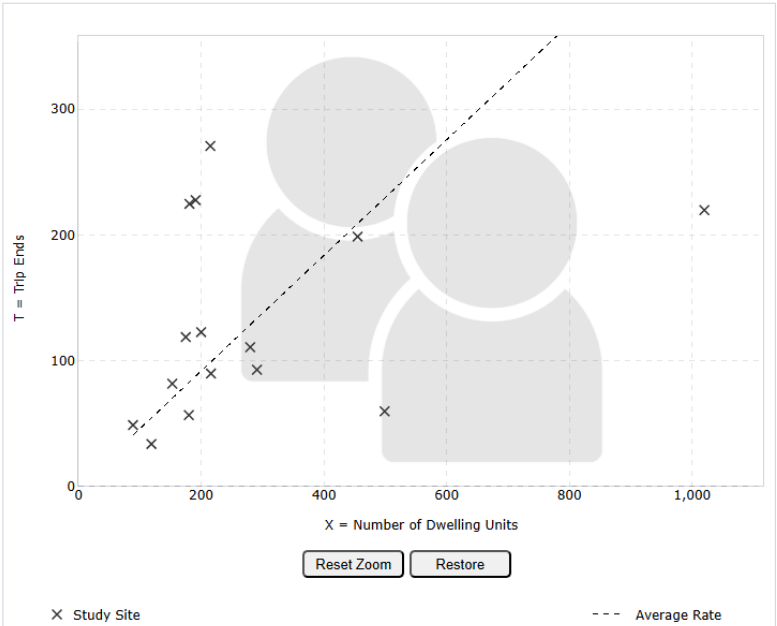
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday, Peak Hour of Adjacent Stre

TRIP TYPE: Person

ENTER IV VALUE TO CALCULATE TRIPS: Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Multifamily Housing (High-Rise) - Not Close to Rail Transit (222) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Person

Number of Studies:
15

Avg. Num. of Dwelling Units:
284

Average Rate:
0.46

Range of Rates:
0.12 - 1.26

Standard Deviation:
0.35

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
54% entering, 46% exiting

Land Use: 822
Strip Retail Plaza (<40k)

Description

A strip retail plaza is an integrated group of commercial establishments planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, its GLA is the same as the gross floor area of the building.

The 40,000-square-foot GLA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. All shopping plazas in the database with a supermarket as their anchor are larger than 40,000 square feet GLA.

Additional Data

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Delaware, Florida, New Jersey, Ontario (CAN), Pennsylvania, South Dakota, Vermont, and Wisconsin.

Users should exercise caution when applying statistics during the AM peak periods, as the sites contained in the database for this land use may or may not contain retail that would generate significant trips during this period (for example, a coffee/donut shop).

Source Numbers

358, 428, 437, 507, 728, 936, 960, 961, 1009, 1219

Strip Retail Plaza (<40k)
(822)

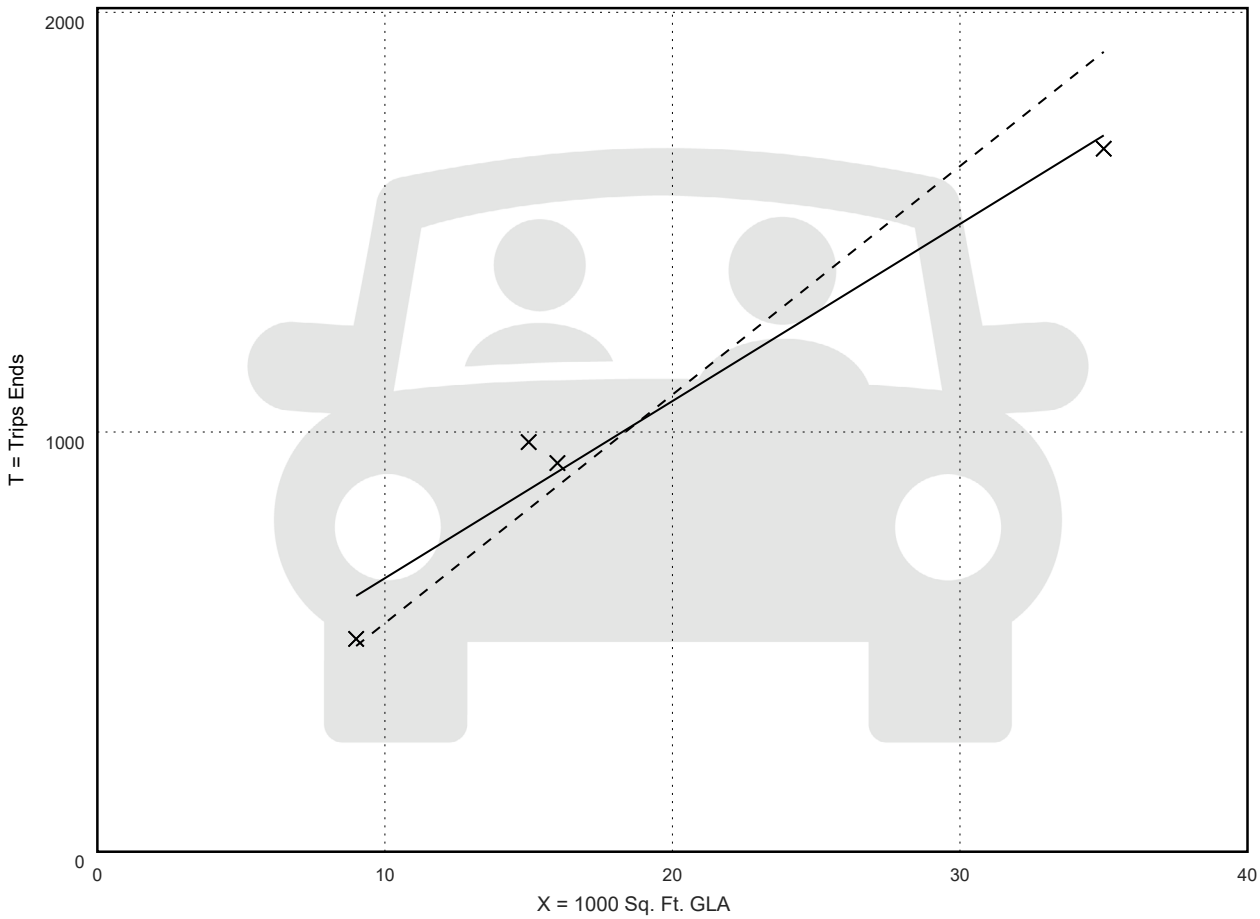
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation



Fitted Curve Equation: T = 42.20(X) + 229.68

R^2= 0.96

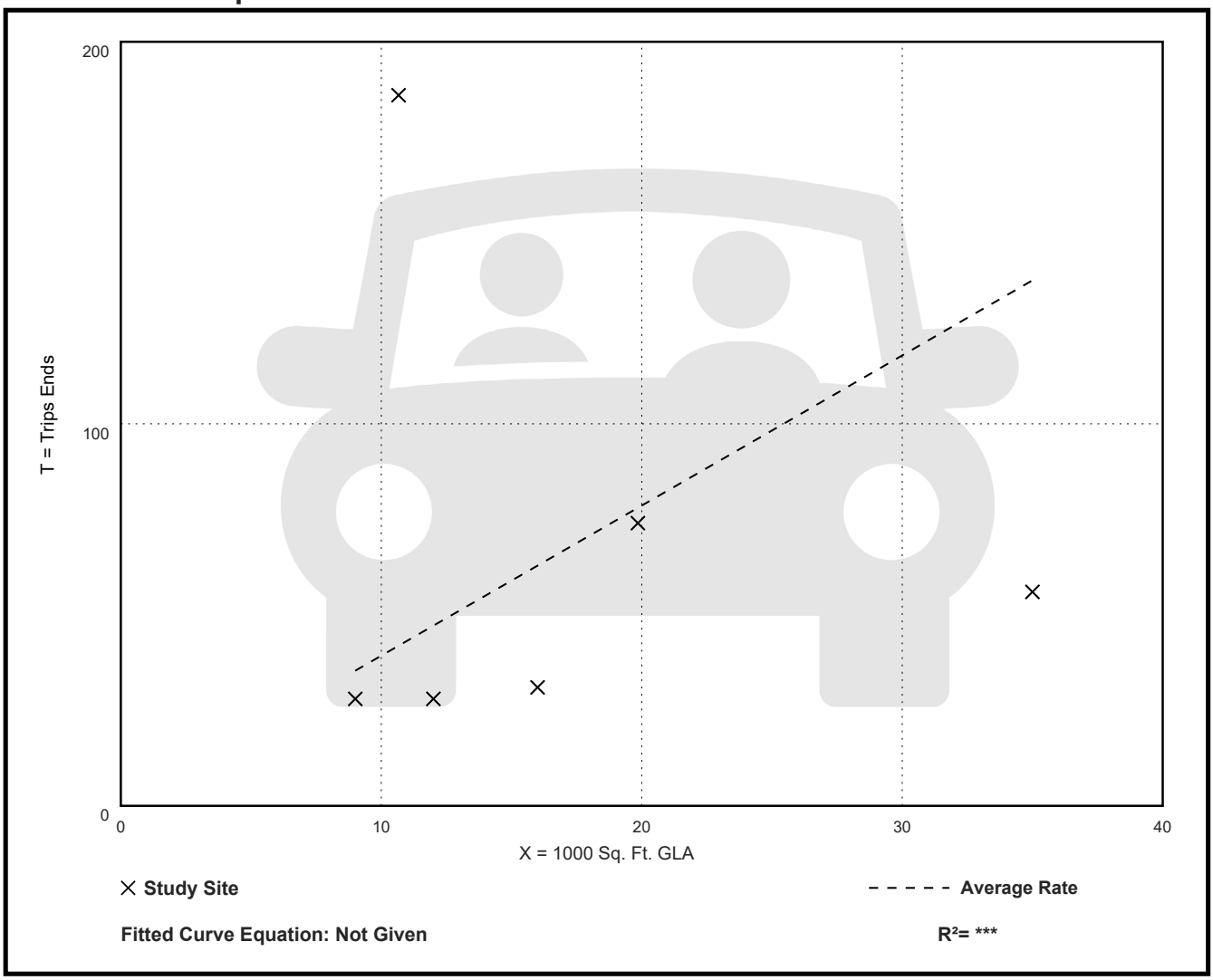
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. 1000 Sq. Ft. GLA: 17
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.93	1.60 - 17.44	5.12

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= *

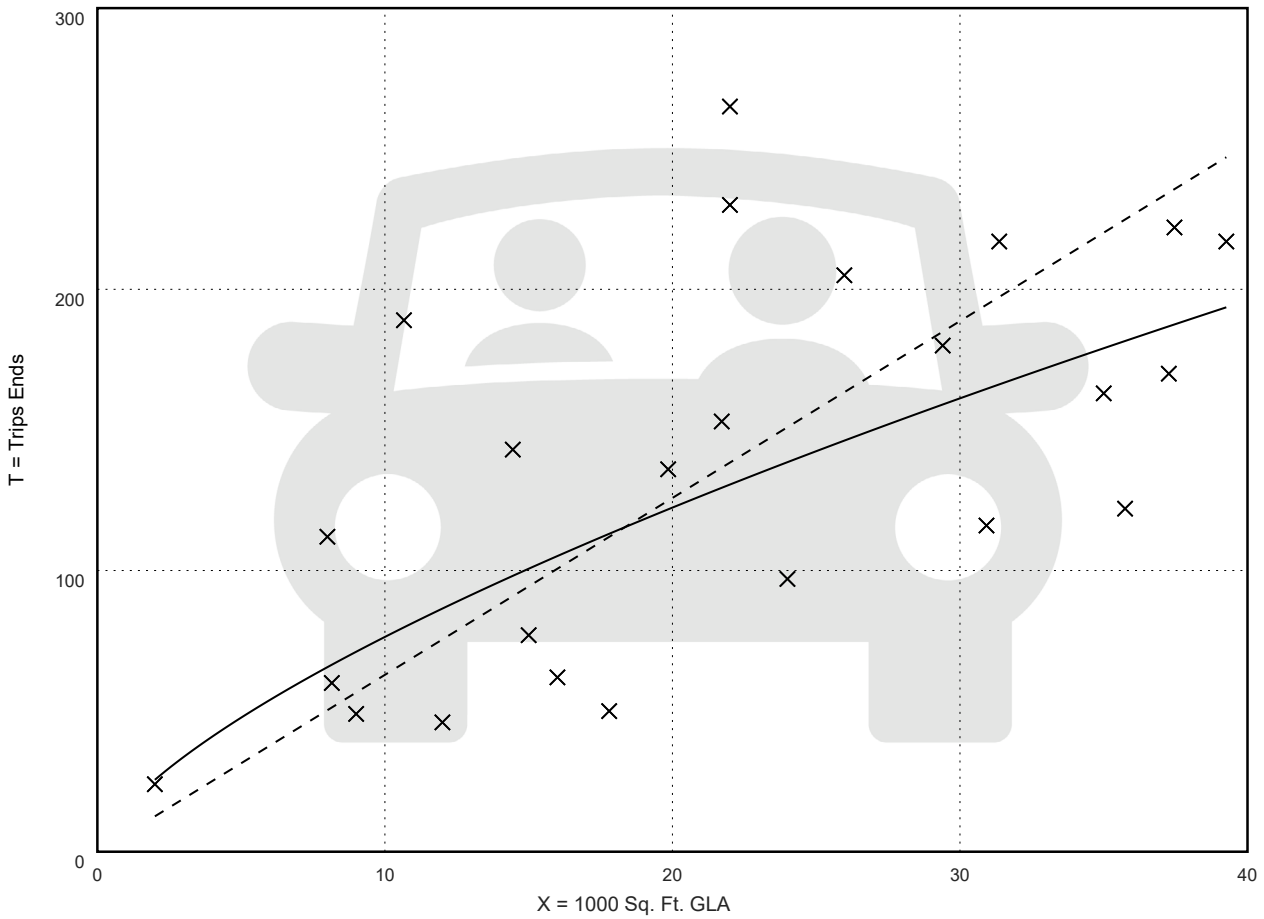
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	24
Avg. 1000 Sq. Ft. GLA:	22
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.29	2.81 - 17.72	3.02

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.68 Ln(X) + 2.77

R^2= 0.54

Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
AM Peak Hour of Generator

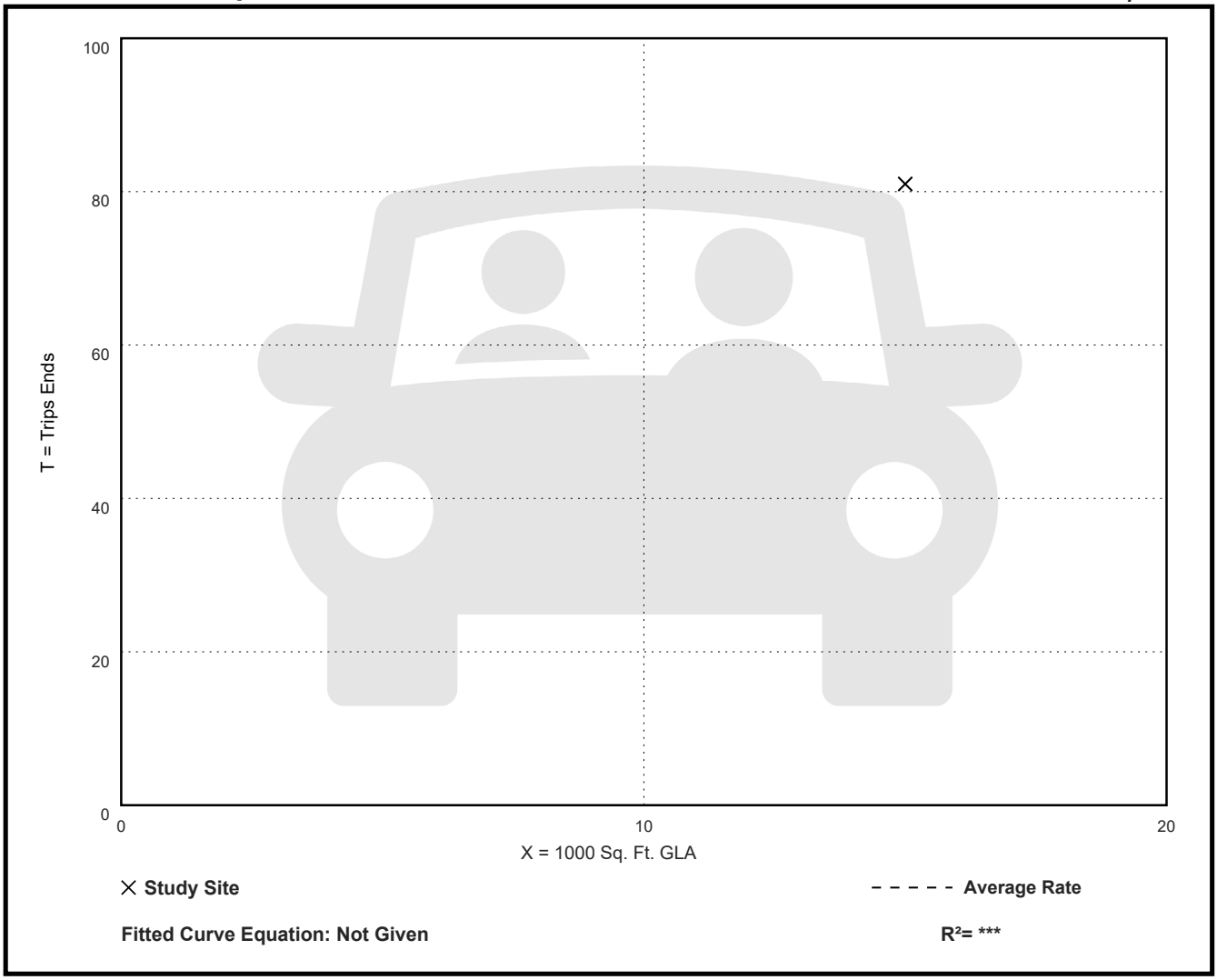
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GLA: 15
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
5.40	5.40 - 5.40	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
PM Peak Hour of Generator

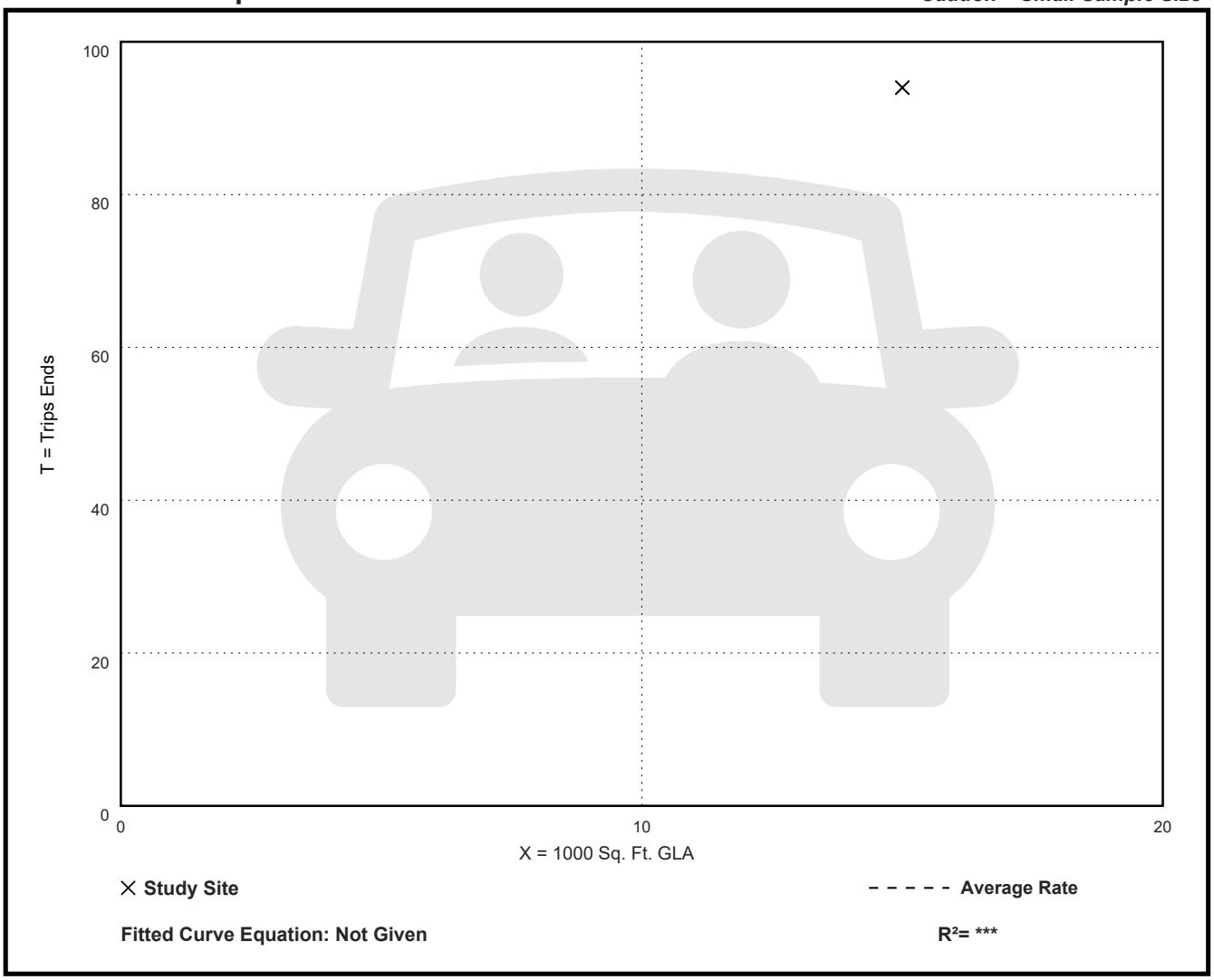
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GLA: 15
Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.27	6.27 - 6.27	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ***

Strip Retail Plaza (<40k)
(822)

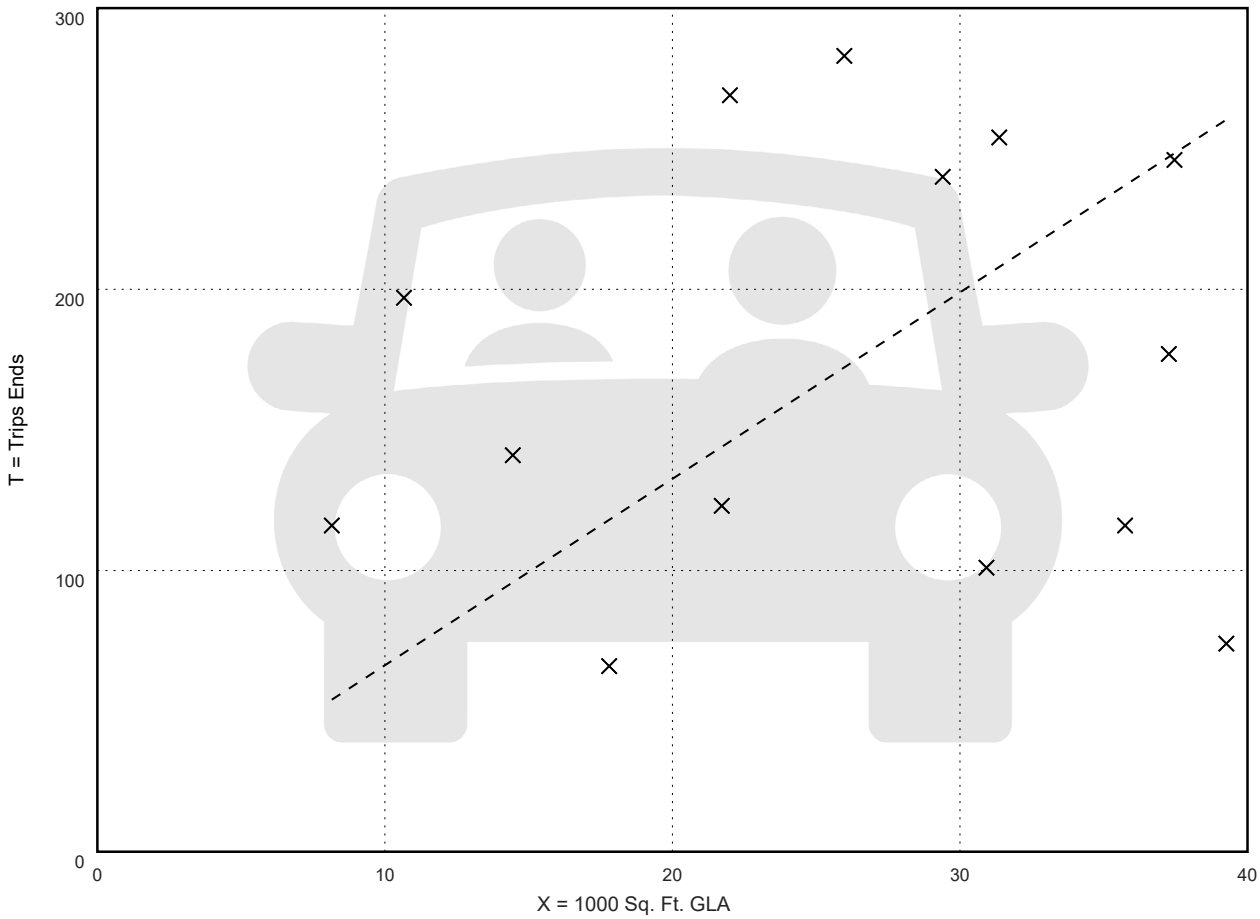
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 14
Avg. 1000 Sq. Ft. GLA: 26
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.63	1.88 - 18.48	3.99

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ***

Strip Retail Plaza (<40k)
(822)

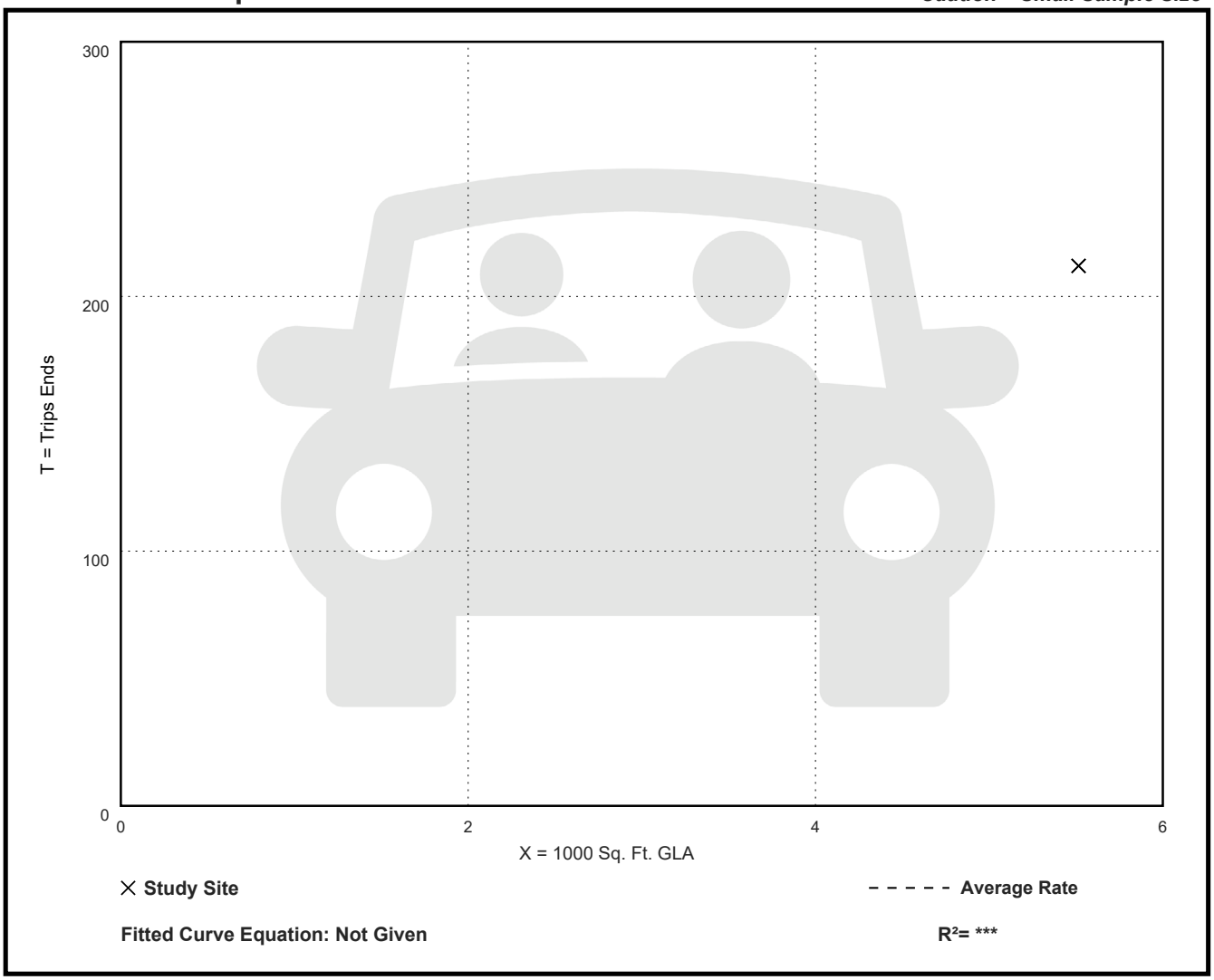
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **Rural**
Number of Studies: 1
Avg. 1000 Sq. Ft. GLA: 6
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
38.44	38.44 - 38.44	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ***

Strip Retail Plaza (<40k)
(822)

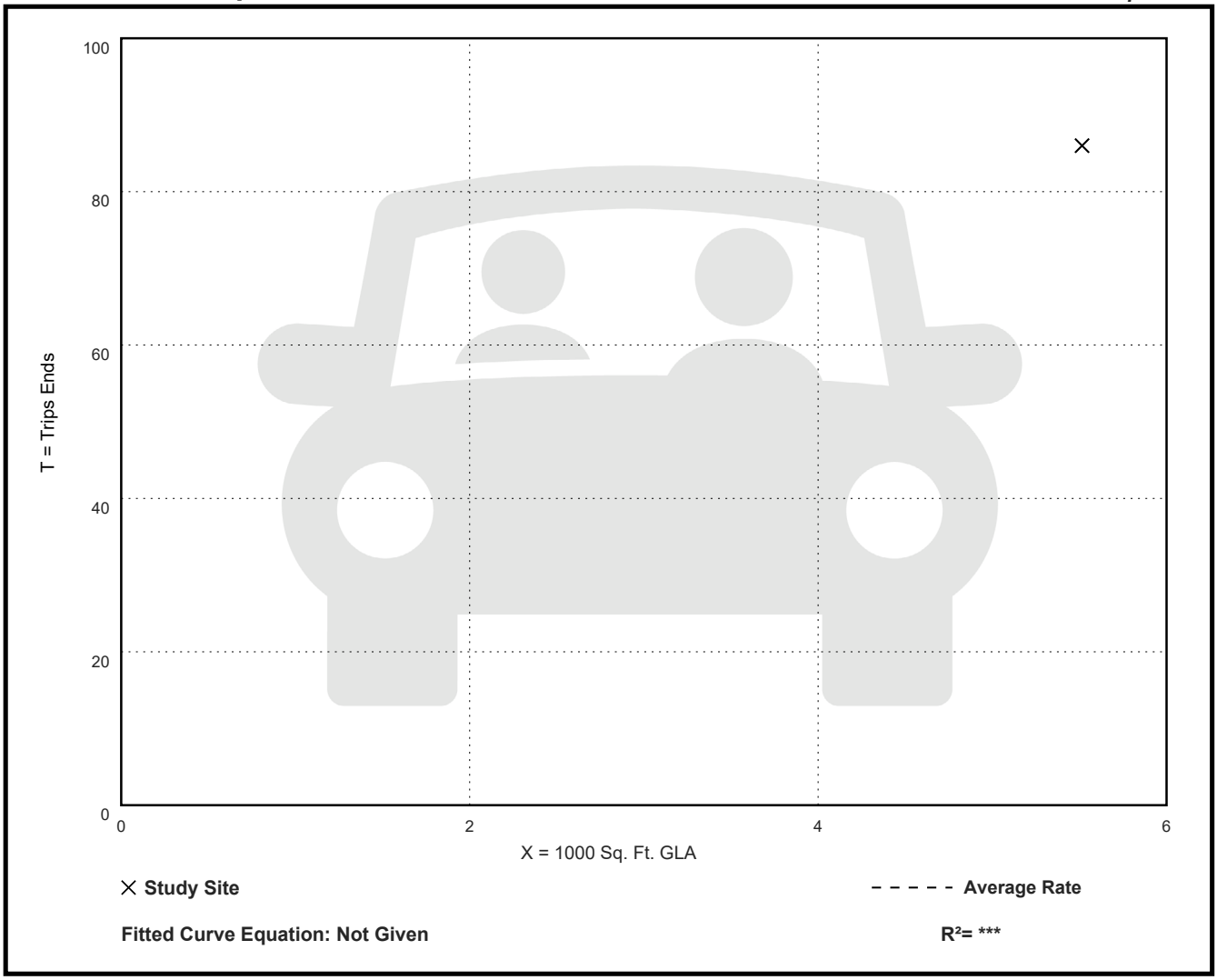
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **Rural**
Number of Studies: 1
Avg. 1000 Sq. Ft. GLA: 6
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
15.59	15.59 - 15.59	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday, Peak Hour of Generator

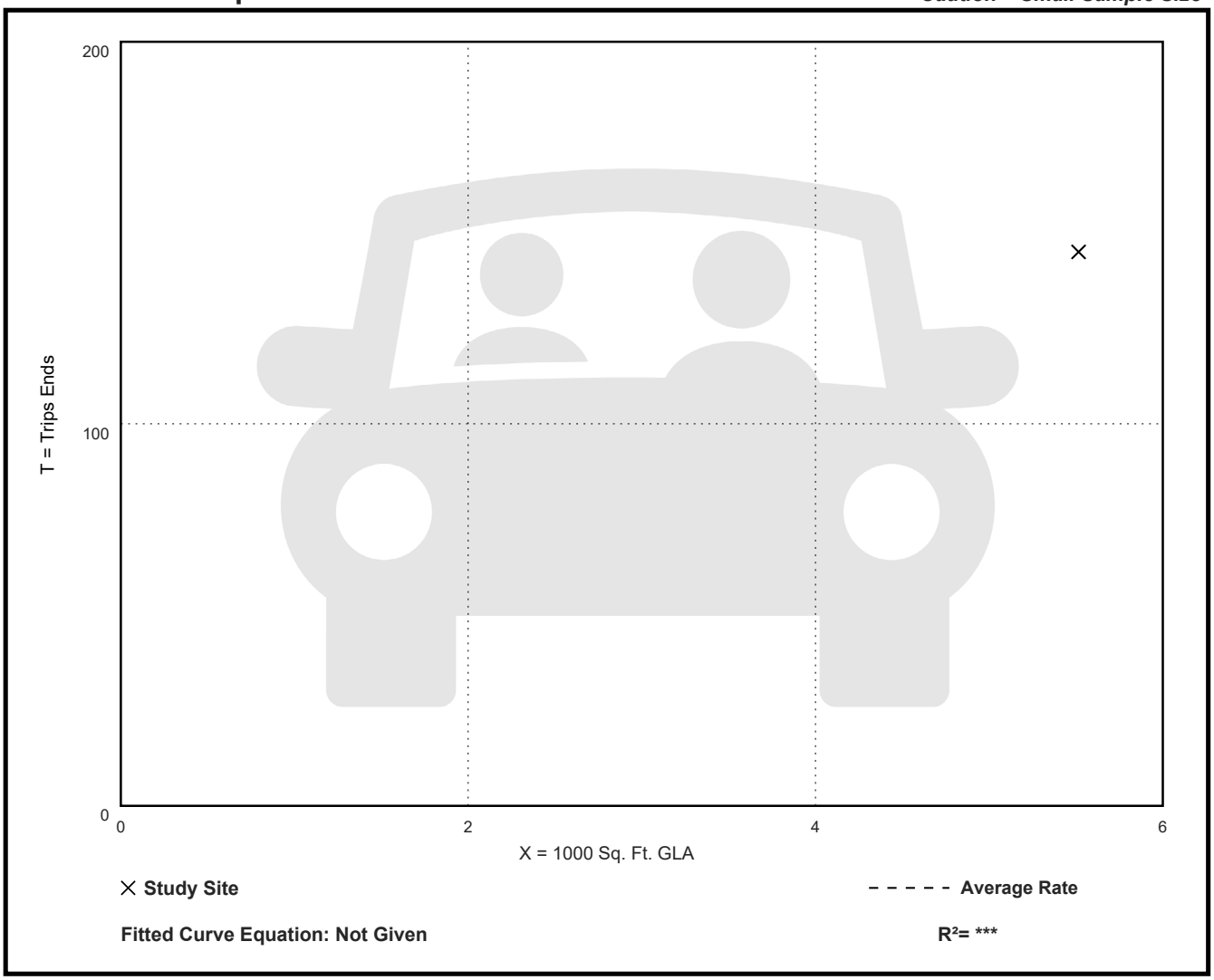
Setting/Location: Rural
Number of Studies: 1
Avg. 1000 Sq. Ft. GLA: 6
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
26.29	26.29 - 26.29	***

Data Plot and Equation

Caution – Small Sample Size



APPENDIX J: TAC Excerpts

Stopping sight distance is the sum of the distance travelled during the perception and reaction time and the braking distance.

$$SSD = 0.278Vt + 0.039 \frac{V^2}{a} \quad (2.5.2)$$

Where:

SSD = Stopping sight distance (m)
t = Brake reaction time, 2.5 s
V = Design speed (km/h)
a = Deceleration rate (m/s^2)

Table 2.5.2 gives the minimum stopping sight distances on level grade, on wet pavement, for a range of design speeds. These values are used for vertical curve design, intersection geometry and the placement of traffic control devices. The stopping sight distances quoted in **Table 2.5.2** may need to be increased for a variety of reasons related to grade and vehicle type as noted below.

Table 2.5.2: Stopping Sight Distance on level roadways for Automobiles[54]

Design speed (km/h)	Brake reaction distance (m)	Braking distance on level (m)	Stopping sight distance	
			Calculated (m)	Design (m)
20	13.9	4.6	18.5	20
30	20.9	10.3	31.2	35
40	27.8	18.4	46.2	50
50	34.8	28.7	63.5	65
60	41.7	41.3	83.0	85
70	48.7	56.2	104.9	105
80	55.6	73.4	129.0	130
90	62.6	92.9	155.5	160
100	69.5	114.7	184.2	185
110	76.5	138.8	215.3	220
120	83.4	165.2	248.6	250
130	90.4	193.8	284.2	285

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 3.4 m/s^2 used to determine calculated sight distance.

Table 9.9.3: Time Gap for Case B1, Left Turn from Stop

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	7.5
Single-unit truck	9.5
Combination truck (WB 19 and WB 20)	11.5
Longer truck	To be established by road authority

Notes: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and with grades of 3% or less. The table values should be adjusted as follows:

- For multi-lane highways: For left turns onto two-lane highways with more than two lanes, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.
- For minor approach grades: If the approach grade is an upgrade that exceeds 3%, add 0.2 s for each percent grade for left turns.
- Some road authorities use higher values for certain specialized vehicles (e.g., Alberta uses 22 s for very long log trucks).

The intersection sight distance along the major road (distance b in **Figure 9.9.2**) is determined by:

$$ISD = 0.278\ V_{major}\ t_g \qquad (9.9.1)$$

Where:

ISD = intersection sight distance (length of the leg of sight triangle along the major road) (m)
V_{major} = design speed of the major road (km/h)
t_g = time gap for minor road vehicle to enter the major road (s)

For example, a passenger car turning left onto a two-lane major road should be provided sight distance equivalent to a time gap of 7.5 s in major-road traffic. If the design speed of the major road is 100 km/h, this corresponds to a sight distance of 0.278(100)(7.5) = 208.5 or 210 m, rounded for design.

A passenger car turning left onto a four-lane undivided roadway will need to cross two near lanes, rather than one. This increases the recommended gap in major-road traffic from 7.5 to 8.0 s. The corresponding value of sight distance for this example would be 223 m. If the minor-road approach to such an intersection is located on a 4% upgrade, then the time gap selected for intersection sight distance design for left turns should be increased from 8.0 to 8.8 s, equivalent to an increase of 0.2 s for each percent grade.

The design values for intersection sight distance for passenger cars are shown in **Table 9.9.4**. **Figure 9.9.4** includes design values, based on the time gaps for the design vehicles included in **Table 9.9.3**.

No adjustment of the recommended sight distance values for the major-road grade is generally needed because both the major- and minor-road vehicle will be on the same grade when departing from the intersection. However, if the minor-road design vehicle is a heavy truck and the intersection is located near a sag vertical curve with grades over 3%, then an adjustment to extend the recommended sight distance based on the major-road grade should be considered.

Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn From Stop

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	41.7	45
30	35	62.6	65
40	50	83.4	85
50	65	104.3	105
60	85	125.1	130
70	105	146.0	150
80	130	166.8	170
90	160	187.7	190
100	185	208.5	210
110	220	229.4	230
120	250	250.2	255
130	285	271.1	275

Note: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

Sight distance design for left turns at divided-highway intersections should consider multiple design vehicles and median width. If the design vehicle used to determine sight distance for a divided-highway intersection is larger than a passenger car, then sight distance for left turns will need to be checked for that selected design vehicle and for smaller design vehicles as well. If the divided-highway median is wide enough to store the design vehicle with a clearance to the through lanes of approximately 1 m at both ends of the vehicle, no separate analysis for the departure sight triangle for left turns is needed on the minor-road approach for the near roadway to the left. In most cases, the departure sight triangle for right turns (case B2) will provide sufficient sight distance for a passenger car to cross the near roadway to reach the median. Possible exceptions are addressed in the discussion of case B3.

The time gaps in **Table 9.9.3** can be decreased by 1.0 s for right-turn maneuvers without undue interference with major-road traffic. These adjusted time gaps for the right turn from the minor road are shown in **Table 9.9.5**. Design values based on these adjusted time gaps are shown in **Table 9.9.6** for passenger cars. **Figure 9.9.5** includes the design values for the design vehicles for each of the time gaps in **Table 9.9.5**.

Table 9.9.5: Time Gap for Case B2—Right Turn from Stop and Case B3—Crossing Maneuver

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	6.5
Single-unit truck	8.5
Combination truck (WB 19 and WB 20)	10.5

Note: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and with grades of 3% or less. The table values should be adjusted as follows:

- For multi-lane highways: For left turns onto two-lane highways with more than two lanes, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.
- For minor approach grades: If the approach grade is an upgrade that exceeds 3%, add 0.1 s for each percent grade for left turns.

Table 9.9.6: Design Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3, Crossing Maneuver

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	36.1	40
30	35	54.2	55
40	50	72.3	75
50	65	90.4	95
60	85	108.4	110
70	105	126.5	130
80	130	144.6	145
90	160	162.6	165
100	185	180.7	185
110	220	198.8	200
120	250	216.8	220
130	285	234.9	235

Note: Intersection sight distance shown is for a stopped passenger car to turn right onto or to cross a two-lane highway with no median and with grades of 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

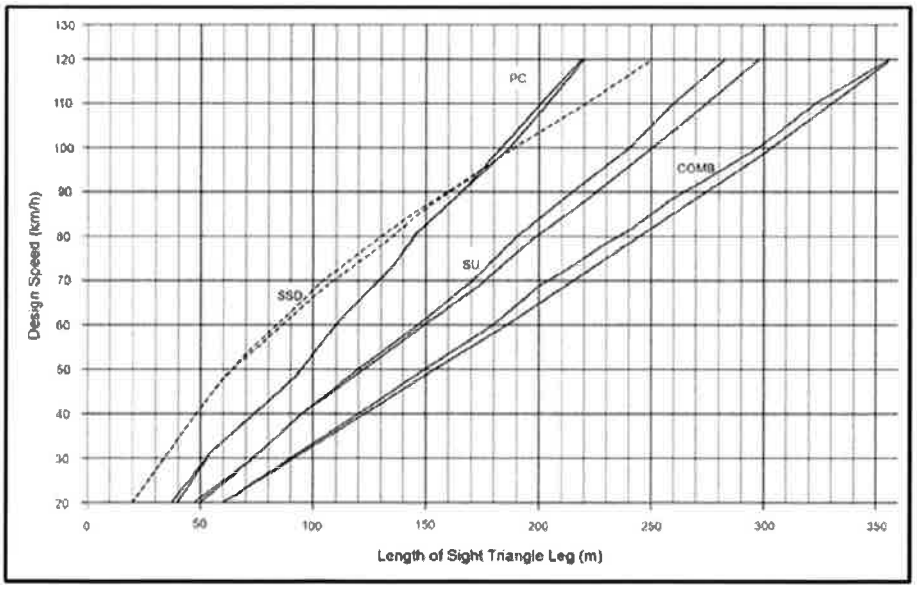


Figure 9.9.5: Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3, Crossing Maneuver (Calculated and Design Values Plotted)

Case F – Left Turns from the Major Road

All locations along a major highway from which vehicles are permitted to turn left across opposing traffic, including intersections and driveways, should have sufficient sight distance to accommodate the left-turn maneuver. Left-turning drivers need sufficient sight distance to decide when to turn left across the lane(s) used by opposing traffic. Sight distance design should be based on a left turn by a stopped vehicle, since a vehicle that turns left without stopping would need less sight distance. The sight distance along the major road to accommodate left turns is the distance traversed at the design speed of the major road in the travel time for the design vehicle given in **Table 9.9.11**.

Table 9.9.11: Time Gap for Case F, Left Turns from the Major Road

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	5.5
Single-unit truck	6.5
Combination truck (WB 19 and WB 20)	7.5

Note: Adjustment for multi-lane highways: For turning vehicles that cross more than one opposing lane, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane to be crossed.

The table also contains appropriate adjustment factors for the number of major-road lanes to be crossed by the turning vehicle. The unadjusted time gap in **Table 9.9.11** for passenger cars was used to develop the sight distances in **Table 9.9.12** and is illustrated in **Figure 9.9.8.**

Table 9.9.12: Intersection Sight Distance – Case F, Left Turn from the Major Road

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance	
		Passenger Cars	
		Calculated (m)	Design (m)
20	20	30.6	35
30	35	45.9	50
40	50	61.2	65
50	65	76.5	80
60	85	91.7	95
70	105	107.0	110
80	130	122.3	125
90	160	137.6	140
100	185	152.9	155
110	220	168.2	170
120	250	183.5	185
130	285	198.8	200

Note: Intersection sight distance shown is for a passenger car making a left turn from an undivided highway. For other conditions and design vehicles, the time gap should be adjusted and the sight distance recalculated.

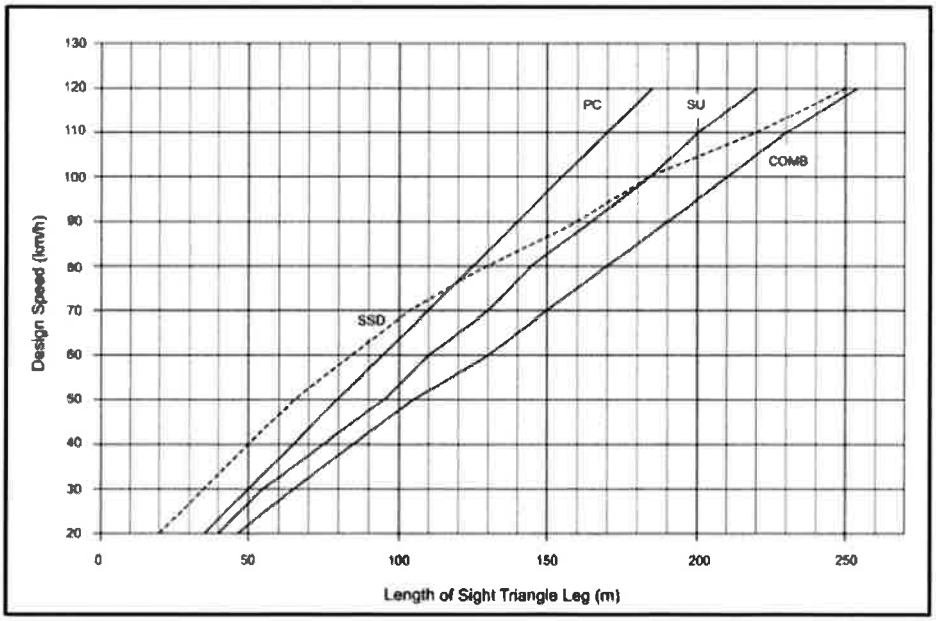
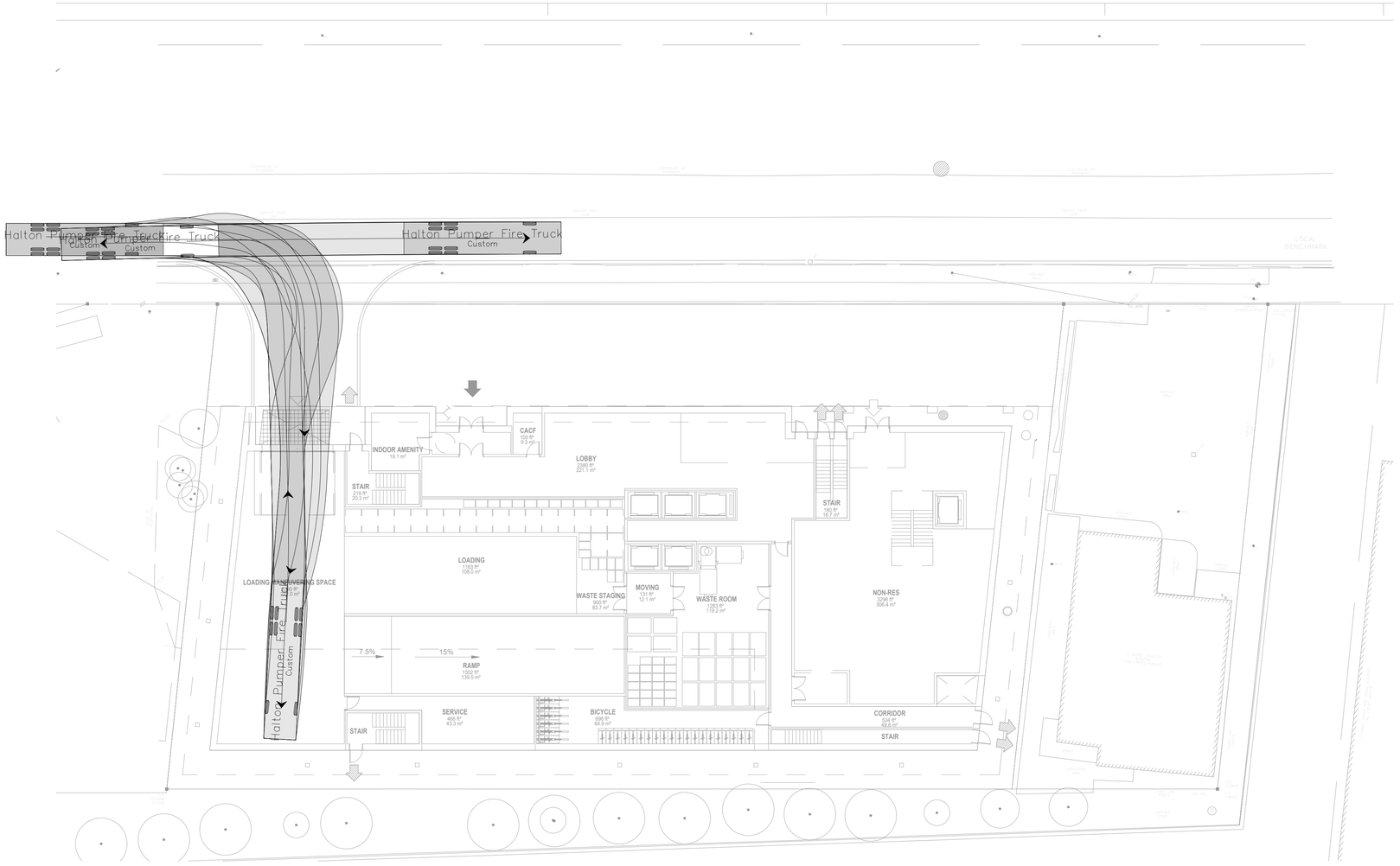


Figure 9.9.8: Intersection Sight Distance – Case F, Left Turn from the Major Road

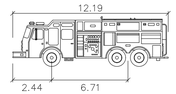
APPENDIX K: Vehicle Turning Diagrams





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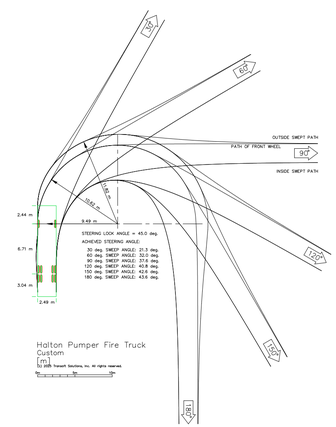
VEHICLE PROFILE



Halton Pumper Fire Truck

	meters
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Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

SWEEP PATH



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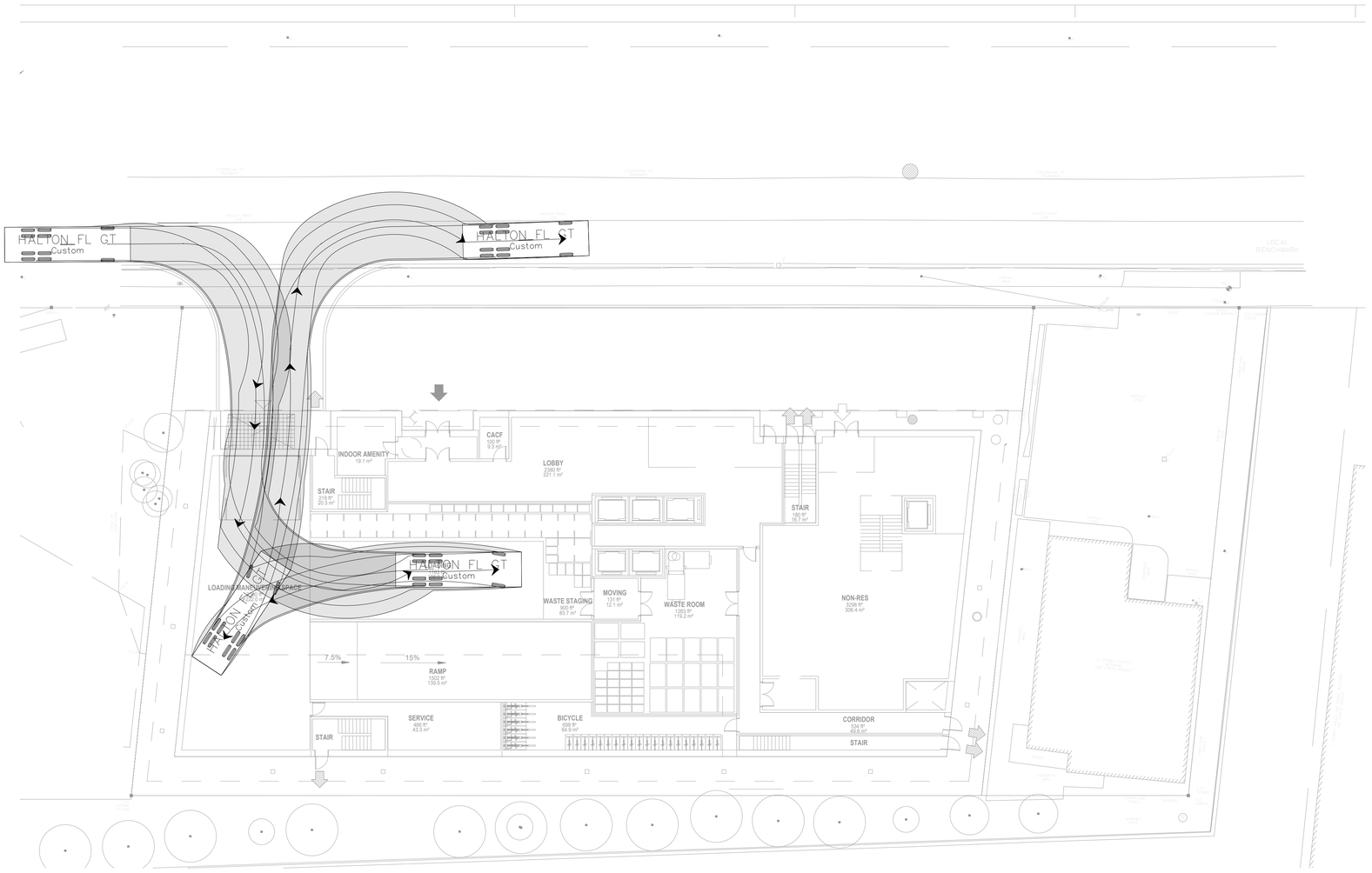
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Project
CITY OF OAKVILLE
118 CROSS AVENUE

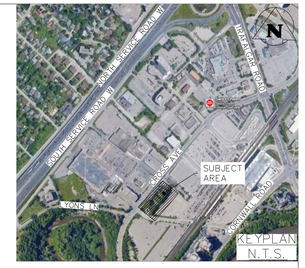
Drawing
VEHICLE MANEUVERING
HALTON FIRE TRUCK

CROZIER
CONSULTING ENGINEERS

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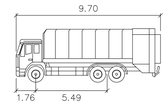


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KEYPLAN
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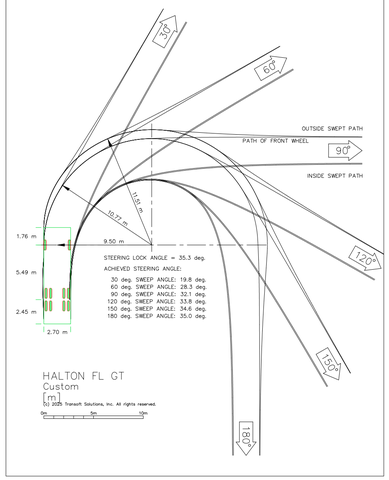
VEHICLE PROFILE



HALTON FL GT

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Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 35.3

SWEEP PATH



HALTON FL GT
Custom
[m]

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5 0m 5 10 15
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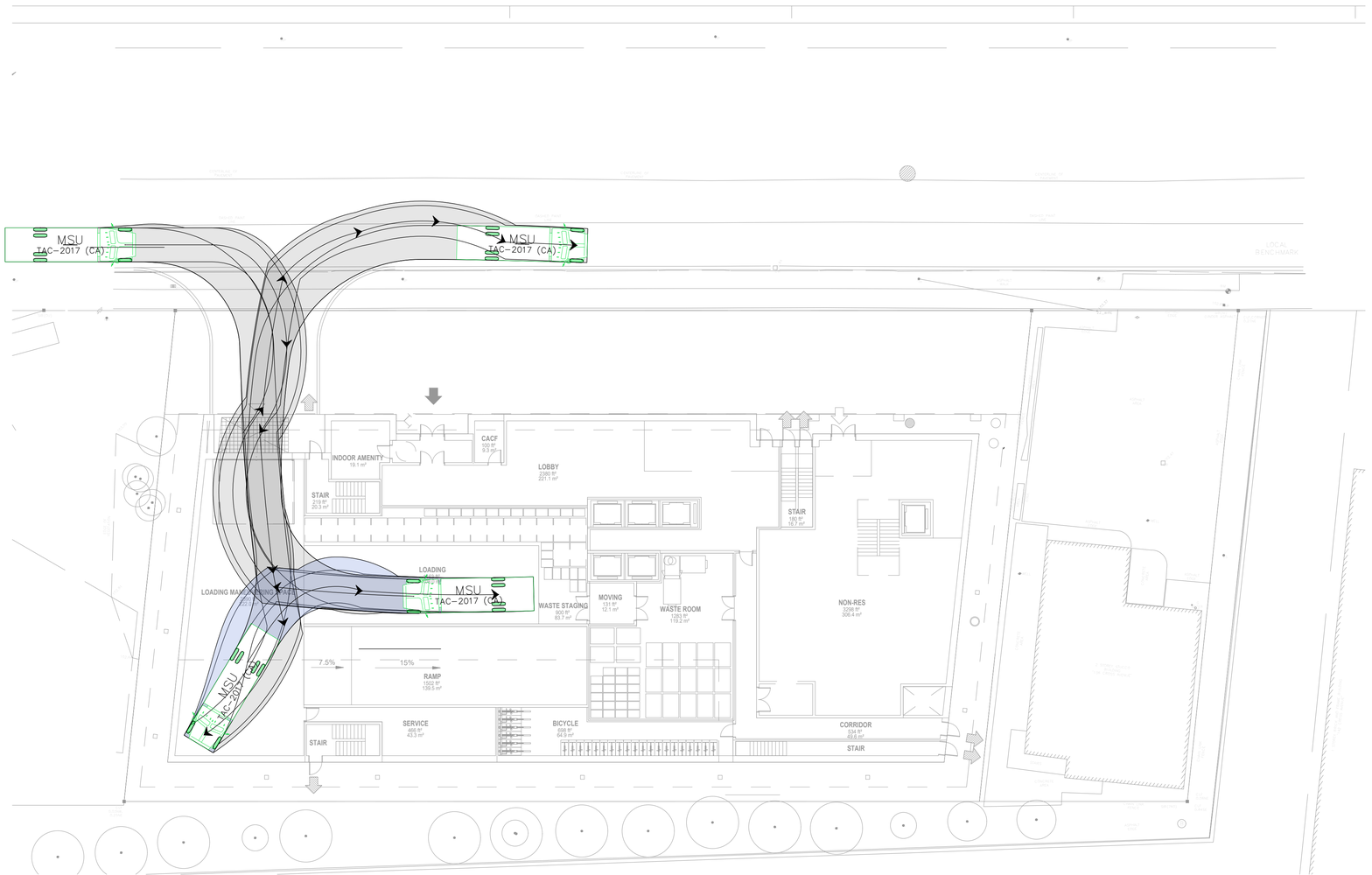
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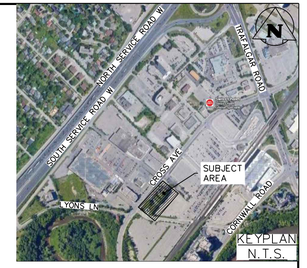
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CITY OF OAKVILLE
118 CROSS AVENUE

Drawing
VEHICLE MANEUVERING
HALTON FL GT

CROZIER
CONSULTING ENGINEERS

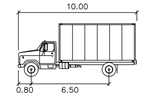
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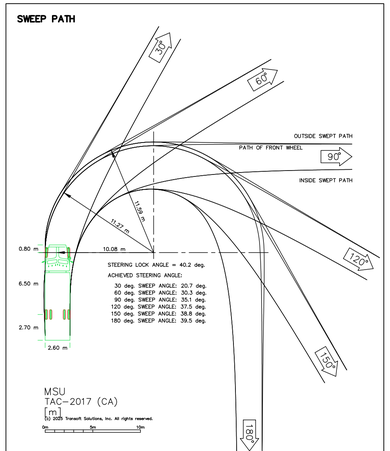
VEHICLE PROFILE



MSU

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Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

SWEEP PATH



MSU
TAC-2017 (CA)

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5 0m 5 10 15
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2	ISSUED FOR REVIEW	05/20/2026

Engineer

Engineer

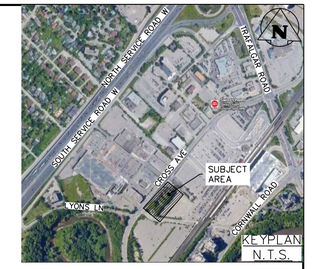
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Project
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118 CROSS AVENUE

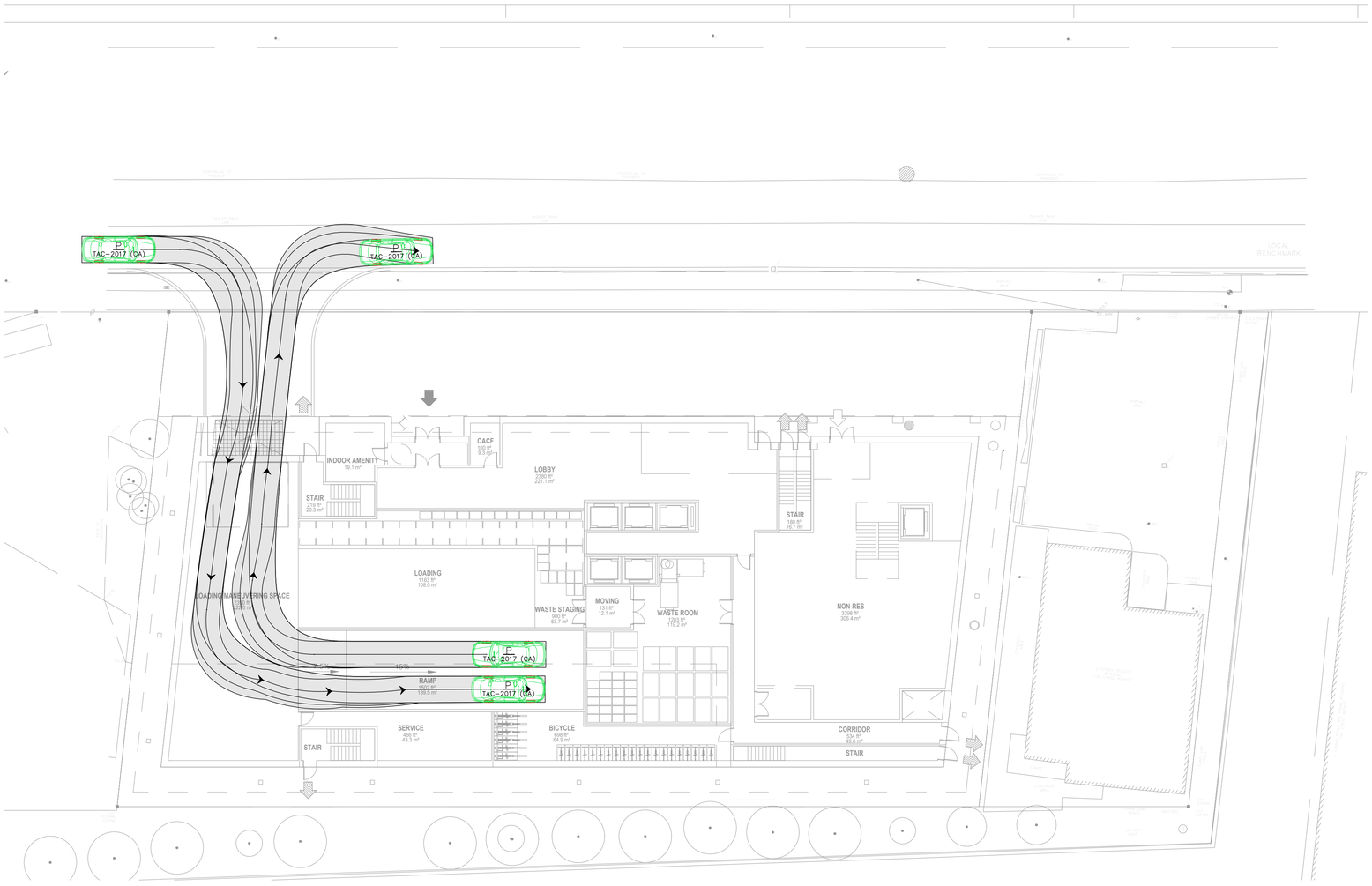
Drawing
VEHICLE MANEUVERING
MSU

CROZIER CONSULTING ENGINEERS

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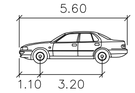


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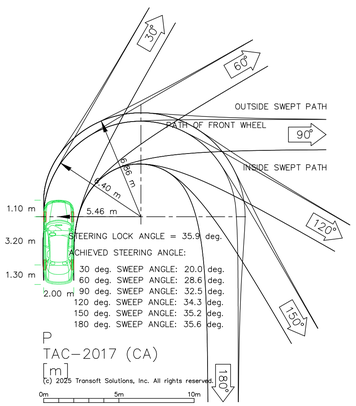
VEHICLE PROFILE



P

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Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

SWEEP PATH



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CITY

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR REVIEW	12/01/2025
1	ISSUED FOR REVIEW	01/20/2026
2	ISSUED FOR REVIEW	05/20/2026

Engineer

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

Engineer

Project
CITY OF OAKVILLE
118 CROSS AVENUE

Drawing
VEHICLE MANEUVERING
PASSENGER

CROZIER CONSULTING ENGINEERS

Drawn By	Drawn By	Project	
I.M.			2856-7391
Check By	Check By	Scale	Drawing
A.B./A.W.	A.B./A.W.	1:200	T004

APPENDIX L: Town of Oakville Zoning By-Law 2014-014 Excerpts

Parking, Loading, & Stacking Lane Provisions

Portions of this by-law not yet in effect are covered with a blue tone. This version consolidates all amendments and orders of the OMB up to the consolidation date shown below. Contact the Building Services or Planning Services departments for more information.

5.1 General Provisions

5.1.1 Applicability

a) The *parking space*, *barrier-free parking space*, *bicycle parking space*, and *stacking space* requirements of this By-law shall not apply to any legal or legal non-conforming *use* existing on the effective date of this By-law.

b) Additional *parking spaces*, *barrier-free parking spaces*, *bicycle parking spaces*, or *stacking spaces* shall be provided in accordance with the provisions of this By-law for all *uses* and all additional *net floor area* on a *lot* in the following circumstances: *(PL140317)*

i) Where a new *building* is erected or additional *net floor area* is added to a legal or legal non-conforming *building* existing on the effective date of this By-law.

ii) Where a change in *use* occurs that has the effect of requiring the additional spaces identified in subsection (b) above.

For an addition to an existing building, a cumulative minimum number of parking spaces is calculated for the additional floor area only. Contact a zoning officer in the Building Services department for more information.

5.1.2 Exclusive Use

Any minimum *parking space*, *barrier-free parking space*, *bicycle parking space*, *stacking space*, and *loading space* required by this By-law and any *driveway* or *aisle* leading to those spaces shall be unobstructed, available, and exclusively *used* for that purpose at all times, unless otherwise specified by this By-law.

5.1.3 More than One Use on a Lot

The *parking space*, *barrier-free parking space*, *bicycle parking space*, and *stacking space* requirements for more than one *use* on a single *lot* or for a *building* containing more than one *use* shall be the sum total of the requirements for each of the component *uses* or *buildings*, unless otherwise permitted by this By-law.

Examples of where a sum total of individual uses would not be calculated is where a "blended rate" is provided in Section 5.2: namely, on lots with multiple premises meeting specified locational or size criteria. Contact a zoning officer in the Building Services department for more information.

5.1.4 Location of Required Parking

a) Any *parking space*, *barrier-free parking space*, *bicycle parking space*, and *loading space* required by this By-law shall be located on the same *lot* on which the *use* is located.

b) Notwithstanding subsection (a) above, on a *lot* in a Mixed Use *Zone* on Maps 19(19a) and 19(22a), any *parking space* or *barrier-free parking space* required by this By-law can be provided on another *lot* within 300.0 metres if both *lots* are in a Mixed Use *Zone*.

5.1.5 Rounding Provision

a) Where the application of any ratio in this Part of the By-law results in a fraction of a *parking space* or *bicycle parking space* being required, the minimum number of spaces required shall be increased to the next highest whole number if the fraction is greater than 0.25.

b) Where the application of any ratio in this Part of the By-law results in a fraction of a *barrier-free parking space* being required, the minimum number of *barrier-free parking spaces* required shall be increased to the next highest whole number.

Parking, Loading, & Stacking Lane Provisions

5.1.6 Cash-in-Lieu of Parking

Parking spaces and *bicycle parking spaces* required by this By-law for non-residential *uses* shall not be required for a *lot* in any Mixed Use *Zone* on Maps 19(2a) and 19(7a) if the *Town* enters into an agreement with the land-owner respecting the payment of cash-in-lieu for some or all of the *parking spaces*, *bicycle parking spaces*, *aisles*, or *driveways* required, in accordance with Section 40 of the Planning Act.

The Town currently only entertains cash-in-lieu of parking requests in Kerr Village and Bronte Village. Contact Planning Services or Legal Services for more information.

5.1.7 Shared Driveways and Access Lanes Recognition

a) Notwithstanding any other provision of this By-law, a *driveway* or *aisle* shared across two *lots* in a Residential Medium (RM) *Zone*, Residential High (RH) *Zone*, Commercial *Zone*, Mixed Use *Zone*, Employment *Zone*, Institutional (I) *Zone*, and Community Use (CU) *Zone* shall be permitted.

b) Compliance with any regulations of this By-law for a *driveway* or *aisle* permitted by subsection (a) above shall be based upon the entire width of the applicable *driveway* or *aisle*. *(2016-013)*

5.1.8 Hardscape Surface Treatment

All *parking areas*, *loading spaces*, and *stacking spaces* in any *Zone* other than an Environmental *Zone* or Other *Zone* shall be surface treated with asphalt, concrete, interlocking brick, similar hardscaped surface, or other material sufficient to provide stability, prevent erosion, be usable in all seasons, and allow infiltration of surface water.

Gravel is not a permitted surface treatment for driveways outside of the Environmental or Other Zones.

5.1.9 Approved Locations for Visitors Parking *(2016-013)*

Visitors *parking spaces* may be provided in any combination of an above or below *grade parking structure* or *surface parking area*.

5.1.10 Tandem and Stacked Parking Spaces *(2017-025)*

Tandem and *stacked parking spaces* are permitted for any *dwelling*.

5.2 Motor Vehicle Parking Spaces

5.2.1 Minimum Number of Parking Spaces

The minimum number of *parking spaces* required for *uses* permitted by this By-law are established and calculated in accordance with the ratios set out in Table 5.2.1, below.

Table 5.2.1: Ratios of Minimum Number of Parking Spaces

Use	Minimum Number of Parking Spaces
Blended Rates for Lots with Multiple Premises	
Where multiple *premises* are located on a *lot* in the Neighbourhood Commercial (C1) *Zone*	1.0 per 22.0 m^2 *net floor area*

Parking, Loading, & Stacking Lane Provisions

Table 5.2.1: Ratios of Minimum Number of Parking Spaces	
Use	**Minimum Number of Parking Spaces**
Where multiple *premises* are located on a *lot* in all other Commercial *Zones*	a) 1.0 per 18.0 m^2 *net floor area* for the first 2,500.0 m^2 *net floor area*; plus, b) 1.0 per 22.0 m^2 *net floor area* for any additional *net floor area*
On a *lot* in the Office Employment (E1), Business Employment (E2), and Industrial (E3) *Zones* where: a) The *lot* has a minimum of five *premises*; b) The *lot* has a minimum of 5,000.0 m^2 total *floor area*; c) No *use* cumulatively occupies more than 50% of the *net floor area* on the *lot*; d) None of the following *uses*, where permitted, together cumulatively occupy no more than 20% of the *net floor area* on the *lot*: • *Financial institutions*; • *Restaurants*; and, • *Service commercial establishments*; e) A *hotel* is not located on the *lot*; and, f) The maximum number of *storeys* is two.	The lesser of the sum total of the requirements for each of the component uses or 1.0 per 50.0 m^2 *net floor area*
On a *lot* in the Business Commercial (E4) *Zone* where: a) The *lot* has a minimum of three *premises*; b) A minimum of two *uses* occur on the *lot*; c) A *hotel* is not located on the *lot*; and, d) The maximum number of *storeys* is two.	The lesser of the sum total of the requirements for each of the component uses or 1.0 per 40.0 m^2 *net floor area*
Residential Uses	
Apartment dwelling *(2021-068)*	a) 1.0 per *dwelling* where the unit has less than 75.0 square metres *net floor area*; b) 1.5 per *dwelling* for all other units (1)(2a)(3)
Back-to-back townhouse dwelling	2.0 per *dwelling*
Detached dwelling	2.0 per *dwelling*
Dormitory	0.2 per bed (1)
Duplex dwelling	2.0 per *dwelling*
Long term care facility	0.25 per bed
Multiple dwelling	1.5 per *dwelling* (1)(2)
Retirement home	0.33 per *assisted living unit* and *dwelling unit*
Semi-detached dwelling	2.0 per *dwelling*
Stacked townhouse dwelling	1.5 per *dwelling* (1)(3)
Townhouse dwelling	2.0 per *dwelling* (1)(2)

Parking, Loading, & Stacking Lane Provisions

Table 5.2.1: Ratios of Minimum Number of Parking Spaces	
Use	**Minimum Number of Parking Spaces**
Accessory Residential Uses	
Attached or *detached additional residential unit (2023-024) (2024-111)*	1.0 additional *parking space*
Bed and breakfast establishment	1.0 additional *parking space* per *lodging unit*
Day care	<See "Institutional and Community *Uses*" row>
Home occupation	No minimum requirement
Lodging house	1.0 additional *parking space* per *lodging unit*
Private home day care	No minimum requirement
Short-term accommodation	1.0 additional *parking space* (5)
Retail Uses	
Retail propane transfer facility	1.0 per 40.0 m^2 *net floor area*
Retail store or any other "store" permitted by this By-law	1.0 per 18.0 m^2 *net floor area*
Service Commercial Uses	
Adult entertainment establishment	1.0 per 18.0 m^2 *net floor area*
Commercial school	1.0 per 22.0 m^2 *net floor area*
Dry cleaning/laundry	1.0 per 22.0 m^2 *net floor area*
Financial institution	1.0 per 22.0 m^2 *net floor area*
Food production	1.0 per 40.0 m^2 *net floor area*
Funeral home	1.0 per 14.0 m^2 *net floor area*
Pet care establishment	1.0 per 22.0 m^2 *net floor area*
Place of entertainment	1.0 per 22.0 m^2 *net floor area*
Rental establishment	1.0 per 18.0 m^2 *net floor area*
Restaurant	1.0 per 10.0 m^2 *net floor area*
Service commercial establishment	1.0 per 22.0 m^2 *net floor area*
Sports facility	a) 1.0 per 18.0 m^2 *net floor area*; plus, b) 4 *parking spaces* per outdoor playing court; plus, c) 12 *parking spaces* per outdoor playing field
Taxi dispatch	1.0 per 22.0 m^2 *net floor area*
Veterinary clinic	1.0 per 22.0 m^2 *net floor area*
Office Uses	
Business office	1.0 per 35.0 m^2 *net floor area* (4)
Medical office (2024-111)	a) For the first 60% of the *net floor area* on the *lot* occupied by *medical offices*, 1.0 per 35.0 m^2 *net floor area* b) Where *medical offices* occupy greater than 60% of the *net floor area* on the *lot*, 1.0 per 18.0 m^2 *net floor area* for the entire *building*

Parking, Loading, & Stacking Lane Provisions

Table 5.2.1: Ratios of Minimum Number of Parking Spaces	
Use	**Minimum Number of Parking Spaces**
Employment Uses	
Bulk storage facility	1.0 per 100.0 m^2 *net floor area*
Commercial self-storage	1.0 per 100.0 m^2 *net floor area*, to a maximum minimum requirement of 8 *parking spaces*
Contractors establishment	1.0 per 100.0 m^2 *net floor area*
Manufacturing	a) 1.0 per 100.0 m^2 *net floor area* for the first 7,500.0 m^2 *net floor area*; plus, b) 1.0 per 200.0 m^2 *net floor area* for any additional *net floor area*
Public works yard	No minimum requirement
Repair shop	a) 1.0 per 100.0 m^2 *net floor area* for the first 7,500.0 m^2 *net floor area*; plus, b) 1.0 per 200.0 m^2 *net floor area* for any additional *net floor area*
Transportation terminal	1.0 per 100.0 m^2 *net floor area*
Training facility	1.0 per 22.0 m^2 *net floor area*
Warehousing	a) 1.0 per 100.0 m^2 *net floor area* for the first 7,500.0 m^2 *net floor area*; plus, b) 1.0 per 200.0 m^2 *net floor area* for any additional *net floor area*
Waste processing station	1.0 per 100.0 m^2 *net floor area*
Waste transfer station	1.0 per 100.0 m^2 *net floor area*
Wholesaling	1.0 per 100.0 m^2 *net floor area*
Institutional and Community Uses	
Art gallery	1.0 per 28.0 m^2 *net floor area*
Community centre	1.0 per 22.0 m^2 *net floor area*
Day care	1.0 per 40.0 m^2 *net floor area*
Emergency service facility	No minimum requirement
Emergency shelter (PL140317)	*1.0 per 4.0 beds*
Food bank	1.0 per 40.0 m^2 *net floor area*
Hospital	1.0 per 50.0 m^2 *net floor area*
Library	1.0 per 28.0 m^2 *net floor area*
Marina	0.6 spaces per berth
Museum	1.0 per 28.0 m^2 *net floor area*
Place of worship	a) 1.0 per 5 persons capacity for the *place of worship area of worship*; plus, b) 1.0 per 22.0 m^2 *net floor area* for any additional *accessory* assembly area
School, post-secondary	No minimum requirement

Parking, Loading, & Stacking Lane Provisions

Table 5.2.1: Ratios of Minimum Number of Parking Spaces	
Use	**Minimum Number of Parking Spaces**
• *School, private* • *School, public*	a) For elementary schools, 1.5 per classroom, not including any portables b) For secondary schools, 4.0 per classroom, not including any portables
Open Space Uses	
Agriculture	No minimum requirement
Boarding kennel	1.0 per 35.0 m^2 *net floor area*, to a maximum minimum requirement of 6 *parking spaces*
Cemetery	No minimum requirement
Conservation use	No minimum requirement
Golf course	a) 6.0 per hole; plus, b) 1.0 per 22.0 m^2 *net floor area* for any *accessory uses*
Outdoor miniature golf course	1.0 per hole
• *Park, private* • *Park, public*	No minimum requirement
Hospitality Uses	
Hotel	a) 1.0 per *lodging unit*; plus, b) 1.0 per 30.0 m^2 *net floor area* outside of a *lodging unit*
Public hall	1.0 per 18.0 m^2 *net floor area*
Motor Vehicle Uses	
Motor vehicle body shop	1.0 per 100.0 m^2 *net floor area*
Motor vehicle dealership	1.0 per 100.0 m^2 *net floor area*
Motor vehicle rental facility	1.0 per 100.0 m^2 *net floor area*
Motor vehicle repair facility	1.0 per 100.0 m^2 *net floor area*
Motor vehicle service station	1.0 per 100.0 m^2 *net floor area*
Motor vehicle storage compound	1.0 per 100.0 m^2 *net floor area*
Motor vehicle washing facility	1.0 per 100.0 m^2 *net floor area*

A "classroom" includes teaching rooms such as a library or gymnasium.

Additional Regulations for Minimum Parking Ratios Table 5.2.1 *(2017-025)*

1. Of the total number of *parking spaces* required, 0.25 of the *parking spaces* required per *dwelling* shall be designated as visitors *parking spaces*.
2.
   a) The location of visitors *parking spaces* shall be in accordance with Section 5.1.9. *(2017-025)*
   b) The visitors *parking spaces* for a *multiple* or *townhouse dwelling* shall only be required in a *condominium* and shall be located on a parcel of land tied to a *common element condominium*. *(2017-025)*

Inventory motor vehicles are not to be parked in required parking spaces, per Section 5.1.2 of this By-law.

3. A minimum of 50% of the minimum *parking spaces* shall be provided within a *private garage*, carport, or *parking structure*.
4.
   a) Where a *business office* is provided *accessory* to a different main permitted *use* in the Office Employment (E1), Business Employment (E2), and Industrial (E3) *Zones*, the parking rate for the main permitted *use* shall apply to any *floor area* occupied by a *business office* provided the *business office* occupies an area equal to or less than 25% of the total *net floor area* on the *lot*.
   b) The *business office* ratio shall apply for all *net floor area* occupied by a *business office* where the *business office* occupies greater than 25% of the total *net floor area* on the *lot*.
5. An additional *parking space* is not required when the additional parking can be accommodated in an existing visitor *parking space*.

5.2.2 Minimum Number of Parking Spaces in Mixed Use Zones

The minimum number of *parking spaces* required for *uses* permitted by this By-law in any Mixed Use *Zone* are established and calculated in accordance with the ratios set out in Table 5.2.2, below:

In the Growth Areas, the minimum number of parking spaces required are reduced to support the Town's strategic and policy objectives related to transit, growth management, and design.

Table 5.2.2: Ratios of Minimum Number of Parking Spaces for Mixed Use Zones

Use	Minimum Number of Parking Spaces
Residential Uses	
Apartment dwelling *(2021-068)*	a) 1.0 per *dwelling* where the unit has less than 75.0 square metres *net floor area*; b) 1.25 per *dwelling* for all other units (1)(2a)(3)
Back-to-back townhouse dwelling	1.5 per *dwelling*
Detached dwelling	2.0 per *dwelling*
Dormitory	No minimum requirement
Live-work dwelling	a) 2.0 for the residential component; plus, b) 1.0 per 40.0 m^2 *net floor area* for the commercial component (4)
Long term care facility	0.25 per bed
Multiple dwelling	1.25 per *dwelling* (1)(2)
Retirement home	0.33 per *assisted living unit* and *dwelling unit*
Semi-detached dwelling	2.0 per *dwelling*
Stacked townhouse dwelling	1.25 per *dwelling* (1)(3)
Townhouse dwelling	1.5 per *dwelling* (1)(2)
Accessory Residential Uses	
Attached or *detached additional residential unit* *(2023-024) (2024-111)*	1.0 additional *parking space*
Bed and breakfast establishment	1.0 additional *parking space* per *lodging unit*
Home occupation	No minimum requirement
Private home day care	No minimum requirement

Parking, Loading, & Stacking Lane Provisions

Table 5.2.2: Ratios of Minimum Number of Parking Spaces for Mixed Use Zones	
Use	**Minimum Number of Parking Spaces**
Short-term accommodation	1.0 additional *parking space* (5)
Hospitality Uses	
Hotel	a) 1.0 per *lodging unit*; plus, b) 1.0 per 40.0 m^2 *net floor area* outside of a *lodging unit*
Public hall	1.0 per 20.0 m^2 *net floor area*
All Non-Residential Uses	
• All other permitted non-residential *uses* in a Mixed Use *Zone* on Map 19(2a) [Bronte Village] • All other permitted non-residential *uses* in a Mixed Use *Zone* on Map 19(7a) [Kerr Village]	1.0 per 40.0 m^2 *net floor area*
All other permitted non-residential *uses* in a Mixed Use *Zone* on Map 19(8a) [Downtown Oakville]	No minimum requirement
• All other permitted non-residential *uses* in a Mixed Use *Zone* on Map 19(19a) [Palermo Village] • All other permitted non-residential *uses* in a Mixed Use *Zone* on Map 19(22a) [Uptown Core]	a) 1.0 per 24.0 m^2 *net floor area* on the *first storey*; plus, b) 1.0 per 40.0 m^2 *net floor area* above the *first storey* occupied by non-residential *uses* c) Notwithstanding this, where *medical offices* cumulatively occupy any *net floor area* on the *first storey* or greater than 60% of the *net floor area* of the *building*, the minimum number of parking spaces shall be 1.0 per 18.0 m^2 *net floor area* occupied by *medical offices*
All Other Uses	
Any other *use* not otherwise accommodated by Table 5.2.2	Shall be the ratio provided in Table 5.2.1

Additional Regulations for Growth Area Parking Spaces Table 5.2.2 *(2017-025)*

1. Where a minimum of 5 *parking spaces* are required on a lot of the total number of *parking spaces* required, 0.2 of the *parking spaces* required per *dwelling* shall be designated as visitors *parking spaces*. *(2015-018)*
2.
   a) The location of visitors parking spaces shall be in accordance with Section 5.1.9 *(2017-025)*
   b) The visitors *parking spaces* for a *multiple* or *townhouse dwelling* shall only be required in a *condominium* and shall be located on a parcel of land tied to a *common element condominium*.
3. A minimum of 50% of the minimum *parking spaces* shall be provided within a *private garage*, carport, or *parking structure*.
4. A *parking space* is not permitted in a *front* or *side yard*.
5. An additional *parking space* is not required when the additional parking can be accommodated in an existing visitor *parking space*.

Parking, Loading, & Stacking Lane Provisions

5.2.3 Motor Vehicle Parking Space Dimensions *(2017-025)*

a) The minimum dimensions of a *parking space* not located in a *private garage* shall be 2.7 metres in width and 5.7 metres in length.

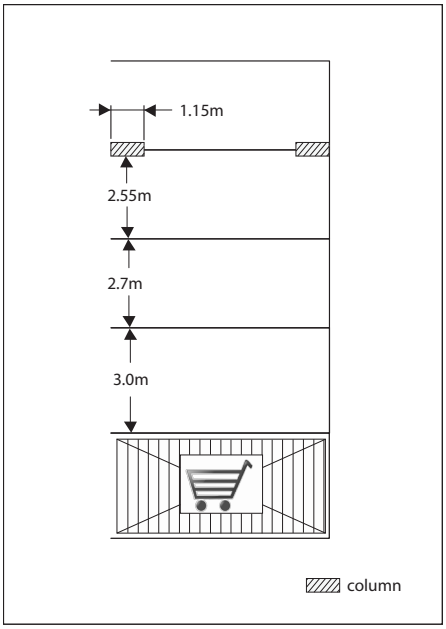
b) The minimum dimensions of a *parking space* located in a *private garage* shall be 5.7 metres in length and:

   i) Where one *parking space* is provided, 3.0 m in width;
   ii) Where two *parking spaces* are provided side-by-side, 2.8 m in width per *parking space*, or 5.6 m in total combined width;
   iii) Where *tandem parking spaces* are provided, 3.0 m in width per *parking space*; and,
   iv) Where *stacked parking spaces* are provided, 3.0 m in width for either the *parking space* on or below the vehicle elevating device

c) The minimum dimensions of a *parking space* provided with the length parallel to the *aisle* or *driveway* shall be 2.7 metres in width and 7.0 metres in length.

d) Where a wall, column, or other obstruction is located abutting or within any *parking space*, the minimum width of the *parking space* shall be increased by 0.3 metres for each side that is obstructed. Obstructions within 1.15 metres of either stall end do not require an increase in *parking space* width, provided the obstruction projects no more than 0.15 metres into the *parking space*. *(2015-018)*

e) Where two *parking spaces* are provided in tandem, the minimum cumulative dimensions of the *parking spaces* shall be 2.7 metres in width and 11.7 metres in length.



Where a wall, column, or other obstruction is next to a parking space, this By-law may require the parking space to be wider.

5.3 Barrier-free Parking Spaces

5.3.1 Ratios for Minimum Number of Spaces

a) *Barrier-free parking spaces* shall be required for all non-residential *uses*.

b) *Barrier-free parking spaces* shall additionally be required for visitor *parking spaces* for the following residential *uses*. The total number of *parking spaces* in the left column of Table 5.3.1 shall be calculated using only the total number of visitor *parking spaces* on the *lot*: *(2015-018)*

   i) *Apartment dwelling*;
   ii) *Dormitory*; and,
   iii) *Stacked townhouse dwelling*.

c) The minimum number of *barrier-free parking spaces* required shall be calculated in accordance with the ratios set out in Table 5.3.1, below.

Table 5.3.1: Minimum Number of Barrier-free Parking Spaces

Total Number of Parking Spaces in all Parking Areas on the Lot	Minimum Number of Barrier-free Parking Spaces
3 to 25 *(2015-018)*	1
26 to 100 *(2015-018)*	4% of the total number of *parking spaces* in the *parking area*

Table 5.3.1: Minimum Number of Barrier-free Parking Spaces	
Total Number of Parking Spaces in all Parking Areas on the Lot	**Minimum Number of Barrier-free Parking Spaces**
101 to 200	1, plus 3% of the total number of *parking spaces* in the *parking area*
201 to 1000	2, plus 2% of the total number of *parking spaces* in the *parking area*
1,001 or greater	11, plus 1% of the total number of *parking spaces* in the *parking area*

5.3.2 Dimensions and Paths of Travel

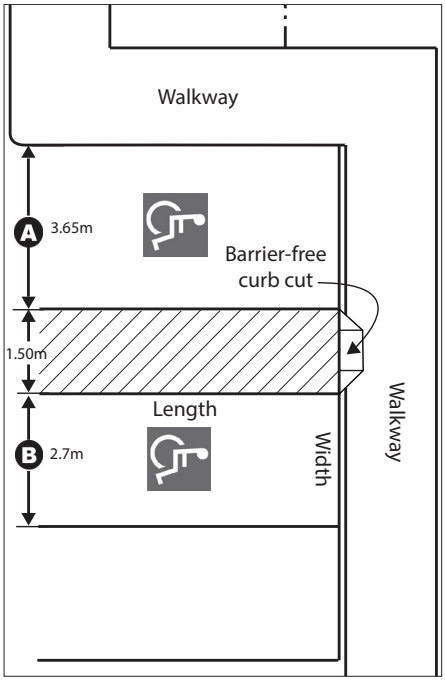
a) The minimum dimensions for a *barrier-free parking space* shall be in accordance with the dimensions of Table 5.3.2, below.

Table 5.3.2: Dimensions of Barrier-free Parking Spaces		
Type	**Width**	**Length**
Type A	3.65 m	5.7 m
Type B	2.7 m	5.7 m

b) Where the minimum number of *barrier-free parking spaces* required is even, an equal number of Type A and Type B *barrier-free parking spaces* shall be required.

c) Where the minimum number of *barrier-free parking spaces* required is odd, the additional *barrier-free parking space* remaining shall be a Type B *barrier-free parking space*. Where the minimum number of *barrier-free parking spaces* is one, the *barrier-free parking space* shall be a Type A *barrier-free parking space*. *(2023-024)*

d) A *barrier-free* path of travel 1.5 metres in width is required abutting the entire length of the longest side of a *barrier-free parking space*. A path of travel can be shared by two *barrier-free parking spaces*. *(2015-018)*



Two barrier-free parking spaces, regardless of width, can share a barrier-free path of travel.

5.4 Bicycle Parking Spaces

5.4.1 Minimum Number of Bicycle Parking Spaces

a) The minimum number of *bicycle parking spaces* required for *uses* permitted by this By-law are established and calculated in accordance with the ratios set out in Table 5.4.1, below.

b) In no circumstance shall the number of minimum *bicycle parking spaces* required on a *lot* be greater than 30.

Table 5.4.1: Ratios of Minimum Number Bicycle Parking Spaces	
Use	**Minimum Number of Bicycle Parking Spaces**
Blended Rates for Lots with Multiple Premises	
Where multiple *premises* are located on a *lot* in any non-residential *zone*	The greater of 2 or 1.0 per 1,000.0 m^2 *net floor area*, plus the minimum number of *bicycle parking spaces* for the *dwellings*
Residential Uses	
Apartment dwelling	1.0 per *dwelling* (1)(2)

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Table 5.4.1: Ratios of Minimum Number Bicycle Parking Spaces	
Use	**Minimum Number of Bicycle Parking Spaces**
Dormitory	1.0 per *lodging unit* (1)(2)
Long term care facility	The lesser of 5 or 0.25 per *assisted living unit* or *dwelling unit* (1)
Stacked townhouse dwelling	1.0 per *dwelling* (1)(2)
Retail Uses	
Retail store	The greater of 2 or 1.0 per 1,000.0 m^2 *net floor area*
Service Commercial Uses	
Adult entertainment establishment	No minimum requirement
Commercial self-storage	No minimum requirement
Funeral home	No minimum requirement
All other *uses* permitted in a *zone* under the heading Service Commercial *Uses*	The greater of 2 or 1.0 per 1,000.0 m^2 *net floor area*
Office Uses	
Business office	The greater of 2 or 1.0 per 1,000.0 m^2 *net floor area* (3)
Medical office	The greater of 2 or 1.0 per 1,000.0 m^2 *net floor area*
Employment Uses	
All *uses* permitted in a *zone* under the heading Employment *Uses*	2, plus 0.25 per 1,000.0 square metres of *net floor area*
Institutional and Community Uses	
Art gallery	The greater of 2 or 1.0 per 1,000.0 m^2 *net floor area*
Marina	No minimum requirement
School, post-secondary	The greater of 3 or 2.0 per 100.0 m^2 of *net floor area*
School, private and *school, public*	a) For elementary schools, 0.25 per classroom, not including any portables. b) For secondary schools, 0.5 per classroom, not including any portables.
All other *uses* permitted in a *zone* under the heading Institutional and Community *Uses*	The greater of 2 or 1.0 per 500.0 m^2 of *net floor area*

Additional Regulations for Minimum Bicycle Parking Ratios Table 5.4.1

1. In a *building* having fewer than 20 *assisted living units* or *dwelling units*, the minimum number of *bicycle parking spaces* required shall be zero.
2. Of the total number of bicycle *parking spaces* required, 0.25 of the bicycle *parking spaces* required per *dwelling* shall be designated as visitors bicycle *parking spaces*
3. In the Industrial E3 *Zone*, the parking rate for the main permitted *use* shall apply to any *floor area* occupied by a *business office* provided the *business office* occupies an area equal to or less than 25% of the total *net floor area* on the *lot*. The *business office* ratio shall apply for all *net floor area* used for a *business office* where the *business office* occupies greater than 25% of the total *net floor area* on the *lot*.

Parking, Loading, & Stacking Lane Provisions

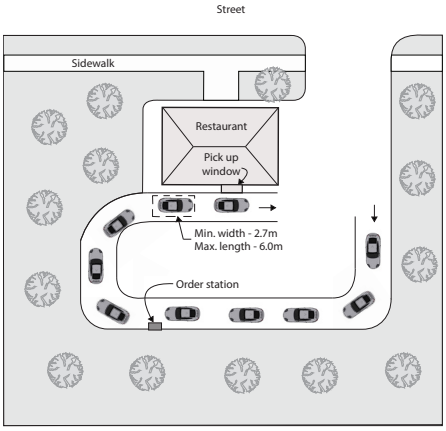
5.5 Drive-through Facilities and Stacking Lanes

5.5.1 Locations

a) The minimum setback for all points of a *drive-through facility* from any *lot line* abutting any Residential *Zone* shall be 15.0 metres.
b) A *stacking lane* shall be separate from an *aisle* or *driveway*.

5.5.2 Minimum Number of Stacking Spaces

a) Each *stacking space* in a *stacking lane* shall have a minimum width of 2.7 metres and a minimum length of 6.0 metres.
b) The minimum number of *stacking spaces* required in a *stacking lane* shall be calculated in accordance with the standards set out in Table 5.5, below.



Conceptual layout for a restaurant stacking lane.

Table 5.5: Stacking Space Requirements	
Use	**Minimum Number of Stacking Spaces**
Financial institution	4
Motor vehicle washing facility	8 (1)
Restaurant	10 (2)
Retail store	4
School, private	10 (3)
School, public	10 (3)
Service commercial establishment	4

Additional Regulations for Stacking Spaces Table 5.5

1. An additional two *stacking spaces* are required at the exit of the *motor vehicle washing facility*.
2. Of these, seven *stacking spaces* shall be provided at or before the order station where an order station is provided.
3. Section 5.5.1 shall not apply.

5.6 Loading Spaces

Where a *loading space* is provided, the following regulations apply:

a) The minimum dimensions of a *loading space* are 3.5 metres in width and 12.0 metres in length, with a minimum vertical clearance of 4.2 metres.
b) A *loading space* shall abut the *building* for which the *loading space* is provided.
c) A *loading space* shall be set back 7.5 metres from any Residential *Zone*, except if it is located entirely within a *structure*. This subsection does not apply to a *loading space* located in a Residential *Zone*.

There is no minimum number of loading spaces required by Zoning By-law 2014-014. Should loading spaces be provided, the following regulations apply to set appropriate dimensions and locations.

A minimum requirement does apply in North Oakville.