TRANSPORTATION IMPACT STUDY

349 DAVIS ROAD
TOWN OF OAKVILLE,
REGIONAL MUNICIPALITY OF HALTON

PREPARED FOR:
1539059 ONTARIO INC.

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
211 YONGE STREET, SUITE 600
TORONTO, ON
M5B 1M4

MARCH 2023

CFCA FILE NO. 2259-6324

CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev. 0	March 2023	Issued for 1st Submission

1.0 Executive Summary

Background

C.F. Crozier & Associates Inc. (Crozier) was retained by 1539059 Ontario Inc. to prepare a Transportation Impact Study in support of Official Plan Amendment and Zoning By-law Amendment for a proposed mixed-use development located at 349 Davis Road in the Town of Oakville, Regional Municipality of Halton. The purpose of the study is to evaluate the transportation related impacts of the proposed development on the boundary road network and to recommend any required mitigation measures, if warranted.

Per the Site Plan prepared by Studio Veronica Madonna Architect (dated September 14, 2022), the development proposes a 58-storey mixed-use building which includes residential, commercial, and office uses. A total of 622 vehicle and 400 bicycle parking spaces are proposed. The site is proposed to be serviced by a full moves access connection to Davis Road.

The Transportation Impact Study was completed in accordance with the Region of Halton Transportation Impact Study Guidelines (January 2015) and the General Guidelines for the Preparation of Traffic Impact Studies (MTO, February 2021). As confirmed with the MTO, Region, and Town, the study assessed the following study intersections:

- Trafalgar Road and QEW westbound ramps / North Service Road East
- Trafalgar Road and QEW eastbound ramps
- Trafalgar Road and South Service Road East / Cross Avenue
- Trafalgar Road and Cornwall Road
- South Service Road East and Davis Road

The development proposal does not conform to the plans identified in the Midtown Oakville Class Environmental Assessment (MOCEA). Therefore, most improvements outlined in the MOCEA were not considered in the analysis herein. However, in the 2035 horizon analysis, the QEW eastbound off-ramp identified in the MOCEA was added to the South Service Road East and Davis Road intersection, as requested by Town staff.

Existing Conditions

A turning movement count (TMC) survey was conducted for the existing 2022 year and compared to TMC's obtained from prior pre-pandemic years at the study intersections. As confirmed through the Terms of Reference correspondence, traffic volumes for the existing conditions scenario were established by retaining the higher volumes between the two data sets for every turning movement at the study intersections.

The study intersections are operating at acceptable levels of service (i.e., LOS "D" or better) during the weekday a.m. and p.m. peak hours. A few movements are operating near capacity at the intersection of Trafalgar Road and QEW ramps. Similarly, the 95th percentile queuing results indicate a couple auxiliary turn storage lanes may be exceeded during the peak hours at the Trafalgar Road intersections with Cornwall Road and South Service Road East / Cross Avenue. Overall, the boundary road network currently operating adequately.

Future Background Conditions

As confirmed through the Study Terms of Reference, a horizon year of the expected full development buildout (2025), along with the five year (2030) and ten year (2035) horizons were used for the purposes of analysis. Similarly, growth rates were established through the Terms of Reference correspondence and applied to the existing traffic volumes to forecast future background traffic growth.

The following background developments in the study area were identified and accounted for under future background conditions:

- 157 Cross Avenue
- 271 Cornwall Road and 485 Trafalgar Road
- 320 Davis Road
- 166 South Service Road East (2030 and 2035 horizons only)

A QEW eastbound off-ramp connection to South Service Road East, similar to what was identified in the Midtown Oakville Class Environmental Assessment (MOCEA) was added in the ultimate 2035 horizon analysis per the request of the Town. The traffic volumes at the existing QEW eastbound off-ramp to Trafalgar Road and the planned QEW eastbound off-ramp to South Service Road East were forecast based on the methodology of the MOCEA.

Analysis of future background traffic operations indicates that the study intersections along Trafalgar Road are expected to operate near capacity in the ultimate 2035 horizon with a few movements at the QEW ramp intersections operating above capacity. However, under all future background analysis scenarios, the boundary road network is forecast to operate at a LOS "D" or better during the peak hours, except at the Trafalgar Road and South Service Road East intersection, where operations are project to be a LOS "E" during the critical p.m. peak hour. Several opportunities for operational improvements were identified in the future background and are included as part of the Study recommendations.

Site Generated Traffic

In the 2025 horizon year, the proposed development is forecast to generate 110 and 104 vehicle trips in the a.m. and p.m. peak hours, respectively. In the 2030 and 2035 horizon years, the proposed development is forecast to generate 102 and 95 vehicle trips in the a.m. and p.m. peak hours, respectively – consistent with the modal split projections provided by the Regional staff. In addition, the ultimate horizon 2035 trip generation forecast projects 39 and 38 non-vehicular trips generated by the proposed development in the a.m. and p.m. peak hours, respectively.

For the purposes of traffic analysis, vehicle trips were assigned to the boundary road network using a combination of 2016 Transportation Tomorrow Survey (TTS) data, expected destinations, and existing travel patterns.

Future Total Traffic Operations

At the study intersections, traffic operations are forecast to remain similar to their respective future background horizons. Under the ultimate 2035 horizon year analysis, at all study intersections except the Trafalgar Road and QEW eastbound ramps intersection, the study intersections are forecast to operate similar to future background conditions at a LOS "D" or better during the peak hours. At the intersection of Trafalgar Road and QEW eastbound ramps, operations are projected to be LOS "E" during the critical p.m. peak hour, the same as 2035 future background conditions. The maximum control delay increment and volume-to-capacity ratio increase compared to future background conditions at any of the study intersections is forecast to be minimal, at 2.1s and 0.01, respectively.

This indicates that site traffic does not materially impact traffic operations at the study intersections. Therefore, no external road improvements attributable to the proposed development are required.

Site Access Safety Review

The available sight distance at the proposed site connection to Davis Road exceeds the minimum sight distance requirements set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), June 2017. Further, the site satisfies the minimum corner clearance and access spacing requirements per the TAC-GDGCR. No maneuverability constraints within the site for waste collection or fire trucks is identified.

Transportation Demand Management

There are existing and planned Transportation Demand Management (TDM) opportunities in the Town of Oakville and near the site to encourage the use of non-auto transportation options.

In addition to the background active transportation and transit improvements expected in the vicinity of the subject site, the development proposal includes several site specific transportation demand management measures that are expected to reduce dependence on vehicle transportation. The development proposal includes a sidewalk connection along the north side of Davis Road to South Service Road East. This direct connection to the existing pedestrian network improves safety and convenience of pedestrian movement and access to the boundary roadway, transit and nearby land uses. The site additionally proposes a bicycle parking supply of 400 spaces, which is in excess of both the Town of Oakville Zoning By-Law requirements and the Midtown Oakville Parking Strategy.

Parking Review

The proposed parking supply of 622 spaces satisfies the Town of Oakville's Zoning By-Law No. 2014-014 minimum vehicle parking requirements. Additionally, the site provides the required barrier free accessible parking spaces.

Public Information Session

Traffic related concerns were raised by some attendees of the 349 Davis Road development proposal Public Information Session conducted on March 2, 2023. Based on the traffic review in **Section 10.0** focused on these concerns, the Midtown Oakville area can be served adequately without the need for the QEW EB underpass off-ramp.

Recommendations

Based on the Study findings, it is recommended that:

- The MTO and Region explore opportunities including timing plan setup adjustments and or turning movement prohibitions (as applicable) in future to increase capacity for southbound right-turn traffic on Trafalgar Road entering the QEW WB on-ramp and north Service Road.

- At the intersection of Trafalgar Road and Cornwall Road, the Region and Town explore mitigation measures such as timing plan coordination along Cornwall Road (if not already), timing plan adjustments and additional regulatory signage (e.g., do not block intersection) to limit operational and potential safety issues at the adjacent upstream intersections on Cornwall Road.

- The MTO explore adding a right-turn storage lane to the QEW eastbound off-ramp connection to Trafalgar Road in future (i.e., beyond 2030) if traffic volumes follow the pattern forecasted by the MOCEA.

- The remaining study intersections aside the proposed site access should be monitored by the Region and Town with timing plans adjusted in future for optimal operations as needed.

Conclusion

In conclusion, the traffic generated from the proposed residential development will not materially impact operations of the boundary road network. The Official Plan Amendment and Zoning By-Law Amendment (ZBA) applications for the 349 Davis Road residential development can be supported from a traffic operations perspective as the boundary road system can accommodate the increase in traffic volumes attributable to the proposed development.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

LIST OF FIGURES

2.0 Introduction

2.1 Background

C.F. Crozier & Associates Inc. (Crozier) was retained by 1539059 Ontario Inc. to prepare a Transportation Impact Study in support of Official Plan Amendment and Zoning By-law Amendment for a proposed mixed-use development located at 349 Davis Road in the Town of Oakville, Regional Municipality of Halton.

2.2 Submissions History

A submission for the 349 Davis Road development proposal was initially made in September 2022, which included an original version of this Traffic Impact Study. This new submission incorporates informal City staff comments and concerns raised by the public at the Public Information Session conducted by Corbett Land Strategies on March 2, 2023. Excerpts from the correspondence with Town staff are included in **Appendix B**.

2.3 Development Proposal

Per the Site Plan prepared by Studio Veronica Madonna Architect (dated September 14, 2022), the development proposes a 58-storey mixed-use building which includes residential, commercial, and office uses. **Appendix A** contains the Site Plan. The site statistics of the proposed development are summarized in **Table 1**.

Table 1: Proposed Development Summary

Land Use	Number of Storeys	Gross Floor Area (GFA)	Number of Units/Spaces
Site Total	**58**	36,674 m^2	N/A
Residential	53	N/A	388 dwelling units
Commercial	1	682 m^2	6 units
Office	1	1470 m^2	4 units
Parking	3+P1-P6	N/A	622 vehicle parking spaces 400 bicycle parking spaces

2.4 Purpose and Scope

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

The study reviews the following main aspects of the proposed development from a transportation engineering perspective:

- Existing, future background, and future total traffic operations on the boundary road network during the weekday a.m. and p.m. peak hours.
- Forecasted trip generation and distribution of the proposed development.
- Mitigation measures to support the proposed development, if required.

- Transportation safety components, including: sight distance requirements at the site access, access spacing and restrictions, and general safety issues.

The study has been completed in accordance with the Terms of Reference established through email correspondence with Town of Oakville, Halton Region and the Ministry of Transportation of Ontario (MTO) staff. **Appendix B** contains relevant excerpts of the terms of reference correspondence.

The study has also been completed in accordance with the following guidelines:

- Transportation Impact Study Guidelines (Halton Region, January 2015)
- General Guidelines for the Preparation of Traffic Impact Studies (MTO, February 2021)

The Midtown Oakville Class Environmental Assessment (MOCEA, 2014) outlines a new road network for the Midtown Oakville Growth Area to serve future development. The new road network is also reflected within the Town's latest Official Plan (Liveable Oakville Plan, August 31, 2021). As shown on the EA preliminary design plates (**Appendix C**), Cross Avenue (currently South Service Road) is planned to be realigned through the 349 Davis Road site. In addition, a new QEW eastbound off-ramp is planned to connect to the realigned Cross Avenue at a location approximately within the 349 Davis Road property.

Considering the MOCEA makes the subject land virtually undevelopable, the proposed development does not align with the MOCEA future roadway improvements. Therefore, this study assesses the existing road network and identifies road improves as required to support the development proposal.

However, Town staff requested that the analysis include the planned QEW eastbound off-ramp and the Station Road and North South Crossing intersections with the future realigned South Service Road. As confirmed through email correspondence and discussions with the Town, the following resolution for the purpose of conducting this Traffic Study was reached.

- No realignment of South Service Road will be considered as it cuts through the site.

- The existing east approach (cul-de-sac) connection to the South Service Road East and Davis Road intersection is assumed to be the connecting point of the MOCEA QEW eastbound off-ramp. This is only considered in the ultimate 2035 horizon, given MOCEA considered these improvements only in a 2031 horizon. Further, none of the subject MOCEA improvements are part of the current capital works improvements (2018-2027).

- Given the above configuration, the 320 Davis Road site access, a very low traffic generator, is assumed to connect to South Service Road at a point 20m south of the existing intersection.

- The North South Crossing and South Service Road is not considered as no realignment of South Service Road is considered herein.

- The Station Road and connection to South Service Road could be considered if the future volumes on Station Road are available. However, volumes could not be obtained or established from the MOCEA. Further, Station Road is exclusively a bus route and no impact from the development herein outside the findings of the MOCEA is expected. Therefore, this intersection was not assessed.

Additional analysis on a potential reconfiguration of the MOCEA road network that accommodates the current development proposal is not part of the study scope herein.

3.0 Existing Conditions

3.1 Development Lands

The subject property is located in an employment area and is bound by an existing commercial property to the east, South Service Road to the west and north, and Davis Road to the south. The site currently consists of a single-storey brick office building occupied by Powell Insurance Brokers. The subject property is zoned as "Midtown Transitional Employment Zone" per the Town of Oakville's Zoning By-Law. Refer to **Figure 1** for the Site Location.

3.2 Study Intersections

The Traffic Impact Study analyzes the following intersections:

- Trafalgar Road and Queen Elizabeth Way (QEW) westbound ramps / North Service Road E.
- Trafalgar Road and QEW eastbound ramps
- Trafalgar Road and South Service Road East / Cross Avenue
- South Service Road East and Davis Road
- Davis Road and site access

3.3 Boundary Road Network

The boundary road network includes the study intersections and corresponding roadways. The boundary roadways included within the study scope are described in **Table 2**.

Table 2: Boundary Road Network

Feature	Roadway					
	Queen Elizabeth Way / Highway 403	**Trafalgar Road**	**Cornwall Road**	**South Service Road East**	**Cross Avenue**	**Davis Road**
Direction	Two-way (East-West)	Two-way (North-South)	Two-way (East-West)	Two-way (East-West[1])	Two-way (North-South)	Two-way (East-West)
Classification[2]	Provincial Freeway	Major Arterial[3]	Multi-Purpose Arterial	Minor Arterial[34]	Minor Arterial	Local
Jurisdiction	MTO	Halton Region[3]	Town of Oakville			
Speed Limit	100 km/h *Off-Ramp advisory speed is 40 km/h*	60 km/h (at MTO ramp terminals) 50 km/h (south of Argus Road)	60 km/h	Unposted (assumed 50 km/h)	Unposted (assumed 50 km/h)	Unposted (assumed 50 km/h)
Number of travel lanes	Six + Two HOV[5]	Six[3]	Four	Four	Four	Two
Median type	Jersey Barrier (typical freeway separation)	Raised concrete median / paved level median (varies)	Raised concrete median	None	None	None

Note 1: While South Service Road East is primarily an east-west roadway, including at the intersection with Trafalgar Road, a north-south orientation is present at the intersection with Davis Road.
Note 2: Classifications per the Town of Oakville Official Plan
Note 3: South of Cornwall Road, Trafalgar Road experiences a change in classification to a Minor Arterial Road, changes jurisdiction to the Town of Oakville, and possesses two total travel lanes instead of six north of Cornwall Road.
Note 4: Designation not shown due to future roads planned part of Midtown Oakville redevelopment. Assumed Minor Arterial given Cross Avenue designation. The Halton Official Plan indicates both roads as "Major Roads".
Note 5: HOV – High Occupancy Vehicle. HOV lanes present on QEW.

Table 3 outlines the existing traffic control, configurations, and pedestrian crossing provisions at the study intersections on the boundary road network.

Table 3: Study Intersections

Intersection	Control	Approaches	Major Street	Lane Configurations	Pedestrian Crossing
Trafalgar Road and QEW WB ramps / North Service Road	Signal Actuated Coordinated	4	Trafalgar Road	EBL; EBR WBL; WBLT; WBR NBT(x3) SBT(x3); SBTR	West, North, and East approaches
Trafalgar Road and QEW EB ramps	Signal Actuated Coordinated	3	Trafalgar Road	EBL(x2); EBR NBT(x3) SBT(x3)	West and South approaches
Trafalgar Road and South Service Road East / Cross Avenue	Signal Actuated Coordinated	4	Trafalgar Road	EBL(x2); EBTR WBL; WBT; WBR NBL; NBT(x2); NBTR SBL; SBT(x2); SBTR	West, South and East approaches
Trafalgar Road and Cornwall Road	Signal Actuated Coordinated	4	Trafalgar Road	EBL(x2); EBT; EBTR WBL; WBT(x2); WBR NBL; NBT; NBTR SBL(x2); SBT; SBR	All approaches
South Service Road East and Davis Road	Stop (Minor Street Only)	4	South Service Road	EBLTR WBLTR NBLT; NBTR SBLT; SBTR	None
Davis Road and Site Access	Stop (Minor Street Only)	3	Davis Road	EBLTR WBLTR SBLR	None

Figure 2 illustrates the existing boundary road network, including lane configurations, storage lengths, and intersection control.

3.4 Transit Operations

There are several Oakville Transit and GO Transit bus routes that operate in the surrounding area of the subject property. The closest transit bus stop to the site is an approximately 450 meter walk away, located on Trafalgar Road, north of South Service Road East. At approximately 800 meters away, the Oakville GO Station serves as a central transit hub for the Town of Oakville and receives both local transit service, along with regional transit through GO Transit. These transit routes and stations allows for further connection to other routs and consequently mobility to most of the Greater Toronto & Hamilton Area (GTHA) by transit.
Table 4 outlines the GO Transit existing transit routes, direction, days of operations, peak hour headways for routes, and bus stops in the study area as of June 25, 2022.

Table 4 outlines the GO Transit existing transit routes, direction, days of operations, peak hour headways for routes, and bus stops in the study area as of June 25, 2022.

Table 4: Existing GO Transit Services

Route	Start and End Points	Days of Operation	Peak Hour Headways (min)	Bus Stop(s) near study area
1 / 18 Lakeshore West	Union Station to Various	Monday - Sunday	15 min	Oakville GO Station
52-54-56 Oshawa / Oakville	Oakville GO Station to Oshawa GO Station	Monday - Sunday	60 min	Oakville GO Station

Table 5 outlines the Oakville Transit existing transit routes, direction, days of operation, peak hour headways for routes, and bus stops in the study area as of March 20, 2022.

Table 5: Existing Oakville Transit Services

Route	Start and End Points	Days and Hours of Operations[1]	Peak Hour Headways	Bus Stop(s) near study area
1 Trafalgar	Oakville GO Station to Trafalgar / 407 GO Carpool	Monday – Friday 6am – 12am	60 min	Trafalgar Road + north of South Service Road East Oakville GO Station
4 Speers – Cornwall	Bronte GO Station to Clarkson GO Station	Monday – Sunday 6am – 12am	30 min	Oakville GO Station
5 / 5A Dundas	Oakville GO Station to Dundas / 407 GO Carpool	Monday – Sunday 6am – 12am	15 min	Trafalgar Road + north of South Service Road East Oakville GO Station
10 West Industrial	Oakville GO Station to Bronte GO Station	Monday – Friday 7am – 11am 2pm – 6pm	30 min	Oakville GO Station
11 Linbrook	Oakville GO Station to Clarkson GO Station	Monday – Friday 6am – 10pm	60 min	Oakville GO Station
13 Westoak Trails	Oakville GO Station to Bronte GO Station	Monday – Sunday 6am – 11pm	30 min	Trafalgar Road + north of South Service Road East Oakville GO Station
14 / 14A Lakeshore West	Oakville GO Station to Appleby GO Station	Monday – Sunday 6am – 12am	15 min	Oakville GO Station
18 Glen Abbey South	Oakville GO Station to Bronte GO Station	Monday – Sunday 6am – 9pm	30 min	Oakville GO Station
15 Bridge	Oakville GO Station to South Oakville Centre	Monday – Sunday 6am – 9pm	30 min	Oakville GO Station
19 River Oaks	Oakville GO Station to Uptown Core	Monday – Sunday 6am – 9pm	30 min	Trafalgar Road + north of South Service Road East Oakville GO Station
20 Northridge	Oakville GO Station to Uptown Core	Monday – Sunday 6am – 9pm	30 min	Trafalgar Road + north of South Service Road East Oakville GO Station
24 South Common	Oakville GO Station to South Common	Monday to Friday 6am – 12am	15 min	Trafalgar Road + north of South Service Road East Oakville GO Station
26 Falgarwood	Oakville GO Station to Lancaster & Grosvenor	Monday – Friday 6am – 9am 3pm – 7pm	30 min	Trafalgar Road + north of South Service Road East Oakville GO Station
28 Glen Abbey North	Oakville GO Station to Bronte GO Station	Monday – Sunday 6am – 9pm	30 min	Oakville GO Station
83 Blakelock	T.A Blakelock Special to Oakville GO Station	Monday – Friday 3pm	N/A	Oakville GO Station
120 East Industrial	Oakville GO Station to Laird & Ridgeway	Monday – Friday 7am – 10am 3pm – 7pm	30 min	Trafalgar Road + north of South Service Road East Oakville GO Station

Note 1: Hours of operation are approximated to the nearest hourly interval on a weekday.

Appendix D contains relevant transit information.

3.5 Active Transportation Network

The existing pedestrian facilities on the boundary road network are described in **Table 6**. Pedestrian facilities at intersections are identified in **Table 3** within **Section 3.3**.

Table 6: Pedestrian Transportation Network

Roadway	Pedestrian Facilities	Separation from Roadway
Trafalgar Road	~1.5 metre concrete sidewalk (both sides)	~0.5m asphalt separator (both sides)
Cornwall Road	~1.5 metre concrete sidewalk (both sides)	1–6m grass strip / brickwork separators
South Service Road East	~1.3 metre concrete sidewalk (north side) raised asphalt shoulder (south side), (both btwn. Trafalgar Road to Davis Road)	~0.5m asphalt separator (north side only)
Cross Avenue	~1.5 metre concrete sidewalk (both sides)	~0.5m asphalt separator (both sides)
Davis Road	~1.5 metre concrete sidewalk (south side)	~3m grass strip (south side)

There are no current designated cycling facilities within the study area. The nearest cycling trail access to the subject site is located at Trafalgar Road just north of Iroquois Shore Road, approximately 1.3km away. In addition, Trafalgar Road is a designated on-street bike route south of the intersection with Cornwall Road.

3.6 Traffic Data

Pre-pandemic Turning Movement Counts (TMC's) from recent adjacent background studies and Halton Region was available for all intersections except for the Davis Road and South Service Road intersection. As confirmed through the terms of reference with municipal staff, new TMC's were conducted in the existing year at all study intersections and compared to the pre-pandemic volumes.

Table 7 provides a summary of the Turning Movement Count (TMC) surveys, including surveyor, count date and period, along with the identified peak hours. Detailed TMC and signal timing plans used for the analysis herein is provided in **Appendix E**.

Table 7: Traffic Data

Intersection	Surveyor	Count Date	Count Hours	Identified Peak Hours	Peak Hour Factor
Trafalgar Road and QEW WB ramps / North Service Road E.	Spectrum Traffic Data Inc.	April 13, 2022	6:00 – 10:00 A.M.	8:00 – 9:00 A.M.	0.95
			3:00 – 7:00 P.M.	4:30 – 5:30 P.M.	0.97
	Accu-Traffic Inc.	March 7, 2019	7:00 – 9:00 A.M.	7:45 – 8:45 A.M.	N/A
			4:00 – 6:00 P.M.	5:00 – 6:00 P.M.	N/A
Trafalgar Road and QEW EB ramps	Spectrum Traffic Data Inc.	April 13, 2022	6:00 – 10:00 A.M.	8:00 – 9:00 A.M.	0.95
			3:00 – 7:00 P.M.	5:00 – 6:00 P.M.	0.96
	Accu-Traffic Inc.	March 7, 2019	7:00 – 9:00 A.M.	7:45 – 8:45 A.M.	N/A
			4:00 – 6:00 P.M.	5:00 – 6:00 P.M.	N/A
Trafalgar Road and South Service Road East / Cross Avenue	Spectrum Traffic Data Inc.	April 13, 2022	6:00 – 10:00 A.M.	8:15 – 9:15 A.M.	0.95
			3:00 – 7:00 P.M.	5:00 – 6:00 P.M.	0.94
	Accu-Traffic Inc.	November 6, 2019	7:00 – 9:00 A.M.	8:00 – 9:00 A.M.	N/A
			3:00 – 6:00 P.M.	4:30 – 5:30 P.M.	N/A
Trafalgar Road and Cornwall Road	Accu-Traffic Inc.	March 7, 2019	7:00 – 9:00 A.M.	8:00 – 9:00 A.M.	N/A
			4:00 – 6:00 P.M.	4:30 – 5:30 P.M.	N/A
		November 6, 2019	7:00 – 9:00 A.M.	8:00 – 9:00 A.M.	N/A
			11:00 A.M. – 2:00 P.M.	N/A[1]	N/A
			3:00 – 6:00 P.M.	3:30 – 4:30 P.M.	N/A
	Spectrum Traffic Data Inc.	April 13, 2022	6:00 – 10:00 A.M.	8:00 – 9:00 A.M.	0.92
			3:00 – 7:00 P.M.	3:00 – 4:00 P.M.	0.97
South Service Road East and Davis Road		April 13, 2022	6:00 – 10:00 A.M.	9:00 – 10:00 A.M.	0.87
			3:00 – 7:00 P.M.	3:00 – 4:00 P.M.	0.87

Note 1: While counts were undertaken during the midday peak hour, a review of the survey results reveals that midday peak hour traffic volumes are lower than both the a.m. and p.m. peak hour volumes. Thus, evaluation of the a.m. and p.m. Peak hours captures worst case conditions at the Trafalgar Road and Cornwall Road study intersection.
N/A: Not available due to TMC's showing only peak hour volumes.

For the purpose of a conservative analysis, the highest traffic volume between the existing counts and the pre-pandemic counts for every turning movement at all study intersections were retained as the existing 2022 volumes. Further, traffic volumes were balanced between the QEW ramp intersections along Trafalgar Road. This data refinement process resulted in the 2022 existing conditions traffic volumes outlined in **Figure 3**, which serve as a baseline for all subsequent future analysis.

No traffic counts were undertaken at the site access connection to Davis Road. To model the traffic volumes at this intersection, traffic data from the South Service Road East and Davis Road intersection (outlined in **Table 7**) was relied upon to estimate through movements. Further, the subject site currently contains a single-storey brick office building that is expected to generate some vehicle trips. These existing vehicle trips were estimated using the Institute of Transportation Engineers Trip Generation Manual, 11th Editions, and were applied at the Davis Road and site access study intersection. It is noted that these vehicle trips are included in the existing conditions and future background scenarios, and are replaced under the future total scenarios given the proposed development replaces the exiting office building. Vehicle trips attributable to the existing site use was not added to the other study intersections given the traffic surveys already capture these trips.

3.7 Traffic Modelling

3.7.1. Modelling Approach

The boundary road network was modelled in Synchro 11 using existing roadway geometrics and the identified traffic data in **Section 3.6**. The methodology of modelling the intersection signal timing plans consisted of applying the available timing plans for the existing conditions scenario, maintaining the cycle lengths and phasing of the obtained timing plans, but optimizing the phasing splits for the projected traffic volumes in the future horizon scenarios. Signal timing plans are included in **Appendix E**.

The results for signalized intersection operations were derived from Synchro. The results for unsignalized intersection operations were derived using HCM2000 methodology. The 95th percentile queue lengths were derived from SimTraffic. The Level of Service (LOS) definitions for signalized and unsignalized intersections are included in **Appendix F**.

3.7.2. Critical Volume-to-Capacity Ratios

The MTO considers a movement to be critical when the volume-to-capacity ratio exceeds 0.75 for an off-ramp approach at a ramp terminal or exceeds 0.85 for all other movements at intersections under MTO jurisdiction. As such, the ramp terminal intersections along Trafalgar Road were evaluated using these thresholds.

The Region of Halton considers a movement to be critical when the volume-to-capacity exceeds 0.85 for through or shared movements, or 0.95 for exclusive turning movements. The remaining study intersections aside from the MTO ramp intersections were evaluated using these thresholds.

3.8 Intersection Operations

The existing intersection operations at the study intersections were analyzed using the existing traffic volumes illustrated in **Figure 3.** Detailed capacity analysis worksheets are included in **Appendix G**.

Table 8 outlines the 2022 existing traffic operations.

Table 8: 2022 Existing Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Trafalgar Road and QEW WB ramps / North Service Road E.	Signal	A.M.	C	21.5s	**0.96 (SBR[4])**	None
		P.M.	C	20.4s	**0.94 (SBR[4])**	None
Trafalgar Road and QEW EB ramps	Signal	A.M.	C	25.2s	**0.88 (EBR)**	None
		P.M.	C	25.2s	**0.79 (EBL)**	None
Trafalgar Road and South Service Road East / Cross Avenue	Signal	A.M.	D	37.4s	0.73 (SBT)	88.8m > 55.0m (SBL)
		P.M.	D	35.6s	0.87 (EBL)	166.4m > 130.0m (EBL1) 56.5m > 55.0m (SBL)
Trafalgar Road and Cornwall Road	Signal	A.M.	D	35.3s	0.82 (EBL)	109.6m > 85.0m (EBL1) 118.8m > 105.0m (EBL2)
		P.M.	D	39.3s	0.83 (EBL)	103.8m > 85.0m (EBL1) 113.6m > 105.0m (EBL2)
South Service Road East and Davis Road	Stop (Minor)	A.M.	B	10.6s	0.06 (NB)	None
		P.M.	B	11.4s	0.08 (SB)	None
Davis Road and Site Access	Stop (Minor)	A.M.	A	8.4s	0.01 (EB)	None
		P.M.	A	8.4s	0.01 (SB)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2000).

*Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection where the maximum v/c ratio does not exceed the critical thresholds identified in **Section 3.7.2**. All v/c ratios that exceed the critical thresholds outlined in are bolded.*

Note 3: The 95th percentile queue lengths were derived from SimTraffic reports using 15-minute seeding, 60-minute simulation and an average of 5 runs. Queues which exceed the designated storage length of the turn lane but can be accommodated by a centre turn lane were not documented in this table.

Note 4: SBR – Refers to southbound movement to QEW WB on-ramp and North Service Road.

The study intersections are operating adequately under 2022 existing conditions, at a LOS "D" or better during the weekday peak hours.,

The southbound right-turn movement at the intersection of Trafalgar Road and QEW WB off/on ramps / North Service Road exceeds the critical volume-to-capacity thresholds outlined in **Section 3.7.2** in both peak hours, and is nearing capacity. Therefore, it is recommended that the intersection be monitored in future and apply timing plan adjustments and or turning movement prohibitions (as applicable) to accommodate traffic demand and maintain optimal intersection operations. For future scenarios herein, the signal timing plan splits were optimized to provide additional capacity for southbound traffic entering the QEW WB on-ramp.

The operations at the intersection of Trafalgar Road and QEW EB on/off-ramps are at a LOS "C" or better during the peak hours. The volume-to-capacity ratios show operations for a few through movements are near capacity though below 1.00. Given the level of densification around the roadway and considering Trafalgar Road is a major arterial, with South Service Road being a minor

arterial, such operational issues are expected during the peak hours. However, the intersection should be monitored and timing plans adjusted in future for optimal operations as needed.

The signalized intersection of Trafalgar Road and South Service Road East / Cross Avenue is operating at a LOS "D" or better during the peak hours. Based on the 95th percentile queuing results, a couple of auxiliary turning movement storage lanes may be occasionally exceeded onto the taper and or adjacent through lane during the peak hours.

The signalized intersection of Trafalgar Road and Cornwall Road currently operates at a LOS "D" during the peak hours. No volume-to-capacity ratios for movements exceed the critical thresholds. The eastbound left-turn 95th percentile queueing results suggest that vehicles may occasionally queue beyond the storage lanes into the adjacent through lanes and potentially block the Oakville GO Station parkade access connection to the Cornwall Road west approach during the peak hours. It is therefore recommended that the Region monitor this intersection and consider timing plan coordination along Cornwall Road (if not already so), timing plan adjustments and additional regulatory signage (e.g., do not block intersection) to limit operational and potential safety issues at the adjacent upstream intersections on Cornwall Road.

The stop controlled intersection of South Service Road East and Davis Road currently operates below capacity at a LOS "B" during the peak hours. Similarly, the existing site access connection to Davis Road serving the existing single-storey office building operates below capacity at a LOS "A" or better during the peak hours.

4.0 Future Background Conditions

4.1 Horizon Years

The proposed development is anticipated to be built-out by 2025. The MTO's TIS guidelines require analysis of the buildout year, along with five and ten years beyond the estimated year of full build-out. The Region of Halton typically requires a five year horizon. Given the MTO approach results in a more comprehensive approach than the latter, the MTO required horizon years were used in the analysis herein. Therefore, the following horizon years were analyzed: 2025 (buildout), 2030 (five-year horizon) and 2035 (ten-year horizon). This study horizons were confirmed through the Terms of Reference correspondence with municipal staff (excerpts in **Appendix B**).

4.2 Growth Rates

As confirmed with the Region and MTO, an industry standard 2% per annum growth rate, compounded annually, was assumed and applied for the MTO ramps and the arterial roadways. The growth rate assumptions combined with the conservative methodology of taking the highest of two TMC surveys for establishing existing traffic volumes (per **Section 3.6**) may result in an overestimate of future volumes; therefore, long-term operational issues identified herein maybe overstated.

4.3 Background Developments

Background developments were confirmed through Terms of Reference correspondence, and thus were accounted for under future background conditions. The developments are outlined in **Table 9.**

Table 9: Background Developments

Development	Location	Development Proposal
157 Cross Avenue	North of Cross Avenue, between the 165 and 117 Cross Avenue properties, and across from the Oakville GO Station north parking lot.	A 26-storey mixed-use tower with 252 dwelling units, 579 m^2 GFA of commercial/office uses, and 289 m^2 of ground floor retail.
Olde Oakville Market Place (271 Cornwall Road and 485 Trafalgar Road)	East of and adjacent to Trafalgar Road, north of Cornwall Road, and south of the CN Oakville subdivision.	Two towers at 19 and 14 storeys. A total of 292 dwelling units, 1,321 m^2 GFA of office space, 1,013 m^2 GFA of retail and a 1,732 m^2 Gym.
320 Davis Road	Bounded by Davis Road to the north, South Service Road East to the east, and a parking lot / commercial plaza to the west and south.	Pumping Station Building Expansion of approximately 360 m^2 GFA.[1]
166 South Service Road East	South of South Service Road East and west of the Value Village store and parking lot. Surrounding commercial uses.	A three tower residential development with approximately 1,720 residential dwelling units.

Note 1: Existing Building approximately 235 m^2 GFA. The existing and future GFAs of each building component was measured using the landscape drawing.

As the 166 South Service Road East background development does not have an associated Transportation Impact Study, vehicle trips were estimated herein. The 166 South Service Road East background development trips were forecast using the Institute of Transportation Engineers' Trip Generation Manual, 11th Edition. The land use category 222 "Multifamily Housing (High-Rise)" was applied to the 1,720 residential dwelling units. It is assumed that the background development will be built out after the 2025 horizon year, therefore, the background development was incorporated into the 2030 and 2035 analysis scenarios.

To remain consistent with the methodology applied for the proposed development, the ITE vehicle trip generation forecast was reduced to the anticipated modal split as outlined in the Region of Halton Transportation Master Plan to result in the vehicle trip generation forecast for the background development; consistent with Regional staff request. **Table 10** summarizes the 166 South Service Road East background development trip generation forecast.

Table 10: 166 South Service Road East Background Trip Generation

Methodology	Peak Hour	Trip Generated		
		Total	Inbound	Outbound
ITE Vehicle Trip Generation Forecast[1] (LUC 222, Dense Multi-Use Urban)	A.M.	378	42	336
	P.M.	327	226	101
Adjusted ITE Vehicle Trip Generation (assumed 72% vehicle modal split)	A.M.	**336**	**37**	**299**
	P.M.	**291**	**201**	**90**

Note 1: Vehicle Modal Share is assumed to be 81% in existing conditions. Refer to **Section 5.2.3** for more details.

Therefore, in both the 2030 and 2035 horizon years, the 166 South Service Road East background development is forecast to generate 336 and 291 vehicle trips in the a.m. and p.m. peak hours, respectively.

The 166 South Service Road East background development trips were assigned to the road network based on Transportation Tomorrow Survey data (refer to **Section 5.3**) and ease of access. The trip distribution used for the 166 South Service Road East background development is outlined in **Figure 4**. The corresponding background trips are outlined in **Figure 5**.

Transportation Impact studies were available for the 157 Cross Avenue and Olde Oakville Market Place background developments. Site traffic volumes from these transportation studies were applied directly to the future background scenario under all study horizons. Given study intersections are inconsistent between the background transportation studies and this study, movements at several study intersections were estimated based on anticipated routings and the trip distribution used for site traffic in **Section 5.3**. **Figures 6 and 7** outline the future background traffic volumes for the Olde Oakville Market Place and 157 Cross Avenue background developments, respectively. Study excerpts are included in **Appendix H.**

The 320 Davis Road background trips were implied based on the traffic counts taken at the South Service Road East and Davis Road intersection (**Section 3.6** includes details on traffic data). Movements entering and exiting the west approach of the intersection were assumed to be entirely attributable to the 320 Davis Road site. Though a future building expansion is planned for the site, as confirmed by Town staff, it is expected that trip generation will remain similar in the future compared to the current condition. Given the west leg of the intersection is assumed in this study to be replaced by a QEW eastbound off-ramp in the 2035 horizon year, the traffic from this background development was assumed to be serviced in the 2035 scenarios by an access located approximately 20m south of the current location. Appropriately, the background development traffic was assigned accordingly to accommodate the new road network configuration in the 2035 horizon year.

4.4 Planned Transportation Improvements

Several relevant planning documents were reviewed to understand the anticipated future transportation network improvements in the vicinity of the subject site.

Figure 7.2 of the Halton Region Transportation Master Plan (2031), "The Road to Change", identifies a conversion of the existing six vehicle travel lane configuration of Trafalgar Road to a four travel lanes plus two high-occupancy vehicle (HOV) lanes configuration to accommodate a future bus rapid transit (BRT) line along Trafalgar Road. However, as confirmed with the Region, given the timing of this

improvement is currently unknown, the existing lane configurations were retained for all future scenarios analyzed herein.

Significant reconfiguring of the transportation network is planned in Midtown Oakville as part of the future planned intensification of the area. Such improvements are described in the Midtown Oakville EA (2014) and are further reflected in Schedule L.3 of "Liveable Oakville", the Town's Official Plan (excerpts included in **Appendix H**). As previously discussed in **Section 2.3**, given the realignment of Cross Avenue and QEW EB off-ramp connection to Cross Avenue as defined in the MOCEA would render the site undevelopable, an alternative analysis approach was pursued. The existing lane configurations at the intersections along Trafalgar Road are preserved for the future horizons. As established in the terms of reference correspondence, a QEW eastbound off-ramp is included in the 2035 horizon year analysis in place of the existing Davis Road west approach. Traffic volumes for the off-ramp were projected using the methodology in the MOCEA Traffic Analysis by comparing the do nothing scenario volumes to the scenario with the new QEW eastbound off-ramp connection to South Service Road. Based on the results of the signal warrants analysis in **Section 6.2** and the MOCEA findings, the intersection was evaluated under both stop control and traffic signals. Refer to Midtown Oakville EA Traffic Analysis excerpts in **Appendix C**.

Further, neither the future HOV lanes on Trafalgar Road nor the subject MOCEA improvements noted above are included in the current capital works improvements (2018-2027).

As part of the GO Expansion program being undertaken by Metrolinx, the Lakeshore West GO Transit line is planned to receive more frequent and faster transit service. Based on the GO Expansion Full Business Case (November 2018), the Oakville GO Station is expected to receive transit frequencies of approximately eight (8) trains per hour per direction during both the peak and off-peak periods. These improvements are expected to significantly increase the attractiveness of the transit transportation mode near the subject site. Refer to **Appendix H** for excerpts.

Finally, there are numerous active transportation improvements reflected in Maps 6 and 7 of the Town's Active Transportation Plan update (2017). The active transportation improvements listed in the plan in the vicinity of the subject site include active transportation crossings across the QEW adjacent and near to Trafalgar Road, a new in-boulevard trail / buffered bike lane along Cornwall Road and a new sidewalk along the North Service Road west of Trafalgar Road. These new active transportation routes are expected to increase the attractiveness of the active transportation modes to and from the subject site.

4.5 Intersection Operations

The future background intersection operations at the study intersections were analyzed using the 2025, 2030, and 2035 future background traffic volumes illustrated in **Figures 8, 9, and 10** respectively. Level of Service definitions are provided in **Appendix F.** Detailed capacity analysis worksheets are included in **Appendix G**.

Tables 11, 12 and 13 outline the 2025, 2030, and 2035 future background traffic operations.

Table 11: 2025 Future Background Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Trafalgar Road and QEW WB ramps / North Service Road E.	Signal	A.M.	C	21.2s	**0.93 (SBR[4])**	None
		P.M.	C	23.2s	**0.95 (SBR[4])**	None
Trafalgar Road and QEW EB ramps	Signal	A.M.	C	23.5s	**0.89 (EBR)** **0.86 (SBT)**	None
		P.M.	C	26.2s	**0.81 (EBL)**	None
Trafalgar Road and South Service Road East / Cross Avenue	Signal	A.M.	D	39.0s	0.75 (EBL)	88.5m > 55.0m (SBL)
		P.M.	D	35.1s	0.85 (EBL)	166.1m > 130.0m (EBL) 78.9m > 55.0m (SBL)
Trafalgar Road and Cornwall Road	Signal	A.M.	C	34.2s	0.82 (SBL)	103.6m > 85.0m (EBL1) 112.2m > 105.0m (EBL2)
		P.M.	D	39.1s	0.81 (SBL)	108.7m > 85.0m (EBL1) 115.4m > 105.0m (EBL2)
South Service Road East and Davis Road	Stop (Minor)	A.M.	B	10.7s	0.06 (NB)	None
		P.M.	B	11.5s	0.08 (SB)	None
Davis Road and Site Access	Stop (Minor)	A.M.	A	8.4s	0.01 (EB)	None
		P.M.	A	8.4s	0.01 (SB)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2000).

*Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection where the maximum v/c ratio does not exceed the critical thresholds identified in **Section 3.7.2**. All v/c ratios that exceed the critical thresholds outlined in are bolded.*

Note 3: The 95th percentile queue lengths were derived from SimTraffic reports using 15-minute seeding, 60-minute simulation and an average of 5 runs. Queues which exceed the designated storage length of the turn lane but can be accommodated by a centre turn lane were not documented in this table.

Note 4: SBR – Refers to southbound movement to QEW WB on-ramp.

Table 12: 2030 Future Background Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Trafalgar Road and QEW WB ramps / North Service Road E.	Signal	A.M.	C	24.9s	**1.03 (SBR[4])**	None
		P.M.	C	31.4s	**1.07 (SBR[4])** **0.89 (NBT)** **0.78 (WBT)** **0.78 (WBL)**	None
Trafalgar Road and QEW EB ramps	Signal	A.M.	C	28.6s	**0.98 (EBR)** **0.96 (SBT)**	196.6m > 175.0m (EBL)
		P.M.	C	29.9s	**0.86 (NBT)** **0.85 (EBL)** **0.80 (EBR)**	205.3m > 175.0m (EBL)
Trafalgar Road and South Service Road East / Cross Avenue	Signal	A.M.	D	44.3s	**0.85 (SBT)**	163.8m > 130.0m (EBL) 89.3m > 55.0m (SBL)
		P.M.	D	37.5s	0.89 (EBL)	167.7m > 130.0m (EBL) 73.4m > 55.0m (SBL)
Trafalgar Road and Cornwall Road	Signal	A.M.	C	34.1s	0.85 (EBL)	109.2m > 85.0m (EBL1) 119.8m > 105.0m (EBL2)
		P.M.	D	39.9s	0.87 (EBL)	105.3m > 85.0m (EBL1) 114.0m > 105.0m (EBL2) 95.8m > 90.0m (SBL1)
South Service Road East and Davis Road	Stop (Minor)	A.M.	B	10.9s	0.07 (NB)	None
		P.M.	B	11.6s	0.09 (SB)	None
Davis Road and Site Access	Stop (Minor)	A.M.	A	8.4s	0.01 (EB)	None
		P.M.	A	8.4s	0.01 (SB)	None

Ditto Notes Table 11.

Table 13: 2035 Future Background Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Trafalgar Road and QEW WB ramps / North Service Road E.	Signal	A.M.	C	32.3s	**1.14 (SBR[4])**	None
		P.M.	D	46.7s	**1.20 (SBR[4])** **1.00 (NBT)** **0.82 (WBT)** **0.81 (WBL)**	75.6m > 60.0m (WBR)
Trafalgar Road and QEW EB ramps	Signal	A.M.	C	21.2s	**0.90 (SBT)** **0.88 (EBL)** **0.81 (EBR)**	206.2m > 175.0m (EBL)
		P.M.	E	58.7s	**1.10 (EBR)** **1.06 (NBT)**	216.8m > 175.0m (EBL)
Trafalgar Road and South Service Road East / Cross Avenue	Signal	A.M.	D	45.8s	**0.90 (SBT)**	166.2m > 130.0m (EBL) 86.9m > 55.0m (SBL)
		P.M.	D	38.1s	0.91 (EBL) **0.85 (NBT)**	161.3m > 130.0m (EBL) 80.1m > 55.0m (SBL)
Trafalgar Road and Cornwall Road	Signal	A.M.	D	35.5s	0.89 (SBL)	105.5m > 85.0m (EBL1) 108.4m > 105.0m (EBL2) 117.6m > 85.0m (WBR)
		P.M.	D	42.5s	**0.95 (EBL)**	99.4m > 85.0m (EBL1) 106.0m > 105.0m (EBL2) 85.2m > 85.0m (WBL) 98.2m> 85.0m (WBR) 92.7m > 90.0m (SBL1)
South Service Road East and Davis Road / QEW EB off-ramp	Signal	A.M.	B	16.2s	**0.78 (EB)**	None
		P.M.	A	5.1s	0.36 (EB)	None
	Stop (Minor)	A.M.	C	23.0s	**0.76 (EB)**	None
		P.M.	B	11.8s	0.15 (EB)	None
South Service Road East and 320 Davis Road Access	Stop (Minor)	A.M.	B	10.6s	0.16 (SB)	None
		P.M.	A	10.0s	0.12 (SB)	None
Davis Road and Site Access	Stop (Minor)	A.M.	A	8.4s	0.01 (EB)	None
		P.M.	A	8.4s	0.01 (SB)	None

Ditto Notes Table 11.

Of the scenarios analyzed, the 2035 horizon year generally represents the most constrained operational scenario for both the a.m. and p.m. peak hours. Unless otherwise noted, operations during 2025 and 2030 future background conditions are projected to be similar or better compared to 2035 future background conditions.

Except for the Trafalgar Road and QEW EB ramp which operates at a LOS "E" in the p.m. peak hour, all the study intersections operates at a LOS "D" or better during the peak hours.

As presented in **Table 13**, the following study intersections are forecast to have some movements operate near or at capacity under 2035 future background conditions:

- Trafalgar Road and QEW WB on/off-ramps / North Service Road
- Trafalgar Road and QEW EB on/off-ramps
- Trafalgar Road and South Service Road East / Cross Avenue
- Trafalgar Road and Cornwall Road

The noted study intersections are forecast to have some movements exceeding critical volume-to-capacity thresholds identified in **Section 3.7.2**, and a couple turn queues occasionally exceed the turn storage lanes into the taper and adjacent travel lane during the peak hours. These findings are consistent with previous traffic studies such as the MOCEA and the Olde Oakville Transportation Study. It is noted that forecasted issues can partly be attributed to the exponential background traffic volume growth projection applied along Trafalgar Road, Cornwall Road, and the MTO ramps over a thirteen year period to the ultimate 2035 horizon. Therefore, though it is expected that intersection operations will be constrained during the peak hours in the future horizons, forecasted operational issues may be overstated herein. Nevertheless, it is recommended that these study intersections be monitored for operational issues and the signal timing plans be revised as required to accommodate future traffic growth.

Under the 2030 future background scenario, the study intersection of Trafalgar Road and QEW EB on/off-ramps is projected to operate at a LOS "D" during the peak hours, with volume-to-capacity ratios above one for a few movements in the a.m. peak hour. Consideration should be given to optimizing the timing plans at the intersection in the 2030 horizon. The planned QEW EB-off ramp to South Service Road East was implemented for the 2035 horizon scenario. Intersection operations in the a.m. peak hour are expected to improve slightly under this scenario when compared to the corresponding 2030 scenario due to this planned improvement. The p.m. peak hour operations are expected to deteriorate between 2030 and 2035 even with the implementation of the planned QEW EB South Service Road East off-ramp. Even if the QEW EB off-ramp to South Service Road East is implemented, it is recommended the MTO explore adding a right-turn storage lane to the QEW eastbound off-ramp connection to Trafalgar Road in future if traffic volumes follow the pattern forecasted by the MOCEA for this scenario.

Under the 2035 future background scenario, the eastbound left-turn movement at the Cornwall Road and Trafalgar Road intersection is projected to be constrained. Similar to existing conditions, the 95th percentile eastbound left-turn queueing results suggests that vehicles may queue beyond the storage lanes into the adjacent through lanes and potentially block the Oakville GO Station parkade access connection to the Cornwall Road west approach during the peak hours. As recommend under existing conditions, the Region should monitor this intersection and consider timing plan coordination along Cornwall Road (if not already so), timing plan adjustments and additional regulatory signage (e.g., do not block intersection) to limit operational and potential safety issues at the adjacent upstream intersections on Cornwall Road.

The South Service Road East and Davis Road unsignalized study intersection is projected to operate at a LOS "B" or better during the peak hours under the 2025 and 2030 horizon years.

Under the 2035 horizon year, the west approach of the South Service Road East and Davis Road intersection was replaced by the planned QEW EB off-ramp. Traffic operations are expected to be adequate under both stop control and traffic signal control. A LOS "C" or better and a LOS "B" or better is forecast for the intersection under stop control and traffic signal control, respectively, during the peak hours. Given the existing Davis Road west approach services the 320 Davis Road background development, a new access connection was assumed for this site approximately 20m

south of the South Service Road East and Davis Road / QEW EB off-ramp intersection. The 320 Davis Road access connection to South Service Road East is projected to operate efficiently in the 2035 horizon, at a LOS "B" or better during the a.m. and p.m. peak hours.

Overall, the boundary road network is expected to operate satisfactorily under all future background scenarios analyzed, however, several improvement opportunities have been identified that would lead to safer and more acceptable traffic operations to accommodate future traffic growth.

5.0 Site Generated Traffic

The proposed development will result in additional vehicles on the boundary road network that would otherwise not exist. The proposed development will also result in additional turning movements at the study intersections. This section outlines the methodology and results of forecasting future inbound and outbound trips attributable to the proposed development under the various analysis scenarios, including existing conditions, future background and future total, along with under the various study horizon years.

5.1 Existing Site Trip Generation and Assignment

As discussed in **Section 3.6**, vehicle trip generation was conducted for the existing site for the purposes of conducting traffic analysis at the site access connection to Davis Road. The trip generation for the existing site is summarized in **Table 14** below.

Table 14: Existing Site Trip Generation

Existing Site Trip Generation						
ITE Land Use Category	GFA (ft^2)	Setting	Peak Hour	Trips Generated		
				Inbound	Outbound	Total
LUC 712 "Small Office Building"	7,900 ft^2	General Urban / Suburban	A.M.	11	2	13
			P.M.	6	11	17

The existing site is expected to generate approximately 13 and 17 two-way vehicle trips in the a.m. and p.m. peak hours, respectively. These trips were included within the existing condition and future background analysis scenario, and were replaced the future total scenario by the proposed development trips.

Given that Davis Road is a dead-end street, all inbound vehicle trips at the intersection of Davis Road and site access were assigned to the eastbound left-turn movement, while all outbound vehicle trips were assigned to the southbound right-turn movement. The turning movement counts at the remaining study intersections are expected to fully capture existing vehicle trips from the site. As such, no other vehicle additions attributable to the existing land use were made at the study intersections during the existing condition and future background scenarios.

5.2 Future Site Trip Generation

Future site trip generation forecasts for the proposed development were performed per the site statistics noted on the latest site plan (dated September 14, 2022, included in **Appendix A**). Trip generation was projected by transportation mode and for each of the horizon years analyzed herein.

5.2.1. ITE Trip Generation Rates

The ITE Trip Generation Manual, 11th Edition, was used to derive trip estimates for the proposed development. The ITE Trip Generation Manual is a compendium of industry collected trip generation data across North America for a variety of land uses and is used industry-wide as a source for trip generation forecasts.

The subject site is located within the Midtown Oakville Secondary Plan Area, which is a designated Urban Growth Centre per the Growth Plan for the Greater Golden Horseshoe (2020). Significant urbanization as a result of development is expected in the coming years. Therefore, while a setting of "General Urban/Suburban" would likely be most appropriate given the current nature of the area surrounding the site, the "Dense Multi-Use Urban" setting is likely more reflective of the future conditions. Therefore, a setting of "Dense Multi-Use Urban" was applied for the proposed development trip generation forecast. For land-use codes without sufficient data in the "Dense Multi-Use Urban" setting option, the "General Urban/Suburban" setting was applied instead.

The following Land Use Categories (LUC) were applied to the proposed mixed-use development:

- LUC 222 "Multifamily Housing (High Rise)" was applied to the 388 apartment dwelling units.
- LUC 710 "General Office Building" was applied to the four (4) office units.
- LUC 822 "Strip Retail Plaza (<40k)" was applied to the five (5) ground floor retail units.
- LUC 932 "High-Turnover (Sit-Down) Restaurant" was applied to the restaurant commercial unit.

Land Use Subcategories depending on proximity (within half a mile) to a Rail Transit Station were available for Land Use Codes 222 and 710. Given the site is located less than half a mile away from Oakville GO Station, the "Close to Rail Transit" land use subcategory was used herein for the applicable land use categories.

Given the lack of person trip generation rates available for several land use categories, ITE vehicle trip generation was recorded as the first step of the trip generation process. The ITE trip generation forecasts for the proposed development are outlined in **Table 15** below.

Table 15: ITE Vehicle Trip Generation

ITE Land Use Category	Independent Variable	Setting	Peak Hour	Trips Generated		
				Total	Inbound	Outbound
LUC 222 "Multifamily Housing (High Rise)"	388 Dwelling Units	Dense Multi-Use Urban	A.M.	85	9	76
			P.M.	74	51	23
LUC 710 "General Office Building"	15,827 ft² GFA	Dense Multi-Use Urban	A.M.	13	11	2
			P.M.	14	2	12
LUC 822 "Strip Retail Plaza (<40k)"	5,032 ft² GFA	General Urban / Suburban	A.M.	12	7	5
			P.M.	34	17	17
LUC 932 "High Turnover (Sit-Down) Restaurant"	2,305 ft² GFA	General Urban / Suburban	A.M.	22	12	10
			P.M.	21	13	8
Total Development Vehicle Trips			A.M.	132	39	93
			P.M.	143	83	60

Therefore, the ITE Trip Generation rates forecast 132 and 143 vehicle trips attributable to the proposed development in the a.m. and p.m. peak hours.

5.2.2. Internal Trip Capture

Given the proposed development is mixed-use in nature, internal trip capture between the proposed retail, office, and residential land uses is expected.

Therefore, the internal trip capture of the proposed development was forecasted. The forecast was conducted in accordance with Section 6.5 of the ITE Trip Generation Handbook, 3rd Edition, "Process for Estimating Mixed-Use Trip Generation". The vehicle trips in **Section 5.2.1** for each land use were used along with the unconstrained internal person trip capture rates listed in Tables 6.1 and 6.2 of the ITE Trip Generation Handbook as inputs for the internal trip capture projection. Given the land uses are all located within the same building, no proximity adjustment factors were applied.

Table 16 summarizes the internal trip capture projections, along with the net external person trips from the proposed development.

Table 16: Internal Trip Capture Projection

Land Use	Peak Hour	External Vehicle Trips			Internal Trip Capture	
		Total	Inbound	Outbound	Total	Capture Rate
Residential	A.M.	82	9	73	3	4%
	P.M.	64	46	18	10	14%
Office	A.M.	9	9	0	4	31%
	P.M.	12	1	11	2	14%
Retail	A.M.	8	4	4	4	33%
	P.M.	20	11	9	14	42%
Restaurant	A.M.	15	8	7	7	32%
	P.M.	11	7	4	10	48%
Combined Development	A.M.	114	30	84	18	14%
	P.M.	107	65	42	36	25%

It is expected based on the results of the internal trip projections that 14% and 25% of the original vehicle trips forecasted by the ITE Trip Generation Manual will be captured by the internal land uses of the site during the a.m. and p.m. peak hours, respectively.

Appendix I includes the detailed internal trip capture analysis.

5.2.3. Mode Split

As advised through the Terms of Reference correspondence, the Region of Halton requires a development forecast of the number of person trips generated by the proposed development, and a breakdown of trips generated by travel mode. Several sources of information were reviewed to determine suitable mode splits to apply for trip generation purposes for the proposed development.

The Halton Region Transportation Master Plan (TMP) identifies a travel demand mode split forecast of 72% for vehicle transportation, 20% for transit, 5% for active transportation, and 3% for travel demand management under a 2031 horizon year. Furthermore, the plan projects increases in transit mode share from the current situation, with a forecast of 10%, 15%, and 20% in transit mode split in 2021, 2026, and 2031, respectively.

The Town of Oakville's "Switching Gears" Transportation Master Plan evaluated various transportation mode splits to inform road network improvements for the 2031 horizon. Scenario D was recommended as the preferred interim solution to accommodate transportation demands. The Town preferred Scenario D mode split forecast identifies a 2031 mode share of 76% for vehicle transportation, 12% for transit, 6% for active transportation, and 6% for travel demand management.

Mode split of the current situation was additionally reviewed using Transportation Tomorrow Survey (TTS) data. TTS is a comprehensive survey of transportation characteristics of households in the Greater Toronto Area (GTA) and surrounding areas.

Mode split was calculated using 2016 survey data for all trips attributable to the Region of Halton, the Town of Oakville, and the 2006 GTA Zone 4014. The subject site is located within 2006 GTA Zone 4014, which approximately covers the entirety of the Midtown Oakville Growth Area. **Table 17** outlines the current mode splits in the Region of Halton, the Town of Oakville, and the Midtown Oakville Growth Area. Refer to **Appendix J** for TTS query data.

Table 17: Existing Modal Split (Transportation Tomorrow Survey)

	Region of Halton	Town of Oakville	Midtown Oakville
Vehicle Transportation	74%	72%	83%
Transit	9%	11%	6%
Active Transportation	6%	6%	2%
TDM (Carpooling Trips)	11%	11%	9%
Total	100%	100%	100%

As discussed in **Section 4.4**, there are significant transit improvements planned for future implementation in the vicinity of the subject site. These improvements include decreased headways and travel times on the Lakeshore West GO Rail Line as part of GO Expansion, along with enhanced transit within the Town of Oakville proper, including a new bus rapid transit service along Trafalgar Road. These improvements are expected to further promote and increase transit use the in the area and at the proposed development.

Based on the transit mode split investigative review and recommendations of the Region via the terms of reference correspondence, the transit mode split shown below in **Table 18** was used in the study herein for the purposes of trip generation forecasts by travel mode and person trip generation.

Table 18: Analysis Mode Split

	2022 (Existing Year)	2025 (Buildout Year)	2030 (5-Year Horizon)	2035 (10-Year Horizon)
Vehicle Transportation	81%	78%	72%	72%
Transit	11%	14%	20%	20%
Active Transportation	5%	5%	5%	5%
TDM (Carpooling Trips)	3%	3%	3%	3%
Total	100%	100%	100%	100%

It is noted that the TDM mode split of 3% was assigned to the TDM transportation mode as this is the highest rate permissible from Halton Region. Based on data from the Transportation Tomorrow Survey outlined in **Table 17**, carpooling rates are currently much higher, with a mode split at approximately 10%. It is expected the TDM mode split will remain similar in the future horizons. Therefore, the expectation is for the vehicle transportation mode split to be approximately 73%, 65% and 65% for the 2025, 2030 and 2035 horizon years, respectively. The expected vehicle mode split of 65% was used for the purpose of projecting total person trip generation. However, a 3% mode split was retained for the estimation by Trip Generation by Travel Mode in **Section 5.2.5**. Thus, vehicle trips forecasted herein are likely a slight overestimate. This results in a more conservative assessment of the traffic operational impact of the proposed development on the boundary road network.

5.2.4. Person Trip Generation

The total person trips generated by the proposed development were forecasted based on the vehicle trip generation in **Section 5.2.2** and the mode split in **Section 5.2.3.** The ITE Trip Generation forecast is assumed to reflect the existing mode split for vehicle trips. Therefore, to determine person trip generation forecasts, the ITE vehicle trip generation were divided by the existing vehicle mode split of 81% (as discussed in **Section 5.2.4**).

The resulting person trip generation forecast is summarized below in **Table 19**.

Table 19: Site Person Trip Generation

ITE Land Use Category	Peak Hour	Trips Generated		
		Total	Inbound	Outbound
Residential	A.M.	101	11	90
	P.M.	79	57	22
Office	A.M.	11	11	0
	P.M.	15	1	14
Retail	A.M.	10	5	5
	P.M.	25	14	11
Restaurant	A.M.	19	10	9
	P.M.	14	9	5
Total Development Person Trips	**A.M.**	**141**	**37**	**104**
	P.M.	**133**	**81**	**52**

As shown in **Table 19**, the proposed development is expected to generate 141 and 133 person trips in the a.m. and p.m. peak hours, respectively.

5.2.5. Trip Generation by Travel Mode

To determine the final trip generation estimates by travel mode, the trip generation mode split identified in **Section 5.2.3** was applied to the net external person trips outlined in **Section 5.2.4**. **Table 20** outlines the trip generation forecast for the 2025 horizon year, and **Table 21** outlines the trip generation for the 2030 and 2035 horizon year.

Table 20: Site Trip Generation (2025)

Transportation Mode	A.M. Peak Hour			P.M. Peak Hour		
	Total	Inbound	Outbound	Total	Inbound	Outbound
Vehicle Transportation	110	29	81	104	63	41
Transit	20	5	15	18	11	7
Active Transportation	7	2	5	7	4	3
TDM (Carpooling Trips)	4	1	3	4	2	2
External Person Trips Total	**141**	**37**	**104**	**133**	**80**	**53**

Table 21: Site Trip Generation (2030/2035)

Transportation Mode	A.M. Peak Hour			P.M. Peak Hour		
	Total	Inbound	Outbound	Total	Inbound	Outbound
Vehicle Transportation	102	27	75	95	58	37
Transit	28	7	21	27	16	11
Active Transportation	7	2	5	7	4	3
TDM (Carpooling Trips)	4	1	3	4	2	2
External Person Trips Total	**141**	**37**	**104**	**133**	**80**	**53**

5.3 Trip Distribution

The vehicle trips generated by the proposed development were distributed to the boundary road network based on 2016 Transportation Tomorrow Survey (TTS) data. TTS is a comprehensive survey of transportation characteristics of households in the Greater Toronto Area (GTA) and surrounding areas.

For the proposed development, TTS results were filtered to vehicle trips entering and exiting 2006 GTA Zone 4014 during the weekday a.m. and p.m. peak periods. The zone approximately represents the entirety of the Midtown Oakville Growth Area.

From this query, trip destinations were determined, and percentage of trips assigned to each destination was accounted for. Trips were assumed to travel to and from their destination points based on the most convenient route. The resultant trip distribution is outlined in **Table 22.**

Table 22: Trip Distribution

Arriving From / Departing To	Percentage
Queen Elizabeth Way (West)	22%
Queen Elizabeth Way (East)	21%
Trafalgar Road (North)	33%
Trafalgar Road (South)	2%
Cornwall Road (West)	11%
Cornwall Road (East)	2%
Cross Avenue (West)	4%
South Service Road East (East)	5%
Total	100%

Figure 11 outlines the trip distribution used for the 2025 and 2030 analysis scenarios. **Figure 12** outlines the trip distribution for the 2035 analysis period. **Appendix J** contains the TTS data and detailed trip distribution calculations.

5.4 Trip Assignment

The trip distribution outlined in **Section 5.3** was applied to the site vehicle trip generation to calculate the trip assignment. Trips were assumed to travel to and from their destination points based on the most convenient route.

Figures 13, 14 and 15 outline the trip assignment for the 2025, 2030, and 2035 horizon years, respectively.

6.0 Future Total Conditions

6.1 Basis of Assessment

To determine future total traffic volumes for each of the future horizon years, the site generated traffic volumes for the horizon year were added to the corresponding future background traffic volumes. The 2025 future total traffic volumes, calculated by summing **Figures 8 and 13**, are provided as **Figure 16**. The 2030 future total traffic volumes, calculated by summing **Figures 9 and 14**, are provided as **Figure 17**. Finally, the 2035 future total traffic volumes, calculated by summing **Figures 10 and 15**, are provided as **Figure 18**.

6.2 Signal Warrant Analysis

A signal warrant analysis was conducted for the intersection of South Service Road East and Davis Road. The analysis followed the procedures specified in Chapter 4 of the "Ontario Traffic Manual – Book 12", March 2012. Justifications 1 (Minimum Vehicular Volume), 2 (Delay to Cross Traffic), 3 (Combination of Justifications 1 and 2), and 4 (4-Hour Volume) were selected as the most appropriate warrants to assess.

The average hour volume was determined using the following formula from OTM Book 12:

AHV = (amPHV + pmPHV) / 4

Where;

AHV = average hour volume
PHV = peak hour volume

Table 23 outlines the results of the signal warrant analysis. **Appendix K** contains the signal warrant sheets.

Table 23: Signal Warrant Analysis Results

Location	Operating Environment	Horizon Year	Number of lanes on major road	Traffic Signals Warranted?
South Service Road East and Davis Road	Urban	2030 Future Total	Two	No
	Urban	2035 Future Total	Two	No

The results of the signal warrant analysis indicate that traffic signals are not warranted at the Davis Road connection to South Service Road East under any of the study horizons. However, the new QEW EB off-ramp connection to South Services Road is planned to be signalized according to the MOCEA, therefore, the intersection was modelled under both the stop-control (minor street) and signalization configurations in the 2035 horizon.

Given that the only access to the site is through this intersection, signal warrants were not checked at the site access connection to Davis Road as the intersection will possess fewer traffic movements than at the South Service Road and Davis Road intersection.

6.3 Intersection Operations

The future total intersection operations at the study intersections were analyzed using the 2025, 2030, and 2035 future total traffic volumes illustrated in **Figures 16, 17, and 18** respectively. Detailed capacity analysis worksheets are included in **Appendix G**.

Tables 24, 25 and 26 outline the 2025, 2030, and 2035 future total traffic operations.

Table 24: 2025 Future Total Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Trafalgar Road and QEW WB ramps / North Service Road E.	Signal	A.M.	C	21.1s	**0.93 (SBR[4])**	None
		P.M.	C	23.9s	**0.95 (SBR[4])**	None
Trafalgar Road and QEW EB ramps	Signal	A.M.	C	23.8s	**0.90 (EBR)** **0.87 (SBT)**	None
		P.M.	C	28.1s	**0.82 (EBL)**	None
Trafalgar Road and South Service Road East / Cross Avenue	Signal	A.M.	D	38.7s	0.75 (EBL)	90.1m > 55.0m (SBL)
		P.M.	D	35.6s	0.85 (EBL)	174.2m > 130.0m (EBL) 79.3m > 55.0m (SBL)
Trafalgar Road and Cornwall Road	Signal	A.M.	C	34.3s	0.81 (SBL)	86.7m > 85.0m (EBL1)
		P.M.	D	39.3s	0.82 (SBL)	108.9m > 85.0m (EBL1) 119.6m > 105.0m (EBL2)
South Service Road East and Davis Road	Stop (Minor)	A.M.	B	12.3s	0.18 (WB)	None
		P.M.	B	12.9s	0.12 (WB)	None
Davis Road and Site Access	Stop (Minor)	A.M.	A	8.7s	0.08 (SB)	None
		P.M.	A	8.5s	0.04 (SB)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2000).

*Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection where the maximum v/c ratio does not exceed the critical thresholds identified in **Section 3.7.2**. All v/c ratios that exceed the critical thresholds outlined in are bolded.*

Note 3: The 95th percentile queue lengths were derived from SimTraffic reports using 15-minute seeding, 60-minute simulation and an average of 5 runs. Queues which exceed the designated storage length of the turn lane but can be accommodated by a centre turn lane were not documented in this table.

Table 25: 2030 Future Total Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Trafalgar Road and QEW WB ramps / North Service Road E.	Signal	A.M.	C	24.8s	**1.03 (SBR[4])**	None
		P.M.	C	31.7s	**1.07 (SBR[4])** **0.90 (NBT)** **0.79 (WBL)** **0.79 (WBT)**	None
Trafalgar Road and QEW EB ramps	Signal	A.M.	C	29.1s	**0.99 (EBR)** **0.97 (SBT)**	202.9m > 175.0m (EBL)
		P.M.	C	30.0s	**0.86 (NBT)** **0.87 (EBL)** **0.83 (EBR)**	204.4m > 175.0m (EBL)
Trafalgar Road and South Service Road East / Cross Avenue	Signal	A.M.	D	44.9s	**0.85 (SBT)**	170.5m > 130.0m (EBL) 89.5m > 55.0m (SBL)
		P.M.	D	37.9s	0.89 (EBL)	166.2m > 130.0m (EBL) 90.6m > 55.0m (SBL)
Trafalgar Road and Cornwall Road	Signal	A.M.	C	34.1s	0.85 (SBL)	107.1m > 85.0m (EBL1) 111.6m > 105.0m (EBL2) 101.4m > 85.0m (WBR)
		P.M.	D	40.4s	0.88 (EBL)	103.6m > 85.0m (EBL1) 110.6m > 105.0m (EBL2)97.8m > 90.0m (SBL1)
South Service Road East and Davis Road	Stop (Minor)	A.M.	B	12.5s	0.18 (WB)	None
		P.M.	B	12.9s	0.11 (WB)	None
Davis Road and Site Access	Stop (Minor)	A.M.	A	8.7s	0.08 (SB)	None
		P.M.	A	8.5s	0.04 (SB)	None

Ditto Notes Table 24.

Table 26: 2035 Future Total Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Trafalgar Road and QEW WB ramps / North Service Road E.	Signal	A.M.	C	32.1s	**1.14 (SBR[4])**	None
		P.M.	D	47.6s	**1.20 (SBR[4])** **1.00 (NBT)** **0.82 (WBT)** **0.82 (WBL)**	78.4m > 60.0m (WBR)
Trafalgar Road and QEW EB ramps	Signal	A.M.	C	21.5s	**0.91 (SBT)** **0.88 (EBL)** **0.81 (EBR)**	197.6m > 175.0m (EBL)
		P.M.	E	58.7s	**1.10 (EBR)** **1.06 (NBT)**	208.6m > 175.0m (EBL)
Trafalgar Road and South Service Road East / Cross Avenue	Signal	A.M.	D	45.7s	**0.90 (SBT)**	170.1m > 130.0m (EBL) 89.0m > 55.0m (SBL)
		P.M.	D	38.4s	0.91 (EBL) **0.89 (SBT)** **0.86 (NBT)**	168.8m > 130.0m (EBL) 87.0m > 55.0m (SBL)
Trafalgar Road and Cornwall Road	Signal	A.M.	D	35.7s	0.89 (SBL)	105.5m > 85.0m (EBL1) 106.4m > 105.0m (EBL2) 115.9m > 85.0m (WBR)
		P.M.	D	42.7s	**0.96 (EBL)**	97.3m > 85.0m (EBL1) 106.1m > 105.0m (EBL2) 100.5m > 85.0m (WBR) 101.3m > 90.0m (SBL1)
South Service Road East and Davis Road	Signal	A.M.	B	17.0s	**0.82 (EB**)	None
		P.M.	A	6.1s	0.39 (EB)	None
	Stop (Minor)	A.M.	C	24.9s	**0.79 (EB)**	None
		P.M.	B	13.9s	0.19 (EB)	None
South Service Road East and 320 Davis Road Access	Stop (Minor)	A.M.	B	11.2s	0.19 (SB)	None
		P.M.	B	10.3s	0.13 (SB)	None
Davis Road and Site Access	Stop (Minor)	A.M.	A	8.7s	0.08 (SB)	None
		P.M.	A	8.5s	0.04 (SB)	None

Ditto Notes Table 24.

All the study intersections are forecast to operate similarly to their respective future background conditions. Except for the Trafalgar Road and QEW EB ramp which operates at a LOS "E" in the p.m. peak hour, all the study intersections are projected to operate at a LOS "D" or better during the peak hours.

The noted operational issues and recommended potential mitigation measures under the future background apply to the future total conditions.

Overall, the boundary road network is expected to operate adequately into the 2035 ultimate horizon year. The addition of site generated traffic to the boundary road network is not expected to materially impact traffic operations. Therefore, the proposed development is supportable from a traffic operations perspective.

7.0 Safety Review

This section reviews transportation safety of the proposed development. The purpose of the safety review is to identify any safety deficiencies and to identify how the development proposes to maximize safety for all road users. The safety review assesses spacing and sight lines at the access along with internal site circulation in the following subsections.

7.1 Access Spacing and Corner clearance

The development includes a site access connection to Davis Road. It is noted that the existing site maintains a site access in nearly the same location as the access proposed to serve the development as outlined in the site plan in **Appendix A**.

Access spacing was checked against the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR) requirements. Per Figure 8.8.2 of the manual, a minimum 15m separation distance is suggested for local roads. A separation to South Service Road East of more than 50m was measured. Further, the access is at least 4m away from the adjacent driveway access to the Oakville Auto Center, satisfying the driveway spacing requirements of the TAC GDGCR Figure 8.9.2. Therefore, the proposed site connection spacing satisfies the minimum suggested intersection spacing requirements per the TAC GDGCR.

7.2 Sight Distance Analysis

The available sightlines at the proposed Ninth Line connections were measured and compared to the standards set out in the TAC GDGCR. Sight distance was measured from the proposed site accesses using the following assumptions:

- A standard driver eye height of 1.08 metres for a passenger car, and
- A 4.4 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 * tg*

Where;
ISD = Intersection Sight Distance
V major = design speed of roadway (km/h)
tg = assumed time gap for vehicles to turn from stop onto roadway (s)

The design speed of a roadway in an urban environment is typically 10 km/h greater than the posted speed limit. Davis Road does not have a posted speed limit. As discussed in **Section 3.3**, a speed limit of 50 km/h was assumed for the roadway. Accordingly, a design speed of 60km/h was used for the evaluation of sight distance.

Table 27 outlines the sight distance analysis for the Davis Road site access.

Table 27: Sight Distance Analysis

Feature	Davis Road site access
Access Type	Full-Moves
Intersection Control	Stop (Minor Street)
Assumed Design Speed	60 km/h
Base Time Gap	7.5 s [1] Left-turn 6.5 s Right-turn
Grade of Roadway	Less than 3%
Horizontal Alignment of Roadway	Straight
Sight Distance Required	Left - 130m Right - 110m
Measured Sight Distance	Visibility of intersection (looking west) >150m (looking east)
Minimum Sight Distance Satisfied?	Left turn – Yes Right turn – Yes

Note 1: Time gap for left-turning vehicles from a stop onto a two-lane highway with no median and with a grade less than 3%. Value from Table 9.9.3 in the GDGCR.
Note 2: Sight distance values calculated from Intersection Sight Distance equation 9.9.1 in the GDGCR.

As outlined in **Table 27**, minimum sight distance requirements are satisfied at the site access connection to Davis Road. Therefore, the proposed development is supportable from a sight distance perspective.

7.3 Internal Site Circulation

Detailed vehicle turning diagrams have been provided to illustrate internal site circulation. Vehicle turning analysis was conducted for the most constrained vehicle profiles expected to navigate through the site: a standard pumper firetruck and a Region of Halton front-load garbage truck. Furthermore, vehicle turning analysis using passenger vehicles for the most constrained parking spaces and parking garage servicing routes were analyzed to ensure accessibility throughout the site.

Vehicle turning analysis indicates that there are no expected maneuverability constraints within the site. Refer to vehicle turning diagrams in **Appendix K**.

8.0 Transportation Demand Management

There are existing and planned Transportation Demand Management (TDM) opportunities in the Town of Oakville and near the site to encourage the use of non-auto transportation options, as outlined in **Section 3.4**, **Section 3.5**, and **Section 4.4**. The existing and future background improvements to the road, transit and active transportation networks are expected to reduce dependence on single occupancy vehicle trips.

Furthermore, there are site specific transportation demand management measures included as part of the proposed development that will promote the use of transit and active transportation modes. As shown in **Appendix A**, the Site Plan identifies internal pedestrian walkways which permit pedestrian

circulation within the site. Furthermore, the site proposes to include a sidewalk connecting along the north side of Davis Road to South Service Road East. This direct connection to the existing pedestrian network improves safety and convenience of pedestrian movement and access to the boundary roadway, transit and nearby land uses.

The site additionally proposes 400 bicycle parking spaces per the Site Plan in **Appendix A**. This bicycle parking supply is in excess of both the Town of Oakville Zoning By-Law No. 2014-014 and the Midtown Oakville Parking Strategy (2012) minimum bicycle parking requirements. Therefore, it is expected that the provision for additional bicycle parking spaces than the set out requirements will promote the cycling transportation mode and thereby reduce dependence on vehicle trips for shorter trips.

The outlined site specific TDM measures are expected to help the development capitalize on the existing and planned TDM opportunities in the area.

9.0 Parking Review

The combined 622 space vehicle parking supply for the proposed land uses satisfies the Town of Oakville's minimum parking requirements per the Town of Oakville Zoning By-Law No. 2014-014 as highlighted by the parking requirement calculation outlined in **Table 28**. The parking supply is 8% in surplus to the minimum requirements of the Town of Oakville. This level of overage or shortage is typically not associated with parking supply induced operations issues and should not impact active transportation goals for the site and area.

Table 28: Parking Review

By-Law Use	Number of Units / GFA	Minimum Parking Space Rate	Required Parking Spaces
Apartment Dwelling [1]	388[1]	1.0 spaces per dwelling unit where the unit has less than 75.0m^2 net floor area, otherwise, 1.5 spaces per dwelling	476 [2]
Retail Store	467 m^2	1.0 space per 18.0 m^2 net floor area	26
Business Office	1470 m^2	1.0 space per 35.0 m^2 net floor area	42
Restaurant	214m^2	1.0 space per 10.0 m^2 net floor area	22
Total Required Parking Spaces			566
Total Proposed Parking Spaces			622
Surplus/Deficit			+56

Note 1: 213 apartment units are less than 75.0m^2 net floor area, while the remaining 175 apartment units are larger than 75.0m^2.
Note 2: Per the By-law, 97 spaces out of the 476 should be provided as visit parking.

Further, the proposed barrier free accessible parking supply of 14 spaces satisfies the Town of Oakville Zoning By-Law requirement of 2+2% of the total number of provided parking spaces.

10.0 Public Information Session

A public information session was held on March 2, 2023 to introduce the development proposal to the public and obtain public input. The development proposal was presented and feedback was received from attendees of the session.

Several attendees at the public meeting were concerned about the existing traffic situation along Trafalgar Road and towards Downtown Oakville. Some attendees expressed their preference for the Midtown Oakville Class Environmental Assessment (MOCEA) eastbound QEW off-ramp underpass (at Trafalgar Road) to a realigned Cross Avenue to relieve traffic pressure on Trafalgar Road. The eastbound QEW off-ramp underpass will be referred to as the "underpass off-ramp" throughout this section.

In response to these concerns, a separate traffic analysis was conducted to accurately characterize the impacts on traffic with and without the underpass off-ramp.

Scenario 1 (MOCEA with underpass off-ramp): The traffic volumes from the MOCEA 2031 preferred scenario, which includes the potential underpass off-ramp, were used as the traffic volumes for the assessment of this scenario. Though the traffic projections from the MOCEA may no longer be necessarily representative of the future condition as there have been and continues to be significant changes in plans and policy for the area, these projections were deemed the most appropriate to use for assessment of the future option with the underpass in place.

Scenario 2 (MOCEA without underpass off-ramp): Traffic volumes for this scenario was established using the MOCEA traffic volumes as the initial baseline. Without the underpass off-ramp, it can be reasonably expected that the MOCEA traffic projected on the underpass off-ramp would instead use either the "buttonhook" QEW EB off-ramp onto Cross Avenue planned as part of the MOCEA, located just west of Royal Windsor Drive (herein referred to as the "buttonbook off-ramp"), or to the existing QEW EB off-ramp to Trafalgar Road. Given the exit point of the underpass off-ramp within Midtown Oakville (per the MOCEA), it is projected that in its absence, approximately 80% of the traffic would divert to the QEW buttonhook EB off-ramp to Cross Avenue, while 20% of the traffic would divert to the QEW EB off-ramp at Trafalgar Road. Further, for the 20% of traffic to the QEW EB off-ramp at Trafalgar Road, 25% of this traffic at the Trafalgar Road EB off-ramp terminal was assigned to turn left to travel northbound, while 75% of this traffic was assigned to travel southbound on Trafalgar Road. This estimated split for the diversions is assessed as reasonably reflective as a portion of the traffic projected on the underpass off-ramp would use the North-South Crossing to access lands on the north side of the QEW. However, most of the traffic projected on the underpass off-ramp would have been destined for the Midtown Oakville located south-east of Trafalgar Road/ QEW, and the buttonhook off-ramp is expected to be the more convenient route compared to the Trafalgar Road QEW EB off-ramp under future traffic volumes.

The focus of this assessment is on the Trafalgar Road interchange based on the community comments. However, it is noted that the additional traffic volumes are anticipated to be accommodated without issues at the planned buttonhook off-ramp to Cross Avenue, given the MOCEA projected traffic operations of LOS "B" or better at this location with under fifteen seconds of delay in both the 2031 a.m. and p.m. peak hours.

Figure 19 outlines a comparison of the traffic volumes at the Trafalgar Road and QEW EB off-ramp for the two scenarios herein (i.e., with and without the underpass off-ramp).

Aside the minor delay differences due to assessing the intersection of Trafalgar Road and QEW EB-off ramp in isolation, while the MOCEA performed a network analysis, the Synchro 11 analysis parameters used in the MOCEA were replicated for the analysis herein. Therefore, the analysis for the two scenarios herein are consistent with the MOCEA analysis methodology.

Table 29 outlines the results of the Synchro 11 operational analysis for the QEW EB off-ramp at Trafalgar Road under the two scenarios (i.e., with and without the underpass off-ramp). Scenario 2 with an additional off-ramp right-turn lane improvement to the Trafalgar Road interchange was also included in the Table, given the existing high right-turn volumes and expected higher future volumes for the movement as highlighted by the v/c ratios in the Table.

Table 29: Traffic Operations – QEW EB off-ramp at Trafalgar Road

Scenario	Peak Hour	Level of Service [1]	Control Delay	V/C ratios [2]
Scenario 1 MOCEA Volumes with underpass off-ramp	A.M.	D	53.3s	**1.01 (EBR)** **0.94 (SBT)** 0.87 (NBT) 0.30 (EBL)
	P.M.	C	24.9s	**0.82 (EBR)** 0.74 (NBT) 0.55 (EBL) 0.51 (SBT)
Scenario 2 MOCEA Volumes without underpass off-ramp	A.M.	E	77.4s	**1.06 (EBR)** **0.99 (SBT)** **0.92 (NBT)** 0.31 (EBL)
	P.M.	C	25.3s	**0.82 (EBR)** 0.74 (NBT) 0.55 (EBL) 0.52 (SBT)
Net Change	A.M.	-1 LOS	+24.1s	**+0.05 (EBR)** **+0.04 (SBT)** **+0.05 (NBT)** +0.01 (EBL)
	P.M.	No change	+0.4s	+0.01 (EBL)
Scenario 2 with an additional auxiliary right-turn lane improvement	A.M.	C	26.1s	**0.81 (EBR)** 0.67 (SBT) 0.62 (NBT) 0.41 (EBL)
	P.M.	C	20.6s	0.73 (EBL) 0.62 (NBT) 0.58 (EBR) 0.43 (SBT)

Note 1: The 2030 Future Total Traffic Analysis used a number of different analysis assumptions than the MOCEA, and should not be considered as representative or comparable to the MOCEA without underpass scenario.

The intersection of Trafalgar Road and QEW EB off-ramp is projected to operate without material change in level of service in the p.m. peak hours, with or without the underpass off-ramp. The intersection is however, expected to incur additional delays in the a.m. peak hour, at 24.1s of projected additional intersection delay for the scenario without the underpass off-ramp.

However, the projected p.m. peak hour operations in the 2031 horizon under both scenarios is typical for the peak commuter hours of a high volume major arterial and highway off-ramp intersection, operations are expected to be better during the rest of the day. Further, as highlighted, by the forecasted operations **(Table 29)** with the implementation of a second auxiliary right-turn lane, operations can be greatly improved in the future with the subject improvement without need for the MOCEA underpass off-ramp.

Given the findings of this analysis and similar to the findings under Section 6 of this study for the subject intersection, it is recommended that the MTO explore adding a second right-turn storage lane to the QEW eastbound off-ramp connection to Trafalgar Road in the future (ie. beyond 2030) if traffic volumes follow the pattern forecast by the MOCEA. Such an improvement would be significantly less complex and cost effective than the potential MOCEA underpass off-ramp improvement.

Appendix G contains the detailed capacity analysis reports for this assessment.

11.0 Conclusions & Recommendations

This study has assessed the transportation impacts of the proposed mixed-use development in the Town of Oakville, Region of Halton. The analyses herein regarding the proposed development has resulted in the following key findings:

- Overall, the study intersections are currently operating acceptably at a LOS "D" or better during the peak hours. A few movements are operating near capacity at the intersection of Trafalgar Road and QEW ramps. Similarly, the 95th queuing results indicate a couple auxiliary turn storage lanes may be exceeded during the peak hours at the Trafalgar Road intersections with Cornwall Road and South Service Road East / Cross Avenue.

- In the 2025 horizon year, the proposed development is forecast to generate 110 and 104 vehicle trips in the a.m. and p.m. peak hours, respectively. In the 2030 and 2035 horizon years, the proposed development is forecast to generate 102 and 95 vehicle trips in the a.m. and p.m. peak hours, respectively – consistent with the modal split projections from the Region.

- The ultimate horizon 2035 trip generation forecast projects 39 and 38 non-vehicular trips generated by the proposed development in the a.m. and p.m. peak hours, respectively.

- Analysis of future background traffic operations indicates that the study intersections along Trafalgar Road are expected to operate near capacity in the ultimate 2035 horizon with a few movements at the QEW ramp intersections operating above capacity. However, under all future background analysis scenarios, the boundary road network is forecast to operate at a LOS "D" or better during the peak hours, except at the Trafalgar Road and South Service Road East intersection, where operations are projected to be a LOS "E" during the critical p.m. peak hour. Several opportunities for operational improvements were identified in the future background and are included as part of the Study recommendations.

associated future background scenario at all study intersections. Under the ultimate 2035 horizon year analysis, the study intersections are forecast to operate at a LOS "D" or better during the peak hours, or the same as future background conditions. At the intersection of Trafalgar Road and QEW eastbound ramps, operations are projected to be LOS "E" during the critical p.m. peak hour, consistent with the 2035 future background conditions.

- The maximum control delay increment and volume-to-capacity ratio increase in the future total scenarios compared to the corresponding future background scenarios at any of the study intersections is forecast to be minimal, at 2.1s and 0.01, respectively. This indicates that site traffic does not materially impact traffic operations at the study intersections. Therefore, no external road improvements attributable to the proposed development are required.

- The available sight distance at the proposed site connection to Davis Road exceeds the minimum sight distance requirements set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), June 2017. Further, the site satisfies the minimum corner clearance and accessing spacing requirements per the TAC-GDGCR. Further, no expected maneuverability constraints within the site for waste collection or fire trucks are identified.

- In addition to the background active transportation and transit improvements expected in the vicinity of the subject site, the development proposal includes several site specific transportation demand management measures that are expected to reduce dependence on vehicle transportation:

    - The development proposal includes a sidewalk connection along the north side of Davis Road to South Service Road East. This direct connection to the existing pedestrian network improves safety and convenience of pedestrian movement and access to the boundary roadway, transit and nearby land uses.

    - The site proposes a bicycle parking supply of 400 spaces, which is in excess of both the Town of Oakville Zoning By-Law requirements and the Midtown Oakville Parking Strategy. This measure is expected to promote the bicycle transportation mode.

- The proposed parking supply of 622 spaces satisfies the Town of Oakville's Zoning By-Law No. 2014-014 minimum vehicle parking requirements. Additionally, the site provides the required barrier free accessible parking spaces.

- The parking supply is 8% in surplus to the minimum requirements of the Oakville Zoning By-Law, however, this level of overage is typically not associated with parking supply induced operations issues and should not impact active transportation goals for the site and area.

- Traffic related concerns were raised by some attendees of the 349 Davis Road development proposal Public Information Session conducted on March 2, 2023. Based on the traffic review in **Section 10.0** focused on these concerns, the Midtown Oakville area can be served adequately without the need for the QEW EB underpass off-ramp.

In addition, several recommendations have been identified based the findings and analysis of this study to support the future transportation conditions in the study area. It is recommended that:

- The MTO and Region explore opportunities including timing plan setup adjustments and or

turning movement prohibitions (as applicable) in the future to increase capacity for southbound right-turn traffic on Trafalgar Road entering the QEW WB on-ramp and North Service Road.

- At the intersection of Trafalgar Road and Cornwall Road, the Region and Town explore mitigation measures such as timing plan coordination along Cornwall Road (if not already), timing plan adjustments and additional regulatory signage (ex. do not block intersection) to limit operational and potential safety issues at the adjacent upstream intersections on Cornwall Road.

- The MTO explore adding a right-turn storage lane to the QEW eastbound off-ramp connection to Trafalgar Road in future (ie. beyond 2030) if traffic volumes follow the pattern forecast by the MOCEA.

- The remaining study intersections aside the proposed site access should be monitored by the Region and Town with timing plans adjusted in future for optimal operations as needed.

The analysis contained within this report was prepared using the Site Plan prepared by Studio Veronica Madonna Architect (dated September 14, 2022). Minor revisions to the site plan are not expected to affect the conclusions contained within this report.

In conclusion, the Official Plan Amendment and Zoning By-Law Amendment applications can be supported from a traffic operations perspective as the boundary road network can accommodate the increase in traffic volumes attributable to the proposed development at 349 Davis Road in the Town of Oakville.

Sincerely,

C.F. CROZIER & ASSOCIATES INC.

Peter Apasnore MASc., P.Eng.,PTOE
Project Manager

C.F. CROZIER & ASSOCIATES INC

Aidan Hallsworth, EIT
Transportation

/AH

J:\2200\2259- 1539059 Ontario Inc\6324- 349 Davis Road\Reports\Transportation Impact Study\2023 1st Submission\2022.03.23_349 Davis Road TIS.docx

APPENDIX A

Site Plan

SURVEYOR'S REAL PROPERTY REPORT
AND TOPOGRAPHY OF
PART OF LOT 12
CONCESSION 3
SOUTH OF DUNDAS STREET
TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON

UNIT BREAKDOWN / DENSITY	
Commercial Area GFA	**769.81m²**
Unit 1: Proposed Restaurant	214.18m²
Patio Area (For Unit 1)	34.98m²
Unit 2: Proposed Retail	87.31m²
Unit 3: Proposed Retail	67.75m²
Unit 4: Proposed Retail	69.36m²
Unit 5: Proposed Retail	128.25m²
Unit 6: Proposed Retail	114.81m²
Lobby (Ground Floor)	260.10m²
Office Area GFA	**1,470.41m²**
Total No. of Units	4 Units
Residential Area GFA	**33,633.21m²**
35 Floors (Medium Plate)	25,381.65m²
No. of Units per Floor	8 Units
No. of Units	280 Units
18 Floors (Small Plate)	8,251.56m²
No. of Units per Floor	6 Units
No. of Units	108 Units
Total No. of Residential Units	388 Units
TOTAL GFA (w/o Parking Levels)	36,674.46m²
TOTAL GFA (incl. Parking Levels)	**41,386.98m²**
Density	
Residential Units per Ha	106.67 uph
Floor Space Index	9.75

PARKING STATISTICS By-law 2014-14	
Above Ground Parking (AB) (3 Levels)	AB Level 1 = 23 parking spaces AB Level 2 = 23 parking spaces AB Level 3 = 23 parking spaces
Underground Parking (UG)	UG Levels 1 to 3 = 85 parking spaces
	UG Levels 4 & 5 = 97 parking spaces
	UG Level 6 = 99 parking spaces
Street Level Parking	5 spaces (including 2 barrier-free)
Loading Space Provided	1 space
Required Parking:	
Commercial (Ground)	1.0 per 18.0m² net floor area.
Office (1 Floor)	1.0 per 35.0m² net floor area.
Residential	a) 1.0 per dwelling where the unit has less than 75.0m² net floor area. b) 1.25 per dwelling for all other units. Visitor Parking: Of the total number of parking spaces required, 0.25 of the parking spaces required per dwelling shall be designed as visitors parking spaces.
Barrier-Free	3 to 25 spaces = 1 space 26 to 100 spaces = 4% 101 to 200 spaces = 1, plus 3% of the total no. of spaces 201 to 1000 spaces = 2, plus 2% of the total no. of spaces
TOTAL PARKING REQUIRED	575 (including 14 barrier-free)
TOTAL PARKING PROPOSED	622 Parking Spaces (including 14 barrier-free)
Min. No. of Bicycle Parking Spaces Required:	
Retail Uses: Office Uses: Residential Uses:	The greater of 2 or 1.0 per 1,000m² net floor area. The greater of 2 or 1.0 per 1,000m² net floor area. Apartment Building - 1.0 per dwelling. Visitor Spaces: Of the total number of bicycle parking spaces required, 0.25 of the parking spaces required per dwelling shall be designed as visitors bicycle parking.
Total Bicycle Parking Required:	392 bicycle parking spaces (racks)
Bicycle Parking Provided:	400 bicycle parking spaces (racks)

ZONING STATISTICS By-law 2014-14		
Zoned MTE - Midtown Transitional Employment		
Proposed MU4 Mixed Use Zone - Urban Core		
MTE REGULATIONS	REQUIRED	PROPOSED
Min. Lot Frontage	Shall be as legally existing as of the effective date of this By-law.	53.90m (existing)
Min. Lot Area		0.42 Ha (existing)
Max. Lot Coverage		37.02%
MU4 REGULATIONS		
Min. Front Yard	1.0m	5.0m (from 4.0m expr. line)
Max. Front Yard	5.0m	5.0m (from 4.0m expr. line)
Min. Interior Side Yard	0.0m	5.40m (W); 11.89m (E)
Min. Rear Yard	0.0m	32.23m
Min. No. of Storeys	8 storeys	58 storeys
Max. No. of Storeys	12 storeys	58 storeys
Min. First Storey Height	4.5m	4.5m
Min. Height	--	175.5m
Max. Height	--	175.5m
Max. Net Floor Area	1,400m²	1,570.84m²

SITE STATISTICS Cont'd:

SITE AREA = 1.05 acre (0.42 ha)
4,243.25 m2 (45,673.96 sq.ft.)

PROPOSED BLDG. FOOTPRINT - (Mixed-Use)
AREA = 1,570.84 m2 (16,908.38 sq.ft.)

ABOVE GROUND PARKING FOOTPRINT - FLOOR LEVELS 2nd - 4th
AREA = 1,570.84 m2 (16,908.38 sq.ft.)

OFFICE FOOTPRINT - 5th FLOOR LEVEL
AREA = 1,470.41 m2 (15,827.36 sq.ft.)

RESIDENTIAL FOOTPRINT 1 - FLOOR LEVELS 6th - 40th
AREA = 725.19 m2 (7,805.88 sq.ft.)

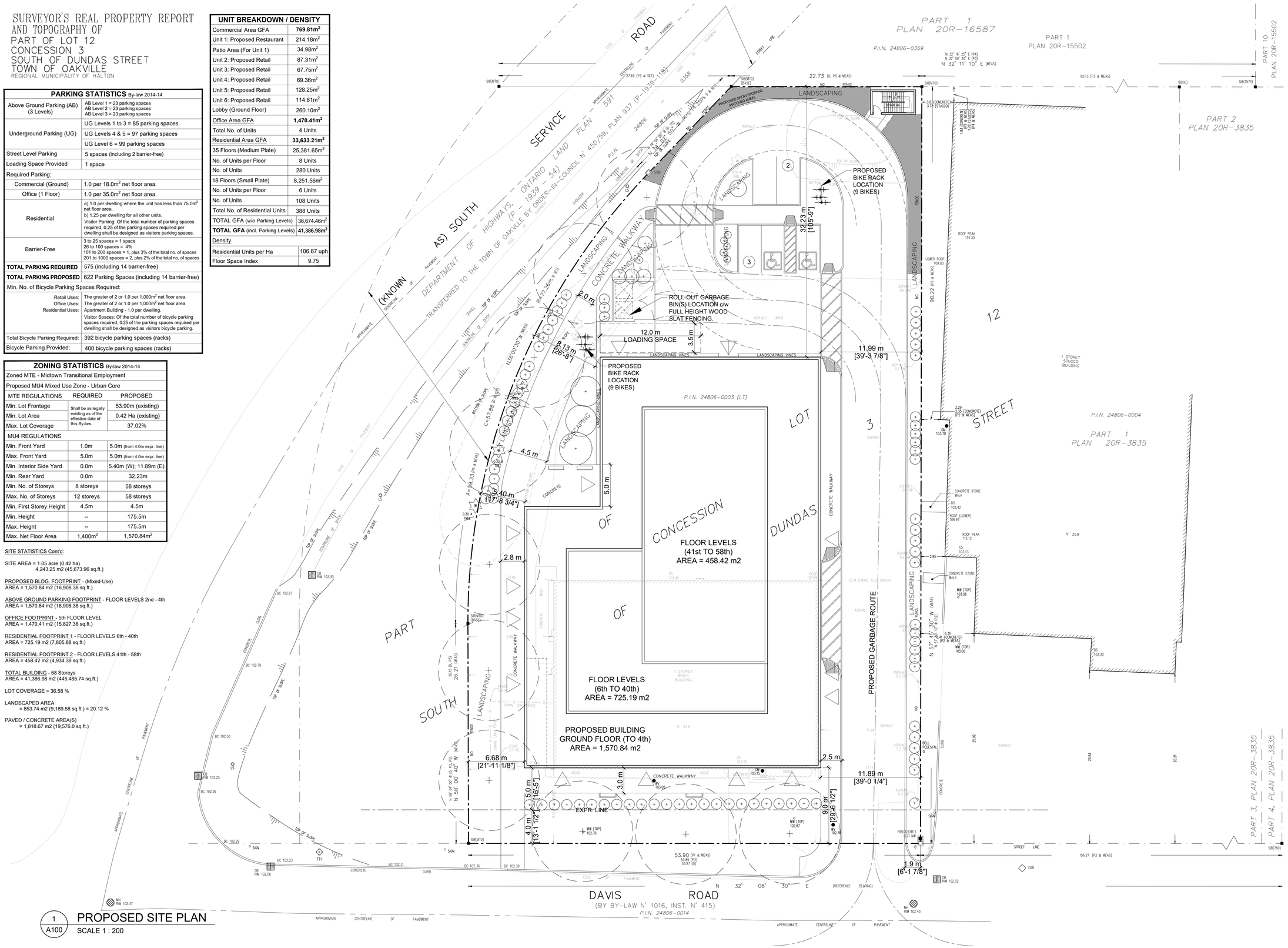
RESIDENTIAL FOOTPRINT 2 - FLOOR LEVELS 41th - 58th
AREA = 458.42 m2 (4,934.39 sq.ft.)

TOTAL BUILDING - 58 Storeys
AREA = 41,386.98 m2 (445,485.74 sq.ft.)

LOT COVERAGE = 36.58 %

LANDSCAPED AREA
= 853.74 m2 (9,189.58 sq.ft.) = 20.12 %

PAVED / CONCRETE AREA(S)
= 1,818.67 m2 (19,576.0 sq.ft.)



1
A100
PROPOSED SITE PLAN
SCALE 1 : 200

All material herein remains property of the architect noted below.

THE GENERAL CONTRACTOR SHALL REPORT AND VERIFY ALL DIMENSIONS AND REPORT ERRORS AND OMISSIONS TO THE ARCHITECT. DRAWINGS MUST NOT BE SCALED.

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS COUNTERSIGNED BY:

Consultant: Surveyor
GENESIS Land Surveying Inc.
10 Four Seasons Place, 10th floor
Toronto, ON. M9B 6H7
Tel: (905) 499-2956

LEGEND

☐	DENOTES	MONUMENT PLANTED
■	——	MONUMENT FOUND
WIT	——	WITNESS
IB	——	IRON BAR
RIB	——	ROUND IRON BAR
SIB	——	STANDARD IRON BAR
SSIB	——	SHORT STANDARD IRON BAR
P1	——	SURVEY BY TARASICK & McMILLAN O.L.S., DATED FEBRUARY 19TH, 2004
P2	——	PLAN 20R-3835
P3	——	EXPROPRIATION PLAN 1335
P4	——	PLAN 20R-16587
P5	——	EXPROPRIATION PLAN 591
MTO	——	MINISTRY OF TRANSPORTATION OF ONT.
OU	——	ORIGIN UNKNOWN
D	——	INST. No. 734763
P.I.N.	——	PROPERTY IDENTIFICATION NUMBER
N.S.E.W.	——	NORTH, SOUTH, EAST, WEST
MEAS	——	MEASURED
FNDN	——	FOUNDATION
UP	——	UTILITY POLE
O.H.W.	——	OVERHEAD UTILITY CABLES
CB	——	CATCH BASIN
MH	——	MAINTENANCE HOLE
DS/GS	——	DOOR/GARAGE SILL ELEVATION
TC/BC	——	TOP/BOTTOM OF CURB
GM	——	GAS METER
WV	——	WATER VALVE
ø	——	DIAMETER
MW	——	MONITORING WELL
LS	——	LIGHT STANDARD
FH	——	FIRE HYDRANT
○ FR-1	——	FIRE ROUTE SIGNS
⊕	——	BOLLARD

LEGEND

△	MAN DOOR
△	OVERHEAD LOADING DOOR

STUDIO
VERONICA MADONNA ARCHITECT
7 Colwyn Road, Toronto ON.
WorkCo., 39 Advance Road, Etobicoke ON.
416-937-8007

S V
M A

True North

No.	Description	Date
1	**Issued for Review**	**APR. 08/22**
2	**Issued for Review**	**APR. 28/22**
3	**Issued for Pre-Consultation Meeting**	**MAY 06/22**
4	**Issued for Review / Coordination**	**MAY 30/22**
5	**Issued for Review / Coordination**	**July 05/22**
6	**Issued for Review / Coordination**	**Aug. 10/22**
7	**Issued for Official Plan Admendment and Zoning By-Law Amendment**	**Sept. 14/22**

Location
Mixed-Use 58-Storey Building
349 Davis Road
Oakville, Ontario L6J 2X2

Page Title
Existing Site Plan
w/ Proposed Building

Project number	22003
Date	JAN.
Drawn by	D.D.
Checked by	V.M.

A100

Scale as noted

APPENDIX B

Correspondence

Aidan Hallsworth

From: Peter Apasnore
Sent: Monday, March 6, 2023 10:51 AM
To: Aquisha Khan; 'Liam Morgan'
Cc: Jonabelle T; Eric Chan; Tricia Collingwood; Aidan Hallsworth
Subject: RE: FW: TIS&PJS Terms of Reference - 349 Davis Road, Oakville
Attachments: 2023.2.23_Midtown Oakville OPA - Recommended Road Modification (PIC).pdf

Hi Aquisha,

Thanks for the input. Please see my responses/notes in blue below.

Also are these official 1st Submission comments?

Peter Apasnore, M.A.Sc., P.Eng., PTOE
Project Engineer, Transportation
211 Yonge Street, Suite 600 | Toronto, ON M5B 1M4
T: 416.477.3392

Crozier Connections:

Read our latest news and announcements here.

From: Aquisha Khan <aquisha.khan@oakville.ca>
Sent: February 27, 2023 3:59 PM
To: 'Liam Morgan' <liam@corbettlandstrategies.ca>
Cc: Jonabelle T <jonabelle@corbettlandstrategies.ca>; Peter Apasnore <papasnore@cfcrozier.ca>; Eric Chan <eric.chan@oakville.ca>; Tricia Collingwood <tricia.collingwood@oakville.ca>
Subject: RE: FW: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hi Liam;

Sorry for the delayed response. Comments were provided for the 1st submission for updating the TIS report.

The updates should include the following:

- A sensitivity analysis illustrating how this development would anticipate operational access with the proposed road network outlined in the approved Midtown EA proposed road-network. The MOCEA has a road going through the site, so it impossible to incorporate this request, hence the reason for maintaining the existing road network and assessing road improvement requirements to accommodate the development. Note that a road

network modification figure similar to attached was shared with the MOCEA review team for consideration in the Town Initiated Official Plan Amendment.

- Provide information of any proposed Active Transportation connectivity to this development. This as well as other TDM measures for the site is provided as part of Section 8 of the TIS.
- The parking justification study (this is a section that is to justify the shortfall/surplus and how it compares to the zoning bylaw and the surrounding area expectations. Noted, please check my other email for response to this.
- Turning Movement Plans (illustration of the turning movement templates of the anticipated vehicles access the development). Please refer to Appendix L of the TIS.
- Horizon years should be 5 and 10 years post build-out not post application. This is already the case in the TIS – assumed full buildout of 2025 plus 2030 and 2035 were analyzed and was confirmed in the terms. We can update the full build year if that seems too aggressive.

If you have any questions, please let me know.

Have a wonderful day 😊!

Aquisha Khan, **P. Eng.,**
Transportation Engineer, East Oakville
Transportation Planning Services,
Town of Oakville | P: 905-845-6601, Ext. 3236 | C: 289-952-9345 | www.oakville.ca

---

From: Liam Morgan <liam@corbettlandstrategies.ca>
Sent: February 15, 2023 2:16 PM
To: Aquisha Khan <aquisha.khan@oakville.ca>
Cc: Jonabelle T <jonabelle@corbettlandstrategies.ca>; Peter Apasnore <papasnore@cfcrozier.ca>
Subject: Re: FW: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hi Aquisha,

CLS and Crozier are currently working on updating the TIS for the Town of Oakville; however, we wanted to confirm what additional information or revisions are required to be added to the TIS. From our understanding a TOR has been approved for the TIS, so, with that being the case, can you just confirm what updates, if any, need to be made to the TIS that would allow this report to be approved by the Town.

Best regards,

Liam Morgan
Associate Development Planner, Development Planning

Corbett Land Strategies Inc.

(289) 684-9717

liam@corbettlandstrategies.ca

Aidan Hallsworth

From: Krusto, Matt <Matt.Krusto@halton.ca>
Sent: Wednesday, March 23, 2022 2:46 PM
To: Aidan Hallsworth
Cc: Campbell, Michaela
Subject: TIS&PJS Terms of Reference - 349 Davis Road, Oakville
Attachments: 2022 01 18_349 Davis Rd_Revised Site Plan.pdf; 10307801 - TRAFALGAR @ SOUTH SERVICE.pdf; 10307701 - TRAFALGAR @ CORNWALL.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Aidan,

Thank you for the terms of reference for your transportation study.

I have reviewed the terms of reference (below) and have the following transportation planning comments from Halton.

For the Transit mode splits, as well as TDM & Active Transportation assumptions, please use:

Halton's Transportation Master Plan 2011 utilizes a transit mode split of 10% for 2021, 15% for 2026 and 20% for 2031. Assumption of travel via other modes (active transportation i.e.: walk, cycle) should utilize a 5% mode split for 2026. Transportation Demand Management (TDM) assumptions of 3% for 2026 would also be acceptable. **Transit mode splits will need to be adjusted from the 2011 TMP assumptions to reasonable percentages based on current year (2022) and "2025/2030/2035" planned and proposed mode splits (based on existing facilities and service in the area to date (planned &/or proposed). Reasonable assumptions and rationale must be clearly outlined in the Study.**

The proposed analysis of the weekday a.m. and p.m. peak periods, considering the existing (2022) scenario, the full-buildout year (assumed by 2025), along with five-years (2030) and ten-years (2035) beyond buildout, per MTO guidelines, is acceptable.

As requested, please find attached a 2019 TMC for Trafalgar at South Service Road.

For the study area intersection proposed, please add Trafalgar Road at Cornwall Road. The 2019 TMC is also attached.

Traffic Data/Growth Rate:

Any Regional information (traffic counts, signal timing) if needed, can be obtained from Halton through a request to our Road Operations staff at trafficdatarequets@halton.ca

Please use a 2% growth rate.

Trafalgar Road:

The timing of the implementation of the Trafalgar Road HOV lanes is undetermined at this time. As noted in the terms of reference, please assume the existing lane configuration along this section on Trafalgar Road.

Halton – Access, TIS Guidelines:

The Study must be in accordance to Halton Region's Transportation Impact Study Guidelines (2015).

Background Developments:

Town staff will provide all background developments to consider as part of the study.

Other general Study comments include:

The TIS report will include:

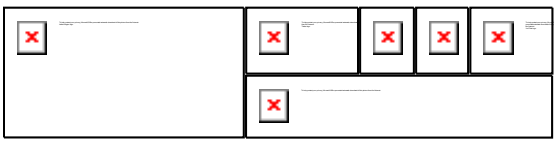
- *Site Plan and Map,*
- *Size & Number of Development Phases,*
- *Existing Conditions (Study Area Intersections, Road Network, Pedestrian Routes, Cycling Routes, Transit Services),*
- *Existing Traffic Conditions (Site Operating Characteristics, Data Collection/Traffic Counts, Analysis Periods (5 years Ahead),*
- *Future Background Conditions (Horizon Years, Horizon Year Volumes)*
- *Background Traffic Demand (with TMC's < 2 years old),*
- *Background Traffic Demand Forecast (with acceptable growth rates)*
- *Site Generated Traffic (Transit Modal Split, Trip Generation/Distribution/Assignment)*
- *Future Total Traffic Demand,*
- *Capacity Analysis (by Intersection, with LOS, Avg. Delay, V/C ratios),*
- *Traffic Impacts (Tables – Total Traffic with/without Mitigation)*
- *Access Considerations – Existing, Proposed, Geometrics (turn lanes, sight lines),*
- *Recommendations - Identify required/recommended road improvements either as a result of the development impacts, or general non-development improvements.*
- *TDM recommendations (Transit, Pedestrian & Cycling Facilities Analysis)*
- *Conclusions*

The above is also subject to the review and approval by both Town of Oakville and the Ministry of Transportation.

Thanks again for circulating.

Matt

Matt Krusto
Supervisor, Transportation Development Review
Infrastructure Planning & Policy
Public Works
Halton Region
905-825-6000, ext. 7225 | 1-866-442-5866



From: Campbell, Michaela <Michaela.Campbell@halton.ca>
Sent: March 17, 2022 10:06 AM
To: ahallsworth@cfcrozier.ca
Cc: Krusto, Matt <Matt.Krusto@halton.ca>
Subject: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hello Aidan,

I have been forwarded your email to Bernie regarding a Terms of Reference for a Traffic Impact Study for the proposal development located at 349 Davis Road in Oakville.

Please find Matt Krusto cc'd in this email. He is the Supervisor for Transportation Development that will be able to comment on your Terms of Reference.

Please let me know if you have any additional questions.

Thank you,
Michaela

Per the attached conceptual site plan, the development proposes:

- A 20-storey mixed use building comprised of:
  - Four (4) commercial units with a combined Gross Floor Area (GFA) of 1,042m^2
  - Six (6) office units with a combined Gross Floor Area (GFA) of 3,583.2m^2
  - A total of 98 residential apartment dwelling units
- A total of 235 vehicle parking spaces located across a two-level underground parking garage, a three (3) level above-ground parking garage, and a surface parking lot
- A single full-moves site access connection to Davis Road

Transportation Impact Study – Scope:

The Transportation Impact Study will be completed in accordance with the Halton Region Traffic Impact Study Guidelines (January 2015) and the MTO's General Guidelines for the Preparation of Traffic Impact Studies (February 2021).

- It is understood that the site is located within the Midtown Oakville Growth Area per the Town's Official Plan (as of August 31, 2021). The Traffic Impact Study will not consider the proposed Cross Avenue realignment and Cross Avenue QEW EB off-ramp given these improvements would impact the current development proposal. Instead, the study will analyze transportation impacts given the existing road network and recommend improvements to the network, as required. Apart from the conversion of Trafalgar Road to 4+2HOV lanes, road improvements will be identified based on the existing road network configuration as required for the future background and future total scenarios.

- Analysis of the weekday a.m. and p.m. peak periods will suffice. The TIS scope will consider the existing (2022) scenario, the full-buildout year (assumed by 2025), along with five-years (2030) and ten-years (2035) beyond buildout, per MTO guidelines.

Aidan Hallsworth

From: White, Mark J. (MTO) <Mark.J.White@ontario.ca>
Sent: Wednesday, April 27, 2022 11:25 AM
To: Aidan Hallsworth
Cc: Peter Apasnore
Subject: RE: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Good afternoon Aidan,

Please see below comments regarding the Traffic ToR.

1. The ministry has noted that a couple of developments have come in that will be impacting the QEW/Trafalgar interchange. The ministry would prefer the submission of one combined TIS for all developments that would use the QEW/Trafalgar Road interchange.
    a. In case, each developer submits separate TIS, then MTO will review, on first come first serve basis.
2. Existing road network will be used for all analysis.
   In case, a developer proposes any addition/modification to existing road network, it should be developer's responsibility and be part of the project.
   If a particular road improvement by the Town/Region is included in the TIS then a written confirmation by the Town/Region MUST be provided otherwise the TIS will not be accepted.
3. QEW/Trafalgar Road IC: Traffic analysis would be acceptable using single IC.
4. Traffic forecasts (2% annually) would be acceptable for the TISs.

Please let me know if you have any questions.

Thanks,

Mark White
Corridor Management Planner
Ministry of Transportation | Central Region
159 Sir William Hearst Ave. 7th Floor,
Toronto, ON M3M 0B7
Mark.j.white@ontario.ca

From: Aidan Hallsworth <ahallsworth@cfcrozier.ca>
Sent: April 20, 2022 2:26 PM
To: White, Mark J. (MTO) <Mark.J.White@ontario.ca>
Cc: Peter Apasnore <papasnore@cfcrozier.ca>
Subject: RE: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hi Mark,

Hope all is well. I'm following up again on the Transportation Impact Study Terms of Reference for 349 Davis Road that was sent over a month ago now. We would greatly appreciate feedback at the earliest on our proposed scope of work.

Aidan Hallsworth

From: Peter Apasnore
Sent: Friday, April 22, 2022 7:31 AM
To: Aidan Hallsworth
Subject: FW: TIS&PJS Terms of Reference - 349 Davis Road, Oakville
Attachments: 166_SouthServiceRd_PreliminarySitePlan_2021-11-24.pdf

Peter Apasnore, M.A.Sc., P.Eng., PTOE | Project Engineer
DID: 416.842.0029

From: Aquisha Khan <aquisha.khan@oakville.ca>
Sent: April 21, 2022 7:35 PM
To: Peter Apasnore <papasnore@cfcrozier.ca>
Subject: RE: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hi Peter;

It was a pleasure chatting with you today. As per our discussions please find my comments below.

Regards

Aquisha Khan, P. Eng.
Transportation Engineer,
Transportation Strategy Department,
Town of Oakville | P: 905-845-6601 | www.oakville.ca

From: Peter Apasnore <papasnore@cfcrozier.ca>
Sent: April 12, 2022 12:16 PM
To: Aquisha Khan <aquisha.khan@oakville.ca>
Cc: Matt Krusto <matt.krusto@halton.ca>; Aidan Hallsworth <ahallsworth@cfcrozier.ca>; Jonabelle T <jonabelle@corbettlandstrategies.ca>; John Corbett <john@corbettlandstrategies.ca>
Subject: RE: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hi Aquisha,

Thanks for your input. Please see responses to your comments below in green.

I left you a voicemail yesterday regarding this as well and I'm happy to chat further.

Thank you,

Peter Apasnore, M.A.Sc., P.Eng., PTOE | Project Engineer
211 Yonge Street, Suite 600 | Toronto, ON M5B 1M4
T: 416.477.3392

Crozier Connections:

Read our latest news and announcements here.

From: Aquisha Khan <aquisha.khan@oakville.ca>
Sent: April 8, 2022 10:32 AM
To: Aidan Hallsworth <ahallsworth@cfcrozier.ca>
Cc: Peter Apasnore <papasnore@cfcrozier.ca>; Matt Krusto <matt.krusto@halton.ca>
Subject: RE: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hello Aidan/Peter;

Please find my comments for the proposed scope of work on the above mentioned development below. If you have any questions or concerns, please feel free to contact me.

Regards;
Aquisha Khan, P. Eng.
Transportation Engineer,
Transportation and Engineering Department,
Town of Oakville | P: 905-845-6601 | www.oakville.ca

Complete our Community Development customer service survey

Aquisha Khan, P. Eng.
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext.3236 | www.oakville.ca

Vision: To be the most livable town in Canada

From: Aidan Hallsworth <ahallsworth@cfcrozier.ca>
Sent: March 31, 2022 10:44 AM
To: Aquisha Khan <aquisha.khan@oakville.ca>
Cc: Syed Rizvi <syed.rizvi@oakville.ca>; Peter Apasnore <papasnore@cfcrozier.ca>
Subject: RE: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hello again,

Following up on the below Terms of Reference sent out over two weeks ago. If you could provide your feedback on our proposed scope at the earliest, that would be greatly appreciated.

Thanks,

Aidan Hallsworth | Engineering Intern
211 Yonge Street, Suite 301 | Toronto, ON M5B 1M4
T: 416.477.3392

CROZIER
CONSULTING ENGINEERS

Crozier Connections:

Read our latest news and announcements here.

From: Syed Rizvi <syed.rizvi@oakville.ca>
Sent: Monday, March 21, 2022 11:48 AM
To: Aidan Hallsworth <ahallsworth@cfcrozier.ca>
Cc: Aquisha Khan <aquisha.khan@oakville.ca>
Subject: FW: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hi Aidan,

The proposed development is located in the Town's East District and Aquisha Khan is the Transportation Engineer for the East District of Town, by way of copying her in this email she will provide comments on the TOR upon her return to office next week.

Thanks,
Syed

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

From: Aidan Hallsworth <ahallsworth@cfcrozier.ca>
Sent: March 15, 2022 1:31 PM
To: Syed Rizvi <syed.rizvi@oakville.ca>; Bernie.Stager@halton.ca; Graham Routledge <graham.routledge@ontario.ca>
Cc: Peter Apasnore <papasnore@cfcrozier.ca>
Subject: TIS&PJS Terms of Reference - 349 Davis Road, Oakville

Hello all,

We are reaching out to present a Terms of Reference for a Traffic Impact Study (TIS) and Parking Justification Study (PJS) for the proposed mixed-use development at 349 Davis Road in the Town of Oakville.

Our proposed workplan is presented below. I have underlined a couple important items that require responses from each of you. We would appreciate your feedback on our proposed Terms of Reference. Should you have any questions or concerns, please feel free to contact me or Peter Apasnore (cc'd), we would be more than happy to discuss.

Thank you,

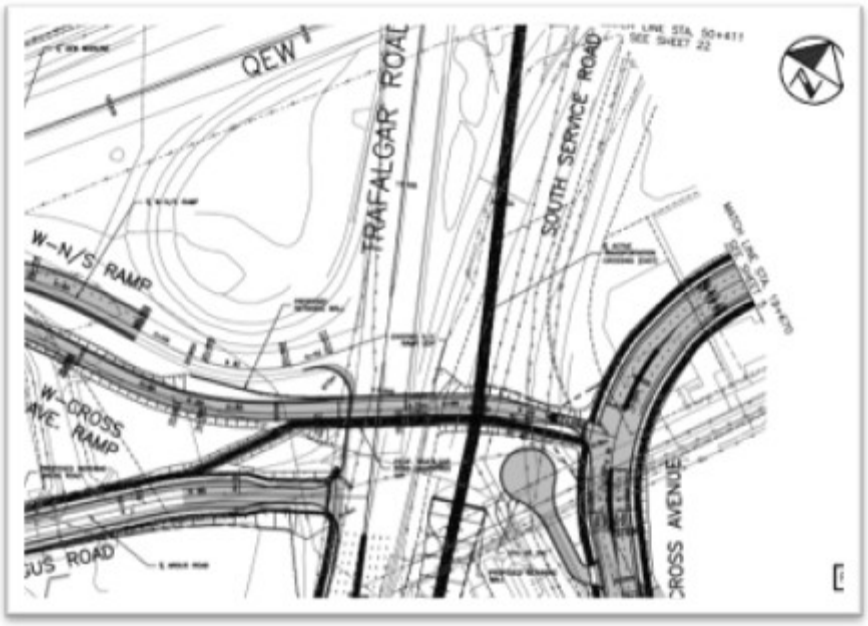
Per the attached conceptual site plan, the development proposes:

- A 20-storey mixed use building comprised of:
  - Four (4) commercial units with a combined Gross Floor Area (GFA) of 1,042m^2
  - Six (6) office units with a combined Gross Floor Area (GFA) of 3,583.2m^2
  - A total of 98 residential apartment dwelling units
- A total of 235 vehicle parking spaces located across a two-level underground parking garage, a three (3) level above-ground parking garage, and a surface parking lot
- A single full-moves site access connection to Davis Road

Transportation Impact Study – Scope:

The Transportation Impact Study will be completed in accordance with the Halton Region Traffic Impact Study Guidelines (January 2015) and the MTO's General Guidelines for the Preparation of Traffic Impact Studies (February 2021).

- It is understood that the site is located within the Midtown Oakville Growth Area per the Town's Official Plan (as of August 31, 2021). The Traffic Impact Study will not consider the proposed Cross Avenue realignment and Cross Avenue QEW EB off-ramp given these improvements would impact the current development proposal. Instead, the study will analyze transportation impacts given the existing road network and recommend improvements to the network, as required. Apart from the conversion of Trafalgar Road to 4+2HOV lanes, road improvements will be identified based on the existing road network configuration as required for the future background and future total scenarios.
  [AK:] The site has to consider the proposed Cross Avenue realignment and Cross Avenue QEW EB off-ramp as outlined in the approved 2013 EA study. Town staff will not accept the assessment without the inclusion of the Cross Avenue realignment and the Cross Avenue QEW off-ramp.
  Please refer to the image below, which was taken from Sheet 2, Appendix K of the Midtown Oakville Final Environmental Study Report.



As shown above, the Cross Avenue realignment and ramp intersection is within the 349 Davis Road site. Our understanding based on the first pre-consultation is the City is supportive of an application for the site. We are unable to consider the subject intersection or realignment in this study as it renders the site undevelopable and traffic analysis for the site will make no sense. As such, as noted already, the study will focus on analyzing the existing transportation network and recommend improvements as required.***[AK:]*** The EA study needs to be incorporated.

- Analysis of the weekday a.m. and p.m. peak periods will suffice. The TIS scope will consider the existing (2022) scenario, the full-buildout year (assumed by 2025), along with five-years (2030) and ten-years (2035) beyond buildout, per MTO guidelines.***[AK:]*** Please include 2045 in your horizon analysis.
  Please clarify why a 2045 horizon is required to assess the transportation impacts to the proposed development. Previous transportation studies for developments of similar context and scope (e.g., the noted studies for the 157 Cross Avenue and 485 Trafalgar Road / 271 Cornwall Road background developments) did not analyze a 2045 horizon. Further, the Region of Halton TIS guidelines outline a horizon year of five years beyond the existing scenario, and ten years as requested by Halton Region staff. The MTO TIS guidelines outline the horizons as originally proposed. Therefore, it is our opinion that horizons years of 2025, 2030, and 2035 are sufficient to assess the transportation impacts of the development proposal. ***[AK:]*** Please disregard the 2045 horizon.

- Analysis of the following study intersections will suffice:
    - Trafalgar Road and North Service Road East / QEW WB off-ramp
    - Trafalgar Road and QEW EB off-ramp
    - Trafalgar Road and South Service Road East / Cross Avenue
    - South Service Road East and Davis Road***[AK:]*** (this intersection should include the off-ramp volumes anticipated for future horizons as per the Midtown Oakville EA)
    - Davis Road and the proposed site access

[AK:] the study intersection should include the following for the future horizons that aligns with the existing Midtown Oakville EA study:

- Davis Road & North South Crossing
- Cross Avenue Realignment and Station Road
- Trafalgar Road & QEW WB on-ramp
- Trafalgar Road & WEQ EB on-ramp

Noted, The on-ramp intersections to Trafalgar Road noted above will be included within the proposed scope of work.

Per the Mid-Town study, Davis Road is not planned to be kept, except to retain an access to the existing 354 Davis Road site. Therefore, Davis Road & North South Crossing does not exist and can't be analyzed. Further, as previously outlined, improvements in the Midtown EA that impact the development proposal cannot be considered within the scope, therefore, the Cross Avenue / Station Road intersections will not be included in the TIS scope. ***[AK:]*** These intersections are forecasted in the EA study and should be assessed as future intersections.

- Existing, future background and future total traffic operations will be analyzed using Synchro 11. Standard traffic operations metrics for signalized and unsignalized intersections including delays, volume-to-capacity ratios, and 95th percentile queue length will be analyzed and reported on.***[AK:]*** ok

- Traffic counts will be commissioned at the above noted study intersections along South Service Road East. We will compare the results of the traffic survey with the Halton Region traffic survey at Trafalgar Road & South Service Road (2017) to understand if and/or what pandemic traffic demand adjustments shall be applied to the above noted study intersections. @Syed Rizvi or @Bernie.Stager@halton.ca, *if you could advise if there are more recent pre-pandemic counts conducted at this intersection, or refer us to the appropriate contact, we would greatly appreciate it.****[AK:]*** *please undertake new traffic counts for the existing horizon(2022) for study intersections and compare with the pre-pandemic counts.*

- Traffic counts were previously conducted in 2019 at the MTO ramp terminal study intersections as part of the Olde Oakville Transportation Study (July 2019, by R.J. Burnside & Associates Limited). These traffic counts from 2019 will be grown to 2022 levels using the growth rates that will be applied for the future traffic volume projections.***[AK:]*** see comment above

Per request, traffic counts will be undertaken at the study intersection and will be compared with the pre-pandemic counts, where applicable. The more conservative volumes will be used and volume balancing applied as applicable.

- Traffic operations will be analyzed using Synchro 11. Standard operational measures of effectiveness will be analyzed and reported on. (ie. level of service, control delay, volume-to-capacity ratios, and 95th percentile queues).***[AK:]*** ok

- Per the Region of Halton Transportation Master Plan (2011), modification of Trafalgar Road to a 4+2 Lanes for Transit/HOV configuration has been identified as an improvement near the subject site in the 2031 Transportation System. *@Bernie.Stager@halton.ca: Please advise on the timing of this change, otherwise we will assume current configuration.* When HOV lanes are to be implemented, per the Region of Halton TIS guidelines, we will assign a lane utilization factor of 0.80 for each HOV lane.

- Future traffic growth projections:

    - *@Syed Rizvi: As discussed above, the Midtown Oakville EA improvements make the development proposal undevelopable. Therefore, unless otherwise advised, we will only consider the two background developments identified on the Town of Oakville's development applications website to capture background growth in the Midtown Oakville area:*
        - 271 Cornwall Road and 485 Trafalgar Road – Two mixed use buildings (14 and 19 storeys)
        - 157 Cross Avenue – A 26 storey mixed use building

    [AK:] please include these as background developments, calculate the trip generations where applicable:

        - Empress Capital Group Ltd. c/o API Development Consultants Inc. - 170 North Service Road West - Z.1517.18 & OPA 1517.18 ***[AK:]*** Please disregard this intersection. I didn't realize it was outside the midtown study area.
        - Region of Halton - 320 Davis Road - 1612.017/02

    The 320 Davis Road development will be added to the proposed scope. As far as can be ascertained, a transportation study was not prepared for this pumper station building expansion. Given the pumper station land use does not have widely available applicable traffic data to estimate background traffic volumes, site traffic will instead be estimated based on traffic volumes associated with the west approach (which is access to the site). Gross Floor Area increment will be used to estimate expected traffic growth resulting from the building expansion.

    The 170 North Service Road West development is located approximately 2Km away from the 349 Davis Road site. The background development is located near the QEW/403 highway interchange with Dorval Drive. It is not expected this site will have a material impact to the proposed study intersections. We propose to exclude this background development from the study scope – please confirm.

    [AK:] As per our discussion, the additional background development is as follows:

        - 166 South Service Road (see attached for preliminary site plan) – these buildings will consist of approximately 1,720 residential high-rise units. Please include in your assessment.

    - *@Bernie.Stager@halton.ca: Please advise on what approach the Region prefers for estimating traffic growth along Trafalgar Road.* If traffic data to support growth rates is not available, an industry standard growth rate of 2% per annum will be used.

    - *@Graham Routledge: Please advise on growth rates to apply to the MTO ramps.* If traffic data to support growth rates is not available, an industry standard growth rate of 2% per annum will be used.

- Site Trip Generation will be forecasted using the Institute of Transportation Engineers' Trip Generation Manual, 11th Edition. Site trips will be distributed to the road network using the 2016 Transportation Tomorrow Survey Data.***[AK:]*** ok

- Comparison of the future background and total traffic operations will be performed to identify if capacity issues are to occur per the development proposal herein and recommend mitigation measures, as necessary.***[AK:]*** ok

- The proposed full-moves site access will be reviewed from a safety perspective with regards to design vehicle maneuverability, drive sight lines, intersection spacing, and corner clearance. The safety assessment will be based on the standards set out by the Transportation Associates of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR).***[AK:]*** ok

- Existing and future Transportation Demand Management (TDM) opportunities will be reviewed along with site specific measures that may be implemented to reduce SOV trips and promote non-auto transportation.***[AK:]*** ok

Parking Justification Study – Scope:

- Review the Town's minimum parking requirements according to the Town's Zoning By-Law No. 2014-014 and compare with the proposed supply. Further, the parking supply will be compared to the rates identified in the Midtown Oakville Parking Strategy.***[AK:]*** ok
- Forecast the peak parking demand and determine whether the parking supply is sufficient to meet the calculated demand, using the Institute of Transportation Engineers Parking Generation Manual 5th Edition and Transportation Tomorrow Survey Data, as applicable.***[AK:]*** ok
- We will utilize previously conducted parking surveys from proxy sites with similar characteristics to the proposed development to support a reduced parking rate.***[AK:]*** ok
- Identify Transportation Demand Management (TDM) opportunities available to the site and assess potential site-specific measures that may be used to further support a reduced parking supply.***[AK:]*** ok
- Based on the findings, confirm the adequacy or shortfall of the proposed parking supply and provide recommendations.***[AK:]*** ok

Aidan Hallsworth | Engineering Intern
211 Yonge Street, Suite 301 | Toronto, ON M5B 1M4
T: 416.477.3392

CROZIER
CONSULTING ENGINEERS

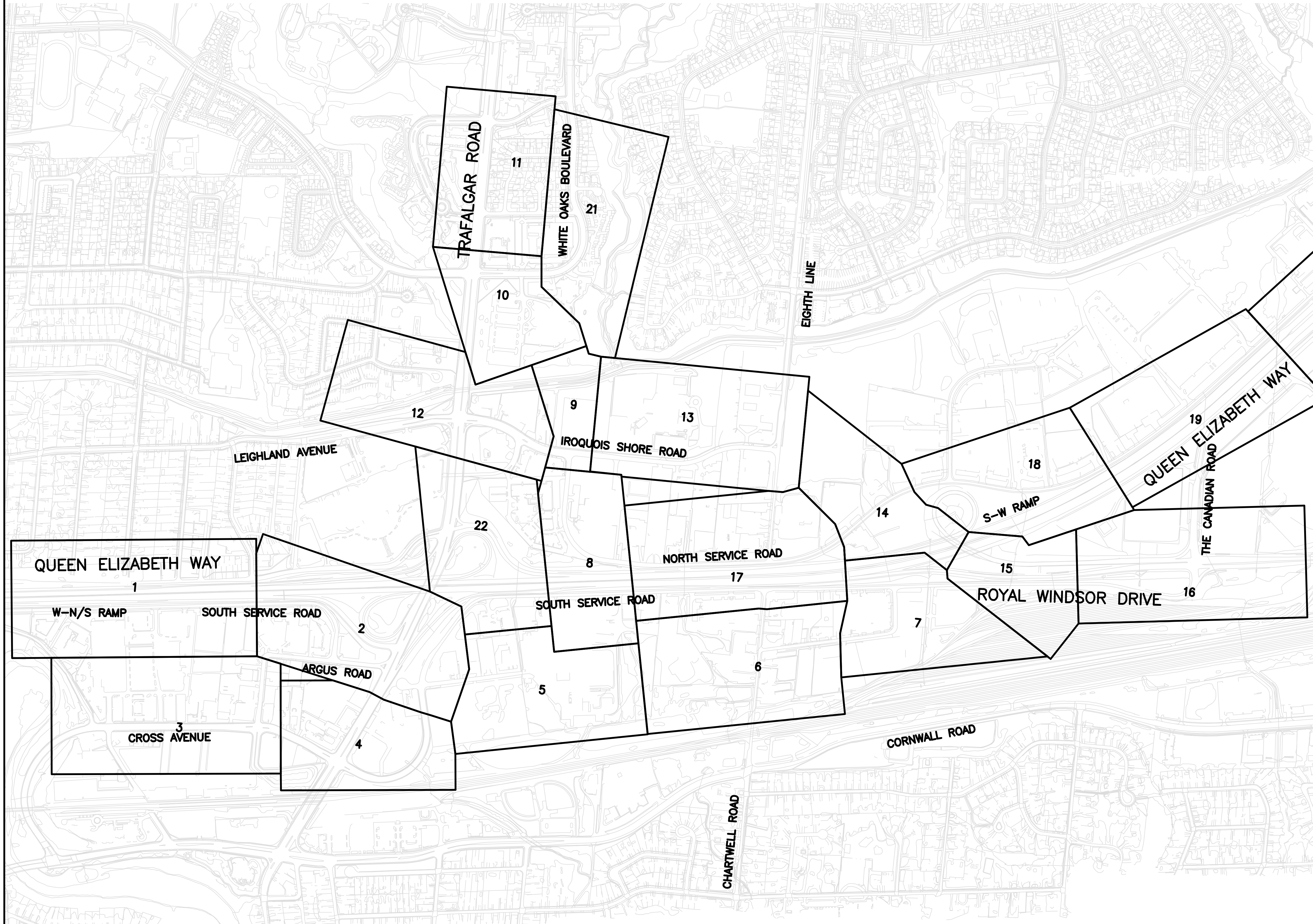
Crozier Connections:

Read our latest news and announcements here.

APPENDIX C

Midtown Oakville EA Excerpts

APPENDIX K
PRELIMINARY DESIGN



Nº	Date	By	REVISIONS	MANU	CAD
1	JUN 14	ROS	FINAL REPORT	SS	IZ

Design ROS | Ch'kd DS | Date JUNE 2014

Drawn IZ | Ch'kd DS

Scale 1:2000 Horiz. 1:200 Vert. | References

COLE ENGINEERING

OAKVILLE

Town of Oakville

Engineering and Construction

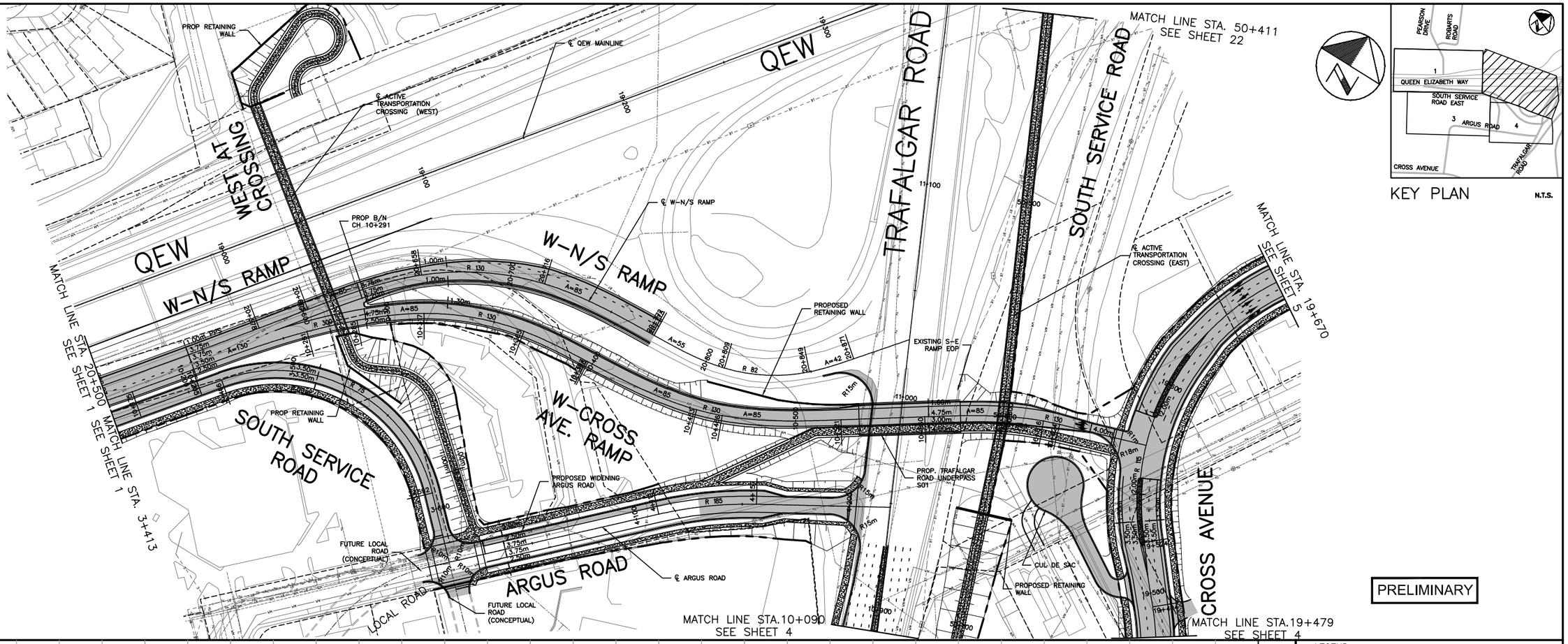
MIDTOWN OAKVILLE EA

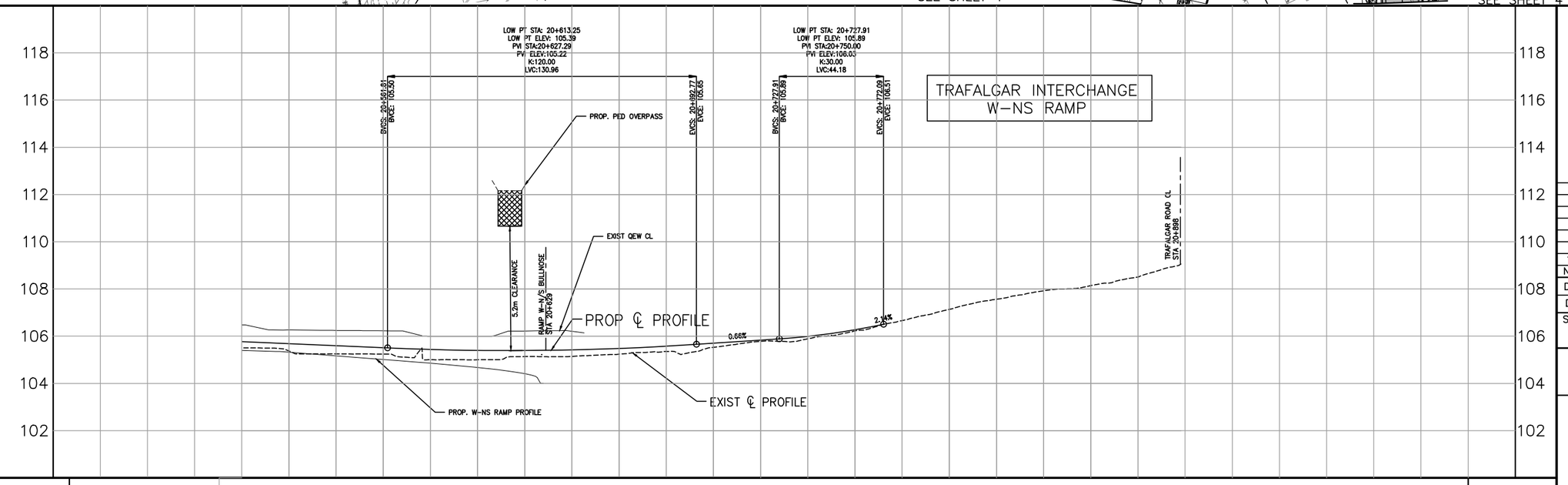
SHEET LAYOUT PLAN

IN THE TOWN OF OAKVILLE

Consultant File Nº TR11-767 | Municipal Drawing Nº

CONTRACT Nº | Drawing Nº SHEET 0 OF 36





℄ ELEVATIONS		105.501 106.477	105.376 106.88	105.251 106.59	105.246 106.51	105.004 106.44	105.002 106.40	105.137 106.39	105.143 106.48	105.238 106.68	105.352 106.58	105.528 106.76	105.784 106.85	105.880 106.99	106.223 106.87	106.661	107.135	107.562	107.924	108.141	108.506	℄ ELEVATIONS
CHAINAGE		20+500	20+520	20+540	20+560	20+580	20+600	20+620	20+640	20+660	20+680	20+700	20+720	20+740	20+760	20+780	20+800	20+820	20+840	20+860	20+880	CHAINAGE

LEGEND

- PROPOSED ROAD / WIDENING
- PROPOSED SIDEWALK / MEDIAN
- EXISTING ROW
- PROPOSED ROW
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING GASMAIN
- EXISTING BELL CABLE
- EXISTING COGECO / ROGERS CABLE
- EXISTING HYDRO CABLE

NO	Date	By	REVISIONS	MANU	CAD
1	JUN 14	ROS	FINAL REPORT	SS	IZ

Design	ROS	Ch'kd	DS	Date JUNE 2014
Drawn	IZ	Ch'kd	DS	

Scale 1:2000 Horiz. 40 20 0 40
1:200 Vert. 4.0 2.0 0 4.0

References

COLE ENGINEERING
70 VALLEYWOOD DRIVE, MARKHAM, ON L3R 4T5
T 416.487.4101 905.940.6161 F 905.940.2064

OAKVILLE

Town of Oakville

Engineering and Construction

MIDTOWN OAKVILLE EA

TRAFALGAR ROAD INTERCHANGE

FROM STA. 20+500 TO STA.20+733
IN THE TOWN OF OAKVILLE

Consultant File NO	Municipal Drawing NO
TR11-767	
CONTRACT NO	Drawing NO
	SHEET 2 OF 36

midtown OAKVILLE

Midtown Oakville Transportation and Stormwater Municipal Class Environmental Assessment Final Report

June 2014

Volume 1 of 3
Report and Appendices A to C

Create it! Vision 2057

OAKVILLE

6. Design Elements of the Preferred Concept

This section describes the engineering features and mitigation measures for the preferred concept identified in **Section 5**. The preferred concept for Midtown Oakville was developed and refined with input from the project team, technical agencies, and various stakeholders, and includes the following:

Improvements to the QEW Trafalgar Road Interchange

- Realignment of the existing eastbound QEW off-ramp
- New eastbound QEW direct off-ramp to Cross Avenue
- New multi-use trail from Argus Road to Cross Avenue under Trafalgar Road
- Realignment of South Service Road
- Realignment of Argus Road

Improvements to the QEW Royal Windsor Drive Interchange

- New westbound QEW off-ramp
- New eastbound QEW on-ramp, including auxiliary lane to Ford Drive off-ramp
- Realignment of eastbound QEW off-ramp
- New eastbound QEW direct off-ramp to Cross Avenue
- Widening and extension of Royal Windsor Drive to to Iroquois Shore Road at Eighth Line
- Realignment of North Service Road
- Realignment of South Service Road

New North-South Crossing across QEW

- Provides pedestrian / cyclist facilities
- Provides dedicated bus lanes
- Provides general purpose lanes
- Accommodates potential widening of the QEW that may be contemplated by MTO

Extension of Cross Avenue

- New connection from Trafalgar Road to Royal Windsor Drive
- Provides pedestrian / cyclist facilities
- Accommodates general purpose lanes
- Accommodates lay-by parking where appropriate

Widening of Iroquois Shore Road

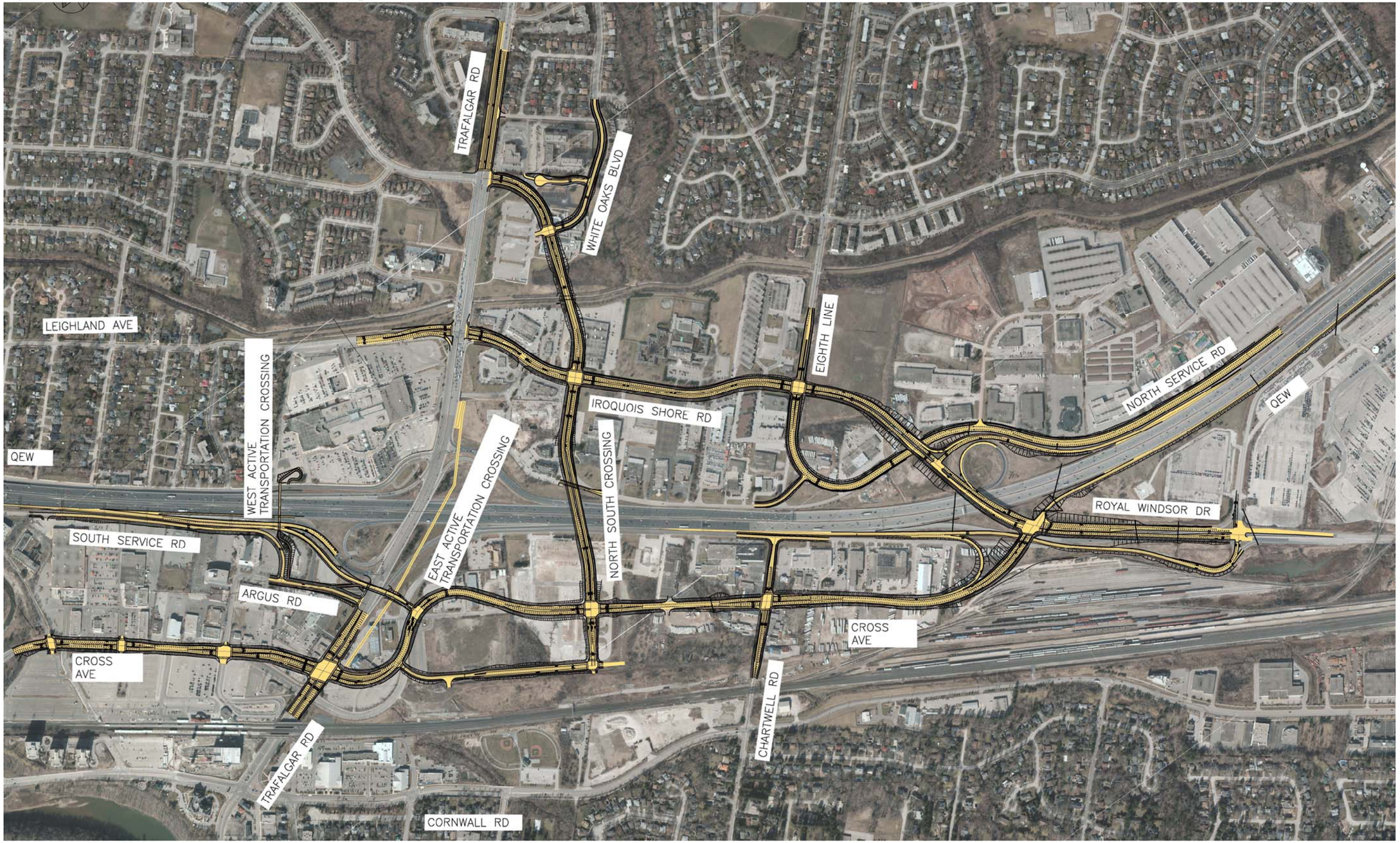
- Provides continuous pedestrian / cyclist facilities on both sides of the road
- Accommodates one additional general purpose lane in each direction plus a median turn lane

Active Transportation Crossings across QEW

- Active transportation crossing of QEW on the east side of Trafalgar Road
- Active transportation crossing of QEW on the west side of Trafalgar Road

Figure 6-1 shows the overall preliminary design of the recommended concept for Midtown Oakville.

Figure 6-1: Preliminary Design of Recommended Concept



This page intentionally left blank.

6.1. Road Characteristics and Typical Sections

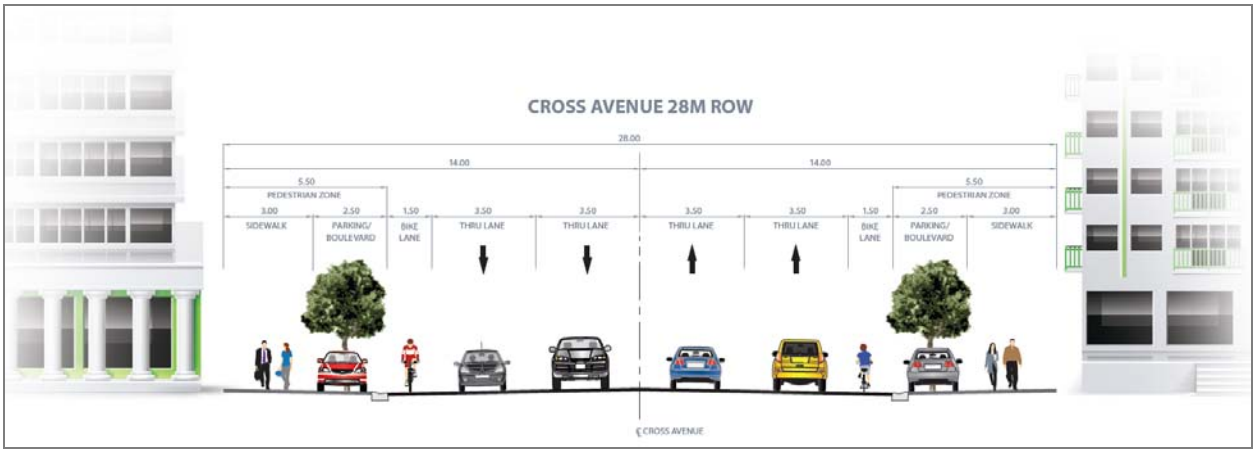
Midtown Oakville is to be transformed into a complete mixed use community with offices, condominiums, civic spaces, parks and plazas. Roadways are envisaged as main streets or commercial/employment corridors with accommodation for pedestrians, cyclists, public transit, and general purpose traffic. A description of the role and function of the roadways in Midtown Oakville are provided below.

6.1.1. Cross Avenue

Cross Avenue is proposed to be the "main street" for Midtown Oakville. It will be a multi-modal corridor serving pedestrians, cyclists, public transit, and general purpose traffic. West of Trafalgar Road, Cross Avenue will have more of a pedestrian-focused streetscape. East of Trafalgar Road, the extension of Cross Avenue will primarily serve commercial/employment lands.

Within the proposed right-of-way of 28 m, Cross Avenue will have four 3.5 m general purpose travel lanes, two 1.5 m bike lanes, and 5.5 m boulevards as shown in **Figure 6-2**. The 5.5 m boulevards are intended to include 3.0 m sidewalks and 2.5 m lay-by parking. In areas without lay-by parking, the full 5.5 m boulevard is designated as a pedestrian zone.

Figure 6-2: Cross Avenue Cross-section



6.1.2. North-South Crossing

The North-South Crossing is proposed to be a multi-modal corridor serving transit, cyclists, pedestrians, and general purpose traffic. Reserved bus lanes are proposed from Trafalgar Road to the proposed bus loop located on the east side of Trafalgar Road. North of Iroquois Shore Road, the North-South Crossing will have a 28 m right-of-way. South of Iroquois Shore Road, the North-South Crossing will need a 32 m right-of-way to accommodate median turn lanes.

Within the proposed 28 m right-of-way, the North-South Crossing will have two 3.5 m general purpose lanes, two 3.75 m transit lanes, two 1.5 m bike lanes, two 2.5 m boulevards, and a 3.0 m multi-use trail on one side, and a 1.5 m sidewalk on the other side as shown in **Figure 6-3**. Where a 32 m right-of-way is required, a 5.0 m median will be provided which is intended to accommodate exclusive turn lanes at the intersection with Cross Avenue as shown in **Figure 6-4**.

Figure 6-3: North-South Crossing Cross-section (North of Iroquois Shore Road)

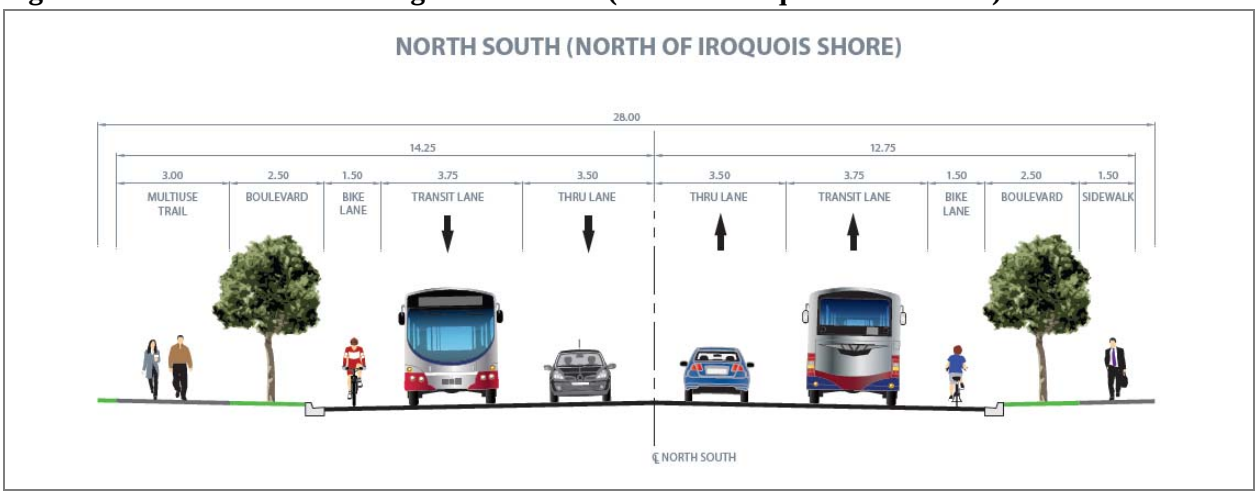
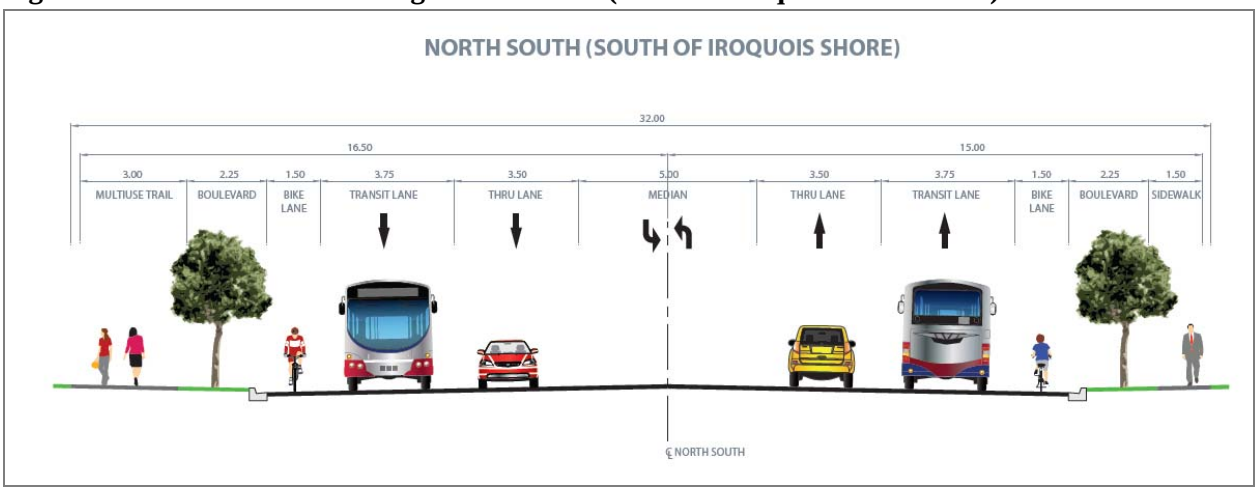


Figure 6-4: North-South Crossing Cross-section (South of Iroquois Shore Road)



6.1.3. Royal Windsor Drive

Royal Windsor Drive is a multi-modal corridor serving transit, cyclists, pedestrians, and general purpose traffic. The extension to Iroquois Shore Road provides new opportunities for all users. North of QEW, Royal Windsor Drive will have a 32 m right-of-way. South of QEW, Royal Windsor Drive will need a 36 m right-of-way to accommodate median turn lanes.

Within the proposed 32 m right-of-way, Royal Windsor Drive will have four 3.5 m general purpose lanes, two 3.0 m boulevards, and a 3.0 m bike trail and 2.0 m multi-use trail on one side as shown in **Figure 6-5**. Where a 36 m right-of-way is required, Royal Windsor Drive will have four 3.5 m general purpose lanes, 9.0 median, with a right turn lane on one side, and a 2.5 m boulevard, a 3.0 m bike trail and a 2.0 m multi-use trail on the other side as shown in **Figure 6-6**.

Figure 6-5: Royal Windsor Drive Cross-section (North of QEW)

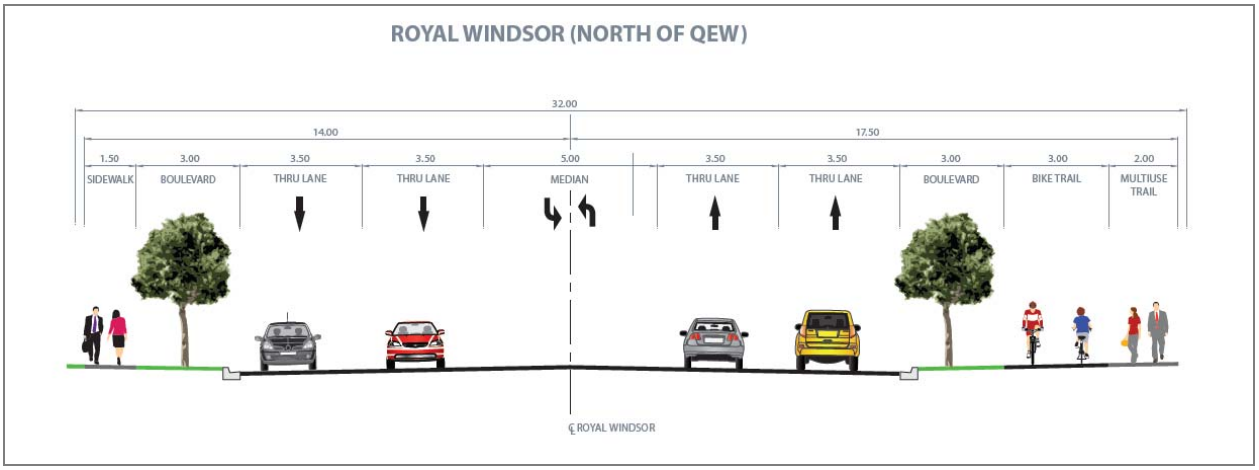
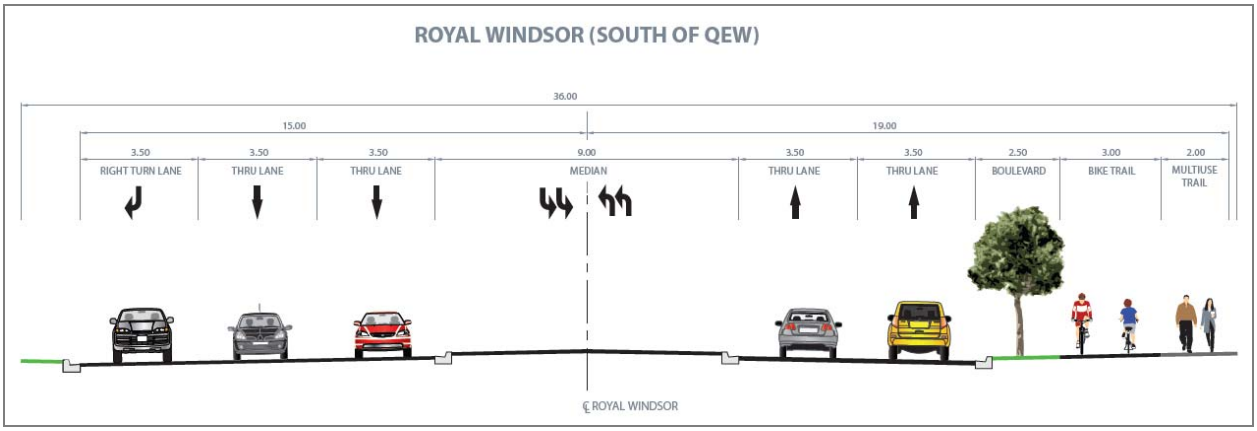


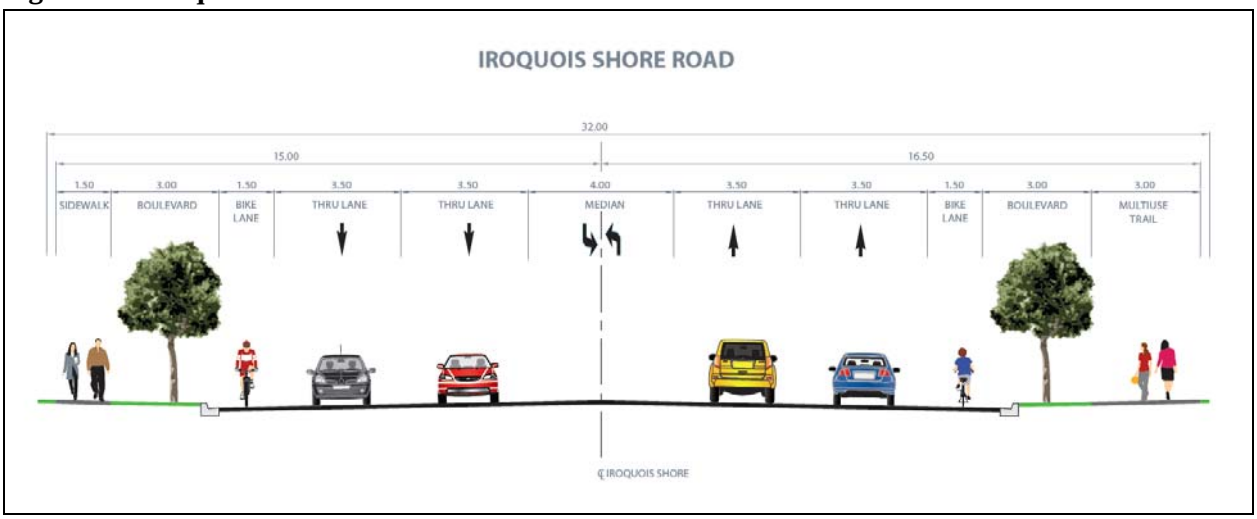
Figure 6-6: Royal Windsor Drive Cross-section (South of QEW)



6.1.4. Iroquois Shore Road

Iroquois Shore Road is a multi-modal corridor serving transit, cyclists, pedestrians, and general purpose traffic. The widening of Iroquois Shore Road will provide benefits to all users. Iroquois Shore Road will have a 32 m right-of-way, which will accommodate four 3.5 m general purpose lanes, two 1.5 m bike lanes, two 3.0 m boulevards, one 3.0 m multi-use trail, and one 1.5 m sidewalk as shown in **Figure 6-7**.

Figure 6-7: Iroquois Shore Road Cross-section



6.1.5. East Active Transportation Crossing

An active transportation crossing of the QEW is provided on the east side of Trafalgar Road which enables cyclists and pedestrians to cross the QEW and all associated ramps within a separated right-of-way. This crossing offers users a direct connection between Oakville Place Drive and the Oakville GO station along the east side of Trafalgar Road. The closeness of the crossing to Trafalgar Road makes it an ideal alternative for those wishing to walk or cycle northbound or southbound along Trafalgar Road which presents opportunities for conflicts between vehicles and cyclists and pedestrians. Due to the redevelopment of Midtown Oakville over the next decade or so, it is anticipated the crossing will accommodate many residents, visitors, and employees within the area.

This facility is contained within a separated right-of-way for cyclists and pedestrians only. It is equipped with stairs/ramps and resting areas for users on both the ascent and descent. At the highest point (i.e. across the QEW), cyclists and pedestrians would be allowed to travel without exerting substantial effort as the slopes are designed to be compliant with Accessibility for Ontarians with Disabilities Act (AODA) standards.

6.1.6. West Active Transportation Crossing

An active transportation crossing of the QEW is provided on the west side of Trafalgar Road which connects the southwest corner of Oakville Place and the adjacent residential neighbourhood to Midtown Oakville and the Oakville Gestation, as well as other areas south of the QEW and west of Trafalgar Road. The crossing was limited in terms of the flexibility of its location due to an existing pier which was previously constructed for this crossing (approximately 300 m west of Trafalgar Road). However, due to the redevelopment of Midtown Oakville over the next decade or so, it is anticipated the crossing will accommodate many residents, visitors, and employees within the area.

APPENDIX D

Transit Information

01 - 18

Route numbers
Numéros des trajets

Lakeshore West

CONTACT US

1-888-438-6646
416-869-3200
TTY/ATS:
1-800-387-3652

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

Face coverings are mandatory on GO Transit. Let's keep each other safe.

Le port d'un masque est obligatoire lors de vos trajets sur GO Transit. Protégeons notre santé les uns les autres.

Lakeshore West

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

METROLINX

LW **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 route 18 /
Inclut le trajet 18 d'autobus GO

Effective / À partir de:
25 JUNE JUIN 2022

How to read our schedules

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

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

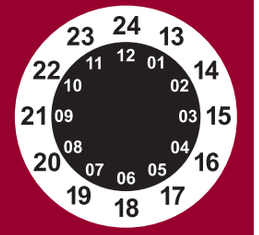
Step 3
Look across the rows for available departure times.

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

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00

Noon to midnight
12 01 - 24 00



Legend

- Train trips
- Bus trips
- → Trip does not serve this location.
- ↓ Check below for connecting trips.
- GO Train service is accessible to passengers using mobility devices at this location.
- GO Bus service is accessible to passengers using mobility devices at this location.
- GO Train & GO Bus service is accessible to passengers using mobility devices at this location.
- Parking available.

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

Notes

h Trip holds for connection from bus.

Bicycles

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

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

Comment lire nos horaires

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

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

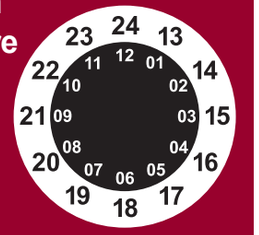
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

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

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00

De midi à minuit:
12 01 - 24 00



Légende

- Horaire des trains
- Horaire des autobus
- → Trajet ne sert pas cette station.
- ↓ Vérifiez les trajets de correspondance cidessous.
- Service de trains GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.
- Service d'autobus GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.
- Les services de trains et d'autobus GO sont accessibles aux utilisateurs d'un appareil d'aide à la mobilité à cet endroit.
- Stationnement disponible.

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

Notes

h Attentes des trajets pour les connexions d'autobus.

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)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Niagara Falls GO	St. Catharines Brock University	St. Catharines St. Catharines GO	Beamsville Ontario St. @ QEW	Grimsby Casablanca Blvd. @ QEW	Centennial Pkwy. N. @ QEW	Hamilton West Harbour GO	Hamilton Hamilton GO Centre	Hamilton King St. W. @ Dundurn St. N.	Burlington Aldershot GO	Transfer - Correspondances	Trip Number - Numéro du parcours	Burlington Aldershot GO	Burlington Burlington GO	Burlington Appleby GO	Oakville Bronte GO	Oakville Oakville GO	Mississauga Clarkson GO	Mississauga Port Credit GO	Etobicoke Long Branch GO	Etobicoke Mimico GO	Toronto Exhibition GO	Toronto Union Station
			84 Dp	83	83	82	81		18 Dp	18 Dp	18	17 Ar			17 Dp	16	15	14	13	12	10	59	79	2	2 Ar
18G	18020								04 15	04 19	04 30	→			04 30	04 40	→	→	04 55↓	→	→	→	→	→	05 25
18H														18022					04 55**h**	05 05	05 15	→	→	→	05 40
18	18040								04 25	04 29	04 40		1004		04 55	05 01	05 07	05 12	05 18	05 25	05 31	05 37	05 44	05 51	06 00
	1704								05 13	→	→	05 25	→		05 25	05 31	05 37	05 42	05 48	05 55	06 01	06 07	06 14	06 21	06 30
18	18090								05 25	05 29	05 40		1006		05 55	06 01	06 07	06 12	06 18	06 25	06 31	06 37	06 44	06 51	07 00
	1706								06 13	→	→	06 25	→		06 25	06 31	06 37	06 42	06 48	06 55	07 01	07 07	07 14	07 21	07 30
18	18170								06 25	06 29	06 40		1008		06 55	07 01	07 07	07 12	07 18	07 25	07 31	07 37	07 44	07 51	08 00
	1808								06 55	→	07 10	→			07 10	07 16	07 22	07 27	07 33	07 40	07 46	07 52	07 59	08 06	08 15
	1908	05 57	→	06 20	→	→	→	07 13	→	→	07 25	→			07 25	07 31	07 37	07 42	07 48	07 55	08 01	08 07	08 14	08 21	08 30
	1810								07 25	→	07 40	→			07 40	07 46	07 52	07 57	08 03	08 10	08 16	08 22	08 29	08 36	08 45
18	18250								07 23	07 30	07 40		1010		07 55	08 01	08 07	08 12	08 18	08 25	08 31	08 37	08 44	08 51	09 00
18	18290								07 53	08 00	08 10↓														
	1710								08 13	→	→	08 25	→		08 25	08 31	08 37	08 42	08 48	08 55	09 01	09 07	09 14	09 21	09 30
18	18340									08 23	08 30	08 40		1012	08 55	09 01	09 07	09 12	09 18	09 25	09 31	09 37	09 44	09 51	10 00
18	18370									08 53	09 00	09 10↓													
	1712								09 13	→	→	09 25	→		09 25	09 31	09 37	09 42	09 48	09 55	10 01	10 07	10 14	10 21	10 30
18	18400									09 25	09 32	09 40		1014	09 55	10 01	10 07	10 12	10 18	10 25	10 31	10 37	10 44	10 51	11 00
18	18420									09 55	10 02	10 10↓													
	1714								10 13	→	→	10 25	→		10 25	10 31	10 37	10 42	10 48	10 55	11 01	11 07	11 14	11 21	11 30
18K	18440			08 50	09 04	09 26	09 37	09 51	10 09	10 20	10 27	10 40		1016	10 55	11 01	11 07	11 12	11 18	11 25	11 31	11 37	11 44	11 51	12 00
	1716								11 13	→	→	11 25	→		11 25	11 31	11 37	11 42	11 48	11 55	12 01	12 07	12 14	12 21	12 30
18K	18490			09 50	10 04	10 26	10 37	10 51	11 09	11 20	11 27	11 40		1018	11 55	12 01	12 07	12 12	12 18	12 25	12 31	12 37	12 44	12 51	13 00
	1718								12 13	→	→	12 25	→		12 25	12 31	12 37	12 42	12 48	12 55	13 01	13 07	13 14	13 21	13 30
18	18530									12 25	12 32	12 40		1020	12 55	13 01	13 07	13 12	13 18	13 25	13 31	13 37	13 44	13 51	14 00
	1720								13 13	→	→	13 25	→		13 25	13 31	13 37	13 42	13 48	13 55	14 01	14 07	14 14	14 21	14 30
18K	18570			11 50	12 04	12 26	12 37	12 51	13 09	13 20	13 27	13 40		1022	13 55	14 01	14 07	14 12	14 18	14 25	14 31	14 37	14 44	14 51	15 00

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 GO	St. Catharines Brock University	St. Catharines St. Catharines GO	Beamsville Ontario St. @ QEW	Grimsby Casablanca Blvd. @ QEW	Centennial Pkwy. N. @ QEW	Hamilton West Harbour GO	Hamilton Hamilton GO Centre	Hamilton King St. W. @ Dundurn St. N.	Burlington Aldershot GO	Transfer - Correspondances	Trip Number - Numéro du parcours	Burlington Aldershot GO	Burlington Burlington GO	Burlington Appleby GO	Oakville Bronte GO	Oakville Oakville GO	Mississauga Clarkson GO	Mississauga Port Credit GO	Etobicoke Long Branch GO	Etobicoke Mimico GO	Toronto Exhibition GO	Toronto Union Station
			84 Dp	83	83	82	81		18 Dp	18 Dp	18	17 Ar			17 Dp	16	15	14	13	12	10	59	79	2	2 Ar
	1722								14 13	→	→	14 25	→		14 25	14 31	14 37	14 42	14 48	14 55	15 01	15 07	15 14	15 21	15 30
18	18610									14 23	14 33	14 40		1024	14 55	15 01	15 07	15 12	15 18	15 25	15 31	15 37	15 44	15 51	16 00
	1724								15 13	→	→	15 25	→		15 25	15 31	15 37	15 42	15 48	15 55	16 01	16 07	16 14	16 21	16 30
18K	18650			13 50	14 04	14 26	14 37	14 51	15 09	15 20	15 27	15 40		1026	15 55	16 01	16 07	16 12	16 18	16 25	16 31	16 37	16 44	16 51	17 00
	1726								16 13	→	→	16 25	→		16 25	16 31	16 37	16 42	16 48	16 55	17 01	17 07	17 14	17 21	17 30
18	18690									16 23	16 33	16 40		1028	16 55	17 01	17 07	17 12	17 18	17 25	17 31	17 37	17 44	17 51	18 00
	1728								17 13	→	→	17 25	→		17 25	17 31	17 37	17 42	17 48	17 55	18 01	18 07	18 14	18 21	18 30
18K	18730			15 50	16 04	16 26	16 37	16 51	17 09	17 20	17 27	17 40		1030	17 55	18 01	18 07	18 12	18 18	18 25	18 31	18 37	18 44	18 51	19 00
	1730								18 13	→	→	18 25	→		18 25	18 31	18 37	18 42	18 48	18 55	19 01	19 07	19 14	19 21	19 30
18K	18770			16 50	17 04	17 26	17 37	17 51	18 09	18 20	18 27	18 40		1032	18 55	19 01	19 07	19 12	19 18	19 25	19 31	19 37	19 44	19 51	20 00
18	18790									18 55	19 02	19 10↓													
	1732								19 13	→	→	19 25	→		19 25	19 31	19 37	19 42	19 48	19 55	20 01	20 07	20 14	20 21	20 30
	1034														19 55	20 01	20 07	20 12	20 18	20 25	20 31	20 37	20 44	20 51	21 00
18K	18830			18 20	18 34	18 56	19 07	19 21	19 39	19 50	19 57	20 10↓													
	1734								20 13	→	→	20 25	→		20 25	20 31	20 37	20 42	20 48	20 55	21 01	21 07	21 14	21 21	21 30
18	18860									20 55	21 02	21 10↓													
	1036														20 55	21 01	21 07	21 12	21 18	21 25	21 31	21 37	21 44	21 51	22 00
	1736								21 13	→	→	21 25	→		21 25	21 31	21 37	21 42	21 48	21 55	22 01	22 07	22 14	22 21	22 30
	1038														21 55	22 01	22 07	22 12	22 18	22 25	22 31	22 37	22 44	22 51	23 00
18K	18880			20 25	20 38	21 00	21 11	21 25	21 43	21 53	22 00	22 10↓													
	1738								22 13	→	→	22 25	→		22 25	22 31	22 37	22 42	22 48	22 55	23 01	23 07	23 14	23 21	23 30
	1040														22 55	23 01	23 07	23 12	23 18	23 25	23 31	23 37	23 44	23 51	00 01
18	18920									22 55	23 02	23 10↓													
	1740								23 13	→	→	23 25	→		23 25	23 31	23 37	23 42	23 48	23 55	00 01	00 07	00 14	00 21	00 30

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→	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	Burlington 17 Dp	Hamilton 18	Hamilton 18	Hamilton 18 Ar	Stoney Creek 80 Ar	Grimsby 81	Beamsville 82	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	Trip Number - Numéro du parcours	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	Brock University	Niagara Falls GO
18K														18061	06 11	06 19	6 29h	06 38	06 55	07 08	07 17	07 40	08 01	
18C	18051		05 29	→	→	→	05 49	06 02	06 16	06 27	06 37	06 49	06 59	→	06 59	07 06	07 19							
18K	1005		06 15	06 22	06 30	06 36	06 41	06 48	06 55	07 01	07 07	07 13	07 20	18071	07 28h	07 36	07 46	07 55	08 12	08 25	08 34	08 57	09 18	
	1705		06 45	06 52	07 00	07 06	07 11	07 18	07 25	07 31	07 37	07 43	07 50	→	07 50	→	→	08 03						
18	1007		07 15	07 22	07 30	07 36	07 41	07 48	07 55	08 01	08 07	08 13	08 20	18121	08 28h	08 36	08 46							
	1707		07 45	07 52	08 00	08 06	08 11	08 18	08 25	08 31	08 37	08 43	08 50	→	08 50	→	→	09 03						
18K	1009		08 15	08 22	08 30	08 36	08 41	08 48	08 55	09 01	09 07	09 13	09 20	18161	09 28h	09 36	09 46	09 55	10 12	10 25	10 34	10 57	11 18	
	1709		08 45	08 52	09 00	09 06	09 11	09 18	09 25	09 31	09 37	09 43	09 50	→	09 50	→	→	10 03						
18	1011		09 15	09 22	09 30	09 36	09 41	09 48	09 55	10 01	10 07	10 13	10 20	18191	10 28h	10 36	10 46							
	1711		09 45	09 52	10 00	10 06	10 11	10 18	10 25	10 31	10 37	10 43	10 50	→	10 50	→	→	11 03						
18K	1013		10 15	10 22	10 30	10 36	10 41	10 48	10 55	11 01	11 07	11 13	11 20	18201	11 28h	11 36	11 46	11 55	12 12	12 25	12 34	12 54	13 13	
	1713		10 45	10 52	11 00	11 06	11 11	11 18	11 25	11 31	11 37	11 43	11 50	→	11 50	→	→	12 03						
18	1015		11 15	11 22	11 30	11 36	11 41	11 48	11 55	12 01	12 07	12 13	12 20	18241	12 28h	12 36	12 46							
	1715		11 45	11 52	12 00	12 06	12 11	12 18	12 25	12 31	12 37	12 43	12 50	→	12 50	→	→	13 03						
18K	1017		12 15	12 22	12 30	12 36	12 41	12 48	12 55	13 01	13 07	13 13	13 20	18281	13 28h	13 36	13 46	13 55	14 12	14 25	14 34	14 54	15 13	
	1717		12 45	12 52	13 00	13 06	13 11	13 18	13 25	13 31	13 37	13 43	13 50	→	13 50↓	→	→	14 03						
18														18331	14 00h	14 08	14 18							
18K	1019		13 15	13 22	13 30	13 36	13 41	13 48	13 55	14 01	14 07	14 13	14 20	18371	14 28h	14 36	14 46	14 55	15 12	15 25	15 34	15 57	16 18	
	1719		13 45	13 52	14 00	14 06	14 11	14 18	14 25	14 31	14 37	14 43	14 50	→	14 50↓	→	→	15 03						
18														18411	15 00h	15 08	15 20							
18K	1021		14 15	14 22	14 30	14 36	14 41	14 48	14 55	15 01	15 07	15 13	15 20	18451	15 28h	15 36	15 48	15 58	16 17	16 30	16 39	17 02	17 23	
	1721		14 45	14 52	15 00	15 06	15 11	15 18	15 25	15 31	15 37	15 43	15 50	→	15 50↓	→	→	16 03						
18														18491	16 00h	16 08	16 20							
18	1023		15 15	15 22	15 30	15 36	15 41	15 48	15 55	16 01	16 07	16 13	16 20	18541	16 28h	16 38	16 50							
	1723		15 45	15 52	16 00	16 06	16 11	16 18	16 25	16 31	16 37	16 43	16 50	→	16 50↓	→	→	17 03						
18K	1025		16 15	16 22	16 30	16 36	16 41	16 48	16 55	17 01	17 07	17 13	17 20	18571	17 28h	17 38	17 50	18 00	18 17	18 30	18 39	19 02	19 23	
	1825		16 30	16 37	16 45	16 51	16 56	17 03	17 10	17 16	17 22	17 28	17 35	→	17 35	→	17 52							
	1725		16 45	16 52	17 00	17 06	17 11	17 18	17 25	17 31	17 37	17 43	17 50	→	17 50↓	→	→	18 03						
18														18641	18 00h	18 10	18 22							
	1927		17 00	17 07	17 15	17 21	17 26	17 33	17 40	17 46	17 52	17 58	18 05	→	18 05	→	→	18 18	→	→	→	19 08	→	19 33

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→	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	Burlington 17 Dp	Hamilton 18	Hamilton 18	Hamilton 18 Ar	Stoney Creek 80 Ar	Grimsby 81	Beamsville 82	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	Trip Number - Numéro du parcours	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	Brock University	Niagara Falls GO
	1027		17 15	17 22	17 30	17 36	17 41	17 48	17 55	18 01	18 07	18 13	18 20											
	1827		17 30	17 37	17 45	17 51	17 56	18 03	18 10	18 16	18 22	18 28	18 35	→	18 35	→	18 52							
	1727		17 45	17 52	18 00	18 06	18 11	18 18	18 25	18 31	18 37	18 43	18 50	→	18 50↓	→	→	19 03						
18														18721	19 00h	19 07	19 17							
	1029		18 15	18 22	18 30	18 36	18 41	18 48	18 55	19 01	19 07	19 13	19 20											
	1729		18 45	18 52	19 00	19 06	19 11	19 18	19 25	19 31	19 37	19 43	19 50	→	19 50↓	→	→	20 03						
18														18781	20 00h	20 07	20 17							
	1031		19 15	19 22	19 30	19 36	19 41	19 48	19 55	20 01	20 07	20 13	20 20											
	1731		19 45	19 52	20 00	20 06	20 11	20 18	20 25	20 31	20 37	20 43	20 50	→	20 50↓	→	→	21 03						
18														18841	21 00h	21 07	21 15							
	1033		20 15	20 22	20 30	20 36	20 41	20 48	20 55	21 01	21 07	21 13	21 20											
	1733		20 45	20 52	21 00	21 06	21 11	21 18	21 25	21 31	21 37	21 43	21 50	→	21 50↓	→	→	22 03						
18														18871	22 00h	22 07	22 15							
	1035		21 15	21 22	21 30	21 36	21 41	21 48	21 55	22 01	22 07	22 13	22 20											
	1735		21 45	21 52	22 00	22 06	22 11	22 18	22 25	22 31	22 37	22 43	22 50	→	22 50↓	→	→	23 03						
18														18901	23 00h	23 07	23 15							
	1037		22 15	22 22	22 30	22 36	22 41	22 48	22 55	23 01	23 07	23 13	23 20											
	1737		22 45	22 52	23 00	23 06	23 11	23 18	23 25	23 31	23 37	23 43	23 50	→	23 50↓	→	→	00 03						
18														18921	00 00h	00 07	00 15							
	1039		23 15	23 22	23 30	23 36	23 41	23 48	23 55	00 01	00 07	00 13	00 20											
	1739		23 45	23 52	00 01	00 06	00 11	00 18	00 25	00 31	00 37	00 43	00 50	→	00 50↓	→	→	01 03						
18														18941	01 00h	01 07	01 15							
	1041		00 15	00 22	00 30	00 36	00 41	00 48	00 55	01 01	01 07	01 13	01 20											
	1741		00 45	00 52	01 00	01 06	01 11	01 18	01 25	01 31	01 37	01 43	01 50	→	01 50↓	→	→	02 03						
18														18961	02 00h	02 07	02 15							
18C	18971		01 30	→	→	→	01 48	02 00	02 12	02 20	02 30	02 38	02 48	→	02 48	D02 55	D03 05							
18C	18991		02 30	→	→	→	02 48	02 58	03 07	03 15	03 25	03 33	03 43	→	03 43	D03 50	D04 00							

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Niagara Falls 84 Dp	St. Catharines 83	Hamilton 18 Dp	Hamilton 18 Dp	Hamilton 18	Burlington 17 Ar	Transfer - Correspondances	Trip Number - Numéro du parcours	Burlington 17 Dp	Burlington 16	Burlington 15	Oakville 14	Oakville 13	Mississauga 12	Mississauga 10	Etobicoke 59	Etobicoke 79	Toronto 2	Toronto 2 Ar
			Niagara Falls GO	St. Catharines GO	West Harbour GO	Hamilton GO Centre	King St. W. @ Dundurn St. N.	Aldershot GO			Aldershot GO	Burlington GO	Appleby GO	Bronte GO	Oakville GO	Clarkson GO	Port Credit GO	Long Branch GO	Mimico GO	Exhibition GO	Union Station
18B	18050					04 30	04 37	04 45	→		04 45	04 55	→	→	05 10	05 20	05 30	→	→	→	05 55
18	18060					04 55	05 02	05 10↓													
	1704				05 13	→	→	05 25	→		05 25	05 31	05 37	05 42	05 48	05 55	06 01	06 07	06 14	06 21	06 30
	1006										05 55	06 01	06 07	06 12	06 18	06 25	06 31	06 37	06 44	06 51	07 00
18	18070					05 55	06 02	06 10↓													
	1706				06 13	→	→	06 25	→		06 25	06 31	06 37	06 42	06 48	06 55	07 01	07 07	07 14	07 21	07 30
	1008										06 55	07 01	07 07	07 12	07 18	07 25	07 31	07 37	07 44	07 51	08 00
18	18100					06 55	07 02	07 10↓													
	1708				07 13	→	→	07 25	→		07 25	07 31	07 37	07 42	07 48	07 55	08 01	08 07	08 14	08 21	08 30
	1010										07 55	08 01	08 07	08 12	08 18	08 25	08 31	08 37	08 44	08 51	09 00
18	18200					07 55	08 02	08 10↓													
	1710				08 13	→	→	08 25	→		08 25	08 31	08 37	08 42	08 48	08 55	09 01	09 07	09 14	09 21	09 30
18	18300					08 55	09 02	09 10↓													
	1012										08 55	09 01	09 07	09 12	09 18	09 25	09 31	09 37	09 44	09 51	10 00
	1712				09 13	→	→	09 25	→		09 25	09 31	09 37	09 42	09 48	09 55	10 01	10 07	10 14	10 21	10 30
	1014										09 55	10 01	10 07	10 12	10 18	10 25	10 31	10 37	10 44	10 51	11 00
18	18360					09 55	10 02	10 10↓													
	1714				10 13	→	→	10 25	→		10 25	10 31	10 37	10 42	10 48	10 55	11 01	11 07	11 14	11 21	11 30
	1016										10 55	11 01	11 07	11 12	11 18	11 25	11 31	11 37	11 44	11 51	12 00
18	18420					10 55	11 02	11 10↓													
	1716				11 13	→	→	11 25	→		11 25	11 31	11 37	11 42	11 48	11 55	12 01	12 07	12 14	12 21	12 30
	1018										11 55	12 01	12 07	12 12	12 18	12 25	12 31	12 37	12 44	12 51	13 00
	1968	11 15	11 39	→	→	→	12 31	→		12 31	12 37	→	→	12 48	→	12 59	→	→	13 11	13 20	
18	18470					11 53	12 00	12 10↓													
	1718				12 13	→	→	12 25	→		12 25	12 31	12 37	12 42	12 48	12 55	13 01	13 07	13 14	13 21	13 30
	1020										12 55	13 01	13 07	13 12	13 18	13 25	13 31	13 37	13 44	13 51	14 00
18	18510					12 53	13 00	13 10↓													
	1720				13 13	→	→	13 25	→		13 25	13 31	13 37	13 42	13 48	13 55	14 01	14 07	14 14	14 21	14 30
	1022										13 55	14 01	14 07	14 12	14 18	14 25	14 31	14 37	14 44	14 51	15 00

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Niagara Falls 84 Dp	St. Catharines 83	Hamilton 18 Dp	Hamilton 18 Dp	Hamilton 18	Burlington 17 Ar	Transfer - Correspondances	Trip Number - Numéro du parcours	Burlington 17 Dp	Burlington 16	Burlington 15	Oakville 14	Oakville 13	Mississauga 12	Mississauga 10	Etobicoke 59	Etobicoke 79	Toronto 2	Toronto 2 Ar
			Niagara Falls GO	St. Catharines GO	West Harbour GO	Hamilton GO Centre	King St. W. @ Dundurn St. N.	Aldershot GO			Aldershot GO	Burlington GO	Appleby GO	Bronte GO	Oakville GO	Clarkson GO	Port Credit GO	Long Branch GO	Mimico GO	Exhibition GO	Union Station
18	18550					13 53	14 00	14 10↓													
	1722				14 13	→	→	14 25	→		14 25	14 31	14 37	14 42	14 48	14 55	15 01	15 07	15 14	15 21	15 30
	1024										14 55	15 01	15 07	15 12	15 18	15 25	15 31	15 37	15 44	15 51	16 00
18	18590					14 53	15 00	15 10↓													
	1724				15 13	→	→	15 25	→		15 25	15 31	15 37	15 42	15 48	15 55	16 01	16 07	16 14	16 21	16 30
	1026										15 55	16 01	16 07	16 12	16 18	16 25	16 31	16 37	16 44	16 51	17 00
	1976	15 15	15 39	→	→	→	16 31	→		16 31	16 37	→	→	16 48	→	16 59	→	→	17 11	17 20	
18	18630					15 53	16 00	16 10↓													
	1726				16 13	→	→	16 25	→		16 25	16 31	16 37	16 42	16 48	16 55	17 01	17 07	17 14	17 21	17 30
	1028										16 55	17 01	17 07	17 12	17 18	17 25	17 31	17 37	17 44	17 51	18 00
18	18670					16 53	17 00	17 10↓													
	1728				17 13	→	→	17 25	→		17 25	17 31	17 37	17 42	17 48	17 55	18 01	18 07	18 14	18 21	18 30
	1030										17 55	18 01	18 07	18 12	18 18	18 25	18 31	18 37	18 44	18 51	19 00
18	18710					17 55	18 02	18 10↓													
	1730				18 13	→	→	18 25	→		18 25	18 31	18 37	18 42	18 48	18 55	19 01	19 07	19 14	19 21	19 30
	1032										18 55	19 01	19 07	19 12	19 18	19 25	19 31	19 37	19 44	19 51	20 00
18	18750					18 55	19 02	19 10↓													
	1732				19 13	→	→	19 25	→		19 25	19 31	19 37	19 42	19 48	19 55	20 01	20 07	20 14	20 21	20 30
	1034										19 55	20 01	20 07	20 12	20 18	20 25	20 31	20 37	20 44	20 51	21 00
	1984	19 15	19 39	→	→	→	20 31	→		20 31	20 37	→	→	20 48	→	20 59	→	→	21 11	21 20	
18	18790					19 55	20 02	20 10↓													
	1734				20 13	→	→	20 25	→		20 25	20 31	20 37	20 42	20 48	20 55	21 01	21 07	21 14	21 21	21 30
	1036										20 55	21 01	21 07	21 12	21 18	21 25	21 31	21 37	21 44	21 51	22 00
18	18820					20 55	21 02	21 10↓													
	1736				21 13	→	→	21 25	→		21 25	21 31	21 37	21 42	21 48	21 55	22 01	22 07	22 14	22 21	22 30
	1038										21 55	22 01	22 07	22 12	22 18	22 25	22 31	22 37	22 44	22 51	23 00
18	18860					21 55	22 02	22 10↓													
	1738				22 13	→	→	22 25	→		22 25	22 31	22 37	22 42	22 48	22 55	23 01	23 07	23 14	23 21	23 30
	1040										22 55	23 01	23 07	23 12	23 18	23 25	23 31	23 37	23 44	23 51	00 01
18	18920					22 55	23 02	23 10↓													
	1740				23 13	→	→	23 25	→		23 25	23 31	23 37	23 42	23 48	23 55	00 01	00 07	00 14	00 21	00 30

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Toronto 2 Dp	Toronto 2	Toronto 79	Toronto 59	Mississauga 10	Mississauga 12	Oakville 13	Oakville 14	Burlington 15	Burlington 16	Burlington 17 Ar	Transfer - Correspondances / Trip Number - Numéro du parcours	Burlington 17 Dp	Hamilton 18	Hamilton 18 Ar	Hamilton 18 Ar	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	St. Catharines GO	Niagara Falls GO
	1705	06 45	06 52	07 00	07 06	07 11	07 18	07 25	07 31	07 37	07 43	07 50	→	07 50↓	→	→	08 03		
18													18081	08 00h	08 07	08 15			
	1007	07 15	07 22	07 30	07 36	07 41	07 48	07 55	08 01	08 07	08 13	08 20							
	1707	07 45	07 52	08 00	08 06	08 11	08 18	08 25	08 31	08 37	08 43	08 50	→	08 50↓	→	→	09 03		
18													18131	09 00h	09 07	09 15			
	1009	08 15	08 22	08 30	08 36	08 41	08 48	08 55	09 01	09 07	09 13	09 20							
	1709	08 45	08 52	09 00	09 06	09 11	09 18	09 25	09 31	09 37	09 43	09 50	→	09 50↓	→	→	10 03		
18													18171	10 00h	10 07	10 15			
	1959	08 51	08 59	→	→	09 11	→	09 22	→	→	09 34	09 41	→	09 41	→	→	→	10 32	10 57
	1011	09 15	09 22	09 30	09 36	09 41	09 48	09 55	10 01	10 07	10 13	10 20							
	1711	09 45	09 52	10 00	10 06	10 11	10 18	10 25	10 31	10 37	10 43	10 50	→	10 50↓	→	→	11 03		
18													18201	11 00h	11 07	11 15			
	1013	10 15	10 22	10 30	10 36	10 41	10 48	10 55	11 01	11 07	11 13	11 20							
	1713	10 45	10 52	11 00	11 06	11 11	11 18	11 25	11 31	11 37	11 43	11 50	→	11 50↓	→	→	12 03		
18													18241	12 00h	12 07	12 17			
	1015	11 15	11 22	11 30	11 36	11 41	11 48	11 55	12 01	12 07	12 13	12 20							
	1715	11 45	11 52	12 00	12 06	12 11	12 18	12 25	12 31	12 37	12 43	12 50	→	12 50↓	→	→	13 03		
18													18281	13 00h	13 07	13 17			
	1017	12 15	12 22	12 30	12 36	12 41	12 48	12 55	13 01	13 07	13 13	13 20							
	1717	12 45	12 52	13 00	13 06	13 11	13 18	13 25	13 31	13 37	13 43	13 50	→	13 50↓	→	→	14 03		
18													18331	14 00h	14 07	14 17			
	1967	12 51	12 59	→	→	13 11	→	13 22	→	→	13 34	13 41	→	13 41	→	→	→	14 32	14 57
	1019	13 15	13 22	13 30	13 36	13 41	13 48	13 55	14 01	14 07	14 13	14 20							
	1719	13 45	13 52	14 00	14 06	14 11	14 18	14 25	14 31	14 37	14 43	14 50	→	14 50↓	→	→	15 03		
18													18411	15 00h	15 07	15 17			
	1021	14 15	14 22	14 30	14 36	14 41	14 48	14 55	15 01	15 07	15 13	15 20							
	1721	14 45	14 52	15 00	15 06	15 11	15 18	15 25	15 31	15 37	15 43	15 50	→	15 50↓	→	→	16 03		
18													18491	16 00h	16 07	16 17			
	1023	15 15	15 22	15 30	15 36	15 41	15 48	15 55	16 01	16 07	16 13	16 20							
	1723	15 45	15 52	16 00	16 06	16 11	16 18	16 25	16 31	16 37	16 43	16 50	→	16 50↓	→	→	17 03		
18													18541	17 00h	17 07	17 17			

Saturday and Sunday
Samedi et dimanche

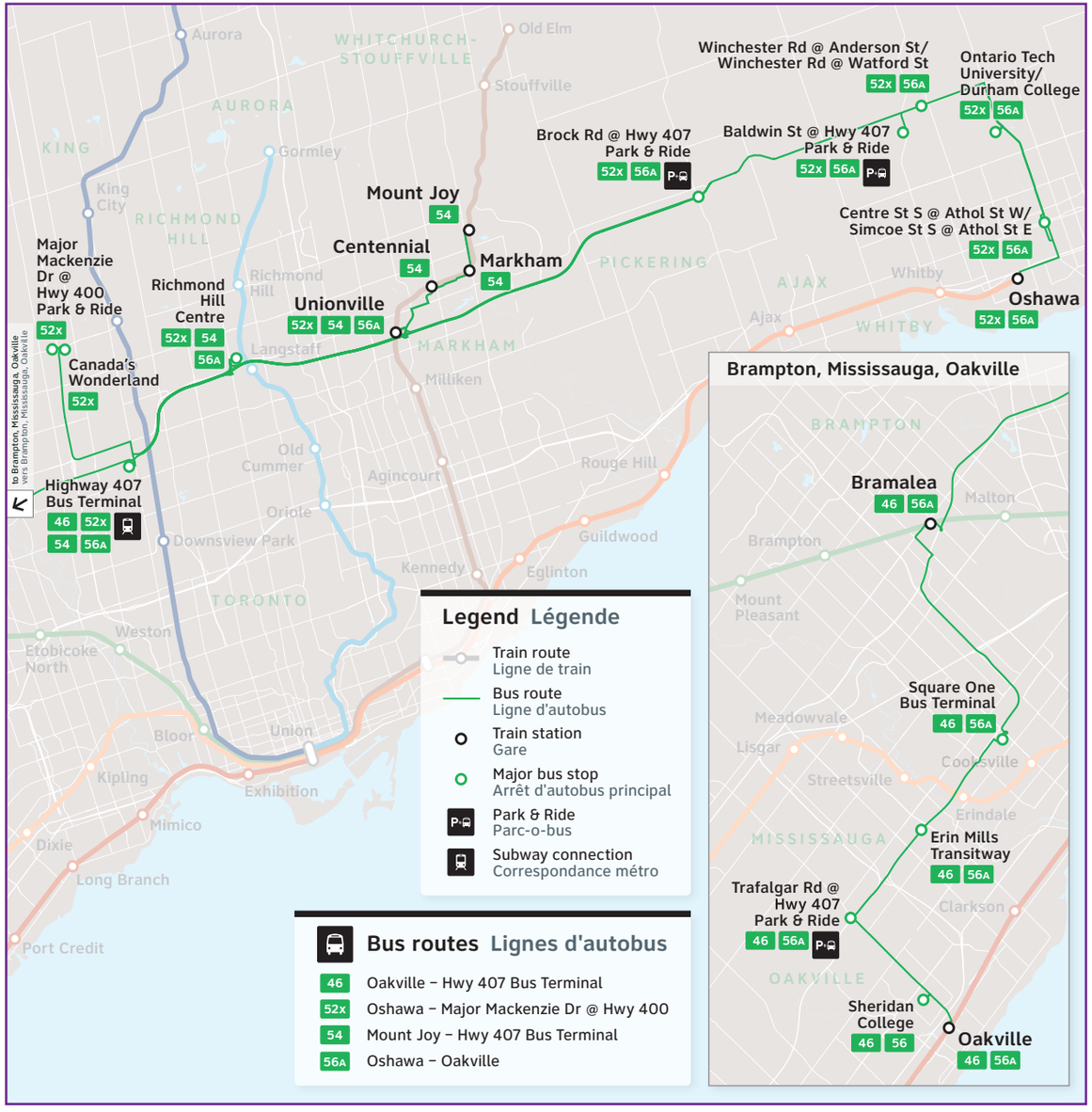
WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Toronto 2 Dp	Toronto 2	Toronto 79	Toronto 59	Mississauga 10	Mississauga 12	Oakville 13	Oakville 14	Burlington 15	Burlington 16	Burlington 17 Ar	Transfer - Correspondances / Trip Number - Numéro du parcours	Burlington 17 Dp	Hamilton 18	Hamilton 18 Ar	Hamilton 18 Ar	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	St. Catharines GO	Niagara Falls GO
	1025	16 15	16 22	16 30	16 36	16 41	16 48	16 55	17 01	17 07	17 13	17 20							
	1725	16 45	16 52	17 00	17 06	17 11	17 18	17 25	17 31	17 37	17 43	17 50	→	17 50↓	→	→	18 03		
18													18641	18 00h	18 07	18 17			
	1975	16 51	16 59	→	→	17 11	→	17 22	→	→	17 34	17 41	→	17 41	→	→	→	18 32	18 57
	1027	17 15	17 22	17 30	17 36	17 41	17 48	17 55	18 01	18 07	18 13	18 20							
	1727	17 45	17 52	18 00	18 06	18 11	18 18	18 25	18 31	18 37	18 43	18 50	→	18 50↓	→	→	19 03		
18													18721	19 00h	19 07	19 17			
	1029	18 15	18 22	18 30	18 36	18 41	18 48	18 55	19 01	19 07	19 13	19 20							
	1729	18 45	18 52	19 00	19 06	19 11	19 18	19 25	19 31	19 37	19 43	19 50	→	19 50↓	→	→	20 03		
18													18781	20 00h	20 07	20 17			
	1031	19 15	19 22	19 30	19 36	19 41	19 48	19 55	20 01	20 07	20 13	20 20							
	1731	19 45	19 52	20 00	20 06	20 11	20 18	20 25	20 31	20 37	20 43	20 50	→	20 50↓	→	→	21 03		
18													18841	21 00h	21 07	21 15			
	1033	20 15	20 22	20 30	20 36	20 41	20 48	20 55	21 01	21 07	21 13	21 20							
	1733	20 45	20 52	21 00	21 06	21 11	21 18	21 25	21 31	21 37	21 43	21 50	→	21 50↓	→	→	22 03		
18													18871	22 00h	22 07	22 15			
	1035	21 15	21 22	21 30	21 36	21 41	21 48	21 55	22 01	22 07	22 13	22 20							
	1735	21 45	21 52	22 00	22 06	22 11	22 18	22 25	22 31	22 37	22 43	22 50	→	22 50↓	→	→	23 03		
18													18901	23 00h	23 07	23 15			
	1037	22 15	22 22	22 30	22 36	22 41	22 48	22 55	23 01	23 07	23 13	23 20							
	1737	22 45	22 52	23 00	23 06	23 11	23 18	23 25	23 31	23 37	23 43	23 50	→	23 50↓	→	→	00 03		
18													18931	00 00h	00 07	00 15			
	1039	23 15	23 22	23 30	23 36	23 41	23 48	23 55	00 01	00 07	00 13	00 20							
	1739	23 45	23 52	00 01	00 06	00 11	00 18	00 25	00 31	00 37	00 43	00 50	→	00 50↓	→	→	01 03		
18													18961	01 00h	01 07	01 15			
	1041	00 15	00 22	00 30	00 36	00 41	00 48	00 55	01 01	01 07	01 13	01 20							
18	1741	00 45	00 52	01 00	01 06	01 11	01 18	01 25	01 31	01 37	01 43	01 50	→	01 50↓	→	→	02 03		
18													18981	02 00h	02 07	02 15			
18C	18991	01 30	→	→	→	01 50	02 02	02 14	02 22	02 32	02 37	02 50	→	02 50	D02 57	D03 10			
18C	18999	02 30	→	→	→	02 48	03 00	03 12	03 20	03 30	03 38	03 48	→	03 48	D03 55	D04 05			

52-54-56

Route number
Numéro du trajet

Oshawa/Oakville



CONTACT US

1-888-438-6646
416-869-3200
TTY/ATS:
1-800-387-3652

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

Face coverings are mandatory on GO Transit. Let's keep each other safe.

Le port d'un masque est obligatoire lors de vos trajets sur GO Transit. Protégeons notre santé les uns les autres.

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:
25 JUNE JUIN **2022**

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.

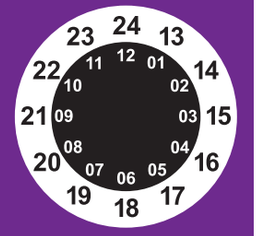
Step 3
Look across the rows for available departure times.

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.

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.

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.

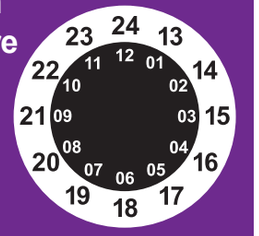
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

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 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.

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	Whitby 51	Pickering 87	Pickering 86	Markham 73	Markham 72	Markham 72	Markham 71	Richmond Hill 60	Vaughan 19 Ar	Vaughan 19 Dp	Brampton 32	Mississauga 20	Mississauga 21	Oakville 13	Oakville 13	Oakville 13 Ar
		Ⓟ ♿	Oshawa GO	♿ Simcoe St. S. @ Athol St. E.	♿ Ontario Tech University/Durham College	Winchester Rd. @ Watford St.	Baldwin St. @ Hwy. 407	Winchester Rd. W. @ Lake Ridge Rd.	Ⓟ ♿ Brock Rd. @ Hwy. 407	Ⓟ ♿ Mount Joy GO	Ⓟ ♿ Main St. N. @ Station St. - Markham GO	Ⓟ ♿ Bullock Dr. @ McCowan Rd. - Centennial GO	Ⓟ ♿ 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
56A	56000		03 45	03 55	04 07	04 14	04 19	04 25	04 33	→	→	→	04 50	05 02	05 15	05 20	05 35	06 00	06 08	06 15	06 22	06 30
56A	56010		04 35	04 45	04 57	05 04	05 09	05 15	05 23	→	→	→	05 40	05 52	06 05	06 10	06 25	06 50	06 58	07 08	07 17	07 25
54	54050									05 40	05 44	05 48	05 55	06 07	06 20							
56A	56030		05 05	05 15	05 27	05 34	05 39	05 45	05 53	→	→	→	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							
56A	56050		05 35	05 45	05 57	06 04	06 09	06 15	06 23	→	→	→	06 40	06 52	07 05	07 10	07 27	07 55	08 03	08 13	08 27	08 35
54	54130									07 00	07 05	07 12	07 25	07 37	07 50							
56A	56100		06 30	06 40	06 53	07 00	07 05	07 11	07 20	→	→	→	07 40	07 52	08 05	08 10	08 27	08 55	09 03	09 13	09 27	09 35
54	54180									07 55	08 00	08 09	08 25	08 37	08 50							
56A	56120		07 05	07 15	07 28	07 37	07 42	07 49	07 58	→	→	→	08 20	08 32	08 45	08 50	09 07	09 35	09 43	09 53	10 02	10 10
56A	56160		07 30	07 40	07 53	08 02	08 07	08 14	08 23	→	→	→	08 45	08 57	09 10	09 15	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							
56A	56180		08 00	08 10	08 23	08 30	08 35	08 41	08 50	→	→	→	09 10	09 22	09 35	09 40	09 55	10 20	10 28	10 38	10 47	10 55
54	54280									10 00	10 05	10 12	10 25	10 37	10 50							
56A	56230		09 00	09 10	09 23	09 30	09 35	09 41	09 50	→	→	→	10 10	10 22	10 35	10 40	10 55	11 20	11 28	11 38	11 47	11 55
54	54320									11 05	11 10	11 15	11 25	11 37	11 50							
56A	56270		10 00	10 10	10 23	10 30	10 35	10 41	10 50	→	→	→	11 10	11 22	11 35	11 40	11 55	12 20	12 28	12 38	12 47	12 55
54	54360									12 05	12 10	12 15	12 25	12 37	12 50							
56A	56310		11 00	11 10	11 23	11 30	11 35	11 41	11 50	→	→	→	12 10	12 22	12 35	12 40	12 55	13 20	13 28	13 38	13 47	13 55
54	54400									13 05	13 10	13 15	13 25	13 37	13 50							
56A	56350		12 00	12 10	12 23	12 30	12 35	12 41	12 50	→	→	→	13 10	13 22	13 35	13 40	13 55	14 20	14 28	14 38	14 52	15 00
54	54440									14 05	14 10	14 15	14 25	14 37	14 50							
56A	56390		12 55	13 05	13 18	13 25	13 30	13 36	13 45	→	→	→	14 05	14 17	14 30	14 35	14 50	15 15	15 23	15 33	15 47	15 55
54	54480									15 00	15 05	15 10	15 20	15 32	15 45							
56A	56430		14 00	14 10	14 23	14 30	14 35	14 41	14 50	→	→	→	15 10	15 22	15 35	15 40	15 55	16 30	16 38	16 48	17 02	17 10
54	54540									16 00	16 05	16 10	16 20	16 32	16 45							
56A	56470		14 55	15 05	15 23	15 30	15 35	15 41	15 50	→	→	→	16 10	16 22	16 35	16 40	17 05	17 40	17 48	17 58	18 12	18 20
56A	56530		16 00	16 10	16 28	16 35	16 40	16 46	16 55	→	→	→	17 15	17 27	17 40	17 45	18 10	18 40	18 48	18 58	19 12	19 20
54	54600									17 05	17 10	17 15	17 25	17 37	17 50							
56A	56590		16 55	17 05	17 23	17 30	17 35	17 41	17 50	→	→	→	18 10	18 22	18 35	18 40	18 55	19 20	19 28	19 38	19 47	19 55
54	54660									18 05	18 10	18 15	18 25	18 37	18 50							
56A	56650		17 55	18 05	18 23	18 30	18 35	18 41	18 50	→	→	→	19 10	19 22	19 35	19 40	19 55	20 20	20 28	20 38	20 47	20 55
56A	56680		18 35	18 45	18 58	19 05	19 10	19 16	19 25	→	→	→	19 45	19 57	20 10	20 15	20 30	20 55	21 03	21 13	21 22	21 30
54	54700									19 05	19 10	19 15	19 25	19 37	19 50							
54	54740									20 05	20 10	20 15	20 25	20 37	20 50							
56A	56720		19 35	19 45	19 57	20 04	20 09	20 15	20 23	→	→	→	20 40	20 52	21 05	21 10	21 25	21 50	21 58	22 08	22 17	22 25
54	54780									21 10	21 14	21 18	21 25	21 37	21 50							
56A	56760		20 35	20 45	20 57	21 04	21 09	21 15	21 23	→	→	→	21 40	21 52	22 05	22 10	22 25	22 50	22 58	23 05	23 12	23 20
54	54820									22 10	22 14	22 18	22 25	22 37	22 50							
56A	56800		21 35	21 45	21 57	22 04	22 09	22 15	22 23	→	→	→	22 40	22 52	23 05	23 10	23 25	23 50	23 58	00 05	00 12	00 20
56A	56830		22 35	22 45	22 57	23 04	23 09	23 15	23 23	→	→	→	23 40	23 52	00 05	00 10	00 25	00 50	00 58	01 05	01 12	01 20

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 72	Markham 72	Markham 73 Ar	Pickering 86	Pickering 87	Whitby 51	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	Ⓟ ♿ Bullock Dr. @ McCowan Rd. - Centennial GO	Ⓟ ♿ Main St. N. @ Ramona Blvd. - Markham GO	Ⓟ ♿ Mount Joy GO	Ⓟ ♿ Brock Rd. @ Hwy. 407	Winchester Rd. W. @ Lake Ridge Rd.	Baldwin St. @ Hwy. 407	Winchester Rd. @ Anderson St.	♿ Ontario Tech University/Durham College	♿ Centre St. S. @ Athol St. W.	Ⓟ ♿ Oshawa GO
56A	56041		05 15	05 20	05 29	05 37	05 50	06 07	06 25	06 30	06 40	06 55	→	→	→	07 10	07 17	07 23	07 27	07 40	07 50	08 05
54	54111									06 40	06 50	07 05	07 12	07 18	07 25							
54	54141									07 10	07 20	07 35	07 42	07 48	07 55							
56A	56081		06 15	06 23	06 34	06 42	07 00	07 17	07 35	07 40	07 50	08 05	→	→	→	08 20	08 28	08 34	08 40	08 53	09 05	09 20
54	54201									08 10	08 20	08 35	08 42	08 48	08 55							
56A	56131		07 10	07 18	07 29	07 37	07 55	08 15	08 35	08 40	08 50	09 05	→	→	→	09 20	09 27	09 33	09 37	09 50	10 00	10 15
54	54241									09 10	09 20	09 35	09 42	09 48	09 55							
56A	56201		08 10	08 18	08 32	08 40	08 55	09 15	09 35	09 40	09 50	10 05	→	→	→	10 20	10 27	10 33	10 37	10 50	11 00	11 15
54	54281									10 10	10 20	10 35	10 42	10 48	10 55							
56A	56251		09 15	09 23	09 37	09 45	10 00	10 17	10 35	10 40	10 50	11 05	→	→	→	11 20	11 27	11 33	11 37	11 50	12 00	12 15
54	54321									11 10	11 20	11 35	11 42	11 48	11 55							
56A	56291		10 15	10 23	10 37	10 45	11 00	11 17	11 35	11 40	11 50	12 05	→	→	→	12 20	12 27	12 33	12 37	12 50	13 00	13 15
54	54361									12 10	12 20	12 35	12 42	12 48	12 55							
56A	56331		11 15	11 23	11 37	11 45	12 00	12 17	12 35	12 40	12 50	13 05	→	→	→	13 20	13 27	13 33	13 37	13 50	14 00	14 15
54	54401									13 10	13 20	13 35	13 42	13 48	13 55							
56A	56371		12 15	12 23	12 37	12 45	13 00	13 17	13 35	13 40	13 50	14 05	→	→	→	14 20	14 27	14 33	14 37	14 50	15 00	15 15
54	54441									14 10	14 20	14 35	14 42	14 48	14 55							
56A	56411		13 15	13 23	13 37	13 45	14 00	14 17	14 35	14 40	14 50	15 05	→	→	→	15 20	15 28	15 34	15 40	15 53	16 05	16 20
54	54491									15 10	15 20	15 35	15 43	15 50	16 00							
54	54551									16 05	16 15	16 30	16 38	16 45	16 55							
56A	56441		14 15	14 23	14 37	14 45	15 00	15 17	15 35	15 40	15 50	16 05	→	→	→	16 20	16 30	16 36	16 43	16 58	17 10	17 25
54	54611									17 05	17 15	17 30	17 38	17 45	17 55							
56A	56481		15 10	15 18	15 32	15 40	15 55	16 15	16 35	16 40	16 50	17 05	→	→	→	17 20	17 30	17 36	17 43	17 58	18 18	18 25
56A	56541		16 10	16 18	16 32	16 40	16 55	17 15	17 35	17 40	17 50	18 05	→	→	→	18 20	18 28	18 34	18 40	18 53	19 05	19 20
54	54661									18 10	18 20	18 35	18 43	18 50	19 00							
56A	56601		17 10	17 21	17 35	17 45	18 00	18 20	18 40	18 45	18 55	19 10	→	→	→	19 25	19 32	19 38	19 42	19 55	20 05	20 20
54	54701									19 10	19 20	19 35	19 42	19 48	19 55							
56A	56671		18 10	18 21	18 35	18 45	19 00	19 17	19 35	19 40	19 50	20 05	→	→	→	20 20	20 27	20 33	20 37	20 50	21 00	21 15
56A	56691		18 45	18 53	19 07	19 15	19 30	19 47	20 05	20 10	20 20	20 35	→	→	→	20 50	20 57	21 03	21 07	21 20	21 30	21 45
54	54741									20 10	20 20	20 35	20 42	20 48	20 55							
56A	56731		19 50	19 56	20 07	20 15	20 30	20 47	21 05	21 10	21 20	21 35	→	→	→	21 50	21 57	22 03	22 07	22 17	22 27	22 40
54	54781									21 10	21 20	21 35	21 42	21 48	21 55							
56A	56771		20 50	20 56	21 07	21 15	21 30	21 47	22 05	22 10	22 20	22 35	→	→	→	22 50	22 57	23 03	23 07	23 17	23 27	23 40
54	54821									22 10	22 20	22 35	22 42	22 48	22 55							
56A	56811		21 50	21 56	22 07	22 15	22 30	22 47	23 05	23 10	23 20	23 35	→	→	→	23 50	23 57	00 03	00 07	00 17	00 27	00 40
54	54851									23 10	23 20	23 35	23 42	23 48	23 55							
56A	56841		22 50	22 56	23 07	23 15	23 30	23 47	00 05	00 10	00 20	00 35	→	→	→	00 50	00 57	01 03	01 07	01 17	01 27	01 40

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Oshawa 94 Dp	Oshawa 94	Oshawa 88	Whitby 51	Whitby 51	Pickering 87	Pickering 86	Markham 71	Richmond Hill 60	Vaughan 19	Vaughan 60	Vaughan 61 Ar
			Ⓟ ♿ Oshawa GO	♿ Simcoe St. S. @ Athol St. E.	♿ Ontario Tech University/Durham College	Winchester Rd. @ Watford St.	Baldwin St. @ Hwy. 407	Winchester Rd. W. @ Lake Ridge Rd.	Ⓟ ♿ Brock Rd. @ Hwy. 407 P&R	Ⓟ ♿ Unionville GO	♿ Richmond Hill Centre	Ⓟ ♿ Hwy. 407 Bus Terminal	Ⓟ ♿ Canada's Wonderland	Ⓟ ♿ Major Mackenzie Dr. @ Hwy. 400
52X	52210		06 20	06 30	06 42	06 49	06 54	07 00	07 08	07 25	07 37	07 50	08 00	08 05
52X	52360		08 15	08 25	08 37	08 44	08 49	08 55	09 03	09 20	09 32	09 45	10 00	10 05
52X	52490		10 15	10 25	10 37	10 44	10 49	10 55	11 03	11 20	11 32	11 45	12 00	12 05
52X	52560		12 15	12 25	12 37	12 44	12 49	12 55	13 03	13 20	13 32	13 45	14 05	14 10
52X	52670		14 15	14 25	14 37	14 44	14 49	14 55	15 03	15 20	15 32	15 45	16 05	16 10
52X	52790		16 15	16 25	16 37	16 44	16 49	16 55	17 03	17 20	17 32	17 45	18 05	18 10
52X	52840		18 15	18 25	18 37	18 44	18 49	18 55	19 03	19 20	19 32	19 45	20 00	20 05
52X	52880		20 20	20 30	20 42	20 49	20 54	21 00	21 08	21 25	21 37	21 50	22 00	22 05
52X	52900		21 20	21 30	21 42	21 49	21 54	22 00	22 08	22 25	22 37	22 50	23 00	23 05

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Vaughan 61 Dp	Vaughan 60	Vaughan 19	Richmond Hill 60	Markham 71	Pickering 86	Pickering 87	Whitby 51	Whitby 51	Oshawa 88	Oshawa 94	Oshawa 94 Ar
			Ⓟ ♿ Major Mackenzie Dr. @ Hwy. 400	Ⓟ ♿ Canada's Wonderland	Ⓟ ♿ Hwy. 407 Bus Terminal	♿ Richmond Hill Centre	Ⓟ ♿ Unionville GO	Ⓟ ♿ Brock Rd. @ Hwy. 407 P&R	Winchester Rd. W. @ Lake Ridge Rd.	Baldwin St. @ Hwy. 407	Winchester Rd. @ Anderson St.	♿ Ontario Tech University/Durham College	♿ Centre St. S. @ Athol St. W.	Ⓟ ♿ Oshawa GO
52X	52151		08 25	08 30	08 45	08 55	09 10	09 25	09 32	09 38	09 42	09 52	10 02	10 15
52X	52281		10 25	10 30	10 45	10 55	11 10	11 25	11 32	11 38	11 42	11 55	12 05	12 20
52X	52351		12 25	12 30	12 45	12 55	13 10	13 25	13 32	13 38	13 42	13 55	14 05	14 20
52X	52431		14 20	14 25	14 45	14 55	15 10	15 25	15 32	15 38	15 42	15 55	16 05	16 20
52X	52621		16 20	16 25	16 45	16 55	17 10	17 25	17 32	17 38	17 42	17 55	18 05	18 20
52X	52801		18 20	18 25	18 45	18 55	19 10	19 25	19 32	19 38	19 42	19 55	20 05	20 20
52X	52861		20 25	20 30	20 45	20 55	21 10	21 25	21 32	21 38	21 42	21 52	22 02	22 15
52X	52921		22 25	22 30	22 45	22 55	23 10	23 25	23 32	23 38	23 42	23 52	00 02	00 15
52X	52951		23 25	23 30	23 40	23 50	00 05	00 20	00 27	00 33	00 37	00 47	00 57	01 10

Oakville Transit service schedules

Effective March 20, 2022 until further notice

For latest information, visit our website at oakvilletransit.ca
or follow us on social media @oakvilletransit

School specials will operate. Visit our website for maps and schedules.

Senior specials, charters and Late Night Service will not operate.

1 Trafalgar

	Timepoint	Oakville GO (Depart)	Sheridan College	Trafalgar & Upper Middle	Uptown Core	Trafalgar / 407 GO Carpool (Arr.)	Trafalgar / 407 GO Carpool (Dep.)	Uptown Core	Trafalgar & Upper Middle	Sheridan College	Oakville GO (Arrive)
Monday to Friday											
		To Highway 407 GO Carpool					To Oakville GO				
a.m.		--	--	--	--	--	6:04	6:10	6:16	6:19	6:28
		6:05	6:14	6:17	6:25	6:33	6:38	6:44	6:50	6:53	7:02
		7:05	7:14	7:17	7:25	7:33	7:38	7:44	7:50	7:53	8:02
		8:05	8:14	8:17	8:25	8:33	8:38	8:44	8:50	8:53	9:02
		9:05	9:14	9:17	9:25	9:33	9:38	9:44	9:50	9:53	10:02
		and every 60 minutes until									
p.m.		7:05	7:14	7:17	7:25	7:33	7:38	7:44	7:50	7:53	8:02
		8:05	8:14	8:17	8:25	8:33	8:38	8:44	8:50	8:53	9:02
		9:05	9:14	9:17	9:25	9:33	9:38	9:44	9:50	9:53	10:02
		10:05	10:14	10:17	10:25	10:33	10:38	10:44	10:50	10:53	11:02
		11:05	11:14	11:17	11:25	11:33	11:38	11:44	11:50	11:53	12:02

3 Third Line

	Timepoint	South Oakville Centre (Depart)	Bronte GO (Northbound)	Third Line & Upper Middle	Hospital (Arrive)	Hospital (Depart)	Third Line & Upper Middle	Bronte GO (Southbound)	Third Line & Rebecca	Lakeshore & Bronte	South Oakville Centre (Arrive)
Monday to Friday											
		To Hospital				To South Oakville Centre					
a.m.		--	--	--	--	5:51	5:59	6:06	6:11	6:15	6:25
		5:58	6:06	6:13	6:21	6:21	6:29	6:36	6:41	6:45	6:55
		6:28	6:36	6:43	6:51	6:51	6:59	7:06	7:11	7:15	7:25
		6:58	7:06	7:13	7:21	7:21	7:29	7:36	7:41	7:45	7:55
		7:28	7:36	7:43	7:51	7:51	7:59	8:06	8:11	8:15	8:25
		7:58	8:06	8:13	8:21	8:21	8:29	8:36	8:41	8:45	8:55
		8:28	8:36	8:43	8:51	8:51	8:59	9:06	9:11	9:15	9:25
		8:58	9:06	9:13	9:21	9:21	9:29	9:36	9:41	9:45	9:55
		9:28	9:36	9:43	9:51	9:51	9:59	10:06	10:11	10:15	10:25
		and every 30 minutes until									
p.m.		2:58	3:06	3:13	3:21	3:21	3:29	3:36	3:41	3:45	3:55
		3:28	3:36	3:43	3:51	3:51	3:59	4:06	4:11	4:15	4:25
		3:58	4:06	4:13	4:21	4:21	4:29	4:36	4:41	4:45	4:55
		4:28	4:36	4:43	4:51	4:51	4:59	5:06	5:11	5:15	5:25
		4:58	5:06	5:13	5:21	5:21	5:29	5:36	5:41	5:45	5:55
		5:28	5:36	5:43	5:51	5:51	5:59	6:06	6:11	6:15	6:25
		5:58	6:06	6:13	6:21	6:21	6:29	6:36	6:41	6:45	6:55
		6:28	6:36	6:43	6:51	6:51	6:59	7:06	7:11	7:15	7:25
		6:58	7:06	7:13	7:21	7:21	7:29	7:36	7:41	7:45	7:55
		7:37	7:45	7:52	8:00	8:00	8:08	8:15	8:20	8:24	8:34
		8:37	8:45	8:52	9:00	9:00	9:08	9:15	9:20	9:24	9:34
		9:37	9:45	9:52	10:00	10:00	10:08	10:15	10:20	10:24	10:34
		10:37	10:45	10:52	11:00	11:10	11:18	11:24	11:29	11:33	11:40
		11:40	11:47	11:52	12:00	--	--	--	--	--	--

3 Third Line

	Timepoint	South Oakville Centre (Depart)	Bronte GO (Northbound)	Third Line & Upper Middle	Hospital (Arrive)	Hospital (Depart)	Third Line & Upper Middle	Bronte GO (Southbound)	Third Line & Rebecca	Lakeshore & Bronte	South Oakville Centre (Arrive)
Saturday											
		To Hospital				To South Oakville Centre					
a.m.		--	--	--	--	7:00	7:08	7:15	7:20	7:24	7:34
		7:37	7:45	7:52	8:00	8:00	8:08	8:15	8:20	8:24	8:34
		8:37	8:45	8:52	9:00	9:00	9:08	9:15	9:20	9:24	9:34
		9:37	9:45	9:52	10:00	10:00	10:08	10:15	10:20	10:24	10:34
		and every 60 minutes until									
p.m.		8:37	8:45	8:52	9:00	9:00	9:08	9:15	9:20	9:24	9:34
		9:37	9:45	9:52	10:00	10:00	10:08	10:15	10:20	10:24	10:34
		10:37	10:45	10:52	11:00	11:10	11:18	11:24	11:29	11:33	11:40
		11:40	11:47	11:52	12:00	--	--	--	--	--	--
Sunday / Holidays											
a.m.		--	--	--	--	8:00	8:08	8:15	8:20	8:24	8:34
		8:37	8:45	8:52	9:00	9:00	9:08	9:15	9:20	9:24	9:34
		9:37	9:45	9:52	10:00	10:00	10:08	10:15	10:20	10:24	10:34
		10:37	10:45	10:52	11:00	11:00	11:08	11:15	11:20	11:24	11:34
		and every 60 minutes until									
p.m.		4:37	4:45	4:52	5:00	5:00	5:08	5:15	5:20	5:24	5:34
		5:37	5:45	5:52	6:00	6:00	6:08	6:15	6:20	6:24	6:34
		6:37	6:45	6:52	7:00	7:00	7:08	7:15	7:20	7:24	7:34
		7:37	7:45	7:52	8:00	--	--	--	--	--	--

For latest information, visit our website at oakvilletransit.ca
or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

4 Speers - Cornwall (East)

4 Speers - Cornwall (West)

Monday to Friday

	Timepoint	Bronte GO (Depart)	Speers & Third Line	Speers & Fourth Line	Speers & Kerr	Oakville GO (Depart)	Cornwall & Chartwell	Cornwall & Maple Grove	Ford & Royal Windsor	Sheridan Gdn. & W. Churchill	Clarkson GO (Arrive)
		Eastbound to Clarkson GO									
a.m.		--	--	--	--	--	--	--	--	--	--
		6:08	6:11	6:15	6:20	6:25	6:30	6:34	6:38	6:41	6:50
		6:35	6:38	6:42	6:47	6:53	6:58	7:01	7:05	7:08	7:16
		7:05	7:08	7:12	7:17	7:23	7:28	7:31	7:35	7:38	7:46
		7:35	7:38	7:42	7:47	7:53	7:58	8:01	8:05	8:08	8:16
		8:05	8:08	8:12	8:17	8:23	8:28	8:31	8:35	8:38	8:46
		8:35	8:38	8:42	8:47	8:53	8:58	9:01	9:05	9:08	9:16
		9:05	9:08	9:12	9:17	9:23	9:28	9:31	9:35	9:38	9:46
		9:35	9:38	9:42	9:47	9:53	9:58	10:01	10:05	10:08	10:16
					and every 30 minutes until						
p.m.		3:05	3:08	3:12	3:17	3:23	3:28	3:31	3:35	3:38	3:46
		3:35	3:38	3:42	3:47	3:53	3:58	4:01	4:05	4:08	4:16
		4:05	4:08	4:12	4:17	4:23	4:28	4:31	4:35	4:38	4:46
		4:35	4:38	4:42	4:47	4:53	4:58	5:01	5:05	5:08	5:16
		5:05	5:08	5:12	5:17	5:23	5:28	5:31	5:35	5:38	5:46
		5:35	5:38	5:42	5:47	5:53	5:58	6:01	6:05	6:08	6:16
		6:05	6:08	6:12	6:17	6:23	6:28	6:31	6:35	6:38	6:46
		6:35	6:38	6:42	6:47	6:53	6:58	7:01	7:05	7:08	7:16
		7:05	7:08	7:12	7:17	7:23	7:28	7:31	7:35	7:38	7:46
		7:35	7:38	7:42	7:47	7:53	7:58	8:01	8:05	8:08	8:16
		8:35	8:38	8:42	8:47	8:53	8:58	9:01	9:05	9:08	9:16
		9:35	9:38	9:42	9:47	9:53	9:58	10:01	10:05	10:08	10:16
		10:35	10:38	10:42	10:47	10:53	10:58	11:01	11:05	11:08	11:16
		11:35	11:38	11:41	11:45	11:50	11:55	11:57	12:00	12:03	12:10

	Timepoint	Clarkson GO (Depart)	Sheridan Gdn. & W. Churchill	Ford & Royal Windsor	Cornwall & Maple Grove	Cornwall & Chartwell	Oakville GO (Arrive/Depart)	Speers & Kerr	Speers & Fourth Line	Speers & Third Line	Bronte GO (Arrive)
		Westbound to Bronte GO									
		6:20	6:24	6:27	6:29	6:32	6:40	6:44	6:48	6:51	6:54
		6:50	6:54	6:57	6:59	7:02	7:10	7:14	7:18	7:21	7:24
		7:20	7:24	7:27	7:29	7:32	7:40	7:44	7:48	7:51	7:54
		7:50	7:54	7:57	7:59	8:02	8:10	8:14	8:18	8:21	8:24
		8:20	8:24	8:27	8:29	8:32	8:40	8:44	8:48	8:51	8:54
		8:50	8:54	8:57	8:59	9:02	9:10	9:14	9:18	9:21	9:24
		9:20	9:24	9:27	9:29	9:32	9:40	9:44	9:48	9:51	9:54
		9:50	9:54	9:57	9:59	10:02	10:10	10:14	10:18	10:21	10:24
		10:20	10:24	10:27	10:29	10:32	10:40	10:44	10:48	10:51	10:54
						and every 30 minutes until					
		3:50	3:54	3:57	3:59	4:02	4:10	4:14	4:18	4:21	4:24
		4:20	4:24	4:27	4:29	4:32	4:40	4:44	4:48	4:51	4:54
		4:50	4:54	4:57	4:59	5:02	5:10	5:14	5:18	5:21	5:24
		5:20	5:24	5:27	5:29	5:32	5:40	5:44	5:48	5:51	5:54
		5:50	5:54	5:57	5:59	6:02	6:10	6:14	6:18	6:21	6:24
		6:20	6:24	6:27	6:29	6:32	6:40	6:44	6:48	6:51	6:54
		6:50	6:54	6:57	6:59	7:02	7:10	7:14	7:18	7:21	7:24
		7:20	7:24	7:27	7:29	7:32	7:40	7:44	7:48	7:51	7:54
		7:50	7:54	7:57	7:59	8:02	8:10	8:14	8:18	8:21	8:24
		8:20	8:24	8:27	8:29	8:32	8:40	8:44	8:48	8:51	8:54
		9:20	9:24	9:27	9:29	9:32	9:40	9:44	9:48	9:51	9:54
		10:20	10:24	10:27	10:29	10:32	10:40	10:44	10:48	10:51	10:54
		11:20	11:24	11:27	11:29	11:32	11:40*	** Ends at Oakville GO*			
		--	--	--	--	--	--	--	--	--	--

4 Speers - Cornwall (East)

4 Speers - Cornwall (West)

Saturday

	Timepoint	Bronte GO (Depart)	Speers & Third Line	Speers & Fourth Line	Speers & Kerr	Oakville GO (Depart)	Cornwall & Chartwell	Cornwall & Maple Grove	Ford & Royal Windsor	Sheridan Gdn. & W. Churchill	Clarkson GO (Arrive)
		Eastbound to Clarkson GO									
a.m.		--	--	--	--	--	--	--	--	--	--
		7:35	7:38	7:42	7:47	7:53	7:58	8:01	8:05	8:08	8:16
		8:35	8:38	8:42	8:47	8:53	8:58	9:01	9:05	9:08	9:16
		9:35	9:38	9:42	9:47	9:53	9:58	10:01	10:05	10:08	10:16
					and every 60 minutes until						
p.m.		7:35	7:38	7:42	7:47	7:53	7:58	8:01	8:05	8:08	8:16
		8:35	8:38	8:42	8:47	8:53	8:58	9:01	9:05	9:08	9:16
		9:35	9:38	9:42	9:47	9:53	9:58	10:01	10:05	10:08	10:16
		10:35	10:38	10:42	10:47	10:53	10:58	11:01	11:05	11:08	11:16

Sunday / Holidays

	Timepoint	Bronte GO (Depart)	Speers & Third Line	Speers & Fourth Line	Speers & Kerr	Oakville GO (Depart)	Cornwall & Chartwell	Cornwall & Maple Grove	Ford & Royal Windsor	Sheridan Gdn. & W. Churchill	Clarkson GO (Arrive)
a.m.		--	--	--	--	7:53	7:58	8:01	8:05	8:08	8:16
		8:35	8:38	8:42	8:47	8:53	8:58	9:01	9:05	9:08	9:16
		9:35	9:38	9:42	9:47	9:53	9:58	10:01	10:05	10:08	10:16
		10:35	10:38	10:42	10:47	10:53	10:58	11:01	11:05	11:08	11:16
					and every 60 minutes until						
p.m.		4:35	4:38	4:42	4:47	4:53	4:58	5:01	5:05	5:08	5:16
		5:35	5:38	5:42	5:47	5:53	5:58	6:01	6:05	6:08	6:16
		6:35	6:38	6:42	6:47	6:53	6:58	7:01	7:05	7:08	7:16
		7:35	7:38	7:42	7:47	7:51*	** Ends at Oakville GO*				

	Timepoint	Clarkson GO (Depart)	Sheridan Gdn. & W. Churchill	Ford & Royal Windsor	Cornwall & Maple Grove	Cornwall & Chartwell	Oakville GO (Arrive/Depart)	Speers & Kerr	Speers & Fourth Line	Speers & Third Line	Bronte GO (Arrive)
		Westbound to Bronte GO									
		7:20	7:24	7:27	7:29	7:32	7:40	7:44	7:48	7:51	7:54
		8:20	8:24	8:27	8:29	8:32	8:40	8:44	8:48	8:51	8:54
		9:20	9:24	9:27	9:29	9:32	9:40	9:44	9:48	9:51	9:54
		10:20	10:24	10:27	10:29	10:32	10:40	10:44	10:48	10:51	10:54
						and every 60 minutes until					
		8:20	8:24	8:27	8:29	8:32	8:40	8:44	8:48	8:51	8:54
		9:20	9:24	9:27	9:29	9:32	9:40	9:44	9:48	9:51	9:54
		10:20	10:24	10:27	10:29	10:32	10:40	10:44	10:48	10:51	10:54
		11:20	11:24	11:27	11:29	11:32	11:40*	** Ends at Oakville GO*			
		8:20	8:24	8:27	8:29	8:32	8:40	8:44	8:48	8:51	8:54
		9:20	9:24	9:27	9:29	9:32	9:40	9:44	9:48	9:51	9:54
		10:20	10:24	10:27	10:29	10:32	10:40	10:44	10:48	10:51	10:54
		11:20	11:24	11:27	11:29	11:32	11:40	11:44	11:48	11:51	11:54
						and every 60 minutes until					
		5:20	5:24	5:27	5:29	5:32	5:40	5:44	5:48	5:51	5:54
		6:20	6:24	6:27	6:29	6:32	6:40	6:44	6:48	6:51	6:54
		7:20	7:24	7:27	7:29	7:32	7:40	7:44	7:48	7:51	7:54
		--	--	--	--	--	--	--	--	--	--

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

5 5A Dundas (West)

Timepoint	Route	Oakville GO (Depart)	White Oaks & Marlborough	Sheridan College	Trafalgar & Upper Middle	Uptown Core (Arrive)	Uptown Core (Depart)	Dundas & Sixth Line	Wheat Boom & Sixth Line	Dundas & Neyagawa	Hospital	Dundas & Bronte	Dundas & Appleby	Dundas / 407 GO Carpool (Ar.)
Monday to Friday														
To Walkers Line (Dundas/407) – 5 via Dundas, 5A via Wheat Boom/Sixteen Mile														
a.m.	**5A**	--	--	--	--	--	**6:20**	--	**6:25**	**6:30**	**6:35**	**6:40**	**6:45**	**6:50**
	5	6:14	6:22	6:25	6:28	6:34	6:37	6:41	--	6:44	6:49	6:54	6:59	7:05
	5A	**6:29**	**6:37**	**6:40**	**6:43**	**6:49**	**6:49**	--	**6:54**	**6:59**	**7:04**	**7:09**	**7:14**	**7:20**
	5	6:44	6:52	6:55	6:58	7:04	7:07	7:11	--	7:14	7:19	7:24	7:29	7:35
	5A	**6:59**	**7:07**	**7:10**	**7:13**	**7:19**	**7:19**	--	**7:24**	**7:29**	**7:34**	**7:39**	**7:44**	**7:50**
	5	7:14	7:22	7:25	7:28	7:34	7:37	7:41	--	7:44	7:49	7:54	7:59	8:05
	5A	**7:29**	**7:37**	**7:40**	**7:43**	**7:49**	**7:49**	--	**7:54**	**7:59**	**8:04**	**8:09**	**8:14**	**8:20**
	5	7:44	7:52	7:55	7:58	8:04	8:07	8:11	--	8:14	8:19	8:24	8:29	8:35
	5A	**7:59**	**8:07**	**8:10**	**8:13**	**8:19**	**8:19**	--	**8:24**	**8:29**	**8:34**	**8:39**	**8:44**	**8:50**
	5	8:14	8:22	8:25	8:28	8:34	8:37	8:41	--	8:44	8:49	8:54	8:59	9:05
	5A	**8:29**	**8:37**	**8:40**	**8:43**	**8:49**	**8:49**	--	**8:54**	**8:59**	**9:04**	**9:09**	**9:14**	**9:20**
	5	8:59	9:07	9:10	9:13	9:19	9:22	9:26	--	9:29	9:34	9:39	9:44	9:50
	5A	**9:29**	**9:37**	**9:40**	**9:43**	**9:49**	**9:49**	--	**9:54**	**9:59**	**10:04**	**10:09**	**10:14**	**10:20**
	5	9:59	10:07	10:10	10:13	10:19	10:22	10:26	--	10:29	10:34	10:39	10:44	10:50
	5A	**10:29**	**10:37**	**10:40**	**10:43**	**10:49**	**10:49**	--	**10:54**	**10:59**	**11:04**	**11:09**	**11:14**	**11:20**
		and alternating – every 30 minutes						*every 60 min.*		*every 30 minutes*				
p.m.	5	2:59	3:07	3:10	3:13	3:19	3:22	3:26	--	3:29	3:34	3:39	3:44	3:50
	5A	**3:29**	**3:37**	**3:40**	**3:43**	**3:49**	**3:49**	--	**3:54**	**3:59**	**4:04**	**4:09**	**4:14**	**4:20**
	5	3:59	4:07	4:10	4:13	4:19	4:22	4:26	--	4:29	4:34	4:39	4:44	4:50
	5A	**4:14**	**4:22**	**4:25**	**4:28**	**4:34**	**4:34**	--	**4:39**	**4:44**	**4:49**	**4:54**	**4:59**	**5:05**
	5	4:29	4:37	4:40	4:43	4:49	4:52	4:56	--	4:59	5:04	5:09	5:14	5:20
	5A	**4:44**	**4:52**	**4:55**	**4:58**	**5:04**	**5:04**	--	**5:09**	**5:14**	**5:19**	**5:24**	**5:29**	**5:35**
	5	4:59	5:07	5:10	5:13	5:19	5:22	5:26	--	5:29	5:34	5:39	5:44	5:50
	5A	**5:14**	**5:22**	**5:25**	**5:28**	**5:34**	**5:34**	--	**5:39**	**5:44**	**5:49**	**5:54**	**5:59**	**6:05**
	5	5:29	5:37	5:40	5:43	5:49	5:52	5:56	--	5:59	6:04	6:09	6:14	6:20
	5A	**5:44**	**5:52**	**5:55**	**5:58**	**6:04**	**6:04**	--	**6:09**	**6:14**	**6:19**	**6:24**	**6:29**	**6:35**
	5	5:59	6:07	6:10	6:13	6:19	6:22	6:26	--	6:29	6:34	6:39	6:44	6:50
	5A	**6:14**	**6:22**	**6:25**	**6:28**	**6:34**	**6:34**	--	**6:39**	**6:44**	**6:49**	**6:54**	**6:59**	**7:05**
	5	6:29	6:37	6:40	6:43	6:49	6:52	6:56	--	6:59	7:04	7:09	7:14	7:20
	5A	**6:44**	**6:52**	**6:55**	**6:58**	**7:04**	**7:04**	--	**7:09**	**7:14**	**7:19**	**7:24**	**7:29**	**7:35**
	5	6:59	7:07	7:10	7:13	7:19	7:22	7:26	--	7:29	7:34	7:39	7:44	7:50
	5A	**7:14**	**7:22**	**7:25**	**7:28**	**7:34**	**7:34**	--	**7:39**	**7:44**	**7:49**	**7:54**	**7:59**	**8:05**
	5	7:40	7:48	7:51	7:54	8:00	8:00	8:04	--	8:07	8:12	8:17	8:22	8:28
	5	8:40	8:48	8:51	8:54	9:00	9:00	9:04	--	9:07	9:12	9:17	9:22	9:28
	5	9:40	9:48	9:51	9:54	10:00	10:00	10:04	--	10:07	10:12	10:17	10:22	10:28
	5	10:40	10:48	10:51	10:54	11:00	11:00	11:03	--	11:06	11:10	*Ends at hospital*		
	5	11:40	11:48	11:51	11:54	12:00	--	--	--	--	--	*Ends at Uptown Core*		

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

5 5A Dundas (East)

Timepoint	Route	Dundas / 407 GO Carpool (Dp.)	Dundas & Appleby	Dundas & Bronte	Hospital	Dundas & Neyagawa	Sixteen Mile & Neyagawa	Sixteen Mile & Sixth Line	Dundas & Sixth Line	Uptown Core (Arrive)	Uptown Core (Depart)	Trafalgar & Upper Middle	Sheridan College	White Oaks & Marlborough	Oakville GO (Arrive)
Monday to Friday															
To Oakville GO – 5 via Dundas, 5A via Sixteen Mile/Wheat Boom															
a.m.	**5A**	--	--	--	--	--	**5:58**	**6:03**	--	**6:09**	**6:09**	**6:15**	**6:18**	**6:21**	**6:29**
	5	--	--	--	--	6:12	--	--	6:15	6:20	6:24	6:30	6:33	6:36	6:44
	5A	--	--	--	**6:22**	--	**6:28**	**6:33**	--	**6:39**	**6:39**	**6:45**	**6:48**	**6:51**	**6:59**
	5	6:20	6:26	6:31	6:37	6:42	--	--	6:45	6:50	6:54	7:00	7:03	7:06	7:14
	5A	**6:35**	**6:41**	**6:46**	**6:52**	--	**6:58**	**7:03**	--	**7:09**	**7:09**	**7:15**	**7:18**	**7:21**	**7:29**
	5	6:50	6:56	7:01	7:07	7:12	--	--	7:15	7:20	7:24	7:30	7:33	7:36	7:44
	5A	**7:05**	**7:11**	**7:16**	**7:22**	--	**7:28**	**7:33**	--	**7:39**	**7:39**	**7:45**	**7:48**	**7:51**	**7:59**
	5	7:20	7:26	7:31	7:37	7:42	--	--	7:45	7:50	7:54	8:00	8:03	8:06	8:14
	5A	**7:35**	**7:41**	**7:46**	**7:52**	--	**7:58**	**8:03**	--	**8:09**	**8:09**	**8:15**	**8:18**	**8:21**	**8:29**
	5	7:50	7:56	8:01	8:07	8:12	--	--	8:15	8:20	8:24	8:30	8:33	8:36	8:44
	5A	**8:05**	**8:11**	**8:16**	**8:22**	--	**8:28**	**8:33**	--	**8:39**	**8:39**	**8:45**	**8:48**	**8:51**	**8:59**
	5	8:20	8:26	8:31	8:37	8:42	--	--	8:45	8:50	8:54	9:00	9:03	9:06	9:14
	5A	**8:50**	**8:56**	**9:01**	**9:07**	--	**9:13**	**9:18**	--	**9:24**	**9:24**	**9:30**	**9:33**	**9:36**	**9:44**
	5	9:20	9:26	9:31	9:37	9:42	--	--	9:45	9:50	9:54	10:00	10:03	10:06	10:14
	5A	**9:50**	**9:56**	**10:01**	**10:07**	--	**10:13**	**10:18**	--	**10:24**	**10:24**	**10:30**	**10:33**	**10:36**	**10:44**
	5	10:20	10:26	10:31	10:37	10:42	--	--	10:45	10:50	10:54	11:00	11:03	11:06	11:14
		and alternating – every 30 minutes					***every 60 minutes***					***every 30 minutes***			
	5A	**2:50**	**2:56**	**3:01**	**3:07**	--	**3:13**	**3:18**	--	**3:24**	**3:24**	**3:30**	**3:33**	**3:36**	**3:44**
	5	3:20	3:26	3:31	3:37	3:42	--	--	3:45	3:50	3:54	4:00	4:03	4:06	4:14
	5A	**3:50**	**3:56**	**4:01**	**4:07**	--	**4:13**	**4:18**	--	**4:24**	**4:24**	**4:30**	**4:33**	**4:36**	**4:44**
	5	4:20	4:26	4:31	4:37	4:42	--	--	4:45	4:50	4:54	5:00	5:03	5:06	5:14
	5A	**4:35**	**4:41**	**4:46**	**4:52**	--	**4:58**	**5:03**	--	**5:09**	**5:09**	**5:15**	**5:18**	**5:21**	**5:29**
	5	4:50	4:56	5:01	5:07	5:12	--	--	5:15	5:20	5:24	5:30	5:33	5:36	5:44
	5A	**5:05**	**5:11**	**5:16**	**5:22**	--	**5:28**	**5:33**	--	**5:39**	**5:39**	**5:45**	**5:48**	**5:51**	**5:59**
	5	5:20	5:26	5:31	5:37	5:42	--	--	5:45	5:50	5:54	6:00	6:03	6:06	6:14
	5A	**5:35**	**5:41**	**5:46**	**5:52**	--	**5:58**	**6:03**	--	**6:09**	**6:09**	**6:15**	**6:18**	**6:21**	**6:29**
p.m.	5	5:50	5:56	6:01	6:07	6:12	--	--	6:15	6:20	6:24	6:30	6:33	6:36	6:44
	5A	**6:05**	**6:11**	**6:16**	**6:22**	--	**6:28**	**6:33**	--	**6:39**	**6:39**	**6:45**	**6:48**	**6:51**	**6:59**
	5	6:20	6:26	6:31	6:37	6:42	--	--	6:45	6:50	6:54	7:00	7:03	7:06	7:14
	5A	**6:35**	**6:41**	**6:46**	**6:52**	--	**6:58**	**7:03**	--	**7:09**	**7:09**	**7:15**	**7:18**	**7:21**	**7:29**
	5	6:50	6:56	7:01	7:07	7:12	--	--	7:15	7:20	7:24	7:30	7:33	7:36	7:44
	5A	**7:05**	**7:11**	**7:16**	**7:22**	--	**7:28**	**7:33**	--	**7:39**	**7:39**	**7:45**	**7:48**	**7:51**	**7:59**
	5	7:20	7:26	7:31	7:37	7:42	--	--	7:45	7:50	7:54	8:00	8:03	8:06	8:14
	5A	**7:50**	**7:56**	**8:01**	**8:07**	--	**8:13**	**8:18**	--	**8:24**	**8:24**	**8:30**	**8:33**	**8:36**	**8:44**
	5	8:30	8:36	8:41	8:46	8:51	--	--	8:54	8:59	8:59	9:05	9:08	9:11	9:19
	5	9:30	9:36	9:41	9:46	9:51	--	--	9:54	9:59	9:59	10:05	10:08	10:11	10:19
	5	10:30	10:36	10:41	10:46	10:51	--	--	10:54	10:59	10:59	11:05	11:08	11:11	11:19
	5	--	--	--	11:10	11:15	--	--	11:17	11:21	11:21	11:27	11:30	11:33	11:40

Home to Hub is an on-demand service that conveniently picks you up/drops you off at the end of your driveway to get you to and from the closest transit hub where you can connect with regular fixed route transit service. Home to Hub is available in North Oakville and Southeast Oakville. Visit oakvilletransit.ca to learn more!

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

5 5A Dundas (West)

Timepoint	Route	Oakville GO (Depart)	White Oaks & Marlborough	Sheridan College	Trafalgar & Upper Middle	Uptown Core (Arrive)	Uptown Core (Depart)	Dundas & Sixth Line	Wheat Boom & Sixth Line	Dundas & Neyagawa	Hospital	Dundas & Bronte	Dundas & Appleby	Dundas/407 GO Carpool (Ar.)
Saturday														
	To Walkers Line (Dundas/407) – 5 via Dundas, 5A via Wheat Boom/Sixteen Mile													
a.m.	**5A**	--	--	--	--	--	**6:49**	--	**6:54**	**6:59**	**7:04**	**7:09**	**7:14**	**7:20**
	5	6:59	7:07	7:10	7:13	7:19	7:22	7:26	--	7:29	7:34	7:39	7:44	7:50
	5A	**7:29**	**7:37**	**7:40**	**7:43**	**7:49**	**7:49**	--	**7:54**	**7:59**	**8:04**	**8:09**	**8:14**	**8:20**
	5	7:59	8:07	8:10	8:13	8:19	8:22	8:26	--	8:29	8:34	8:39	8:44	8:50
	5A	**8:29**	**8:37**	**8:40**	**8:43**	**8:49**	**8:49**	--	**8:54**	**8:59**	**9:04**	**9:09**	**9:14**	**9:20**
	5	8:59	9:07	9:10	9:13	9:19	9:22	9:26	--	9:29	9:34	9:39	9:44	9:50
	and alternating – every 30 minutes							*every 60 min.*		*every 30 minutes*				
p.m.	**5A**	**5:29**	**5:37**	**5:40**	**5:43**	**5:49**	**5:49**	--	**5:54**	**5:59**	**6:04**	**6:09**	**6:14**	**6:20**
	5	5:59	6:07	6:10	6:13	6:19	6:22	6:26	--	6:29	6:34	6:39	6:44	6:50
	5A	**6:29**	**6:37**	**6:40**	**6:43**	**6:49**	**6:49**	--	**6:54**	**6:59**	**7:04**	**7:09**	**7:14**	**7:20**
	5	6:59	7:07	7:10	7:13	7:19	7:22	7:26	--	7:29	7:34	7:39	7:44	7:50
	5A	**7:29**	**7:37**	**7:40**	**7:43**	**7:49**	**7:49**	--	**7:54**	**7:59**	**8:04**	**8:09**	**8:14**	**8:20**
	5	8:30	8:38	8:41	8:44	8:50	8:50	8:54	--	8:57	9:02	9:07	9:12	9:18
	5	9:30	9:38	9:41	9:44	9:50	9:50	9:54	--	9:57	10:02	10:07	10:12	10:18
	5	10:30	10:38	10:41	10:44	10:50	10:50	10:54	--	10:57	11:02	*Ends at hospital*		
	5	11:40	11:48	11:51	11:54	12:00	--	--	--	--	--	*Ends at Uptown Core*		
Sunday / Holidays														
a.m.	**5A**	--	--	--	--	--	**7:49**	--	**7:54**	**7:59**	**8:04**	**8:09**	**8:14**	**8:20**
	5	7:59	8:07	8:10	8:13	8:19	8:22	8:26	--	8:29	8:34	8:39	8:44	8:50
	5A	**8:29**	**8:37**	**8:40**	**8:43**	**8:49**	**8:49**	--	**8:54**	**8:59**	**9:04**	**9:09**	**9:14**	**9:20**
	5	8:59	9:07	9:10	9:13	9:19	9:22	9:26	--	9:29	9:34	9:39	9:44	9:50
	5A	**9:29**	**9:37**	**9:40**	**9:43**	**9:49**	**9:49**	--	**9:54**	**9:59**	**10:04**	**10:09**	**10:14**	**10:20**
	5	9:59	10:07	10:10	10:13	10:19	10:22	10:26	--	10:29	10:34	10:39	10:44	10:50
	and alternating – every 30 minutes							*every 60 min.*		*every 30 minutes*				
p.m.	**5A**	**5:29**	**5:37**	**5:40**	**5:43**	**5:49**	**5:49**	--	**5:54**	**5:59**	**6:04**	**6:09**	**6:14**	**6:20**
	5	5:59	6:07	6:10	6:13	6:19	6:22	6:26	--	6:29	6:34	6:39	6:44	6:50
	5A	**6:29**	**6:37**	**6:40**	**6:43**	**6:49**	**6:49**	--	**6:54**	**6:59**	**7:04**	**7:09**	**7:14**	**7:20**
	5	6:59	7:07	7:10	7:13	7:19	7:22	7:26	--	7:29	7:34	7:39	7:44	7:50
	5A	**7:29**	**7:37**	**7:40**	**7:43**	**7:49**	**7:49**	--	**7:54**	**7:59**	**8:04**	**8:09**	**8:14**	**8:20**

5 5A Dundas (East)

Timepoint	Route	Dundas/407 GO Carpool (Dp.)	Dundas & Appleby	Dundas & Bronte	Hospital	Dundas & Neyagawa	Sixteen Mile & Neyagawa	Sixteen Mile & Sixth Line	Dundas & Sixth Line	Uptown Core (Arrive)	Uptown Core (Depart)	Trafalgar & Upper Middle	Sheridan College	White Oaks & Marlborough	Oakville GO (Arrive)
Saturday															
	To Oakville GO – 5 via Dundas, 5A via Sixteen Mile/Wheat Boom														
a.m.	**5A**	--	--	--	--	--	**6:43**	**6:48**	--	**6:54**	**6:54**	**7:00**	**7:03**	**7:06**	**7:14**
	5	6:50	6:56	7:01	7:07	7:12	--	--	7:15	7:20	7:24	7:30	7:33	7:36	7:44
	5A	**7:20**	**7:26**	**7:31**	**7:37**	--	**7:43**	**7:48**	--	**7:54**	**7:54**	**8:00**	**8:03**	**8:06**	**8:14**
	5	7:50	7:56	8:01	8:07	8:12	--	--	8:15	8:20	8:24	8:30	8:33	8:36	8:44
	5A	**8:20**	**8:26**	**8:31**	**8:37**	--	**8:43**	**8:48**	--	**8:54**	**8:54**	**9:00**	**9:03**	**9:06**	**9:14**
	5	8:50	8:56	9:01	9:07	9:12	--	--	9:15	9:20	9:24	9:30	9:33	9:36	9:44
	and alternating – every 30 minutes					*every 60 minutes*					*every 30 minutes*				
p.m.	**5A**	**5:20**	**5:26**	**5:31**	**5:37**	--	**5:43**	**5:48**	--	**5:54**	**5:54**	**6:00**	**6:03**	**6:06**	**6:14**
	5	5:50	5:56	6:01	6:07	6:12	--	--	6:15	6:20	6:24	6:30	6:33	6:36	6:44
	5A	**6:20**	**6:26**	**6:31**	**6:37**	--	**6:43**	**6:48**	--	**6:54**	**6:54**	**7:00**	**7:03**	**7:06**	**7:14**
	5	6:50	6:56	7:01	7:07	7:12	--	--	7:15	7:20	7:24	7:30	7:33	7:36	7:44
	5A	**7:20**	**7:26**	**7:31**	**7:37**	--	**7:43**	**7:48**	--	**7:54**	**7:54**	**8:00**	**8:03**	**8:06**	**8:14**
	5	8:25	8:31	8:36	8:41	8:46	--	--	8:49	8:54	8:54	9:00	9:03	9:06	9:14
	5	9:25	9:31	9:36	9:41	9:46	--	--	9:49	9:54	9:54	10:00	10:03	10:06	10:14
	5	10:25	10:31	10:36	10:41	10:46	--	--	10:49	10:54	10:54	11:00	11:03	11:06	11:14
	5	--	--	--	11:10	11:15	--	--	11:17	11:21	11:21	11:27	11:30	11:33	11:40
Sunday / Holidays															
a.m.	**5A**	**7:50**	**7:56**	**8:01**	**8:07**	--	**8:13**	**8:18**	--	**8:24**	**8:24**	**8:30**	**8:33**	**8:36**	**8:44**
	5	8:20	8:26	8:31	8:37	8:42	--	--	8:45	8:50	8:54	9:00	9:03	9:06	9:14
	5A	**8:50**	**8:56**	**9:01**	**9:07**	--	**9:13**	**9:18**	--	**9:24**	**9:24**	**9:30**	**9:33**	**9:36**	**9:44**
	5	9:20	9:26	9:31	9:37	9:42	--	--	9:45	9:50	9:54	10:00	10:03	10:06	10:14
	5A	**9:50**	**9:56**	**10:01**	**10:07**	--	**10:13**	**10:18**	--	**10:24**	**10:24**	**10:30**	**10:33**	**10:36**	**10:44**
	5	10:20	10:26	10:31	10:37	10:42	--	--	10:45	10:50	10:54	11:00	11:03	11:06	11:14
	and alternating – every 30 minutes					*every 60 minutes*					*every 30 minutes*				
p.m.	5	5:20	5:26	5:31	5:37	5:42	--	--	5:45	5:50	5:54	6:00	6:03	6:06	6:14
	5A	**5:50**	**5:56**	**6:01**	**6:07**	--	**6:13**	**6:18**	--	**6:24**	**6:24**	**6:30**	**6:33**	**6:36**	**6:44**
	5	6:20	6:26	6:31	6:37	6:42	--	--	6:45	6:50	6:54	7:00	7:03	7:06	7:14
	5A	**6:50**	**6:56**	**7:01**	**7:07**	--	**7:13**	**7:18**	--	**7:24**	**7:24**	**7:30**	**7:33**	**7:36**	**7:44**
	5	7:20	7:26	7:31	7:37	7:42	--	--	7:45	7:50	7:54	8:00	8:03	8:06	8:14

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

6 Upper Middle (East)

Timepoint	Bronte GO (Depart)	Upper Middle & Bronte	Upper Middle & Third Line	Upper Middle & Dorval	Upper Middle & Trafalgar	Sheridan College	Trafalgar & Upper Middle	Upper Middle & Ford	Winston Pk. & Bristol Circle	Laird & Ridgeway (Ar.)
Monday to Friday										
	Eastbound to Laird & Ridgeway									
a.m.	--	--	--	--	--	--	--	--	--	--
	6:38	6:45	6:49	6:53	6:58	7:03	7:06	7:11	7:14	7:20
	7:08	7:15	7:19	7:23	7:28	7:33	7:36	7:41	7:44	7:50
	7:38	7:45	7:49	7:53	7:58	8:03	8:06	8:11	8:14	8:20
	8:08	8:15	8:19	8:23	8:28	8:33	8:36	8:41	8:44	8:50
	9:08	9:15	9:19	9:23	9:28	9:33	9:36	9:41	9:44	9:50
	and every 60 minutes until									
p.m.	2:08	2:15	2:19	2:23	2:28	2:33	2:36	2:41	2:44	2:50
	3:08	3:15	3:19	3:23	3:28	3:33	3:36	3:41	3:44	3:50
	--	--	--	--	--	4:03	4:06	4:11	4:14	4:20
	4:08	4:15	4:19	4:23	4:28	4:33	4:36	4:41	4:44	4:50
	4:38	4:45	4:49	4:53	4:58	5:03	5:06	5:11	5:14	5:20
	5:08	5:15	5:19	5:23	5:28	5:33	5:36	5:41	5:44	5:50
	6:08	6:15	6:19	6:23	6:28	6:33	6:36	6:41	6:44	6:50
	7:08	7:15	7:19	7:23	7:28	7:33	7:36	7:41	7:44	7:50
Saturday										
a.m.	--	--	--	--	--	--	--	--	--	--
	7:08	7:15	7:19	7:23	7:28	7:33	7:36	7:41	7:44	7:50
	8:08	8:15	8:19	8:23	8:28	8:33	8:36	8:41	8:44	8:50
	and every 60 minutes until									
p.m.	5:08	5:15	5:19	5:23	5:28	5:33	5:36	5:41	5:44	5:50
	6:08	6:15	6:19	6:23	6:28	6:33	6:36	6:41	6:44	6:50
	7:08	7:15	7:19	7:23	7:28	7:33	7:36	7:41	7:44	7:50
Sunday / Holidays										
a.m.	--	--	--	--	--	--	--	--	--	--
	8:08	8:15	8:19	8:23	8:28	8:33	8:36	8:41	8:44	8:50
	9:08	9:15	9:19	9:23	9:28	9:33	9:36	9:41	9:44	9:50
	and every 60 minutes until									
p.m.	5:08	5:15	5:19	5:23	5:28	5:33	5:36	5:41	5:44	5:50
	6:08	6:15	6:19	6:23	6:28	6:33	6:36	6:41	6:44	6:50
	7:08	7:15	7:19	7:23	7:28	7:33	7:36	7:41	7:44	7:50

6 Upper Middle (West)

Timepoint	Laird & Ridgeway (Dp.)	Winston Pk. & Bristol Circle	Upper Middle & Ford	Upper Middle & Golden Briar	Sheridan College	Upper Middle & Trafalgar	Upper Middle & Dorval	Upper Middle & Third Line	Upper Middle & Bronte	Bronte GO (Arrive)
Monday to Friday										
	Westbound to Bronte GO									
a.m.	6:50	6:56	7:00	7:05	7:10	7:13	7:19	7:23	7:27	7:35
	7:20	7:26	7:30	7:35	7:40	7:43	7:49	7:53	7:57	8:05
	7:50	7:56	8:00	8:05	8:10	8:13	8:19	8:23	8:27	8:35
	8:20	8:26	8:30	8:35	8:40	8:43	8:49	8:53	8:57	9:05
	8:50	8:56	9:00	9:05	9:10	9:13	9:19	9:23	9:27	9:35
	9:50	9:56	10:00	10:05	10:10	10:13	10:19	10:23	10:27	10:35
	and every 60 minutes until									
p.m.	2:50	2:56	3:00	3:05	3:10	3:13	3:19	3:23	3:27	3:35
	3:50	3:56	4:00	4:05	4:10	4:13	4:19	4:23	4:27	4:35
	4:20	4:26	4:30	4:35	4:40	4:43	4:49	4:53	4:57	5:05
	4:50	4:56	5:00	5:05	5:10	5:13	5:19	5:23	5:27	5:35
	5:20	5:26	5:30	5:35	5:40	5:43	5:49	5:53	5:57	6:05
	5:50	5:56	6:00	6:05	6:10	6:13	6:19	6:23	6:27	6:35
	6:50	6:56	7:00	7:05	7:10	7:13	7:19	7:23	7:27	7:35
	--	--	--	--	--	--	--	--	--	--
Saturday										
a.m.	6:50	6:56	7:00	7:05	7:10	7:13	7:19	7:23	7:27	7:35
	7:50	7:56	8:00	8:05	8:10	8:13	8:19	8:23	8:27	8:35
	8:50	8:56	9:00	9:05	9:10	9:13	9:19	9:23	9:27	9:35
	and every 60 minutes until									
p.m.	5:50	5:56	6:00	6:05	6:10	6:13	6:19	6:23	6:27	6:35
	6:50	6:56	7:00	7:05	7:10	7:13	7:19	7:23	7:27	7:35
	--	--	--	--	--	--	--	--	--	--
Sunday / Holidays										
a.m.	7:50	7:56	8:00	8:05	8:10	8:13	8:19	8:23	8:27	8:35
	8:50	8:56	9:00	9:05	9:10	9:13	9:19	9:23	9:27	9:35
	9:50	9:56	10:00	10:05	10:10	10:13	10:19	10:23	10:27	10:35
	and every 60 minutes until									
p.m.	5:50	5:56	6:00	6:05	6:10	6:13	6:19	6:23	6:27	6:35
	6:50	6:56	7:00	7:05	7:10	7:13	7:19	7:23	7:27	7:35
	--	--	--	--	--	--	--	--	--	--

10 West Industrial

Timepoint	Oakville GO (Depart)	Wyecroft at Oakville Transit	Wyecroft & Fourth Line	Third Line & Speers	Bronte GO (Arrive)	Bronte GO (Depart)	North Service & Fourth Line	Wyecroft at Oakville Transit	Oakville GO (Arrive)
Monday to Friday (morning)									
	To Bronte GO					**To Oakville GO**			
a.m.	6:40	6:49	6:50	6:55	7:05	7:16	7:23	7:24	7:36
	7:10	7:19	7:20	7:25	7:35	7:46	7:53	7:54	8:06
	7:40	7:49	7:50	7:55	8:05	8:16	8:23	8:24	8:36
	8:10	8:19	8:20	8:25	8:35	8:46	8:53	8:54	9:06
	8:40	8:49	8:50	8:55	9:05	9:16	9:23	9:24	9:36
	9:10	9:19	9:20	9:25	9:35	9:46	9:53	9:54	10:06
	9:40	9:49	9:50	9:55	10:05	10:16	10:23	10:24	10:36

10 West Industrial

Timepoint	Oakville GO (Depart)	Wyecroft at Oakville Transit	North Service & Fourth Line	Bronte GO (Arrive)	Bronte GO (Depart)	Third Line & Speers	Wyecroft & Fourth Line	Wyecroft at Oakville Transit	Oakville GO (Arrive)
Monday to Friday (afternoon)									
	To Bronte GO				**To Oakville GO**				
p.m.	2:15	2:24	2:25	2:35	2:40	2:50	2:55	2:56	3:08
	2:45	2:54	2:55	3:05	3:10	3:20	3:25	3:26	3:38
	3:15	3:24	3:25	3:35	3:40	3:50	3:55	3:56	4:08
	3:45	3:54	3:55	4:05	4:10	4:20	4:25	4:26	4:38
	4:15	4:24	4:25	4:35	4:40	4:50	4:55	4:56	5:08
	4:45	4:54	4:55	5:05	5:10	5:20	5:25	5:26	5:38
	5:15	5:24	5:25	5:35	5:40	5:50	5:55	5:56	6:08

11 Linbrook

Timepoint	Oakville GO (Depart)	Reynolds & MacDonald	Devon & Morrison	Devon & Maple Grove	Devon & Lakeshore	Ford & Royal Windsor	Clarkson GO (Arrive)	Clarkson GO (Depart)	Ford & Royal Windsor	Devon & Lakeshore	Devon & Maple Grove	Devon & Morrison	Reynolds & MacDonald	Oakville GO (Arrive)
Monday to Friday														
	To Clarkson GO							**To Oakville GO**						
a.m.	5:52	5:57	6:01	6:04	6:08	6:12	6:20	6:23	6:29	6:33	6:37	6:39	6:44	6:51
	6:52	6:57	7:01	7:04	7:08	7:12	7:20	7:23	7:29	7:33	7:37	7:39	7:44	7:51
	7:52	7:57	8:01	8:04	8:08	8:12	8:20	8:23	8:29	8:33	8:37	8:39	8:44	8:51
	8:52	8:57	9:01	9:04	9:08	9:12	9:20	9:23	9:29	9:33	9:37	9:39	9:44	9:51
	and every 60 minutes until							*and every 60 minutes until*						
p.m.	5:52	5:57	6:01	6:04	6:08	6:12	6:20	6:23	6:29	6:33	6:37	6:39	6:44	6:51
	6:52	6:57	7:01	7:04	7:08	7:12	7:20	7:23	7:29	7:33	7:37	7:39	7:44	7:51
	7:52	7:57	8:01	8:04	8:08	8:12	8:20	8:23	8:29	8:33	8:37	8:39	8:44	8:51
	8:52	8:57	9:01	9:04	9:08	9:12	9:20	9:23	9:29	9:33	9:37	9:39	9:44	9:51

Oakville Transit service schedules

Effective March 20, 2022 until further notice

12 Winston Park

Monday to Friday

Timepoint	Clarkson GO (Depart)	Royal Windsor & W. Churchill	Kingsway & Wynten	Kingsway & W. Churchill	Bristol Circle & Dover Gate	Bristol Circle & Buckingham	Laird & Ridgeway (Ar.)	Laird & Ridgeway (Dp.)	Bristol Circle & Dover Gate	Kingsway & W. Churchill	Kingsway & Wynten	Royal Windsor & W. Churchill	Clarkson GO (Arrive)
	To Winston Park							**To Clarkson GO**					
a.m.	--	--	--	--	--	--	--	--	--	6:05	6:08	6:13	6:20
	--	--	--	--	--	--	--	--	--	6:35	6:38	6:43	6:50
	6:25	6:29	6:34	6:37	6:43	6:48	6:54	6:55	6:59	7:05	7:08	7:13	7:20
	6:55	6:59	7:04	7:07	7:13	7:18	7:24	7:25	7:29	7:35	7:38	7:43	7:50
	7:25	7:29	7:34	7:37	7:43	7:48	7:54	7:55	7:59	8:05	8:08	8:13	8:20
	7:55	7:59	8:04	8:07	8:13	8:18	8:24	8:25	8:29	8:35	8:38	8:43	8:50
	8:25	8:29	8:34	8:37	8:43	8:48	8:54	8:55	8:59	9:05	9:08	9:13	9:20
	8:55	8:59	9:04	9:07	9:13	9:18	9:24	9:25	9:29	9:35	9:38	9:43	9:50
p.m.	3:25	3:29	3:34	3:37	3:43	3:48	3:54	3:55	3:59	4:05	4:08	4:13	4:20
	3:55	3:59	4:04	4:07	4:13	4:18	4:24	4:25	4:29	4:35	4:38	4:43	4:50
	4:25	4:29	4:34	4:37	4:43	4:48	4:54	4:55	4:59	5:05	5:08	5:13	5:20
	4:55	4:59	5:04	5:07	5:13	5:18	5:24	5:25	5:29	5:35	5:38	5:43	5:50
	5:25	5:29	5:34	5:37	5:43	5:48	5:54	5:55	5:59	6:05	6:08	6:13	6:20
	5:55	5:59	6:04	6:07	6:13	6:18	6:24	6:25	6:29	6:35	6:38	6:43	6:50
	6:25	6:29	6:34	6:37	6:43	6:48	6:54	6:55	6:59	7:05	7:08	7:13	7:20
	6:55	6:59	7:04	7:07	7:13	7:18	7:24	7:25	7:29	7:35	7:38	7:43	7:50

13 Westoak Trails (West)

Timepoint	Oakville GO (Depart)	Oakville Place	Upper Middle & Oxford	Westoak Trails & Up. Middle	Westoak Trails & Third Line	Westoak Trails & Bronte	Wyecroft & Bronte	Bronte GO (Arrive)
Monday to Friday								
	To Bronte GO							
a.m.	6:10	6:17	6:24	6:27	6:32	6:36	6:41	6:45
	6:40	6:47	6:54	6:57	7:02	7:06	7:11	7:15
	7:10	7:17	7:24	7:27	7:32	7:36	7:41	7:45
	7:40	7:47	7:54	7:57	8:02	8:06	8:11	8:15
	8:10	8:17	8:24	8:27	8:32	8:36	8:41	8:45
	8:40	8:47	8:54	8:57	9:02	9:06	9:11	9:15
	9:10	9:17	9:24	9:27	9:32	9:36	9:41	9:45
	and every 30 minutes until							
p.m.	3:40	3:47	3:54	3:57	4:02	4:06	4:11	4:15
	4:10	4:17	4:24	4:27	4:32	4:36	4:41	4:45
	4:40	4:47	4:54	4:57	5:02	5:06	5:11	5:15
	5:13	5:20	5:27	5:30	5:35	5:39	5:44	5:48
	5:43	5:50	5:57	6:00	6:05	6:09	6:14	6:18
	6:13	6:20	6:27	6:30	6:35	6:39	6:44	6:48
	6:40	6:47	6:54	6:57	7:02	7:06	7:11	7:15
	7:10	7:17	7:24	7:27	7:32	7:36	7:41	7:45
	7:40	7:47	7:54	7:57	8:02	8:06	8:11	8:15
	8:40	8:47	8:54	8:57	9:02	9:06	9:11	9:15
	9:40	9:47	9:54	9:57	10:02	10:06	10:11	10:15
	10:40	10:47	10:54	10:57	11:02	11:06	11:11	11:15
Saturday								
a.m.	--	6:47	6:54	6:57	7:02	7:06	7:11	7:15
	7:40	7:47	7:54	7:57	8:02	8:06	8:11	8:15
	8:40	8:47	8:54	8:57	9:02	9:06	9:11	9:15
	and every 60 minutes until							
p.m.	7:40	7:47	7:54	7:57	8:02	8:06	8:11	8:15
	8:40	8:47	8:54	8:57	9:02	9:06	9:11	9:15
	9:40	9:47	9:54	9:57	10:02	10:06	10:11	10:15
Sunday / Holidays								
a.m.	--	7:47	7:54	7:57	8:02	8:06	8:11	8:15
	8:40	8:47	8:54	8:57	9:02	9:06	9:11	9:15
	9:40	9:47	9:54	9:57	10:02	10:06	10:11	10:15
	and every 60 minutes until							
p.m.	4:40	4:47	4:54	4:57	5:02	5:06	5:11	5:15
	5:40	5:47	5:54	5:57	6:02	6:06	6:11	6:15
	6:40	6:47	6:54	6:57	7:02	7:06	7:11	7:15

13 Westoak Trails (East)

Timepoint	Bronte GO (Depart)	Wyecroft & Bronte	Westoak Trails & Bronte	Westoak Trails & Third Line	Westoak Trails & Up. Middle	Upper Middle & Oxford	Oakville Place	Oakville GO (Arrive)
Monday to Friday								
	To Oakville GO							
a.m.	--	--	6:13	6:18	6:23	6:26	6:33	6:38
	6:35	6:38	6:43	6:48	6:53	6:56	7:03	7:08
	7:05	7:08	7:13	7:18	7:23	7:26	7:33	7:38
	7:35	7:38	7:43	7:48	7:53	7:56	8:03	8:08
	8:05	8:08	8:13	8:18	8:23	8:26	8:33	8:38
	8:35	8:38	8:43	8:48	8:53	8:56	9:03	9:08
	9:05	9:08	9:13	9:18	9:23	9:26	9:33	9:38
	9:35	9:38	9:43	9:48	9:53	9:56	10:03	10:08
	and every 30 minutes until							
p.m.	4:05	4:08	4:13	4:18	4:23	4:26	4:33	4:38
	4:35	4:38	4:43	4:48	4:53	4:56	5:03	5:08
	5:05	5:08	5:13	5:18	5:23	5:26	5:33	5:38
	5:35	5:38	5:43	5:48	5:53	5:56	6:03	6:08
	6:05	6:08	6:13	6:18	6:23	6:26	6:33	6:38
	6:35	6:38	6:43	6:48	6:53	6:56	7:03	7:08
	7:05	7:08	7:13	7:18	7:23	7:26	7:33	7:38
	7:35	7:38	7:43	7:48	7:53	7:56	8:03	8:08
	8:05	8:08	8:13	8:18	8:23	8:26	8:33	8:38
	9:05	9:08	9:13	9:18	9:23	9:26	9:33	9:38
	10:05	10:08	10:13	10:18	10:23	10:26	10:33	10:38
	11:05	11:08	11:13	11:18	11:23	11:26	11:33	11:38
Saturday								
a.m.	--	--	--	--	--	6:56	7:03	7:08
	7:35	7:38	7:43	7:48	7:53	7:56	8:03	8:08
	8:35	8:38	8:43	8:48	8:53	8:56	9:03	9:08
	and every 60 minutes until							
p.m.	7:35	7:38	7:43	7:48	7:53	7:56	8:03	8:08
	8:35	8:38	8:43	8:48	8:53	8:56	9:03	9:08
	9:35	9:38	9:43	9:48	9:53	9:56	10:03	10:08
Sunday / Holidays								
a.m.	--	--	--	--	--	7:56	8:03	8:08
	8:35	8:38	8:43	8:48	8:53	8:56	9:03	9:08
	9:35	9:38	9:43	9:48	9:53	9:56	10:03	10:08
	and every 60 minutes until							
p.m.	5:35	5:38	5:43	5:48	5:53	5:56	6:03	6:08
	6:35	6:38	6:43	6:48	6:53	6:56	7:03	7:08
	7:35	7:38	7:43	7:48	7:53	7:56	8:03	8:08

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

14 14A Lakeshore West

Timepoint	Route	Oakville GO (Depart)	Speers & Kerr	Church & Dunn	Rebecca & Kerr	South Oakville Centre (Ar.)	South Oakville Centre (Dp.)	Lakeshore & Bronte	Lakeshore & Great Lakes	Great Lakes & Rebecca	Burloak & Rebecca	RioCan Centre	Harvester & Burloak	Appleby GO (Arrive)
Monday to Friday														
	To Appleby GO – 14 via Great Lakes Blvd., 14A via Burloak Dr.													
a.m.	14A	6:05	6:08	6:17	6:20	6:28	6:37	6:44	6:47	--	6:51	--	6:55	7:04
	14	**6:25**	**6:29**	**6:38**	**6:41**	**6:49**	**6:52**	**6:59**	**7:02**	**7:05**	**--**	**--**	**7:09**	**7:18**
	14A	6:40	6:44	6:53	6:56	7:04	7:07	7:14	7:17	--	7:21	--	7:25	7:34
	14	**6:55**	**6:59**	**7:08**	**7:11**	**7:19**	**7:22**	**7:29**	**7:32**	**7:35**	**--**	**--**	**7:39**	**7:48**
	14A	7:10	7:14	7:23	7:26	7:34	7:37	7:44	7:47	--	7:51	7:56	7:58	8:07
	14	**7:25**	**7:29**	**7:38**	**7:41**	**7:49**	**7:52**	**7:59**	**8:02**	**8:05**	**--**	**--**	**8:09**	**8:18**
	14A	7:40	7:44	7:53	7:56	8:04	8:07	8:14	8:17	--	8:21	8:26	8:28	8:37
	14	**7:55**	**7:59**	**8:08**	**8:11**	**8:19**	**8:22**	**8:29**	**8:32**	**8:35**	**--**	**--**	**8:39**	**8:48**
	14A	8:10	8:14	8:23	8:26	8:34	8:37	8:44	8:47	--	8:51	8:56	8:58	9:07
	14	**8:25**	**8:29**	**8:38**	**8:41**	**8:49**	**8:52**	**8:59**	**9:02**	**9:05**	**--**	**--**	**9:09**	**9:18**
	14A	8:40	8:44	8:53	8:56	9:04	9:07	9:14	9:17	--	9:21	9:26	9:28	9:37
	14	**9:10**	**9:14**	**9:23**	**9:26**	**9:34**	**9:37**	**9:44**	**9:47**	**9:50**	**--**	**--**	**9:54**	**10:03**
	14A	9:40	9:44	9:53	9:56	10:04	10:07	10:14	10:17	--	10:21	10:26	10:28	10:37
	14	**10:10**	**10:14**	**10:23**	**10:26**	**10:34**	**10:37**	**10:44**	**10:47**	**10:50**	**--**	**--**	**10:54**	**11:03**
				and alternating – every 30 minutes						***every 60 minutes***			***every 26/34 min.***	
p.m.	**14**	**3:10**	**3:14**	**3:23**	**3:26**	**3:34**	**3:37**	**3:44**	**3:47**	**3:50**	**--**	**--**	**3:54**	**4:03**
	14A	3:40	3:44	3:53	3:56	4:04	4:07	4:14	4:17	--	4:21	4:26	4:28	4:37
	14	**4:10**	**4:14**	**4:23**	**4:26**	**4:34**	**4:37**	**4:44**	**4:47**	**4:50**	**--**	**--**	**4:54**	**5:03**
	14A	4:28	4:32	4:41	4:44	4:52	4:55	5:02	5:05	--	5:09	5:14	5:16	5:25
	14	**4:40**	**4:44**	**4:53**	**4:56**	**5:04**	**5:07**	**5:14**	**5:17**	**5:20**	**--**	**--**	**5:24**	**5:33**
	14A	4:58	5:02	5:11	5:14	5:22	5:25	5:32	5:35	--	5:39	5:44	5:46	5:55
	14	**5:13**	**5:17**	**5:26**	**5:29**	**5:37**	**5:40**	**5:47**	**5:50**	**5:53**	**--**	**--**	**5:57**	**6:06**
	14A	5:28	5:32	5:41	5:44	5:52	5:55	6:02	6:05	--	6:09	6:14	6:16	6:25
	14	**5:43**	**5:47**	**5:56**	**5:59**	**6:07**	**6:10**	**6:17**	**6:20**	**6:23**	**--**	**--**	**6:27**	**6:36**
	14A	5:58	6:02	6:11	6:14	6:22	6:25	6:32	6:35	--	6:39	6:44	6:46	6:55
	14	**6:13**	**6:17**	**6:26**	**6:29**	**6:37**	**6:40**	**6:47**	**6:50**	**6:53**	**--**	**--**	**6:57**	**7:06**
	14A	6:28	6:32	6:41	6:44	6:52	6:55	7:02	7:05	--	7:09	7:14	7:16	7:25
	14	**6:40**	**6:44**	**6:53**	**6:56**	**7:04**	**7:07**	**7:14**	**7:17**	**7:20**	**--**	**--**	**7:24**	**7:33**
	14A	7:10	7:14	7:23	7:26	7:34	7:37	7:44	7:47	--	7:51	7:56	7:58	8:07
	14	**7:40**	**7:44**	**7:53**	**7:56**	**8:04**	**8:07**	**8:14**	**8:17**	**8:20**	**--**	**--**	**8:24**	**8:33**
	14A	8:10	8:14	8:23	8:26	8:34	8:37	8:44	8:47	--	8:51	8:56	8:58	9:07
	14A	9:10	9:14	9:23	9:26	9:34	9:37	9:44	9:47	--	9:51	9:56	9:58	10:07
	14A	10:10	10:14	10:23	10:26	10:34	10:37	10:44	10:47	--	10:51	10:56	10:58	11:07
	14A	11:40	11:44	11:53	11:56	12:04	12:04	12:11	12:14	--	12:18	*Ends at Burloak/Rebecca*		
Saturday														
a.m.	14A	7:10	7:14	7:23	7:26	7:34	7:37	7:44	7:47	--	7:51	7:56	7:58	8:07
	14	**7:40**	**7:44**	**7:53**	**7:56**	**8:04**	**8:07**	**8:14**	**8:17**	**8:20**	**--**	**--**	**8:24**	**8:33**
	14A	8:10	8:14	8:23	8:26	8:34	8:37	8:44	8:47	--	8:51	8:56	8:58	9:07
	14	**8:40**	**8:44**	**8:53**	**8:56**	**9:04**	**9:07**	**9:14**	**9:17**	**9:20**	**--**	**--**	**9:24**	**9:33**
				and alternating – every 30 minutes						***every 60 minutes***			***every 26/34 min.***	
p.m.	14A	6:10	6:14	6:23	6:26	6:34	6:37	6:44	6:47	--	6:51	6:56	6:58	7:07
	14	**6:40**	**6:44**	**6:53**	**6:56**	**7:04**	**7:07**	**7:14**	**7:17**	**7:20**	**--**	**--**	**7:24**	**7:33**
	14A	7:10	7:14	7:23	7:26	7:34	7:37	7:44	7:47	--	7:51	7:56	7:58	8:07
	14	**7:40**	**7:44**	**7:53**	**7:56**	**8:04**	**8:07**	**8:14**	**8:17**	**8:20**	**--**	**--**	**8:24**	**8:33**
	14A	8:10	8:14	8:23	8:26	8:34	8:37	8:44	8:47	--	8:51	8:56	8:58	9:07
	14A	9:10	9:14	9:23	9:26	9:34	9:37	9:44	9:47	--	9:51	9:56	9:58	10:07
	14A	10:10	10:14	10:23	10:26	10:34	10:37	10:44	10:47	--	10:51	10:56	10:58	11:07
	14A	11:40	11:44	11:53	11:56	12:04	12:04	12:11	12:14	--	12:18	*Ends at Burloak/Rebecca*		
Sunday / Holidays														
a.m.	14A	8:10	8:14	8:23	8:26	8:34	8:37	8:44	8:47	--	8:51	8:56	8:58	9:07
	14	**8:40**	**8:44**	**8:53**	**8:56**	**9:04**	**9:07**	**9:14**	**9:17**	**9:20**	**--**	**--**	**9:24**	**9:33**
	14A	9:10	9:14	9:23	9:26	9:34	9:37	9:44	9:47	--	9:51	9:56	9:58	10:07
	14	**9:40**	**9:44**	**9:53**	**9:56**	**10:04**	**10:07**	**10:14**	**10:17**	**10:20**	**--**	**--**	**10:24**	**10:33**
				and alternating – every 30 minutes						***every 60 minutes***			***every 26/34 min.***	
p.m.	**14**	**5:40**	**5:44**	**5:53**	**5:56**	**6:04**	**6:07**	**6:14**	**6:17**	**6:20**	**--**	**--**	**6:24**	**6:33**
	14A	6:10	6:14	6:23	6:26	6:34	6:37	6:44	6:47	--	6:51	6:56	6:58	7:07
	14	**6:40**	**6:44**	**6:53**	**6:56**	**7:04**	**7:07**	**7:14**	**7:17**	**7:20**	**--**	**--**	**7:24**	**7:33**
	14A	7:10	7:14	7:23	7:26	7:34	7:37	7:44	7:47	--	7:51	7:56	7:58	8:07

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

14 14A Oakville GO

Timepoint	Route	Appleby GO (Depart)	Harvester & Appleby	Harvester & Burloak	RioCan Centre	Burloak & New	Great Lakes & Rebecca	Lakeshore & Great Lakes	Lakeshore & Bronte	South Oakville Centre (Ar.)	South Oakville Centre (Dp.)	Rebecca & Kerr	Church & Dunn	Bond & Kerr	Oakville GO (Arrive)
Monday to Friday															
	To Oakville GO – 14 via Great Lakes Blvd., 14A via Burloak Dr.														
a.m.	14A	--	--	--	--	--	--	--	--	--	--	--	5:55	5:59	6:08
	14	--	--	--	--	--	--	--	--	--	**6:12**	**6:19**	**6:25**	**6:29**	**6:38**
	14A	*Begins at Burloak & Prince William at 6:06.*				6:08	--	6:12	6:15	6:22	6:27	6:34	6:40	6:44	6:53
	14	**6:13**	**6:17**	**6:20**	--	--	**6:24**	**6:27**	**6:30**	**6:37**	**6:42**	**6:49**	**6:55**	**6:59**	**7:08**
	14A	6:28	6:32	6:35	--	6:38	--	6:42	6:45	6:52	6:57	7:04	7:10	7:14	7:23
	14	**6:43**	**6:47**	**6:50**	--	--	**6:54**	**6:57**	**7:00**	**7:07**	**7:12**	**7:19**	**7:25**	**7:29**	**7:38**
	14A	6:58	7:02	7:05	--	7:08	--	7:12	7:15	7:22	7:27	7:34	7:40	7:44	7:53
	14	**7:13**	**7:17**	**7:20**	--	--	**7:24**	**7:27**	**7:30**	**7:37**	**7:42**	**7:49**	**7:55**	**7:59**	**8:08**
	14A	7:28	7:32	7:35	--	7:38	--	7:42	7:45	7:52	7:57	8:04	8:10	8:14	8:23
	14	**7:43**	**7:47**	**7:50**	--	--	**7:54**	**7:57**	**8:00**	**8:07**	**8:12**	**8:19**	**8:25**	**8:29**	**8:38**
	14A	7:58	8:02	8:05	--	8:08	--	8:12	8:15	8:22	8:27	8:34	8:40	8:44	8:53
	14	**8:13**	**8:17**	**8:20**	--	--	**8:24**	**8:27**	**8:30**	**8:37**	**8:42**	**8:49**	**8:55**	**8:59**	**9:08**
	14A	8:22	8:26	8:29	8:32	8:38	--	8:42	8:45	8:52	8:57	9:04	9:10	9:14	9:23
	14	**8:43**	**8:47**	**8:50**	--	--	**8:54**	**8:57**	**9:00**	**9:07**	**9:12**	**9:19**	**9:25**	**9:29**	**9:38**
	14A	9:07	9:11	9:14	9:17	9:23	--	9:27	9:30	9:37	9:42	9:49	9:55	9:59	10:08
	14	**9:43**	**9:47**	**9:50**	--	--	**9:54**	**9:57**	**10:00**	**10:07**	**10:12**	**10:19**	**10:25**	**10:29**	**10:38**
		and alternating – every 24/36 minutes			***every 60 minutes***			***every 30 minutes***							
p.m.	14A	3:07	3:11	3:14	3:17	3:23	--	3:27	3:30	3:37	3:42	3:49	3:55	3:59	4:08
	14	**3:43**	**3:47**	**3:50**	--	--	**3:54**	**3:57**	**4:00**	**4:07**	**4:12**	**4:19**	**4:25**	**4:29**	**4:38**
	14A	4:07	4:11	4:14	4:17	4:23	--	4:27	4:30	4:37	4:42	4:49	4:55	4:59	5:08
	14	**4:43**	**4:47**	**4:50**	--	--	**4:54**	**4:57**	**5:00**	**5:07**	**5:12**	**5:19**	**5:25**	**5:29**	**5:38**
	14A	4:55	4:59	5:02	5:05	5:11	--	5:15	5:18	5:25	5:27	5:34	5:40	5:44	5:53
	14	**5:13**	**5:17**	**5:20**	--	--	**5:24**	**5:27**	**5:30**	**5:37**	**5:42**	**5:49**	**5:55**	**5:59**	**6:08**
	14A	5:25	5:29	5:32	5:35	5:41	--	5:45	5:48	5:55	5:57	6:04	6:10	6:14	6:23
	14	**5:43**	**5:47**	**5:50**	--	--	**5:54**	**5:57**	**6:00**	**6:07**	**6:12**	**6:19**	**6:25**	**6:29**	**6:38**
	14A	5:55	5:59	6:02	6:05	6:11	--	6:15	6:18	6:25	6:27	6:34	6:40	6:44	6:53
	14	**6:13**	**6:17**	**6:20**	--	--	**6:24**	**6:27**	**6:30**	**6:37**	**6:42**	**6:49**	**6:55**	**6:59**	**7:08**
	14A	6:25	6:29	6:32	6:35	6:41	--	6:45	6:48	6:55	6:57	7:04	7:10	7:14	7:23
	14	**6:43**	**6:47**	**6:50**	--	--	**6:54**	**6:57**	**7:00**	**7:07**	**7:12**	**7:19**	**7:25**	**7:29**	**7:38**
	14A	7:07	7:11	7:14	7:17	7:23	--	7:27	7:30	7:37	7:42	7:49	7:55	7:59	8:08
	14	**7:43**	**7:47**	**7:50**	--	--	**7:54**	**7:57**	**8:00**	**8:07**	**8:12**	**8:19**	**8:25**	**8:29**	**8:38**
	14A	8:07	8:11	8:14	8:17	8:23	--	8:27	8:30	8:37	8:42	8:49	8:55	8:59	9:08
	14A	9:07	9:11	9:14	9:17	9:23	--	9:27	9:30	9:37	9:42	9:49	9:55	9:59	10:08
	14A	10:07	10:11	10:14	10:17	10:23	--	10:27	10:30	10:37	10:42	10:49	10:55	10:59	11:08
	14A	11:07	11:11	11:14	11:17	11:23	--	11:27	11:30	11:37	11:40	11:46	11:50	11:54	12:00
Saturday															
a.m.	14A	--	--	--	--	--	--	--	--	--	--	--	6:55	6:59	7:08
	14	*This trip begins at Burloak & Prince William at 6:52 a.m.*					**6:54**	**6:57**	**7:00**	**7:07**	**7:12**	**7:19**	**7:25**	**7:29**	**7:38**
	14A	7:07	7:11	7:14	7:17	7:23	--	7:27	7:30	7:37	7:42	7:49	7:55	7:59	8:08
	14	**7:43**	**7:47**	**7:50**	--	--	**7:54**	**7:57**	**8:00**	**8:07**	**8:12**	**8:19**	**8:25**	**8:29**	**8:38**
	14A	8:07	8:11	8:14	8:17	8:23	--	8:27	8:30	8:37	8:42	8:49	8:55	8:59	9:08
	14	**8:43**	**8:47**	**8:50**	--	--	**8:54**	**8:57**	**9:00**	**9:07**	**9:12**	**9:19**	**9:25**	**9:29**	**9:38**
		and alternating – every 24/36 minutes			***every 60 minutes***			***every 30 minutes***							
p.m.	14A	6:07	6:11	6:14	6:17	6:23	--	6:27	6:30	6:37	6:42	6:49	6:55	6:59	7:08
	14	**6:43**	**6:47**	**6:50**	--	--	**6:54**	**6:57**	**7:00**	**7:07**	**7:12**	**7:19**	**7:25**	**7:29**	**7:38**
	14A	7:07	7:11	7:14	7:17	7:23	--	7:27	7:30	7:37	7:42	7:49	7:55	7:59	8:08
	14	**7:43**	**7:47**	**7:50**	--	--	**7:54**	**7:57**	**8:00**	**8:07**	**8:12**	**8:19**	**8:25**	**8:29**	**8:38**
	14A	8:07	8:11	8:14	8:17	8:23	--	8:27	8:30	8:37	8:42	8:49	8:55	8:59	9:08
	14A	9:07	9:11	9:14	9:17	9:23	--	9:27	9:30	9:37	9:42	9:49	9:55	9:59	10:08
	14A	10:07	10:11	10:14	10:17	10:23	--	10:27	10:30	10:37	10:42	10:49	10:55	10:59	11:08
	14A	11:07	11:11	11:14	11:17	11:23	--	11:27	11:30	11:37	11:40	11:46	11:50	11:54	12:00
Sunday / Holidays															
a.m.	14A	--	--	--	--	--	--	--	--	--	--	--	7:55	7:59	8:08
	14	*This trip begins at Burloak & Prince William at 7:52 a.m.*					**7:54**	**7:57**	**8:00**	**8:07**	**8:12**	**8:19**	**8:25**	**8:29**	**8:38**
	14A	8:07	8:11	8:14	8:17	8:23	--	8:27	8:30	8:37	8:42	8:49	8:55	8:59	9:08
	14	**8:43**	**8:47**	**8:50**	--	--	**8:54**	**8:57**	**9:00**	**9:07**	**9:12**	**9:19**	**9:25**	**9:29**	**9:38**
	14A	9:07	9:11	9:14	9:17	9:23	--	9:27	9:30	9:37	9:42	9:49	9:55	9:59	10:08
	14	**9:43**	**9:47**	**9:50**	--	--	**9:54**	**9:57**	**10:00**	**10:07**	**10:12**	**10:19**	**10:25**	**10:29**	**10:38**
		and alternating – every 24/36 minutes			***every 60 minutes***			***every 30 minutes***							
p.m.	**14**	**5:43**	**5:47**	**5:50**	--	--	**5:54**	**5:57**	**6:00**	**6:07**	**6:12**	**6:19**	**6:25**	**6:29**	**6:38**
	14A	6:07	6:11	6:14	6:17	6:23	--	6:27	6:30	6:37	6:42	6:49	6:55	6:59	7:08
	14	**6:43**	**6:47**	**6:50**	--	--	**6:54**	**6:57**	**7:00**	**7:07**	**7:12**	**7:19**	**7:25**	**7:29**	**7:38**
	14A	7:07	7:11	7:14	7:17	7:23	--	7:27	7:30	7:37	7:42	7:49	7:55	7:59	8:08

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

15 Bridge

See next page for Route 15.

18 Glen Abbey South

Timepoint	Oakville GO (Depart)	Kerr & Speers	North Service & Dorval	Nottinghill & Old Abbey	Abbeywood & Third Line	Bronte GO (Arrive)
Monday to Friday						
	To Bronte GO					
a.m.	--	--	--	--	--	--
a.m.	6:10	6:14	6:18	6:22	6:27	6:30
a.m.	6:40	6:44	6:48	6:52	6:57	7:00
a.m.	7:10	7:14	7:18	7:22	7:27	7:30
	and every 30 minutes until					
p.m.	4:10	4:14	4:18	4:22	4:27	4:30
p.m.	4:40	4:44	4:48	4:52	4:57	5:00
p.m.	5:13	5:17	5:21	5:25	5:30	5:33
p.m.	5:43	5:47	5:51	5:55	6:00	6:03
p.m.	6:13	6:17	6:21	6:25	6:30	6:33
p.m.	6:40	6:44	6:48	6:52	6:57	7:00
p.m.	7:10	7:14	7:18	7:22	7:27	7:30
p.m.	8:10	8:14	8:18	8:22	8:27	8:30
p.m.	9:10	9:14	9:18	9:22	9:27	9:30
Saturday						
a.m.	--	--	--	--	--	--
a.m.	7:10	7:14	7:18	7:22	7:27	7:30
a.m.	8:10	8:14	8:18	8:22	8:27	8:30
	and every 60 minutes until					
p.m.	5:10	5:14	5:18	5:22	5:27	5:30
p.m.	6:10	6:14	6:18	6:22	6:27	6:30
p.m.	7:10	7:14	7:18	7:22	7:27	7:30
Sunday / Holidays						
a.m.	--	--	--	--	--	--
a.m.	8:10	8:14	8:18	8:22	8:27	8:30
a.m.	9:10	9:14	9:18	9:22	9:27	9:30
	and every 60 minutes until					
p.m.	5:10	5:14	5:18	5:22	5:27	5:30
p.m.	6:10	6:14	6:18	6:22	6:27	6:30
p.m.	7:10	7:14	7:18	7:22	7:27	7:30

28 Oakville GO

Bronte GO (Depart)	Third Line & Abbeywood	Heritage Way & Stonecutter	Glen Abbey & Third Line	Monastery & Nottinghill	Dorval & North Service	Speers & Kerr	Oakville GO (Arrive)
Monday to Friday							
To Oakville GO							
6:07	6:12	6:16	6:20	6:23	6:27	6:33	6:38
6:37	6:42	6:46	6:50	6:53	6:57	7:03	7:08
7:07	7:12	7:16	7:20	7:23	7:27	7:33	7:38
7:37	7:42	7:46	7:50	7:53	7:57	8:03	8:08
and every 30 minutes until							
4:37	4:42	4:46	4:50	4:53	4:57	5:03	5:08
5:07	5:12	5:16	5:20	5:23	5:27	5:33	5:38
5:37	5:42	5:46	5:50	5:53	5:57	6:03	6:08
6:07	6:12	6:16	6:20	6:23	6:27	6:33	6:38
6:37	6:42	6:46	6:50	6:53	6:57	7:03	7:08
7:07	7:12	7:16	7:20	7:23	7:27	7:33	7:38
7:37	7:42	7:46	7:50	7:53	7:57	8:03	8:08
8:37	8:42	8:46	8:50	8:53	8:57	9:03	9:08
--	--	--	--	--	--	--	--
Saturday							
--	6:42	6:46	6:50	6:53	6:57	7:03	7:08
7:37	7:42	7:46	7:50	7:53	7:57	8:03	8:08
8:37	8:42	8:46	8:50	8:53	8:57	9:03	9:08
and every 60 minutes until							
5:37	5:42	5:46	5:50	5:53	5:57	6:03	6:08
6:37	6:42	6:46	6:50	6:53	6:57	7:03	7:08
7:37	7:42	7:46	7:50	7:53	7:57	8:03	8:08
Sunday / Holidays							
--	7:42	7:46	7:50	7:53	7:57	8:03	8:08
8:37	8:42	8:46	8:50	8:53	8:57	9:03	9:08
9:37	9:42	9:46	9:50	9:53	9:57	10:03	10:08
and every 60 minutes until							
5:37	5:42	5:46	5:50	5:53	5:57	6:03	6:08
6:37	6:42	6:46	6:50	6:53	6:57	7:03	7:08
7:37	7:42	7:46	7:50	7:53	7:57	8:03	8:08

28 Glen Abbey North

Timepoint	Oakville GO (Depart)	Kerr & Speers	Dorval & North Service	Monastery & Nottinghill	Glen Abbey & Third Line	Heritage Way & Stonecutter	Third Line & Kings College	Bronte GO (Arrive)
Monday to Friday								
	To Bronte GO							
a.m.	--	--	--	--	--	--	--	--
a.m.	6:10	6:14	6:20	6:24	6:28	6:31	6:36	6:39
a.m.	6:40	6:44	6:50	6:54	6:58	7:01	7:06	7:09
a.m.	7:10	7:14	7:20	7:24	7:28	7:31	7:36	7:39
	and every 30 minutes until							
p.m.	4:10	4:14	4:20	4:24	4:28	4:31	4:36	4:39
p.m.	4:40	4:44	4:50	4:54	4:58	5:01	5:06	5:09
p.m.	5:13	5:17	5:23	5:27	5:31	5:34	5:39	5:42
p.m.	5:43	5:47	5:53	5:57	6:01	6:04	6:09	6:12
p.m.	6:13	6:17	6:23	6:27	6:31	6:34	6:39	6:42
p.m.	6:40	6:44	6:50	6:54	6:58	7:01	7:06	7:09
p.m.	7:10	7:14	7:20	7:24	7:28	7:31	7:36	7:39
p.m.	7:40	7:44	7:50	7:54	7:58	8:01	8:06	8:09
p.m.	8:40	8:44	8:50	8:54	8:58	9:01	9:06	9:09
Saturday								
a.m.	6:40	6:44	6:50	6:54	6:58	7:01	7:06	7:09
a.m.	7:40	7:44	7:50	7:54	7:58	8:01	8:06	8:09
a.m.	8:40	8:44	8:50	8:54	8:58	9:01	9:06	9:09
	and every 60 minutes until							
p.m.	5:40	5:44	5:50	5:54	5:58	6:01	6:06	6:09
p.m.	6:40	6:44	6:50	6:54	6:58	7:01	7:06	7:09
p.m.	7:40	7:44	7:50	7:54	7:58	8:01	8:06	8:09
Sunday / Holidays								
a.m.	--	--	7:50	7:54	7:58	8:01	8:06	8:09
a.m.	8:40	8:44	8:50	8:54	8:58	9:01	9:06	9:09
a.m.	9:40	9:44	9:50	9:54	9:58	10:01	10:06	10:09
	and every 60 minutes until							
p.m.	5:40	5:44	5:50	5:54	5:58	6:01	6:06	6:09
p.m.	6:40	6:44	6:50	6:54	6:58	7:01	7:06	7:09
p.m.	7:40	7:44	7:50	7:54	7:58	8:01	8:06	8:09

18 Oakville GO

Bronte GO (Depart)	Third Line & Abbeywood	Nottinghill & North Service	North Service & Dorval	Speers & Kerr	Oakville GO (Arrive)
Monday to Friday					
To Oakville GO					
6:15	6:20	6:25	6:28	6:33	6:38
6:45	6:50	6:55	6:58	7:03	7:08
7:15	7:20	7:25	7:28	7:33	7:38
7:45	7:50	7:55	7:58	8:03	8:08
and every 30 minutes until					
4:45	4:50	4:55	4:58	5:03	5:08
5:15	5:20	5:25	5:28	5:33	5:38
5:45	5:50	5:55	5:58	6:03	6:08
6:15	6:20	6:25	6:28	6:33	6:38
6:45	6:50	6:55	6:58	7:03	7:08
7:15	7:20	7:25	7:28	7:33	7:38
7:45	7:50	7:55	7:58	8:03	8:08
8:15	8:20	8:25	8:28	8:33	8:38
9:15	9:20	9:25	9:28	9:33	9:38
Saturday					
7:15	7:20	7:25	7:28	7:33	7:38
8:15	8:20	8:25	8:28	8:33	8:38
9:15	9:20	9:25	9:28	9:33	9:38
and every 60 minutes until					
6:15	6:20	6:25	6:28	6:33	6:38
7:15	7:20	7:25	7:28	7:33	7:38
--	--	--	--	--	--
Sunday / Holidays					
8:15	8:20	8:25	8:28	8:33	8:38
9:15	9:20	9:25	9:28	9:33	9:38
10:15	10:20	10:25	10:28	10:33	10:38
and every 60 minutes until					
6:15	6:20	6:25	6:28	6:33	6:38
7:15	7:20	7:25	7:28	7:33	7:38
--	--	--	--	--	--

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

Oakville Transit service schedules

Effective March 20, 2022 until further notice

15 Bridge

Timepoint	Oakville GO (Depart)	Stewart & Kerr	Bridge & Fourth Line	Bridge & Third Line	Bronte & Rebecca	South Oakville Centre (Ar.)	South Oakville Centre (Dp.)	Bronte & Rebecca	Bridge & Third Line	Bridge & Fourth Line	Stewart & Kerr	Oakville GO (Arrive)
Monday to Friday												
	To South Oakville Centre						**To Oakville GO**					
a.m.	--	--	--	--	--	--	6:08	6:12	6:18	6:23	6:29	6:38
	6:10	6:17	6:23	6:27	6:32	6:37	6:38	6:42	6:48	6:53	6:59	7:08
	6:40	6:47	6:53	6:57	7:02	7:07	7:08	7:12	7:18	7:23	7:29	7:38
	7:10	7:17	7:23	7:27	7:32	7:37	7:38	7:42	7:48	7:53	7:59	8:08
	7:40	7:47	7:53	7:57	8:02	8:07	8:08	8:12	8:18	8:23	8:29	8:38
	and every 30 minutes until											
p.m.	3:40	3:47	3:53	3:57	4:02	4:07	4:08	4:12	4:18	4:23	4:29	4:38
	4:10	4:17	4:23	4:27	4:32	4:37	4:38	4:42	4:48	4:53	4:59	5:08
	4:40	4:47	4:53	4:57	5:02	5:07	5:08	5:12	5:18	5:23	5:29	5:38
	5:13	5:20	5:26	5:30	5:35	5:40	5:40	5:44	5:50	5:55	6:01	6:10
	5:43	5:50	5:56	6:00	6:05	6:10	6:10	6:14	6:20	6:25	6:31	6:40
	6:13	6:20	6:26	6:30	6:35	6:40	6:40	6:44	6:50	6:55	7:01	7:10
	6:40	6:47	6:53	6:57	7:02	7:07	7:08	7:12	7:18	7:23	7:29	7:38
	7:10	7:17	7:23	7:27	7:32	7:37	7:38	7:42	7:48	7:53	7:59	8:08
	8:10	8:17	8:23	8:27	8:32	8:37	8:38	8:42	8:48	8:53	8:59	9:08

15 Bridge

Timepoint	Oakville GO (Depart)	Stewart & Kerr	Bridge & Fourth Line	Bridge & Third Line	Bronte & Rebecca	South Oakville Centre (Ar.)	South Oakville Centre (Dp.)	Bronte & Rebecca	Bridge & Third Line	Bridge & Fourth Line	Stewart & Kerr	Oakville GO (Arrive)
Saturday												
	To South Oakville Centre						**To Oakville GO**					
a.m.	--	--	--	--	--	--	7:08	7:12	7:18	7:23	7:29	7:38
	7:40	7:47	7:53	7:57	8:02	8:07	8:08	8:12	8:18	8:23	8:29	8:38
	8:40	8:47	8:53	8:57	9:02	9:07	9:08	9:12	9:18	9:23	9:29	9:38
	9:40	9:47	9:53	9:57	10:02	10:07	10:08	10:12	10:18	10:23	10:29	10:38
	and every 60 minutes until											
p.m.	5:40	5:47	5:53	5:57	6:02	6:07	6:08	6:12	6:18	6:23	6:29	6:38
	6:40	6:47	6:53	6:57	7:02	7:07	7:08	7:12	7:18	7:23	7:29	7:38
	7:40	7:47	7:53	7:57	8:02	8:07	8:08	8:12	8:18	8:23	8:29	8:38
Sunday / Holidays												
	--	--	--	--	--	--	8:08	8:12	8:18	8:23	8:29	8:38
a.m.	8:40	8:47	8:53	8:57	9:02	9:07	9:08	9:12	9:18	9:23	9:29	9:38
	9:40	9:47	9:53	9:57	10:02	10:07	10:08	10:12	10:18	10:23	10:29	10:38
	10:40	10:47	10:53	10:57	11:02	11:07	11:08	11:12	11:18	11:23	11:29	11:38
	and every 60 minutes until											
p.m.	4:40	4:47	4:53	4:57	5:02	5:07	5:08	5:12	5:18	5:23	5:29	5:38
	5:40	5:47	5:53	5:57	6:02	6:07	6:08	6:12	6:18	6:23	6:29	6:38
	6:40	6:47	6:53	6:57	7:02	7:07	7:08	7:12	7:18	7:23	7:29	7:38
	7:40	7:47	7:53	7:57	8:02	8:07	--	--	--	--	--	--

19 River Oaks

Timepoint	Oakville GO (Depart)	McCraney & Montclair	River Oaks & Oakmead	Towne & Mowat	River Glen & Sixth Line	Uptown Core (Arrive)
Monday to Friday						
	To Uptown Core					
a.m.	--	--	--	--	--	--
	6:10	6:18	6:23	6:28	6:33	6:42
	6:40	6:48	6:53	6:58	7:03	7:12
	7:10	7:18	7:23	7:28	7:33	7:42
	7:40	7:48	7:53	7:58	8:03	8:12
	and every 30 minutes until					
p.m.	3:40	3:48	3:53	3:58	4:03	4:12
	4:10	4:18	4:23	4:28	4:33	4:42
	4:40	4:48	4:53	4:58	5:03	5:12
	5:13	5:21	5:26	5:31	5:36	5:45
	5:43	5:51	5:56	6:01	6:06	6:15
	6:13	6:21	6:26	6:31	6:36	6:45
	6:40	6:48	6:53	6:58	7:03	7:12
	7:10	7:18	7:23	7:28	7:33	7:42
	7:40	7:48	7:53	7:58	8:03	8:12
	8:40	8:48	8:53	8:58	9:03	9:12
Saturday						
	To Uptown Core					
a.m.	--	--	--	--	--	--
	7:40	7:48	7:53	7:58	8:03	8:12
	8:40	8:48	8:53	8:58	9:03	9:12
	9:40	9:48	9:53	9:58	10:03	10:12
	and every 60 minutes until					
p.m.	5:40	5:48	5:53	5:58	6:03	6:12
	6:40	6:48	6:53	6:58	7:03	7:12
	7:40	7:48	7:53	7:58	8:03	8:12
Sunday / Holidays						
	To Uptown Core					
a.m.	--	--	--	--	--	--
	8:40	8:48	8:53	8:58	9:03	9:12
	9:40	9:48	9:53	9:58	10:03	10:12
	10:40	10:48	10:53	10:58	11:03	11:12
	and every 60 minutes until					
p.m.	4:40	4:48	4:53	4:58	5:03	5:12
	5:40	5:48	5:53	5:58	6:03	6:12
	6:40	6:48	6:53	6:58	7:03	7:12
	7:40	7:48	7:53	7:58	8:03	8:12

20 Oakville GO

Timepoint	Uptown Core (Depart)	Dundas & Postridge	Northridge & Eighth Line	Glenashton & Northridge	Eighth Line & Grand	Oakville GO (Arrive)
Monday to Friday						
	To Oakville GO					
a.m.	6:13	6:18	6:20	6:24	6:29	6:38
	6:43	6:48	6:50	6:54	6:59	7:08
	7:13	7:18	7:20	7:24	7:29	7:38
	7:43	7:48	7:50	7:54	7:59	8:08
	8:13	8:18	8:20	8:24	8:29	8:38
	and every 30 minutes until					
p.m.	4:13	4:18	4:20	4:24	4:29	4:38
	4:43	4:48	4:50	4:54	4:59	5:08
	5:13	5:18	5:20	5:24	5:29	5:38
	5:45	5:50	5:52	5:56	6:01	6:10
	6:15	6:20	6:22	6:26	6:31	6:40
	6:45	6:50	6:52	6:56	7:01	7:10
	7:13	7:18	7:20	7:24	7:29	7:38
	7:43	7:48	7:50	7:54	7:59	8:08
	8:13	8:18	8:20	8:24	8:29	8:38
	9:13	9:18	9:20	9:24	9:29	9:38
Saturday						
	To Oakville GO					
a.m.	7:15	7:20	7:21	7:24	7:29	7:38
	8:15	8:20	8:21	8:24	8:29	8:38
	9:15	9:20	9:21	9:24	9:29	9:38
	10:15	10:20	10:21	10:24	10:29	10:38
	and every 60 minutes until					
p.m.	6:15	6:20	6:21	6:24	6:29	6:38
	7:15	7:20	7:21	7:24	7:29	7:38
	8:15	8:20	8:21	8:24	8:29	8:38
Sunday / Holidays						
	To Oakville GO					
a.m.	8:15	8:20	8:21	8:24	8:29	8:38
	9:15	9:20	9:21	9:24	9:29	9:38
	10:15	10:20	10:21	10:24	10:29	10:38
	11:15	11:20	11:21	11:24	11:29	11:38
	and every 60 minutes until					
p.m.	5:15	5:20	5:21	5:24	5:29	5:38
	6:15	6:20	6:21	6:24	6:29	6:38
	7:15	7:20	7:21	7:24	7:29	7:38
	--	--	--	--	--	--

20 Northridge

Timepoint	Oakville GO (Depart)	Eighth Line & Grand	Glenashton & Northridge	Northridge & Eighth Line	Uptown Core (Arrive)
Monday to Friday					
	To Uptown Core				
a.m.	--	--	--	--	--
	6:10	6:18	6:23	6:27	6:32
	6:40	6:48	6:53	6:57	7:02
	7:10	7:18	7:23	7:27	7:32
	7:40	7:48	7:53	7:57	8:02
	and every 30 minutes until				
p.m.	3:40	3:48	3:53	3:57	4:02
	4:10	4:18	4:23	4:27	4:32
	4:40	4:48	4:53	4:57	5:02
	5:13	5:21	5:26	5:30	5:35
	5:43	5:51	5:56	6:00	6:05
	6:13	6:21	6:26	6:30	6:35
	6:40	6:48	6:53	6:57	7:02
	7:10	7:18	7:23	7:27	7:32
	7:40	7:48	7:53	7:57	8:02
	8:40	8:48	8:53	8:57	9:02
Saturday					
	To Uptown Core				
a.m.	--	--	--	--	--
	7:40	7:48	7:53	7:57	8:02
	8:40	8:48	8:53	8:57	9:02
	9:40	9:48	9:53	9:57	10:02
	and every 60 minutes until				
p.m.	5:40	5:48	5:53	5:57	6:02
	6:40	6:48	6:53	6:57	7:02
	7:40	7:48	7:53	7:57	8:02
Sunday / Holidays					
	To Uptown Core				
a.m.	--	--	--	--	--
	8:40	8:48	8:53	8:57	9:02
	9:40	9:48	9:53	9:57	10:02
	10:40	10:48	10:53	10:57	11:02
	and every 60 minutes until				
p.m.	4:40	4:48	4:53	4:57	5:02
	5:40	5:48	5:53	5:57	6:02
	6:40	6:48	6:53	6:57	7:02
	7:40	7:48	7:53	7:57	8:02

19 Oakville GO

Timepoint	Uptown Core (Depart)	River Glen & Sixth Line	Mowat & Levanna	River Oaks & Oakmead	McCraney & Montclair	Oakville GO (Arrive)
Monday to Friday						
	To Oakville GO					
a.m.	6:05	6:12	6:16	6:22	6:27	6:35
	6:35	6:42	6:46	6:52	6:57	7:05
	7:05	7:12	7:16	7:22	7:27	7:35
	7:35	7:42	7:46	7:52	7:57	8:05
	8:05	8:12	8:16	8:22	8:27	8:35
	and every 30 minutes until					
p.m.	4:05	4:12	4:16	4:22	4:27	4:35
	4:35	4:42	4:46	4:52	4:57	5:05
	5:05	5:12	5:16	5:22	5:27	5:35
	5:35	5:42	5:46	5:52	5:57	6:05
	6:05	6:12	6:16	6:22	6:27	6:35
	6:35	6:42	6:46	6:52	6:57	7:05
	7:05	7:12	7:16	7:22	7:27	7:35
	7:35	7:42	7:46	7:52	7:57	8:05
	8:05	8:12	8:16	8:22	8:27	8:35
	9:05	9:12	9:16	9:22	9:27	9:35
Saturday						
	To Oakville GO					
a.m.	7:05	7:12	7:16	7:22	7:27	7:35
	8:05	8:12	8:16	8:22	8:27	8:35
	9:05	9:12	9:16	9:22	9:27	9:35
	10:05	10:12	10:16	10:22	10:27	10:35
	and every 60 minutes until					
p.m.	6:05	6:12	6:16	6:22	6:27	6:35
	7:05	7:12	7:16	7:22	7:27	7:35
	8:05	8:12	8:16	8:22	8:27	8:35
Sunday / Holidays						
	To Oakville GO					
a.m.	8:05	8:12	8:16	8:22	8:27	8:35
	9:05	9:12	9:16	9:22	9:27	9:35
	10:05	10:12	10:16	10:22	10:27	10:35
	11:05	11:12	11:16	11:22	11:27	11:35
	and every 60 minutes until					
p.m.	5:05	5:12	5:16	5:22	5:27	5:35
	6:05	6:12	6:16	6:22	6:27	6:35
	7:05	7:12	7:16	7:22	7:27	7:35
	--	--	--	--	--	--

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

Effective March 20, 2022 until further notice

24 South Common

Monday to Friday

Timepoint	Oakville GO (Depart)	Sheridan College	Trafalgar & Upper Middle	Uptown Core	Dundas & Eighth Line	Dundas & Hampshire	South Common (Arrive)	South Common (Depart)	Dundas & Hampshire	Dundas & Eighth Line	Uptown Core	Trafalgar & Upper Middle	Sheridan College	Oakville GO (Arrive)
	To South Common							**To Oakville GO**						
a.m.	--	--	--	--	--	--	--	6:15	6:23	6:27	6:33	6:39	6:42	6:50
	--	--	--	--	--	--	--	6:39	6:49	6:56	7:02	7:08	7:11	7:20
	6:10	6:19	6:22	6:30	6:35	6:42	6:51	6:54	7:04	7:11	7:17	7:23	7:26	7:35
	6:25	6:34	6:37	6:45	6:50	6:57	7:06	7:09	7:19	7:26	7:32	7:38	7:41	7:50
	6:40	6:49	6:52	7:00	7:05	7:12	7:21	7:24	7:34	7:41	7:47	7:53	7:56	8:05
	6:55	7:04	7:07	7:15	7:20	7:27	7:36	7:39	7:49	7:56	8:02	8:08	8:11	8:20
	7:10	7:19	7:22	7:30	7:35	7:42	7:51	7:54	8:04	8:11	8:17	8:23	8:26	8:35
	7:25	7:34	7:37	7:45	7:50	7:57	8:06	8:09	8:19	8:26	8:32	8:38	8:41	8:50
	7:40	7:49	7:52	8:00	8:05	8:12	8:21	8:24	8:34	8:41	8:47	8:53	8:56	9:05
	7:55	8:04	8:07	8:15	8:20	8:27	8:36	8:39	8:49	8:56	9:02	9:08	9:11	9:20
	8:10	8:19	8:22	8:30	8:35	8:42	8:51	8:54	9:04	9:11	9:17	9:23	9:26	9:35
	8:25	8:34	8:37	8:45	8:50	8:57	9:06	9:09	9:19	9:26	9:32	9:38	9:41	9:50
	8:40	8:49	8:52	9:00	9:05	9:12	9:21	9:24	9:34	9:41	9:47	9:53	9:56	10:05
	9:10	9:19	9:22	9:30	9:35	9:42	9:51	9:54	10:04	10:11	10:17	10:23	10:26	10:35
	9:40	9:49	9:52	10:00	10:05	10:12	10:21	10:24	10:34	10:41	10:47	10:53	10:56	11:05
	and every 30 minutes until							***and every 30 minutes until***						
p.m.	3:10	3:19	3:22	3:30	3:35	3:42	3:51	3:54	4:04	4:11	4:17	4:23	4:26	4:35
	3:40	3:49	3:52	4:00	4:05	4:12	4:21	4:24	4:34	4:41	4:47	4:53	4:56	5:05
	3:58	4:07	4:10	4:16	4:21	4:28	4:37	4:39	4:49	4:56	5:02	5:08	5:11	5:20
	4:10	4:19	4:22	4:30	4:35	4:42	4:51	4:54	5:04	5:11	5:17	5:23	5:26	5:35
	4:28	4:37	4:40	4:46	4:51	4:58	5:07	5:09	5:19	5:26	5:32	5:38	5:41	5:50
	4:40	4:49	4:52	5:00	5:05	5:12	5:21	5:24	5:34	5:41	5:47	5:53	5:56	6:05
	4:58	5:07	5:10	5:16	5:21	5:28	5:37	5:39	5:49	5:56	6:02	6:08	6:11	6:20
	5:13	5:22	5:25	5:31	5:36	5:43	5:52	5:54	6:04	6:11	6:17	6:23	6:26	6:35
	5:28	5:37	5:40	5:46	5:51	5:58	6:07	6:09	6:19	6:26	6:32	6:38	6:41	6:50
	5:43	5:52	5:55	6:01	6:06	6:13	6:22	6:24	6:34	6:41	6:47	6:53	6:56	7:05
	5:58	6:07	6:10	6:16	6:21	6:28	6:37	6:39	6:49	6:56	7:02	7:08	7:11	7:20
	6:13	6:22	6:25	6:31	6:36	6:43	6:52	6:54	7:04	7:11	7:17	7:23	7:26	7:35
	6:28	6:37	6:40	6:46	6:51	6:58	7:07	7:09	7:19	7:26	7:32	7:38	7:41	7:50
	6:40	6:49	6:52	7:00	7:05	7:12	7:21	7:24	7:34	7:41	7:47	7:53	7:56	8:05
	7:10	7:19	7:22	7:30	7:35	7:42	7:51	7:55	8:05	8:12	8:18	8:24	8:27	8:35
	8:10	8:19	8:22	8:30	8:35	8:42	8:51	8:55	9:05	9:12	9:18	9:24	9:27	9:35
	9:10	9:19	9:22	9:30	9:35	9:42	9:51	9:55	10:05	10:12	10:18	10:24	10:27	10:35
	10:10	10:19	10:22	10:30	10:35	10:42	10:51	10:55	11:05	11:12	11:18	11:24	11:27	11:35
	11:10	11:18	11:21	11:28	11:32	11:36	11:45	11:45	11:54	11:58	12:03	12:08	12:11	12:19

24 South Common

Saturday

Timepoint	Oakville GO (Depart)	Sheridan College	Trafalgar & Upper Middle	Uptown Core	Dundas & Eighth Line	Dundas & Hampshire	South Common (Arrive)	South Common (Depart)	Dundas & Hampshire	Dundas & Eighth Line	Uptown Core	Trafalgar & Upper Middle	Sheridan College	Oakville GO (Arrive)
	To South Common							**To Oakville GO**						
a.m.	7:10	7:19	7:22	7:30	7:35	7:42	7:51	7:54	8:04	8:11	8:17	8:23	8:26	8:35
	7:40	7:49	7:52	8:00	8:05	8:12	8:21	8:24	8:34	8:41	8:47	8:53	8:56	9:05
	8:10	8:19	8:22	8:30	8:35	8:42	8:51	8:54	9:04	9:11	9:17	9:23	9:26	9:35
	and every 30 minutes until							***and every 30 minutes until***						
p.m.	6:10	6:19	6:22	6:30	6:35	6:42	6:51	6:54	7:04	7:11	7:17	7:23	7:26	7:35
	6:40	6:49	6:52	7:00	7:05	7:12	7:21	7:24	7:34	7:41	7:47	7:53	7:56	8:05
	7:10	7:19	7:22	7:30	7:35	7:42	7:51	7:55	8:05	8:12	8:18	8:24	8:27	8:35
	8:10	8:19	8:22	8:30	8:35	8:42	8:51	8:55	9:05	9:12	9:18	9:24	9:27	9:35
	9:10	9:19	9:22	9:30	9:35	9:42	9:51	9:55	10:05	10:12	10:18	10:24	10:27	10:35
	10:10	10:19	10:22	10:30	10:35	10:42	10:51	10:55	11:05	11:12	11:18	11:24	11:27	11:35
	11:10	11:18	11:21	11:28	11:32	11:36	11:45	11:45	11:54	11:58	12:03	12:08	12:11	12:19
	Sunday / Holidays													
a.m.	--	--	--	--	--	--	--	8:25	8:35	8:42	8:48	8:54	8:57	9:05
	8:10	8:19	8:22	8:30	8:35	8:42	8:51	8:55	9:05	9:12	9:18	9:24	9:27	9:35
	8:40	8:49	8:52	9:00	9:05	9:12	9:21	9:25	9:35	9:42	9:48	9:54	9:57	10:05
	9:10	9:19	9:22	9:30	9:35	9:42	9:51	9:55	10:05	10:12	10:18	10:24	10:27	10:35
	and every 30 minutes until							***and every 30 minutes until***						
p.m.	5:40	5:49	5:52	6:00	6:05	6:12	6:21	6:25	6:35	6:42	6:48	6:54	6:57	7:05
	6:10	6:19	6:22	6:30	6:35	6:42	6:51	6:55	7:05	7:12	7:18	7:24	7:27	7:35
	6:40	6:49	6:52	7:00	7:05	7:12	7:21	7:25	7:35	7:42	7:48	7:54	7:57	8:05

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

Oakville Transit service schedules

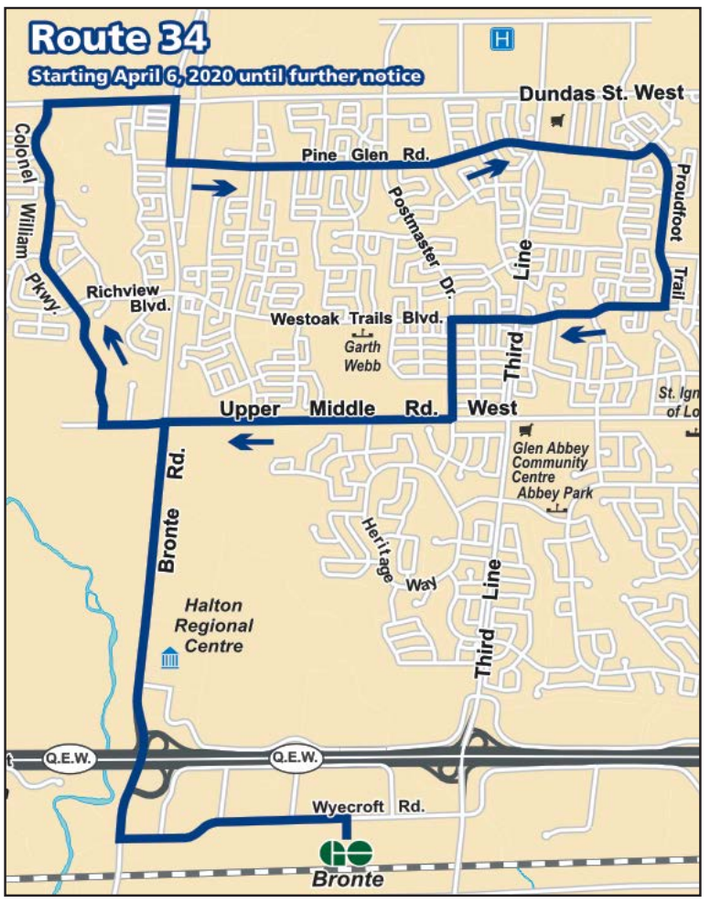
Effective March 20, 2022 until further notice

33 Palermo

Routes 33 and 34 have been combined as noted in the map below.

34 Pine Glen

Timepoint	Bronte GO (Depart)	Wyecroft & Bronte	Bronte & Upper Middle	Colonel William & Dundas	Pine Glen & Postmaster	Pine Glen & Proudfoot	Westoak & Postmaster	Upper Middle & Bronte	Wyecroft & Bronte	Bronte GO (Arrive)
Monday to Friday										
	To Pine Glen						To Bronte GO			
a.m.	--	--	6:02	6:07	6:12	6:17	6:21	6:27	6:31	6:35
	--	--	6:32	6:37	6:42	6:47	6:51	6:57	7:01	7:05
	6:55	6:58	7:02	7:07	7:12	7:17	7:21	7:27	7:31	7:35
	7:25	7:28	7:32	7:37	7:42	7:47	7:51	7:57	8:01	8:05
	7:55	7:58	8:02	8:07	8:12	8:17	8:21	8:27	8:31	8:35
	8:25	8:28	8:32	8:37	8:42	8:47	8:51	8:57	9:01	9:05
p.m.	4:35	4:38	4:42	4:47	4:52	4:57	5:01	5:07	5:11	5:15
	5:05	5:08	5:12	5:17	5:22	5:27	5:31	5:37	5:41	5:45
	5:35	5:38	5:42	5:47	5:52	5:57	6:01	6:07	6:11	6:15
	6:05	6:08	6:12	6:17	6:22	6:27	6:31	6:37	6:41	6:45
	6:35	6:38	6:42	6:47	6:52	6:57	7:01	7:07	7:11	7:15
	7:05	7:08	7:12	7:17	7:22	7:27	7:31	7:37	7:41	7:45
	7:35	7:38	7:42	7:47	7:52	7:57	8:01	8:07	8:11	8:15



26 Falgarwood

Timepoint	Oakville GO (Depart)	Lancaster & Grosvenor	Oakville GO (Arrive)
Monday to Friday (morning)			
	Falgarwood–Oakville GO		
a.m.	6:10	6:22	6:35
	6:40	6:52	7:05
	7:10	7:22	7:35
	7:40	7:52	8:05
	8:10	8:22	8:35
	8:40	8:52	9:05
Monday to Friday (afternoon)			
	Falgarwood–Oakville GO		
p.m.	3:10	3:22	3:35
	3:40	3:52	4:05
	4:10	4:22	4:35
	4:40	4:52	5:05
	5:13	5:25	5:35
	5:43	5:55	6:05
	6:13	6:22	6:35
	6:40	6:52	7:05
	7:10	7:22	7:35

120 East Industrial

Timepoint	Oakville GO (Depart)	N. Service & Eighth Line	Joshuas Ck. & Up. Middle	Winston Pk. & Bristol Circle	Laird & Ridgeway	Winston Pk. & Bristol Circle	Joshuas Ck. & Up. Middle	N. Service & Eighth Line	Oakville GO (Arrive)
Monday to Friday									
	To Winston Park				To Oakville GO				
a.m.	6:40	6:47	6:53	6:58	7:05	7:10	7:15	7:21	7:31
	7:10	7:17	7:23	7:28	7:35	7:40	7:45	7:51	8:01
	7:40	7:47	7:53	7:58	8:05	8:10	8:15	8:21	8:31
	8:10	8:17	8:23	8:28	8:35	8:40	8:45	8:51	9:01
	8:40	8:47	8:53	8:58	9:05	9:10	9:15	9:21	9:31
	9:10	9:17	9:23	9:28	9:35	9:40	9:45	9:51	10:01
p.m.	3:18	3:25	3:31	3:36	3:43	3:48	3:53	3:59	4:09
	3:48	3:55	4:01	4:06	4:13	4:18	4:23	4:29	4:39
	4:18	4:25	4:31	4:36	4:43	4:48	4:53	4:59	5:09
	4:48	4:55	5:01	5:06	5:13	5:18	5:23	5:29	5:39
	5:18	5:25	5:31	5:36	5:43	5:48	5:53	5:59	6:09
	5:48	5:55	6:01	6:06	6:13	6:18	6:23	6:29	6:39
	6:18	6:25	6:31	6:36	6:43	6:48	6:53	6:59	7:09

121 Southeast Industrial

Route 121 customers will be provided On Demand service Monday to Friday from 7 to 9 a.m. and 4 to 6 p.m.

Please contact us at transit@oakville.ca to register and for more information.

190 River Oaks Express

Temporarily suspended.

For latest information, visit our website at oakvilletransit.ca or follow us on social media @oakvilletransit

Info Line 905-815-2020 care-A-van 905-337-9222

While every effort will be made to operate our service to these timetables, all schedules including bus stop times and transfer times are based on normal traffic and weather conditions and as such are subject to change. Oakville Transit will not be responsible for any loss, damage or inconvenience that may result from any errors, omissions or service delays.

OAKVILLE TRANSIT

83 T.A. BLAKELOCK SPECIAL

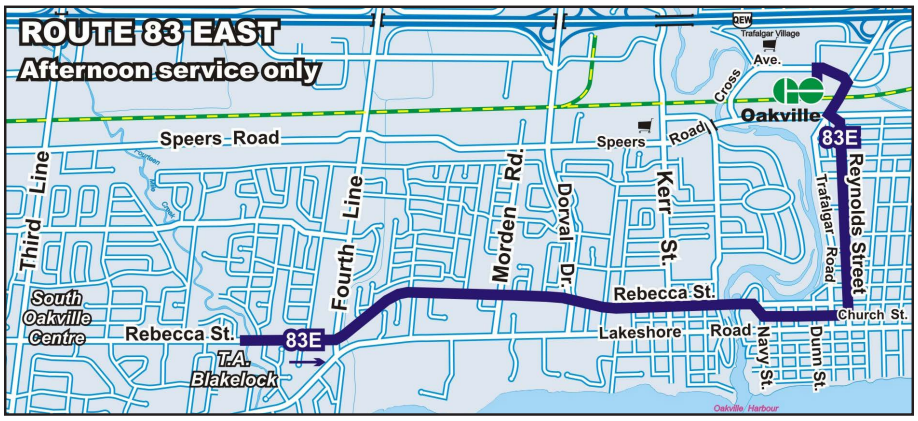
Monday to Friday, effective September 5, 2021

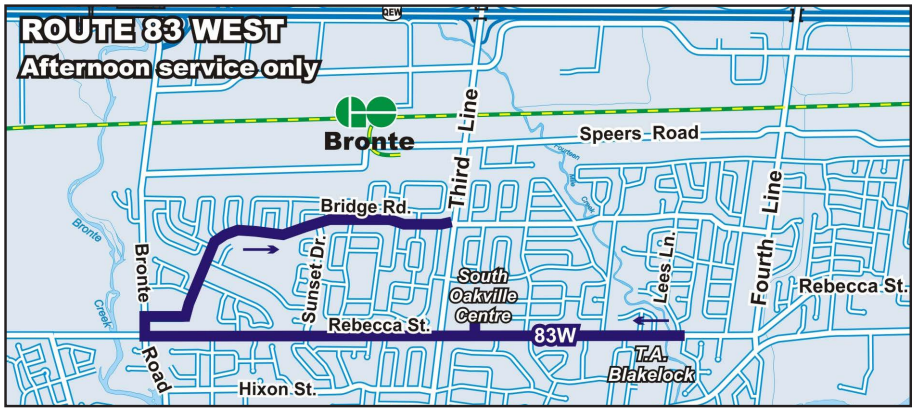
83 Blakelock East

Timepoint	T.A. Blakelock (Depart)	Church & Dunn	Oakville GO (Arrive)
Monday to Friday (afternoon)			
	To Oakville GO		
	2:50	2:57	3:10

83 Blakelock West

Timepoint	Rebecca & Lees Lane (Depart)	South Oakville Centre	Bridge & Third Line
Monday to Friday (afternoon)			
	To Bridge & Third Line		
	2:50	2:55	3:10





Real-time bus tracking

Track your bus at oakvilletransit.ca or download the Oakville Transit mobile app.

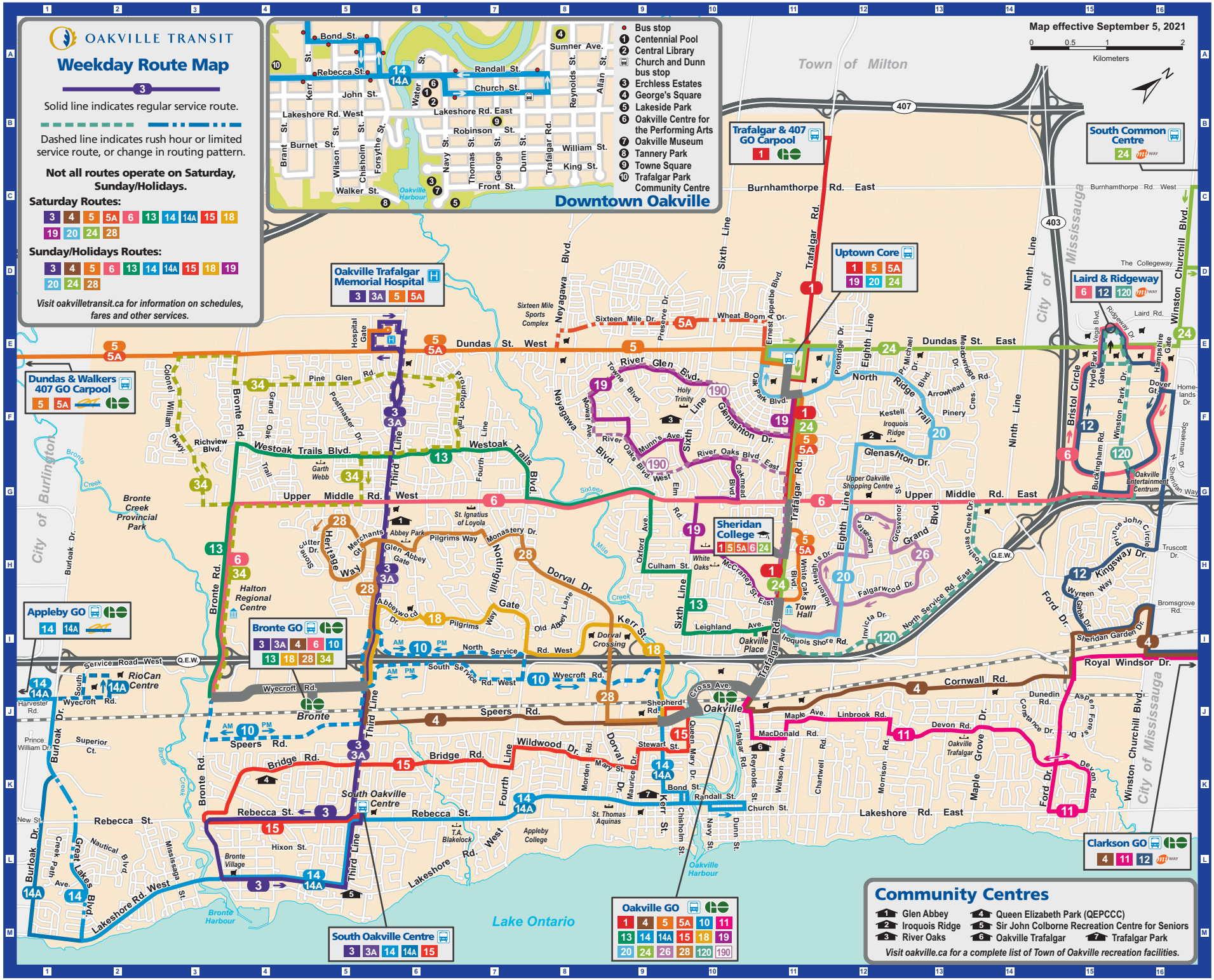
Download on the App Store | GET IT ON Google play

Oakville Transit
430 Wyecroft Road
8:30 a.m. - 4:30 p.m.
Monday - Friday

oakvilletransit.ca
@oakvilletransit

Mailing Address
Oakville Transit
1225 Trafalgar Road
Oakville, ON L6H 0H3

Info Line 905-815-2020
care-A-van 905-337-9222


OAKVILLE TRANSIT
Weekday Route Map
3
Solid line indicates regular service route.
Dashed line indicates rush hour or limited service route, or change in routing pattern.
Not all routes operate on Saturday, Sunday/Holidays.
Saturday Routes:
3 4 5 5A 6 13 14 14A 15 18 19 20 24 28
Sunday/Holidays Routes:
3 4 5 6 13 14 14A 15 18 19 20 24 28
Visit oakvilletransit.ca for information on schedules, fares and other services.
Downtown Oakville
Bus stop
1 Centennial Pool
2 Central Library
Church and Dunn bus stop
3 Erchless Estates
4 George's Square
5 Lakeside Park
6 Oakville Centre for the Performing Arts
7 Oakville Museum
8 Tannery Park
9 Towne Square
10 Trafalgar Park Community Centre
Map effective September 5, 2021
Kilometers
Town of Milton
City of Mississauga
Lake Ontario
Trafalgar & 407 GO Carpool
Uptown Core
South Common Centre
Laird & Ridgeway
Oakville Trafalgar Memorial Hospital
Dundas & Walkers 407 GO Carpool
Sheridan College
Appleby GO
Bronte GO
Oakville GO
South Oakville Centre
Clarkson GO
Community Centres
1 Glen Abbey
2 Iroquois Ridge
3 River Oaks
4 Queen Elizabeth Park (QEPCCC)
5 Sir John Colborne Recreation Centre for Seniors
6 Oakville Trafalgar
7 Trafalgar Park
Visit oakville.ca for a complete list of Town of Oakville recreation facilities.

APPENDIX E

Traffic Data

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & NORTH SERVICE RD / QEW WB ON-OFF RAMPS
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Turning Movement Count (1 . TRAFALGAR RD & NORTH SERVICE RD / QEW WB ON-OFF RAMPS)

Start Time	N Approach TRAFALGAR RD						E Approach QEW WB ON RAMPS			S Approach TRAFALGAR RD						W Approach NORTH SERVICE RD E						SW Approach QEW WB ON RAMPS			NE Approach QEW WB OFF RAMPS							Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Bear Right N:SW	Thru N:S	UTurn N:N	Peds N:	Approach Total	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Hard Right W:SW	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total	UTurn SW:SW	Peds SW:	Approach Total	Hard Right NE:N	Bear Right NE:W	Thru NE:SW	Bear Left NE:S	UTurn NE:NE	Peds NE:	Approach Total		
06:00:00	0	48	85	0	0	133	0	0	0	13	78	0	0	0	91	2	5	0	0	0	7	0	0	0	26	2	0	15	0	0	43	274	
06:15:00	1	66	71	0	0	138	0	0	0	13	100	0	0	0	113	3	2	1	0	1	6	0	3	0	29	0	0	32	0	0	61	318	
06:30:00	0	77	145	0	0	222	0	0	0	27	100	0	0	0	127	3	8	1	0	3	12	0	3	0	46	0	0	44	0	1	90	451	
06:45:00	0	76	141	0	0	217	0	1	0	30	153	0	0	0	183	5	11	0	0	1	16	0	1	0	51	3	0	66	0	2	120	536	1579
07:00:00	0	101	178	0	0	279	0	0	0	30	134	0	0	0	164	9	12	0	0	2	21	0	1	0	36	1	0	58	0	0	95	559	1864
07:15:00	1	124	226	0	0	351	0	1	0	39	177	0	0	0	216	9	15	1	0	1	25	0	2	0	74	3	0	58	0	1	135	727	2273
07:30:00	0	153	262	0	0	415	0	2	0	48	228	0	0	0	276	10	18	0	0	3	28	0	3	0	48	3	0	81	0	2	132	851	2673
07:45:00	0	173	319	0	0	492	0	1	0	41	297	0	0	0	338	13	14	1	0	0	28	0	0	0	80	8	1	81	0	1	170	1028	3165
08:00:00	0	209	335	0	0	544	0	0	0	51	278	0	0	0	329	13	27	1	0	2	41	0	2	0	68	10	1	92	0	0	171	1085	3691
08:15:00	2	216	319	0	0	537	0	2	0	85	383	0	0	0	468	8	18	1	0	1	27	0	1	0	48	7	0	87	0	2	142	1174	4138
08:30:00	0	199	263	0	0	462	0	0	0	83	324	0	0	0	407	8	32	2	0	0	42	0	1	0	49	3	0	81	0	0	133	1044	4331
08:45:00	3	249	332	0	0	584	0	0	0	92	295	0	0	0	387	11	22	2	0	1	35	0	2	0	60	6	0	109	0	0	175	1181	4484
09:00:00	0	154	225	0	0	379	0	3	0	64	318	0	0	0	382	7	12	1	0	1	20	0	1	0	62	8	0	113	0	3	183	964	4363
09:15:00	2	156	217	0	0	375	0	0	0	76	287	0	0	0	363	2	19	0	0	1	21	0	2	0	50	14	1	104	0	0	169	928	4117
09:30:00	0	172	214	0	1	386	0	2	0	59	251	0	0	0	310	8	18	0	0	0	26	0	0	0	48	13	0	108	0	2	169	891	3964
09:45:00	0	132	229	0	0	361	0	0	0	64	265	0	0	0	329	14	18	1	0	2	33	0	1	0	62	12	0	143	0	0	217	940	3723
BREAK																																	
15:00:00	2	244	334	0	0	580	0	2	0	109	446	0	0	0	555	26	28	3	0	1	57	0	1	0	51	11	1	80	0	2	143	1335	
15:15:00	2	186	254	0	0	442	0	0	0	107	449	0	0	0	556	16	37	3	0	4	56	0	3	0	55	11	1	93	0	1	160	1214	
15:30:00	4	205	261	0	0	470	0	1	0	82	465	0	0	0	547	17	25	2	0	6	44	0	5	0	59	28	3	82	0	2	172	1233	
15:45:00	2	200	301	0	0	503	0	4	0	110	402	0	0	0	512	20	41	5	0	4	66	0	9	0	67	23	0	89	0	4	179	1260	5042
16:00:00	3	209	275	0	0	487	0	3	0	85	494	0	0	0	579	15	36	4	0	2	55	0	6	0	72	15	1	59	0	3	147	1268	4975
16:15:00	4	196	242	0	0	442	0	1	0	97	452	0	0	0	549	16	14	2	0	5	32	0	5	0	72	28	2	79	0	1	181	1204	4965
16:30:00	2	220	273	0	0	495	0	3	0	111	532	0	0	0	643	18	32	1	0	2	51	0	2	0	48	25	2	73	0	3	148	1337	5069
16:45:00	1	184	286	0	0	471	0	2	0	98	452	0	0	0	550	15	27	3	0	0	45	0	2	0	64	28	0	74	0	2	166	1232	5041
17:00:00	4	201	293	0	0	498	0	3	0	94	533	0	0	0	627	23	41	5	0	3	69	0	5	0	71	20	1	70	0	3	162	1356	5129
17:15:00	4	181	245	0	0	430	0	0	0	95	550	0	0	0	645	27	27	4	0	1	58	0	1	0	60	25	4	108	0	0	197	1330	5255
17:30:00	6	181	270	0	0	457	0	0	0	111	480	0	0	0	591	10	27	5	0	1	42	0	3	0	75	27	0	81	0	1	183	1273	5191
17:45:00	2	158	258	0	0	418	0	0	0	84	483	0	0	0	567	19	36	2	0	0	57	0	2	0	81	25	3	111	0	1	220	1262	5221
18:00:00	2	195	239	0	0	436	0	1	0	82	466	1	0	0	549	21	28	3	0	2	52	0	3	0	58	18	0	84	0	0	160	1197	5062
18:15:00	6	127	225	0	0	358	0	1	0	79	416	0	0	0	495	26	28	7	0	1	61	0	3	0	80	24	0	92	0	1	196	1110	4842
18:30:00	3	182	208	0	0	393	0	1	0	73	398	0	0	0	471	21	20	2	0	5	43	0	6	0	52	17	1	71	0	1	141	1048	4617
18:45:00	3	154	205	0	0	362	0	0	0	64	317	0	0	0	381	21	17	4	0	0	42	0	0	0	63	22	0	87	0	1	172	957	4312
Grand Total	59	5328	7730	0	1	13117	0	34	0	2296	11003	1	0	0	13300	436	715	67	0	56	1218	0	79	0	1865	440	22	2605	0	40	4932	**32567**	-
Approach%	0.4%	40.6%	58.9%	0%		-	0%		-	17.3%	82.7%	0%	0%		-	35.8%	58.7%	5.5%	0%		-	0%		-	37.8%	8.9%	0.4%	52.8%	0%		-	-	-
Totals %	0.2%	16.4%	23.7%	0%		40.3%	0%		0%	7.1%	33.8%	0%	0%		40.8%	1.3%	2.2%	0.2%	0%		3.7%	0%		0%	5.7%	1.4%	0.1%	8%	0%		15.1%	-	-
Heavy	2	148	263	0		-	0		-	65	349	0	0		-	6	12	1	0		-	0		-	53	4	0	80	0		-	-	-
Heavy %	3.4%	2.8%	3.4%	0%		-	0%		-	2.8%	3.2%	0%	0%		-	1.4%	1.7%	1.5%	0%		-	0%		-	2.8%	0.9%	0%	3.1%	0%		-	-	-
Bicycles	-	-	-	-		-	-		-	-	-	-	-		-	-	-	-	-		-	-		-	-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-		-	-	-	-	-		-	-	-	-	-		-	-		-	-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & NORTH SERVICE RD / QEW WB ON-OFF RAMPS
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (9.31 °C)

Start Time	N Approach TRAFALGAR RD						E Approach QEW WB ON RAMPS			S Approach TRAFALGAR RD						W Approach NORTH SERVICE RD E						SW Approach QEW WB ON RAMPS			NE Approach QEW WB OFF RAMPS						Int. Total (15 min)
	Right	Bear Right	Thru	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Hard Right	Right	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Hard Right	Bear Right	Thru	Bear Left	UTurn	Peds	Approach Total	
08:00:00	0	209	335	0	0	544	0	0	0	51	278	0	0	0	329	13	27	1	0	2	41	0	2	0	68	10	1	92	0	0	171	1085
08:15:00	2	216	319	0	0	537	0	2	0	85	383	0	0	0	468	8	18	1	0	1	27	0	1	0	48	7	0	87	0	2	142	1174
08:30:00	0	199	263	0	0	462	0	0	0	83	324	0	0	0	407	8	32	2	0	0	42	0	1	0	49	3	0	81	0	0	133	1044
08:45:00	3	249	332	0	0	584	0	0	0	92	295	0	0	0	387	11	22	2	0	1	35	0	2	0	60	6	0	109	0	0	175	1181
Grand Total	5	873	1249	0	0	2127	0	2	0	311	1280	0	0	0	1591	40	99	6	0	4	145	0	6	0	225	26	1	369	0	2	621	**4484**
Approach%	0.2%	41%	58.7%	0%		-	0%		-	19.5%	80.5%	0%	0%		-	27.6%	68.3%	4.1%	0%		-	0%		-	36.2%	4.2%	0.2%	59.4%	0%		-	-
Totals %	0.1%	19.5%	27.9%	0%		47.4%	0%		0%	6.9%	28.5%	0%	0%		35.5%	0.9%	2.2%	0.1%	0%		3.2%	0%		0%	5%	0.6%	0%	8.2%	0%		13.8%	-
PHF	0.42	0.88	0.93	0		0.91	0		0	0.85	0.84	0	0		0.85	0.77	0.77	0.75	0		0.86	0		0	0.83	0.65	0.25	0.85	0		0.89	-
Heavy	0	29	53	0		82	0		0	16	60	0	0		76	0	1	0	0		1	0		0	8	1	0	16	0		25	-
Heavy %	0%	3.3%	4.2%	0%		3.9%	0%		0%	5.1%	4.7%	0%	0%		4.8%	0%	1%	0%	0%		0.7%	0%		0%	3.6%	3.8%	0%	4.3%	0%		4%	-
Lights	5	844	1196	0		2045	0		0	295	1220	0	0		1515	40	98	6	0		144	0		0	217	25	1	353	0		596	-
Lights %	100%	96.7%	95.8%	0%		96.1%	0%		0%	94.9%	95.3%	0%	0%		95.2%	100%	99%	100%	0%		99.3%	0%		0%	96.4%	96.2%	100%	95.7%	0%		96%	-
Single-Unit Trucks	0	13	14	0		27	0		0	3	19	0	0		22	0	0	0	0		0	0		0	6	1	0	11	0		18	-
Single-Unit Trucks %	0%	1.5%	1.1%	0%		1.3%	0%		0%	1%	1.5%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%		0%	2.7%	3.8%	0%	3%	0%		2.9%	-
Buses	0	6	37	0		43	0		0	10	38	0	0		48	0	1	0	0		1	0		0	0	0	0	2	0		2	-
Buses %	0%	0.7%	3%	0%		2%	0%		0%	3.2%	3%	0%	0%		3%	0%	1%	0%	0%		0.7%	0%		0%	0%	0%	0%	0.5%	0%		0.3%	-
Articulated Trucks	0	10	2	0		12	0		0	3	3	0	0		6	0	0	0	0		0	0		0	2	0	0	3	0		5	-
Articulated Trucks %	0%	1.1%	0.2%	0%		0.6%	0%		0%	1%	0.2%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%		0%	0.9%	0%	0%	0.8%	0%		0.8%	-
Pedestrians	-	-	-	-	0	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	-	-	5	-	-	-	-	-	-	1	-	-
Pedestrians%	-	-	-	-	0%		-	7.1%		-	-	-	-	0%		-	-	-	-	21.4%		-	35.7%		-	-	-	-	-	7.1%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	7.1%		-	-	-	-	0%		-	-	-	-	7.1%		-	7.1%		-	-	-	-	-	7.1%		-

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & NORTH SERVICE RD / QEW WB ON-OFF RAMPS
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

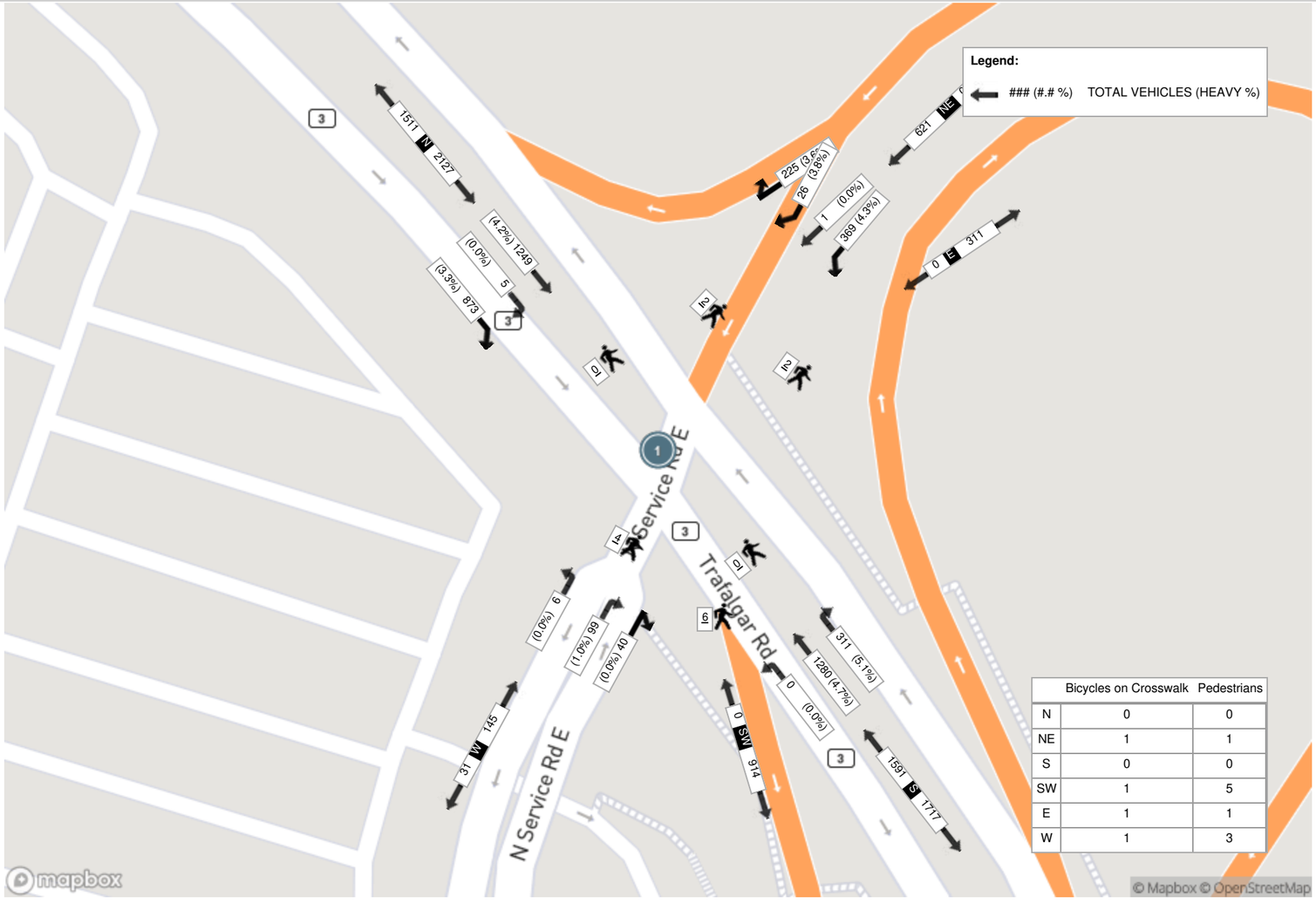
Crozier & Associates
SUITE 301 211 YONGE STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (19.92 °C)

Start Time	N Approach TRAFALGAR RD						E Approach QEW WB ON RAMPS			S Approach TRAFALGAR RD						W Approach NORTH SERVICE RD E						SW Approach QEW WB ON RAMPS			NE Approach QEW WB OFF RAMPS						Int. Total (15 min)
	Right	Bear Right	Thru	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Hard Right	Right	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Hard Right	Bear Right	Thru	Bear Left	UTurn	Peds	Approach Total	
16:30:00	2	220	273	0	0	495	0	3	0	111	532	0	0	0	643	18	32	1	0	2	51	0	2	0	48	25	2	73	0	3	148	1337
16:45:00	1	184	286	0	0	471	0	2	0	98	452	0	0	0	550	15	27	3	0	0	45	0	2	0	64	28	0	74	0	2	166	1232
17:00:00	4	201	293	0	0	498	0	3	0	94	533	0	0	0	627	23	41	5	0	3	69	0	5	0	71	20	1	70	0	3	162	1356
17:15:00	4	181	245	0	0	430	0	0	0	95	550	0	0	0	645	27	27	4	0	1	58	0	1	0	60	25	4	108	0	0	197	1330
Grand Total	11	786	1097	0	0	1894	0	8	0	398	2067	0	0	0	2465	83	127	13	0	6	223	0	10	0	243	98	7	325	0	8	673	**5255**
Approach%	0.6%	41.5%	57.9%	0%		-	0%		-	16.1%	83.9%	0%	0%		-	37.2%	57%	5.8%	0%		-	0%		-	36.1%	14.6%	1%	48.3%	0%		-	-
Totals %	0.2%	15%	20.9%	0%		36%	0%		0%	7.6%	39.3%	0%	0%		46.9%	1.6%	2.4%	0.2%	0%		4.2%	0%		0%	4.6%	1.9%	0.1%	6.2%	0%		12.8%	-
PHF	0.69	0.89	0.94	0		0.95	0		0	0.9	0.94	0	0		0.96	0.77	0.77	0.65	0		0.81	0		0	0.86	0.88	0.44	0.75	0		0.85	-
Heavy	0	15	24	0		39	0		0	6	37	0	0		43	1	2	0	0		3	0		0	6	1	0	4	0		11	-
Heavy %	0%	1.9%	2.2%	0%		2.1%	0%		0%	1.5%	1.8%	0%	0%		1.7%	1.2%	1.6%	0%	0%		1.3%	0%		0%	2.5%	1%	0%	1.2%	0%		1.6%	-
Lights	11	771	1073	0		1855	0		0	392	2030	0	0		2422	82	125	13	0		220	0		0	237	97	7	321	0		662	-
Lights %	100%	98.1%	97.8%	0%		97.9%	0%		0%	98.5%	98.2%	0%	0%		98.3%	98.8%	98.4%	100%	0%		98.7%	0%		0%	97.5%	99%	100%	98.8%	0%		98.4%	-
Single-Unit Trucks	0	10	5	0		15	0		0	3	12	0	0		15	0	2	0	0		2	0		0	4	1	0	3	0		8	-
Single-Unit Trucks %	0%	1.3%	0.5%	0%		0.8%	0%		0%	0.8%	0.6%	0%	0%		0.6%	0%	1.6%	0%	0%		0.9%	0%		0%	1.6%	1%	0%	0.9%	0%		1.2%	-
Buses	0	3	19	0		22	0		0	1	24	0	0		25	1	0	0	0		1	0		0	0	0	0	0	0		0	-
Buses %	0%	0.4%	1.7%	0%		1.2%	0%		0%	0.3%	1.2%	0%	0%		1%	1.2%	0%	0%	0%		0.4%	0%		0%	0%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	2	0	0		2	0		0	2	1	0	0		3	0	0	0	0		0	0		0	2	0	0	1	0		3	-
Articulated Trucks %	0%	0.3%	0%	0%		0.1%	0%		0%	0.5%	0%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%		0%	0.8%	0%	0%	0.3%	0%		0.4%	-
Pedestrians	-	-	-	-	0	-	-	4	-	-	-	-	-	0	-	-	-	-	-	5	-	-	7	-	-	-	-	-	-	4	-	-
Pedestrians%	-	-	-	-	0%		-	12.5%		-	-	-	-	0%		-	-	-	-	15.6%		-	21.9%		-	-	-	-	-	12.5%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	4	-	-	-	-	-	0	-	-	-	-	-	1	-	-	3	-	-	-	-	-	-	4	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	12.5%		-	-	-	-	0%		-	-	-	-	3.1%		-	9.4%		-	-	-	-	-	12.5%		-

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

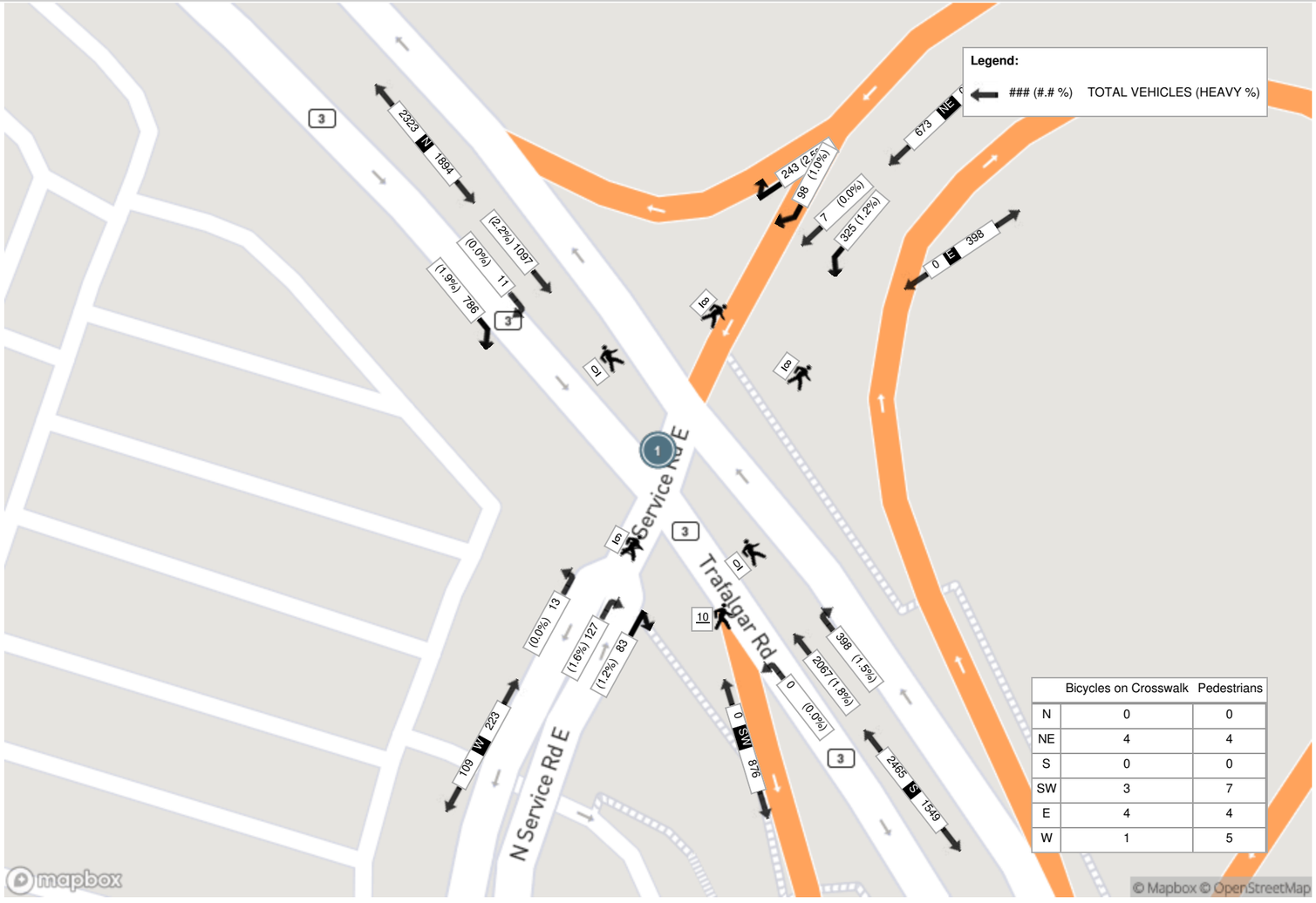
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (9.31 °C)



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

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

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (19.92 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
NE	4	4
S	0	0
SW	3	7
E	4	4
W	1	5

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & QEW EB ON-OFF RAMPS
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Turning Movement Count (2 . TRAFALGAR RD & QEW EB ON-OFF RAMPS)

Start Time	N Approach TRAFALGAR RD					E Approach QEW EB ON RAMPS			S Approach TRAFALGAR RD					W Approach QEW EB OFF RAMPS					NW Approach QEW EB ON RAMPS			Int. Total (15 min)	Int. Total (1 hr)
	Hard Right N:NW	Thru N:S	UTurn N:N	Peds N:	Approach Total	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total	UTurn NW:NW	Peds NW:	Approach Total		
06:00:00	29	70	0	0	99	0	0	0	27	34	0	0	61	31	56	0	0	87	0	0	0	247	
06:15:00	43	64	0	0	107	0	2	0	43	45	0	0	88	34	67	0	2	101	0	2	0	296	
06:30:00	46	150	0	0	196	0	0	0	48	50	0	0	98	59	79	0	3	138	0	3	0	432	
06:45:00	58	163	0	0	221	0	1	0	64	89	0	0	153	71	93	0	1	164	0	1	0	538	1513
07:00:00	53	197	0	0	250	0	0	0	71	81	1	0	153	67	85	0	1	152	0	1	0	555	1821
07:15:00	69	225	0	0	294	0	1	0	73	114	0	0	187	66	110	0	1	176	0	1	0	657	2182
07:30:00	76	287	0	0	363	0	1	0	68	147	0	1	215	87	119	0	4	206	0	4	0	784	2534
07:45:00	91	295	0	0	386	0	0	0	93	162	0	1	255	123	185	0	0	308	0	0	0	949	2945
08:00:00	103	380	0	0	483	0	1	0	95	173	0	0	268	110	169	0	2	279	0	2	0	1030	3420
08:15:00	83	324	0	0	407	0	1	0	89	267	0	0	356	145	202	0	1	347	0	2	0	1110	3873
08:30:00	84	302	0	0	386	0	0	0	115	269	0	0	384	134	160	0	1	294	0	1	0	1064	4153
08:45:00	72	390	0	0	462	0	0	0	75	207	0	0	282	138	154	0	3	292	0	3	0	1036	4240
09:00:00	47	288	0	0	335	0	3	0	80	220	0	0	300	124	174	0	1	298	0	1	0	933	4143
09:15:00	55	302	0	0	357	0	2	0	91	227	0	0	318	104	129	0	2	233	0	2	0	908	3941
09:30:00	63	266	0	0	329	0	0	0	80	164	0	0	244	106	145	0	0	251	0	0	0	824	3701
09:45:00	67	337	0	0	404	0	0	0	98	200	0	0	298	106	140	0	2	246	0	2	0	948	3613
BREAK																							
15:00:00	95	330	0	0	425	0	2	0	132	349	0	0	481	104	193	0	4	297	0	4	0	1203	
15:15:00	85	307	0	0	392	0	0	0	116	373	0	0	489	95	180	0	4	275	0	4	0	1156	
15:30:00	76	307	0	0	383	0	2	0	104	374	0	1	478	84	185	0	4	269	0	3	0	1130	
15:45:00	74	348	0	0	422	0	4	0	98	349	0	0	447	86	156	0	9	242	0	9	0	1111	4600
16:00:00	65	305	0	0	370	0	3	0	126	397	0	1	523	66	203	0	6	269	0	6	0	1162	4559
16:15:00	56	283	0	0	339	0	1	0	99	354	0	0	453	84	194	0	4	278	0	4	0	1070	4473
16:30:00	76	309	0	0	385	0	3	0	109	425	0	0	534	68	217	0	3	285	0	3	0	1204	4547
16:45:00	78	297	0	0	375	0	2	0	100	329	0	0	429	85	207	0	2	292	0	2	0	1096	4532
17:00:00	75	335	0	0	410	0	2	0	109	441	0	1	550	73	206	0	4	279	0	5	0	1239	4609
17:15:00	52	296	0	0	348	0	0	0	136	386	0	0	522	58	245	0	2	303	0	1	0	1173	4712
17:30:00	51	359	0	0	410	0	0	0	116	381	0	0	497	87	202	0	3	289	0	3	0	1196	4704
17:45:00	44	331	0	0	375	0	0	0	85	361	0	1	446	92	226	0	2	318	0	2	0	1139	4747
18:00:00	58	332	0	0	390	0	0	0	121	369	0	1	490	88	182	0	3	270	0	3	0	1150	4658
18:15:00	57	281	0	0	338	0	1	0	94	309	0	0	403	90	172	0	4	262	0	4	0	1003	4488
18:30:00	61	223	0	0	284	0	1	0	92	298	0	0	390	70	181	0	5	251	0	5	0	925	4217
18:45:00	56	265	0	0	321	0	0	0	79	248	0	0	327	75	128	0	1	203	0	1	0	851	3929
Grand Total	2098	8948	0	0	11046	0	33	0	2926	8192	1	7	11119	2810	5144	0	84	7954	0	84	0	**30119**	-
Approach%	19%	81%	0%		-	0%		-	26.3%	73.7%	0%		-	35.3%	64.7%	0%		-	0%		-	**-**	-
Totals %	7%	29.7%	0%		36.7%	0%		0%	9.7%	27.2%	0%		36.9%	9.3%	17.1%	0%		26.4%	0%		0%	**-**	-
Heavy	60	295	0		-	0		-	78	287	0		-	82	123	0		-	0		-	**-**	-
Heavy %	2.9%	3.3%	0%		-	0%		-	2.7%	3.5%	0%		-	2.9%	2.4%	0%		-	0%		-	**-**	-
Bicycles	-	-	-		-	-		-	-	-	-		-	-	-	-		-	-		-	**-**	-
Bicycle %	-	-	-		-	-		-	-	-	-		-	-	-	-		-	-		-	**-**	-

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & QEW EB ON-OFF RAMPS
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Peak Hour: 08:00 AM - 09:00 AM **Weather: Overcast Clouds (9.31 °C)**

Start Time	N Approach TRAFALGAR RD					E Approach QEW EB ON RAMPS			S Approach TRAFALGAR RD					W Approach QEW EB OFF RAMPS					NW Approach QEW EB ON RAMPS			Int. Total (15 min)
	Hard Right	Thru	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	
08:00:00	103	380	0	0	483	0	1	0	95	173	0	0	268	110	169	0	2	279	0	2	0	1030
08:15:00	83	324	0	0	407	0	1	0	89	267	0	0	356	145	202	0	1	347	0	2	0	1110
08:30:00	84	302	0	0	386	0	0	0	115	269	0	0	384	134	160	0	1	294	0	1	0	1064
08:45:00	72	390	0	0	462	0	0	0	75	207	0	0	282	138	154	0	3	292	0	3	0	1036
Grand Total	342	1396	0	0	1738	0	2	0	374	916	0	0	1290	527	685	0	7	1212	0	8	0	**4240**
Approach%	19.7%	80.3%	0%		-	0%		-	29%	71%	0%		-	43.5%	56.5%	0%		-	0%		-	**-**
Totals %	8.1%	32.9%	0%		41%	0%		0%	8.8%	21.6%	0%		30.4%	12.4%	16.2%	0%		28.6%	0%		0%	**-**
PHF	0.83	0.89	0		0.9	0		0	0.81	0.85	0		0.84	0.91	0.85	0		0.87	0		0	**-**
Heavy	8	58	0		66	0		0	10	60	0		70	9	16	0		25	0		0	**-**
Heavy %	2.3%	4.2%	0%		3.8%	0%		0%	2.7%	6.6%	0%		5.4%	1.7%	2.3%	0%		2.1%	0%		0%	**-**
Lights	334	1338	0		1672	0		0	364	856	0		1220	518	669	0		1187	0		0	**-**
Lights %	97.7%	95.8%	0%		96.2%	0%		0%	97.3%	93.4%	0%		94.6%	98.3%	97.7%	0%		97.9%	0%		0%	**-**
Single-Unit Trucks	3	20	0		23	0		0	8	13	0		21	4	9	0		13	0		0	**-**
Single-Unit Trucks %	0.9%	1.4%	0%		1.3%	0%		0%	2.1%	1.4%	0%		1.6%	0.8%	1.3%	0%		1.1%	0%		0%	**-**
Buses	4	34	0		38	0		0	1	44	0		45	5	4	0		9	0		0	**-**
Buses %	1.2%	2.4%	0%		2.2%	0%		0%	0.3%	4.8%	0%		3.5%	0.9%	0.6%	0%		0.7%	0%		0%	**-**
Articulated Trucks	1	4	0		5	0		0	1	3	0		4	0	3	0		3	0		0	**-**
Articulated Trucks %	0.3%	0.3%	0%		0.3%	0%		0%	0.3%	0.3%	0%		0.3%	0%	0.4%	0%		0.2%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	1	-	-	-	-	0	-	-	-	-	6	-	-	6	-	**-**
Pedestrians%	-	-	-	0%		-	5.9%		-	-	-	0%		-	-	-	35.3%		-	35.3%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	5.9%		-	-	-	0%		-	-	-	5.9%		-	11.8%		**-**

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & QEW EB ON-OFF RAMPS
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

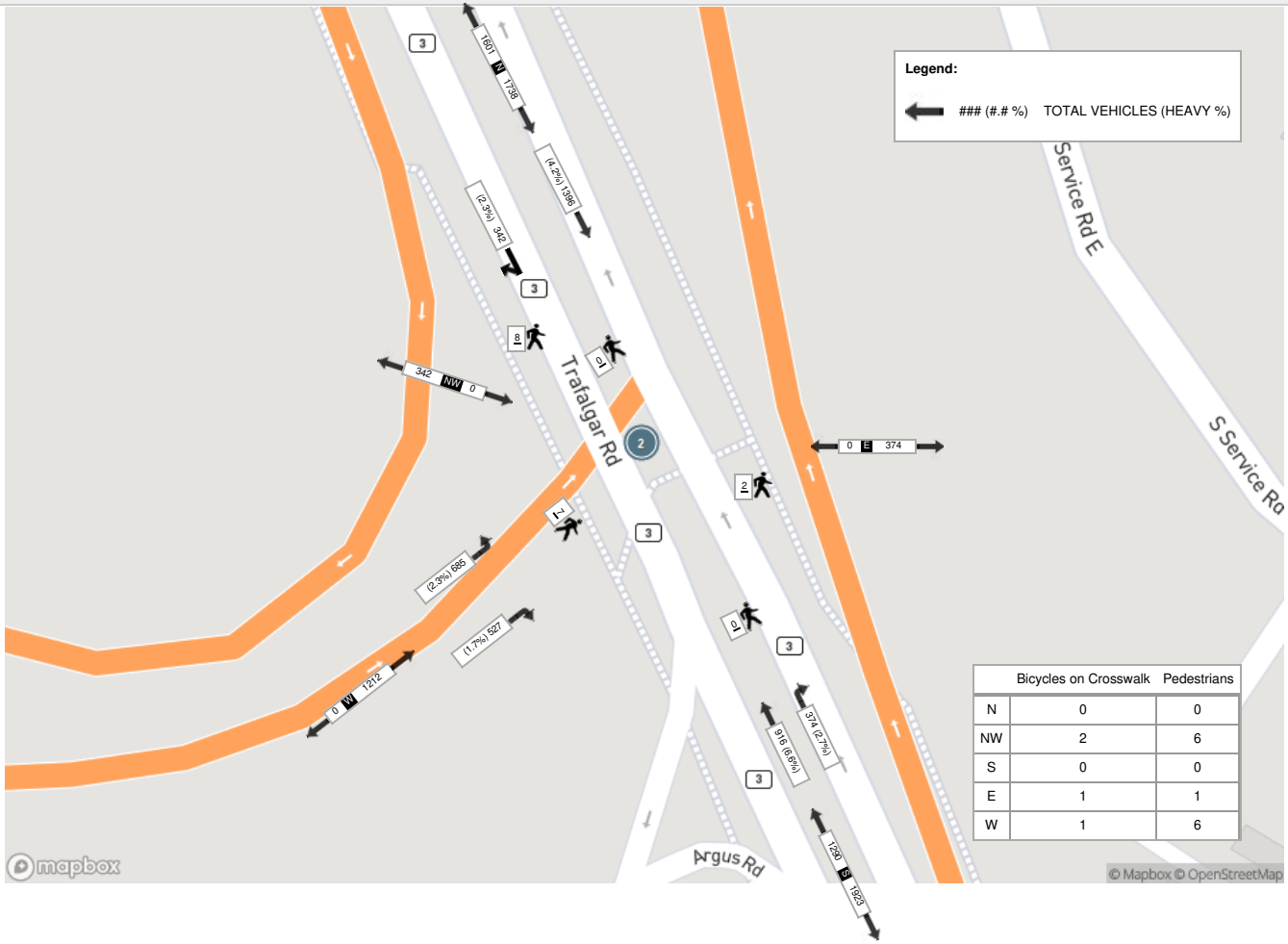
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (19.92 °C)

Start Time	N Approach TRAFALGAR RD					E Approach QEW EB ON RAMPS			S Approach TRAFALGAR RD					W Approach QEW EB OFF RAMPS					NW Approach QEW EB ON RAMPS			Int. Total (15 min)
	Hard Right	Thru	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	
17:00:00	75	335	0	0	410	0	2	0	109	441	0	1	550	73	206	0	4	279	0	5	0	1239
17:15:00	52	296	0	0	348	0	0	0	136	386	0	0	522	58	245	0	2	303	0	1	0	1173
17:30:00	51	359	0	0	410	0	0	0	116	381	0	0	497	87	202	0	3	289	0	3	0	1196
17:45:00	44	331	0	0	375	0	0	0	85	361	0	1	446	92	226	0	2	318	0	2	0	1139
Grand Total	222	1321	0	0	1543	0	2	0	446	1569	0	2	2015	310	879	0	11	1189	0	11	0	**4747**
Approach%	14.4%	85.6%	0%		-	0%		-	22.1%	77.9%	0%		-	26.1%	73.9%	0%		-	0%		-	**-**
Totals %	4.7%	27.8%	0%		32.5%	0%		0%	9.4%	33.1%	0%		42.4%	6.5%	18.5%	0%		25%	0%		0%	**-**
PHF	0.74	0.92	0		0.94	0		0	0.82	0.89	0		0.92	0.84	0.9	0		0.93	0		0	**-**
Heavy	3	30	0		33	0		0	9	29	0		38	4	6	0		10	0		0	**-**
Heavy %	1.4%	2.3%	0%		2.1%	0%		0%	2%	1.8%	0%		1.9%	1.3%	0.7%	0%		0.8%	0%		0%	**-**
Lights	219	1291	0		1510	0		0	437	1540	0		1977	306	873	0		1179	0		0	**-**
Lights %	98.6%	97.7%	0%		97.9%	0%		0%	98%	98.2%	0%		98.1%	98.7%	99.3%	0%		99.2%	0%		0%	**-**
Single-Unit Trucks	2	8	0		10	0		0	8	5	0		13	0	3	0		3	0		0	**-**
Single-Unit Trucks %	0.9%	0.6%	0%		0.6%	0%		0%	1.8%	0.3%	0%		0.6%	0%	0.3%	0%		0.3%	0%		0%	**-**
Buses	0	21	0		21	0		0	0	22	0		22	3	0	0		3	0		0	**-**
Buses %	0%	1.6%	0%		1.4%	0%		0%	0%	1.4%	0%		1.1%	1%	0%	0%		0.3%	0%		0%	**-**
Articulated Trucks	1	1	0		2	0		0	1	2	0		3	1	3	0		4	0		0	**-**
Articulated Trucks %	0.5%	0.1%	0%		0.1%	0%		0%	0.2%	0.1%	0%		0.1%	0.3%	0.3%	0%		0.3%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	0	-	-	-	-	2	-	-	-	-	9	-	-	8	-	**-**
Pedestrians%	-	-	-	0%		-	0%		-	-	-	7.7%		-	-	-	34.6%		-	30.8%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	2	-	-	-	-	0	-	-	-	-	2	-	-	3	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	7.7%		-	-	-	0%		-	-	-	7.7%		-	11.5%		**-**

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

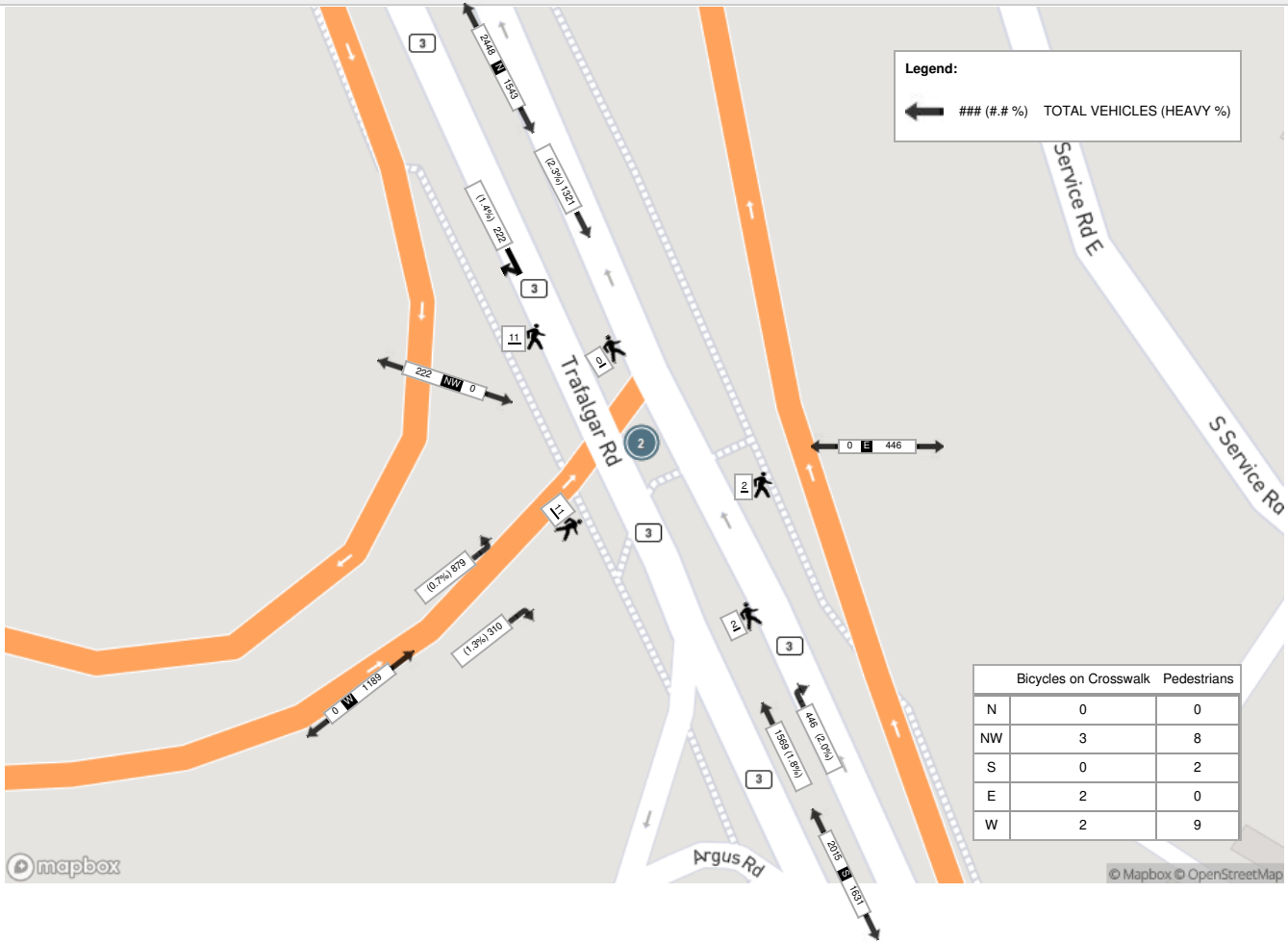
Peak Hour: 08:00 AM - 09:00 AM **Weather: Overcast Clouds (9.31 °C)**



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

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

Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (19.92 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
NW	3	8
S	0	2
E	2	0
W	2	9

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & SOUTH SERVICE RD E / CROSS AVENUE
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Turning Movement Count (3 . TRAFALGAR RD & SOUTH SERVICE RD E / CROSS AVENUE)

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		
06:00:00	32	53	8	0	0	93	6	0	2	0	0	8	3	35	2	0	0	40	5	1	23	0	0	29	170	
06:15:00	22	48	9	0	0	79	3	0	1	0	2	4	4	61	2	0	0	67	4	6	17	0	1	27	177	
06:30:00	53	99	10	0	0	162	5	3	3	0	0	11	3	78	3	0	1	84	5	2	22	0	3	29	286	
06:45:00	29	155	22	1	1	207	9	4	2	0	1	15	4	103	5	0	2	112	11	5	26	0	1	42	376	1009
07:00:00	72	111	10	1	0	194	22	2	1	0	0	25	3	97	11	0	2	111	11	6	43	0	1	60	390	1229
07:15:00	69	159	18	4	0	250	7	4	2	0	3	13	3	131	8	0	1	142	10	5	41	0	2	56	461	1513
07:30:00	75	208	14	1	0	298	7	4	11	0	0	22	4	154	15	0	0	173	12	7	52	0	1	71	564	1791
07:45:00	71	249	32	0	0	352	16	6	2	0	0	24	7	181	11	0	1	199	15	10	72	0	2	97	672	2087
08:00:00	65	308	31	0	0	404	12	9	12	0	0	33	10	200	12	0	1	222	16	8	44	0	2	68	727	2424
08:15:00	48	313	35	0	0	396	19	9	4	0	1	32	0	268	23	0	1	291	22	8	70	0	0	100	819	2782
08:30:00	56	286	36	2	0	380	23	5	13	0	0	41	7	293	20	0	3	320	12	7	58	0	1	77	818	3036
08:45:00	42	336	34	2	0	414	18	9	5	0	2	32	6	202	18	0	2	226	19	7	52	0	1	78	750	3114
09:00:00	56	264	43	4	0	367	25	6	12	0	1	43	9	206	13	2	1	230	20	4	68	0	1	92	732	3119
09:15:00	51	270	31	0	0	352	23	4	5	0	2	32	11	224	19	0	2	254	23	5	61	0	2	89	727	3027
09:30:00	42	224	27	2	0	295	21	12	8	0	0	41	6	157	18	0	1	181	21	8	69	0	1	98	615	2824
09:45:00	49	305	28	0	0	382	9	8	15	0	0	32	10	198	25	0	1	233	27	9	75	0	2	111	758	2832
BREAK																										
15:00:00	37	269	33	0	0	339	39	14	12	0	1	65	8	330	24	0	0	362	22	16	110	0	3	148	914	
15:15:00	44	304	16	2	0	366	34	17	13	0	1	64	9	352	40	0	7	401	29	7	87	0	1	123	954	
15:30:00	51	265	23	1	0	340	37	12	11	0	2	60	9	357	10	0	2	376	23	12	89	0	5	124	900	
15:45:00	51	293	16	2	0	362	35	20	14	0	1	69	7	305	23	1	2	336	22	6	94	0	2	122	889	3657
16:00:00	43	256	19	4	0	322	43	10	18	0	4	71	10	373	30	0	3	413	29	8	96	0	4	133	939	3682
16:15:00	47	232	16	4	0	299	36	18	14	0	2	68	3	295	28	0	2	326	24	8	116	0	3	148	841	3569
16:30:00	47	283	15	3	0	348	44	12	11	0	3	67	11	356	28	1	1	396	31	8	103	0	2	142	953	3622
16:45:00	42	244	12	2	0	300	28	15	13	0	1	56	3	312	16	0	6	331	27	10	96	0	2	133	820	3553
17:00:00	48	295	23	4	0	370	51	16	18	0	3	85	14	346	21	0	4	381	32	8	127	0	3	167	1003	3617
17:15:00	41	265	20	0	0	326	47	19	22	0	0	88	6	329	15	0	1	350	21	9	147	0	2	177	941	3717
17:30:00	71	286	15	4	0	376	35	7	16	0	2	58	6	336	24	0	3	366	21	8	106	0	3	135	935	3699
17:45:00	46	311	10	3	0	370	27	11	8	0	0	46	5	272	28	2	0	307	29	9	149	0	0	187	910	3789
18:00:00	61	301	26	3	0	391	39	7	8	0	0	54	14	324	21	0	1	359	27	6	112	0	1	145	949	3735
18:15:00	47	262	17	5	0	331	31	4	8	0	2	43	5	253	14	1	2	273	25	8	118	0	1	151	798	3592
18:30:00	41	213	7	2	0	263	10	8	4	0	1	22	6	290	18	0	1	314	14	4	100	0	1	118	717	3374
18:45:00	63	234	7	4	0	308	10	7	4	0	0	21	6	211	10	0	2	227	21	3	66	0	3	90	646	3110
Grand Total	1612	7701	663	60	1	10036	771	282	292	0	35	1345	212	7629	555	7	56	8403	630	228	2509	0	57	3367	**23151**	-
Approach%	16.1%	76.7%	6.6%	0.6%		-	57.3%	21%	21.7%	0%		-	2.5%	90.8%	6.6%	0.1%		-	18.7%	6.8%	74.5%	0%		-	-	-
Totals %	7%	33.3%	2.9%	0.3%		43.4%	3.3%	1.2%	1.3%	0%		5.8%	0.9%	33%	2.4%	0%		36.3%	2.7%	1%	10.8%	0%		14.5%	-	-
Heavy	109	143	17	0		-	31	5	10	0		-	6	154	31	0		-	35	8	179	0		-	-	-
Heavy %	6.8%	1.9%	2.6%	0%		-	4%	1.8%	3.4%	0%		-	2.8%	2%	5.6%	0%		-	5.6%	3.5%	7.1%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & SOUTH SERVICE RD E / CROSS AVENUE
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Peak Hour: 08:15 AM - 09:15 AM **Weather: Overcast Clouds (9.31 °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	
08:15:00	48	313	35	0	0	396	19	9	4	0	1	32	0	268	23	0	1	291	22	8	70	0	0	100	819
08:30:00	56	286	36	2	0	380	23	5	13	0	0	41	7	293	20	0	3	320	12	7	58	0	1	77	818
08:45:00	42	336	34	2	0	414	18	9	5	0	2	32	6	202	18	0	2	226	19	7	52	0	1	78	750
09:00:00	56	264	43	4	0	367	25	6	12	0	1	43	9	206	13	2	1	230	20	4	68	0	1	92	732
Grand Total	202	1199	148	8	0	1557	85	29	34	0	4	148	22	969	74	2	7	1067	73	26	248	0	3	347	**3119**
Approach%	13%	77%	9.5%	0.5%		-	57.4%	19.6%	23%	0%		-	2.1%	90.8%	6.9%	0.2%		-	21%	7.5%	71.5%	0%		-	**-**
Totals %	6.5%	38.4%	4.7%	0.3%		49.9%	2.7%	0.9%	1.1%	0%		4.7%	0.7%	31.1%	2.4%	0.1%		34.2%	2.3%	0.8%	8%	0%		11.1%	**-**
PHF	0.9	0.89	0.86	0.5		0.94	0.85	0.81	0.65	0		0.86	0.61	0.83	0.8	0.25		0.83	0.83	0.81	0.89	0		0.87	**-**
Heavy	14	32	2	0		48	1	0	2	0		3	0	39	3	0		42	3	0	25	0		28	**-**
Heavy %	6.9%	2.7%	1.4%	0%		3.1%	1.2%	0%	5.9%	0%		2%	0%	4%	4.1%	0%		3.9%	4.1%	0%	10.1%	0%		8.1%	**-**
Lights	188	1167	146	8		1509	84	29	32	0		145	22	930	71	2		1025	70	26	223	0		319	**-**
Lights %	93.1%	97.3%	98.6%	100%		96.9%	98.8%	100%	94.1%	0%		98%	100%	96%	95.9%	100%		96.1%	95.9%	100%	89.9%	0%		91.9%	**-**
Single-Unit Trucks	1	18	2	0		21	1	0	1	0		2	0	18	0	0		18	0	0	0	0		0	**-**
Single-Unit Trucks %	0.5%	1.5%	1.4%	0%		1.3%	1.2%	0%	2.9%	0%		1.4%	0%	1.9%	0%	0%		1.7%	0%	0%	0%	0%		0%	**-**
Buses	12	9	0	0		21	0	0	0	0		0	0	17	3	0		20	3	0	25	0		28	**-**
Buses %	5.9%	0.8%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	1.8%	4.1%	0%		1.9%	4.1%	0%	10.1%	0%		8.1%	**-**
Articulated Trucks	1	5	0	0		6	0	0	1	0		1	0	4	0	0		4	0	0	0	0		0	**-**
Articulated Trucks %	0.5%	0.4%	0%	0%		0.4%	0%	0%	2.9%	0%		0.7%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	7	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	21.4%		-	-	-	-	50%		-	-	-	-	21.4%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	7.1%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & SOUTH SERVICE RD E / CROSS AVENUE
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

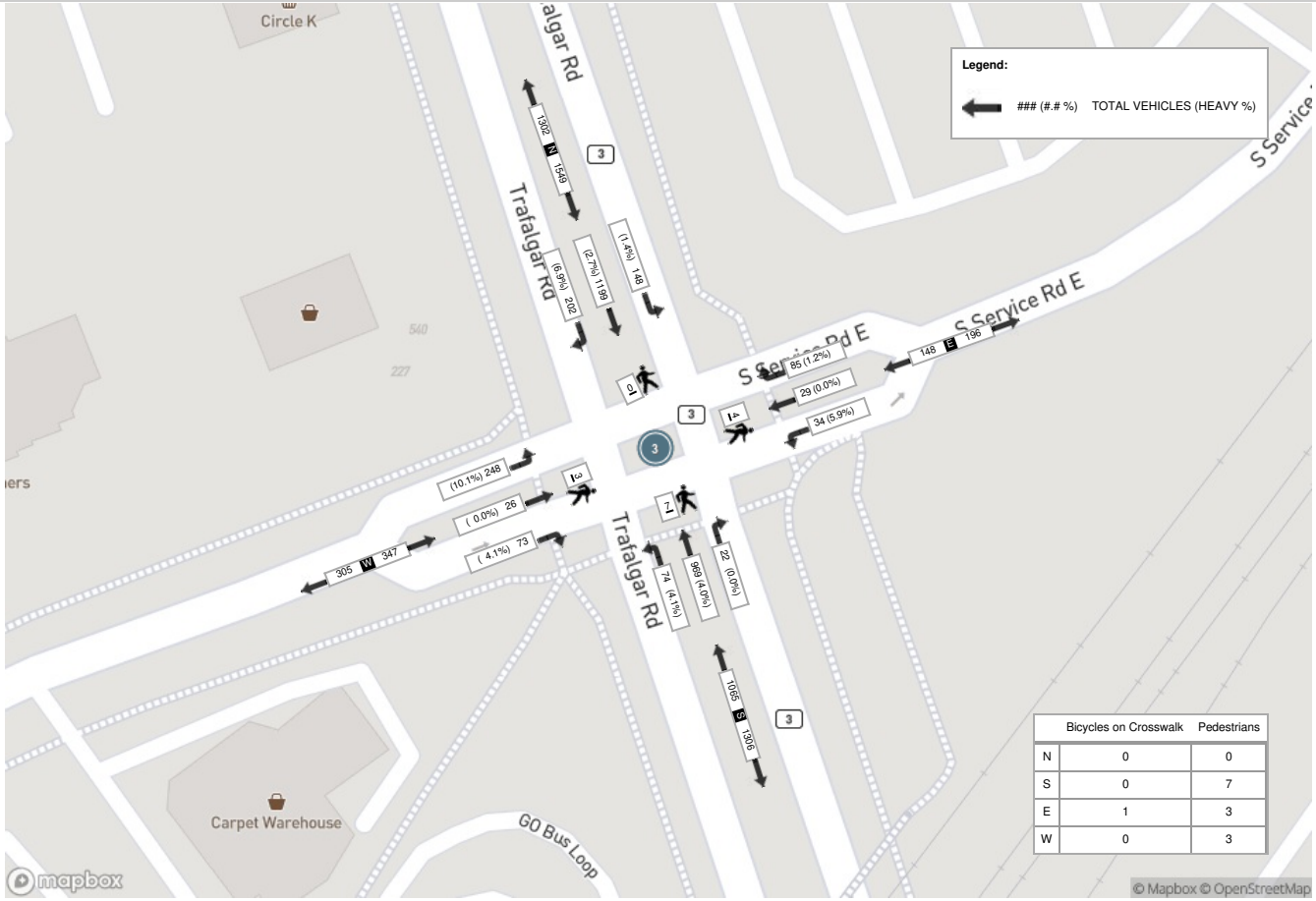
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (19.92 °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	
17:00:00	48	295	23	4	0	370	51	16	18	0	3	85	14	346	21	0	4	381	32	8	127	0	3	167	1003
17:15:00	41	265	20	0	0	326	47	19	22	0	0	88	6	329	15	0	1	350	21	9	147	0	2	177	941
17:30:00	71	286	15	4	0	376	35	7	16	0	2	58	6	336	24	0	3	366	21	8	106	0	3	135	935
17:45:00	46	311	10	3	0	370	27	11	8	0	0	46	5	272	28	2	0	307	29	9	149	0	0	187	910
Grand Total	206	1157	68	11	0	1442	160	53	64	0	5	277	31	1283	88	2	8	1404	103	34	529	0	8	666	**3789**
Approach%	14.3%	80.2%	4.7%	0.8%		-	57.8%	19.1%	23.1%	0%		-	2.2%	91.4%	6.3%	0.1%		-	15.5%	5.1%	79.4%	0%		-	**-**
Totals %	5.4%	30.5%	1.8%	0.3%		38.1%	4.2%	1.4%	1.7%	0%		7.3%	0.8%	33.9%	2.3%	0.1%		37.1%	2.7%	0.9%	14%	0%		17.6%	**-**
PHF	0.73	0.93	0.74	0.69		0.96	0.78	0.7	0.73	0		0.79	0.55	0.93	0.79	0.25		0.92	0.8	0.94	0.89	0		0.89	**-**
Heavy	11	3	1	0		15	4	1	1	0		6	0	9	3	0		12	4	3	24	0		31	**-**
Heavy %	5.3%	0.3%	1.5%	0%		1%	2.5%	1.9%	1.6%	0%		2.2%	0%	0.7%	3.4%	0%		0.9%	3.9%	8.8%	4.5%	0%		4.7%	**-**
Lights	195	1154	67	11		1427	156	52	63	0		271	31	1274	85	2		1392	99	31	505	0		635	**-**
Lights %	94.7%	99.7%	98.5%	100%		99%	97.5%	98.1%	98.4%	0%		97.8%	100%	99.3%	96.6%	100%		99.1%	96.1%	91.2%	95.5%	0%		95.3%	**-**
Single-Unit Trucks	3	3	1	0		7	3	1	1	0		5	0	7	0	0		7	0	0	3	0		3	**-**
Single-Unit Trucks %	1.5%	0.3%	1.5%	0%		0.5%	1.9%	1.9%	1.6%	0%		1.8%	0%	0.5%	0%	0%		0.5%	0%	0%	0.6%	0%		0.5%	**-**
Buses	8	0	0	0		8	0	0	0	0		0	0	0	3	0		3	4	1	21	0		26	**-**
Buses %	3.9%	0%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0%	3.4%	0%		0.2%	3.9%	2.9%	4%	0%		3.9%	**-**
Articulated Trucks	0	0	0	0		0	1	0	0	0		1	0	2	0	0		2	0	2	0	0		2	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0.6%	0%	0%	0%		0.4%	0%	0.2%	0%	0%		0.1%	0%	5.9%	0%	0%		0.3%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-	-	6	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	14.3%		-	-	-	-	23.8%		-	-	-	-	28.6%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	9.5%		-	-	-	-	14.3%		-	-	-	-	9.5%		**-**

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

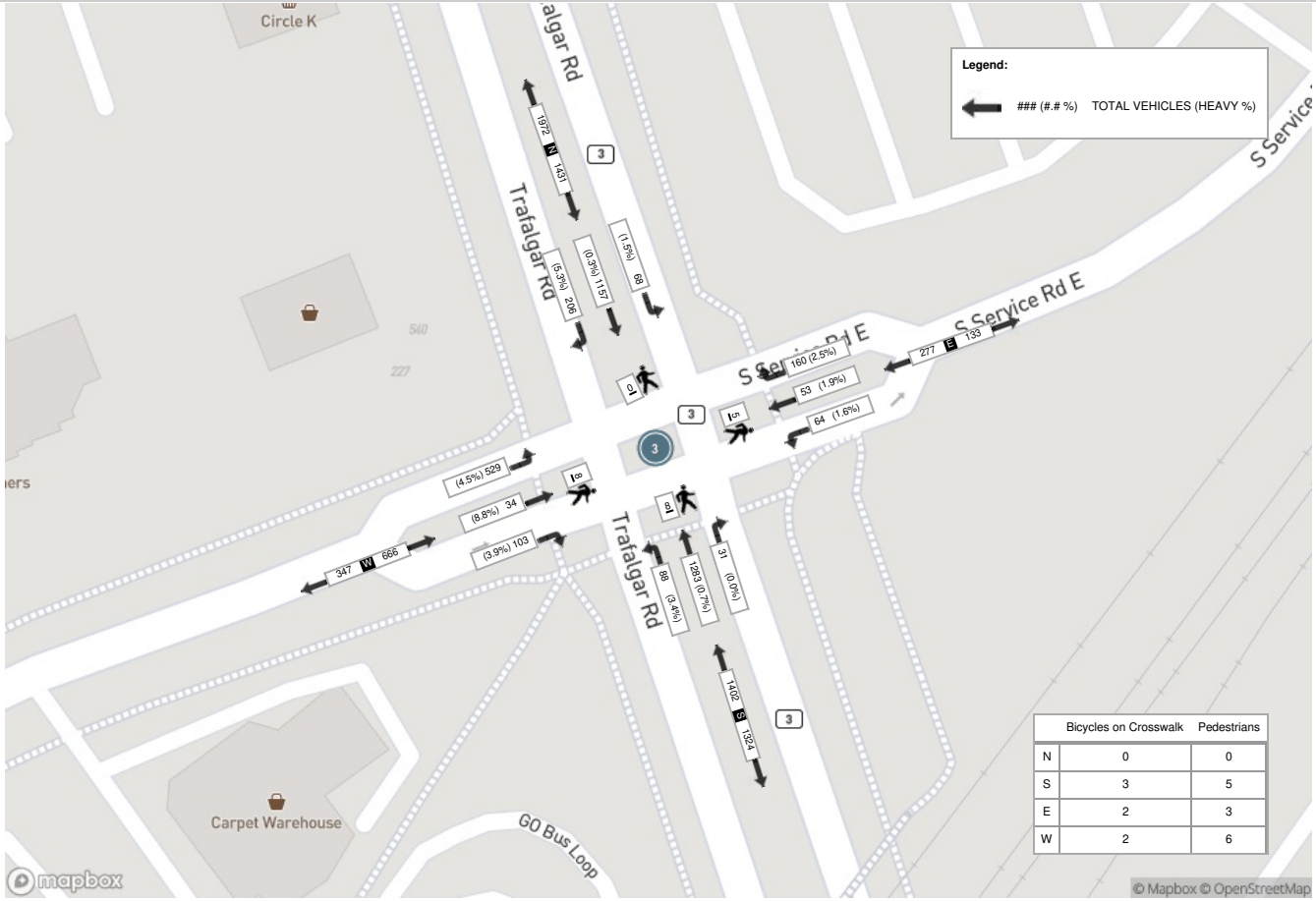
Peak Hour: 08:15 AM - 09:15 AM **Weather: Overcast Clouds (9.31 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	7
E	1	3
W	0	3

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

Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (19.92 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	3	5
E	2	3
W	2	6

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & CORNWALL RD
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Turning Movement Count (4 . TRAFALGAR RD & CORNWALL RD)

Start Time	N Approach TRAFALGAR RD						E Approach CORNWALL RD						S Approach TRAFALGAR RD						W Approach CORNWALL RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
06:00:00	15	27	16	0	0	58	14	14	1	0	0	29	1	15	2	0	2	18	0	9	17	0	0	26	131	
06:15:00	14	21	19	0	0	54	23	10	0	0	1	33	3	16	1	0	0	20	3	11	19	0	0	33	140	
06:30:00	33	35	37	0	5	105	34	10	0	0	1	44	1	29	6	0	2	36	4	16	32	0	2	52	237	
06:45:00	19	87	58	0	3	164	44	20	0	0	0	64	4	33	0	0	0	37	6	20	26	0	0	52	317	825
07:00:00	27	49	49	0	4	125	41	20	1	0	2	62	1	47	5	0	0	53	2	24	22	0	1	48	288	982
07:15:00	22	65	79	0	2	166	60	29	2	0	1	91	6	35	5	0	0	46	7	34	34	0	2	75	378	1220
07:30:00	48	91	83	0	5	222	73	39	0	1	4	113	2	61	4	0	3	67	5	50	43	0	3	98	500	1483
07:45:00	41	90	110	0	5	241	67	48	2	0	2	117	3	70	3	0	1	76	8	71	61	0	5	140	574	1740
08:00:00	64	138	144	0	4	346	96	42	1	0	2	139	8	61	10	0	2	79	9	71	52	0	6	132	696	2148
08:15:00	45	147	145	0	0	337	156	79	5	0	0	240	15	105	11	0	0	131	14	80	62	0	1	156	864	2634
08:30:00	55	124	140	0	5	319	153	93	10	0	3	256	13	76	19	0	1	108	9	87	54	0	0	150	833	2967
08:45:00	80	156	129	0	0	365	106	67	6	0	0	179	12	81	6	0	1	99	10	72	51	0	2	133	776	3169
09:00:00	58	138	89	0	2	285	102	62	6	0	0	170	4	72	4	0	1	80	6	88	60	0	1	154	689	3162
09:15:00	47	130	110	0	2	287	111	52	7	0	0	170	10	72	12	0	0	94	11	63	45	0	0	119	670	2968
09:30:00	38	127	90	0	1	255	80	56	6	1	1	143	4	68	8	0	0	80	9	67	45	0	0	121	599	2734
09:45:00	54	151	137	0	6	342	103	49	8	1	2	161	8	70	8	0	2	86	16	62	47	0	0	125	714	2672
BREAK																										
15:00:00	69	104	146	0	5	319	183	127	13	0	0	323	9	115	12	0	0	136	17	84	81	0	2	182	960	
15:15:00	65	138	128	0	9	331	179	118	5	1	0	303	18	117	17	0	8	152	15	84	81	0	6	180	966	
15:30:00	79	121	131	0	10	331	179	119	18	0	3	316	12	115	16	0	2	143	9	86	56	0	3	151	941	
15:45:00	68	130	102	0	5	300	182	109	9	0	0	300	10	84	8	0	1	102	11	92	83	0	1	186	888	3755
16:00:00	69	113	130	0	3	312	196	105	10	0	3	311	11	112	12	0	0	135	15	80	67	0	0	162	920	3715
16:15:00	58	98	121	0	1	277	143	120	15	0	3	278	10	113	8	0	3	131	9	80	85	0	3	174	860	3609
16:30:00	67	137	131	1	3	336	166	107	14	0	0	287	14	113	11	0	3	138	7	92	70	0	4	169	930	3598
16:45:00	72	108	94	0	3	274	157	96	10	0	6	263	12	112	7	0	0	131	7	96	86	0	0	189	857	3567
17:00:00	86	117	142	0	4	345	159	116	12	0	0	287	14	124	10	0	0	148	13	86	70	0	1	169	949	3596
17:15:00	79	110	105	1	2	295	136	96	11	0	1	243	7	140	7	0	1	154	15	93	84	0	1	192	884	3620
17:30:00	77	116	132	0	2	325	138	71	18	0	1	227	7	112	9	0	2	128	8	74	65	0	2	147	827	3517
17:45:00	74	141	123	0	4	338	125	85	9	0	2	219	14	110	9	0	2	133	14	71	95	0	2	180	870	3530
18:00:00	64	114	157	0	9	335	136	82	5	0	2	223	12	102	8	0	0	122	10	66	79	0	1	155	835	3416
18:15:00	65	131	116	0	5	312	111	69	9	0	3	189	5	113	6	0	2	124	9	69	60	0	4	138	763	3295
18:30:00	32	111	86	0	1	229	126	68	3	1	3	198	10	90	5	0	3	105	11	49	60	0	4	120	652	3120
18:45:00	59	109	85	0	2	253	91	45	17	0	3	153	4	87	3	0	1	94	5	51	48	0	3	104	604	2854
Grand Total	1743	3474	3364	2	112	8583	3670	2223	233	5	49	6131	264	2670	252	0	43	3186	294	2078	1840	0	60	4212	**22112**	-
Approach%	20.3%	40.5%	39.2%	0%		-	59.9%	36.3%	3.8%	0.1%		-	8.3%	83.8%	7.9%	0%		-	7%	49.3%	43.7%	0%		-	-	-
Totals %	7.9%	15.7%	15.2%	0%		38.8%	16.6%	10.1%	1.1%	0%		27.7%	1.2%	12.1%	1.1%	0%		14.4%	1.3%	9.4%	8.3%	0%		19%	-	-
Heavy	46	50	87	0		-	111	71	5	0		-	3	37	7	0		-	7	56	37	0		-	-	-
Heavy %	2.6%	1.4%	2.6%	0%		-	3%	3.2%	2.1%	0%		-	1.1%	1.4%	2.8%	0%		-	2.4%	2.7%	2%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & CORNWALL RD
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (9.31 °C)

Start Time	N Approach TRAFALGAR RD						E Approach CORNWALL RD						S Approach TRAFALGAR RD						W Approach CORNWALL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	64	138	144	0	4	346	96	42	1	0	2	139	8	61	10	0	2	79	9	71	52	0	6	132	696
08:15:00	45	147	145	0	0	337	156	79	5	0	0	240	15	105	11	0	0	131	14	80	62	0	1	156	864
08:30:00	55	124	140	0	5	319	153	93	10	0	3	256	13	76	19	0	1	108	9	87	54	0	0	150	833
08:45:00	80	156	129	0	0	365	106	67	6	0	0	179	12	81	6	0	1	99	10	72	51	0	2	133	776
Grand Total	244	565	558	0	9	1367	511	281	22	0	5	814	48	323	46	0	4	417	42	310	219	0	9	571	**3169**
Approach%	17.8%	41.3%	40.8%	0%		-	62.8%	34.5%	2.7%	0%		-	11.5%	77.5%	11%	0%		-	7.4%	54.3%	38.4%	0%		-	**-**
Totals %	7.7%	17.8%	17.6%	0%		43.1%	16.1%	8.9%	0.7%	0%		25.7%	1.5%	10.2%	1.5%	0%		13.2%	1.3%	9.8%	6.9%	0%		18%	**-**
PHF	0.76	0.91	0.96	0		0.94	0.82	0.76	0.55	0		0.79	0.8	0.77	0.61	0		0.8	0.75	0.89	0.88	0		0.92	**-**
Heavy	7	13	19	0		39	28	11	0	0		39	0	9	1	0		10	2	12	8	0		22	**-**
Heavy %	2.9%	2.3%	3.4%	0%		2.9%	5.5%	3.9%	0%	0%		4.8%	0%	2.8%	2.2%	0%		2.4%	4.8%	3.9%	3.7%	0%		3.9%	**-**
Lights	237	552	539	0		1328	483	270	22	0		775	48	314	45	0		407	40	297	211	0		548	**-**
Lights %	97.1%	97.7%	96.6%	0%		97.1%	94.5%	96.1%	100%	0%		95.2%	100%	97.2%	97.8%	0%		97.6%	95.2%	95.8%	96.3%	0%		96%	**-**
Single-Unit Trucks	2	8	8	0		18	7	4	0	0		11	0	4	0	0		4	0	6	4	0		10	**-**
Single-Unit Trucks %	0.8%	1.4%	1.4%	0%		1.3%	1.4%	1.4%	0%	0%		1.4%	0%	1.2%	0%	0%		1%	0%	1.9%	1.8%	0%		1.8%	**-**
Buses	4	4	10	0		18	17	4	0	0		21	0	5	1	0		6	2	4	4	0		10	**-**
Buses %	1.6%	0.7%	1.8%	0%		1.3%	3.3%	1.4%	0%	0%		2.6%	0%	1.5%	2.2%	0%		1.4%	4.8%	1.3%	1.8%	0%		1.8%	**-**
Articulated Trucks	1	1	1	0		3	4	3	0	0		7	0	0	0	0		0	0	2	0	0		2	**-**
Articulated Trucks %	0.4%	0.2%	0.2%	0%		0.2%	0.8%	1.1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.4%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	**-**
Pedestrians	-	-	-	-	8	-	-	-	-	-	5	-	-	-	-	-	4	-	-	-	-	-	8	-	**-**
Pedestrians%	-	-	-	-	29.6%		-	-	-	-	18.5%		-	-	-	-	14.8%		-	-	-	-	29.6%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	3.7%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	3.7%		**-**

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & CORNWALL RD
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

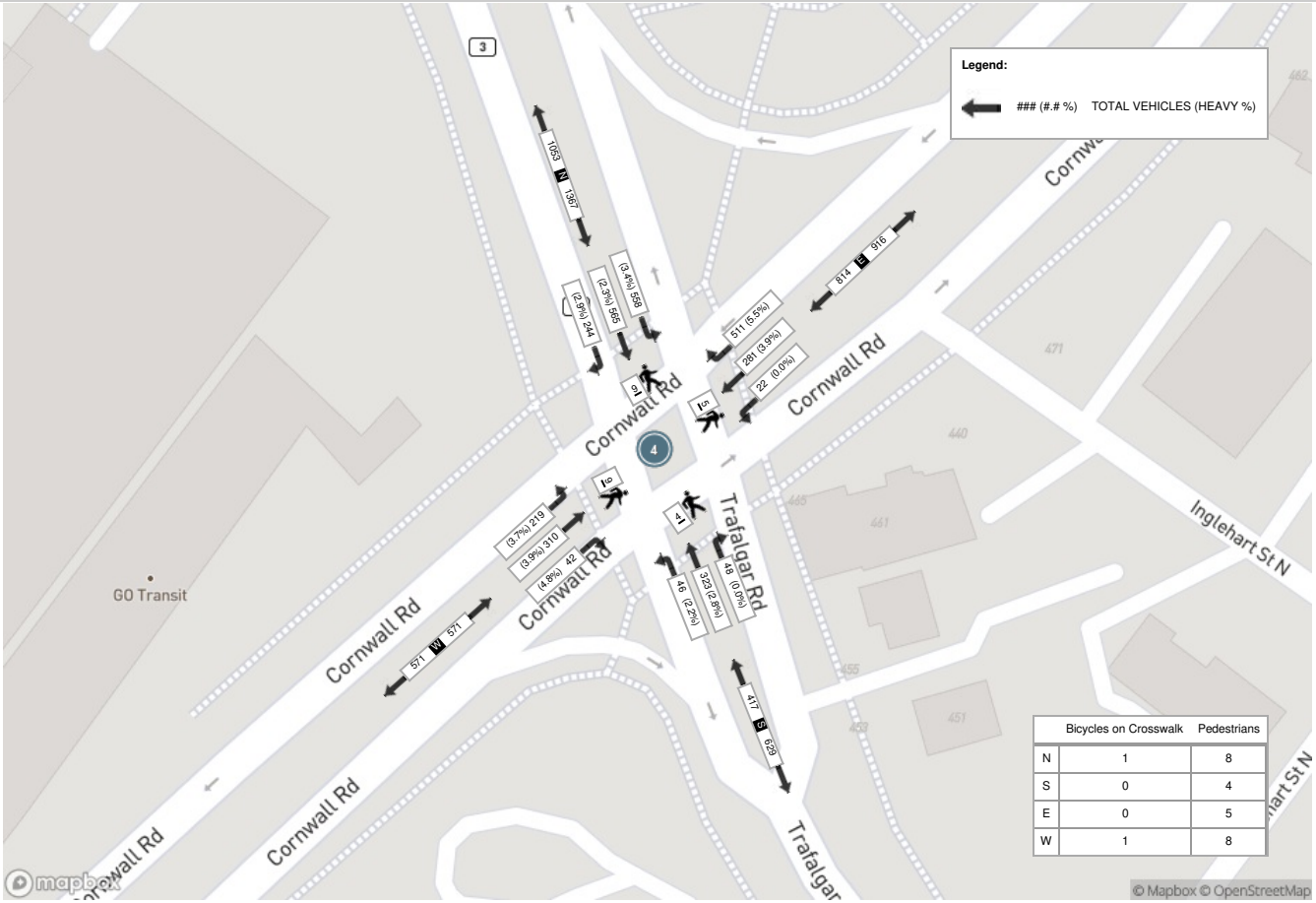
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:00 PM - 04:00 PM Weather: Overcast Clouds (19.92 °C)

Start Time	N Approach TRAFALGAR RD						E Approach CORNWALL RD						S Approach TRAFALGAR RD						W Approach CORNWALL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
15:00:00	69	104	146	0	5	319	183	127	13	0	0	323	9	115	12	0	0	136	17	84	81	0	2	182	960
15:15:00	65	138	128	0	9	331	179	118	5	1	0	303	18	117	17	0	8	152	15	84	81	0	6	180	966
15:30:00	79	121	131	0	10	331	179	119	18	0	3	316	12	115	16	0	2	143	9	86	56	0	3	151	941
15:45:00	68	130	102	0	5	300	182	109	9	0	0	300	10	84	8	0	1	102	11	92	83	0	1	186	888
Grand Total	281	493	507	0	29	1281	723	473	45	1	3	1242	49	431	53	0	11	533	52	346	301	0	12	699	**3755**
Approach%	21.9%	38.5%	39.6%	0%		-	58.2%	38.1%	3.6%	0.1%		-	9.2%	80.9%	9.9%	0%		-	7.4%	49.5%	43.1%	0%		-	**-**
Totals %	7.5%	13.1%	13.5%	0%		34.1%	19.3%	12.6%	1.2%	0%		33.1%	1.3%	11.5%	1.4%	0%		14.2%	1.4%	9.2%	8%	0%		18.6%	**-**
PHF	0.89	0.89	0.87	0		0.97	0.99	0.93	0.63	0.25		0.96	0.68	0.92	0.78	0		0.88	0.76	0.94	0.91	0		0.94	**-**
Heavy	10	8	11	0		29	19	13	1	0		33	2	8	2	0		12	3	10	9	0		22	**-**
Heavy %	3.6%	1.6%	2.2%	0%		2.3%	2.6%	2.7%	2.2%	0%		2.7%	4.1%	1.9%	3.8%	0%		2.3%	5.8%	2.9%	3%	0%		3.1%	**-**
Lights	271	485	496	0		1252	704	460	44	1		1209	47	423	51	0		521	49	336	292	0		677	**-**
Lights %	96.4%	98.4%	97.8%	0%		97.7%	97.4%	97.3%	97.8%	100%		97.3%	95.9%	98.1%	96.2%	0%		97.7%	94.2%	97.1%	97%	0%		96.9%	**-**
Single-Unit Trucks	3	5	3	0		11	6	7	0	0		13	1	6	0	0		7	1	5	4	0		10	**-**
Single-Unit Trucks %	1.1%	1%	0.6%	0%		0.9%	0.8%	1.5%	0%	0%		1%	2%	1.4%	0%	0%		1.3%	1.9%	1.4%	1.3%	0%		1.4%	**-**
Buses	4	3	6	0		13	13	6	1	0		20	1	2	2	0		5	2	4	4	0		10	**-**
Buses %	1.4%	0.6%	1.2%	0%		1%	1.8%	1.3%	2.2%	0%		1.6%	2%	0.5%	3.8%	0%		0.9%	3.8%	1.2%	1.3%	0%		1.4%	**-**
Articulated Trucks	3	0	2	0		5	0	0	0	0		0	0	0	0	0		0	0	1	1	0		2	**-**
Articulated Trucks %	1.1%	0%	0.4%	0%		0.4%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.3%	0.3%	0%		0.3%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	25	-	-	-	-	-	2	-	-	-	-	-	6	-	-	-	-	-	9	-	**-**
Pedestrians%	-	-	-	-	45.5%		-	-	-	-	3.6%		-	-	-	-	10.9%		-	-	-	-	16.4%		**-**
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	3	-	**-**
Bicycles on Crosswalk%	-	-	-	-	7.3%		-	-	-	-	1.8%		-	-	-	-	9.1%		-	-	-	-	5.5%		**-**

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

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (9.31 °C)

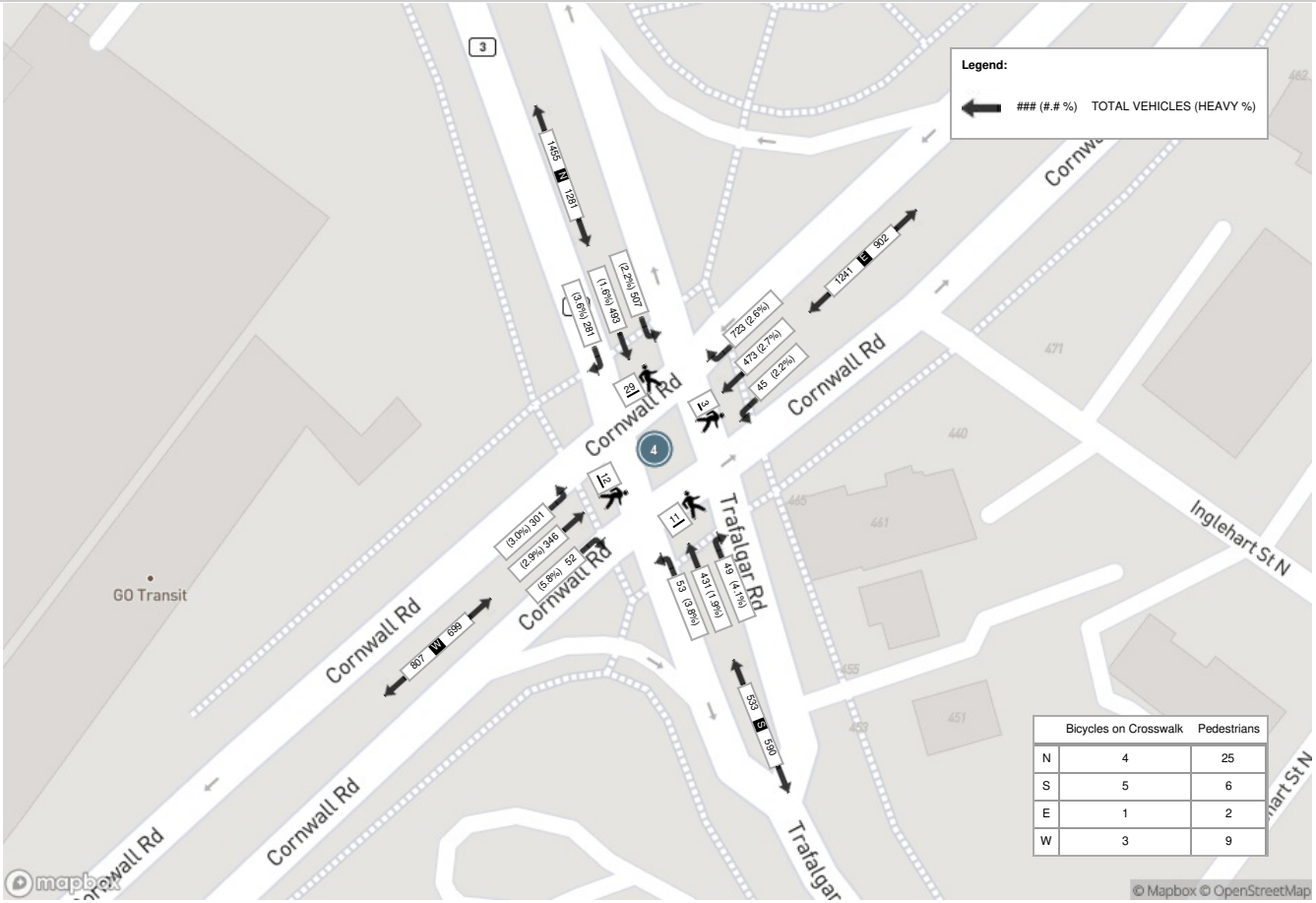


Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & CORNWALL RD
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Peak Hour: 03:00 PM - 04:00 PM Weather: Overcast Clouds (19.92 °C)



	Bicycles on Crosswalk	Pedestrians
N	4	25
S	5	6
E	1	2
W	3	9

Spectrum

Turning Movement Count
Location Name: SOUTH SERVICE RD E & DAVIS RD
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaaakidis

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

Turning Movement Count (5 . SOUTH SERVICE RD E & DAVIS RD)

Start Time	N Approach SOUTH SERVICE RD E						E Approach DAVIS RD						S Approach SOUTH SERVICE RD E						W Approach DAVIS RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
06:00:00	0	7	0	0	0	7	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	18	
06:15:00	0	4	0	0	0	4	0	0	0	0	0	0	0	21	0	0	0	21	0	0	0	0	0	0	25	
06:30:00	0	14	0	0	0	14	0	0	0	0	0	0	1	12	0	1	0	14	0	0	0	0	0	0	28	
06:45:00	0	10	0	0	0	10	0	0	0	0	0	0	2	27	0	0	0	29	0	0	0	0	0	0	39	110
07:00:00	0	26	0	0	0	26	0	0	1	0	0	1	2	15	0	0	0	17	0	0	0	0	0	0	44	136
07:15:00	0	11	0	0	0	11	0	0	0	0	1	0	3	21	0	0	0	24	0	0	0	0	0	0	35	146
07:30:00	0	22	0	0	0	22	0	0	1	0	0	1	3	21	0	0	0	24	0	0	0	0	0	0	47	165
07:45:00	1	25	3	0	1	29	0	0	3	0	0	3	4	32	1	0	0	37	0	0	0	0	0	0	69	195
08:00:00	0	28	0	0	1	28	0	0	1	0	0	1	4	37	0	0	0	41	0	0	1	0	0	1	71	222
08:15:00	0	30	0	0	0	30	0	0	5	0	0	5	5	24	1	0	0	30	2	0	0	0	0	2	67	254
08:30:00	0	36	3	0	0	39	1	0	3	0	0	4	2	40	0	0	0	42	0	0	0	0	0	0	85	292
08:45:00	0	30	1	0	0	31	0	0	2	0	0	2	2	32	1	0	0	35	0	0	0	0	0	0	68	291
09:00:00	0	40	3	0	0	43	1	0	3	0	0	4	3	36	1	0	0	40	1	0	0	0	0	1	88	308
09:15:00	0	30	0	1	0	31	1	0	1	0	0	2	4	38	0	0	0	42	0	0	0	0	0	0	75	316
09:30:00	0	34	0	0	0	34	0	0	7	0	0	7	7	31	0	0	0	38	1	0	0	0	0	1	80	311
09:45:00	2	32	0	0	0	34	1	0	2	0	0	3	6	38	0	0	1	44	0	0	2	0	0	2	83	326
BREAK																										
15:00:00	2	55	4	1	0	62	1	1	3	0	0	5	4	47	0	1	0	52	1	0	1	0	0	2	121	
15:15:00	1	59	2	0	0	62	1	0	1	0	2	2	7	29	0	0	0	36	1	0	1	0	0	2	102	
15:30:00	0	54	1	0	0	55	0	0	2	0	0	2	0	45	0	0	0	45	0	0	0	0	0	0	102	
15:45:00	0	59	1	1	0	61	0	0	4	0	0	4	4	25	0	0	0	29	0	0	0	0	0	0	94	419
16:00:00	0	54	2	0	0	56	1	0	16	0	0	17	15	22	0	0	0	37	0	0	0	0	0	0	110	408
16:15:00	0	52	2	0	0	54	3	0	8	0	0	11	4	24	0	0	0	28	0	0	0	0	0	0	93	399
16:30:00	0	60	1	0	0	61	3	0	3	0	0	6	1	32	1	0	0	34	1	0	0	0	0	1	102	399
16:45:00	0	46	0	0	1	46	0	0	2	0	1	2	1	27	0	0	0	28	0	0	0	0	0	0	76	381
17:00:00	0	61	4	0	1	65	3	0	12	0	0	15	11	27	1	0	0	39	1	0	0	0	0	1	120	391
17:15:00	0	63	0	0	0	63	5	0	13	0	0	18	6	28	0	0	0	34	0	0	0	0	0	0	115	413
17:30:00	0	48	0	0	0	48	0	0	3	0	4	3	4	24	0	0	0	28	0	0	0	0	0	0	79	390
17:45:00	0	35	0	0	0	35	0	0	7	0	0	7	3	19	1	0	0	23	1	0	0	0	0	1	66	380
18:00:00	0	35	10	0	0	45	5	0	9	0	0	14	15	25	0	0	0	40	0	0	0	0	0	0	99	359
18:15:00	0	23	2	0	0	25	8	0	17	0	0	25	6	24	0	0	0	30	0	0	0	0	0	0	80	324
18:30:00	0	20	0	0	0	20	0	0	0	0	1	0	0	17	1	1	0	19	1	0	0	0	0	1	40	285
18:45:00	0	19	1	0	0	20	0	0	0	0	2	0	2	10	0	0	0	12	0	0	0	0	0	0	32	251
Grand Total	6	1122	40	3	4	1171	34	1	129	0	11	164	131	861	8	3	1	1003	10	0	5	0	0	15	**2353**	-
Approach%	0.5%	95.8%	3.4%	0.3%		-	20.7%	0.6%	78.7%	0%		-	13.1%	85.8%	0.8%	0.3%		-	66.7%	0%	33.3%	0%		-	-	-
Totals %	0.3%	47.7%	1.7%	0.1%		49.8%	1.4%	0%	5.5%	0%		7%	5.6%	36.6%	0.3%	0.1%		42.6%	0.4%	0%	0.2%	0%		0.6%	-	-
Heavy	0	39	3	0		-	0	0	2	0		-	2	28	1	0		-	1	0	0	0		-	-	-
Heavy %	0%	3.5%	7.5%	0%		-	0%	0%	1.6%	0%		-	1.5%	3.3%	12.5%	0%		-	10%	0%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

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

Peak Hour: 09:00 AM - 10:00 AM Weather: Overcast Clouds (9.31 °C)

Start Time	N Approach SOUTH SERVICE RD E						E Approach DAVIS RD						S Approach SOUTH SERVICE RD E						W Approach DAVIS RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
09:00:00	0	40	3	0	0	43	1	0	3	0	0	4	3	36	1	0	0	40	1	0	0	0	0	1	88
09:15:00	0	30	0	1	0	31	1	0	1	0	0	2	4	38	0	0	0	42	0	0	0	0	0	0	75
09:30:00	0	34	0	0	0	34	0	0	7	0	0	7	7	31	0	0	0	38	1	0	0	0	0	1	80
09:45:00	2	32	0	0	0	34	1	0	2	0	0	3	6	38	0	0	1	44	0	0	2	0	0	2	83
Grand Total	2	136	3	1	0	142	3	0	13	0	0	16	20	143	1	0	1	164	2	0	2	0	0	4	**326**
Approach%	1.4%	95.8%	2.1%	0.7%		-	18.8%	0%	81.3%	0%		-	12.2%	87.2%	0.6%	0%		-	50%	0%	50%	0%		-	**-**
Totals %	0.6%	41.7%	0.9%	0.3%		43.6%	0.9%	0%	4%	0%		4.9%	6.1%	43.9%	0.3%	0%		50.3%	0.6%	0%	0.6%	0%		1.2%	**-**
PHF	0.25	0.85	0.25	0.25		0.83	0.75	0	0.46	0		0.57	0.71	0.94	0.25	0		0.93	0.5	0	0.25	0		0.5	**-**
Heavy	0	7	0	0		7	0	0	0	0		0	2	5	0	0		7	0	0	0	0		0	**-**
Heavy %	0%	5.1%	0%	0%		4.9%	0%	0%	0%	0%		0%	10%	3.5%	0%	0%		4.3%	0%	0%	0%	0%		0%	**-**
Lights	2	129	3	1		135	3	0	13	0		16	18	138	1	0		157	2	0	2	0		4	**-**
Lights %	100%	94.9%	100%	100%		95.1%	100%	0%	100%	0%		100%	90%	96.5%	100%	0%		95.7%	100%	0%	100%	0%		100%	**-**
Single-Unit Trucks	0	3	0	0		3	0	0	0	0		0	2	2	0	0		4	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	2.2%	0%	0%		2.1%	0%	0%	0%	0%		0%	10%	1.4%	0%	0%		2.4%	0%	0%	0%	0%		0%	**-**
Buses	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Buses %	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	3	0	0		3	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	**-**
Articulated Trucks %	0%	2.2%	0%	0%		2.1%	0%	0%	0%	0%		0%	0%	2.1%	0%	0%		1.8%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: SOUTH SERVICE RD E & DAVIS RD
Date: Wed, Apr 13, 2022 Deployment Lead: Tasos Issaakidis

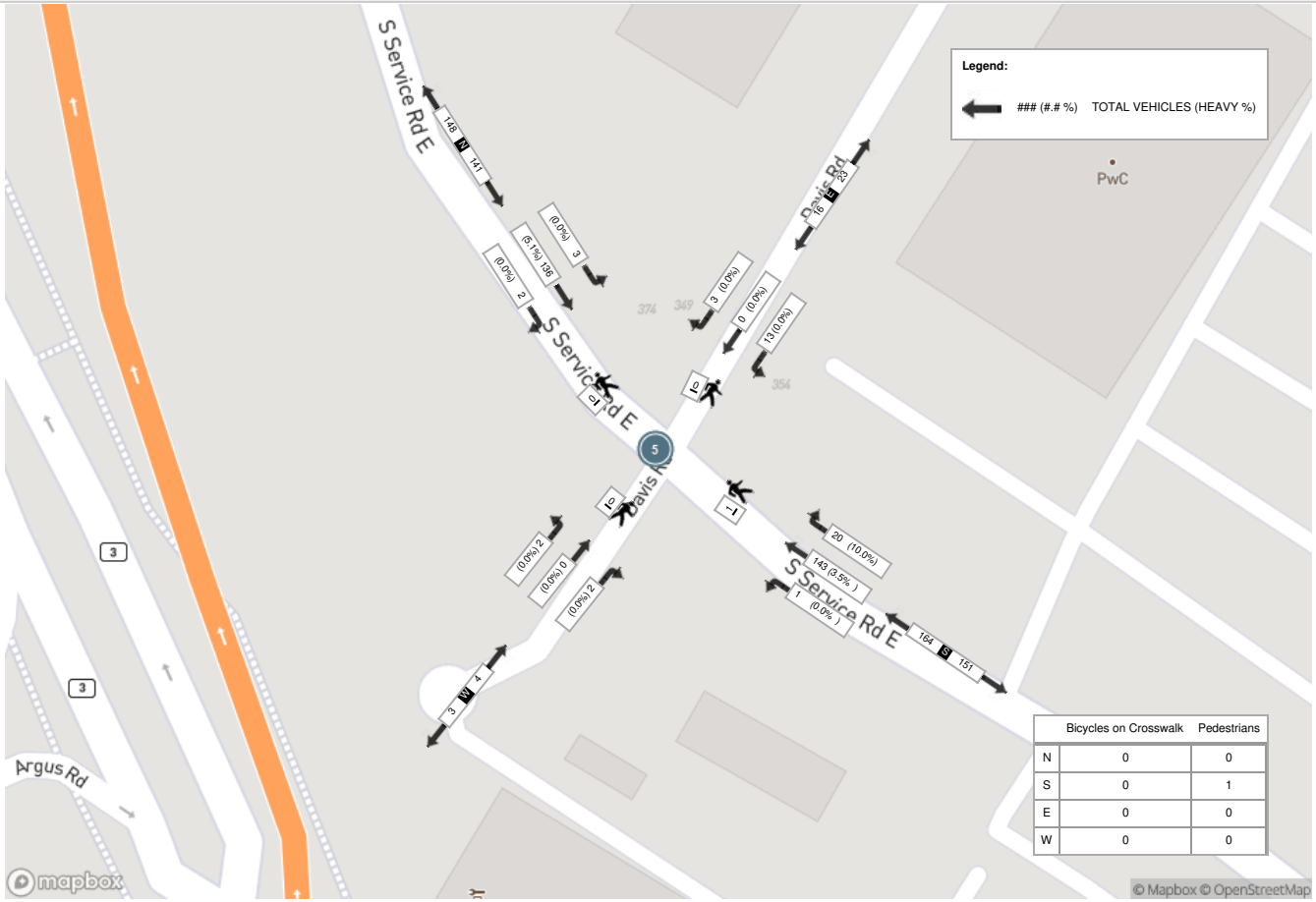
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:00 PM - 04:00 PM Weather: Overcast Clouds (19.92 °C)

Start Time	N Approach SOUTH SERVICE RD E						E Approach DAVIS RD						S Approach SOUTH SERVICE RD E						W Approach DAVIS RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
15:00:00	2	55	4	1	0	62	1	1	3	0	0	5	4	47	0	1	0	52	1	0	1	0	0	2	121
15:15:00	1	59	2	0	0	62	1	0	1	0	2	2	7	29	0	0	0	36	1	0	1	0	0	2	102
15:30:00	0	54	1	0	0	55	0	0	2	0	0	2	0	45	0	0	0	45	0	0	0	0	0	0	102
15:45:00	0	59	1	1	0	61	0	0	4	0	0	4	4	25	0	0	0	29	0	0	0	0	0	0	94
Grand Total	3	227	8	2	0	240	2	1	10	0	2	13	15	146	0	1	0	162	2	0	2	0	0	4	**419**
Approach%	1.3%	94.6%	3.3%	0.8%		-	15.4%	7.7%	76.9%	0%		-	9.3%	90.1%	0%	0.6%		-	50%	0%	50%	0%		-	**-**
Totals %	0.7%	54.2%	1.9%	0.5%		57.3%	0.5%	0.2%	2.4%	0%		3.1%	3.6%	34.8%	0%	0.2%		38.7%	0.5%	0%	0.5%	0%		1%	**-**
PHF	0.38	0.96	0.5	0.5		0.97	0.5	0.25	0.63	0		0.65	0.54	0.78	0	0.25		0.78	0.5	0	0.5	0		0.5	**-**
Heavy	0	4	3	0		7	0	0	2	0		2	0	6	0	0		6	0	0	0	0		0	**-**
Heavy %	0%	1.8%	37.5%	0%		2.9%	0%	0%	20%	0%		15.4%	0%	4.1%	0%	0%		3.7%	0%	0%	0%	0%		0%	**-**
Lights	3	223	5	2		233	2	1	8	0		11	15	139	0	1		155	2	0	2	0		4	**-**
Lights %	100%	98.2%	62.5%	100%		97.1%	100%	100%	80%	0%		84.6%	100%	95.2%	0%	100%		95.7%	100%	0%	100%	0%		100%	**-**
Single-Unit Trucks	0	0	3	0		3	0	0	2	0		2	0	2	0	0		2	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	37.5%	0%		1.3%	0%	0%	20%	0%		15.4%	0%	1.4%	0%	0%		1.2%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	4	0	0		4	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	**-**
Articulated Trucks %	0%	1.8%	0%	0%		1.7%	0%	0%	0%	0%		0%	0%	2.1%	0%	0%		1.9%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

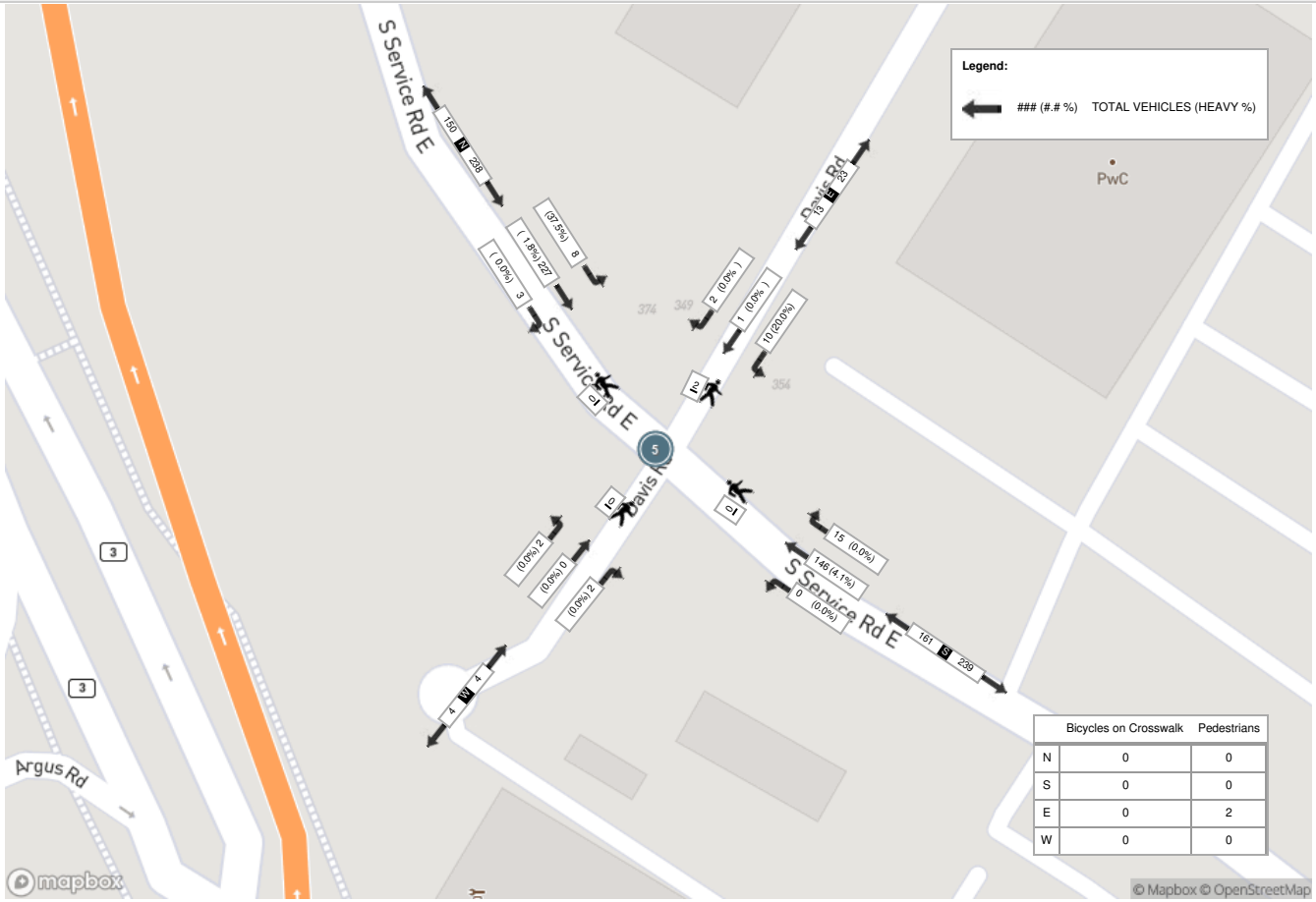
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 09:00 AM - 10:00 AM **Weather: Overcast Clouds (9.31 °C)**



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

Peak Hour: 03:00 PM - 04:00 PM Weather: Overcast Clouds (19.92 °C)



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

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

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

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

Municipality: Oakville
Site #: 1902700006
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 1
Count date: 7-Mar-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total: 2639
North Entering: 1401
North Peds: 17
Peds Cross: ⋈

Heavys	11	5	19	35
Trucks	3	4	5	12
Cars	386	493	475	1354
Totals	400	502	499	

Heavys	44
Trucks	8
Cars	1186
Totals	1238

East Leg Total: 1790
East Entering: 873
East Peds: 6
Peds Cross: ⧖

Trafalgar Rd

Heavys	Trucks	Cars	Totals
16	7	725	748

Cars	Trucks	Heavys	Totals
538	5	27	570
275	4	5	284
17	0	2	19
830	9	34	

Cornwall Rd

N
W E
S

Heavys	Trucks	Cars	Totals
13	2	308	323
8	2	358	368
1	0	60	61
22	4	726	

Cornwall Rd

Cars	Trucks	Heavys	Totals
883	7	27	917

Trafalgar Rd

Peds Cross: ⧖
West Peds: 11
West Entering: 752
West Leg Total: 1500

Cars	570
Trucks	4
Heavys	8
Totals	582

Cars	64	340	50	454
Trucks	0	1	0	1
Heavys	0	4	0	4
Totals	64	345	50	

Peds Cross: ⋈
South Peds: 10
South Entering: 459
South Leg Total: 1041

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

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

One Hour Peak
From: 16:30:00
To: 17:30:00

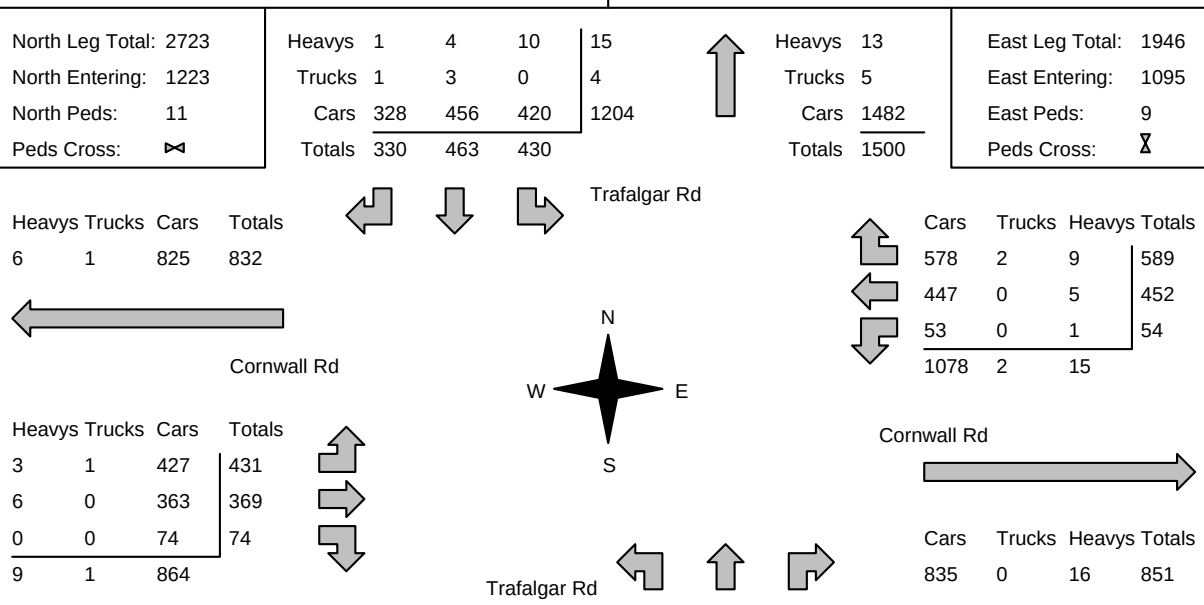
Municipality: Oakville
Site #: 1902700006
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 1
Count date: 7-Mar-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

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

One Hour Peak
From: 7:45:00
To: 8:45:00

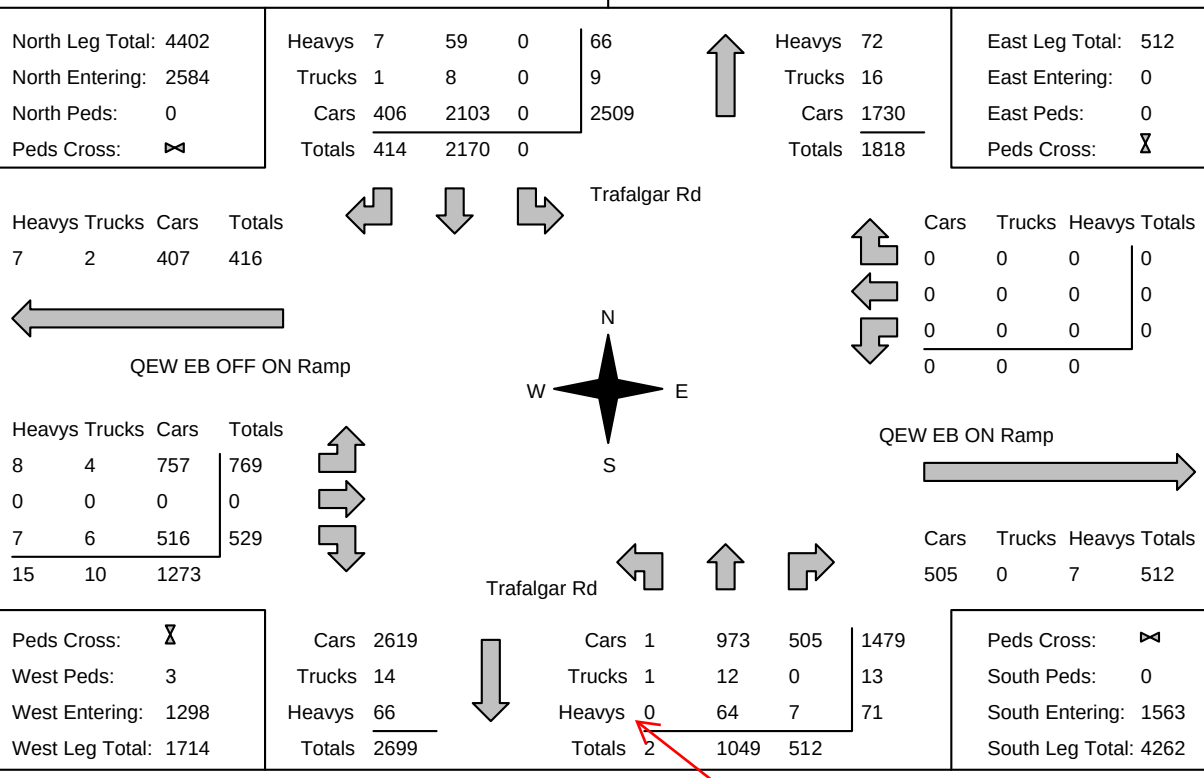
Municipality: Oakville
Site #: 1902700003
Intersection: Trafalgar Rd & QEW EB OFF ON R
TFR File #: 1
Count date: 7-Mar-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

people making u-turns

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

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

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

Municipality: Oakville
Site #: 1902700003
Intersection: Trafalgar Rd & QEW EB OFF ON R
TFR File #: 1
Count date: 7-Mar-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

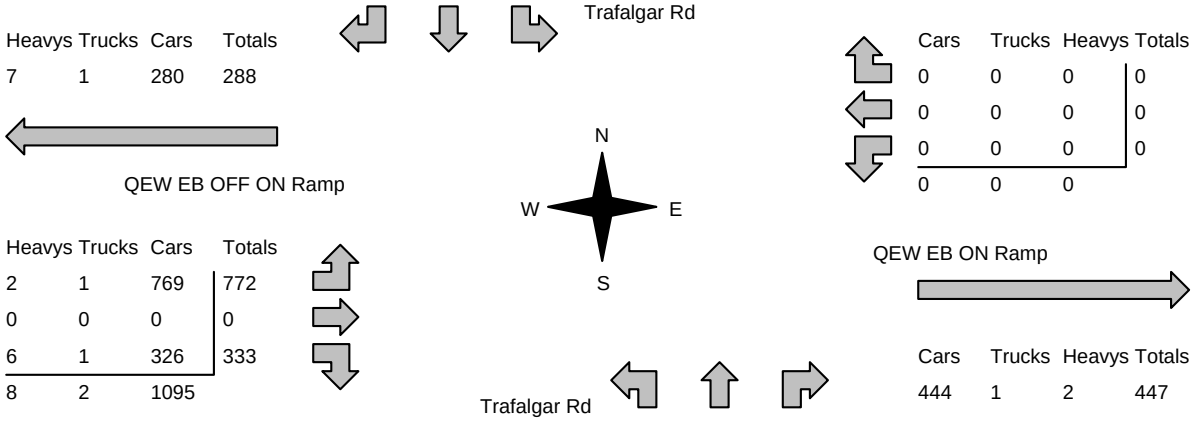
Major Road: Trafalgar Rd runs N/S

North Leg Total: 4626
North Entering: 1604
North Peds: 0
Peds Cross: ⋈

Heavys	7	30	0	37
Trucks	1	9	0	10
Cars	280	1277	0	1557
Totals	288	1316	0	

Heavys	35
Trucks	4
Cars	2983
Totals	3022

East Leg Total: 447
East Entering: 0
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 4
West Entering: 1105
West Leg Total: 1393

Cars	1603			
Trucks	10			
Heavys	36			
Totals	1649			

Cars	0	2214	444	2658
Trucks	0	3	1	4
Heavys	0	33	2	35
Totals	0	2250	447	

Peds Cross: ⋈
South Peds: 0
South Entering: 2697
South Leg Total: 4346

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

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

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Oakville
Site #: 1902700001
Intersection: Trafalgar Rd & QEW WB OFF Ram
TFR File #: 1
Count date: 7-Mar-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

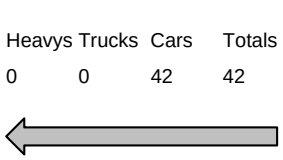
Major Road: Trafalgar Rd runs N/S

North Leg Total: 4638
North Entering: 2893
North Peds: 6
Peds Cross: ⋈

Heavys	0	67	0	67
Trucks	0	12	0	12
Cars	4	2810	0	2814
Totals	4	2889	0	

Heavys	65
Trucks	17
Cars	1663
Totals	1745

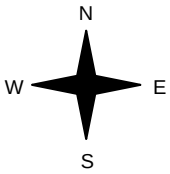
East Leg Total: 635
East Entering: 635
East Peds: 0
Peds Cross: ⋈



Heavys	Trucks	Cars	Totals
0	0	42	42

Heavys	Trucks	Cars	Totals
0	0	1	1
0	0	0	0
6	1	339	346
6	1	340	

Cars	Trucks	Heavys	Totals
201	3	7	211
38	0	0	38
376	2	8	386
615	5	15	



Cars	Trucks	Heavys	Totals
0	0	0	0

Peds Cross: ⋈
West Peds: 3
West Entering: 347
West Leg Total: 389

Cars	3525			
Trucks	15			
Heavys	81			
Totals	3621			

Cars	0	1461	0	1461
Trucks	0	14	0	14
Heavys	0	58	0	58
Totals	0	1533	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 1533
South Leg Total: 5154

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

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

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

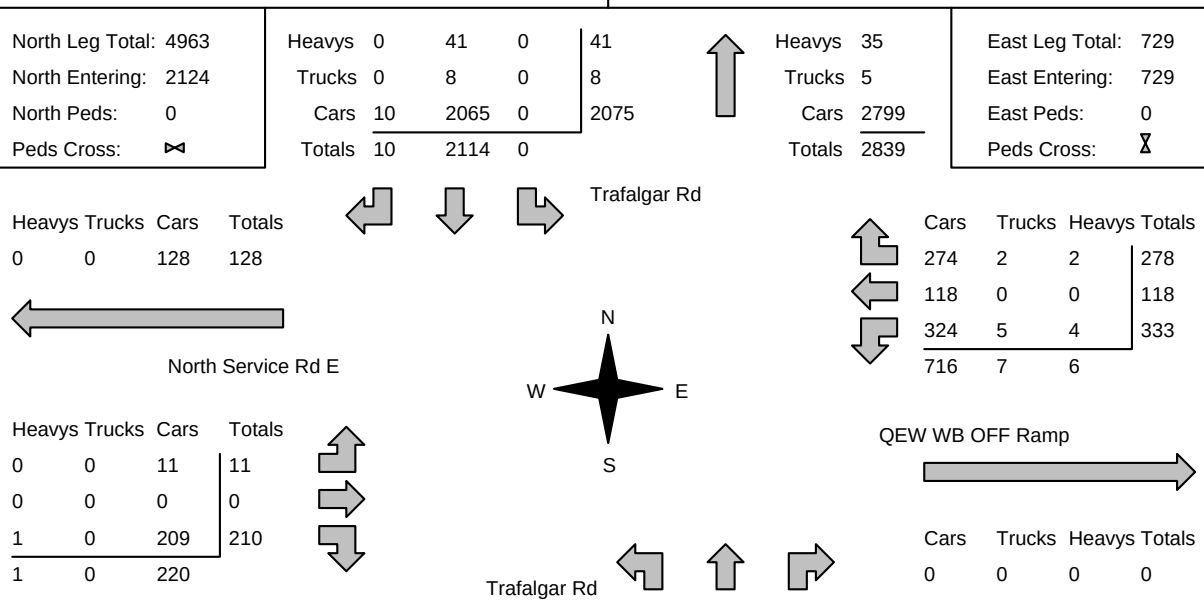
Municipality: Oakville
Site #: 1902700001
Intersection: Trafalgar Rd & QEW WB OFF Ram
TFR File #: 1
Count date: 7-Mar-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

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

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Oakville
Site #: 1902700002
Intersection: Trafalgar Rd & QEW WB ON Ramp
TFR File #: 1
Count date: 7-Mar-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Trafalgar Rd runs N/S

North Leg Total:	5142			
North Entering:	3613			
North Peds:	0			
Peds Cross:	⋈			

Heavys	16	65	0	81
Trucks	4	10	0	14
Cars	978	2540	0	3518
Totals	998	2615	0	

Heavys	58
Trucks	14
Cars	1457
Totals	1529

East Leg Total:	303
East Entering:	0
East Peds:	0
Peds Cross:	⧖

Trafalgar Rd

Heavys	Trucks	Cars	Totals
16	4	978	998

Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

QEW WB ON Ramp

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

QEW WB ON Ramp

Cars	Trucks	Heavys	Totals
286	3	14	303

Trafalgar Rd

Peds Cross:	⧖			
West Peds:	0			
West Entering:	0			
West Leg Total:	998			

Cars	2540			
Trucks	10			
Heavys	65			
Totals	2615			

Cars	0	1457	286	1743
Trucks	0	14	3	17
Heavys	0	58	14	72
Totals	0	1529	303	

Peds Cross:	⋈
South Peds:	0
South Entering:	1832
South Leg Total:	4447

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

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

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

Municipality: Oakville
Site #: 1902700002
Intersection: Trafalgar Rd & QEW WB ON Ramp
TFR File #: 1
Count date: 7-Mar-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

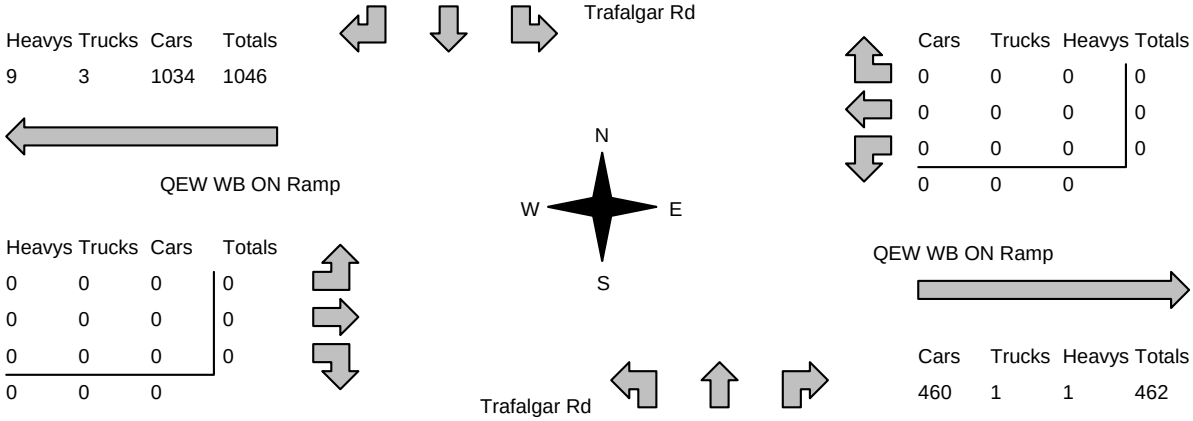
Major Road: Trafalgar Rd runs N/S

North Leg Total: 5202
North Entering: 2649
North Peds: 0
Peds Cross: ⋈

Heavys	9	37	0	46
Trucks	3	10	0	13
Cars	1034	1556	0	2590
Totals	1046	1603	0	

Heavys	33
Trucks	3
Cars	2517
Totals	2553

East Leg Total: 462
East Entering: 0
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 0
West Leg Total: 1046

Cars	1556
Trucks	10
Heavys	37
Totals	1603

Cars	0	2517	460	2977
Trucks	0	3	1	4
Heavys	0	33	1	34
Totals	0	2553	462	

Peds Cross: ⋈
South Peds: 0
South Entering: 3015
South Leg Total: 4618

Comments

Trafalgar Rd @ South Service Rd

Morning Peak Diagram

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

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

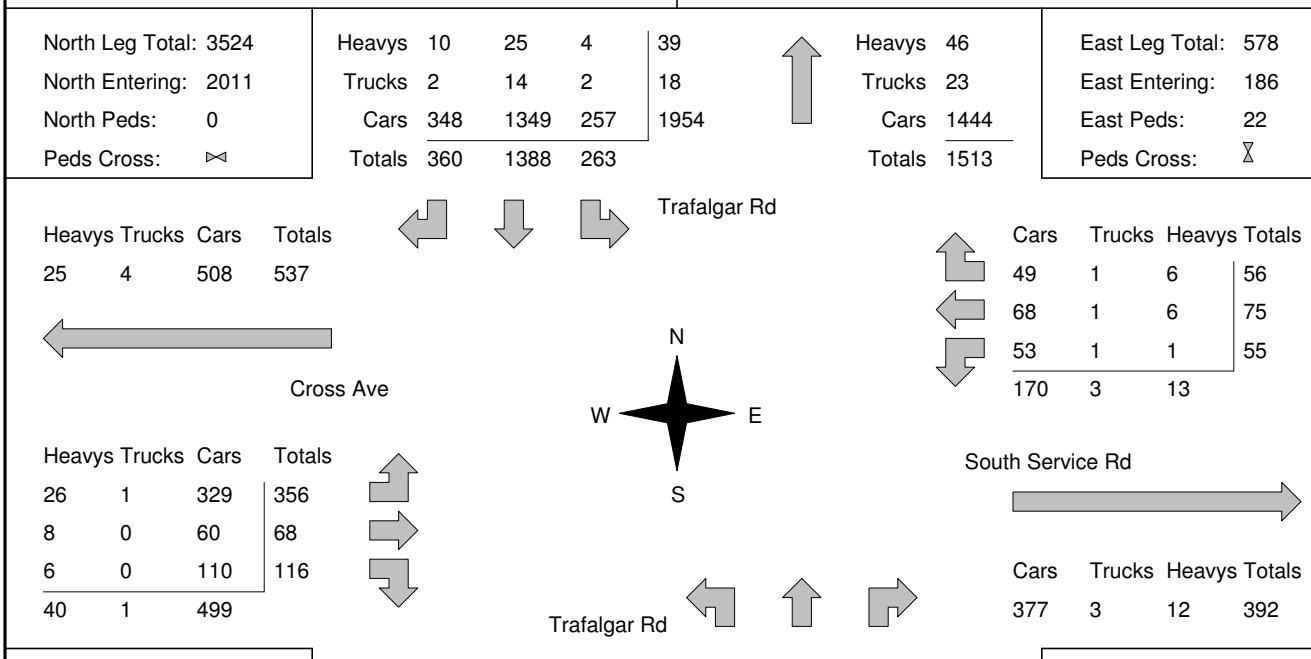
Municipality: Halton Region
Site #: 0000003366
Intersection: Trafalgar Rd & South Service Rd
TFR File #: 3
Count date: 6-Nov-2019

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ South Service Rd

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:00:00
To: 13:00:00

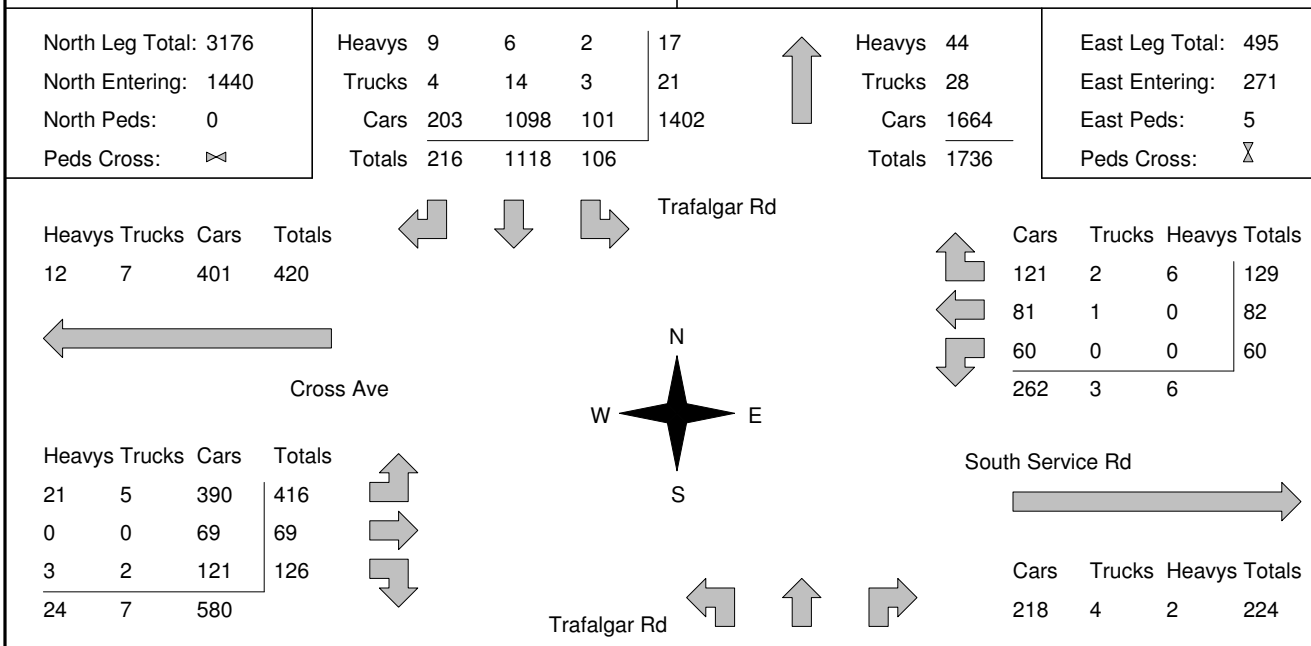
Municipality: Halton Region
Site #: 0000003366
Intersection: Trafalgar Rd & South Service Rd
TFR File #: 3
Count date: 6-Nov-2019

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ South Service Rd

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

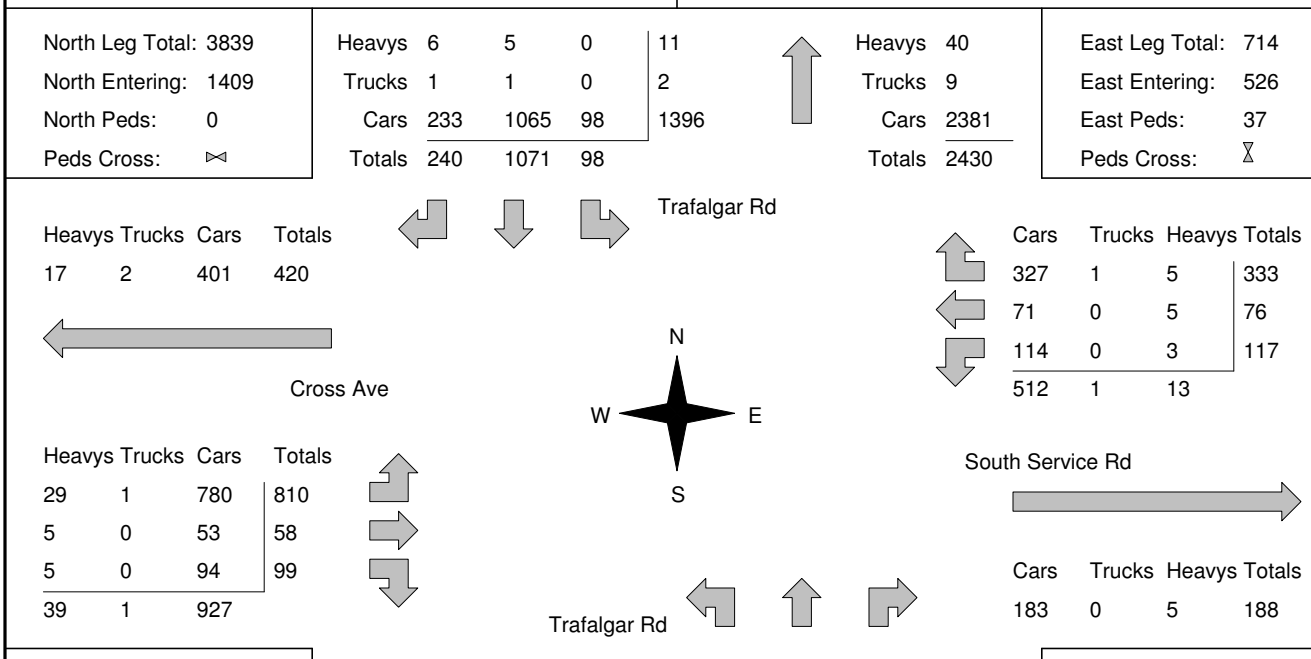
Municipality: Halton Region
Site #: 0000003366
Intersection: Trafalgar Rd & South Service Rd
TFR File #: 3
Count date: 6-Nov-2019

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ South Service Rd

Total Count Diagram

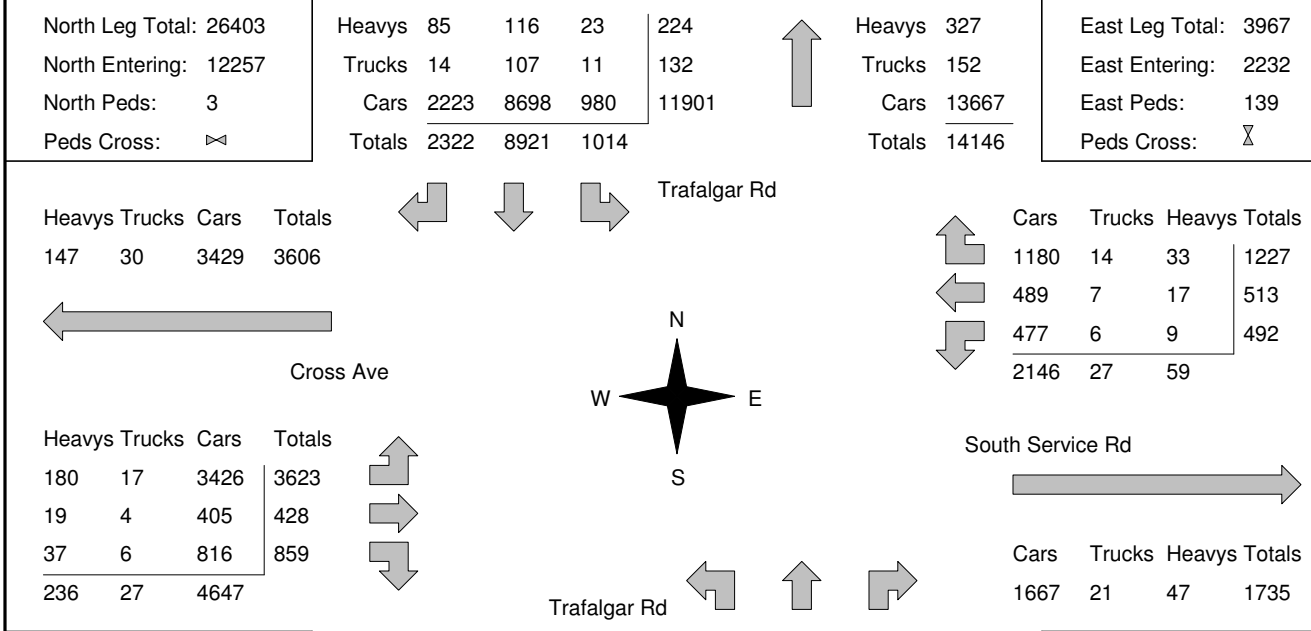
Municipality: Halton Region
Site #: 0000003366
Intersection: Trafalgar Rd & South Service Rd
TFR File #: 3
Count date: 6-Nov-2019

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ Cornwall Rd

Morning Peak Diagram

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

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

Municipality: Halton Region
Site #: 0000003365
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 2
Count date: 6-Nov-2019

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total:	2842			
North Entering:	1522			
North Peds:	36			
Peds Cross:	⋈			

Heavys	10	4	17	31
Trucks	5	3	9	17
Cars	372	561	541	1474
Totals	387	568	567	

Heavys	39
Trucks	15
Cars	1266
Totals	1320

East Leg Total:	2044
East Entering:	985
East Peds:	15
Peds Cross:	⧖

Trafalgar Rd

Heavys	Trucks	Cars	Totals
24	10	832	866

Cornwall Rd

Heavys	Trucks	Cars	Totals
5	3	344	352
11	2	428	441
2	0	57	59
18	5	829	

Cars	Trucks	Heavys	Totals
524	10	26	560
381	5	13	399
24	1	1	26
929	16	40	

N
W E
S

Cornwall Rd

Cars	Trucks	Heavys	Totals
1020	11	28	1059

Trafalgar Rd

Peds Cross:	⧖		
West Peds:	14		
West Entering:	852		
West Leg Total:	1718		

Cars	642
Trucks	4
Heavys	7
Totals	653

Cars	79	398	51	528
Trucks	0	2	0	2
Heavys	1	8	0	9
Totals	80	408	51	

Peds Cross:	⋈		
South Peds:	10		
South Entering:	539		
South Leg Total:	1192		

Comments

Trafalgar Rd @ Cornwall Rd

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:00:00
To: 13:00:00

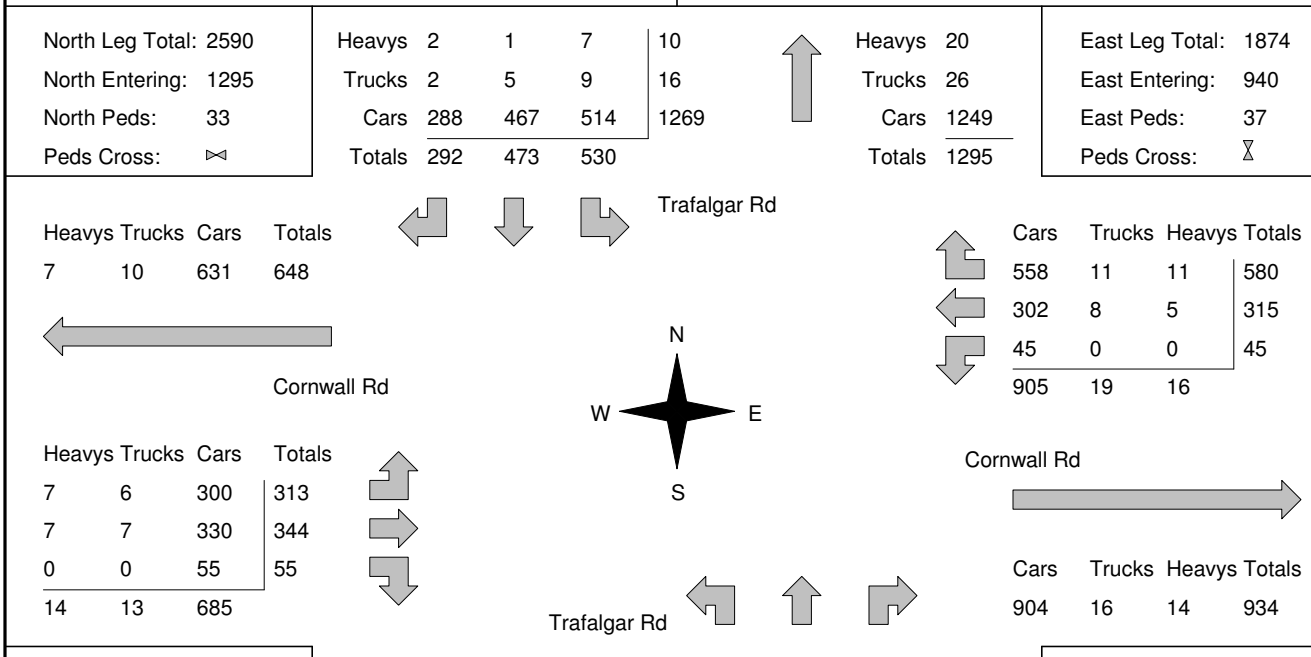
Municipality: Halton Region
Site #: 0000003365
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 2
Count date: 6-Nov-2019

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ Cornwall Rd

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 15:30:00
To: 16:30:00

Municipality: Halton Region
Site #: 0000003365
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 2
Count date: 6-Nov-2019

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total: 2825
North Entering: 1297
North Peds: 20
Peds Cross: ⋈

Heavys	6	1	12	19
Trucks	1	2	2	5
Cars	309	462	502	1273
Totals	316	465	516	

Heavys	32
Trucks	10
Cars	1486
Totals	1528

East Leg Total: 2188
East Entering: 1244
East Peds: 11
Peds Cross: ⧖

Trafalgar Rd

Heavys	Trucks	Cars	Totals
18	8	853	879

Cars	Trucks	Heavys	Totals
666	6	15	687
482	6	11	499
56	2	0	58
1204	14	26	

Cornwall Rd

N
W E
S

Heavys	Trucks	Cars	Totals
11	1	355	367
7	2	368	377
0	0	66	66
18	3	789	

Cornwall Rd

Cars	Trucks	Heavys	Totals
921	4	19	944

Trafalgar Rd

Peds Cross: ⧖
West Peds: 10
West Entering: 810
West Leg Total: 1689

Cars	584
Trucks	4
Heavys	1
Totals	589

Cars	62	465	51	578
Trucks	1	3	0	4
Heavys	1	6	0	7
Totals	64	474	51	

Peds Cross: ⋈
South Peds: 10
South Entering: 589
South Leg Total: 1178

Comments

Trafalgar Rd @ Cornwall Rd

Total Count Diagram

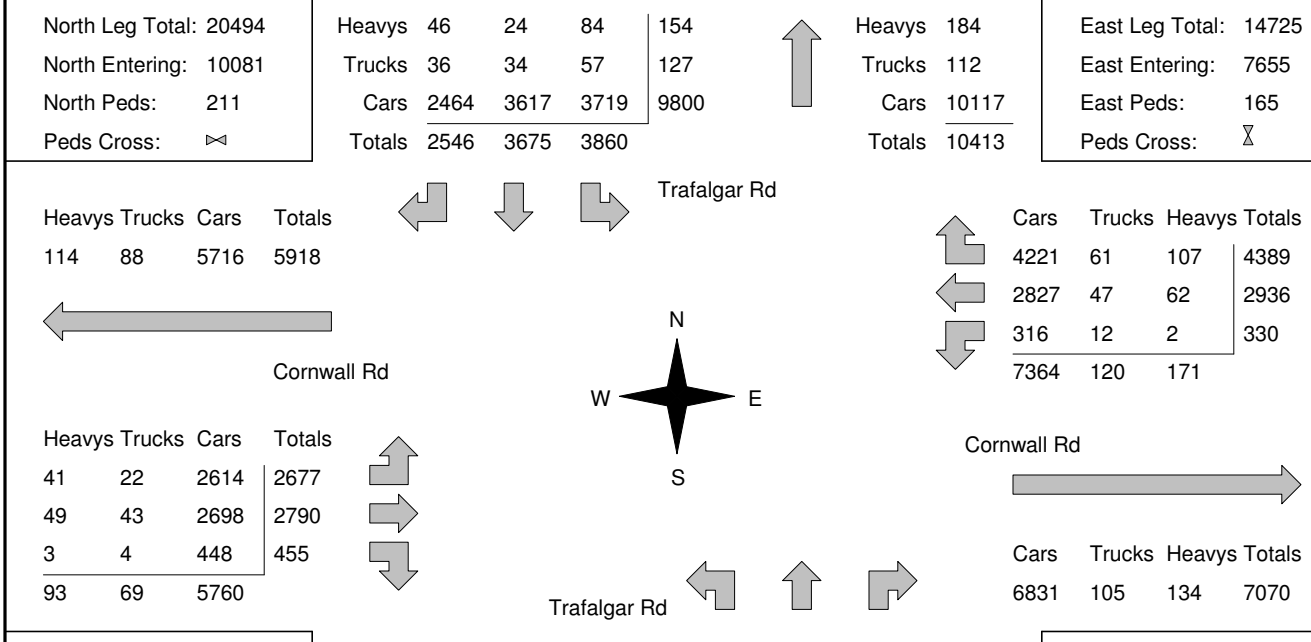
Municipality: Halton Region
Site #: 0000003365
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 2
Count date: 6-Nov-2019

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

APPENDIX F

Level of Service Definitions

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

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

APPENDIX G

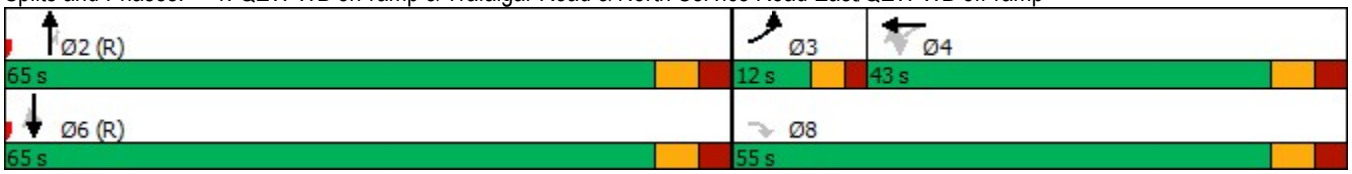
Detailed Capacity Analysis Worksheets

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	6	239	107	386	38	225	1533	311	1996	893	5
Future Volume (vph)	6	239	107	386	38	225	1533	311	1996	893	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.98		0.96	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.961						
Satd. Flow (prot)	1825	1622	0	1667	1686	1570	5142	1601	5092	1570	0
Flt Permitted	0.950			0.950	0.961						
Satd. Flow (perm)	1825	1622	0	1667	1686	1550	5142	1562	5092	1506	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						237		327		82	
Link Speed (k/h)					40		60		60		
Link Distance (m)					190.6		330.4		230.9		
Travel Time (s)					17.2		19.8		13.9		
Confl. Peds. (#/hr)						2		2		6	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	4%	4%	4%	2%	2%	3%	4%	0%
Adj. Flow (vph)	6	252	113	406	40	237	1614	327	2101	940	5
Shared Lane Traffic (%)				45%							
Lane Group Flow (vph)	6	365	0	223	223	237	1614	327	2101	945	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	55.0		43.0	43.0		65.0	65.0	65.0	65.0	
Total Split (%)	10.0%	45.8%		35.8%	35.8%		54.2%	54.2%	54.2%	54.2%	
Maximum Green (s)	7.0	48.0		36.0	36.0		58.0	58.0	58.0	58.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	35.9		33.5	33.5	120.0	76.1	76.1	76.1	76.1	
Actuated g/C Ratio	0.08	0.30		0.28	0.28	1.00	0.63	0.63	0.63	0.63	
v/c Ratio	0.04	0.75		0.48	0.47	0.15	0.50	0.29	0.65	0.96	
Control Delay	52.5	47.5		39.3	39.1	0.2	13.3	2.0	16.0	41.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.5	47.5		39.3	39.1	0.2	13.3	2.0	16.0	41.6	
LOS	D	D		D	D	A	B	A	B	D	
Approach Delay					25.6		11.4		23.9		
Approach LOS					C		B		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 21.5		Intersection LOS: C	
Intersection Capacity Utilization 100.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

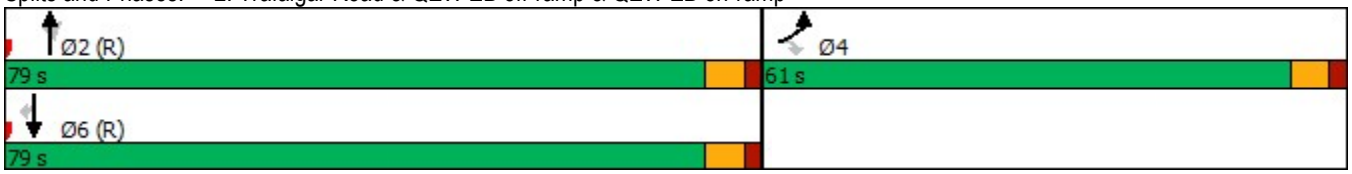


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	769	0	529	0	1075	512	0	2201	420	0	0
Future Volume (vph)	769	0	529	0	1075	512	0	2201	420	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor						0.97			0.95		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3471	0	1601	0	5142	1601	0	4902	1585	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3471	0	1601	0	5142	1557	0	4902	1505	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			539			280		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)						2			8		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	2%	0%	2%	2%	0%	7%	3%	0%	0%
Adj. Flow (vph)	809	0	557	0	1132	539	0	2317	442	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	809	0	557	0	1132	539	0	2317	442	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	5.0		5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	24.0		24.0		24.0	24.0		24.0	24.0		
Total Split (s)	61.0		61.0		79.0	79.0		79.0	79.0		
Total Split (%)	43.6%		43.6%		56.4%	56.4%		56.4%	56.4%		
Maximum Green (s)	55.0		55.0		73.0	73.0		73.0	73.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	54.4		54.4		79.6	79.6		79.6	79.6		
Actuated g/C Ratio	0.39		0.39		0.57	0.57		0.57	0.57		
v/c Ratio	0.60		0.88		0.39	0.48		0.83	0.45		
Control Delay	35.8		53.5		13.4	3.6		28.9	7.9		
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		
Total Delay	35.8		53.5		13.4	3.6		28.9	7.9		
LOS	D		D		B	A		C	A		
Approach Delay		43.0			10.2			25.5			
Approach LOS		D			B			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 5.6 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 25.2		Intersection LOS: C	
Intersection Capacity Utilization 81.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

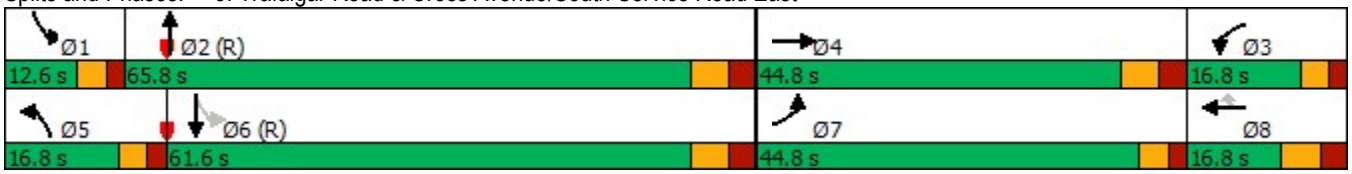


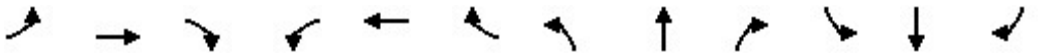
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	356	68	116	55	75	85	107	1158	64	263	1388	360
Future Volume (vph)	356	68	116	55	75	85	107	1158	64	263	1388	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.906				0.850		0.992			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3219	1676	0	1722	1921	1617	1755	5005	0	1807	4878	0
Flt Permitted	0.950			0.950			0.950			0.117		
Satd. Flow (perm)	3219	1676	0	1722	1921	1617	1755	5005	0	223	4878	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61				125		8			56	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			7						4			3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	0%	4%	6%	0%	1%	4%	4%	0%	1%	3%	7%
Adj. Flow (vph)	375	72	122	58	79	89	113	1219	67	277	1461	379
Shared Lane Traffic (%)												
Lane Group Flow (vph)	375	194	0	58	79	89	113	1286	0	277	1840	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8	9.8	7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8	16.8	12.0	34.0		12.0	34.0	
Total Split (s)	44.8	44.8		16.8	16.8	16.8	16.8	65.8		12.6	61.6	
Total Split (%)	32.0%	32.0%		12.0%	12.0%	12.0%	12.0%	47.0%		9.0%	44.0%	
Maximum Green (s)	39.8	37.8		11.8	9.8	9.8	11.8	58.8		7.6	54.6	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		2.0	-3.0	-3.0	-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		7.0	4.0	4.0	3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	23.7	24.3		12.4	14.7	14.7	16.3	62.2		90.1	71.2	
Actuated g/C Ratio	0.17	0.17		0.09	0.10	0.10	0.12	0.44		0.64	0.51	
v/c Ratio	0.69	0.57		0.38	0.39	0.32	0.55	0.58		0.64	0.73	
Control Delay	61.2	43.5		66.1	63.8	6.0	52.1	41.9		37.4	27.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	61.2	43.5		66.1	63.8	6.0	52.1	41.9		37.4	27.3	
LOS	E	D		E	E	A	D	D		D	C	
Approach Delay		55.2			41.6			42.7			28.6	
Approach LOS		E			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 8.4 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 37.4		Intersection LOS: D	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East



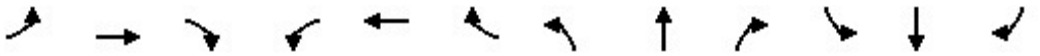


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	441	61	26	399	570	80	408	51	576	577	406
Future Volume (vph)	352	441	61	26	399	570	80	408	51	576	577	406
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		1.00				0.99		1.00				0.98
Frt		0.982				0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3404	3430	0	1825	3510	1541	1789	3488	0	3437	1883	1585
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3404	3430	0	1825	3510	1518	1789	3488	0	3437	1883	1548
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				620		9				351
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			4			9			5			9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	5%	0%	4%	6%	2%	3%	0%	3%	2%	3%
Adj. Flow (vph)	383	479	66	28	434	620	87	443	55	626	627	441
Shared Lane Traffic (%)												
Lane Group Flow (vph)	383	545	0	28	434	620	87	498	0	626	627	441
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	22.4	49.0		12.6	39.2		12.6	40.6		37.8	65.8	65.8
Total Split (%)	16.0%	35.0%		9.0%	28.0%		9.0%	29.0%		27.0%	47.0%	47.0%
Maximum Green (s)	17.4	42.0		7.6	32.2		7.6	33.6		32.8	58.8	58.8
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	19.2	40.3		9.4	25.7	140.0	13.4	48.7		32.4	67.7	67.7
Actuated g/C Ratio	0.14	0.29		0.07	0.18	1.00	0.10	0.35		0.23	0.48	0.48
v/c Ratio	0.82	0.55		0.23	0.67	0.41	0.51	0.41		0.79	0.69	0.47
Control Delay	74.0	43.9		66.7	58.3	0.8	70.8	37.0		56.8	15.7	2.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	74.0	43.9		66.7	58.3	0.8	70.8	37.0		56.8	15.7	2.9
LOS	E	D		E	E	A	E	D		E	B	A
Approach Delay		56.3			25.6			42.0			27.6	
Approach LOS		E			C			D			C	

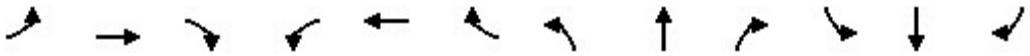
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 35.3		Intersection LOS: D	
Intersection Capacity Utilization 81.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Trafalgar Road & Cornwall Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	13	0	3	1	143	20	3	136	2
Future Volume (vph)	2	0	2	13	0	3	1	143	20	3	136	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.932			0.977			0.982			0.998	
Flt Protected		0.976			0.960						0.999	
Satd. Flow (prot)	0	1748	0	0	1544	0	0	3584	0	0	3545	0
Flt Permitted		0.976			0.960						0.999	
Satd. Flow (perm)	0	1748	0	0	1544	0	0	3584	0	0	3545	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	15	0	3	1	164	23	3	156	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	18	0	0	188	0	0	161	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

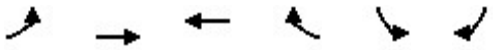
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	13	0	3	1	143	20	3	136	2
Future Volume (Veh/h)	2	0	2	13	0	3	1	143	20	3	136	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	15	0	3	1	164	23	3	156	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	250	352	79	264	342	94	158			187		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	250	352	79	264	342	94	158			187		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	98	100	100	100			100		
cM capacity (veh/h)	684	574	972	620	582	952	1434			1158		

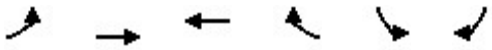
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	18	83	105	81	80
Volume Left	2	15	1	0	3	0
Volume Right	2	3	0	23	0	2
cSH	803	658	1434	1700	1158	1700
Volume to Capacity	0.00	0.03	0.00	0.06	0.00	0.05
Queue Length 95th (m)	0.1	0.6	0.0	0.0	0.1	0.0
Control Delay (s)	9.5	10.6	0.1	0.0	0.3	0.0
Lane LOS	A	B	A		A	
Approach Delay (s)	9.5	10.6	0.0		0.2	
Approach LOS	A	B				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	16.0%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	12	14	0	0	2
Future Volume (vph)	11	12	14	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.977				
Satd. Flow (prot)	0	1840	1883	0	1629	0
Flt Permitted		0.977				
Satd. Flow (perm)	0	1840	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	13	15	0	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	15	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	12	14	0	0	2
Future Volume (Veh/h)	11	12	14	0	0	2
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)	12	13	15	0	0	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	15				52	15
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				52	15
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1603				949	1065

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	15	2
Volume Left	12	0	0
Volume Right	0	0	2
cSH	1603	1700	1065
Volume to Capacity	0.01	0.01	0.00
Queue Length 95th (m)	0.2	0.0	0.0
Control Delay (s)	3.5	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	3.5	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization		17.9%	ICU Level of Service A
Analysis Period (min)		15	

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	T	T	T	T	T	T	R>
Maximum Queue (m)	79.8	121.7	64.6	69.3	70.7	73.3	78.0	180.2	227.1	237.1	238.4
Average Queue (m)	5.1	97.7	36.9	37.4	35.7	41.6	46.0	91.1	140.3	228.0	229.1
95th Queue (m)	34.6	143.5	59.9	62.9	62.0	67.8	74.3	142.1	248.3	233.2	235.3
Link Distance (m)		112.3	173.7	173.7	275.5	275.5	275.5	222.0	222.0	222.0	222.0
Upstream Blk Time (%)		44							1	50	75
Queuing Penalty (veh)		0							0	0	0
Storage Bay Dist (m)	65.0										
Storage Blk Time (%)		61		2			0				
Queuing Penalty (veh)		4		3			1				

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	<	<	R	T	T	T	T	T	T	R
Maximum Queue (m)	128.0	164.1	165.6	23.5	30.5	39.6	166.8	167.4	143.8	96.0
Average Queue (m)	77.6	99.3	91.7	6.3	9.1	13.7	79.4	78.4	71.4	8.8
95th Queue (m)	116.9	141.5	145.1	18.0	23.4	31.6	134.6	138.7	126.8	60.2
Link Distance (m)		209.2	209.2	295.8	295.8	295.8	275.5	275.5	275.5	
Upstream Blk Time (%)		0	0							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	175.0									65.0
Storage Blk Time (%)		0							10	
Queuing Penalty (veh)		0							41	

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	TR	L	T	R	L	T	T	TR	L	T
Maximum Queue (m)	96.3	114.0	71.3	34.6	39.0	34.2	52.8	115.5	162.1	179.1	74.9	172.8
Average Queue (m)	48.1	68.3	34.8	14.0	17.5	13.5	22.5	61.2	106.6	129.2	57.1	89.1
95th Queue (m)	87.2	96.9	64.3	30.3	32.6	26.5	42.3	98.2	158.1	168.7	88.8	157.2
Link Distance (m)		171.6	171.6		93.4	93.4		236.4	236.4	236.4		295.8
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	130.0			55.0			120.0				55.0	
Storage Blk Time (%)	0	0						0			24	18
Queuing Penalty (veh)	0	0						0			109	48

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	177.7	189.8
Average Queue (m)	83.6	95.0
95th Queue (m)	147.6	163.0
Link Distance (m)	295.8	295.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	T	L	T	TR	L	L
Maximum Queue (m)	94.9	104.8	194.3	176.2	21.3	88.7	76.8	44.9	108.6	121.3	97.5	106.8
Average Queue (m)	75.0	86.8	86.8	66.6	5.4	56.5	43.0	19.4	45.3	67.3	46.2	52.2
95th Queue (m)	109.6	118.8	180.3	142.1	15.2	78.7	70.7	36.7	86.3	104.0	77.9	84.7
Link Distance (m)			249.6	249.6		141.5	141.5			203.7		236.4
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (m)	85.0	85.0			85.0			40.0	40.0		90.0	
Storage Blk Time (%)	4	33	0			0		2	3	35	0	2
Queuing Penalty (veh)	8	72	0			0		4	9	98	1	5

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (m)	102.9	63.8
Average Queue (m)	28.5	12.1
95th Queue (m)	70.1	39.5
Link Distance (m)	236.4	236.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (m)	7.2	22.0	1.8	2.7
Average Queue (m)	0.9	4.0	0.1	0.1
95th Queue (m)	4.7	13.4	1.3	1.4
Link Distance (m)	38.3	70.7	102.9	206.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Davis Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	8.8
Average Queue (m)	0.6
95th Queue (m)	4.4
Link Distance (m)	36.3
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 404

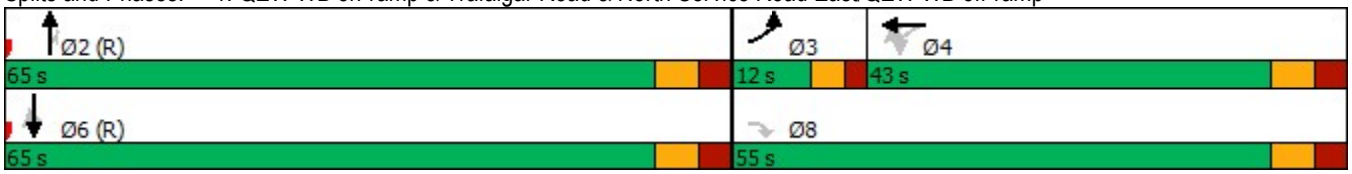
Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	13	127	94	333	118	278	2650	479	1159	955	11
Future Volume (vph)	13	127	94	333	118	278	2650	479	1159	955	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.96		0.95	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.977						
Satd. Flow (prot)	1825	1608	0	1717	1765	1585	5142	1601	5142	1601	0
Flt Permitted	0.950			0.950	0.977						
Satd. Flow (perm)	1825	1608	0	1717	1765	1563	5142	1542	5142	1515	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						287		347		82	
Link Speed (k/h)					40		60		60		
Link Distance (m)					324.6		330.4		230.9		
Travel Time (s)					29.2		19.8		13.9		
Confl. Peds. (#/hr)						8		8		10	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	1%	1%	3%	2%	2%	2%	2%	0%
Adj. Flow (vph)	13	131	97	343	122	287	2732	494	1195	985	11
Shared Lane Traffic (%)				33%							
Lane Group Flow (vph)	13	228	0	230	235	287	2732	494	1195	996	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	55.0		43.0	43.0		65.0	65.0	65.0	65.0	
Total Split (%)	10.0%	45.8%		35.8%	35.8%		54.2%	54.2%	54.2%	54.2%	
Maximum Green (s)	7.0	48.0		36.0	36.0		58.0	58.0	58.0	58.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	30.2		25.4	25.4	120.0	81.8	81.8	81.8	81.8	
Actuated g/C Ratio	0.08	0.25		0.21	0.21	1.00	0.68	0.68	0.68	0.68	
v/c Ratio	0.10	0.56		0.63	0.63	0.18	0.78	0.43	0.34	0.94	
Control Delay	53.5	42.8		50.4	50.0	0.3	17.4	4.6	9.7	35.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.5	42.8		50.4	50.0	0.3	17.4	4.6	9.7	35.5	
LOS	D	D		D	D	A	B	A	A	D	
Approach Delay					31.1		15.4		21.4		
Approach LOS					C		B		C		

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 100.0% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

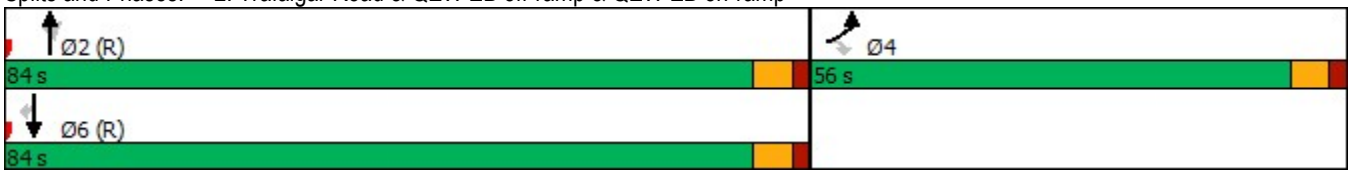


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	879	0	333	0	2250	447	0	1329	290	0	0
Future Volume (vph)	879	0	333	0	2250	447	0	1329	290	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor			0.98			0.97			0.94		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3506	0	1617	0	5142	1601	0	5142	1617	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3506	0	1590	0	5142	1557	0	5142	1517	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			41			360			302		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)			2			2			11		
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
Heavy Vehicles (%)	1%	0%	1%	0%	2%	2%	0%	2%	1%	0%	0%
Adj. Flow (vph)	916	0	347	0	2344	466	0	1384	302	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	916	0	347	0	2344	466	0	1384	302	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	10.0		10.0		28.0	28.0		28.0	28.0		
Minimum Split (s)	24.0		24.0		34.0	34.0		34.0	34.0		
Total Split (s)	56.0		56.0		84.0	84.0		84.0	84.0		
Total Split (%)	40.0%		40.0%		60.0%	60.0%		60.0%	60.0%		
Maximum Green (s)	50.0		50.0		78.0	78.0		78.0	78.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	46.5		46.5		87.5	87.5		87.5	87.5		
Actuated g/C Ratio	0.33		0.33		0.62	0.62		0.62	0.62		
v/c Ratio	0.79		0.63		0.73	0.42		0.43	0.28		
Control Delay	47.3		39.2		27.1	8.8		14.5	2.1		
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		
Total Delay	47.3		39.2		27.1	8.8		14.5	2.1		
LOS	D		D		C	A		B	A		
Approach Delay		45.1			24.1			12.3			
Approach LOS		D			C			B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 51.8 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 25.2		Intersection LOS: C	
Intersection Capacity Utilization 75.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

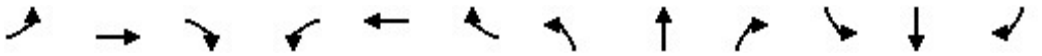


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	810	58	103	117	76	333	119	1478	37	98	1157	240
Future Volume (vph)	810	58	103	117	76	333	119	1478	37	98	1157	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.904				0.850		0.996			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	1619	0	1789	1883	1585	1772	5169	0	1789	5044	0
Flt Permitted	0.950			0.950			0.950			0.071		
Satd. Flow (perm)	3372	1619	0	1789	1883	1585	1772	5169	0	134	5044	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65				166		3			37	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			8						5			8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	9%	4%	2%	2%	3%	3%	1%	0%	2%	0%	5%
Adj. Flow (vph)	862	62	110	124	81	354	127	1572	39	104	1231	255
Shared Lane Traffic (%)												
Lane Group Flow (vph)	862	172	0	124	81	354	127	1611	0	104	1486	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	custom	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						4 8				6		
Detector Phase	7	4		3	8	4 8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8		7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8		12.0	34.0		12.0	34.0	
Total Split (s)	46.2	46.2		18.2	18.2		16.8	61.6		14.0	58.8	
Total Split (%)	33.0%	33.0%		13.0%	13.0%		12.0%	44.0%		10.0%	42.0%	
Maximum Green (s)	41.2	39.2		13.2	11.2		11.8	54.6		9.0	51.8	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	41.1	22.1		32.7	13.6	35.7	13.8	60.8		68.9	57.5	
Actuated g/C Ratio	0.29	0.16		0.23	0.10	0.26	0.10	0.43		0.49	0.41	
v/c Ratio	0.87	0.55		0.30	0.44	0.67	0.73	0.72		0.55	0.71	
Control Delay	57.4	38.9		47.9	67.6	22.4	82.2	23.3		29.1	32.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	57.4	38.9		47.9	67.6	22.4	82.2	23.3		29.1	32.8	
LOS	E	D		D	E	C	F	C		C	C	
Approach Delay		54.3			34.6			27.6			32.6	
Approach LOS		D			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 98 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 35.6		Intersection LOS: D	
Intersection Capacity Utilization 83.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East

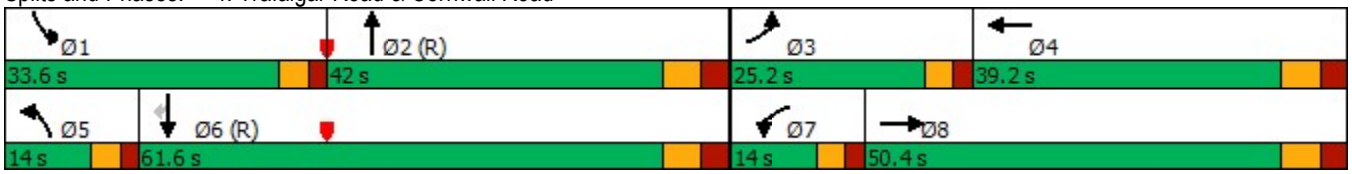


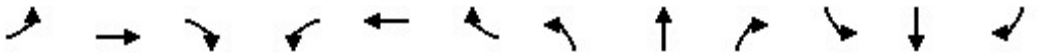
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	377	74	58	499	723	64	480	52	531	507	339
Future Volume (vph)	431	377	74	58	499	723	64	480	52	531	507	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00				0.97
Frt		0.975				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3413	0	1789	3544	1585	1755	3513	0	3471	1883	1570
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3437	3413	0	1789	3544	1553	1755	3513	0	3471	1883	1527
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				609		8				321
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			11			29			3			12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	3%	6%	2%	3%	3%	4%	2%	4%	2%	2%	4%
Adj. Flow (vph)	444	389	76	60	514	745	66	495	54	547	523	349
Shared Lane Traffic (%)												
Lane Group Flow (vph)	444	465	0	60	514	745	66	549	0	547	523	349
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	25.2	50.4		14.0	39.2		14.0	42.0		33.6	61.6	61.6
Total Split (%)	18.0%	36.0%		10.0%	28.0%		10.0%	30.0%		24.0%	44.0%	44.0%
Maximum Green (s)	20.2	43.4		9.0	32.2		9.0	35.0		28.6	54.6	54.6
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	21.8	42.5		10.5	28.8	140.0	11.6	47.1		28.3	66.2	66.2
Actuated g/C Ratio	0.16	0.30		0.08	0.21	1.00	0.08	0.34		0.20	0.47	0.47
v/c Ratio	0.83	0.44		0.45	0.71	0.48	0.46	0.46		0.78	0.59	0.39
Control Delay	71.4	39.2		72.9	56.9	1.1	71.3	39.0		44.2	46.9	24.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	71.4	39.2		72.9	56.9	1.1	71.3	39.0		44.2	46.9	24.1
LOS	E	D		E	E	A	E	D		D	D	C
Approach Delay		54.9			26.1			42.5			40.3	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 39.3		Intersection LOS: D	
Intersection Capacity Utilization 88.2%		ICU Level of Service E	
Analysis Period (min) 15			

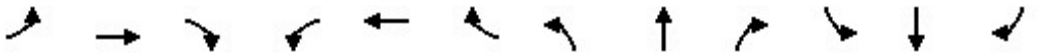
Splits and Phases: 4: Trafalgar Road & Cornwall Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	10	1	2	0	146	15	8	227	3
Future Volume (vph)	2	0	2	10	1	2	0	146	15	8	227	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.981			0.986			0.998	
Flt Protected		0.976			0.962						0.998	
Satd. Flow (prot)	0	1748	0	0	1567	0	0	3473	0	0	3524	0
Flt Permitted		0.976			0.962						0.998	
Satd. Flow (perm)	0	1748	0	0	1567	0	0	3473	0	0	3524	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	4%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	11	1	2	0	168	17	9	261	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	14	0	0	185	0	0	273	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

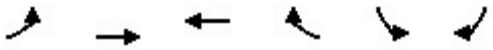
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	10	1	2	0	146	15	8	227	3
Future Volume (Veh/h)	2	0	2	10	1	2	0	146	15	8	227	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	11	1	2	0	168	17	9	261	3
Pedestrians					2							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	367	468	132	329	460	94	264			187		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	367	468	132	329	460	94	264			187		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	98	100	100	100			99		
cM capacity (veh/h)	563	491	899	551	496	948	1312			1156		

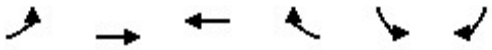
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	14	84	101	140	134
Volume Left	2	11	0	0	9	0
Volume Right	2	2	0	17	0	3
cSH	693	581	1312	1700	1156	1700
Volume to Capacity	0.01	0.02	0.00	0.06	0.01	0.08
Queue Length 95th (m)	0.1	0.6	0.0	0.0	0.2	0.0
Control Delay (s)	10.2	11.4	0.0	0.0	0.6	0.0
Lane LOS	B	B			A	
Approach Delay (s)	10.2	11.4	0.0		0.3	
Approach LOS	B	B				

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	22.2%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	17	2	0	0	11
Future Volume (vph)	6	17	2	0	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.986				
Satd. Flow (prot)	0	1857	1883	0	1629	0
Flt Permitted		0.986				
Satd. Flow (perm)	0	1857	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	18	2	0	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	2	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	17	2	0	0	11
Future Volume (Veh/h)	6	17	2	0	0	11
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)	7	18	2	0	0	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2				34	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2				34	2
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1620				975	1082

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	2	12
Volume Left	7	0	0
Volume Right	0	0	12
cSH	1620	1700	1082
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (m)	0.1	0.0	0.3
Control Delay (s)	2.0	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	2.0	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	T	T	T	R	T	T	T	R>
Maximum Queue (m)	12.8	85.3	65.7	82.5	161.3	174.2	163.4	139.7	127.9	215.9	238.1	238.6
Average Queue (m)	2.8	40.0	33.0	47.5	86.5	93.8	96.1	18.5	49.4	80.6	224.6	228.0
95th Queue (m)	9.2	71.4	58.6	75.3	153.1	160.0	155.6	96.6	91.1	192.0	265.4	233.9
Link Distance (m)		112.3	307.7	307.7	275.5	275.5	275.5		222.1	222.1	222.1	222.1
Upstream Blk Time (%)										0	54	84
Queuing Penalty (veh)										0	0	0
Storage Bay Dist (m)	65.0							80.0				
Storage Blk Time (%)		4		6			13					
Queuing Penalty (veh)		1		16			63					

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	<	<	R	T	T	T	R	T	T	T
Maximum Queue (m)	153.6	199.4	155.2	130.4	132.6	151.0	129.9	68.6	72.4	70.2
Average Queue (m)	103.5	123.6	37.8	74.0	83.3	90.7	13.7	36.7	36.9	32.6
95th Queue (m)	146.6	173.7	91.1	118.0	124.4	133.4	79.1	65.4	66.1	62.7
Link Distance (m)		209.2	209.2	295.8	295.8	295.8		275.5	275.5	275.5
Upstream Blk Time (%)		0	0							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	175.0						75.0			
Storage Blk Time (%)		1				15				1
Queuing Penalty (veh)		3				68				2

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	TR	L	T	R	L	T	T	TR	L	T
Maximum Queue (m)	154.8	183.9	178.2	58.8	50.6	99.8	77.6	93.5	141.5	134.6	74.9	122.8
Average Queue (m)	125.7	153.8	63.7	26.9	20.2	69.1	36.2	42.9	66.0	84.2	23.4	65.4
95th Queue (m)	166.4	198.2	170.9	50.0	41.2	92.7	69.8	76.1	109.8	123.6	56.5	102.1
Link Distance (m)		171.6	171.6		93.4	93.4		236.4	236.4	236.4		295.8
Upstream Blk Time (%)		14	3			1						
Queuing Penalty (veh)		0	0			2						
Storage Bay Dist (m)	130.0			55.0			120.0				55.0	
Storage Blk Time (%)	1	25		1	0							8
Queuing Penalty (veh)	4	100		1	0							8

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	111.2	125.5
Average Queue (m)	67.8	76.3
95th Queue (m)	107.0	121.2
Link Distance (m)	295.8	295.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	104.5	146.2	133.6	74.0	100.8	87.2	18.0	42.3	106.6	120.8	86.8
Average Queue (m)	74.8	85.7	67.8	54.0	17.0	66.2	53.1	0.6	16.3	59.2	75.3	53.0
95th Queue (m)	103.8	113.6	161.2	124.4	42.9	88.8	76.2	12.6	30.5	94.5	109.1	78.6
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	6	22				1	0	0	0	7	40	0
Queuing Penalty (veh)	11	40				1	1	0	0	20	122	0

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	109.6	161.6	95.0
Average Queue (m)	59.6	100.4	49.9
95th Queue (m)	88.5	143.9	83.6
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	0		
Queuing Penalty (veh)	1		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (m)	7.2	15.1	7.8
Average Queue (m)	1.5	2.8	0.3
95th Queue (m)	6.2	10.6	3.5
Link Distance (m)	38.3	70.7	206.2
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Davis Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	8.8
Average Queue (m)	2.7
95th Queue (m)	9.3
Link Distance (m)	36.3
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

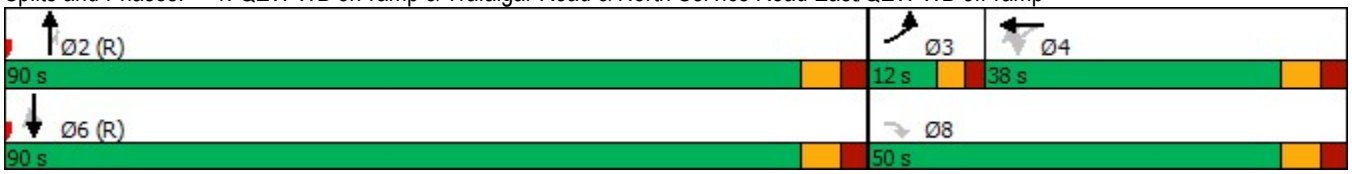
Network wide Queuing Penalty: 462

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	6	239	114	430	40	239	1648	349	2127	948	5
Future Volume (vph)	6	239	114	430	40	239	1648	349	2127	948	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.98		0.96	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.960						
Satd. Flow (prot)	1825	1622	0	1667	1685	1570	5142	1601	5092	1570	0
Flt Permitted	0.950			0.950	0.960						
Satd. Flow (perm)	1825	1622	0	1667	1685	1550	5142	1561	5092	1501	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						230		349		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					190.6		330.4		230.9		
Travel Time (s)					17.2		19.8		13.9		
Confl. Peds. (#/hr)						2		2		6	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	4%	4%	4%	2%	2%	3%	4%	0%
Adj. Flow (vph)	6	239	114	430	40	239	1648	349	2127	948	5
Shared Lane Traffic (%)				46%							
Lane Group Flow (vph)	6	353	0	232	238	239	1648	349	2127	953	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	38.2		35.8	35.8	140.0	93.8	93.8	93.8	93.8	
Actuated g/C Ratio	0.06	0.27		0.26	0.26	1.00	0.67	0.67	0.67	0.67	
v/c Ratio	0.05	0.80		0.54	0.55	0.15	0.48	0.30	0.62	0.93	
Control Delay	62.7	60.7		50.1	50.3	0.2	10.7	3.2	14.9	35.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.7	60.7		50.1	50.3	0.2	10.7	3.2	14.9	35.9	
LOS	E	E		D	D	A	B	A	B	D	
Approach Delay					33.3		9.4		21.4		
Approach LOS					C		A		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 105.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

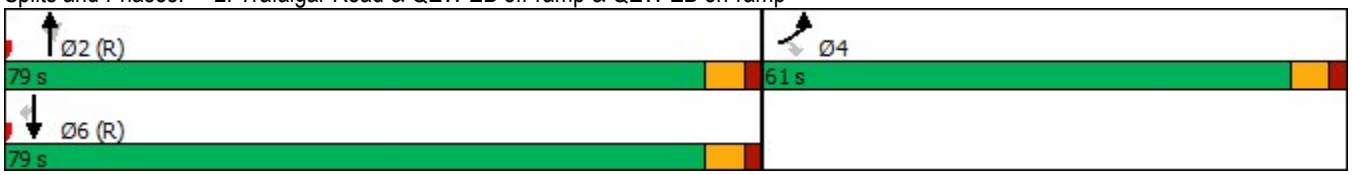


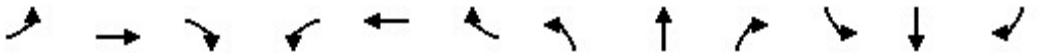
Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	816	0	572	0	1181	567	0	2365	446	0	0
Future Volume (vph)	816	0	572	0	1181	567	0	2365	446	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3471	0	1601	0	5142	1601	0	4902	1585	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3471	0	1601	0	5142	1601	0	4902	1585	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			567			277		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	2%	0%	2%	2%	0%	7%	3%	0%	0%
Adj. Flow (vph)	816	0	572	0	1181	567	0	2365	446	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	816	0	572	0	1181	567	0	2365	446	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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			
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	5.0		5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	24.0		24.0		24.0	24.0		24.0	24.0		
Total Split (s)	61.0		61.0		79.0	79.0		79.0	79.0		
Total Split (%)	43.6%		43.6%		56.4%	56.4%		56.4%	56.4%		
Maximum Green (s)	55.0		55.0		73.0	73.0		73.0	73.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont Walk (s)	11.0		11.0		11.0	11.0		11.0	11.0		
Pedestrian Calls (#/hr)	0		0		0	0		7	7		
Act Effct Green (s)	55.1		55.1		78.9	78.9		78.9	78.9		
Actuated g/C Ratio	0.39		0.39		0.56	0.56		0.56	0.56		
v/c Ratio	0.60		0.89		0.41	0.49		0.86	0.44		
Control Delay	35.4		54.8		13.6	3.4		25.1	4.4		
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		
Total Delay	35.4		54.8		13.6	3.4		25.1	4.4		
LOS	D		D		B	A		C	A		
Approach Delay		43.4			10.3			21.8			
Approach LOS		D			B			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 5.6 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 87.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp



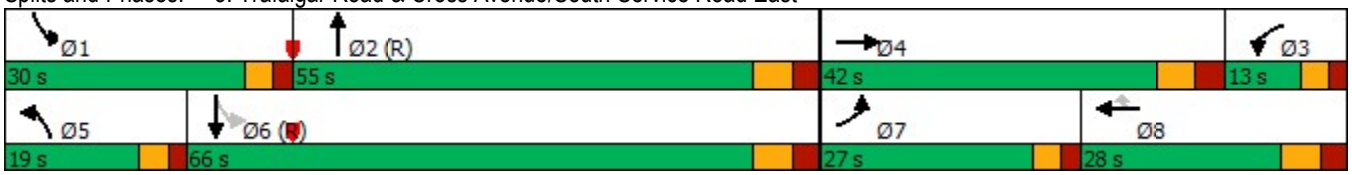


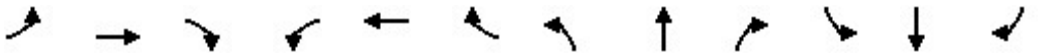
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	76	120	55	79	85	110	1264	64	263	1509	364
Future Volume (vph)	385	76	120	55	79	85	110	1264	64	263	1509	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.908				0.850		0.993			0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3219	1703	0	1722	1921	1617	1755	5017	0	1807	4907	0
Flt Permitted	0.950			0.950			0.950			0.117		
Satd. Flow (perm)	3219	1703	0	1722	1921	1617	1755	5017	0	223	4907	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56				148		6			52	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	0%	4%	6%	0%	1%	4%	4%	0%	1%	3%	7%
Adj. Flow (vph)	385	76	120	55	79	85	110	1264	64	263	1509	364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	385	196	0	55	79	85	110	1328	0	263	1873	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8	9.8	7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8	16.8	12.0	34.0		12.0	34.0	
Total Split (s)	27.0	42.0		13.0	28.0	28.0	19.0	55.0		30.0	66.0	
Total Split (%)	19.3%	30.0%		9.3%	20.0%	20.0%	13.6%	39.3%		21.4%	47.1%	
Maximum Green (s)	22.0	35.0		8.0	21.0	21.0	14.0	48.0		25.0	59.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0	-3.0	-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		7						4			3	
Act Effct Green (s)	22.4	26.6		13.9	15.9	15.9	15.0	66.0		91.7	72.8	
Actuated g/C Ratio	0.16	0.19		0.10	0.11	0.11	0.11	0.47		0.66	0.52	
v/c Ratio	0.75	0.53		0.32	0.36	0.27	0.59	0.56		0.67	0.73	
Control Delay	65.7	41.5		64.1	60.9	2.1	61.4	39.3		34.6	30.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	65.7	41.5		64.1	60.9	2.1	61.4	39.3		34.6	30.0	
LOS	E	D		E	E	A	E	D		C	C	
Approach Delay		57.6			38.9			41.0			30.6	
Approach LOS		E			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 8.4 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 38.0		Intersection LOS: D	
Intersection Capacity Utilization 75.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	374	472	61	31	432	611	80	410	56	649	579	431
Future Volume (vph)	374	472	61	31	432	611	80	410	56	649	579	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Frt		0.983				0.850		0.982				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3404	3446	0	1825	3510	1541	1789	3492	0	3437	1883	1585
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3404	3446	0	1825	3510	1541	1789	3492	0	3437	1883	1585
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				611		10				359
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	5%	0%	4%	6%	2%	3%	0%	3%	2%	3%
Adj. Flow (vph)	374	472	61	31	432	611	80	410	56	649	579	431
Shared Lane Traffic (%)												
Lane Group Flow (vph)	374	533	0	31	432	611	80	466	0	649	579	431
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	

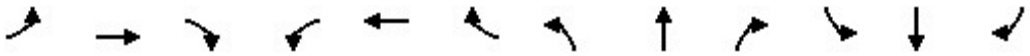
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	26.0	51.0		12.0	37.0		15.0	39.0		38.0	62.0	62.0
Total Split (%)	18.6%	36.4%		8.6%	26.4%		10.7%	27.9%		27.1%	44.3%	44.3%
Maximum Green (s)	21.0	44.0		7.0	30.0		10.0	32.0		33.0	55.0	55.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		4			9			5			9	9
Act Effct Green (s)	21.3	43.0		9.0	25.9	140.0	12.4	46.4		32.4	66.4	66.4
Actuated g/C Ratio	0.15	0.31		0.06	0.18	1.00	0.09	0.33		0.23	0.47	0.47
v/c Ratio	0.72	0.50		0.26	0.67	0.40	0.51	0.40		0.82	0.65	0.46
Control Delay	65.0	40.6		68.4	57.8	0.8	72.2	38.5		51.4	17.8	5.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	65.0	40.6		68.4	57.8	0.8	72.2	38.5		51.4	17.8	5.5
LOS	E	D		E	E	A	E	D		D	B	A
Approach Delay		50.6			25.7			43.5			27.7	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 34.2		Intersection LOS: C	
Intersection Capacity Utilization 72.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Trafalgar Road & Cornwall Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	13	0	3	1	151	20	3	140	2
Future Volume (vph)	2	0	2	13	0	3	1	151	20	3	140	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.932			0.977			0.983			0.998	
Flt Protected		0.976			0.960						0.999	
Satd. Flow (prot)	0	1748	0	0	1544	0	0	3588	0	0	3546	0
Flt Permitted		0.976			0.960						0.999	
Satd. Flow (perm)	0	1748	0	0	1544	0	0	3588	0	0	3546	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	15	0	3	1	174	23	3	161	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	18	0	0	198	0	0	166	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

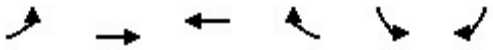
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	13	0	3	1	151	20	3	140	2
Future Volume (Veh/h)	2	0	2	13	0	3	1	151	20	3	140	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	15	0	3	1	174	23	3	161	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	260	367	82	276	356	98	163			197		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	260	367	82	276	356	98	163			197		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	98	100	100	100			100		
cM capacity (veh/h)	673	563	968	607	571	945	1428			1147		

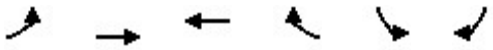
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	18	88	110	84	82
Volume Left	2	15	1	0	3	0
Volume Right	2	3	0	23	0	2
cSH	794	645	1428	1700	1147	1700
Volume to Capacity	0.01	0.03	0.00	0.06	0.00	0.05
Queue Length 95th (m)	0.1	0.7	0.0	0.0	0.1	0.0
Control Delay (s)	9.6	10.7	0.1	0.0	0.3	0.0
Lane LOS	A	B	A		A	
Approach Delay (s)	9.6	10.7	0.0		0.2	
Approach LOS	A	B				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	16.1%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	12	14	0	0	2
Future Volume (vph)	11	12	14	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.977				
Satd. Flow (prot)	0	1840	1883	0	1629	0
Flt Permitted		0.977				
Satd. Flow (perm)	0	1840	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	13	15	0	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	15	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	12	14	0	0	2
Future Volume (Veh/h)	11	12	14	0	0	2
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)	12	13	15	0	0	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	15				52	15
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				52	15
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1603				949	1065

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	15	2
Volume Left	12	0	0
Volume Right	0	0	2
cSH	1603	1700	1065
Volume to Capacity	0.01	0.01	0.00
Queue Length 95th (m)	0.2	0.0	0.0
Control Delay (s)	3.5	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	3.5	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	T	T	T	T	T	T	R>
Maximum Queue (m)	63.9	122.4	86.9	86.4	44.3	46.0	49.1	183.4	226.4	235.2	238.5
Average Queue (m)	8.8	117.2	51.5	54.2	24.0	26.0	28.2	85.2	129.0	226.8	229.0
95th Queue (m)	49.3	119.4	78.5	80.6	44.6	46.2	51.4	137.2	237.0	232.0	235.4
Link Distance (m)		112.3	173.7	173.7	275.5	275.5	275.5	222.0	222.0	222.0	222.0
Upstream Blk Time (%)		97						0	1	34	64
Queuing Penalty (veh)		0						0	0	0	0
Storage Bay Dist (m)	65.0										
Storage Blk Time (%)		95		8							
Queuing Penalty (veh)		6		19							

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	<	<	R	T	T	T	T	T	T	R
Maximum Queue (m)	145.4	195.4	199.5	25.2	34.9	38.8	158.4	173.7	158.2	96.0
Average Queue (m)	85.1	105.0	116.8	8.7	11.9	12.9	80.0	81.1	74.0	7.9
95th Queue (m)	126.2	157.8	184.7	21.4	27.4	28.7	126.2	133.0	123.4	57.0
Link Distance (m)		209.2	209.2	295.8	295.8	295.8	275.5	275.5	275.5	
Upstream Blk Time (%)		0	0					0		
Queuing Penalty (veh)		0	0					0		
Storage Bay Dist (m)	175.0									65.0
Storage Blk Time (%)		0							9	
Queuing Penalty (veh)		1							39	

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	TR	L	T	R	L	T	T	TR	L	T
Maximum Queue (m)	111.0	127.2	78.1	38.8	46.2	30.0	60.1	142.3	212.4	223.5	74.9	152.5
Average Queue (m)	70.0	88.6	38.3	14.4	20.1	13.1	25.1	76.4	130.5	153.4	57.9	92.8
95th Queue (m)	103.6	121.9	69.9	30.3	38.3	24.7	47.2	131.1	198.7	215.5	88.5	137.2
Link Distance (m)		171.6	171.6		93.4	93.4		236.4	236.4	236.4		295.8
Upstream Blk Time (%)									0	1		
Queuing Penalty (veh)									0	5		
Storage Bay Dist (m)	130.0			55.0			120.0				55.0	
Storage Blk Time (%)		0			0			0			8	29
Queuing Penalty (veh)		0			0			0			39	76

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	142.5	173.9
Average Queue (m)	93.2	106.4
95th Queue (m)	130.3	163.6
Link Distance (m)	295.8	295.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	104.7	152.6	121.2	42.9	103.2	89.6	42.0	41.3	100.3	124.6	83.0
Average Queue (m)	67.1	80.5	63.1	55.3	8.5	62.8	51.2	1.7	19.8	53.2	74.8	37.5
95th Queue (m)	103.6	112.2	132.7	102.5	24.4	88.6	78.8	19.6	35.1	89.0	108.0	67.5
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	1	15	0			1	0	0	1	7	44	0
Queuing Penalty (veh)	3	34	1			0	0	0	4	17	124	0

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	89.8	143.0	65.8
Average Queue (m)	44.8	67.3	22.8
95th Queue (m)	74.1	121.2	50.3
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	0		
Queuing Penalty (veh)	1		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (m)	7.2	19.4	2.6
Average Queue (m)	0.9	4.6	0.1
95th Queue (m)	4.7	13.7	1.8
Link Distance (m)	38.3	70.7	206.2
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Davis Road & Site Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (m)	1.8	8.6
Average Queue (m)	0.1	0.5
95th Queue (m)	1.3	3.6
Link Distance (m)	70.7	36.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

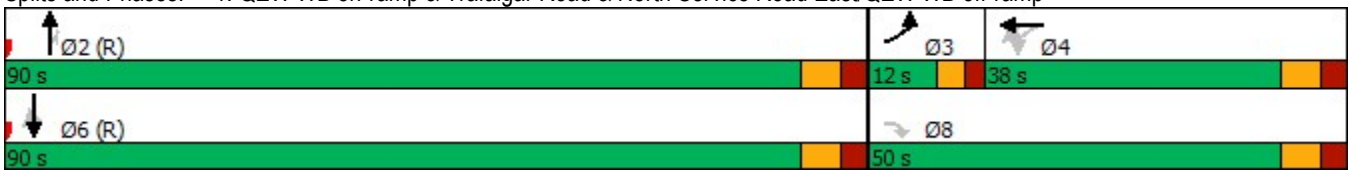
Network wide Queuing Penalty: 371

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	13	127	100	383	125	295	2823	527	1245	1013	11
Future Volume (vph)	13	127	100	383	125	295	2823	527	1245	1013	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.96		0.94	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.975						
Satd. Flow (prot)	1825	1608	0	1717	1762	1585	5142	1601	5142	1601	0
Flt Permitted	0.950			0.950	0.975						
Satd. Flow (perm)	1825	1608	0	1717	1762	1563	5142	1538	5142	1506	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						265		392		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					324.6		330.4		230.9		
Travel Time (s)					29.2		19.8		13.9		
Confl. Peds. (#/hr)						8		8		10	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	1%	1%	1%	3%	2%	2%	2%	2%	0%
Adj. Flow (vph)	13	127	100	383	125	295	2823	527	1245	1013	11
Shared Lane Traffic (%)				34%							
Lane Group Flow (vph)	13	227	0	253	255	295	2823	527	1245	1024	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	33.5		28.7	28.7	140.0	98.5	98.5	98.5	98.5	
Actuated g/C Ratio	0.06	0.24		0.20	0.20	1.00	0.70	0.70	0.70	0.70	
v/c Ratio	0.11	0.59		0.72	0.71	0.19	0.78	0.44	0.34	0.95	
Control Delay	64.1	52.0		63.4	62.3	0.3	20.0	6.3	9.6	37.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0	0.0	
Total Delay	64.1	52.0		63.4	62.3	0.3	20.1	6.3	9.6	37.2	
LOS	E	D		E	E	A	C	A	A	D	
Approach Delay					39.9		17.9		22.0		
Approach LOS					D		B		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 105.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

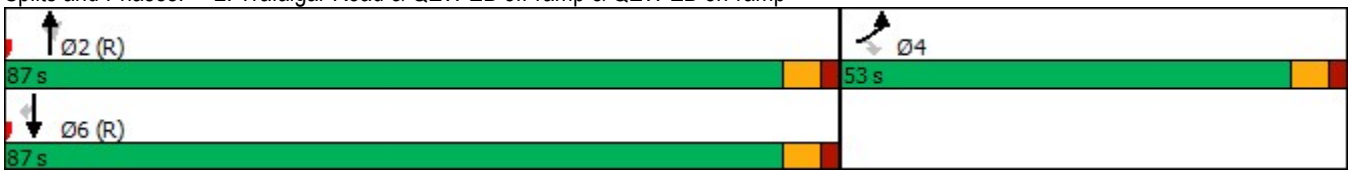


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	933	0	369	0	2418	492	0	1455	308	0	0
Future Volume (vph)	933	0	369	0	2418	492	0	1455	308	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor			0.98			0.97			0.94		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3506	0	1617	0	5142	1601	0	5142	1617	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3506	0	1590	0	5142	1557	0	5142	1517	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			40			388			308		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)			2			2			11		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	1%	0%	2%	2%	0%	2%	1%	0%	0%
Adj. Flow (vph)	933	0	369	0	2418	492	0	1455	308	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	933	0	369	0	2418	492	0	1455	308	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	10.0		10.0		28.0	28.0		28.0	28.0		
Minimum Split (s)	24.0		24.0		34.0	34.0		34.0	34.0		
Total Split (s)	53.0		53.0		87.0	87.0		87.0	87.0		
Total Split (%)	37.9%		37.9%		62.1%	62.1%		62.1%	62.1%		
Maximum Green (s)	47.0		47.0		81.0	81.0		81.0	81.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	46.1		46.1		87.9	87.9		87.9	87.9		
Actuated g/C Ratio	0.33		0.33		0.63	0.63		0.63	0.63		
v/c Ratio	0.81		0.67		0.75	0.44		0.45	0.29		
Control Delay	48.9		42.0		25.5	7.6		19.2	6.2		
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		
Total Delay	48.9		42.0		25.5	7.6		19.2	6.2		
LOS	D		D		C	A		B	A		
Approach Delay		47.0			22.5			16.9			
Approach LOS		D			C			B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 51.8 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 26.2		Intersection LOS: C	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp



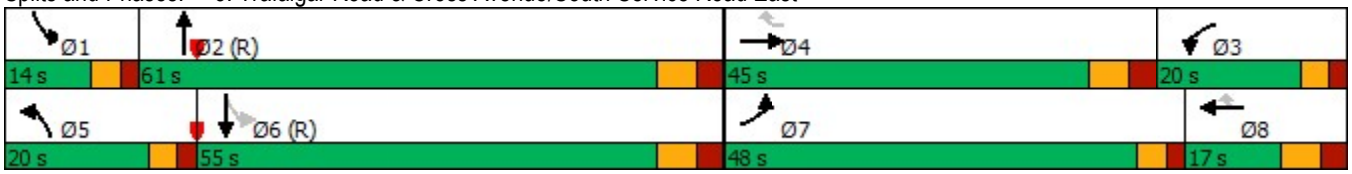
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	847	64	117	117	85	333	125	1579	37	98	1279	250
Future Volume (vph)	847	64	117	117	85	333	125	1579	37	98	1279	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.903				0.850		0.997			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	1617	0	1789	1883	1585	1772	5174	0	1789	5052	0
Flt Permitted	0.950			0.950			0.950			0.073		
Satd. Flow (perm)	3372	1617	0	1789	1883	1585	1772	5174	0	137	5052	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		66				173		3			33	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			8						5			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	9%	4%	2%	2%	3%	3%	1%	0%	2%	0%	5%
Adj. Flow (vph)	847	64	117	117	85	333	125	1579	37	98	1279	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	847	181	0	117	85	333	125	1616	0	98	1529	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	custom	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						4 8				6		
Detector Phase	7	4		3	8	4 8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8		7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8		12.0	34.0		12.0	34.0	
Total Split (s)	48.0	45.0		20.0	17.0		20.0	61.0		14.0	55.0	
Total Split (%)	34.3%	32.1%		14.3%	12.1%		14.3%	43.6%		10.0%	39.3%	
Maximum Green (s)	43.0	38.0		15.0	10.0		15.0	54.0		9.0	48.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	41.5	20.3		34.5	13.2	33.6	15.5	60.7		67.2	55.7	
Actuated g/C Ratio	0.30	0.14		0.25	0.09	0.24	0.11	0.43		0.48	0.40	
v/c Ratio	0.85	0.62		0.27	0.48	0.65	0.64	0.72		0.52	0.75	
Control Delay	54.9	43.7		45.4	69.7	20.3	74.0	21.8		33.0	34.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.9	43.7		45.4	69.7	20.3	74.0	21.8		33.0	34.7	
LOS	D	D		D	E	C	E	C		C	C	
Approach Delay		52.9			33.7			25.5			34.6	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 98 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 35.1 Intersection LOS: D
Intersection Capacity Utilization 86.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	457	408	74	61	535	770	64	483	56	621	515	360
Future Volume (vph)	457	408	74	61	535	770	64	483	56	621	515	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00				0.97
Frt		0.977				0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3423	0	1789	3544	1585	1755	3508	0	3471	1883	1570
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3437	3423	0	1789	3544	1553	1755	3508	0	3471	1883	1527
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				606		8				338
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			11			29			3			12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	3%	3%	4%	2%	4%	2%	2%	4%
Adj. Flow (vph)	457	408	74	61	535	770	64	483	56	621	515	360
Shared Lane Traffic (%)												
Lane Group Flow (vph)	457	482	0	61	535	770	64	539	0	621	515	360
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	

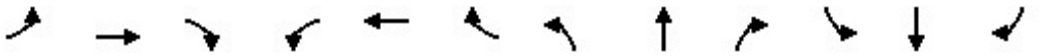
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	28.0	52.0		13.0	37.0		13.0	39.0		36.0	62.0	62.0
Total Split (%)	20.0%	37.1%		9.3%	26.4%		9.3%	27.9%		25.7%	44.3%	44.3%
Maximum Green (s)	23.0	45.0		8.0	30.0		8.0	32.0		31.0	55.0	55.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	23.7	45.5		9.8	29.2	140.0	10.6	42.3		30.8	64.9	64.9
Actuated g/C Ratio	0.17	0.32		0.07	0.21	1.00	0.08	0.30		0.22	0.46	0.46
v/c Ratio	0.79	0.43		0.49	0.72	0.50	0.48	0.51		0.81	0.59	0.40
Control Delay	66.0	37.0		76.3	57.5	1.1	75.0	43.2		45.0	46.1	23.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.0	37.0		76.3	57.5	1.1	75.0	43.2		45.0	46.1	23.1
LOS	E	D		E	E	A	E	D		D	D	C
Approach Delay		51.1			26.6			46.6			40.1	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 91.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: Trafalgar Road & Cornwall Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	10	1	2	0	152	15	8	236	3
Future Volume (vph)	2	0	2	10	1	2	0	152	15	8	236	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.981			0.987			0.998	
Flt Protected		0.976			0.962						0.998	
Satd. Flow (prot)	0	1748	0	0	1567	0	0	3476	0	0	3525	0
Flt Permitted		0.976			0.962						0.998	
Satd. Flow (perm)	0	1748	0	0	1567	0	0	3476	0	0	3525	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	4%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	11	1	2	0	175	17	9	271	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	14	0	0	192	0	0	283	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

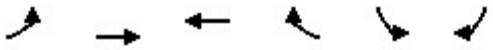
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	10	1	2	0	152	15	8	236	3
Future Volume (Veh/h)	2	0	2	10	1	2	0	152	15	8	236	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	11	1	2	0	175	17	9	271	3
Pedestrians					2							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	380	484	137	341	478	98	274			194		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	380	484	137	341	478	98	274			194		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	98	100	100	100			99		
cM capacity (veh/h)	551	481	893	539	485	943	1301			1148		

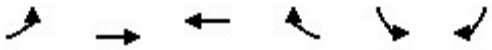
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	14	88	104	144	138
Volume Left	2	11	0	0	9	0
Volume Right	2	2	0	17	0	3
cSH	681	570	1301	1700	1148	1700
Volume to Capacity	0.01	0.02	0.00	0.06	0.01	0.08
Queue Length 95th (m)	0.1	0.6	0.0	0.0	0.2	0.0
Control Delay (s)	10.3	11.5	0.0	0.0	0.6	0.0
Lane LOS	B	B			A	
Approach Delay (s)	10.3	11.5	0.0		0.3	
Approach LOS	B	B				

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	22.4%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	17	2	0	0	11
Future Volume (vph)	6	17	2	0	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.986				
Satd. Flow (prot)	0	1857	1883	0	1629	0
Flt Permitted		0.986				
Satd. Flow (perm)	0	1857	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	18	2	0	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	2	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	17	2	0	0	11
Future Volume (Veh/h)	6	17	2	0	0	11
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)	7	18	2	0	0	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2				34	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2				34	2
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1620				975	1082

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	2	12
Volume Left	7	0	0
Volume Right	0	0	12
cSH	1620	1700	1082
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (m)	0.1	0.0	0.3
Control Delay (s)	2.0	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	2.0	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	T	T	T	R	T	T	T	R>
Maximum Queue (m)	53.6	107.7	76.2	94.0	164.7	170.3	178.1	140.0	83.9	224.2	234.2	237.8
Average Queue (m)	7.1	65.8	45.9	65.1	117.0	122.6	123.3	36.2	47.9	84.7	226.5	228.8
95th Queue (m)	36.5	113.8	71.1	92.2	158.1	164.2	165.9	137.0	72.8	200.6	230.4	234.7
Link Distance (m)		112.3	307.7	307.7	275.5	275.5	275.5		222.1	222.1	222.1	222.1
Upstream Blk Time (%)		11								0	39	83
Queuing Penalty (veh)		0								0	0	0
Storage Bay Dist (m)	65.0							80.0				
Storage Blk Time (%)		26		16			23					
Queuing Penalty (veh)		3		48			122					

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	<	<	R	T	T	T	R	T	T	T
Maximum Queue (m)	183.3	213.6	167.6	136.4	142.0	153.9	129.8	82.7	78.2	73.8
Average Queue (m)	112.5	136.8	47.8	83.9	93.3	96.6	14.6	45.3	46.0	42.2
95th Queue (m)	164.1	192.1	106.7	120.7	131.6	137.9	82.2	70.8	72.7	67.3
Link Distance (m)		209.2	209.2	295.8	295.8	295.8		275.5	275.5	275.5
Upstream Blk Time (%)		1	0							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	175.0						75.0			
Storage Blk Time (%)	0	2				16				1
Queuing Penalty (veh)	0	10				80				2

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	B22	NB	NB	NB	NB	SB
Directions Served	L	L	TR	L	T	R	T	L	T	T	TR	L
Maximum Queue (m)	154.9	184.9	180.2	60.5	57.7	94.2	6.2	65.5	126.6	188.3	175.2	74.9
Average Queue (m)	125.6	153.4	73.9	27.5	22.3	73.0	0.5	30.1	51.7	78.3	93.6	35.2
95th Queue (m)	166.1	199.0	175.5	51.6	44.5	93.0	6.3	53.4	99.9	143.7	152.0	78.9
Link Distance (m)		171.6	171.6		93.4	93.4	173.1		236.4	236.4	236.4	
Upstream Blk Time (%)		12	3			2				0	0	
Queuing Penalty (veh)		0	0			3				0	1	
Storage Bay Dist (m)	130.0			55.0				120.0				55.0
Storage Blk Time (%)	1	24		2	1							0
Queuing Penalty (veh)	4	100		2	1							2

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (m)	134.6	131.9	152.4
Average Queue (m)	82.3	80.6	91.4
95th Queue (m)	120.6	117.0	136.4
Link Distance (m)	295.8	295.8	295.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	14		
Queuing Penalty (veh)	14		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.8	104.7	175.5	133.6	80.2	119.6	96.6	18.5	51.2	114.1	130.8	101.3
Average Queue (m)	75.3	86.8	74.0	59.3	17.1	72.8	59.0	1.8	18.3	64.0	80.3	64.3
95th Queue (m)	108.7	115.4	180.3	139.2	47.6	104.3	89.2	23.0	37.4	102.2	117.5	89.2
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)						0						
Queuing Penalty (veh)						0						
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	6	24	0			4	0	0	2	11	48	0
Queuing Penalty (veh)	12	49	0			3	3	0	5	32	146	1

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	109.0	156.4	97.8
Average Queue (m)	71.1	101.9	49.8
95th Queue (m)	96.2	145.2	82.2
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	1		
Queuing Penalty (veh)	3		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (m)	7.2	18.2	12.2
Average Queue (m)	0.8	3.6	0.5
95th Queue (m)	4.6	12.4	4.4
Link Distance (m)	38.3	70.7	206.2
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Davis Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	9.0
Average Queue (m)	2.6
95th Queue (m)	9.2
Link Distance (m)	36.3
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

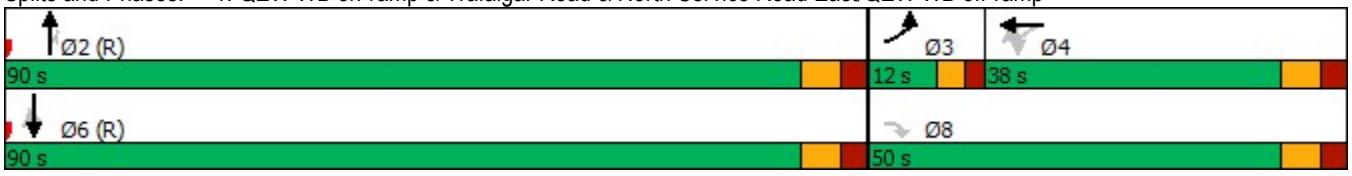
Network wide Queuing Penalty: 645

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	6	239	125	480	45	264	1915	449	2360	1046	5
Future Volume (vph)	6	239	125	480	45	264	1915	449	2360	1046	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	2	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.98		0.96	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.960						
Satd. Flow (prot)	3541	1622	0	1667	1685	1570	5142	1601	5092	1570	0
Flt Permitted	0.950			0.950	0.960						
Satd. Flow (perm)	3541	1622	0	1667	1685	1550	5142	1561	5092	1501	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						227		449		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					190.6		330.4		230.9		
Travel Time (s)					17.2		19.8		13.9		
Confl. Peds. (#/hr)						2		2		6	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	4%	4%	4%	2%	2%	3%	4%	0%
Adj. Flow (vph)	6	239	125	480	45	264	1915	449	2360	1046	5
Shared Lane Traffic (%)				46%							
Lane Group Flow (vph)	6	364	0	259	266	264	1915	449	2360	1051	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					7.4		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	38.9		36.5	36.5	140.0	93.1	93.1	93.1	93.1	
Actuated g/C Ratio	0.06	0.28		0.26	0.26	1.00	0.66	0.66	0.66	0.66	
v/c Ratio	0.03	0.81		0.60	0.61	0.17	0.56	0.38	0.70	1.03	
Control Delay	61.8	61.0		51.5	51.8	0.2	10.3	2.4	16.9	58.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.8	61.0		51.5	51.8	0.2	10.3	2.4	16.9	58.9	
LOS	E	E		D	D	A	B	A	B	E	
Approach Delay					34.4		8.8		29.8		
Approach LOS					C		A		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 24.9		Intersection LOS: C	
Intersection Capacity Utilization 113.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

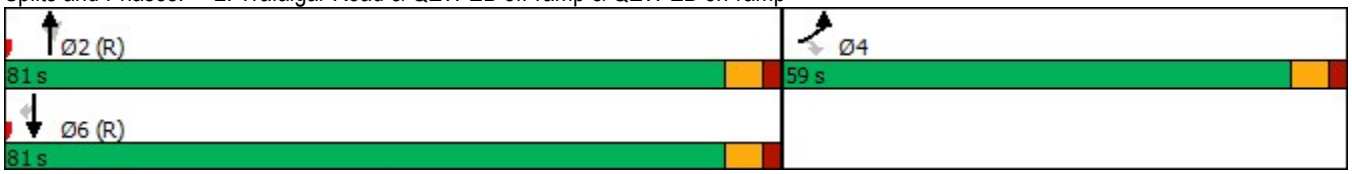


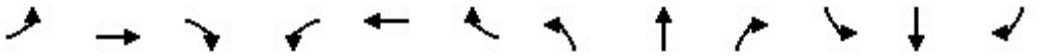
Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	901	0	639	0	1464	687	0	2628	492	0	0
Future Volume (vph)	901	0	639	0	1464	687	0	2628	492	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor						0.97			0.95		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3471	0	1601	0	5142	1601	0	4902	1585	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3471	0	1601	0	5142	1557	0	4902	1505	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			687			283		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)						2			8		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	2%	0%	2%	2%	0%	7%	3%	0%	0%
Adj. Flow (vph)	901	0	639	0	1464	687	0	2628	492	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	901	0	639	0	1464	687	0	2628	492	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	5.0		5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	24.0		24.0		24.0	24.0		24.0	24.0		
Total Split (s)	59.0		59.0		81.0	81.0		81.0	81.0		
Total Split (%)	42.1%		42.1%		57.9%	57.9%		57.9%	57.9%		
Maximum Green (s)	53.0		53.0		75.0	75.0		75.0	75.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont Walk (s)	11.0		11.0		11.0	11.0		11.0	11.0		
Pedestrian Calls (#/hr)	0		0		0	0		7	7		
Act Effct Green (s)	56.0		56.0		78.0	78.0		78.0	78.0		
Actuated g/C Ratio	0.40		0.40		0.56	0.56		0.56	0.56		
v/c Ratio	0.65		0.98		0.51	0.59		0.96	0.51		
Control Delay	36.7		70.0		17.1	4.5		33.0	4.9		
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		
Total Delay	36.7		70.0		17.1	4.5		33.0	4.9		
LOS	D		E		B	A		C	A		
Approach Delay		50.5			13.1			28.6			
Approach LOS		D			B			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 5.6 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 28.6		Intersection LOS: C	
Intersection Capacity Utilization 97.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp



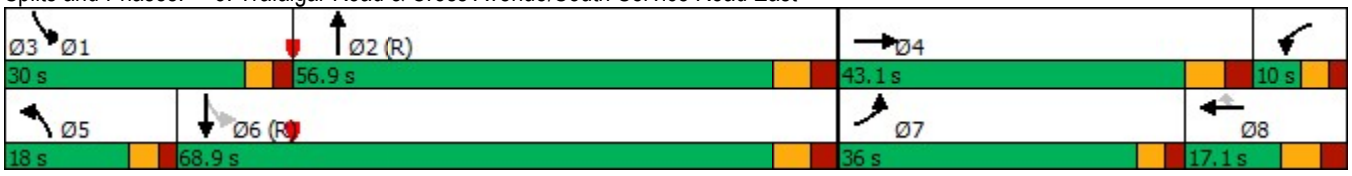


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	612	91	142	55	81	85	116	1392	64	263	1662	364
Future Volume (vph)	612	91	142	55	81	85	116	1392	64	263	1662	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.909				0.850		0.993			0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3219	1684	0	1722	1921	1617	1755	5009	0	1807	4905	0
Flt Permitted	0.950			0.950			0.950			0.077		
Satd. Flow (perm)	3219	1684	0	1722	1921	1617	1755	5009	0	146	4905	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56				148		6			46	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			7						4			3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	0%	4%	6%	0%	1%	4%	4%	0%	1%	3%	7%
Adj. Flow (vph)	612	91	142	55	81	85	116	1392	64	263	1662	364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	612	233	0	55	81	85	116	1456	0	263	2026	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8	9.8	7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8	16.8	12.0	34.0		12.0	34.0	
Total Split (s)	36.0	43.1		10.0	17.1	17.1	18.0	56.9		30.0	68.9	
Total Split (%)	25.7%	30.8%		7.1%	12.2%	12.2%	12.9%	40.6%		21.4%	49.2%	
Maximum Green (s)	31.0	36.1		5.0	10.1	10.1	13.0	49.9		25.0	61.9	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0	-3.0	-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	31.4	29.1		17.5	13.0	13.0	14.0	59.8		85.6	67.6	
Actuated g/C Ratio	0.22	0.21		0.12	0.09	0.09	0.10	0.43		0.61	0.48	
v/c Ratio	0.85	0.59		0.26	0.46	0.30	0.66	0.68		0.76	0.85	
Control Delay	63.9	45.2		58.3	69.0	2.7	60.9	46.3		42.5	36.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	63.9	45.2		58.3	69.0	2.7	60.9	46.3		42.5	36.4	
LOS	E	D		E	E	A	E	D		D	D	
Approach Delay		58.8			40.8			47.3			37.1	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 8.4 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 44.3		Intersection LOS: D	
Intersection Capacity Utilization 85.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East

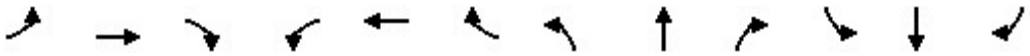


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	416	521	61	31	476	675	80	411	56	719	585	509
Future Volume (vph)	416	521	61	31	476	675	80	411	56	719	585	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		1.00				0.99		1.00				0.98
Frt		0.984				0.850		0.982				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3404	3440	0	1825	3510	1541	1789	3484	0	3437	1883	1585
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3404	3440	0	1825	3510	1518	1789	3484	0	3437	1883	1548
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				640		10				388
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			4			9			5			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	5%	0%	4%	6%	2%	3%	0%	3%	2%	3%
Adj. Flow (vph)	416	521	61	31	476	675	80	411	56	719	585	509
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	582	0	31	476	675	80	467	0	719	585	509
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	25.0	50.0		12.0	37.0		14.0	40.0		38.0	64.0	64.0
Total Split (%)	17.9%	35.7%		8.6%	26.4%		10.0%	28.6%		27.1%	45.7%	45.7%
Maximum Green (s)	20.0	43.0		7.0	30.0		9.0	33.0		33.0	57.0	57.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	21.4	44.6		9.0	27.4	140.0	11.8	42.7		34.5	65.4	65.4
Actuated g/C Ratio	0.15	0.32		0.06	0.20	1.00	0.08	0.30		0.25	0.47	0.47
v/c Ratio	0.80	0.53		0.26	0.69	0.44	0.53	0.44		0.85	0.67	0.55
Control Delay	69.6	40.5		68.4	57.7	0.9	74.5	41.2		49.5	15.2	4.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	69.6	40.5		68.4	57.7	0.9	74.5	41.2		49.5	15.2	4.9
LOS	E	D		E	E	A	E	D		D	B	A
Approach Delay		52.7			25.6			46.0			25.9	
Approach LOS		D			C			D			C	

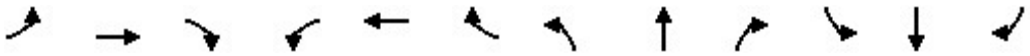
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 34.1		Intersection LOS: C	
Intersection Capacity Utilization 88.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Trafalgar Road & Cornwall Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	13	0	3	1	166	20	3	142	2
Future Volume (vph)	2	0	2	13	0	3	1	166	20	3	142	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.932			0.977			0.984			0.998	
Flt Protected		0.976			0.960						0.999	
Satd. Flow (prot)	0	1748	0	0	1544	0	0	3592	0	0	3546	0
Flt Permitted		0.976			0.960						0.999	
Satd. Flow (perm)	0	1748	0	0	1544	0	0	3592	0	0	3546	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	15	0	3	1	191	23	3	163	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	18	0	0	215	0	0	168	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

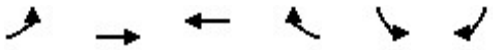
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	13	0	3	1	166	20	3	142	2
Future Volume (Veh/h)	2	0	2	13	0	3	1	166	20	3	142	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	15	0	3	1	191	23	3	163	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	270	386	82	294	376	107	165			214		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	270	386	82	294	376	107	165			214		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	97	100	100	100			100		
cM capacity (veh/h)	662	549	967	589	557	933	1426			1127		

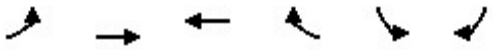
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	18	96	118	84	84
Volume Left	2	15	1	0	3	0
Volume Right	2	3	0	23	0	2
cSH	786	627	1426	1700	1127	1700
Volume to Capacity	0.01	0.03	0.00	0.07	0.00	0.05
Queue Length 95th (m)	0.1	0.7	0.0	0.0	0.1	0.0
Control Delay (s)	9.6	10.9	0.1	0.0	0.3	0.0
Lane LOS	A	B	A		A	
Approach Delay (s)	9.6	10.9	0.0		0.2	
Approach LOS	A	B				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	16.1%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	12	14	0	0	2
Future Volume (vph)	11	12	14	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.977				
Satd. Flow (prot)	0	1840	1883	0	1629	0
Flt Permitted		0.977				
Satd. Flow (perm)	0	1840	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	13	15	0	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	15	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	12	14	0	0	2
Future Volume (Veh/h)	11	12	14	0	0	2
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)	12	13	15	0	0	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	15				52	15
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				52	15
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1603				949	1065

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	15	2
Volume Left	12	0	0
Volume Right	0	0	2
cSH	1603	1700	1065
Volume to Capacity	0.01	0.01	0.00
Queue Length 95th (m)	0.2	0.0	0.0
Control Delay (s)	3.5	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	3.5	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization		17.9%	ICU Level of Service A
Analysis Period (min)		15	

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	T	T	T	T	T	T	R>
Maximum Queue (m)	79.8	116.9	94.1	105.1	60.8	65.4	73.8	172.2	226.6	234.5	236.1
Average Queue (m)	7.1	113.4	58.7	59.1	30.7	34.2	34.0	83.4	122.8	225.2	226.9
95th Queue (m)	44.0	115.6	87.6	89.2	55.0	60.0	64.3	132.3	230.8	230.6	232.6
Link Distance (m)		108.5	174.0	174.0	275.8	275.8	275.8	220.2	220.2	220.2	220.2
Upstream Blk Time (%)		98							1	36	68
Queuing Penalty (veh)		0							0	0	0
Storage Bay Dist (m)	65.0										
Storage Blk Time (%)		96		11			0				
Queuing Penalty (veh)		6		28			0				

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	<	<	R	T	T	T	T	T	T	R
Maximum Queue (m)	196.9	220.6	223.5	45.2	44.9	50.5	134.4	124.2	114.5	24.0
Average Queue (m)	122.1	181.6	190.7	23.6	25.9	26.1	80.8	80.9	70.3	1.6
95th Queue (m)	196.6	258.1	258.1	39.2	42.9	44.4	117.3	115.5	105.3	24.2
Link Distance (m)		209.2	209.2	295.8	295.8	295.8	275.8	275.8	275.8	
Upstream Blk Time (%)		20	33							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	175.0									65.0
Storage Blk Time (%)	0	7							8	
Queuing Penalty (veh)	1	30							39	

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	TR	L	T	R	L	T	T	TR	L	T
Maximum Queue (m)	154.2	184.3	176.0	49.2	48.9	42.4	86.1	177.3	225.0	254.5	74.9	153.6
Average Queue (m)	121.4	149.3	84.4	19.0	23.5	16.0	29.2	97.8	156.6	181.5	55.1	96.8
95th Queue (m)	163.8	197.0	176.7	43.4	43.0	32.4	57.1	155.1	225.2	251.8	89.3	138.8
Link Distance (m)		171.6	171.6		93.4	93.4		236.4	236.4	236.4		295.8
Upstream Blk Time (%)		15	5						0	5		
Queuing Penalty (veh)		0	0						1	25		
Storage Bay Dist (m)	130.0			55.0			120.0				55.0	
Storage Blk Time (%)	2	27		3	1		0	1			9	32
Queuing Penalty (veh)	5	84		2	0		0	2			48	83

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	149.1	167.4
Average Queue (m)	93.8	105.3
95th Queue (m)	130.7	148.3
Link Distance (m)	295.8	295.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	104.9	214.5	186.8	47.3	101.4	113.2	71.3	43.9	112.7	133.2	99.4
Average Queue (m)	82.2	93.6	129.7	107.2	7.6	66.5	58.6	9.2	19.9	53.3	73.5	44.5
95th Queue (m)	109.2	119.8	266.9	229.5	26.4	92.9	100.9	53.5	37.0	94.1	107.6	75.7
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			12	0			1					
Queuing Penalty (veh)			0	0			0					
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	11	42	0			1	0	3	2	5	42	0
Queuing Penalty (veh)	27	110	2			0	1	6	6	14	119	2

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	107.7	97.2	84.4
Average Queue (m)	51.0	45.9	21.4
95th Queue (m)	82.1	88.3	52.9
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	1		
Queuing Penalty (veh)	2		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (m)	5.7	18.5	1.7	2.8
Average Queue (m)	0.8	5.0	0.1	0.1
95th Queue (m)	4.5	14.8	1.2	2.2
Link Distance (m)	38.3	70.7	102.9	206.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Davis Road & Site Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (m)	1.8	8.8
Average Queue (m)	0.1	0.9
95th Queue (m)	1.3	5.2
Link Distance (m)	70.7	36.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 644

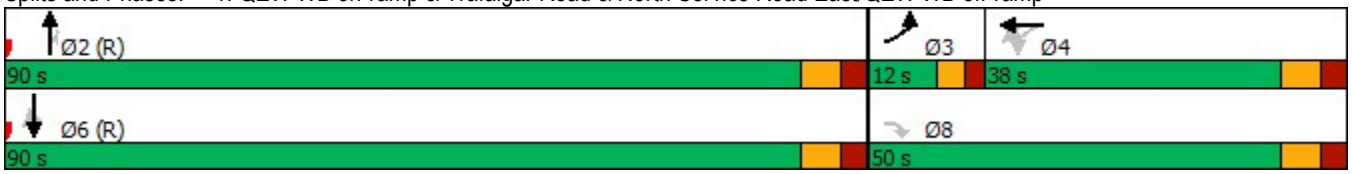
1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	13	127	110	462	138	326	3146	600	1440	1119	11
Future Volume (vph)	13	127	110	462	138	326	3146	600	1440	1119	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.96		0.94	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.973						
Satd. Flow (prot)	1825	1608	0	1717	1758	1585	5142	1601	5142	1601	0
Flt Permitted	0.950			0.950	0.973						
Satd. Flow (perm)	1825	1608	0	1717	1758	1563	5142	1538	5142	1506	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						245		400		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					324.6		330.4		230.9		
Travel Time (s)					29.2		19.8		13.9		
Confl. Peds. (#/hr)						8		8		10	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	1%	1%	1%	3%	2%	2%	2%	2%	0%
Adj. Flow (vph)	13	127	110	462	138	326	3146	600	1440	1119	11
Shared Lane Traffic (%)				36%							
Lane Group Flow (vph)	13	237	0	296	304	326	3146	600	1440	1130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	35.8		31.0	31.0	140.0	96.2	96.2	96.2	96.2	
Actuated g/C Ratio	0.06	0.26		0.22	0.22	1.00	0.69	0.69	0.69	0.69	
v/c Ratio	0.11	0.58		0.78	0.78	0.21	0.89	0.51	0.41	1.07	
Control Delay	64.1	49.9		65.8	65.7	0.3	26.2	8.0	10.9	70.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.2	0.0	0.0	0.0	
Total Delay	64.1	49.9		65.8	65.7	0.3	26.4	8.0	10.9	70.4	
LOS	E	D		E	E	A	C	A	B	E	
Approach Delay					42.7		23.5		37.1		
Approach LOS					D		C		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 31.4		Intersection LOS: C	
Intersection Capacity Utilization 114.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

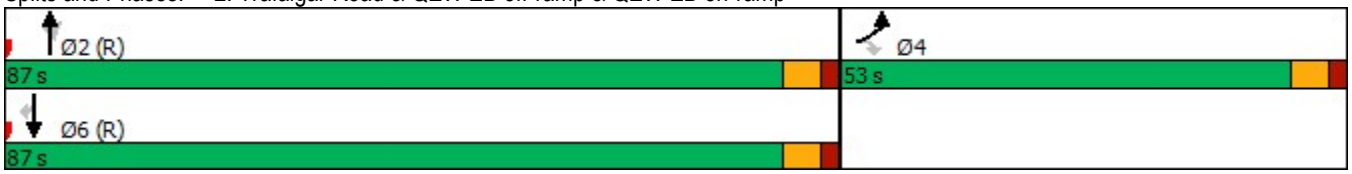


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	1030	0	450	0	2716	560	0	1711	340	0	0
Future Volume (vph)	1030	0	450	0	2716	560	0	1711	340	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor			0.98			0.97			0.94		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3506	0	1617	0	5142	1601	0	5142	1617	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3506	0	1590	0	5142	1557	0	5142	1517	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			393			333		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)			2			2			11		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	1%	0%	2%	2%	0%	2%	1%	0%	0%
Adj. Flow (vph)	1030	0	450	0	2716	560	0	1711	340	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	1030	0	450	0	2716	560	0	1711	340	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	10.0		10.0		28.0	28.0		28.0	28.0		
Minimum Split (s)	24.0		24.0		34.0	34.0		34.0	34.0		
Total Split (s)	53.0		53.0		87.0	87.0		87.0	87.0		
Total Split (%)	37.9%		37.9%		62.1%	62.1%		62.1%	62.1%		
Maximum Green (s)	47.0		47.0		81.0	81.0		81.0	81.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	48.1		48.1		85.9	85.9		85.9	85.9		
Actuated g/C Ratio	0.34		0.34		0.61	0.61		0.61	0.61		
v/c Ratio	0.85		0.80		0.86	0.51		0.54	0.32		
Control Delay	50.6		51.2		30.0	9.5		22.1	6.6		
Queue Delay	0.0		0.0		0.6	0.0		0.0	0.0		
Total Delay	50.6		51.2		30.6	9.5		22.1	6.6		
LOS	D		D		C	A		C	A		
Approach Delay		50.8			27.0			19.5			
Approach LOS		D			C			B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 51.8 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 29.9		Intersection LOS: C	
Intersection Capacity Utilization 88.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

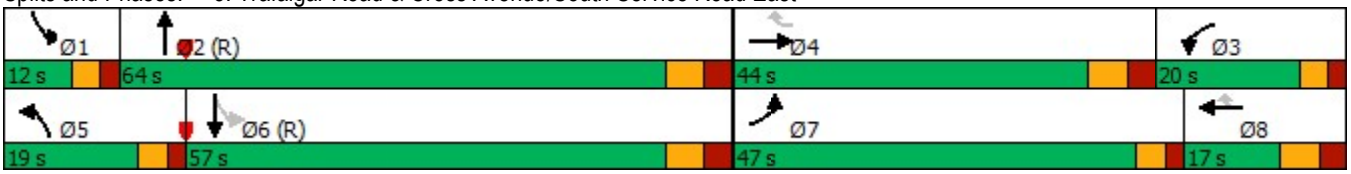


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	915	69	124	117	95	333	155	1743	37	98	1407	250
Future Volume (vph)	915	69	124	117	95	333	155	1743	37	98	1407	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.904				0.850		0.997			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	1619	0	1789	1883	1585	1772	5175	0	1789	5067	0
Flt Permitted	0.950			0.950			0.950			0.074		
Satd. Flow (perm)	3372	1619	0	1789	1883	1585	1772	5175	0	139	5067	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65				133		3			29	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			8						5			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	9%	4%	2%	2%	3%	3%	1%	0%	2%	0%	5%
Adj. Flow (vph)	915	69	124	117	95	333	155	1743	37	98	1407	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	915	193	0	117	95	333	155	1780	0	98	1657	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	custom	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						4 8				6		
Detector Phase	7	4		3	8	4 8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8		7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8		12.0	34.0		12.0	34.0	
Total Split (s)	47.0	44.0		20.0	17.0		19.0	64.0		12.0	57.0	
Total Split (%)	33.6%	31.4%		14.3%	12.1%		13.6%	45.7%		8.6%	40.7%	
Maximum Green (s)	42.0	37.0		15.0	10.0		14.0	57.0		7.0	50.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		8						5			8	
Act Effct Green (s)	42.5	23.9		31.7	13.1	30.9	15.7	61.3		64.9	54.7	
Actuated g/C Ratio	0.30	0.17		0.23	0.09	0.22	0.11	0.44		0.46	0.39	
v/c Ratio	0.89	0.58		0.29	0.54	0.74	0.78	0.79		0.57	0.83	
Control Delay	58.5	40.7		49.7	72.9	29.4	84.3	22.5		37.7	35.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	58.5	40.7		49.7	72.9	29.4	84.3	22.5		37.7	35.9	
LOS	E	D		D	E	C	F	C		D	D	
Approach Delay		55.4			41.3			27.4			36.0	
Approach LOS		E			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 98 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 37.5		Intersection LOS: D	
Intersection Capacity Utilization 93.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East

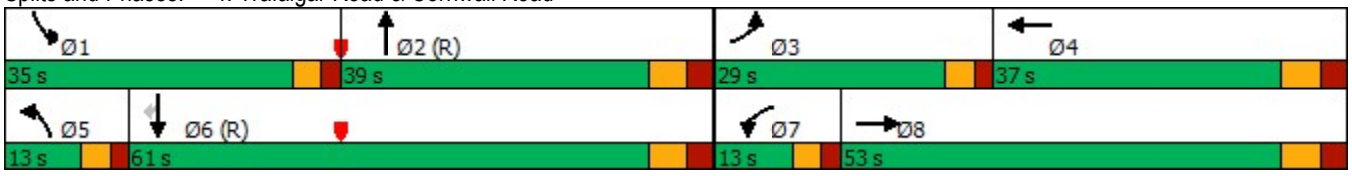


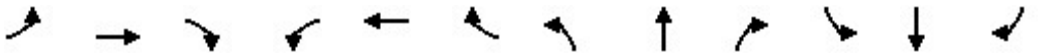
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	527	450	74	61	590	854	64	487	56	681	517	407
Future Volume (vph)	527	450	74	61	590	854	64	487	56	681	517	407
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00				0.97
Frt		0.979				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3433	0	1789	3544	1585	1755	3512	0	3471	1883	1570
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3437	3433	0	1789	3544	1553	1755	3512	0	3471	1883	1527
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				594		8				376
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			11			29			3			12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	3%	3%	4%	2%	4%	2%	2%	4%
Adj. Flow (vph)	527	450	74	61	590	854	64	487	56	681	517	407
Shared Lane Traffic (%)												
Lane Group Flow (vph)	527	524	0	61	590	854	64	543	0	681	517	407
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	29.0	53.0		13.0	37.0		13.0	39.0		35.0	61.0	61.0
Total Split (%)	20.7%	37.9%		9.3%	26.4%		9.3%	27.9%		25.0%	43.6%	43.6%
Maximum Green (s)	24.0	46.0		8.0	30.0		8.0	32.0		30.0	54.0	54.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	25.4	48.6		9.8	30.6	140.0	10.1	38.5		31.5	62.2	62.2
Actuated g/C Ratio	0.18	0.35		0.07	0.22	1.00	0.07	0.28		0.22	0.44	0.44
v/c Ratio	0.85	0.44		0.49	0.76	0.55	0.50	0.56		0.87	0.62	0.46
Control Delay	68.8	35.6		76.3	58.1	1.4	76.8	46.4		46.8	45.9	23.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	68.8	35.6		76.3	58.1	1.4	76.8	46.4		46.8	45.9	23.7
LOS	E	D		E	E	A	E	D		D	D	C
Approach Delay		52.2			26.7			49.6			40.6	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 39.9		Intersection LOS: D	
Intersection Capacity Utilization 96.2%		ICU Level of Service F	
Analysis Period (min) 15			

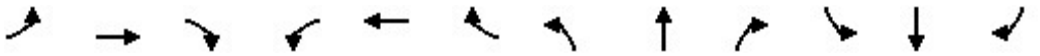
Splits and Phases: 4: Trafalgar Road & Cornwall Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	10	1	2	0	157	15	8	246	3
Future Volume (vph)	2	0	2	10	1	2	0	157	15	8	246	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.981			0.987			0.998	
Flt Protected		0.976			0.962						0.998	
Satd. Flow (prot)	0	1748	0	0	1567	0	0	3476	0	0	3527	0
Flt Permitted		0.976			0.962						0.998	
Satd. Flow (perm)	0	1748	0	0	1567	0	0	3476	0	0	3527	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	4%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	11	1	2	0	180	17	9	283	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	14	0	0	197	0	0	295	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

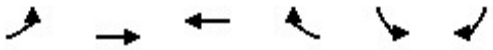
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	10	1	2	0	157	15	8	246	3
Future Volume (Veh/h)	2	0	2	10	1	2	0	157	15	8	246	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	11	1	2	0	180	17	9	283	3
Pedestrians					2							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	395	502	143	352	494	100	286			199		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	395	502	143	352	494	100	286			199		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	98	100	100	100			99		
cM capacity (veh/h)	538	470	885	529	474	940	1288			1142		

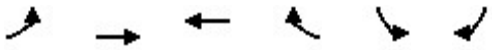
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	14	90	107	150	144
Volume Left	2	11	0	0	9	0
Volume Right	2	2	0	17	0	3
cSH	669	560	1288	1700	1142	1700
Volume to Capacity	0.01	0.03	0.00	0.06	0.01	0.09
Queue Length 95th (m)	0.1	0.6	0.0	0.0	0.2	0.0
Control Delay (s)	10.4	11.6	0.0	0.0	0.6	0.0
Lane LOS	B	B			A	
Approach Delay (s)	10.4	11.6	0.0		0.3	
Approach LOS	B	B				

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	22.7%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	17	2	0	0	11
Future Volume (vph)	6	17	2	0	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.986				
Satd. Flow (prot)	0	1857	1883	0	1629	0
Flt Permitted		0.986				
Satd. Flow (perm)	0	1857	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	18	2	0	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	2	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	17	2	0	0	11
Future Volume (Veh/h)	6	17	2	0	0	11
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)	7	18	2	0	0	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2				34	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2				34	2
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1620				975	1082

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	2	12
Volume Left	7	0	0
Volume Right	0	0	12
cSH	1620	1700	1082
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (m)	0.1	0.0	0.3
Control Delay (s)	2.0	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	2.0	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R>	<	<LT	R	T	T	T	R	T	T	T
Maximum Queue (m)	65.2	122.2	106.2	122.0	71.4	280.2	271.3	282.7	140.0	79.4	222.4	234.0
Average Queue (m)	8.1	77.3	60.2	78.3	9.5	184.8	188.9	193.0	109.0	48.3	74.3	225.7
95th Queue (m)	41.9	131.6	91.2	116.3	62.4	265.1	269.1	277.6	204.5	72.2	173.4	246.1
Link Distance (m)		112.3	307.7	307.7		275.5	275.5	275.5		222.1	222.1	222.1
Upstream Blk Time (%)		24				0	0	0			0	40
Queuing Penalty (veh)		0				5	4	5			0	0
Storage Bay Dist (m)	65.0				60.0				80.0			
Storage Blk Time (%)		40		24				32				
Queuing Penalty (veh)		5		79				190				

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	SB
Directions Served	R>
Maximum Queue (m)	238.5
Average Queue (m)	228.2
95th Queue (m)	233.5
Link Distance (m)	222.1
Upstream Blk Time (%)	83
Queuing Penalty (veh)	0
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	<	<	R	T	T	T	R	T	T	T
Maximum Queue (m)	196.0	218.6	217.8	176.4	175.6	201.0	130.0	85.6	91.3	84.6
Average Queue (m)	146.5	174.0	112.0	114.3	126.1	131.8	58.7	49.6	52.5	48.3
95th Queue (m)	205.3	239.9	235.4	164.9	172.4	190.5	165.0	76.2	80.0	76.5
Link Distance (m)		209.2	209.2	295.8	295.8	295.8		275.5	275.5	275.5
Upstream Blk Time (%)		14	4							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	175.0						75.0			
Storage Blk Time (%)	0	16				28				2
Queuing Penalty (veh)	2	82				154				8

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	B22	NB	NB	NB	NB	SB
Directions Served	L	L	TR	L	T	R	T	L	T	T	TR	L
Maximum Queue (m)	155.0	185.7	187.0	55.1	55.4	99.3	2.8	97.2	124.6	194.6	161.0	74.9
Average Queue (m)	150.3	176.1	152.9	23.2	24.7	75.2	0.1	46.7	60.2	90.5	106.5	31.9
95th Queue (m)	167.7	193.4	240.8	46.4	50.2	92.5	1.9	83.3	105.9	148.1	152.5	73.4
Link Distance (m)		171.6	171.6		93.4	93.4	173.1		236.4	236.4	236.4	
Upstream Blk Time (%)		57	21			1				0		
Queuing Penalty (veh)		0	0			1				0		
Storage Bay Dist (m)	130.0			55.0				120.0				55.0
Storage Blk Time (%)	8	58		1	2				0			0
Queuing Penalty (veh)	35	267		1	2				0			0

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (m)	138.2	147.2	156.4
Average Queue (m)	89.2	89.5	99.1
95th Queue (m)	129.8	130.4	143.7
Link Distance (m)	295.8	295.8	295.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	16		
Queuing Penalty (veh)	16		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	104.9	250.6	225.3	92.0	140.7	135.4	74.0	75.7	117.5	135.2	100.5
Average Queue (m)	89.9	100.9	163.6	127.2	23.6	85.0	73.1	14.1	19.6	65.3	82.4	66.8
95th Queue (m)	105.3	114.0	302.2	253.3	66.5	123.3	117.4	69.0	46.7	102.4	118.2	95.8
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			15	0		1	1					
Queuing Penalty (veh)			0	0		0	0					
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	13	53	0		0	9	2	0	3	11	48	1
Queuing Penalty (veh)	29	120	0		0	6	20	0	8	34	149	5

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	134.1	158.2	114.3
Average Queue (m)	76.0	99.2	62.8
95th Queue (m)	123.4	141.2	99.4
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	3		
Queuing Penalty (veh)	10		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (m)	8.5	16.5	9.7
Average Queue (m)	0.8	3.5	0.4
95th Queue (m)	4.7	11.4	4.2
Link Distance (m)	38.3	70.7	206.2
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Davis Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	8.9
Average Queue (m)	3.5
95th Queue (m)	10.6
Link Distance (m)	36.3
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

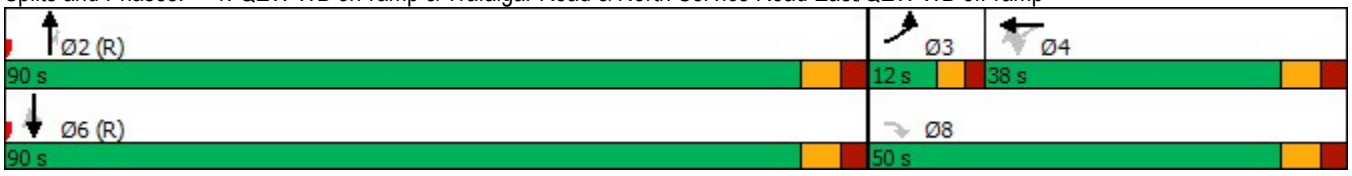
Network wide Queuing Penalty: 1235

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	6	239	138	527	49	291	2102	487	2603	1155	5
Future Volume (vph)	6	239	138	527	49	291	2102	487	2603	1155	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.98		0.96	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.960						
Satd. Flow (prot)	1825	1623	0	1667	1685	1570	5142	1601	5092	1570	0
Flt Permitted	0.950			0.950	0.960						
Satd. Flow (perm)	1825	1623	0	1667	1685	1550	5142	1561	5092	1501	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						229		437		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					190.6		330.4		230.9		
Travel Time (s)					17.2		19.8		13.9		
Confl. Peds. (#/hr)						2		2		6	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	4%	4%	4%	2%	2%	3%	4%	0%
Adj. Flow (vph)	6	239	138	527	49	291	2102	487	2603	1155	5
Shared Lane Traffic (%)				46%							
Lane Group Flow (vph)	6	377	0	285	291	291	2102	487	2603	1160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	10.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	39.7		37.3	37.3	140.0	92.3	86.3	92.3	92.3	
Actuated g/C Ratio	0.06	0.28		0.27	0.27	1.00	0.66	0.62	0.66	0.66	
v/c Ratio	0.05	0.82		0.64	0.65	0.19	0.62	0.43	0.78	1.14	
Control Delay	62.7	61.5		52.8	53.0	0.3	10.9	2.2	19.6	100.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.7	61.5		52.8	53.0	0.3	10.9	2.2	19.7	100.6	
LOS	E	E		D	D	A	B	A	B	F	
Approach Delay					35.3		9.3		44.6		
Approach LOS					D		A		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 32.4		Intersection LOS: C	
Intersection Capacity Utilization 122.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

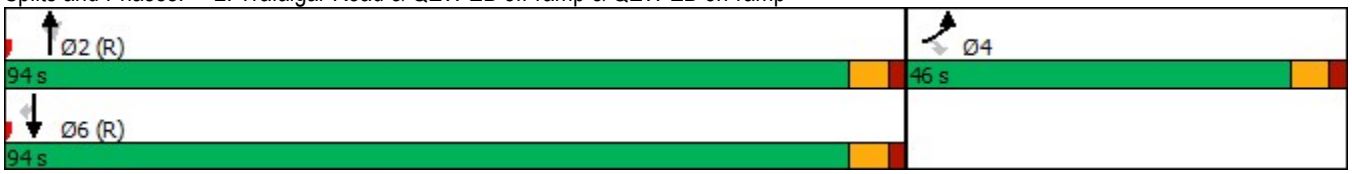


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	922	0	405	0	1595	749	0	2896	543	0	0
Future Volume (vph)	922	0	405	0	1595	749	0	2896	543	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor						0.97			0.95		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3471	0	1601	0	5142	1601	0	4902	1585	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3471	0	1601	0	5142	1557	0	4902	1505	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			749			359		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)						2			8		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	2%	0%	2%	2%	0%	7%	3%	0%	0%
Adj. Flow (vph)	922	0	405	0	1595	749	0	2896	543	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	922	0	405	0	1595	749	0	2896	543	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	5.0		5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	24.0		24.0		24.0	24.0		24.0	24.0		
Total Split (s)	46.0		46.0		94.0	94.0		94.0	94.0		
Total Split (%)	32.9%		32.9%		67.1%	67.1%		67.1%	67.1%		
Maximum Green (s)	40.0		40.0		88.0	88.0		88.0	88.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	42.3		42.3		91.7	91.7		91.7	91.7		
Actuated g/C Ratio	0.30		0.30		0.66	0.66		0.66	0.66		
v/c Ratio	0.88		0.81		0.47	0.59		0.90	0.49		
Control Delay	57.1		56.4		9.3	3.1		19.5	2.8		
Queue Delay	0.0		0.0		0.0	0.0		0.1	0.0		
Total Delay	57.1		56.4		9.3	3.1		19.5	2.8		
LOS	E		E		A	A		B	A		
Approach Delay		56.9			7.3			16.9			
Approach LOS		E			A			B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 5.6 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 88.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

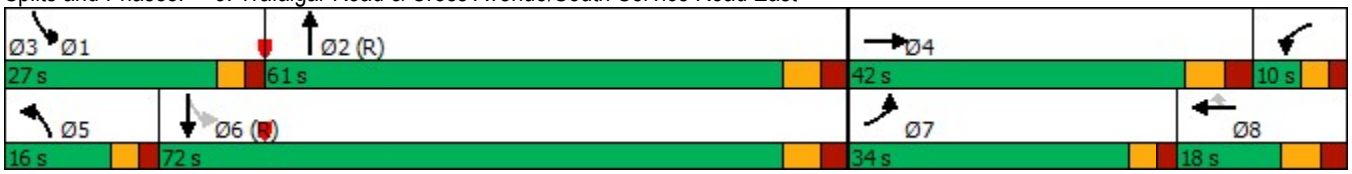


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	612	91	142	55	81	85	116	1533	64	263	1854	364
Future Volume (vph)	612	91	142	55	81	85	116	1533	64	263	1854	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.909				0.850		0.994			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3219	1684	0	1722	1921	1617	1755	5014	0	1807	4920	0
Flt Permitted	0.950			0.950			0.950			0.064		
Satd. Flow (perm)	3219	1684	0	1722	1921	1617	1755	5014	0	122	4920	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55				148		5			41	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			7						4			3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	0%	4%	6%	0%	1%	4%	4%	0%	1%	3%	7%
Adj. Flow (vph)	612	91	142	55	81	85	116	1533	64	263	1854	364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	612	233	0	55	81	85	116	1597	0	263	2218	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8	9.8	7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8	16.8	12.0	34.0		12.0	34.0	
Total Split (s)	34.0	42.0		10.0	18.0	18.0	16.0	61.0		27.0	72.0	
Total Split (%)	24.3%	30.0%		7.1%	12.9%	12.9%	11.4%	43.6%		19.3%	51.4%	
Maximum Green (s)	29.0	35.0		5.0	11.0	11.0	11.0	54.0		22.0	65.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0	-3.0	-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	30.3	29.2		16.9	13.5	13.5	12.9	61.3		86.2	69.3	
Actuated g/C Ratio	0.22	0.21		0.12	0.10	0.10	0.09	0.44		0.62	0.50	
v/c Ratio	0.88	0.59		0.27	0.44	0.29	0.72	0.73		0.81	0.90	
Control Delay	68.0	45.4		59.5	67.4	2.6	65.4	48.0		50.3	37.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	68.0	45.4		59.5	67.4	2.6	65.4	48.0		50.3	37.2	
LOS	E	D		E	E	A	E	D		D	D	
Approach Delay		61.8			40.5			49.1			38.6	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 8.4 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 45.8		Intersection LOS: D	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	459	574	61	31	525	744	80	411	56	789	585	557
Future Volume (vph)	459	574	61	31	525	744	80	411	56	789	585	557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		1.00				0.99		1.00				0.98
Frt		0.986				0.850		0.982				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3404	3448	0	1825	3510	1541	1789	3484	0	3437	1883	1585
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3404	3448	0	1825	3510	1518	1789	3484	0	3437	1883	1548
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				645		10				383
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			4			9			5			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	5%	0%	4%	6%	2%	3%	0%	3%	2%	3%
Adj. Flow (vph)	459	574	61	31	525	744	80	411	56	789	585	557
Shared Lane Traffic (%)												
Lane Group Flow (vph)	459	635	0	31	525	744	80	467	0	789	585	557
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	25.0	50.0		12.0	37.0		15.0	39.0		39.0	63.0	63.0
Total Split (%)	17.9%	35.7%		8.6%	26.4%		10.7%	27.9%		27.9%	45.0%	45.0%
Maximum Green (s)	20.0	43.0		7.0	30.0		10.0	32.0		34.0	56.0	56.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	21.8	46.6		9.0	29.0	140.0	11.8	38.9		36.3	63.3	63.3
Actuated g/C Ratio	0.16	0.33		0.06	0.21	1.00	0.08	0.28		0.26	0.45	0.45
v/c Ratio	0.87	0.55		0.26	0.72	0.49	0.53	0.48		0.89	0.69	0.61
Control Delay	75.0	40.0		68.4	57.6	1.1	74.4	44.1		53.6	14.1	4.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	75.0	40.0		68.4	57.6	1.1	74.4	44.1		53.6	14.1	4.9
LOS	E	D		E	E	A	E	D		D	B	A
Approach Delay		54.7			25.5			48.6			27.6	
Approach LOS		D			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 35.5 Intersection LOS: D
Intersection Capacity Utilization 92.8% ICU Level of Service F
Analysis Period (min) 15

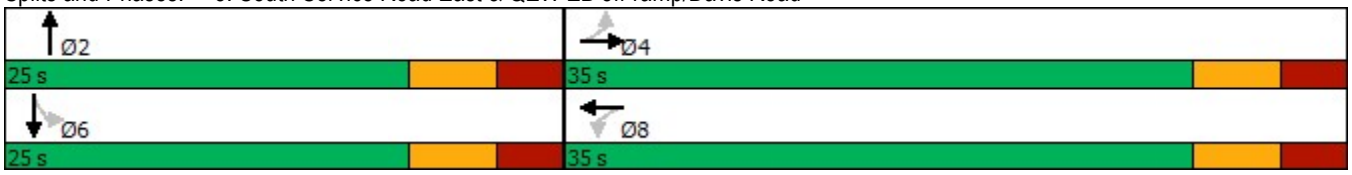
Splits and Phases: 4: Trafalgar Road & Cornwall Road

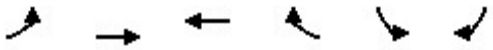
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	0	223	13	0	3	0	166	20	3	142	0
Future Volume (vph)	288	0	223	13	0	3	0	166	20	3	142	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.941			0.977			0.984				
Flt Protected		0.973			0.960						0.999	
Satd. Flow (prot)	0	1759	0	0	1544	0	0	3592	0	0	3552	0
Flt Permitted		0.815			0.674						0.943	
Satd. Flow (perm)	0	1473	0	0	1084	0	0	3592	0	0	3353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87			73			22				
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	331	0	256	15	0	3	0	191	23	3	163	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	18	0	0	214	0	0	166	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5			30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8			1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0			25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%			41.7%		41.7%	41.7%	
Maximum Green (s)	28.0	28.0		28.0	28.0			18.0		18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont 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)		21.0			21.0			7.9			7.9	
Actuated g/C Ratio		0.48			0.48			0.18			0.18	
v/c Ratio		0.78			0.03			0.32			0.27	
Control Delay		16.0			0.1			16.7			18.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		16.0			0.1			16.7			18.2	
LOS		B			A			B			B	
Approach Delay		16.0			0.1			16.7			18.2	
Approach LOS		B			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 43.4			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 16.2		Intersection LOS: B	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

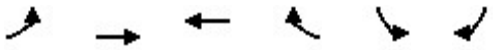
Splits and Phases: 5: South Service Road East & QEW EB off-ramp/Davis Road





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	12	14	0	0	2
Future Volume (vph)	11	12	14	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.977				
Satd. Flow (prot)	0	1840	1883	0	1629	0
Flt Permitted		0.977				
Satd. Flow (perm)	0	1840	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	13	15	0	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	15	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	12	14	0	0	2
Future Volume (Veh/h)	11	12	14	0	0	2
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)	12	13	15	0	0	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		90				
pX, platoon unblocked						
vC, conflicting volume	15				52	15
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				52	15
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1603				949	1065

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	15	2
Volume Left	12	0	0
Volume Right	0	0	2
cSH	1603	1700	1065
Volume to Capacity	0.01	0.01	0.00
Queue Length 95th (m)	0.2	0.0	0.0
Control Delay (s)	3.5	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	3.5	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization		17.9%	ICU Level of Service A
Analysis Period (min)		15	

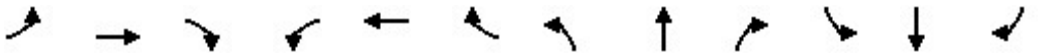
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	1	185	376	2
Future Volume (vph)	2	2	1	185	376	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.932				0.999	
Flt Protected	0.976					
Satd. Flow (prot)	1713	0	0	3579	3575	0
Flt Permitted	0.976					
Satd. Flow (perm)	1713	0	0	3579	3575	0
Link Speed (k/h)	48			50	48	
Link Distance (m)	47.0			96.9	23.0	
Travel Time (s)	3.5			7.0	1.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2	1	201	409	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	202	411	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	2	1	185	376	2
Future Volume (Veh/h)	2	2	1	185	376	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	1	201	409	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				401	23	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	512	206	411			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	454	140	351			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	522	862	1177			

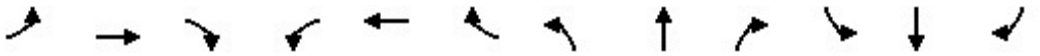
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	68	134	273	138
Volume Left	2	1	0	0	0
Volume Right	2	0	0	0	2
cSH	650	1177	1700	1700	1700
Volume to Capacity	0.01	0.00	0.08	0.16	0.08
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0
Control Delay (s)	10.6	0.1	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.6	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	20.5%	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)	288	0	223	13	0	3	0	166	20	3	142	0
Future Volume (vph)	288	0	223	13	0	3	0	166	20	3	142	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.941			0.977			0.984				
Flt Protected		0.973			0.960						0.999	
Satd. Flow (prot)	0	1759	0	0	1544	0	0	3592	0	0	3552	0
Flt Permitted		0.973			0.960						0.999	
Satd. Flow (perm)	0	1759	0	0	1544	0	0	3592	0	0	3552	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	331	0	256	15	0	3	0	191	23	3	163	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	18	0	0	214	0	0	166	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	0	223	13	0	3	0	166	20	3	142	0
Future Volume (Veh/h)	288	0	223	13	0	3	0	166	20	3	142	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	331	0	256	15	0	3	0	191	23	3	163	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	268	383	82	546	372	107	163			214		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	268	383	82	546	372	107	163			214		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	50	100	74	95	100	100	100			100		
cM capacity (veh/h)	666	552	968	282	560	933	1428			1127		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	587	18	127	87	57	109
Volume Left	331	15	0	0	3	0
Volume Right	256	3	0	23	0	0
cSH	771	319	1700	1700	1127	1700
Volume to Capacity	0.76	0.06	0.07	0.05	0.00	0.06
Queue Length 95th (m)	55.3	1.4	0.0	0.0	0.1	0.0
Control Delay (s)	23.0	17.0	0.0	0.0	0.5	0.0
Lane LOS	C	C			A	
Approach Delay (s)	23.0	17.0	0.0		0.2	
Approach LOS	C	C				

Intersection Summary				
Average Delay	14.0			
Intersection Capacity Utilization	42.2%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	R	T	T	T	T	T	T	R>
Maximum Queue (m)	65.1	123.2	103.3	106.8	47.2	54.6	65.6	64.7	166.4	223.8	236.0	237.8
Average Queue (m)	5.1	117.1	64.3	66.9	1.6	22.6	27.6	21.1	88.6	130.6	227.0	228.8
95th Queue (m)	36.3	120.2	94.8	96.1	23.9	46.1	54.5	51.2	137.7	236.0	232.0	234.6
Link Distance (m)		112.3	173.7	173.7		275.5	275.5	275.5	222.0	222.0	222.0	222.0
Upstream Blk Time (%)		98								1	34	63
Queuing Penalty (veh)		0								0	0	0
Storage Bay Dist (m)	65.0				60.0							
Storage Blk Time (%)		97		16				0				
Queuing Penalty (veh)		6		46				0				

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	<	<	R	T	T	T	T	T	T
Maximum Queue (m)	199.6	220.8	216.2	41.9	45.1	54.1	96.9	139.0	109.4
Average Queue (m)	149.4	176.8	124.0	20.4	24.4	22.8	60.7	61.1	50.4
95th Queue (m)	206.2	237.5	232.4	35.3	40.8	42.5	92.1	103.7	84.3
Link Distance (m)		209.2	209.2	295.8	295.8	295.8	275.5	275.5	275.5
Upstream Blk Time (%)		12	4					0	
Queuing Penalty (veh)		0	0					0	
Storage Bay Dist (m)	175.0								
Storage Blk Time (%)	0	16				0			2
Queuing Penalty (veh)	2	76				0			12

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	TR	L	T	R	L	T	T	TR	L	T
Maximum Queue (m)	154.8	186.2	172.5	42.0	47.5	33.2	80.0	215.1	232.5	263.7	74.9	159.2
Average Queue (m)	122.0	148.7	71.4	14.9	20.2	15.3	27.6	131.2	194.8	227.4	51.6	96.8
95th Queue (m)	166.2	195.3	160.4	32.5	39.4	29.2	58.8	202.7	245.5	291.0	86.9	148.5
Link Distance (m)		171.6	171.6		93.4	93.4		236.4	236.4	236.4		295.8
Upstream Blk Time (%)		12	5					0	1	24		
Queuing Penalty (veh)		0	0					0	3	130		
Storage Bay Dist (m)	130.0			55.0			120.0				55.0	
Storage Blk Time (%)	1	29			0			3			6	29
Queuing Penalty (veh)	3	88			0			4			35	76

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	151.8	174.8
Average Queue (m)	95.2	105.2
95th Queue (m)	138.2	155.9
Link Distance (m)	295.8	295.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.9	105.0	263.8	254.2	65.2	122.8	150.7	92.5	38.3	121.6	132.7	87.7
Average Queue (m)	92.5	104.2	234.6	187.1	9.0	78.1	92.8	43.1	19.9	62.5	84.3	48.1
95th Queue (m)	105.5	108.4	315.6	303.3	33.9	117.2	164.2	117.6	35.7	105.6	118.8	78.2
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			57	0		0	17					
Queuing Penalty (veh)			0	0		0	0					
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	26	80	1			5	1	18	0	9	53	0
Queuing Penalty (veh)	75	229	2			1	6	47	1	24	151	1

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	104.7	92.6	71.1
Average Queue (m)	54.3	37.0	18.5
95th Queue (m)	86.0	74.0	47.8
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	1		
Queuing Penalty (veh)	3		

Intersection: 5: South Service Road East & QEW EB off-ramp/Davis Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	T	TR	LT	T
Maximum Queue (m)	45.3	18.6	18.9	24.2	30.0	19.4
Average Queue (m)	42.1	2.8	7.2	10.1	11.8	5.1
95th Queue (m)	51.9	11.5	16.7	21.5	23.5	14.3
Link Distance (m)	40.7	70.7	102.9	102.9	211.2	211.2
Upstream Blk Time (%)	17					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Davis Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	8.7
Average Queue (m)	0.8
95th Queue (m)	4.8
Link Distance (m)	36.3
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1021

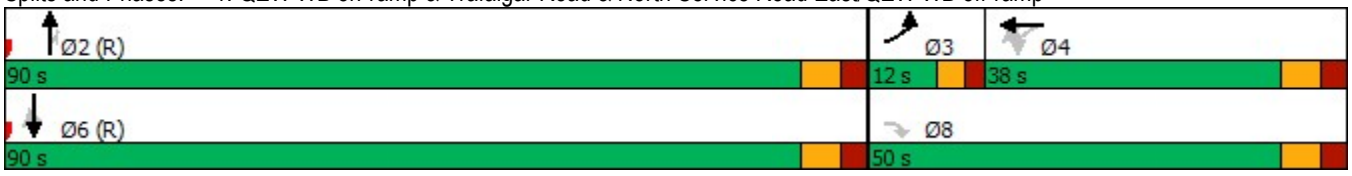
1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	13	127	122	503	153	360	3469	659	1581	1235	11
Future Volume (vph)	13	127	122	503	153	360	3469	659	1581	1235	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.96		0.94	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.974						
Satd. Flow (prot)	1825	1609	0	1717	1760	1585	5142	1601	5142	1601	0
Flt Permitted	0.950			0.950	0.974						
Satd. Flow (perm)	1825	1609	0	1717	1760	1563	5142	1538	5142	1506	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						247		398		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					324.6		330.4		230.9		
Travel Time (s)					29.2		19.8		13.9		
Confl. Peds. (#/hr)						8		8		10	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	1%	1%	1%	3%	2%	2%	2%	2%	0%
Adj. Flow (vph)	13	127	122	503	153	360	3469	659	1581	1235	11
Shared Lane Traffic (%)				36%							
Lane Group Flow (vph)	13	249	0	322	334	360	3469	659	1581	1246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	37.3		32.5	32.5	140.0	94.7	94.7	94.7	94.7	
Actuated g/C Ratio	0.06	0.27		0.23	0.23	1.00	0.68	0.68	0.68	0.68	
v/c Ratio	0.11	0.58		0.81	0.82	0.23	1.00	0.56	0.45	1.20	
Control Delay	64.1	49.1		67.0	67.5	0.3	40.0	11.1	12.0	121.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	3.4	0.0	0.0	0.0	
Total Delay	64.1	49.1		67.0	67.5	0.3	43.4	11.1	12.0	121.1	
LOS	E	D		E	E	A	D	B	B	F	
Approach Delay					43.5		38.2		60.1		
Approach LOS					D		D		E		

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 46.7	Intersection LOS: D
Intersection Capacity Utilization 123.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

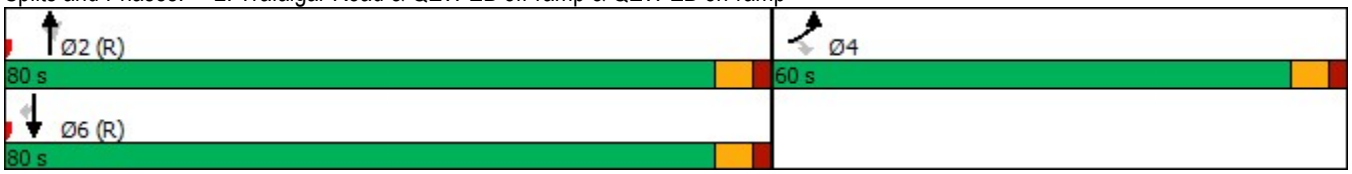


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	1053	0	725	0	2991	614	0	1873	375	0	0
Future Volume (vph)	1053	0	725	0	2991	614	0	1873	375	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor			0.98			0.97			0.94		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3506	0	1617	0	5142	1601	0	5142	1617	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3506	0	1590	0	5142	1557	0	5142	1517	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			348			298		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)			2			2			11		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	1%	0%	2%	2%	0%	2%	1%	0%	0%
Adj. Flow (vph)	1053	0	725	0	2991	614	0	1873	375	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	1053	0	725	0	2991	614	0	1873	375	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	10.0		10.0		28.0	28.0		28.0	28.0		
Minimum Split (s)	24.0		24.0		34.0	34.0		34.0	34.0		
Total Split (s)	60.0		60.0		80.0	80.0		80.0	80.0		
Total Split (%)	42.9%		42.9%		57.1%	57.1%		57.1%	57.1%		
Maximum Green (s)	54.0		54.0		74.0	74.0		74.0	74.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	57.0		57.0		77.0	77.0		77.0	77.0		
Actuated g/C Ratio	0.41		0.41		0.55	0.55		0.55	0.55		
v/c Ratio	0.74		1.10		1.06	0.61		0.66	0.39		
Control Delay	39.0		103.0		69.8	17.7		28.6	9.8		
Queue Delay	0.9		0.0		18.1	0.0		0.0	0.0		
Total Delay	39.9		103.0		87.8	17.7		28.6	9.8		
LOS	D		F		F	B		C	A		
Approach Delay		65.6			75.9			25.5			
Approach LOS		E			E			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 51.8 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 58.7		Intersection LOS: E	
Intersection Capacity Utilization 94.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

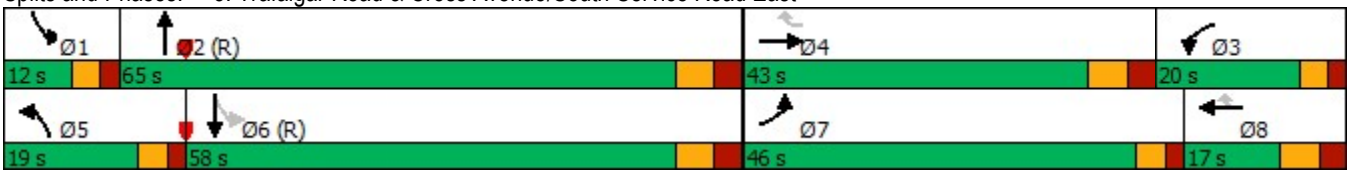


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	915	69	124	117	95	333	155	1923	37	98	1555	250
Future Volume (vph)	915	69	124	117	95	333	155	1923	37	98	1555	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.904				0.850		0.997			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	1619	0	1789	1883	1585	1772	5175	0	1789	5082	0
Flt Permitted	0.950			0.950			0.950			0.073		
Satd. Flow (perm)	3372	1619	0	1789	1883	1585	1772	5175	0	137	5082	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64				129		2			25	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			8						5			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	9%	4%	2%	2%	3%	3%	1%	0%	2%	0%	5%
Adj. Flow (vph)	915	69	124	117	95	333	155	1923	37	98	1555	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	915	193	0	117	95	333	155	1960	0	98	1805	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	custom	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						4 8				6		
Detector Phase	7	4		3	8	4 8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8		7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8		12.0	34.0		12.0	34.0	
Total Split (s)	46.0	43.0		20.0	17.0		19.0	65.0		12.0	58.0	
Total Split (%)	32.9%	30.7%		14.3%	12.1%		13.6%	46.4%		8.6%	41.4%	
Maximum Green (s)	41.0	36.0		15.0	10.0		14.0	58.0		7.0	51.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	41.9	22.9		32.0	13.0	35.9	15.6	62.1		65.5	55.5	
Actuated g/C Ratio	0.30	0.16		0.23	0.09	0.26	0.11	0.44		0.47	0.40	
v/c Ratio	0.91	0.61		0.29	0.55	0.66	0.79	0.85		0.58	0.89	
Control Delay	60.3	42.8		48.9	73.1	25.2	84.0	24.5		35.8	37.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	60.3	42.8		48.9	73.1	25.2	84.0	24.5		35.8	37.2	
LOS	E	D		D	E	C	F	C		D	D	
Approach Delay		57.3			38.7			28.9			37.1	
Approach LOS		E			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 98 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 38.1		Intersection LOS: D	
Intersection Capacity Utilization 94.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East

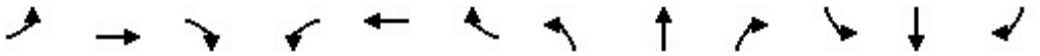


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	496	74	61	651	942	64	487	56	746	517	449
Future Volume (vph)	580	496	74	61	651	942	64	487	56	746	517	449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00				0.97
Frt		0.981				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3443	0	1789	3544	1585	1755	3512	0	3471	1883	1570
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3437	3443	0	1789	3544	1553	1755	3512	0	3471	1883	1527
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				595		8				409
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			11			29			3			12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	3%	3%	4%	2%	4%	2%	2%	4%
Adj. Flow (vph)	580	496	74	61	651	942	64	487	56	746	517	449
Shared Lane Traffic (%)												
Lane Group Flow (vph)	580	570	0	61	651	942	64	543	0	746	517	449
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	28.0	52.0		13.0	37.0		13.0	40.0		35.0	62.0	62.0
Total Split (%)	20.0%	37.1%		9.3%	26.4%		9.3%	28.6%		25.0%	44.3%	44.3%
Maximum Green (s)	23.0	45.0		8.0	30.0		8.0	33.0		30.0	55.0	55.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	25.0	49.2		9.8	31.6	140.0	10.0	37.1		32.2	61.8	61.8
Actuated g/C Ratio	0.18	0.35		0.07	0.23	1.00	0.07	0.26		0.23	0.44	0.44
v/c Ratio	0.95	0.47		0.49	0.81	0.61	0.52	0.58		0.93	0.62	0.50
Control Delay	81.9	36.3		76.3	60.3	1.8	77.7	47.2		51.4	46.1	24.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	81.9	36.3		76.3	60.3	1.8	77.7	47.2		51.4	46.1	24.4
LOS	F	D		E	E	A	E	D		D	D	C
Approach Delay		59.3			27.6			50.4			42.7	
Approach LOS		E			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 42.5		Intersection LOS: D	
Intersection Capacity Utilization 100.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 4: Trafalgar Road & Cornwall Road

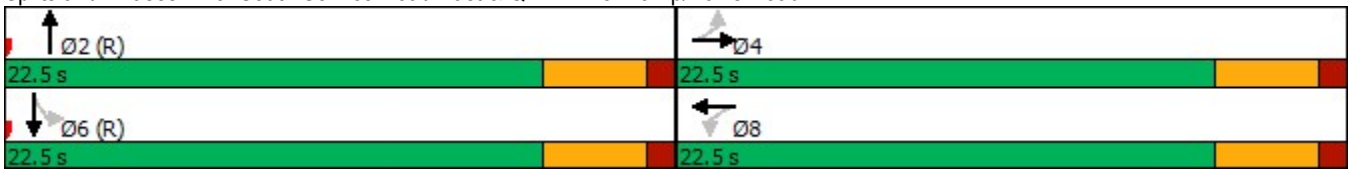


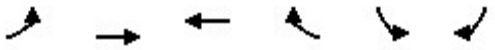
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	0	28	10	0	2	0	157	15	8	246	0
Future Volume (vph)	56	0	28	10	0	2	0	157	15	8	246	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor								1.00				
Frt		0.955			0.979			0.987				
Flt Protected		0.968			0.959						0.998	
Satd. Flow (prot)	0	1776	0	0	1543	0	0	3469	0	0	3533	0
Flt Permitted		0.792			0.835						0.948	
Satd. Flow (perm)	0	1453	0	0	1343	0	0	3469	0	0	3356	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			36			17				
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	4%	0%	38%	2%	0%
Adj. Flow (vph)	64	0	32	11	0	2	0	180	17	9	283	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	13	0	0	197	0	0	292	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5			30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8			1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8			2		6	6	
Switch Phase												
Minimum Initial (s)	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	
Total Split (s)	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%	
Maximum Green (s)	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	
All-Red Time (s)	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	
Total Lost Time (s)		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	
Recall Mode	None	None		None	None			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont 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)		7.5			7.4			34.4			34.4	
Actuated g/C Ratio		0.17			0.16			0.76			0.76	
v/c Ratio		0.36			0.05			0.07			0.11	
Control Delay		14.8			2.9			3.1			3.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.8			2.9			3.1			3.3	
LOS		B			A			A			A	
Approach Delay		14.8			2.9			3.1			3.3	
Approach LOS		B			A			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 27.4%		ICU Level of Service A	
Analysis Period (min) 15			

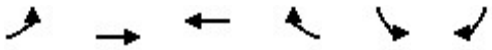
Splits and Phases: 5: South Service Road East & QEW EB off-ramp/Davis Road





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	17	2	0	0	11
Future Volume (vph)	6	17	2	0	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.986				
Satd. Flow (prot)	0	1857	1883	0	1629	0
Flt Permitted		0.986				
Satd. Flow (perm)	0	1857	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	18	2	0	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	2	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	17	2	0	0	11
Future Volume (Veh/h)	6	17	2	0	0	11
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)	7	18	2	0	0	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		90				
pX, platoon unblocked						
vC, conflicting volume	2				34	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2				34	2
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1620				975	1082

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	2	12
Volume Left	7	0	0
Volume Right	0	0	12
cSH	1620	1700	1082
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (m)	0.1	0.0	0.3
Control Delay (s)	2.0	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	2.0	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	0	172	281	3
Future Volume (vph)	2	2	0	172	281	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.932				0.999	
Flt Protected	0.976					
Satd. Flow (prot)	1713	0	0	3579	3575	0
Flt Permitted	0.976					
Satd. Flow (perm)	1713	0	0	3579	3575	0
Link Speed (k/h)	48			50	48	
Link Distance (m)	41.3			96.9	23.0	
Travel Time (s)	3.1			7.0	1.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2	0	187	305	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	187	308	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	2	0	172	281	3
Future Volume (Veh/h)	2	2	0	172	281	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	0	187	305	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				401	23	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	400	154	308			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	360	110	266			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	603	909	1275			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	94	94	203	105
Volume Left	2	0	0	0	0
Volume Right	2	0	0	0	3
cSH	725	1700	1700	1700	1700
Volume to Capacity	0.01	0.06	0.06	0.12	0.06
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0
Control Delay (s)	10.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	10.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R>	<	<LT	R	T	T	T	R	T	T	T
Maximum Queue (m)	79.9	119.8	176.8	159.3	95.9	281.6	281.6	282.6	140.0	113.9	222.7	235.4
Average Queue (m)	9.9	89.6	68.4	84.3	13.5	228.0	232.6	236.9	133.3	51.1	77.7	226.3
95th Queue (m)	47.2	136.1	120.9	128.8	75.6	294.0	292.4	298.2	182.0	85.1	176.9	234.4
Link Distance (m)		112.3	307.7	307.7		275.5	275.5	275.5		222.1	222.1	222.1
Upstream Blk Time (%)		22	0			1	1	1			0	38
Queuing Penalty (veh)		0	0			8	8	12			0	0
Storage Bay Dist (m)	65.0				60.0				80.0			
Storage Blk Time (%)		51		30				35				
Queuing Penalty (veh)		7		106				229				

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	SB
Directions Served	R>
Maximum Queue (m)	237.5
Average Queue (m)	228.0
95th Queue (m)	232.7
Link Distance (m)	222.1
Upstream Blk Time (%)	83
Queuing Penalty (veh)	0
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	<	<	R	T	T	T	R	T	T	T
Maximum Queue (m)	199.4	223.2	218.0	289.3	294.4	298.2	130.0	101.6	111.5	100.5
Average Queue (m)	150.4	206.9	207.0	231.9	242.7	259.3	124.7	65.4	66.7	61.7
95th Queue (m)	216.8	246.3	240.6	289.4	300.9	310.6	166.7	96.0	97.8	94.2
Link Distance (m)		209.2	209.2	295.8	295.8	295.8		275.5	275.5	275.5
Upstream Blk Time (%)		27	35	0	0	1				
Queuing Penalty (veh)		0	0	2	2	12				
Storage Bay Dist (m)	175.0						75.0			
Storage Blk Time (%)	0	12				47				6
Queuing Penalty (veh)	1	63				286				22

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	B22	NB	NB	NB	NB	SB
Directions Served	L	L	TR	L	T	R	T	L	T	T	TR	L
Maximum Queue (m)	154.9	188.7	187.2	51.2	60.5	106.0	33.0	119.7	183.8	216.4	241.1	74.9
Average Queue (m)	152.7	179.5	163.6	22.5	27.1	83.5	5.0	49.8	95.4	132.8	147.4	34.6
95th Queue (m)	161.3	186.3	231.8	44.5	51.9	107.6	25.5	96.9	169.7	212.4	224.3	80.1
Link Distance (m)		171.6	171.6		93.4	93.4	173.1		236.4	236.4	236.4	
Upstream Blk Time (%)		68	27			17			0	0	2	
Queuing Penalty (veh)		0	0			24			0	0	11	
Storage Bay Dist (m)	130.0			55.0				120.0				55.0
Storage Blk Time (%)	9	64		1	1			0	2			0
Queuing Penalty (veh)	41	294		1	2			1	3			1

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (m)	136.7	132.7	161.4
Average Queue (m)	89.9	87.9	99.2
95th Queue (m)	125.2	122.4	139.6
Link Distance (m)	295.8	295.8	295.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	17		
Queuing Penalty (veh)	17		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	95.0	105.0	265.3	253.1	92.4	145.2	147.2	92.5	42.9	119.1	133.4	100.0
Average Queue (m)	93.8	104.6	252.5	191.2	31.3	99.0	88.3	28.2	17.2	64.7	83.1	66.8
95th Queue (m)	99.4	106.0	279.8	302.8	85.2	142.9	142.4	98.2	33.5	102.9	120.0	92.7
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			68	0		3	3					
Queuing Penalty (veh)			0	0		0	0					
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	36	77	0		0	18	5	1	0	11	51	0
Queuing Penalty (veh)	90	191	2		0	11	47	2	0	34	158	2

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	101.1	155.8	107.0
Average Queue (m)	72.5	100.4	65.8
95th Queue (m)	97.8	144.0	98.7
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	1		
Queuing Penalty (veh)	5		

Intersection: 5: South Service Road East & QEW EB off-ramp/Davis Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	T	TR	LT	T
Maximum Queue (m)	31.5	20.6	13.8	19.3	20.6	18.3
Average Queue (m)	13.2	4.3	2.3	3.8	4.1	5.3
95th Queue (m)	24.8	14.9	9.0	13.2	14.4	14.9
Link Distance (m)	40.7	70.7	102.9	102.9	211.2	211.2
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Davis Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	8.8
Average Queue (m)	2.9
95th Queue (m)	9.8
Link Distance (m)	36.3
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

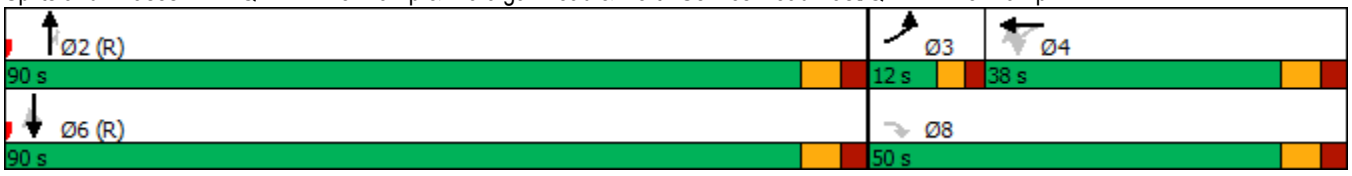
Network wide Queuing Penalty: 1694

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	6	239	114	436	40	239	1675	367	2137	948	5
Future Volume (vph)	6	239	114	436	40	239	1675	367	2137	948	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.98		0.96	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.960						
Satd. Flow (prot)	1825	1622	0	1667	1685	1570	5142	1601	5092	1570	0
Flt Permitted	0.950			0.950	0.960						
Satd. Flow (perm)	1825	1622	0	1667	1685	1550	5142	1561	5092	1501	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						227		367		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					190.6		330.4		230.9		
Travel Time (s)					17.2		19.8		13.9		
Confl. Peds. (#/hr)						2		2		6	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	4%	4%	4%	2%	2%	3%	4%	0%
Adj. Flow (vph)	6	239	114	436	40	239	1675	367	2137	948	5
Shared Lane Traffic (%)				46%							
Lane Group Flow (vph)	6	353	0	235	241	239	1675	367	2137	953	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	38.2		35.8	35.8	140.0	93.8	93.8	93.8	93.8	
Actuated g/C Ratio	0.06	0.27		0.26	0.26	1.00	0.67	0.67	0.67	0.67	
v/c Ratio	0.05	0.80		0.55	0.56	0.15	0.49	0.31	0.63	0.93	
Control Delay	62.7	60.7		50.3	50.5	0.2	10.5	3.1	15.0	35.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.7	60.7		50.3	50.5	0.2	10.5	3.1	15.0	35.9	
LOS	E	E		D	D	A	B	A	B	D	
Approach Delay					33.6		9.1		21.4		
Approach LOS					C		A		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 21.1		Intersection LOS: C	
Intersection Capacity Utilization 105.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp



Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	816	0	578	0	1226	584	0	2381	446	0	0
Future Volume (vph)	816	0	578	0	1226	584	0	2381	446	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor						0.97			0.95		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3471	0	1601	0	5142	1601	0	4902	1585	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3471	0	1601	0	5142	1557	0	4902	1505	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			584			275		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)						2			8		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	2%	0%	2%	2%	0%	7%	3%	0%	0%
Adj. Flow (vph)	816	0	578	0	1226	584	0	2381	446	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	816	0	578	0	1226	584	0	2381	446	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	5.0		5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	24.0		24.0		24.0	24.0		24.0	24.0		
Total Split (s)	61.0		61.0		79.0	79.0		79.0	79.0		
Total Split (%)	43.6%		43.6%		56.4%	56.4%		56.4%	56.4%		
Maximum Green (s)	55.0		55.0		73.0	73.0		73.0	73.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	55.3		55.3		78.7	78.7		78.7	78.7		
Actuated g/C Ratio	0.40		0.40		0.56	0.56		0.56	0.56		
v/c Ratio	0.60		0.89		0.42	0.52		0.86	0.46		
Control Delay	35.2		55.4		14.3	3.7		25.7	4.6		
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		
Total Delay	35.2		55.4		14.3	3.7		25.7	4.6		
LOS	D		E		B	A		C	A		
Approach Delay		43.6			10.9			22.3			
Approach LOS		D			B			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 5.6 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 23.8		Intersection LOS: C	
Intersection Capacity Utilization 88.5%		ICU Level of Service E	
Analysis Period (min) 15			

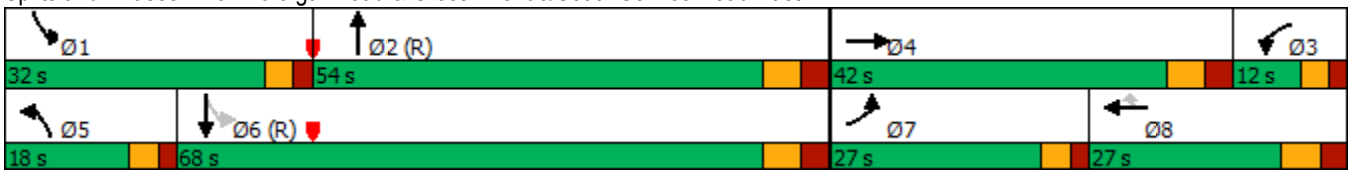
Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

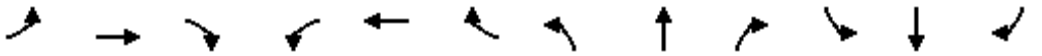
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	77	120	67	82	147	110	1264	69	285	1509	364
Future Volume (vph)	385	77	120	67	82	147	110	1264	69	285	1509	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.909				0.850		0.992			0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3219	1684	0	1722	1921	1617	1755	5005	0	1807	4891	0
Flt Permitted	0.950			0.950			0.950			0.113		
Satd. Flow (perm)	3219	1684	0	1722	1921	1617	1755	5005	0	215	4891	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55				148		7			54	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			7						4			3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	0%	4%	6%	0%	1%	4%	4%	0%	1%	3%	7%
Adj. Flow (vph)	385	77	120	67	82	147	110	1264	69	285	1509	364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	385	197	0	67	82	147	110	1333	0	285	1873	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8	9.8	7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8	16.8	12.0	34.0		12.0	34.0	
Total Split (s)	27.0	42.0		12.0	27.0	27.0	18.0	54.0		32.0	68.0	
Total Split (%)	19.3%	30.0%		8.6%	19.3%	19.3%	12.9%	38.6%		22.9%	48.6%	
Maximum Green (s)	22.0	35.0		7.0	20.0	20.0	13.0	47.0		27.0	61.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0	-3.0	-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	22.4	24.8		15.3	15.4	15.4	15.1	64.5		92.2	73.1	
Actuated g/C Ratio	0.16	0.18		0.11	0.11	0.11	0.11	0.46		0.66	0.52	
v/c Ratio	0.75	0.57		0.36	0.39	0.47	0.58	0.58		0.70	0.73	
Control Delay	65.7	45.3		62.5	62.5	13.1	63.0	40.2		36.0	30.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	65.7	45.3		62.5	62.5	13.1	63.0	40.2		36.0	30.4	
LOS	E	D		E	E	B	E	D		D	C	
Approach Delay		58.8			38.0			42.0			31.2	
Approach LOS		E			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 8.4 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 38.7		Intersection LOS: D	
Intersection Capacity Utilization 76.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East



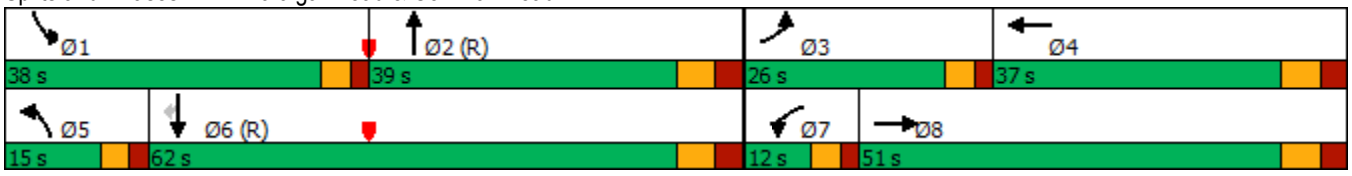


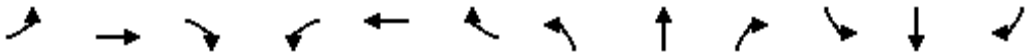
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	377	472	61	31	432	612	80	411	56	650	581	440
Future Volume (vph)	377	472	61	31	432	612	80	411	56	650	581	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		1.00				0.99		1.00				0.98
Frt		0.983				0.850		0.982				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3404	3435	0	1825	3510	1541	1789	3484	0	3437	1883	1585
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3404	3435	0	1825	3510	1518	1789	3484	0	3437	1883	1548
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				612		10				366
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			4			9			5			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	5%	0%	4%	6%	2%	3%	0%	3%	2%	3%
Adj. Flow (vph)	377	472	61	31	432	612	80	411	56	650	581	440
Shared Lane Traffic (%)												
Lane Group Flow (vph)	377	533	0	31	432	612	80	467	0	650	581	440
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	26.0	51.0		12.0	37.0		15.0	39.0		38.0	62.0	62.0
Total Split (%)	18.6%	36.4%		8.6%	26.4%		10.7%	27.9%		27.1%	44.3%	44.3%
Maximum Green (s)	21.0	44.0		7.0	30.0		10.0	32.0		33.0	55.0	55.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	21.4	42.8		9.0	25.6	140.0	12.7	46.3		32.8	66.4	66.4
Actuated g/C Ratio	0.15	0.31		0.06	0.18	1.00	0.09	0.33		0.23	0.47	0.47
v/c Ratio	0.73	0.50		0.26	0.67	0.40	0.50	0.40		0.81	0.65	0.48
Control Delay	65.1	40.9		68.4	58.4	0.8	71.0	38.6		49.2	19.5	6.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	65.1	40.9		68.4	58.4	0.8	71.0	38.6		49.2	19.5	6.4
LOS	E	D		E	E	A	E	D		D	B	A
Approach Delay		50.9			25.9			43.4			27.6	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 34.3		Intersection LOS: C	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			

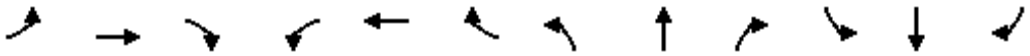
Splits and Phases: 4: Trafalgar Road & Cornwall Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	90	0	7	1	151	48	4	140	2
Future Volume (vph)	2	0	2	90	0	7	1	151	48	4	140	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.932			0.990			0.964			0.998	
Flt Protected		0.976			0.956						0.999	
Satd. Flow (prot)	0	1748	0	0	1534	0	0	3519	0	0	3532	0
Flt Permitted		0.976			0.956						0.999	
Satd. Flow (perm)	0	1748	0	0	1534	0	0	3519	0	0	3532	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	103	0	8	1	174	55	5	161	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	111	0	0	230	0	0	168	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

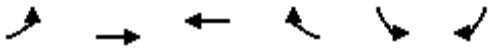
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	90	0	7	1	151	48	4	140	2
Future Volume (Veh/h)	2	0	2	90	0	7	1	151	48	4	140	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	103	0	8	1	174	55	5	161	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	269	403	82	296	376	114	163			229		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	269	403	82	296	376	114	163			229		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	82	100	99	100			100		
cM capacity (veh/h)	659	537	968	586	555	923	1428			1111		

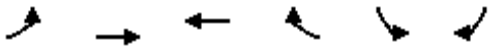
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	111	88	142	86	82
Volume Left	2	103	1	0	5	0
Volume Right	2	8	0	55	0	2
cSH	784	602	1428	1700	1111	1700
Volume to Capacity	0.01	0.18	0.00	0.08	0.00	0.05
Queue Length 95th (m)	0.1	5.1	0.0	0.0	0.1	0.0
Control Delay (s)	9.6	12.3	0.1	0.0	0.5	0.0
Lane LOS	A	B	A		A	
Approach Delay (s)	9.6	12.3	0.0		0.3	
Approach LOS	A	B				

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	22.6%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	23	16	0	0	81
Future Volume (vph)	29	23	16	0	0	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.973				
Satd. Flow (prot)	0	1833	1883	0	1629	0
Flt Permitted		0.973				
Satd. Flow (perm)	0	1833	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	25	17	0	0	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	17	0	88	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	23	16	0	0	81
Future Volume (Veh/h)	29	23	16	0	0	81
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	25	17	0	0	88
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	17				106	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				106	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	92
cM capacity (veh/h)	1600				874	1062

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	57	17	88
Volume Left	32	0	0
Volume Right	0	0	88
cSH	1600	1700	1062
Volume to Capacity	0.02	0.01	0.08
Queue Length 95th (m)	0.5	0.0	2.1
Control Delay (s)	4.2	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	4.2	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	T	T	T	T	T	T	R>
Maximum Queue (m)	34.5	121.2	87.0	85.1	47.6	53.5	65.8	169.2	225.0	235.3	237.9
Average Queue (m)	2.4	117.0	51.9	55.6	24.8	26.5	28.7	84.4	126.1	226.7	228.8
95th Queue (m)	23.7	118.8	76.2	82.4	46.7	50.6	56.7	141.2	237.8	232.9	234.7
Link Distance (m)		112.3	173.7	173.7	275.5	275.5	275.5	222.0	222.0	222.0	222.0
Upstream Blk Time (%)		97						0	1	35	66
Queuing Penalty (veh)		0						0	0	0	0
Storage Bay Dist (m)	65.0										
Storage Blk Time (%)		96		8			0				
Queuing Penalty (veh)		6		20			0				

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	<	<	R	T	T	T	T	T	T	R
Maximum Queue (m)	160.5	197.6	207.3	30.7	34.4	37.1	140.2	146.0	146.2	48.0
Average Queue (m)	90.1	116.2	123.7	9.6	13.8	15.9	78.7	77.6	68.2	2.4
95th Queue (m)	137.2	180.9	201.3	23.7	28.2	32.3	116.6	118.4	112.1	30.1
Link Distance (m)		209.2	209.2	295.8	295.8	295.8	275.5	275.5	275.5	
Upstream Blk Time (%)		2	4							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	175.0									65.0
Storage Blk Time (%)	0	1							7	
Queuing Penalty (veh)	0	5							33	

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	TR	L	T	R	L	T	T	TR	L	T
Maximum Queue (m)	104.7	130.4	76.2	42.0	48.6	47.5	61.0	150.4	193.1	216.8	74.9	147.2
Average Queue (m)	69.5	89.2	39.6	17.7	19.8	21.4	27.1	77.1	120.7	146.4	60.0	93.0
95th Queue (m)	106.7	127.2	66.0	35.4	39.2	39.0	49.0	128.2	173.9	189.5	90.1	132.7
Link Distance (m)		171.6	171.6		93.4	93.4		236.4	236.4	236.4		295.8
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										1		
Storage Bay Dist (m)	130.0			55.0			120.0				55.0	
Storage Blk Time (%)	0	1		0	0			0			11	31
Queuing Penalty (veh)	0	1		0	0			0			57	87

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	150.7	192.1
Average Queue (m)	93.0	108.0
95th Queue (m)	132.6	161.1
Link Distance (m)	295.8	295.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	89.9	98.5	128.3	120.2	34.8	104.5	83.0	32.6	43.8	110.9	132.5	68.7
Average Queue (m)	53.6	68.6	53.3	53.6	7.6	62.2	49.1	1.1	19.9	54.5	77.0	36.7
95th Queue (m)	86.7	96.5	111.8	105.5	27.0	87.1	76.3	16.6	38.4	97.2	115.9	60.8
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	1	5	0			1	0	0	2	6	43	
Queuing Penalty (veh)	3	12	1			0	0	0	4	15	124	

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	73.8	123.4	66.2
Average Queue (m)	42.5	62.4	21.8
95th Queue (m)	66.1	107.9	49.6
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	LT
Maximum Queue (m)	7.2	29.6	1.3	5.8
Average Queue (m)	1.0	13.4	0.0	0.3
95th Queue (m)	5.0	24.0	0.9	3.2
Link Distance (m)	38.3	70.7	102.9	206.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Davis Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	20.0
Average Queue (m)	9.2
95th Queue (m)	16.1
Link Distance (m)	36.3
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

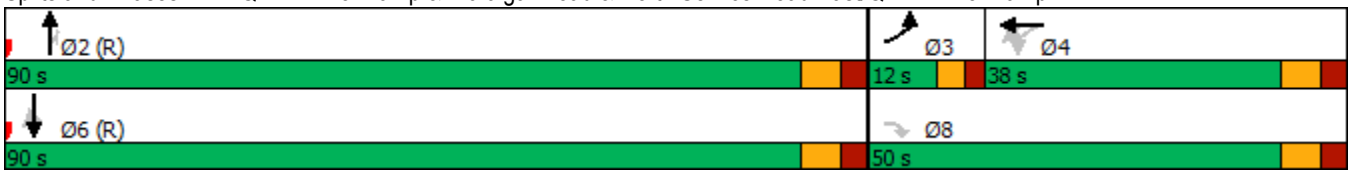
Network wide Queuing Penalty: 369

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	13	127	100	396	125	295	2837	536	1266	1013	11
Future Volume (vph)	13	127	100	396	125	295	2837	536	1266	1013	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.96		0.94	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.974						
Satd. Flow (prot)	1825	1608	0	1717	1760	1585	5142	1601	5142	1601	0
Flt Permitted	0.950			0.950	0.974						
Satd. Flow (perm)	1825	1608	0	1717	1760	1563	5142	1538	5142	1506	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						256		396		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					324.6		330.4		230.9		
Travel Time (s)					29.2		19.8		13.9		
Confl. Peds. (#/hr)						8		8		10	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	1%	1%	1%	3%	2%	2%	2%	2%	0%
Adj. Flow (vph)	13	127	100	396	125	295	2837	536	1266	1013	11
Shared Lane Traffic (%)				35%							
Lane Group Flow (vph)	13	227	0	257	264	295	2837	536	1266	1024	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	33.7		28.9	28.9	140.0	98.3	98.3	98.3	98.3	
Actuated g/C Ratio	0.06	0.24		0.21	0.21	1.00	0.70	0.70	0.70	0.70	
v/c Ratio	0.11	0.59		0.73	0.73	0.19	0.79	0.45	0.35	0.95	
Control Delay	64.1	51.6		63.5	63.3	0.3	21.3	6.7	9.7	37.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0	0.0	
Total Delay	64.1	51.6		63.5	63.3	0.3	21.4	6.7	9.7	37.7	
LOS	E	D		E	E	A	C	A	A	D	
Approach Delay					40.6		19.0		22.3		
Approach LOS					D		B		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 23.9		Intersection LOS: C	
Intersection Capacity Utilization 105.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

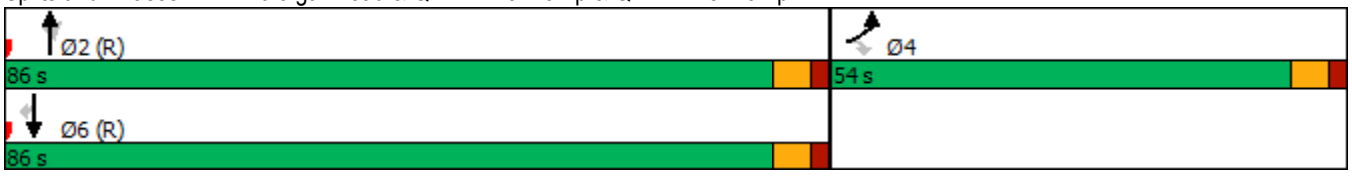


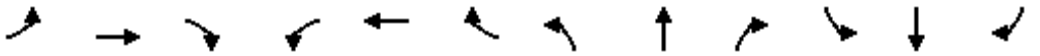
Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	933	0	383	0	2441	500	0	1489	308	0	0
Future Volume (vph)	933	0	383	0	2441	500	0	1489	308	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor			0.98			0.97			0.94		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3506	0	1617	0	5142	1601	0	5142	1617	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3506	0	1590	0	5142	1557	0	5142	1517	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			30			384			321		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)			2			2			11		
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
Heavy Vehicles (%)	1%	0%	1%	0%	2%	2%	0%	2%	1%	0%	0%
Adj. Flow (vph)	972	0	399	0	2543	521	0	1551	321	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	972	0	399	0	2543	521	0	1551	321	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	10.0		10.0		28.0	28.0		28.0	28.0		
Minimum Split (s)	24.0		24.0		34.0	34.0		34.0	34.0		
Total Split (s)	54.0		54.0		86.0	86.0		86.0	86.0		
Total Split (%)	38.6%		38.6%		61.4%	61.4%		61.4%	61.4%		
Maximum Green (s)	48.0		48.0		80.0	80.0		80.0	80.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	47.6		47.6		86.4	86.4		86.4	86.4		
Actuated g/C Ratio	0.34		0.34		0.62	0.62		0.62	0.62		
v/c Ratio	0.82		0.71		0.80	0.47		0.49	0.30		
Control Delay	48.3		44.5		29.0	9.7		20.5	6.1		
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		
Total Delay	48.3		44.5		29.0	9.7		20.5	6.1		
LOS	D		D		C	A		C	A		
Approach Delay		47.2			25.7			18.1			
Approach LOS		D			C			B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 51.8 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 28.1		Intersection LOS: C	
Intersection Capacity Utilization 80.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp



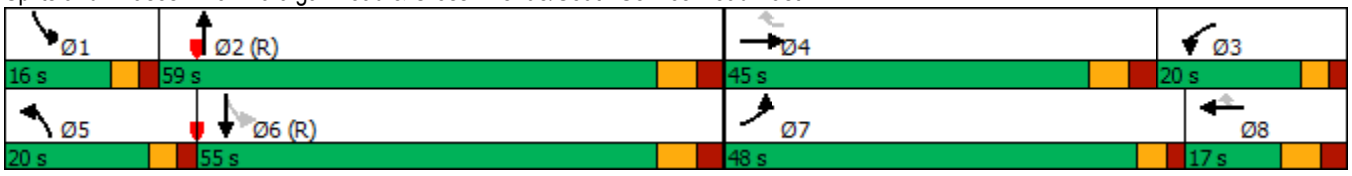


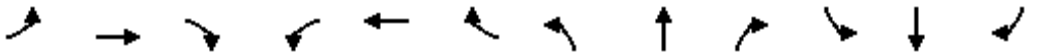
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	847	67	117	123	87	364	125	1579	46	146	1279	250
Future Volume (vph)	847	67	117	123	87	364	125	1579	46	146	1279	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.905				0.850		0.996			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	1621	0	1789	1883	1585	1772	5169	0	1789	5052	0
Flt Permitted	0.950			0.950			0.950			0.073		
Satd. Flow (perm)	3372	1621	0	1789	1883	1585	1772	5169	0	137	5052	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64				207		4			33	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			8						5			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	9%	4%	2%	2%	3%	3%	1%	0%	2%	0%	5%
Adj. Flow (vph)	847	67	117	123	87	364	125	1579	46	146	1279	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	847	184	0	123	87	364	125	1625	0	146	1529	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	custom	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						4 8				6		
Detector Phase	7	4		3	8	4 8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8		7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8		12.0	34.0		12.0	34.0	
Total Split (s)	48.0	45.0		20.0	17.0		20.0	59.0		16.0	55.0	
Total Split (%)	34.3%	32.1%		14.3%	12.1%		14.3%	42.1%		11.4%	39.3%	
Maximum Green (s)	43.0	38.0		15.0	10.0		15.0	52.0		11.0	48.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	41.5	20.6		34.2	13.3	33.9	15.5	58.9		68.9	55.7	
Actuated g/C Ratio	0.30	0.15		0.24	0.10	0.24	0.11	0.42		0.49	0.40	
v/c Ratio	0.85	0.63		0.28	0.49	0.67	0.64	0.75		0.69	0.75	
Control Delay	54.9	44.7		46.0	70.0	19.1	74.0	23.5		45.1	33.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.9	44.7		46.0	70.0	19.1	74.0	23.5		45.1	33.9	
LOS	D	D		D	E	B	E	C		D	C	
Approach Delay		53.1			32.6			27.1			34.9	
Approach LOS		D			C			C			C	

Intersection Summary		
Area Type:	Other	
Cycle Length: 140		
Actuated Cycle Length: 140		
Offset: 98 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 100		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.85		
Intersection Signal Delay: 35.6	Intersection LOS: D	
Intersection Capacity Utilization 88.2%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East



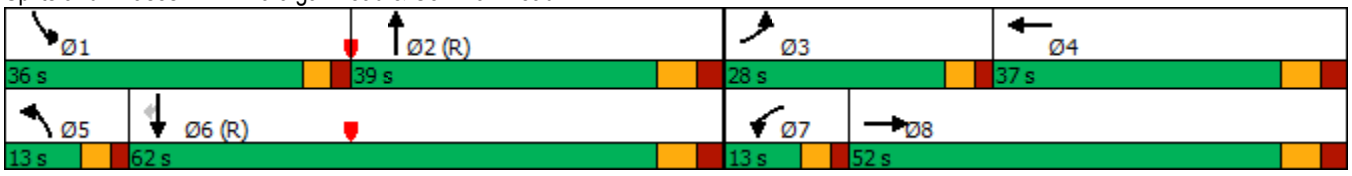


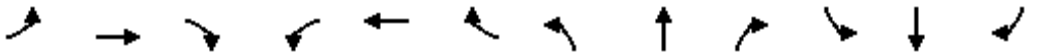
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	464	408	74	61	535	771	64	484	56	622	516	364
Future Volume (vph)	464	408	74	61	535	771	64	484	56	622	516	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00				0.97
Frt		0.977				0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3423	0	1789	3544	1585	1755	3508	0	3471	1883	1570
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3437	3423	0	1789	3544	1553	1755	3508	0	3471	1883	1527
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				606		8				341
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			11			29			3			12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	3%	3%	4%	2%	4%	2%	2%	4%
Adj. Flow (vph)	464	408	74	61	535	771	64	484	56	622	516	364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	464	482	0	61	535	771	64	540	0	622	516	364
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	28.0	52.0		13.0	37.0		13.0	39.0		36.0	62.0	62.0
Total Split (%)	20.0%	37.1%		9.3%	26.4%		9.3%	27.9%		25.7%	44.3%	44.3%
Maximum Green (s)	23.0	45.0		8.0	30.0		8.0	32.0		31.0	55.0	55.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	23.8	45.6		9.8	29.2	140.0	10.6	42.2		30.8	64.8	64.8
Actuated g/C Ratio	0.17	0.33		0.07	0.21	1.00	0.08	0.30		0.22	0.46	0.46
v/c Ratio	0.79	0.43		0.49	0.72	0.50	0.48	0.51		0.82	0.59	0.41
Control Delay	66.5	36.9		76.3	57.5	1.1	75.0	43.3		45.4	45.9	23.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.5	36.9		76.3	57.5	1.1	75.0	43.3		45.4	45.9	23.1
LOS	E	D		E	E	A	E	D		D	D	C
Approach Delay		51.4			26.5			46.7			40.1	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 39.3		Intersection LOS: D	
Intersection Capacity Utilization 92.1%		ICU Level of Service F	
Analysis Period (min) 15			

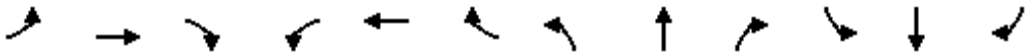
Splits and Phases: 4: Trafalgar Road & Cornwall Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	49	1	4	0	152	75	11	236	3
Future Volume (vph)	2	0	2	49	1	4	0	152	75	11	236	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.989			0.951			0.998	
Flt Protected		0.976			0.957						0.998	
Satd. Flow (prot)	0	1748	0	0	1540	0	0	3381	0	0	3509	0
Flt Permitted		0.976			0.957						0.998	
Satd. Flow (perm)	0	1748	0	0	1540	0	0	3381	0	0	3509	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	4%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	56	1	5	0	175	86	13	271	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	62	0	0	261	0	0	287	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

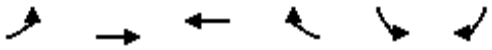
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	49	1	4	0	152	75	11	236	3
Future Volume (Veh/h)	2	0	2	49	1	4	0	152	75	11	236	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	56	1	5	0	175	86	13	271	3
Pedestrians					2							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	392	562	137	384	520	132	274			263		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	392	562	137	384	520	132	274			263		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	89	100	99	100			99		
cM capacity (veh/h)	537	433	893	500	457	897	1301			1071		

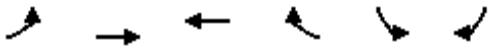
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	62	88	174	148	138
Volume Left	2	56	0	0	13	0
Volume Right	2	5	0	86	0	3
cSH	671	518	1301	1700	1071	1700
Volume to Capacity	0.01	0.12	0.00	0.10	0.01	0.08
Queue Length 95th (m)	0.1	3.1	0.0	0.0	0.3	0.0
Control Delay (s)	10.4	12.9	0.0	0.0	0.8	0.0
Lane LOS	B	B			A	
Approach Delay (s)	10.4	12.9	0.0		0.4	
Approach LOS	B	B				

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	26.4%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	63	23	13	0	0	41
Future Volume (vph)	63	23	13	0	0	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.965				
Satd. Flow (prot)	0	1818	1883	0	1629	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	1818	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	25	14	0	0	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	93	14	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	23	13	0	0	41
Future Volume (Veh/h)	63	23	13	0	0	41
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)	68	25	14	0	0	45
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	14				175	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14				175	14
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				100	96
cM capacity (veh/h)	1604				780	1066

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	93	14	45
Volume Left	68	0	0
Volume Right	0	0	45
cSH	1604	1700	1066
Volume to Capacity	0.04	0.01	0.04
Queue Length 95th (m)	1.0	0.0	1.0
Control Delay (s)	5.5	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	5.5	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R>	<	<LT	R	T	T	T	R	T	T	T
Maximum Queue (m)	66.4	115.8	81.6	112.9	24.0	169.8	169.8	172.9	140.0	77.9	221.0	232.8
Average Queue (m)	4.7	63.3	48.0	62.8	0.8	121.0	124.4	125.2	45.5	43.5	82.2	226.4
95th Queue (m)	26.1	109.4	74.7	95.6	16.9	166.8	168.5	168.5	153.3	71.1	205.1	230.9
Link Distance (m)		112.3	307.7	307.7		275.5	275.5	275.5		222.1	222.1	222.1
Upstream Blk Time (%)		4									0	42
Queuing Penalty (veh)		0									0	0
Storage Bay Dist (m)	65.0				60.0				80.0			
Storage Blk Time (%)		20		15				24				
Queuing Penalty (veh)		3		45				127				

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	SB
Directions Served	R>
Maximum Queue (m)	235.8
Average Queue (m)	228.2
95th Queue (m)	232.8
Link Distance (m)	222.1
Upstream Blk Time (%)	82
Queuing Penalty (veh)	0
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	<	<	R	T	T	T	R	T	T	T
Maximum Queue (m)	169.8	204.8	133.3	138.8	141.6	162.7	130.0	76.6	78.0	73.1
Average Queue (m)	110.5	135.2	45.3	92.9	101.6	107.4	26.6	44.1	43.7	41.1
95th Queue (m)	156.5	188.9	86.7	130.4	138.8	145.5	112.8	72.3	71.8	69.8
Link Distance (m)		209.2	209.2	295.8	295.8	295.8		275.5	275.5	275.5
Upstream Blk Time (%)		1								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)	175.0						75.0			
Storage Blk Time (%)	0	2				21			1	
Queuing Penalty (veh)	0	7				104			4	

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	B22	NB	NB	NB	NB	SB
Directions Served	L	L	TR	L	T	R	T	L	T	T	TR	L
Maximum Queue (m)	154.9	187.7	184.9	51.0	44.0	109.0	27.6	61.2	124.7	171.9	174.4	74.8
Average Queue (m)	132.5	160.0	88.8	24.0	21.0	80.6	2.2	30.4	63.8	90.6	109.8	39.3
95th Queue (m)	174.2	204.2	205.2	44.7	40.5	103.5	13.1	56.0	104.6	140.5	155.5	79.3
Link Distance (m)		171.6	171.6		93.4	93.4	173.1		236.4	236.4	236.4	
Upstream Blk Time (%)		23	8			7						
Queuing Penalty (veh)		0	0			10						
Storage Bay Dist (m)	130.0			55.0				120.0				55.0
Storage Blk Time (%)	2	32		0	0							1
Queuing Penalty (veh)	10	133		0	0							2

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (m)	125.7	124.3	149.7
Average Queue (m)	75.6	79.1	88.1
95th Queue (m)	114.8	115.3	128.3
Link Distance (m)	295.8	295.8	295.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	12		
Queuing Penalty (veh)	17		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	94.8	104.7	190.8	162.8	92.2	114.6	91.2	18.5	40.4	116.0	132.2	88.7
Average Queue (m)	82.2	92.8	112.5	81.7	22.5	74.9	60.0	0.6	18.2	61.5	79.0	58.7
95th Queue (m)	108.9	119.6	250.2	197.8	58.1	103.1	86.6	13.0	36.5	97.4	114.2	84.3
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			7	0								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	9	38	0		0	4	0	0	3	9	45	0
Queuing Penalty (veh)	17	77	0		0	2	2	0	8	26	136	0

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	93.2	145.7	110.6
Average Queue (m)	63.9	97.7	55.7
95th Queue (m)	88.6	138.5	91.7
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	0		
Queuing Penalty (veh)	1		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	LT
Maximum Queue (m)	7.2	21.7	1.2	12.3
Average Queue (m)	0.9	9.5	0.0	0.6
95th Queue (m)	4.9	18.4	0.9	4.9
Link Distance (m)	38.3	70.7	102.9	206.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Davis Road & Site Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (m)	3.7	19.4
Average Queue (m)	0.2	7.1
95th Queue (m)	2.3	14.7
Link Distance (m)	70.7	36.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

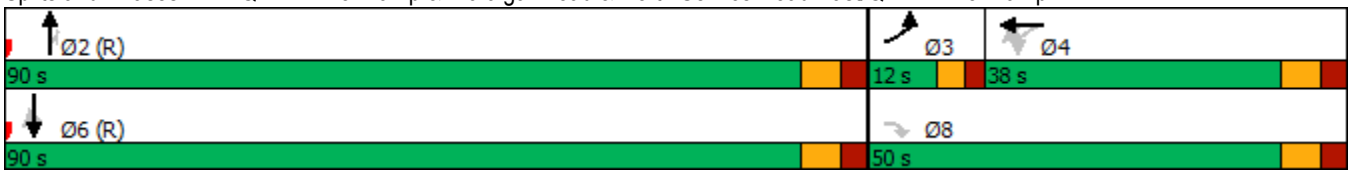
Network wide Queuing Penalty: 733

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	6	239	125	486	45	264	1940	465	2369	1046	5
Future Volume (vph)	6	239	125	486	45	264	1940	465	2369	1046	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.98		0.96	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.960						
Satd. Flow (prot)	1825	1622	0	1667	1685	1570	5142	1601	5092	1570	0
Flt Permitted	0.950			0.950	0.960						
Satd. Flow (perm)	1825	1622	0	1667	1685	1550	5142	1561	5092	1501	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						224		465		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					190.6		330.4		230.9		
Travel Time (s)					17.2		19.8		13.9		
Confl. Peds. (#/hr)						2		2		6	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	4%	4%	4%	2%	2%	3%	4%	0%
Adj. Flow (vph)	6	239	125	486	45	264	1940	465	2369	1046	5
Shared Lane Traffic (%)				46%							
Lane Group Flow (vph)	6	364	0	262	269	264	1940	465	2369	1051	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	38.9		36.5	36.5	140.0	93.1	93.1	93.1	93.1	
Actuated g/C Ratio	0.06	0.28		0.26	0.26	1.00	0.66	0.66	0.66	0.66	
v/c Ratio	0.05	0.81		0.60	0.61	0.17	0.57	0.39	0.70	1.03	
Control Delay	62.7	61.0		51.8	52.0	0.2	10.4	2.4	17.0	58.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.7	61.0		51.8	52.0	0.2	10.4	2.4	17.0	58.9	
LOS	E	E		D	D	A	B	A	B	E	
Approach Delay					34.7		8.8		29.9		
Approach LOS					C		A		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 24.8		Intersection LOS: C	
Intersection Capacity Utilization 113.6%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

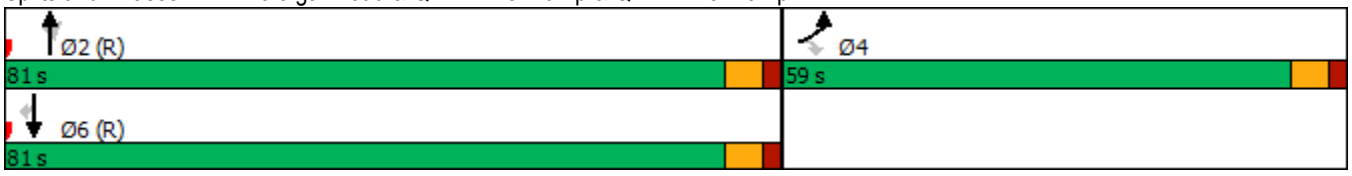


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	901	0	645	0	1505	703	0	2643	492	0	0
Future Volume (vph)	901	0	645	0	1505	703	0	2643	492	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor						0.97			0.95		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3471	0	1601	0	5142	1601	0	4902	1585	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3471	0	1601	0	5142	1557	0	4902	1505	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			703			282		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)						2			8		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	2%	0%	2%	2%	0%	7%	3%	0%	0%
Adj. Flow (vph)	901	0	645	0	1505	703	0	2643	492	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	901	0	645	0	1505	703	0	2643	492	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	5.0		5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	24.0		24.0		24.0	24.0		24.0	24.0		
Total Split (s)	59.0		59.0		81.0	81.0		81.0	81.0		
Total Split (%)	42.1%		42.1%		57.9%	57.9%		57.9%	57.9%		
Maximum Green (s)	53.0		53.0		75.0	75.0		75.0	75.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	56.0		56.0		78.0	78.0		78.0	78.0		
Actuated g/C Ratio	0.40		0.40		0.56	0.56		0.56	0.56		
v/c Ratio	0.65		0.99		0.53	0.60		0.97	0.51		
Control Delay	36.7		72.1		17.3	4.5		33.8	5.0		
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		
Total Delay	36.7		72.1		17.3	4.5		33.8	5.0		
LOS	D		E		B	A		C	A		
Approach Delay		51.5			13.2			29.3			
Approach LOS		D			B			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 5.6 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 29.1		Intersection LOS: C	
Intersection Capacity Utilization 97.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

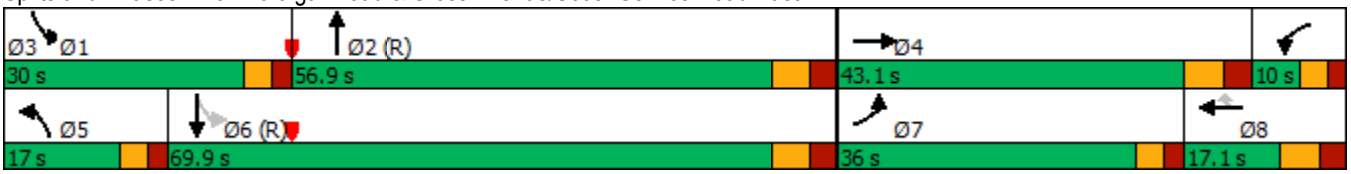


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	612	92	142	66	84	142	116	1392	68	284	1684	364
Future Volume (vph)	612	92	142	66	84	142	116	1392	68	284	1684	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.909				0.850		0.993			0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3219	1684	0	1722	1921	1617	1755	5010	0	1807	4906	0
Flt Permitted	0.950			0.950			0.950			0.076		
Satd. Flow (perm)	3219	1684	0	1722	1921	1617	1755	5010	0	145	4906	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55				148		6			46	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			7						4			3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	0%	4%	6%	0%	1%	4%	4%	0%	1%	3%	7%
Adj. Flow (vph)	612	92	142	66	84	142	116	1392	68	284	1684	364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	612	234	0	66	84	142	116	1460	0	284	2048	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8	9.8	7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8	16.8	12.0	34.0		12.0	34.0	
Total Split (s)	36.0	43.1		10.0	17.1	17.1	17.0	56.9		30.0	69.9	
Total Split (%)	25.7%	30.8%		7.1%	12.2%	12.2%	12.1%	40.6%		21.4%	49.9%	
Maximum Green (s)	31.0	36.1		5.0	10.1	10.1	12.0	49.9		25.0	62.9	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0	-3.0	-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	31.4	23.7		20.7	13.0	13.0	13.6	58.8		85.6	68.1	
Actuated g/C Ratio	0.22	0.17		0.15	0.09	0.09	0.10	0.42		0.61	0.49	
v/c Ratio	0.85	0.71		0.26	0.47	0.50	0.69	0.69		0.79	0.85	
Control Delay	63.9	52.8		57.9	69.7	14.4	64.7	47.4		44.5	36.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	63.9	52.8		57.9	69.7	14.4	64.7	47.4		44.5	36.2	
LOS	E	D		E	E	B	E	D		D	D	
Approach Delay		60.9			40.1			48.6			37.2	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 8.4 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 44.9		Intersection LOS: D	
Intersection Capacity Utilization 86.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East

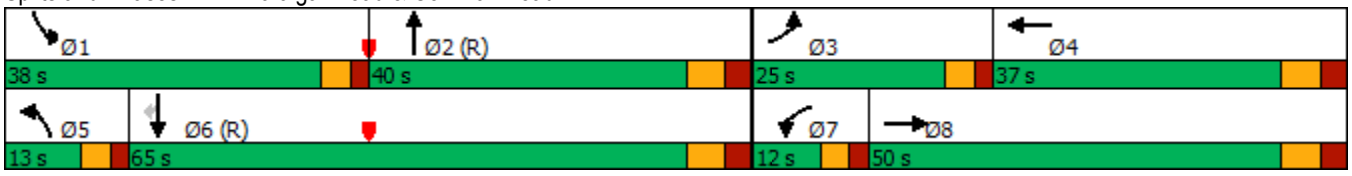


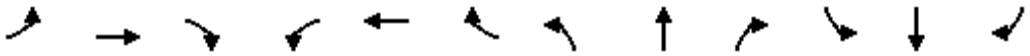
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	418	521	61	31	476	676	80	412	56	721	586	516
Future Volume (vph)	418	521	61	31	476	676	80	412	56	721	586	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		1.00				0.99		1.00				0.98
Frt		0.984				0.850		0.982				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3404	3440	0	1825	3510	1541	1789	3484	0	3437	1883	1585
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3404	3440	0	1825	3510	1518	1789	3484	0	3437	1883	1548
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				640		10				384
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			4			9			5			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	5%	0%	4%	6%	2%	3%	0%	3%	2%	3%
Adj. Flow (vph)	418	521	61	31	476	676	80	412	56	721	586	516
Shared Lane Traffic (%)												
Lane Group Flow (vph)	418	582	0	31	476	676	80	468	0	721	586	516
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	25.0	50.0		12.0	37.0		13.0	40.0		38.0	65.0	65.0
Total Split (%)	17.9%	35.7%		8.6%	26.4%		9.3%	28.6%		27.1%	46.4%	46.4%
Maximum Green (s)	20.0	43.0		7.0	30.0		8.0	33.0		33.0	58.0	58.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	21.4	44.6		9.0	27.4	140.0	11.6	42.6		34.6	65.6	65.6
Actuated g/C Ratio	0.15	0.32		0.06	0.20	1.00	0.08	0.30		0.25	0.47	0.47
v/c Ratio	0.80	0.53		0.26	0.69	0.45	0.54	0.44		0.85	0.66	0.56
Control Delay	69.8	40.5		68.4	57.7	0.9	75.5	41.2		49.4	15.3	5.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	69.8	40.5		68.4	57.7	0.9	75.5	41.2		49.4	15.3	5.0
LOS	E	D		E	E	A	E	D		D	B	A
Approach Delay		52.8			25.5			46.2			25.8	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 34.1		Intersection LOS: C	
Intersection Capacity Utilization 88.7%		ICU Level of Service E	
Analysis Period (min) 15			

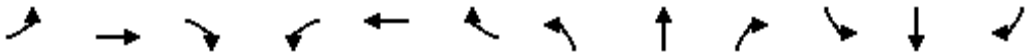
Splits and Phases: 4: Trafalgar Road & Cornwall Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	84	0	7	1	166	46	4	142	2
Future Volume (vph)	2	0	2	84	0	7	1	166	46	4	142	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.932			0.990			0.968			0.998	
Flt Protected		0.976			0.956						0.999	
Satd. Flow (prot)	0	1748	0	0	1535	0	0	3533	0	0	3532	0
Flt Permitted		0.976			0.956						0.999	
Satd. Flow (perm)	0	1748	0	0	1535	0	0	3533	0	0	3532	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	97	0	8	1	191	53	5	163	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	105	0	0	245	0	0	170	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

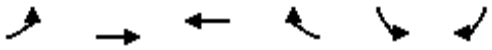
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	84	0	7	1	166	46	4	142	2
Future Volume (Veh/h)	2	0	2	84	0	7	1	166	46	4	142	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	97	0	8	1	191	53	5	163	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	280	420	82	313	394	122	165			244		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	280	420	82	313	394	122	165			244		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	83	100	99	100			100		
cM capacity (veh/h)	648	525	967	569	542	913	1426			1094		

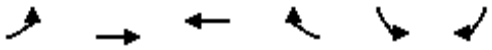
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	105	96	148	86	84
Volume Left	2	97	1	0	5	0
Volume Right	2	8	0	53	0	2
cSH	776	586	1426	1700	1094	1700
Volume to Capacity	0.01	0.18	0.00	0.09	0.00	0.05
Queue Length 95th (m)	0.1	4.9	0.0	0.0	0.1	0.0
Control Delay (s)	9.7	12.5	0.1	0.0	0.5	0.0
Lane LOS	A	B	A		A	
Approach Delay (s)	9.7	12.5	0.0		0.3	
Approach LOS	A	B				

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	22.1%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	23	16	0	0	75
Future Volume (vph)	27	23	16	0	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.974				
Satd. Flow (prot)	0	1834	1883	0	1629	0
Flt Permitted		0.974				
Satd. Flow (perm)	0	1834	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	25	17	0	0	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	17	0	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	23	16	0	0	75
Future Volume (Veh/h)	27	23	16	0	0	75
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)	29	25	17	0	0	82
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	17				100	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				100	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	92
cM capacity (veh/h)	1600				882	1062

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	54	17	82
Volume Left	29	0	0
Volume Right	0	0	82
cSH	1600	1700	1062
Volume to Capacity	0.02	0.01	0.08
Queue Length 95th (m)	0.4	0.0	1.9
Control Delay (s)	4.0	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	4.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	T	T	T	T	T	T	R>
Maximum Queue (m)	79.8	124.4	95.4	100.6	54.6	61.3	63.6	151.8	226.5	235.2	237.6
Average Queue (m)	7.7	117.4	60.0	64.0	31.1	35.9	33.0	88.3	133.7	224.2	228.5
95th Queue (m)	45.9	120.7	87.6	93.8	53.0	60.2	60.5	129.6	237.3	255.4	233.9
Link Distance (m)		112.3	173.7	173.7	275.5	275.5	275.5	222.0	222.0	222.0	222.0
Upstream Blk Time (%)		98							1	34	63
Queuing Penalty (veh)		0							0	0	0
Storage Bay Dist (m)	65.0										
Storage Blk Time (%)		97		15							
Queuing Penalty (veh)		6		40							

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	<	<	R	T	T	T	T	T	T	R
Maximum Queue (m)	198.2	219.0	222.0	47.8	53.7	59.1	153.4	166.6	128.7	71.6
Average Queue (m)	129.6	198.2	205.2	23.8	28.5	29.3	83.9	86.6	74.1	4.0
95th Queue (m)	202.9	257.9	247.8	39.6	46.3	52.3	131.2	141.8	117.5	39.3
Link Distance (m)		209.2	209.2	295.8	295.8	295.8	275.5	275.5	275.5	
Upstream Blk Time (%)		26	40					0		
Queuing Penalty (veh)		0	0					0		
Storage Bay Dist (m)	175.0									65.0
Storage Blk Time (%)	0	8				0			10	
Queuing Penalty (veh)	1	37				0			47	

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	TR	L	T	R	L	T	T	TR	L	T
Maximum Queue (m)	154.8	187.7	178.4	45.9	44.1	56.3	103.0	200.9	236.0	259.4	74.9	145.1
Average Queue (m)	128.8	157.8	92.1	20.2	21.5	24.9	36.6	122.8	187.8	211.9	60.7	94.0
95th Queue (m)	170.5	206.3	195.8	41.0	40.9	46.3	80.1	192.1	256.5	287.0	89.5	137.6
Link Distance (m)		171.6	171.6		93.4	93.4		236.4	236.4	236.4		295.8
Upstream Blk Time (%)		23	6					0	2	18		
Queuing Penalty (veh)		0	0					0	10	90		
Storage Bay Dist (m)	130.0			55.0			120.0				55.0	
Storage Blk Time (%)	2	37		1	0		0	2			11	30
Queuing Penalty (veh)	6	112		1	0		0	2			62	85

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	155.7	197.1
Average Queue (m)	95.1	109.9
95th Queue (m)	135.4	162.8
Link Distance (m)	295.8	295.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	95.0	105.0	255.0	233.9	62.8	116.4	143.8	92.5	43.1	113.7	130.9	79.7
Average Queue (m)	91.6	103.2	195.8	154.4	8.8	69.2	76.9	30.9	20.1	59.7	78.6	40.1
95th Queue (m)	107.1	111.6	307.1	273.2	30.8	103.9	146.7	101.4	36.7	100.0	118.6	65.4
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			23	0		0	14					
Queuing Penalty (veh)			0	0		0	0					
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	20	72	1			2	0	16	1	8	49	0
Queuing Penalty (veh)	51	187	2			1	2	38	3	21	140	0

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	83.0	108.9	95.0
Average Queue (m)	45.4	48.7	21.1
95th Queue (m)	70.4	89.4	53.7
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (m)	7.2	27.0	1.8	2.7
Average Queue (m)	0.8	12.8	0.1	0.1
95th Queue (m)	4.4	22.7	1.3	1.9
Link Distance (m)	38.3	70.7	102.9	206.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Davis Road & Site Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (m)	3.4	18.2
Average Queue (m)	0.1	9.5
95th Queue (m)	1.7	16.5
Link Distance (m)	70.7	36.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

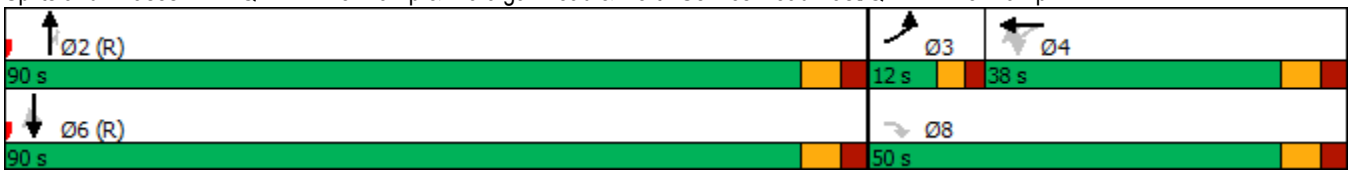
Network wide Queuing Penalty: 946

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	13	127	110	474	138	326	3158	608	1459	1119	11
Future Volume (vph)	13	127	110	474	138	326	3158	608	1459	1119	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.96		0.94	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.973						
Satd. Flow (prot)	1825	1608	0	1717	1758	1585	5142	1601	5142	1601	0
Flt Permitted	0.950			0.950	0.973						
Satd. Flow (perm)	1825	1608	0	1717	1758	1563	5142	1538	5142	1506	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						241		404		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					324.6		330.4		230.9		
Travel Time (s)					29.2		19.8		13.9		
Confl. Peds. (#/hr)						8		8		10	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	1%	1%	1%	3%	2%	2%	2%	2%	0%
Adj. Flow (vph)	13	127	110	474	138	326	3158	608	1459	1119	11
Shared Lane Traffic (%)				36%							
Lane Group Flow (vph)	13	237	0	303	309	326	3158	608	1459	1130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	36.0		31.2	31.2	140.0	96.0	96.0	96.0	96.0	
Actuated g/C Ratio	0.06	0.26		0.22	0.22	1.00	0.69	0.69	0.69	0.69	
v/c Ratio	0.11	0.57		0.79	0.79	0.21	0.90	0.51	0.41	1.07	
Control Delay	64.1	49.6		66.8	66.2	0.3	26.4	8.0	11.1	71.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.3	0.0	0.0	0.0	
Total Delay	64.1	49.6		66.8	66.2	0.3	26.7	8.0	11.1	71.3	
LOS	E	D		E	E	A	C	A	B	E	
Approach Delay					43.5		23.7		37.4		
Approach LOS					D		C		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 114.6%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

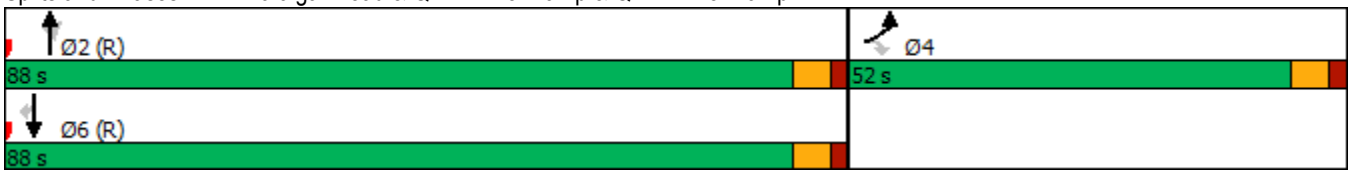


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	1030	0	463	0	2736	568	0	1742	340	0	0
Future Volume (vph)	1030	0	463	0	2736	568	0	1742	340	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor			0.98			0.97			0.94		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3506	0	1617	0	5142	1601	0	5142	1617	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3506	0	1590	0	5142	1557	0	5142	1517	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			403			333		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)			2			2			11		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	1%	0%	2%	2%	0%	2%	1%	0%	0%
Adj. Flow (vph)	1030	0	463	0	2736	568	0	1742	340	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	1030	0	463	0	2736	568	0	1742	340	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	10.0		10.0		28.0	28.0		28.0	28.0		
Minimum Split (s)	24.0		24.0		34.0	34.0		34.0	34.0		
Total Split (s)	52.0		52.0		88.0	88.0		88.0	88.0		
Total Split (%)	37.1%		37.1%		62.9%	62.9%		62.9%	62.9%		
Maximum Green (s)	46.0		46.0		82.0	82.0		82.0	82.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	47.5		47.5		86.5	86.5		86.5	86.5		
Actuated g/C Ratio	0.34		0.34		0.62	0.62		0.62	0.62		
v/c Ratio	0.87		0.83		0.86	0.51		0.55	0.32		
Control Delay	51.9		54.5		29.3	8.9		22.0	6.5		
Queue Delay	0.0		0.0		0.6	0.0		0.0	0.0		
Total Delay	51.9		54.5		29.9	8.9		22.0	6.5		
LOS	D		D		C	A		C	A		
Approach Delay		52.7			26.3			19.5			
Approach LOS		D			C			B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 51.8 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 30.0		Intersection LOS: C	
Intersection Capacity Utilization 88.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

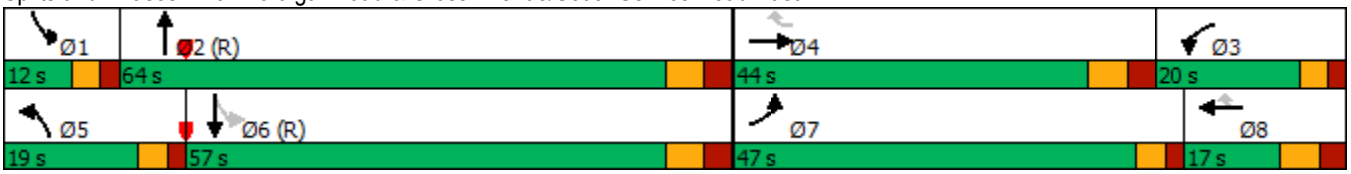


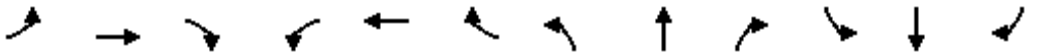
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	915	71	124	123	96	361	155	1743	46	142	1414	250
Future Volume (vph)	915	71	124	123	96	361	155	1743	46	142	1414	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.905				0.850		0.996			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	1621	0	1789	1883	1585	1772	5169	0	1789	5067	0
Flt Permitted	0.950			0.950			0.950			0.074		
Satd. Flow (perm)	3372	1621	0	1789	1883	1585	1772	5169	0	139	5067	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63				133		3			29	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			8						5			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	9%	4%	2%	2%	3%	3%	1%	0%	2%	0%	5%
Adj. Flow (vph)	915	71	124	123	96	361	155	1743	46	142	1414	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	915	195	0	123	96	361	155	1789	0	142	1664	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	custom	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						4 8				6		
Detector Phase	7	4		3	8	4 8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8		7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8		12.0	34.0		12.0	34.0	
Total Split (s)	47.0	44.0		20.0	17.0		19.0	64.0		12.0	57.0	
Total Split (%)	33.6%	31.4%		14.3%	12.1%		13.6%	45.7%		8.6%	40.7%	
Maximum Green (s)	42.0	37.0		15.0	10.0		14.0	57.0		7.0	50.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	42.5	24.8		30.8	13.1	37.9	15.7	60.9		65.3	54.7	
Actuated g/C Ratio	0.30	0.18		0.22	0.09	0.27	0.11	0.44		0.47	0.39	
v/c Ratio	0.89	0.58		0.31	0.55	0.69	0.78	0.80		0.80	0.83	
Control Delay	58.5	40.7		50.4	73.1	26.1	83.9	22.6		60.6	36.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	58.5	40.7		50.4	73.1	26.1	83.9	22.6		60.6	36.0	
LOS	E	D		D	E	C	F	C		E	D	
Approach Delay		55.4			39.1			27.4			37.9	
Approach LOS		E			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 98 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 37.9		Intersection LOS: D	
Intersection Capacity Utilization 93.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East



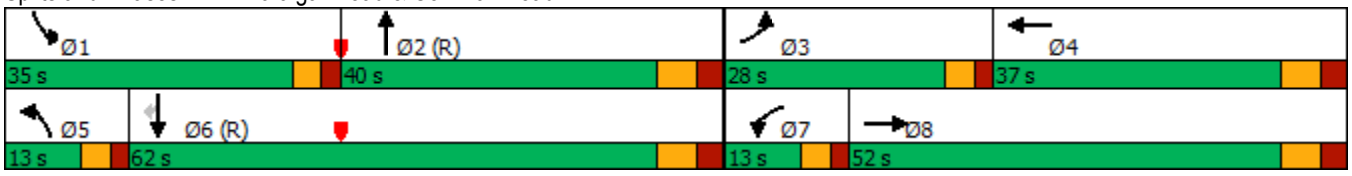


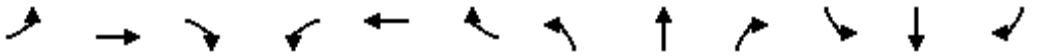
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	534	450	74	61	590	855	64	488	56	682	518	411
Future Volume (vph)	534	450	74	61	590	855	64	488	56	682	518	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00				0.97
Frt		0.979				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3433	0	1789	3544	1585	1755	3512	0	3471	1883	1570
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3437	3433	0	1789	3544	1553	1755	3512	0	3471	1883	1527
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				595		8				383
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			11			29			3			12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	3%	3%	4%	2%	4%	2%	2%	4%
Adj. Flow (vph)	534	450	74	61	590	855	64	488	56	682	518	411
Shared Lane Traffic (%)												
Lane Group Flow (vph)	534	524	0	61	590	855	64	544	0	682	518	411
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	28.0	52.0		13.0	37.0		13.0	40.0		35.0	62.0	62.0
Total Split (%)	20.0%	37.1%		9.3%	26.4%		9.3%	28.6%		25.0%	44.3%	44.3%
Maximum Green (s)	23.0	45.0		8.0	30.0		8.0	33.0		30.0	55.0	55.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	24.7	47.9		9.8	30.6	140.0	10.1	39.2		31.5	62.9	62.9
Actuated g/C Ratio	0.18	0.34		0.07	0.22	1.00	0.07	0.28		0.22	0.45	0.45
v/c Ratio	0.88	0.44		0.49	0.76	0.55	0.50	0.55		0.87	0.61	0.46
Control Delay	73.1	36.2		76.3	58.1	1.4	76.8	45.6		47.0	45.6	23.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	73.1	36.2		76.3	58.1	1.4	76.8	45.6		47.0	45.6	23.4
LOS	E	D		E	E	A	E	D		D	D	C
Approach Delay		54.8			26.7			48.9			40.5	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 40.4		Intersection LOS: D	
Intersection Capacity Utilization 96.4%		ICU Level of Service F	
Analysis Period (min) 15			

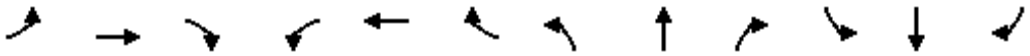
Splits and Phases: 4: Trafalgar Road & Cornwall Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	45	1	4	0	157	70	11	246	3
Future Volume (vph)	2	0	2	45	1	4	0	157	70	11	246	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.988			0.954			0.998	
Flt Protected		0.976			0.957						0.998	
Satd. Flow (prot)	0	1748	0	0	1540	0	0	3388	0	0	3511	0
Flt Permitted		0.976			0.957						0.998	
Satd. Flow (perm)	0	1748	0	0	1540	0	0	3388	0	0	3511	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	4%	0%	38%	2%	0%
Adj. Flow (vph)	2	0	2	52	1	5	0	180	80	13	283	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	58	0	0	260	0	0	299	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

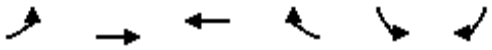
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	45	1	4	0	157	70	11	246	3
Future Volume (Veh/h)	2	0	2	45	1	4	0	157	70	11	246	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	52	1	5	0	180	80	13	283	3
Pedestrians					2							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	406	572	143	392	534	132	286			262		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	406	572	143	392	534	132	286			262		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	100	100	100	89	100	99	100			99		
cM capacity (veh/h)	525	427	885	493	449	898	1288			1072		

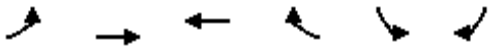
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	58	90	170	154	144
Volume Left	2	52	0	0	13	0
Volume Right	2	5	0	80	0	3
cSH	659	512	1288	1700	1072	1700
Volume to Capacity	0.01	0.11	0.00	0.10	0.01	0.09
Queue Length 95th (m)	0.1	2.9	0.0	0.0	0.3	0.0
Control Delay (s)	10.5	12.9	0.0	0.0	0.8	0.0
Lane LOS	B	B			A	
Approach Delay (s)	10.5	12.9	0.0		0.4	
Approach LOS	B	B				

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	26.3%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	58	23	13	0	0	37
Future Volume (vph)	58	23	13	0	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.965				
Satd. Flow (prot)	0	1818	1883	0	1629	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	1818	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	25	14	0	0	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	88	14	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	23	13	0	0	37
Future Volume (Veh/h)	58	23	13	0	0	37
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)	63	25	14	0	0	40
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	14				165	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14				165	14
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				100	96
cM capacity (veh/h)	1604				793	1066

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	88	14	40
Volume Left	63	0	0
Volume Right	0	0	40
cSH	1604	1700	1066
Volume to Capacity	0.04	0.01	0.04
Queue Length 95th (m)	0.9	0.0	0.9
Control Delay (s)	5.3	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	5.3	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R>	<	<LT	R	T	T	T	R	T	T	T
Maximum Queue (m)	79.9	117.8	105.3	123.1	47.6	238.6	255.8	249.6	140.0	107.3	219.0	235.1
Average Queue (m)	11.5	79.9	68.3	81.1	9.5	171.3	176.4	178.7	105.2	52.4	79.4	226.5
95th Queue (m)	49.9	135.6	107.5	126.2	62.9	234.8	244.4	250.0	204.6	83.3	183.5	232.5
Link Distance (m)		112.3	307.7	307.7		275.5	275.5	275.5		222.1	222.1	222.1
Upstream Blk Time (%)		19					0				0	39
Queuing Penalty (veh)		0					0				0	0
Storage Bay Dist (m)	65.0				60.0				80.0			
Storage Blk Time (%)		45		28				32				
Queuing Penalty (veh)		6		92				193				

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	SB
Directions Served	R>
Maximum Queue (m)	238.4
Average Queue (m)	228.5
95th Queue (m)	234.1
Link Distance (m)	222.1
Upstream Blk Time (%)	81
Queuing Penalty (veh)	0
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	<	<	R	T	T	T	R	T	T	T
Maximum Queue (m)	197.3	218.0	213.8	168.9	174.7	190.6	130.0	96.4	97.7	95.2
Average Queue (m)	145.1	174.7	104.5	105.3	117.1	119.2	55.2	57.1	56.2	51.6
95th Queue (m)	204.4	238.0	217.6	150.5	161.0	176.9	160.9	86.8	86.2	82.4
Link Distance (m)		209.2	209.2	295.8	295.8	295.8		275.5	275.5	275.5
Upstream Blk Time (%)		10	3							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	175.0						75.0			
Storage Blk Time (%)	0	13				24				2
Queuing Penalty (veh)	2	68				137				8

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	B22	NB	NB	NB	NB	SB
Directions Served	L	L	TR	L	T	R	T	L	T	T	TR	L
Maximum Queue (m)	155.0	188.1	183.6	48.9	43.5	110.8	39.2	79.3	119.0	197.4	187.9	74.9
Average Queue (m)	150.7	176.6	152.8	23.9	20.6	83.7	2.9	42.8	69.0	96.8	115.4	51.9
95th Queue (m)	166.2	193.5	237.6	44.5	40.3	106.4	17.6	77.3	107.7	149.5	164.3	90.6
Link Distance (m)		171.6	171.6		93.4	93.4	173.1		236.4	236.4	236.4	
Upstream Blk Time (%)		56	22			11						
Queuing Penalty (veh)		0	0			16						
Storage Bay Dist (m)	130.0			55.0				120.0				55.0
Storage Blk Time (%)	7	58		0	1				0			13
Queuing Penalty (veh)	30	267		0	1				0			59

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (m)	181.0	167.7	173.4
Average Queue (m)	104.3	97.8	102.9
95th Queue (m)	170.5	159.9	161.9
Link Distance (m)	295.8	295.8	295.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	19		
Queuing Penalty (veh)	27		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	95.0	105.0	262.0	249.7	79.0	142.3	138.1	74.0	43.0	111.6	142.1	98.3
Average Queue (m)	92.7	103.6	228.6	184.9	22.0	90.1	78.1	15.9	15.9	65.5	83.2	69.8
95th Queue (m)	103.6	110.6	320.9	288.6	63.0	129.1	124.6	73.3	33.3	103.4	121.0	97.8
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			42	0		1	1					
Queuing Penalty (veh)			0	0		0	0					
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	24	72	0		0	11	3	0	0	11	47	1
Queuing Penalty (veh)	54	162	1		0	7	26	0	0	33	145	3

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	113.2	157.4	113.2
Average Queue (m)	75.8	100.5	62.4
95th Queue (m)	105.4	143.2	99.2
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	2		
Queuing Penalty (veh)	7		

Intersection: 5: South Service Road East & Davis Road

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (m)	5.6	23.0	9.9
Average Queue (m)	0.6	9.6	0.6
95th Queue (m)	3.9	19.0	5.5
Link Distance (m)	38.3	70.7	206.2
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Davis Road & Site Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (m)	1.7	17.0
Average Queue (m)	0.1	6.9
95th Queue (m)	1.2	14.3
Link Distance (m)	70.7	36.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1345

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	6	239	138	533	49	291	2127	503	2612	1155	5
Future Volume (vph)	6	239	138	533	49	291	2127	503	2612	1155	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.98		0.96	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.960						
Satd. Flow (prot)	1825	1623	0	1667	1685	1570	5142	1601	5092	1570	0
Flt Permitted	0.950			0.950	0.960						
Satd. Flow (perm)	1825	1623	0	1667	1685	1550	5142	1561	5092	1501	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						226		447		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					190.6		330.4		230.9		
Travel Time (s)					17.2		19.8		13.9		
Confl. Peds. (#/hr)						2		2		6	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	4%	4%	4%	2%	2%	3%	4%	0%
Adj. Flow (vph)	6	239	138	533	49	291	2127	503	2612	1155	5
Shared Lane Traffic (%)				46%							
Lane Group Flow (vph)	6	377	0	288	294	291	2127	503	2612	1160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	10.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	39.7		37.3	37.3	140.0	92.3	86.3	92.3	92.3	
Actuated g/C Ratio	0.06	0.28		0.27	0.27	1.00	0.66	0.62	0.66	0.66	
v/c Ratio	0.05	0.82		0.65	0.66	0.19	0.63	0.44	0.78	1.14	
Control Delay	62.7	61.5		53.1	53.3	0.3	10.4	2.1	19.7	100.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.7	61.5		53.1	53.3	0.3	10.4	2.1	19.7	100.6	
LOS	E	E		D	D	A	B	A	B	F	
Approach Delay					35.6		8.8		44.6		
Approach LOS					D		A		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 32.1		Intersection LOS: C	
Intersection Capacity Utilization 122.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	922	0	405	0	1636	765	0	2911	543	0	0
Future Volume (vph)	922	0	405	0	1636	765	0	2911	543	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor						0.97			0.95		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3471	0	1601	0	5142	1601	0	4902	1585	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3471	0	1601	0	5142	1557	0	4902	1505	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			765			357		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)						2			8		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	2%	0%	2%	2%	0%	7%	3%	0%	0%
Adj. Flow (vph)	922	0	405	0	1636	765	0	2911	543	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	922	0	405	0	1636	765	0	2911	543	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	5.0		5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	24.0		24.0		24.0	24.0		24.0	24.0		
Total Split (s)	46.0		46.0		94.0	94.0		94.0	94.0		
Total Split (%)	32.9%		32.9%		67.1%	67.1%		67.1%	67.1%		
Maximum Green (s)	40.0		40.0		88.0	88.0		88.0	88.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	42.3		42.3		91.7	91.7		91.7	91.7		
Actuated g/C Ratio	0.30		0.30		0.66	0.66		0.66	0.66		
v/c Ratio	0.88		0.81		0.49	0.60		0.91	0.49		
Control Delay	57.1		56.4		10.7	3.4		19.8	2.8		
Queue Delay	0.0		0.0		0.0	0.0		0.1	0.0		
Total Delay	57.1		56.4		10.7	3.4		19.8	2.8		
LOS	E		E		B	A		B	A		
Approach Delay		56.9			8.4			17.2			
Approach LOS		E			A			B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 5.6 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 21.5		Intersection LOS: C	
Intersection Capacity Utilization 89.2%		ICU Level of Service E	
Analysis Period (min) 15			

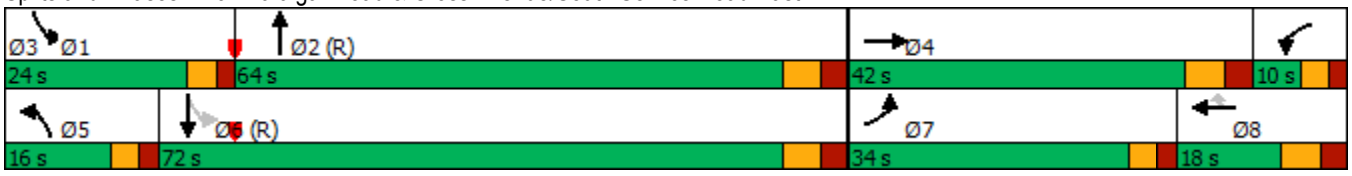
Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

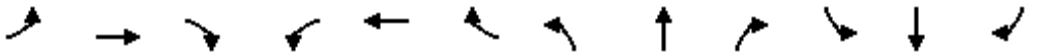
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	612	92	142	66	84	142	116	1533	68	278	1854	364
Future Volume (vph)	612	92	142	66	84	142	116	1533	68	278	1854	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.909				0.850		0.994			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3219	1684	0	1722	1921	1617	1755	5014	0	1807	4920	0
Flt Permitted	0.950			0.950			0.950			0.063		
Satd. Flow (perm)	3219	1684	0	1722	1921	1617	1755	5014	0	120	4920	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54				148		6			41	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			7						4			3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	0%	4%	6%	0%	1%	4%	4%	0%	1%	3%	7%
Adj. Flow (vph)	612	92	142	66	84	142	116	1533	68	278	1854	364
Shared Lane Traffic (%)												
Lane Group Flow (vph)	612	234	0	66	84	142	116	1601	0	278	2218	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8	9.8	7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8	16.8	12.0	34.0		12.0	34.0	
Total Split (s)	34.0	42.0		10.0	18.0	18.0	16.0	64.0		24.0	72.0	
Total Split (%)	24.3%	30.0%		7.1%	12.9%	12.9%	11.4%	45.7%		17.1%	51.4%	
Maximum Green (s)	29.0	35.0		5.0	11.0	11.0	11.0	57.0		19.0	65.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0	-3.0	-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	30.3	23.8		20.0	13.5	13.5	12.9	61.8		86.2	69.3	
Actuated g/C Ratio	0.22	0.17		0.14	0.10	0.10	0.09	0.44		0.62	0.50	
v/c Ratio	0.88	0.71		0.27	0.45	0.49	0.72	0.72		0.87	0.90	
Control Delay	68.0	53.0		59.0	68.0	13.9	63.5	47.7		57.3	35.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	68.0	53.0		59.0	68.0	13.9	63.5	47.7		57.3	35.9	
LOS	E	D		E	E	B	E	D		E	D	
Approach Delay		63.8			39.7			48.8			38.2	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 8.4 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 45.7		Intersection LOS: D	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East



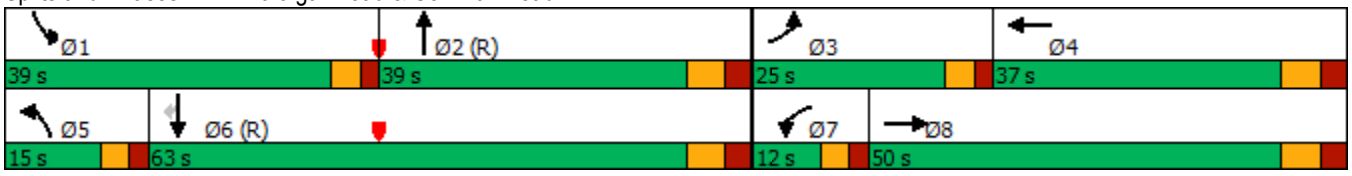


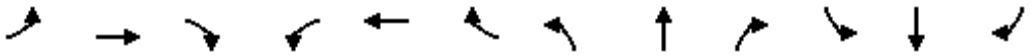
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	461	574	61	31	525	745	80	412	56	791	586	565
Future Volume (vph)	461	574	61	31	525	745	80	412	56	791	586	565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		1.00				0.99		1.00				0.98
Frt		0.986				0.850		0.982				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3404	3448	0	1825	3510	1541	1789	3484	0	3437	1883	1585
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3404	3448	0	1825	3510	1518	1789	3484	0	3437	1883	1548
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				645		10				383
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			4			9			5			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	5%	0%	4%	6%	2%	3%	0%	3%	2%	3%
Adj. Flow (vph)	461	574	61	31	525	745	80	412	56	791	586	565
Shared Lane Traffic (%)												
Lane Group Flow (vph)	461	635	0	31	525	745	80	468	0	791	586	565
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	25.0	50.0		12.0	37.0		15.0	39.0		39.0	63.0	63.0
Total Split (%)	17.9%	35.7%		8.6%	26.4%		10.7%	27.9%		27.9%	45.0%	45.0%
Maximum Green (s)	20.0	43.0		7.0	30.0		10.0	32.0		34.0	56.0	56.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	21.8	46.6		9.0	29.0	140.0	11.8	38.8		36.3	63.3	63.3
Actuated g/C Ratio	0.16	0.33		0.06	0.21	1.00	0.08	0.28		0.26	0.45	0.45
v/c Ratio	0.87	0.55		0.26	0.72	0.49	0.53	0.48		0.89	0.69	0.62
Control Delay	75.2	40.0		68.4	57.6	1.1	74.4	44.2		56.4	13.4	3.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	75.2	40.0		68.4	57.6	1.1	74.4	44.2		56.4	13.4	3.9
LOS	E	D		E	E	A	E	D		E	B	A
Approach Delay		54.8			25.5			48.6			28.1	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 35.7		Intersection LOS: D	
Intersection Capacity Utilization 92.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: Trafalgar Road & Cornwall Road



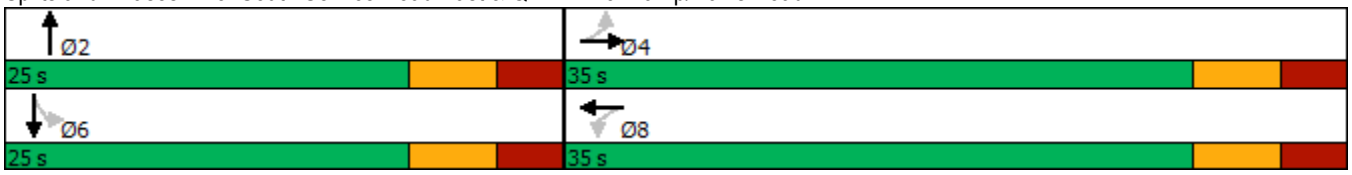


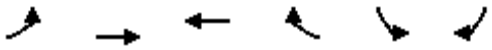
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	6	223	84	0	7	0	166	40	4	142	0
Future Volume (vph)	288	6	223	84	0	7	0	166	40	4	142	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.942			0.990			0.971				
Flt Protected		0.973			0.956						0.999	
Satd. Flow (prot)	0	1761	0	0	1535	0	0	3544	0	0	3538	0
Flt Permitted		0.769			0.506						0.934	
Satd. Flow (perm)	0	1392	0	0	812	0	0	3544	0	0	3308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85			73			46				
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	331	7	256	97	0	8	0	191	46	5	163	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	0	0	105	0	0	237	0	0	168	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5			30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8			1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0			25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%			41.7%		41.7%	41.7%	
Maximum Green (s)	28.0	28.0		28.0	28.0			18.0		18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont 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)		21.7			21.7			8.0			8.0	
Actuated g/C Ratio		0.49			0.49			0.18			0.18	
v/c Ratio		0.82			0.24			0.35			0.28	
Control Delay		19.4			4.4			15.5			18.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		19.4			4.4			15.5			18.5	
LOS		B			A			B			B	
Approach Delay		19.4			4.4			15.5			18.5	
Approach LOS		B			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.1			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 17.0		Intersection LOS: B	
Intersection Capacity Utilization 46.3%		ICU Level of Service A	
Analysis Period (min) 15			

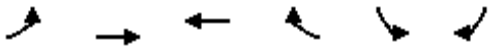
Splits and Phases: 5: South Service Road East & QEW EB off-ramp/Davis Road





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	23	16	0	0	75
Future Volume (vph)	27	23	16	0	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.974				
Satd. Flow (prot)	0	1834	1883	0	1629	0
Flt Permitted		0.974				
Satd. Flow (perm)	0	1834	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	25	17	0	0	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	17	0	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	23	16	0	0	75
Future Volume (Veh/h)	27	23	16	0	0	75
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)	29	25	17	0	0	82
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		90				
pX, platoon unblocked						
vC, conflicting volume	17				100	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				100	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	92
cM capacity (veh/h)	1600				882	1062

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	54	17	82
Volume Left	29	0	0
Volume Right	0	0	82
cSH	1600	1700	1062
Volume to Capacity	0.02	0.01	0.08
Queue Length 95th (m)	0.4	0.0	1.9
Control Delay (s)	4.0	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	4.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		6.1	
Intersection Capacity Utilization		20.7%	ICU Level of Service A
Analysis Period (min)		15	

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R>	<	<LT	R	T	T	T	T	T	T	R>
Maximum Queue (m)	63.8	119.5	114.4	115.8	48.0	52.5	60.4	65.1	191.3	225.6	233.8	237.0
Average Queue (m)	3.9	116.9	67.8	70.0	2.4	24.1	29.0	24.9	88.4	131.0	225.9	228.6
95th Queue (m)	31.7	118.2	101.2	99.8	29.9	46.8	54.3	52.1	143.6	236.2	243.2	234.1
Link Distance (m)		112.3	173.7	173.7		275.5	275.5	275.5	222.0	222.0	222.0	222.0
Upstream Blk Time (%)		99							0	1	36	64
Queuing Penalty (veh)		0							0	0	0	0
Storage Bay Dist (m)	65.0				60.0							
Storage Blk Time (%)		97		18								
Queuing Penalty (veh)		6		53								

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	<	<	R	T	T	T	T	T	T
Maximum Queue (m)	186.7	217.4	204.0	42.9	48.6	49.8	110.1	121.4	93.4
Average Queue (m)	138.0	165.8	102.4	21.7	27.9	26.3	63.8	62.2	51.7
95th Queue (m)	197.6	233.0	195.0	36.2	44.5	44.6	94.2	97.6	83.1
Link Distance (m)		209.2	209.2	295.8	295.8	295.8	275.5	275.5	275.5
Upstream Blk Time (%)		5	1						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (m)	175.0								
Storage Blk Time (%)	0	11							2
Queuing Penalty (veh)	2	50							11

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	L	TR	L	T	R	L	T	T	TR	L	T
Maximum Queue (m)	154.9	188.4	181.8	43.2	48.3	51.2	89.8	206.4	233.2	263.1	74.9	181.4
Average Queue (m)	130.1	160.0	93.4	19.8	22.3	23.2	34.6	130.1	196.7	229.6	56.4	94.5
95th Queue (m)	170.1	200.2	198.4	39.6	41.5	42.5	76.4	192.0	244.6	290.6	89.0	146.7
Link Distance (m)		171.6	171.6		93.4	93.4		236.4	236.4	236.4		295.8
Upstream Blk Time (%)		21	7						0	23		
Queuing Penalty (veh)		0	0						0	126		
Storage Bay Dist (m)	130.0			55.0			120.0				55.0	
Storage Blk Time (%)	3	38		1	0		0	2			11	28
Queuing Penalty (veh)	10	116		0	0		1	3			68	78

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	170.7	177.3
Average Queue (m)	92.3	105.0
95th Queue (m)	140.3	159.1
Link Distance (m)	295.8	295.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	95.0	105.0	265.7	251.4	38.4	134.2	156.4	92.5	50.0	105.0	129.0	87.9
Average Queue (m)	93.0	104.4	241.8	204.5	8.8	77.1	88.6	42.0	19.8	57.8	79.2	49.4
95th Queue (m)	105.5	106.4	308.7	293.8	31.4	114.2	161.8	115.9	37.8	96.6	111.6	80.7
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			69	0		0	16					
Queuing Penalty (veh)			0	0		0	0					
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	21	81	1		0	5	1	17	1	8	50	2
Queuing Penalty (veh)	59	234	5		0	1	11	45	3	21	143	6

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	116.6	114.2	71.8
Average Queue (m)	56.8	36.1	19.5
95th Queue (m)	105.7	82.9	47.4
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)	0	0	
Queuing Penalty (veh)	1	0	
Storage Bay Dist (m)			
Storage Blk Time (%)	2		
Queuing Penalty (veh)	8		

Intersection: 5: South Service Road East & QEW EB off-ramp/Davis Road

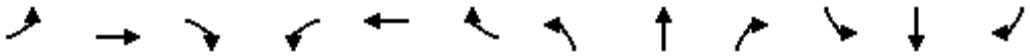
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	T	TR	LT	T
Maximum Queue (m)	45.3	29.9	18.5	24.2	29.0	19.3
Average Queue (m)	33.7	10.5	7.9	11.3	12.0	6.8
95th Queue (m)	51.7	23.9	16.4	21.4	22.5	15.8
Link Distance (m)	40.7	70.7	102.9	102.9	211.2	211.2
Upstream Blk Time (%)	4					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Davis Road & Site Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (m)	1.8	17.8
Average Queue (m)	0.1	9.7
95th Queue (m)	1.3	16.4
Link Distance (m)	70.7	36.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1061



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	6	223	84	0	7	0	166	40	4	142	0
Future Volume (vph)	288	6	223	84	0	7	0	166	40	4	142	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.942			0.990			0.971				
Flt Protected		0.973			0.956						0.999	
Satd. Flow (prot)	0	1761	0	0	1535	0	0	3544	0	0	3538	0
Flt Permitted		0.973			0.956						0.999	
Satd. Flow (perm)	0	1761	0	0	1535	0	0	3544	0	0	3538	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	0%	0%	38%	2%	0%
Adj. Flow (vph)	331	7	256	97	0	8	0	191	46	5	163	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	0	0	105	0	0	237	0	0	168	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	6	223	84	0	7	0	166	40	4	142	0
Future Volume (Veh/h)	288	6	223	84	0	7	0	166	40	4	142	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	331	7	256	97	0	8	0	191	46	5	163	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	276	410	82	565	387	118	163			237		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	276	410	82	565	387	118	163			237		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	49	99	74	64	100	99	100			100		
cM capacity (veh/h)	651	532	968	269	548	917	1428			1102		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	594	105	127	110	59	109
Volume Left	331	97	0	0	5	0
Volume Right	256	8	0	46	0	0
cSH	756	285	1700	1700	1102	1700
Volume to Capacity	0.79	0.37	0.07	0.06	0.00	0.06
Queue Length 95th (m)	60.1	12.4	0.0	0.0	0.1	0.0
Control Delay (s)	24.9	24.8	0.0	0.0	0.7	0.0
Lane LOS	C	C			A	
Approach Delay (s)	24.9	24.8	0.0		0.3	
Approach LOS	C	C				

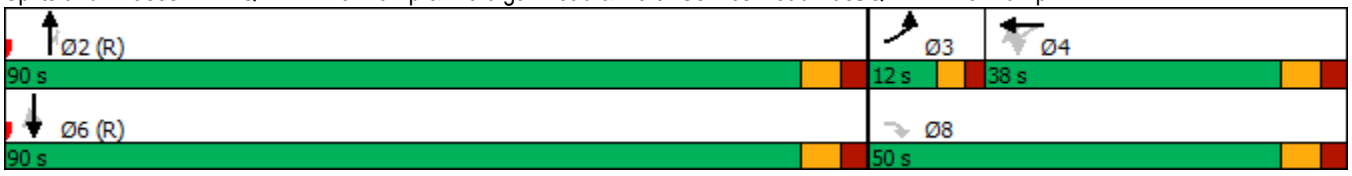
Intersection Summary				
Average Delay	15.8			
Intersection Capacity Utilization	41.3%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Lane Configurations											
Traffic Volume (vph)	13	127	122	515	153	360	3481	667	1600	1235	11
Future Volume (vph)	13	127	122	515	153	360	3481	667	1600	1235	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0				60.0		80.0		0.0	
Storage Lanes	1	1				1		1		1	
Taper Length (m)	15.0										
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	0.91	1.00	0.91
Ped Bike Factor						0.99		0.96		0.94	
Frt		0.850				0.850		0.850		0.850	
Flt Protected	0.950			0.950	0.973						
Satd. Flow (prot)	1825	1609	0	1717	1758	1585	5142	1601	5142	1601	0
Flt Permitted	0.950			0.950	0.973						
Satd. Flow (perm)	1825	1609	0	1717	1758	1563	5142	1538	5142	1506	0
Right Turn on Red			No			Yes		Yes			Yes
Satd. Flow (RTOR)						244		402		70	
Link Speed (k/h)					40		60		60		
Link Distance (m)					324.6		330.4		230.9		
Travel Time (s)					29.2		19.8		13.9		
Confl. Peds. (#/hr)						8		8		10	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	1%	1%	1%	3%	2%	2%	2%	2%	0%
Adj. Flow (vph)	13	127	122	515	153	360	3481	667	1600	1235	11
Shared Lane Traffic (%)				36%							
Lane Group Flow (vph)	13	249	0	330	338	360	3481	667	1600	1246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Right	Right
Median Width(m)					3.7		2.0		2.0		
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14	24		14		14		14	14
Number of Detectors	1	1		1	2	1	2	1	2	1	
Detector Template	Left	Right		Left	Thru	Right	Thru	Right	Thru	Right	
Leading Detector (m)	6.1	6.1		6.1	30.5	6.1	30.5	6.1	30.5	6.1	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	6.1		6.1	1.8	6.1	1.8	6.1	1.8	6.1	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	EBL	EBR	EBR2	WBL2	WBT	WBR	NBT	NBR	SBT	SBR	SBR2
Turn Type	Prot	Perm		Perm	NA	Free	NA	Perm	NA	Perm	
Protected Phases	3				4		2		6		
Permitted Phases		8		4		Free		2		6	
Detector Phase	3	8		4	4		2	2	6	6	
Switch Phase											
Minimum Initial (s)	7.0	10.0		5.0	5.0		28.0	28.0	28.0	28.0	
Minimum Split (s)	12.0	22.5		38.0	38.0		35.0	35.0	35.0	35.0	
Total Split (s)	12.0	50.0		38.0	38.0		90.0	90.0	90.0	90.0	
Total Split (%)	8.6%	35.7%		27.1%	27.1%		64.3%	64.3%	64.3%	64.3%	
Maximum Green (s)	7.0	43.0		31.0	31.0		83.0	83.0	83.0	83.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				24.0	24.0		21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	
Act Effct Green (s)	9.0	37.5		32.7	32.7	140.0	94.5	94.5	94.5	94.5	
Actuated g/C Ratio	0.06	0.27		0.23	0.23	1.00	0.68	0.68	0.68	0.68	
v/c Ratio	0.11	0.58		0.82	0.82	0.23	1.00	0.57	0.46	1.20	
Control Delay	64.1	48.8		68.2	67.8	0.3	41.5	11.3	12.1	122.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	3.6	0.0	0.0	0.0	
Total Delay	64.1	48.8		68.2	67.8	0.3	45.1	11.3	12.1	122.2	
LOS	E	D		E	E	A	D	B	B	F	
Approach Delay					44.3		39.7		60.3		
Approach LOS					D		D		E		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 47.6		Intersection LOS: D	
Intersection Capacity Utilization 123.7%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

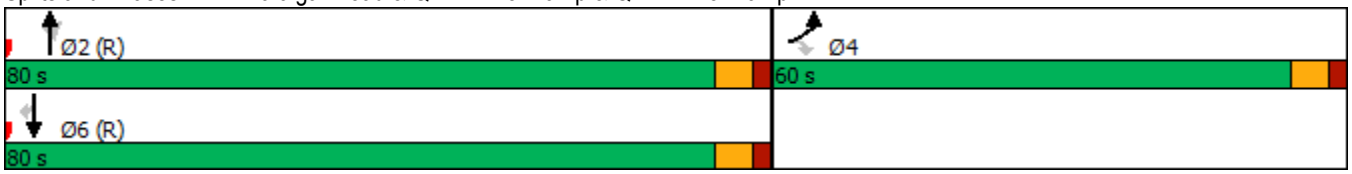


Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Traffic Volume (vph)	1053	0	725	0	3011	622	0	1904	375	0	0
Future Volume (vph)	1053	0	725	0	3011	622	0	1904	375	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)		175.0	0.0	0.0		75.0	0.0		65.0	0.0	0.0
Storage Lanes		1	1	0		1	0		1	0	0
Taper Length (m)		25.0		7.6			7.6			2.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00
Ped Bike Factor			0.98			0.97			0.94		
Frt			0.850			0.850			0.850		
Flt Protected	0.950										
Satd. Flow (prot)	3506	0	1617	0	5142	1601	0	5142	1617	0	0
Flt Permitted	0.950										
Satd. Flow (perm)	3506	0	1590	0	5142	1557	0	5142	1517	0	0
Right Turn on Red			Yes			Yes			Yes		
Satd. Flow (RTOR)			23			350			294		
Link Speed (k/h)		40			60			60		40	
Link Distance (m)		226.4			327.5			330.4		203.9	
Travel Time (s)		20.4			19.7			19.8		18.4	
Confl. Peds. (#/hr)			2			2			11		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	1%	0%	2%	2%	0%	2%	1%	0%	0%
Adj. Flow (vph)	1053	0	725	0	3011	622	0	1904	375	0	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	1053	0	725	0	3011	622	0	1904	375	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)		7.4			2.0			2.0		0.0	
Link Offset(m)		0.0			0.0			0.0		0.0	
Crosswalk Width(m)		4.9			4.9			4.9		1.6	
Two way Left Turn Lane											
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	24	14	24		14	24		14	24	14
Number of Detectors	1		1		2	1		2	1		
Detector Template	Left		Right		Thru	Right		Thru	Right		
Leading Detector (m)	6.1		6.1		30.5	6.1		30.5	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		6.1		1.8	6.1		1.8	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	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Turn Type	Prot		Perm		NA	Perm		NA	Perm		
Protected Phases	4				2			6			
Permitted Phases			4			2			6		
Detector Phase	4		4		2	2		6	6		
Switch Phase											
Minimum Initial (s)	10.0		10.0		28.0	28.0		28.0	28.0		
Minimum Split (s)	24.0		24.0		34.0	34.0		34.0	34.0		
Total Split (s)	60.0		60.0		80.0	80.0		80.0	80.0		
Total Split (%)	42.9%		42.9%		57.1%	57.1%		57.1%	57.1%		
Maximum Green (s)	54.0		54.0		74.0	74.0		74.0	74.0		
Yellow Time (s)	4.0		4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0		2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-3.0		-3.0		-3.0	-3.0		-3.0	-3.0		
Total Lost Time (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0		3.0	3.0		3.0	3.0		
Recall Mode	None		None		C-Max	C-Max		C-Max	C-Max		
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		
Flash Dont 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)	57.0		57.0		77.0	77.0		77.0	77.0		
Actuated g/C Ratio	0.41		0.41		0.55	0.55		0.55	0.55		
v/c Ratio	0.74		1.10		1.06	0.61		0.67	0.39		
Control Delay	39.0		103.0		72.6	18.0		29.0	10.0		
Queue Delay	0.9		0.0		15.2	0.0		0.0	0.0		
Total Delay	39.9		103.0		87.7	18.0		29.0	10.0		
LOS	D		F		F	B		C	A		
Approach Delay		65.7			75.8			25.9			
Approach LOS		E			E			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 51.8 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 58.7		Intersection LOS: E	
Intersection Capacity Utilization 94.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp



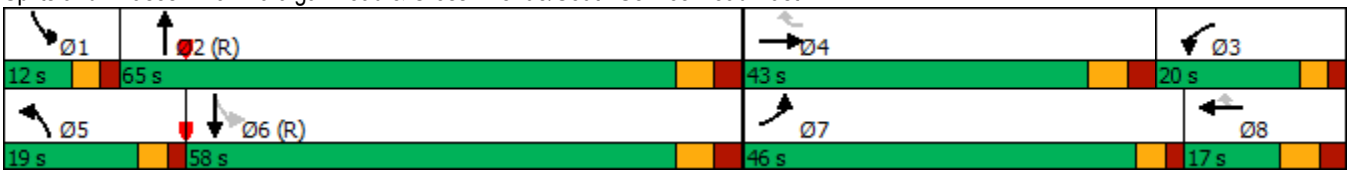
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	915	71	124	123	96	361	155	1923	46	129	1555	250
Future Volume (vph)	915	71	124	123	96	361	155	1923	46	129	1555	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	55.0		0.0	120.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			30.0			30.0			20.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99						1.00			1.00	
Frt		0.905				0.850		0.996			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	1621	0	1789	1883	1585	1772	5169	0	1789	5082	0
Flt Permitted	0.950			0.950			0.950			0.073		
Satd. Flow (perm)	3372	1621	0	1789	1883	1585	1772	5169	0	137	5082	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62				129		3			25	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		191.2			115.5			274.1			327.5	
Travel Time (s)		13.8			8.3			19.7			23.6	
Confl. Peds. (#/hr)			8						5			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	9%	4%	2%	2%	3%	3%	1%	0%	2%	0%	5%
Adj. Flow (vph)	915	71	124	123	96	361	155	1923	46	129	1555	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	915	195	0	123	96	361	155	1969	0	129	1805	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)		9.4			5.4			5.7			5.7	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	
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	
Detector 1 Queue (s)	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	
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	

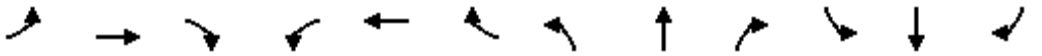
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						4 8				6		
Detector Phase	7	4		3	8	4 8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	9.8		7.0	20.0		7.0	20.0	
Minimum Split (s)	10.0	42.0		10.0	16.8		12.0	34.0		12.0	34.0	
Total Split (s)	46.0	43.0		20.0	17.0		19.0	65.0		12.0	58.0	
Total Split (%)	32.9%	30.7%		14.3%	12.1%		13.6%	46.4%		8.6%	41.4%	
Maximum Green (s)	41.0	36.0		15.0	10.0		14.0	58.0		7.0	51.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	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	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		28.0						20.0			20.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	41.9	25.2		29.7	13.0	38.2	15.6	61.9		65.7	55.5	
Actuated g/C Ratio	0.30	0.18		0.21	0.09	0.27	0.11	0.44		0.47	0.40	
v/c Ratio	0.91	0.57		0.32	0.55	0.69	0.79	0.86		0.75	0.89	
Control Delay	60.3	40.5		51.7	73.4	26.8	84.1	24.8		49.9	36.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	60.3	40.5		51.7	73.4	26.8	84.1	24.8		49.9	36.7	
LOS	E	D		D	E	C	F	C		D	D	
Approach Delay		56.8			39.8			29.1			37.6	
Approach LOS		E			D			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 98 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 38.4 Intersection LOS: D
Intersection Capacity Utilization 96.6% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Trafalgar Road & Cross Avenue/South Service Road East



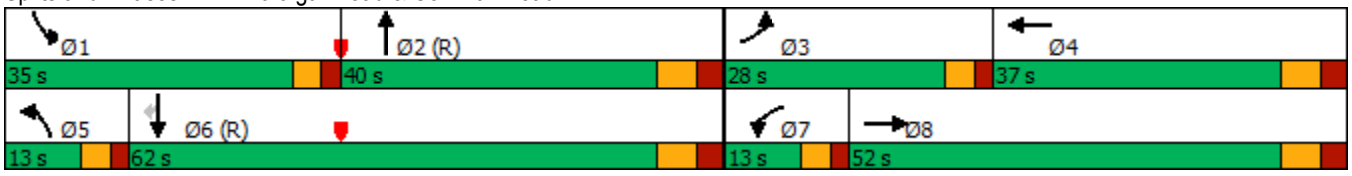


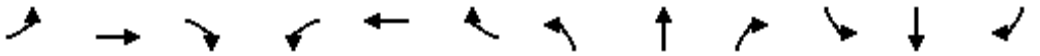
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	587	496	74	61	651	943	64	488	56	747	518	453
Future Volume (vph)	587	496	74	61	651	943	64	488	56	747	518	453
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	85.0		85.0	40.0		0.0	90.0		0.0
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (m)	20.0			7.5			85.0			15.0		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00				0.97
Frt		0.981				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3443	0	1789	3544	1585	1755	3512	0	3471	1883	1570
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3437	3443	0	1789	3544	1553	1755	3512	0	3471	1883	1527
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				594		8				409
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.7			164.8			224.3			274.1	
Travel Time (s)		16.1			9.9			16.1			19.7	
Confl. Peds. (#/hr)			11			29			3			12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	3%	3%	4%	2%	4%	2%	2%	4%
Adj. Flow (vph)	587	496	74	61	651	943	64	488	56	747	518	453
Shared Lane Traffic (%)												
Lane Group Flow (vph)	587	570	0	61	651	943	64	544	0	747	518	453
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)		7.4			7.4			7.4			7.4	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	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	1.8		6.1	1.8	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			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	Prot	NA		Prot	NA	Free	Prot	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases						Free						6
Detector Phase	3	8		7	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0		12.0	39.0		12.0	39.0	39.0
Total Split (s)	28.0	52.0		13.0	37.0		13.0	40.0		35.0	62.0	62.0
Total Split (%)	20.0%	37.1%		9.3%	26.4%		9.3%	28.6%		25.0%	44.3%	44.3%
Maximum Green (s)	23.0	45.0		8.0	30.0		8.0	33.0		30.0	55.0	55.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-2.0	-3.0		-2.0	-3.0	-3.0
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		23.0			23.0			25.0			25.0	25.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	25.0	49.2		9.8	31.6	140.0	10.0	37.1		32.3	61.8	61.8
Actuated g/C Ratio	0.18	0.35		0.07	0.23	1.00	0.07	0.26		0.23	0.44	0.44
v/c Ratio	0.96	0.47		0.49	0.81	0.61	0.52	0.58		0.93	0.62	0.50
Control Delay	84.0	36.3		76.3	60.3	1.8	77.7	47.3		51.6	45.7	24.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	84.0	36.3		76.3	60.3	1.8	77.7	47.3		51.6	45.7	24.4
LOS	F	D		E	E	A	E	D		D	D	C
Approach Delay		60.5			27.5			50.5			42.7	
Approach LOS		E			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 57.4 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 42.7		Intersection LOS: D	
Intersection Capacity Utilization 100.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 4: Trafalgar Road & Cornwall Road



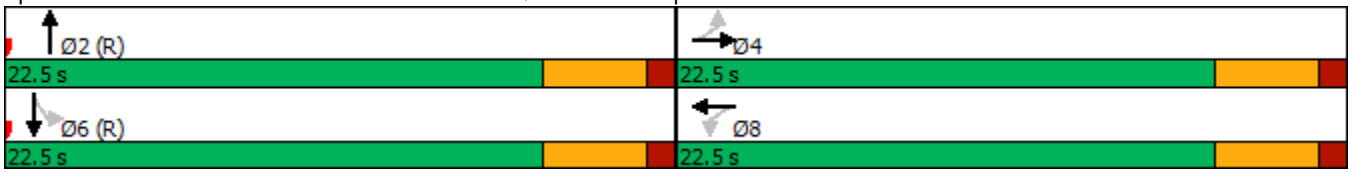


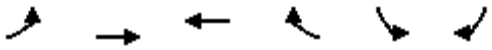
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	13	28	45	0	4	0	157	57	11	246	0
Future Volume (vph)	56	13	28	45	0	4	0	157	57	11	246	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor								0.99				
Frt		0.961			0.988			0.960				
Flt Protected		0.972			0.956						0.998	
Satd. Flow (prot)	0	1794	0	0	1535	0	0	3384	0	0	3517	0
Flt Permitted		0.790			0.801						0.943	
Satd. Flow (perm)	0	1458	0	0	1286	0	0	3384	0	0	3323	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			36			66				
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	4%	0%	38%	2%	0%
Adj. Flow (vph)	64	15	32	52	0	5	0	180	66	13	283	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	57	0	0	246	0	0	296	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5			30.5		6.1	30.5	
Trailing Detector (m)	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	
Detector 1 Size(m)	6.1	1.8		6.1	1.8			1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8			2		6	6	
Switch Phase												
Minimum Initial (s)	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	
Total Split (s)	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%	
Maximum Green (s)	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	
All-Red Time (s)	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	
Total Lost Time (s)		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	
Recall Mode	None	None		None	None			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont 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)		8.0			8.0			30.9			30.9	
Actuated g/C Ratio		0.18			0.18			0.69			0.69	
v/c Ratio		0.39			0.22			0.10			0.13	
Control Delay		16.0			10.5			3.1			4.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		16.0			10.5			3.1			4.0	
LOS		B			B			A			A	
Approach Delay		16.0			10.5			3.1			4.0	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 27.6%		ICU Level of Service A	
Analysis Period (min) 15			

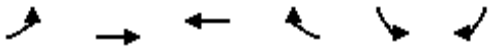
Splits and Phases: 5: South Service Road East & QEW EB off-ramp/Davis Road





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	58	23	12	0	0	37
Future Volume (vph)	58	23	12	0	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.965				
Satd. Flow (prot)	0	1818	1883	0	1629	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	1818	1883	0	1629	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		90.2	144.8		45.4	
Travel Time (s)		6.5	10.4		3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	25	13	0	0	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	88	13	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	23	12	0	0	37
Future Volume (Veh/h)	58	23	12	0	0	37
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)	63	25	13	0	0	40
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		90				
pX, platoon unblocked						
vC, conflicting volume	13				164	13
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	13				164	13
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				100	96
cM capacity (veh/h)	1606				794	1067

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	88	13	40
Volume Left	63	0	0
Volume Right	0	0	40
cSH	1606	1700	1067
Volume to Capacity	0.04	0.01	0.04
Queue Length 95th (m)	0.9	0.0	0.9
Control Delay (s)	5.3	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	5.3	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R>	<	<LT	R	T	T	T	R	T	T	T
Maximum Queue (m)	66.4	113.4	139.4	168.5	119.2	280.7	286.1	282.0	140.0	82.6	221.1	237.0
Average Queue (m)	9.6	84.1	72.6	90.4	14.3	232.8	238.5	242.2	131.5	49.1	77.8	226.8
95th Queue (m)	47.2	132.2	120.5	153.9	78.4	296.2	291.3	298.6	186.3	75.1	185.6	231.8
Link Distance (m)		112.3	307.7	307.7		275.5	275.5	275.5		222.1	222.1	222.1
Upstream Blk Time (%)		24				1	1	1			0	39
Queuing Penalty (veh)		0				8	9	10			0	0
Storage Bay Dist (m)	65.0				60.0				80.0			
Storage Blk Time (%)		46		33				35				
Queuing Penalty (veh)		6		117				235				

Intersection: 1: QEW WB on-ramp & Trafalgar Road & North Service Road East/QEW WB off-ramp

Movement	SB
Directions Served	R>
Maximum Queue (m)	236.9
Average Queue (m)	228.0
95th Queue (m)	232.8
Link Distance (m)	222.1
Upstream Blk Time (%)	82
Queuing Penalty (veh)	0
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Trafalgar Road & QEW EB off-ramp & QEW EB on-ramp

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	<	<	R	T	T	T	R	T	T	T	R
Maximum Queue (m)	199.2	219.8	214.9	287.2	296.4	298.1	130.0	109.2	108.2	103.8	23.2
Average Queue (m)	144.9	194.6	193.5	229.1	242.7	257.8	124.7	65.3	66.2	61.2	0.8
95th Queue (m)	208.6	252.5	255.1	278.4	294.7	301.4	166.6	95.1	96.6	94.4	16.4
Link Distance (m)		209.2	209.2	295.8	295.8	295.8		275.5	275.5	275.5	
Upstream Blk Time (%)		22	24	0	0	0					
Queuing Penalty (veh)		0	0	0	1	4					
Storage Bay Dist (m)	175.0						75.0				65.0
Storage Blk Time (%)	0	13				47				7	
Queuing Penalty (veh)	2	66				290				27	

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	EB	EB	EB	WB	WB	WB	B22	NB	NB	NB	NB	SB
Directions Served	L	L	TR	L	T	R	T	L	T	T	TR	L
Maximum Queue (m)	155.0	189.6	184.3	54.0	58.9	109.1	33.9	108.5	205.6	218.1	227.8	74.9
Average Queue (m)	151.4	178.2	167.4	24.6	23.9	85.7	3.5	44.9	102.0	134.7	152.3	42.8
95th Queue (m)	168.8	191.9	221.5	45.8	49.3	108.5	17.6	88.3	184.8	218.8	235.7	87.0
Link Distance (m)		171.6	171.6		93.4	93.4	173.1		236.4	236.4	236.4	
Upstream Blk Time (%)		71	31			14			0	0	3	
Queuing Penalty (veh)		0	0			23			0	1	21	
Storage Bay Dist (m)	130.0			55.0				120.0				55.0
Storage Blk Time (%)	12	66		0	2			0	2			
Queuing Penalty (veh)	53	301		0	3			0	3			

Intersection: 3: Trafalgar Road & Cross Avenue/South Service Road East

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (m)	140.5	142.8	146.2
Average Queue (m)	94.3	93.0	97.6
95th Queue (m)	133.8	134.9	143.6
Link Distance (m)	295.8	295.8	295.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	19		
Queuing Penalty (veh)	24		

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	T	T	R	L	T	TR	L
Maximum Queue (m)	95.0	105.0	264.2	249.9	92.4	146.1	147.5	92.5	45.7	116.6	134.0	104.1
Average Queue (m)	94.2	104.5	250.2	180.4	30.7	104.8	92.5	29.8	19.5	65.1	83.1	70.8
95th Queue (m)	97.3	106.1	282.3	297.4	83.3	146.7	142.3	100.5	38.6	100.1	117.1	101.3
Link Distance (m)			249.6	249.6		141.5	141.5				203.7	
Upstream Blk Time (%)			68	0		2	4					
Queuing Penalty (veh)			0	0		0	0					
Storage Bay Dist (m)	85.0	85.0			85.0			85.0	40.0	40.0		90.0
Storage Blk Time (%)	32	77	0		0	21	5	1	3	12	50	1
Queuing Penalty (veh)	80	192	1		0	13	47	4	8	37	154	3

Intersection: 4: Trafalgar Road & Cornwall Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	123.8	144.6	134.8
Average Queue (m)	79.2	93.7	72.3
95th Queue (m)	118.9	136.8	114.6
Link Distance (m)	236.4	236.4	236.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)	3		
Queuing Penalty (veh)	11		

Intersection: 5: South Service Road East & QEW EB off-ramp/Davis Road

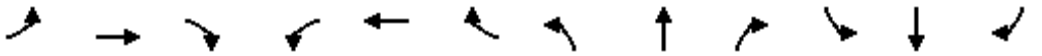
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	T	TR	LT	T
Maximum Queue (m)	30.9	27.6	14.3	21.0	24.1	20.9
Average Queue (m)	13.3	11.2	3.5	6.0	6.3	6.0
95th Queue (m)	24.0	22.5	11.4	16.3	17.8	15.8
Link Distance (m)	40.7	70.7	102.9	102.9	211.2	211.2
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Davis Road & Site Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (m)	1.8	16.3
Average Queue (m)	0.1	7.1
95th Queue (m)	1.3	14.1
Link Distance (m)	70.7	36.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

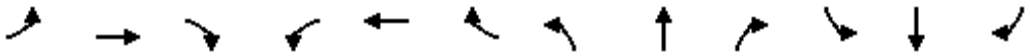
Network Summary

Network wide Queuing Penalty: 1753



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	13	28	45	0	4	0	157	57	11	246	0
Future Volume (vph)	56	13	28	45	0	4	0	157	57	11	246	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.961			0.988			0.960				
Flt Protected		0.972			0.956						0.998	
Satd. Flow (prot)	0	1794	0	0	1535	0	0	3404	0	0	3517	0
Flt Permitted		0.972			0.956						0.998	
Satd. Flow (perm)	0	1794	0	0	1535	0	0	3404	0	0	3517	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		53.3			90.2			119.9			218.3	
Travel Time (s)		3.8			6.5			8.6			15.7	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	20%	0%	0%	0%	4%	0%	38%	2%	0%
Adj. Flow (vph)	64	15	32	52	0	5	0	180	66	13	283	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	57	0	0	246	0	0	296	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)		0.0			0.0			0.0			0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

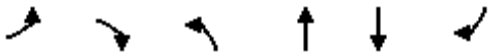
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	13	28	45	0	4	0	157	57	11	246	0
Future Volume (Veh/h)	56	13	28	45	0	4	0	157	57	11	246	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	64	15	32	52	0	5	0	180	66	13	283	0
Pedestrians					2							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	404	557	142	422	524	125	283			248		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	404	557	142	422	524	125	283			248		
tC, single (s)	7.5	6.5	6.9	7.9	6.5	6.9	4.1			4.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.0	3.3	2.2			2.6		
p0 queue free %	88	97	96	88	100	99	100			99		
cM capacity (veh/h)	527	435	887	440	455	907	1291			1088		

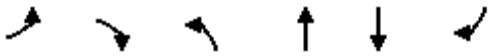
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	111	57	120	126	107	189
Volume Left	64	52	0	0	13	0
Volume Right	32	5	0	66	0	0
cSH	579	461	1700	1700	1088	1700
Volume to Capacity	0.19	0.12	0.07	0.07	0.01	0.11
Queue Length 95th (m)	5.3	3.2	0.0	0.0	0.3	0.0
Control Delay (s)	12.7	13.9	0.0	0.0	1.1	0.0
Lane LOS	B	B			A	
Approach Delay (s)	12.7	13.9	0.0		0.4	
Approach LOS	B	B				

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	26.7%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	1	205	447	2
Future Volume (vph)	2	2	1	205	447	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.932				0.999	
Flt Protected	0.976					
Satd. Flow (prot)	1713	0	0	3579	3575	0
Flt Permitted	0.976					
Satd. Flow (perm)	1713	0	0	3579	3575	0
Link Speed (k/h)	48			50	48	
Link Distance (m)	50.6			96.6	23.3	
Travel Time (s)	3.8			7.0	1.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2	1	223	486	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	224	488	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

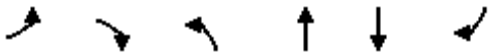
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	2	1	205	447	2
Future Volume (Veh/h)	2	2	1	205	447	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	1	223	486	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				401	23	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	600	244	488			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	543	178	428			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	458	815	1102			

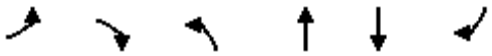
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	75	149	324	164
Volume Left	2	1	0	0	0
Volume Right	2	0	0	0	2
cSH	587	1102	1700	1700	1700
Volume to Capacity	0.01	0.00	0.09	0.19	0.10
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0
Control Delay (s)	11.2	0.1	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	11.2	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	0	214	316	3
Future Volume (vph)	2	2	0	214	316	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.999	
Flt Protected	0.950					
Satd. Flow (prot)	0	1629	0	3579	3575	0
Flt Permitted	0.950					
Satd. Flow (perm)	0	1629	0	3579	3575	0
Link Speed (k/h)	48			50	48	
Link Distance (m)	46.1			97.6	22.2	
Travel Time (s)	3.5			7.0	1.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2	0	233	343	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	2	0	233	346	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

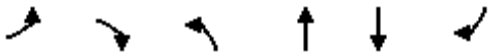
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	2	0	214	316	3
Future Volume (Veh/h)	2	2	0	214	316	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	0	233	343	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				402	22	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	461	173	346			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	411	117	293			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	558	895	1240			

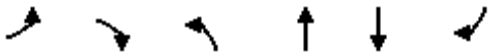
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	116	116	229	117
Volume Left	2	0	0	0	0
Volume Right	2	0	0	0	3
cSH	687	1700	1700	1700	1700
Volume to Capacity	0.01	0.07	0.07	0.13	0.07
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0
Control Delay (s)	10.3	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.3	0.0		0.0	
Approach LOS	B				

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



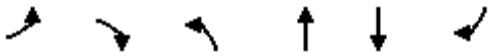
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	631	969	0	1535	1651	0
Future Volume (vph)	631	969	0	1535	1651	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3506	1617		5142	5142	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3506	1617		5142	5142	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	631	969	0	1535	1651	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	631	969	0	1535	1651	0
Heavy Vehicles (%)	1%	1%	0%	2%	2%	3%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	69.0	69.0		39.0	39.0	
Effective Green, g (s)	71.0	71.0		41.0	41.0	
Actuated g/C Ratio	0.59	0.59		0.34	0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.5	3.5		4.5	4.5	
Lane Grp Cap (vph)	2074	956		1756	1756	
v/s Ratio Prot	0.18			0.30	c0.32	
v/s Ratio Perm		c0.60				
v/c Ratio	0.30	1.01		0.87	0.94	
Uniform Delay, d1	12.2	24.5		37.1	38.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	71.6		6.9	14.2	
Delay (s)	12.3	96.1		44.0	52.5	
Level of Service	B	F		D	D	
Approach Delay (s)	63.1			44.0	52.5	
Approach LOS	E			D	D	

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	60		
c Critical Lane Group			



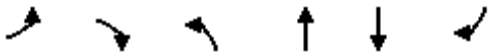
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	657	1046	0	1535	1651	0
Future Volume (vph)	657	1046	0	1535	1651	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3506	1617		5142	5142	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3506	1617		5142	5142	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	657	1046	0	1535	1651	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	657	1046	0	1535	1651	0
Heavy Vehicles (%)	1%	1%	0%	2%	2%	3%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	71.0	71.0		37.0	37.0	
Effective Green, g (s)	73.0	73.0		39.0	39.0	
Actuated g/C Ratio	0.61	0.61		0.32	0.32	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.5	3.5		4.5	4.5	
Lane Grp Cap (vph)	2132	983		1671	1671	
v/s Ratio Prot	0.19			0.30	c0.32	
v/s Ratio Perm		c0.65				
v/c Ratio	0.31	1.06		0.92	0.99	
Uniform Delay, d1	11.3	23.5		39.0	40.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	139.7		11.3	34.3	
Delay (s)	11.4	163.2		50.3	74.6	
Level of Service	B	F		D	E	
Approach Delay (s)	104.7			50.3	74.6	
Approach LOS	F			D	E	

Intersection Summary			
HCM 2000 Control Delay	77.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	60		
c Critical Lane Group			



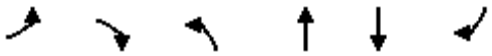
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	657	1046	0	1535	1651	0
Future Volume (vph)	657	1046	0	1535	1651	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3506	2846		5142	5142	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3506	2846		5142	5142	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	657	1046	0	1535	1651	0
RTOR Reduction (vph)	0	6	0	0	0	0
Lane Group Flow (vph)	657	1040	0	1535	1651	0
Heavy Vehicles (%)	1%	1%	0%	2%	2%	3%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	52.4	52.4		55.6	55.6	
Effective Green, g (s)	54.4	54.4		57.6	57.6	
Actuated g/C Ratio	0.45	0.45		0.48	0.48	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.5	3.5		4.5	4.5	
Lane Grp Cap (vph)	1589	1290		2468	2468	
v/s Ratio Prot	0.19			0.30	c0.32	
v/s Ratio Perm		c0.37				
v/c Ratio	0.41	0.81		0.62	0.67	
Uniform Delay, d1	22.1	28.3		23.1	23.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	4.0		1.2	1.5	
Delay (s)	22.3	32.3		24.3	25.4	
Level of Service	C	C		C	C	
Approach Delay (s)	28.4			24.3	25.4	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	60		
c Critical Lane Group			



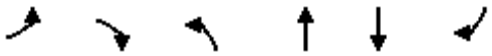
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	786	546	0	1997	1391	0
Future Volume (vph)	786	546	0	1997	1391	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3506	1617		5142	5142	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3506	1617		5142	5142	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	786	546	0	1997	1391	0
RTOR Reduction (vph)	0	11	0	0	0	0
Lane Group Flow (vph)	786	535	0	1997	1391	0
Heavy Vehicles (%)	1%	1%	0%	2%	2%	3%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	46.7	46.7		61.3	61.3	
Effective Green, g (s)	48.7	48.7		63.3	63.3	
Actuated g/C Ratio	0.41	0.41		0.53	0.53	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.5	3.5		4.5	4.5	
Lane Grp Cap (vph)	1422	656		2712	2712	
v/s Ratio Prot	0.22			c0.39	0.27	
v/s Ratio Perm		c0.33				
v/c Ratio	0.55	0.82		0.74	0.51	
Uniform Delay, d1	27.3	31.7		21.9	18.4	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	8.4		1.8	0.7	
Delay (s)	27.8	40.1		23.7	19.1	
Level of Service	C	D		C	B	
Approach Delay (s)	32.9			23.7	19.1	
Approach LOS	C			C	B	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	60		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	790	559	0	1997	1391	0
Future Volume (vph)	790	559	0	1997	1391	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3506	1617		5142	5142	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3506	1617		5142	5142	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	790	559	0	1997	1391	0
RTOR Reduction (vph)	0	11	0	0	0	0
Lane Group Flow (vph)	790	548	0	1997	1391	0
Heavy Vehicles (%)	1%	1%	0%	2%	2%	3%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	47.4	47.4		60.6	60.6	
Effective Green, g (s)	49.4	49.4		62.6	62.6	
Actuated g/C Ratio	0.41	0.41		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.5	3.5		4.5	4.5	
Lane Grp Cap (vph)	1443	665		2682	2682	
v/s Ratio Prot	0.23			c0.39	0.27	
v/s Ratio Perm		c0.34				
v/c Ratio	0.55	0.82		0.74	0.52	
Uniform Delay, d1	26.8	31.4		22.4	18.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	9.0		1.9	0.7	
Delay (s)	27.3	40.4		24.4	19.5	
Level of Service	C	D		C	B	
Approach Delay (s)	32.7			24.4	19.5	
Approach LOS	C			C	B	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	60		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	790	559	0	1997	1391	0
Future Volume (vph)	790	559	0	1997	1391	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3506	2846		5142	5142	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3506	2846		5142	5142	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	790	559	0	1997	1391	0
RTOR Reduction (vph)	0	51	0	0	0	0
Lane Group Flow (vph)	790	508	0	1997	1391	0
Heavy Vehicles (%)	1%	1%	0%	2%	2%	3%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	34.9	34.9		73.1	73.1	
Effective Green, g (s)	36.9	36.9		75.1	75.1	
Actuated g/C Ratio	0.31	0.31		0.63	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.5	3.5		4.5	4.5	
Lane Grp Cap (vph)	1078	875		3218	3218	
v/s Ratio Prot	c0.23			c0.39	0.27	
v/s Ratio Perm		0.18				
v/c Ratio	0.73	0.58		0.62	0.43	
Uniform Delay, d1	37.1	35.0		13.7	11.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	1.1		0.9	0.4	
Delay (s)	39.9	36.1		14.6	11.9	
Level of Service	D	D		B	B	
Approach Delay (s)	38.3			14.6	11.9	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	60		
c Critical Lane Group			

APPENDIX H

Excerpts – Background Transportation Reports

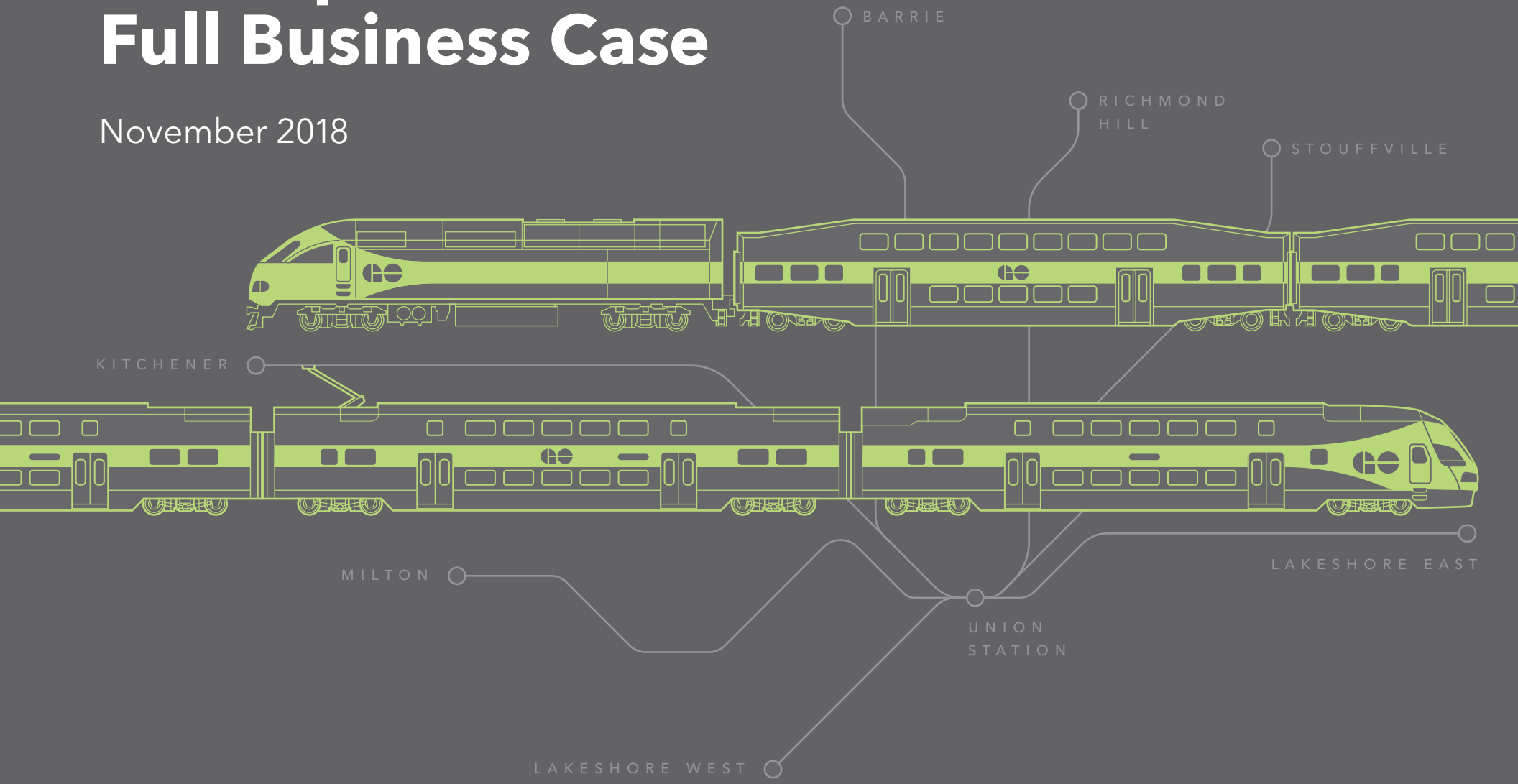
APPENDIX H.1

Excerpts – GO Expansion Full Business Case

METROLINX

GO Expansion Full Business Case

November 2018



LSW Lakeshore West

Lakeshore West Today

Lakeshore West is GO Rail's most heavily used corridor, with 48,000 peak passengers and 16,000 mid-day, contra-peak, and all-day passengers. Large parts of the corridor have been urbanized since the 1950s but intensification continues especially around Oakville and Aldershot stations.

The Lakeshore West Line currently offers two-way all-day service between Union Station and Aldershot with trains arriving every 15-20 minutes in the peak period and every 30 minutes throughout the rest of the day and on evenings and weekends. Additionally, there are trains to Union Station from Hamilton in the morning and trains from Union Station to Hamilton in the evening.

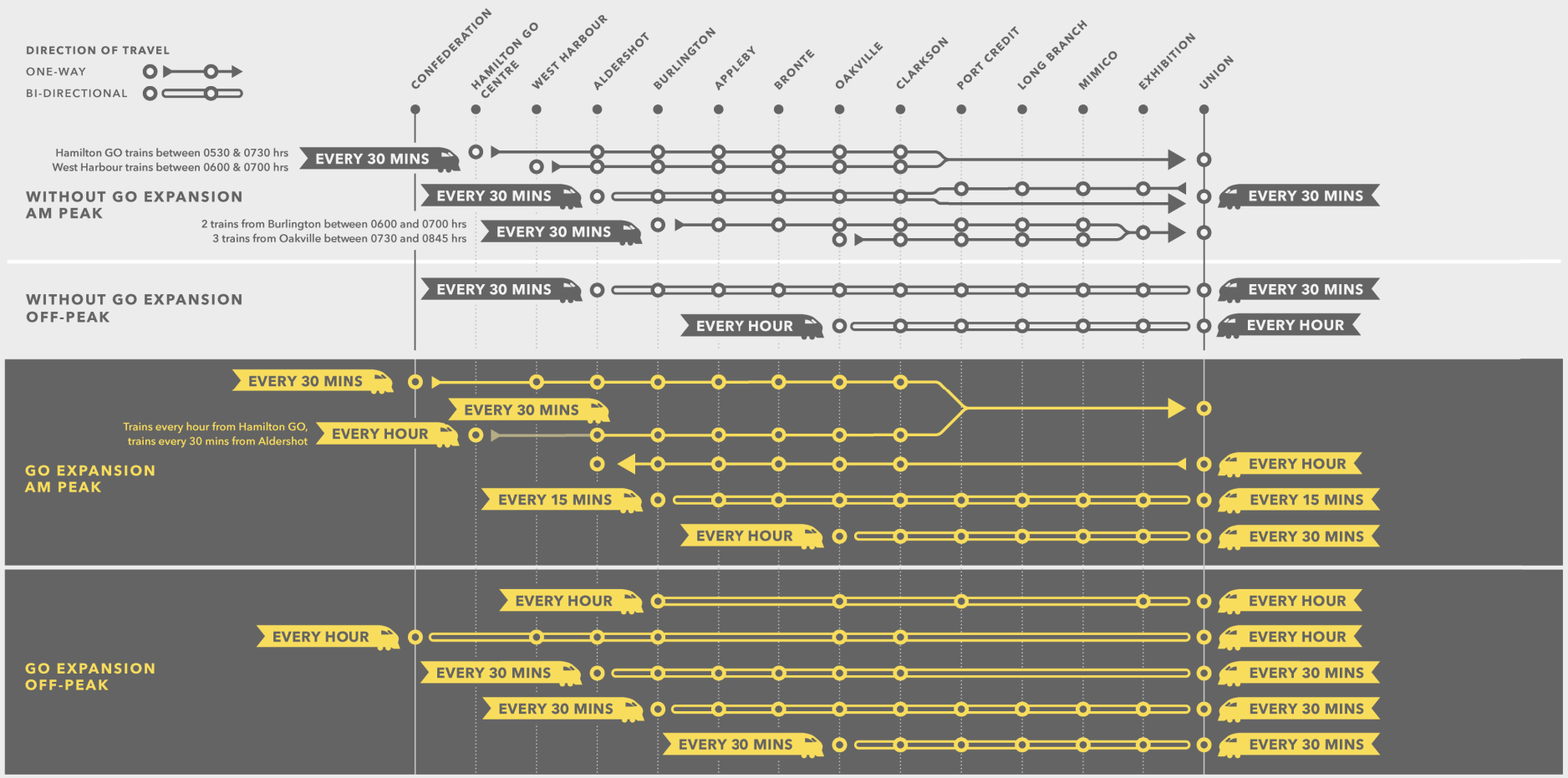
Investment Summary

As part of GO Expansion, Lakeshore West will receive significant investment which is summarized in Table 3.2. The travel time and frequency improvements included in this program are illustrated in Figure 3.7.

Table 3.2: GO Expansion Improvements to the Lakeshore West Line

Program Element	Performance Objectives	Next Steps
MORE ACCESSIBLE STATIONS	• **Customers can board and alight faster, reducing trip times by 2-5 minutes**	• Improvements at: Exhibition, Mimico, Long Branch, Clarkson, Oakville, Bronte, Appleby, Burlington
MORE ALL-DAY SERVICE **SERVICE IN BOTH DIRECTIONS** **TRAINS EVERY 15 MINUTES**	• **282 weekday services** • **Detailed service plan shown in Figure 3.5** • **Two-way all-day service between Union and Hamilton, fifteen minute service or better between Burlington and Union**	• 20.4 km of new track, two new road/rail separations • All-day EMU service comprises 2 tph stopping at all stations to/from Burlington, and 2 tph stopping at all stations to/from Oakville. • All-day Aldershot trains stop at Burlington, Bronte, Appleby, Oakville and Clarkson offering a combined service from these stations, half of which are express from Oakville • Oakville and Clarkson have 6 tph, comprising 2 express and 4 all stations. Port Credit and all stations to Union have 4 tph all day
FASTER AND MORE EFFICIENT TRAINS	• **Up to 8% faster for electric locomotive services** • **Up to 29% faster for EMU service**	• Electrification from Union Station to Burlington Station (205 km of electrified track) • Use of electric rolling stock (locomotives and EMUs)

Figure 3.7: Lakeshore West Reference Concept Design Frequency and Speed Improvements



APPENDIX H.2

Excerpts – Region of Halton Transportation Master Plan

The **Road** to *Change*

Halton Region Transportation Master Plan

2031

Halton REGION

September 2011

TDM initiatives do not on their own address the forecasted travel demand to 2031 but these should be considered an element of the overall transportation solution to ensure the efficient movement of people and to encourage the use of alternative modes of travel while minimizing impacts on socio-economic and natural environments.

5.5 Active Transportation

Active Transportation refers primarily to walking and cycling. Active Transportation can provide health benefits to individuals by increasing physical activity and can benefit the environment by conserving energy and reducing emissions that impact air quality.

The attractiveness of walking and cycling is influenced by:

- The distance between origin and destination;
- Individual attitudes towards walking and cycling;
- The availability of pedestrian and cycle facilities that are:
    - Maintained year round;
    - Direct and continuous; and
    - Physically safe with respect to pedestrian/cyclist interaction with other pedestrians/cyclists as well as interaction with vehicles; and
- Suitable facilities such as benches, water fountains, bicycle parking/storage, personal showers and change rooms at a destination.

According to the 2006 Transportation Tomorrow Survey, approximately 34 percent of current "auto drive" trips during the PM peak period are short trips under 5 km in length, with a further 30 percent of trips falling in the 5-10 km and 10-15 km trip length range. These represent the target market for shifts to Active Transportation modes as longer trips do not become reasonable or feasible for "average" travellers.

The success of Active Transportation depends on the ability to attract those individuals that are driving their car (as a single occupant) to a destination which is within 5 to 10 km.

Table 5.2 summarises the distribution of trip length for auto driver trips made by Halton residents in 2006 (according to the 2006 Transportation Tomorrow Survey).

Previously, the Region coordinated cycling through the former Halton Regional Cycling Advisory Committee. A broader focus is required to account for the other Active Transportation modes including walking, roller blades and scooters. In December 2010 Regional Council dissolved the Regional Cycling Committee and approved the establishment of a new Regional Active Transportation Advisory Committee. The Region's "Active Transportation Advisory Committee" (ATAC) will define a coordinated approach to all non-motorised travel needs across the Region. The ATAC will play an active role in establishing a strategy defining educational and outreach initiatives and infrastructure improvements to promote increased non-motorised travel throughout the Region.

7.3 Public Transit

The evaluation of transportation demand in the Region to 2031 determined that in order to maintain current levels of service and establish a transportation system that recognises the vision and guiding principles established through ROPA 38 and this TMP, 15 to 20 percent of all peak period trips must be accommodated by public transit by 2031. Meeting this objective will, however, require a significant enhancement of transit services over the planning period, a stronger commitment to transit-supportive development and policies, the implementation of a transit supportive road network and implementation of transit improvements by neighbouring municipalities and Metrolinx in accordance with the Metrolinx Regional Transportation Plan (The Big Move).

To ensure that the proposed Regional road network effectively accommodates the transit services required to achieve the 2031 transportation system objectives, a conceptual Transit Strategy was developed with the local municipal transit authorities to ensure transit supportive initiatives within the Regional roadway network are provided to accommodate:

- Implementation of a Bus Rapid Transit (BRT) service along Dundas Street and Trafalgar Road;
- Protection for higher order transit corridors within key areas of Halton Region; and
- Development of a Transit Priority Program and implement measures along key corridors and nodes.

The TMP analysis considered a gradual transit increase over the next 20 years as presented in **Table 7.1.**

Table 7.1 - Transit Mode Share Targets by Horizon

Horizon Year	Transit Mode Share Target		
	Internal Trips	External Trips	Total
2016	2%	7%	5%
2021	6%	20%	10%
2026	8%	30%	15%
2031	11%	30%	20%

A transit servicing concept was developed to demonstrate the feasibility of achieving a 20 percent transit mode share by 2031. This concept evolved from discussions with the Municipal Advisory Group and is an initial step in addressing the anticipated travel needs of the Region and its local municipalities. Further discussion among these stakeholders will be required to define transit servicing to 2031.

Higher order transit corridors were identified within Halton Region to increase transit service usage and help meet the region-wide Transit Mode Split targets. Three types of corridors were considered, each providing a different level of transit service:

- Transit in reserved rights-of-way;
- Transit in semi-exclusive/exclusive rights-of-way; and
- Corridors with transit priority.

Transit in reserved rights-of-way - This is the highest level of priority for transit. In this corridor type, transit vehicles operate in an exclusive travel lane unimpeded by traffic (with the exception of intersection crossings). Transit signal priority features are also placed at signalised intersections to give transit vehicles priority and improve the reliability of service. An example of this type of corridor is the proposed Dundas Bus Rapid Transit corridor.

Transit in semi-exclusive/exclusive rights-of-way – This is the second highest level of priority for transit. In this corridor type, buses operate in high occupancy vehicle lanes; shared with taxis and automobiles with 2+ or 3+ occupants. Transit signal priority measures are placed at signalised intersections (where warranted). An example of this corridor type includes Eglinton Avenue East in Toronto.

Corridors with transit priority – This is the third highest level of priority for transit. In this corridor type, buses operate in mixed traffic lanes. Transit priority features such as signal priority and queue jump lanes are implemented at specific intersections along the corridor to improve service reliability and decrease travel time. An example of this is the first phase of the Züm higher order transit service on Queen Street in Brampton.

The transit servicing concept is presented in **Figure 7.1**.

7.3.1 External Transit Demand

The external transit demand will largely be met by planned improvements in the GO Transit network (rail and bus). Halton Region has also initiated a number of studies with the objective of improving local and inter-regional transit access such as the Dundas BRT Study in partnership with Oakville and Burlington, as well as the Trafalgar Road BRT Study.

Figure 7.1 - Transit Servicing Concept

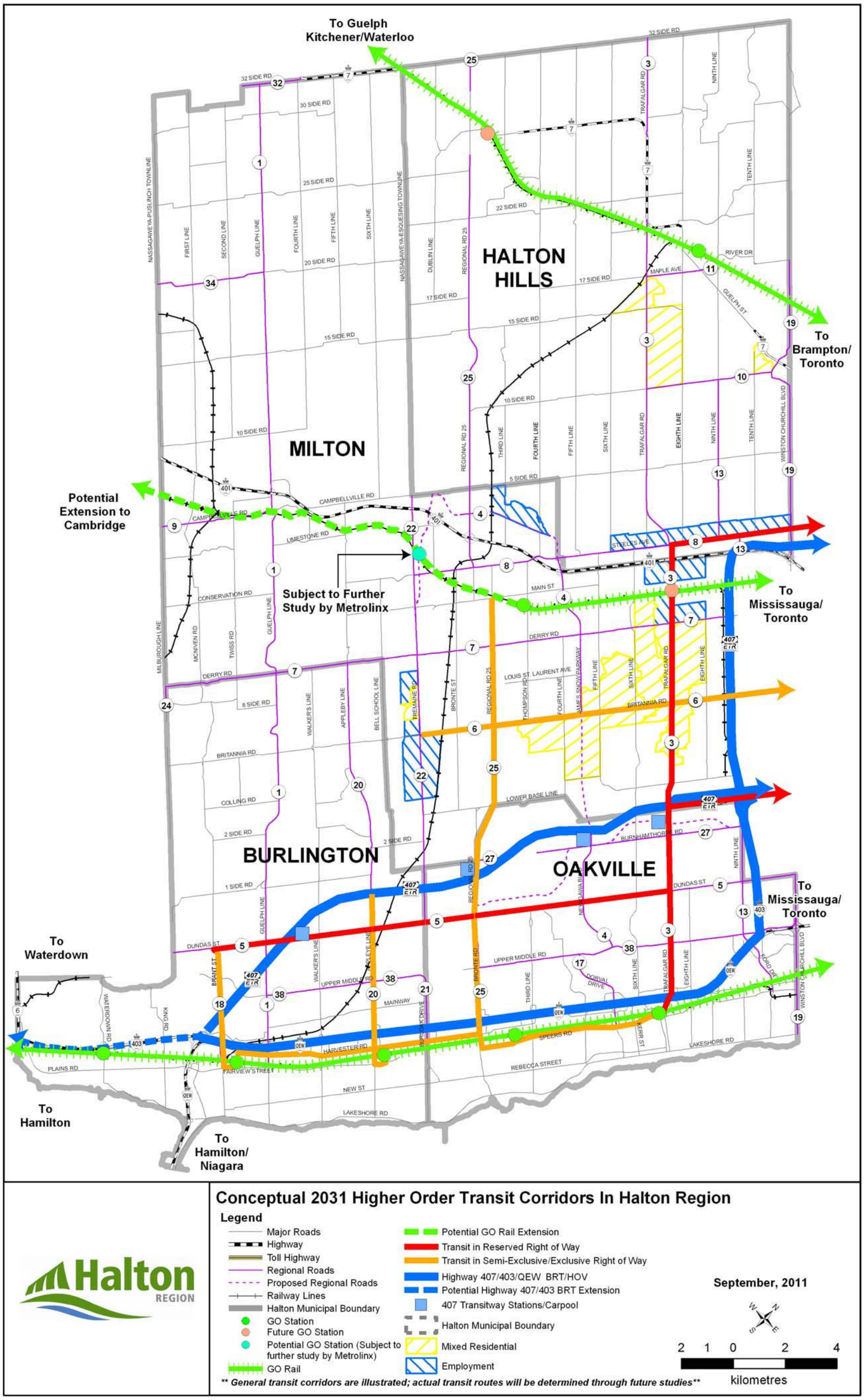
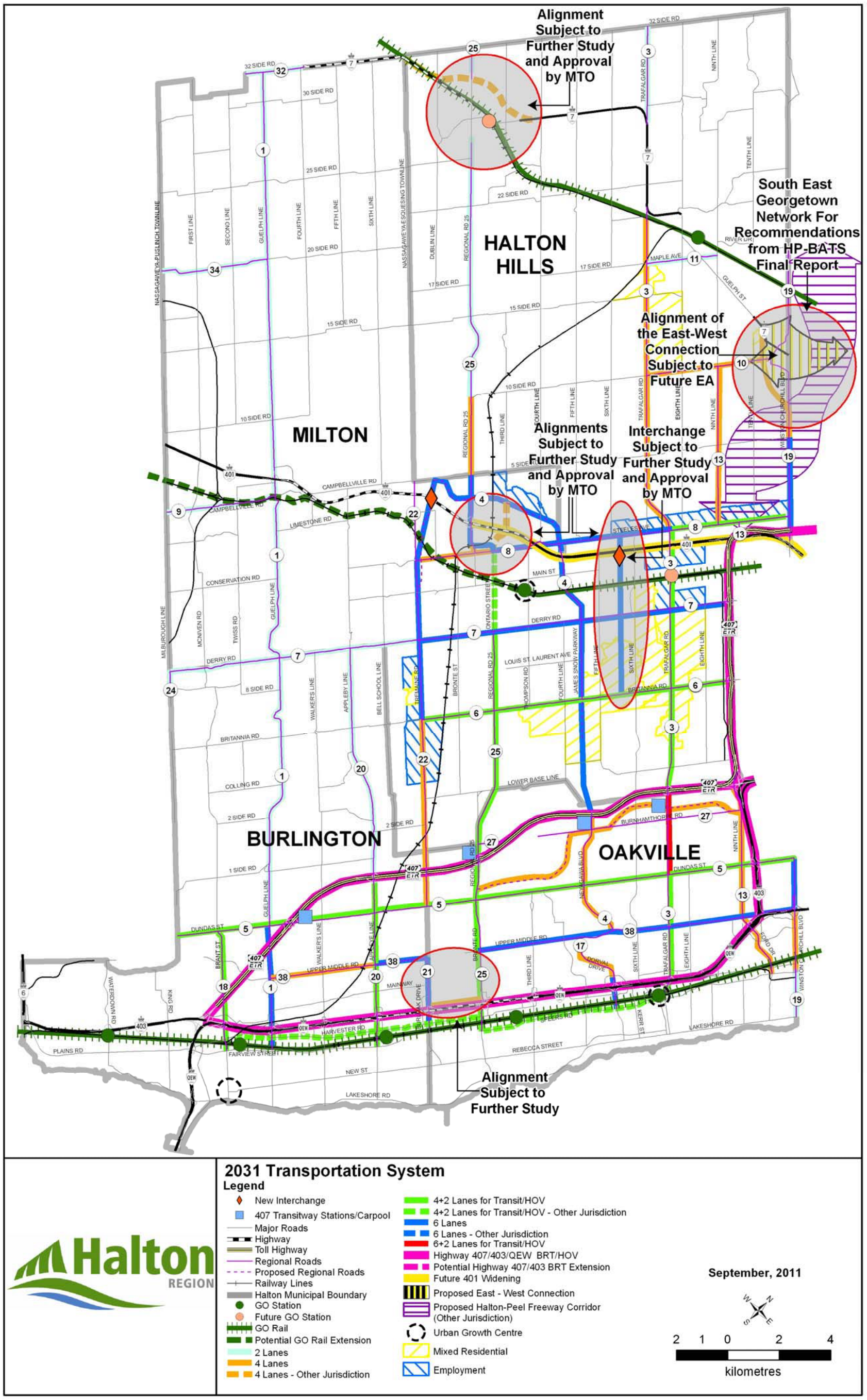
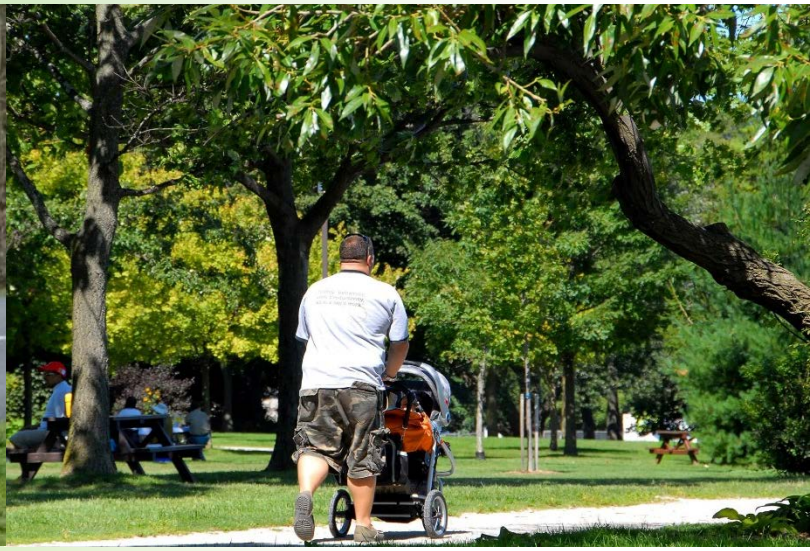


Figure 7.2 – 2031 Transportation System



APPENDIX H.3

Excerpts – Town of Oakville Active Transportation Master Plan



TOWN OF OAKVILLE

ACTIVE TRANSPORTATION MASTER PLAN (ATMP)

OAKVILLE

FINAL REPORT | NOVEMBER 2017

WSP + GLENN POTHIER (GLPi)

Map 6 - Recommended Pedestrian Facility Types

Map 6

TOWN OF MILTON

CITY OF BURLINGTON

CITY OF MISSISSAUGA

BRONTE CREEK PROVINCIAL PARK

LAKE ONTARIO

Downtown Area

0 1 2 4 Kilometres

Notes:
i. Based on existing and previously proposed routes from the Town of Oakville Active Transportation Master Plan (2009), the North Oakville Trails Plan (2013), Downtown Transportation and Streetscape Study (2015) and the Midtown Oakville Transportation and Stormwater Municipal Class EA Final Report (2014). Includes existing routes from the Halton Region Active Transportation Master Plan (2015).
ii. Refer to Technical Appendix K for proposed routes from the Halton Region Active Transportation Master Plan (2015).
iii. Parks and Natural Heritage System includes the Parkway Belt.

Town of Oakville
Active Transportation Master Plan (ATMP)

Final November 2017

Legend

Recommended Pedestrian Routes[i]

Existing	Proposed
	Off-Road Trail
	In-Boulevard Trail
	Paved Shoulder
N/A	Region Facility[ii] (Refer to Technical Appendix K)

Sidewalk Network

- Existing Sidewalk
- Proposed Sidewalk Connection: Add sidewalk on one side of the road
- Proposed Sidewalk Connection: Add sidewalk on both sides on the road
- Proposed Sidewalk Connection: As indicated in the North OakvilleTrails Plan and Midtown Oakville Class EA Study

Grade Separate Pedestrian Crossings

- Existing Grade Separated Pedestrian Crossing
- Proposed Grade Separated Pedestrian Crossing

Existing Regional Trails

- Waterfront Trail / Trans Canada Trail

Community Destinations

- GO Transit Station
- Elementary School
- Secondary School
- College
- Other School
- Community Centre
- Library
- Municipal / Regional Office
- Sport Facility
- Transit Station
- Other Key Destination

Transportation Features

- Provincial Highway
- Regional Road
- Local Road
- Private Road
- Proposed Road
- Active Railway
- Existing Traffic Signal
- Connection to Surrounding Municipality

Land Use Features

- Park / Natural Heritage System[iii]
- Provincial Park
- Waterbody

Map 7 - Recommended Cycling Facility Types

Map 7

TOWN OF MILTON

CITY OF BURLINGTON

CITY OF MISSISSAUGA

BRONTE CREEK PROVINCIAL PARK

LAKE ONTARIO

Downtown Area

0 1 2 4 Kilometres

Town of Oakville
Active Transportation Master Plan (ATMP)

Final November 2017

Legend

Recommended Cycling Routes[i]

Existing	Proposed
	Off-Road Trail
	In-Boulevard Trail
	Paved Shoulder
	Buffered Bike Lane
	Bike Lane
	Signed Route[ii]
N/A	Region Facility[iii] (Refer to Technical Appendix K)

Grade Separated Pedestrian Crossings

- Existing Grade Separated Pedestrian Crossing
- Proposed Grade Separated Pedestrian Crossing

Existing Regional Trails

- Waterfront Trail / Trans Canada Trail

Community Destinations

- GO Transit Station
- Elementary School
- Secondary School
- College
- Other School
- Community Centre
- Library
- Municipal / Regional Office
- Sport Facility
- Transit Station
- Other Key Destination

Transportation Features

- Provincial Highway
- Regional Road
- Local Road
- Private Road
- Proposed Road
- Active Railway
- Existing Traffic Signal
- Connection to Surrounding Municipality

Land Use Features

- Park / Natural Heritage System[iv]
- Provincial Park
- Waterbody

Notes:
i. Based on existing and previously proposed routes from the Town of Oakville Active Transportation Master Plan (2009), the North Oakville Trails Plan (2013), Downtown Transportation and Streetscape Study (2015), Midtown Oakville Transportation and Stormwater Municipal Class EA Final Report (2014). Includes existing routes from the Halton Region Active Transportation Master Plan (2015).
ii. Signed Routes may include sharrow or edgeline markings.
iii. Refer to Technical Appendix K for proposed routes from the Halton Region Active Transportation Master Plan (2015).
iv. Parks and Natural Heritage System includes the Parkway Belt.

APPENDIX H.4

Excerpts – Town of Oakville Transportation Master Plan

TOWN OF OAKVILLE TRANSPORTATION MASTER PLAN REVIEW

FINAL

MARCH 2018

PREPARED FOR THE TOWN OF:

OAKVILLE

WSP + GLPi

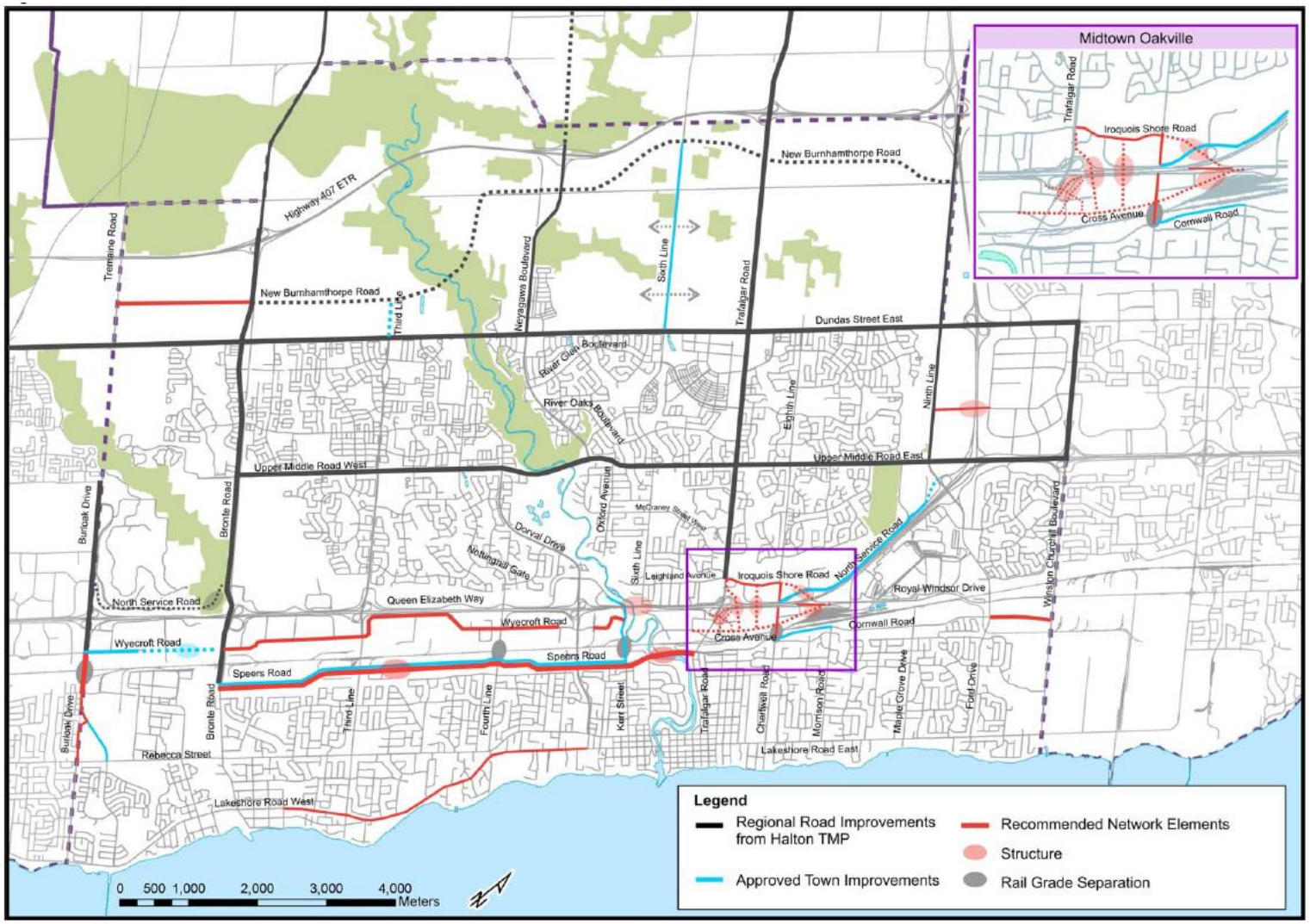


Figure 16: *Switching Gears 2013* Recommended Network

Source: Switching Gears 2013

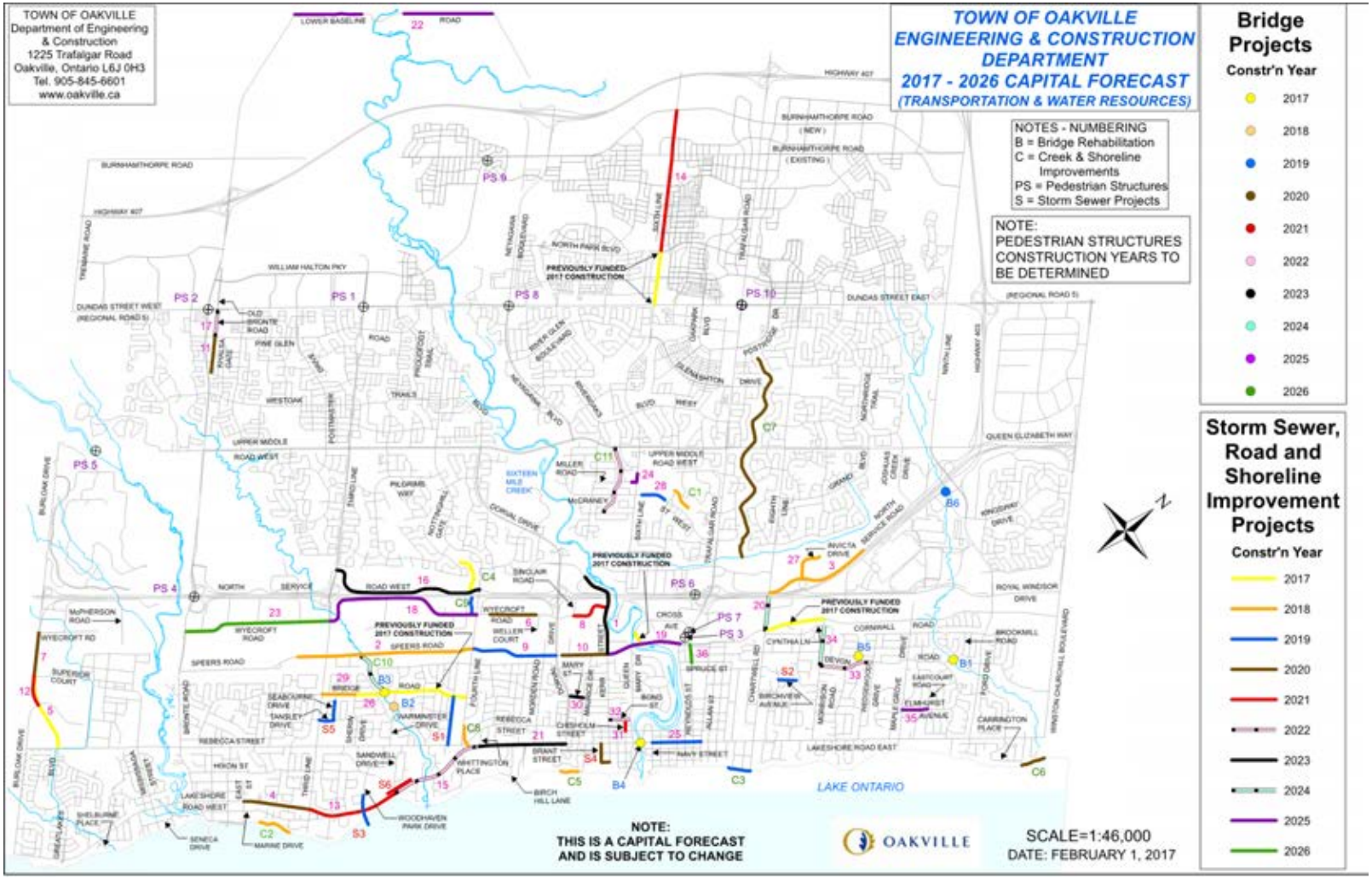


Figure 17: Town of Oakville 2017-2026 Capital Forecast Map

Source: Town of Oakville, https://www.oakville.ca/townhall/capital-forecast.html

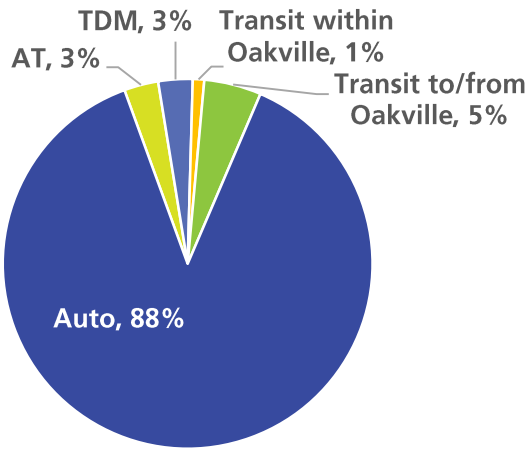
4 Transit Split Target Assessment

4.1 Alternative Transit Mode Split Scenarios

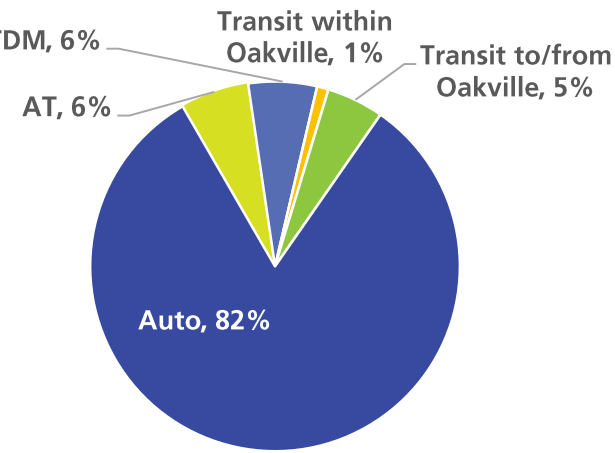
In addition to the baseline condition, five alternate transit mode split scenarios were developed and assessed to determine the optimal conditions for the year 2031. With the recent ATMP Update and TDM initiatives, the town will continue to encourage these modes of non-auto trips. All scenarios assume that the active transportation and TDM targets of 6% each as set out in *Switching Gears 2013* will be met by 2031. The scenarios are described below:

- **Scenario A: Growth in AT and TDM,** assumes the percentage of trips by local and inter-regional transit remains unchanged at the current level of 1% and 5%. There will be some growth in the number of transit trips due to an overall increase in trips taken by all mode.
- **Scenario B: Growth in AT and TDM and Local Transit,** assumes growth in local transit mode share based on an extrapolation of the growth rate to 2031 in the 2015 Transit Service Review Report, resulting in a 2031 PM peak period local transit mode share of 3%. There will be no increase in inter-regional transit mode share.
- **Scenario C: Growth in AT and TDM, higher growth in inter-regional transit,** assumes that no growth in local transit mode share but service improvements anticipated through Metrolinx's Regional Transportation Plan initiative will be in place and also higher transit mode share for other municipalities in Halton Region, which results in inter-regional transit share of 7%.
- **Scenario D: Growth in AT and TDM, local transit and higher growth in inter-regional transit,** assumes a 3% local transit split as outlined in Scenario B and a higher inter-regional transit share of 9%, for a total transit mode share of 12%.
- **Scenario E: Growth in AT and TDM and higher growth in local transit and inter-regional transit,** assumes high growth in both local and inter-regional transit through high investments in transit infrastructure projects for a transit mode share of 16%.

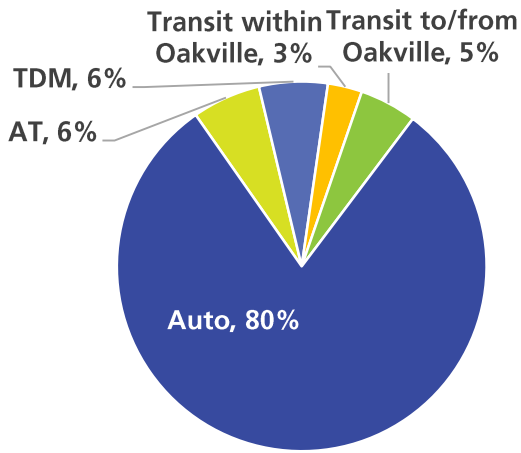
Figure 19 summarizes the transit mode split targets for 2031 under each scenario considered.



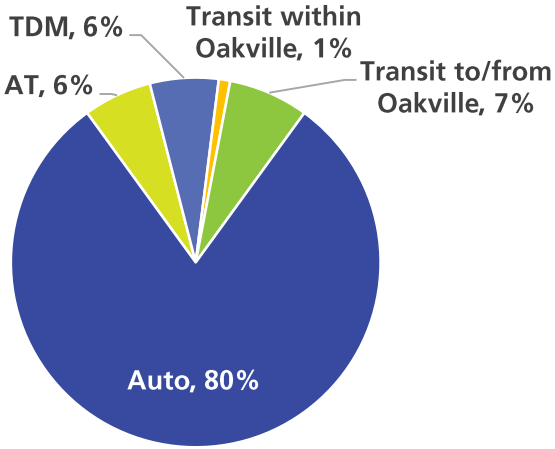
Baseline Scenario
Existing trend



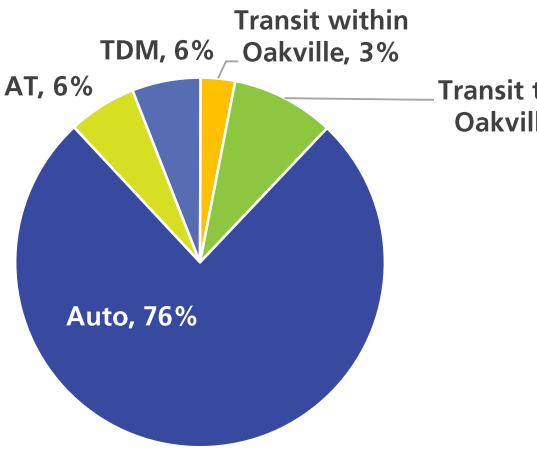
Scenario A: Growth in AT and TDM



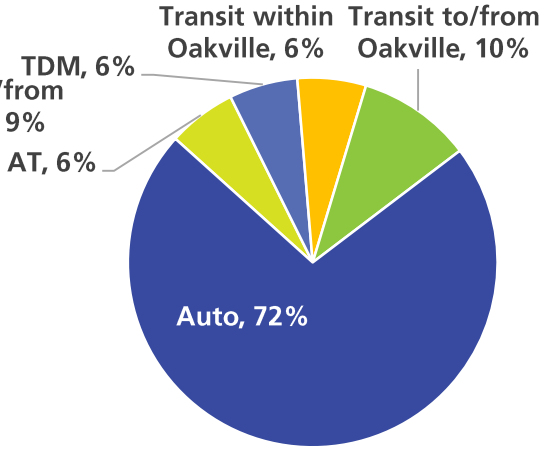
Scenario B: Growth in AT, TDM and local transit



Scenario C: Growth in AT and TDM, Higher growth in inter-regional transit



Scenario D: Growth in AT, TDM and local transit, Higher growth in inter-regional transit



Scenario E: Growth in AT and TDM, Higher growth in local and inter-regional transit

Figure 19: Alternative Transit Mode Split Scenarios for 2031

4.3 Preferred Transit Mode Share Target

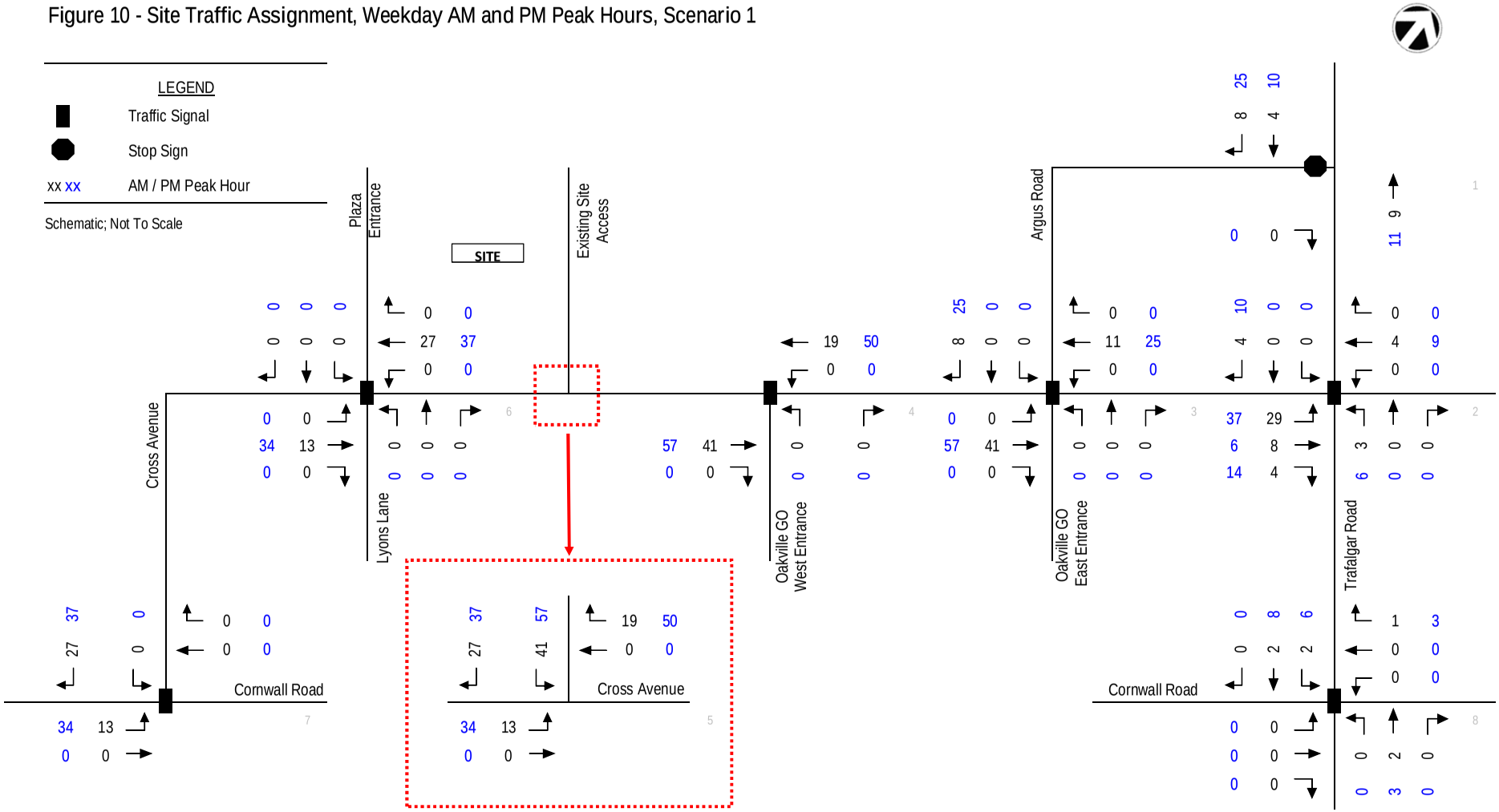
From the assessment and evaluation of the socio-economic environment, natural environment, transportation services and traffic impacts, and cost-effectiveness perspectives, it is noted that Scenario D prevails as the preferred interim solution for 2031 with growth in AT and TDM, local transit, and higher growth in inter-regional transit. The 20% transit mode share is still the town's ultimate goal in order to provide sustainable transportation options. With the proposed interim transit mode share in Scenario D, the number of capacity-constrained screenlines is reduced from seven to four in the 2031 baseline scenario with trend modal share presented in **Figure 19**.

The remaining screenline lane deficiencies are presented in **Figure 20** and **Table 10**. Comparing to the baseline scenario, the screenlines east of Sixth Line and Trafalgar Road are no longer approaching capacity. In addition, the screenline along Oakville Creek South was previously identified as requiring two additional lanes per direction. Under the preferred scenario, only one additional lane per direction is required.

APPENDIX H.5

Excerpts – 157 Cross Avenue TIS

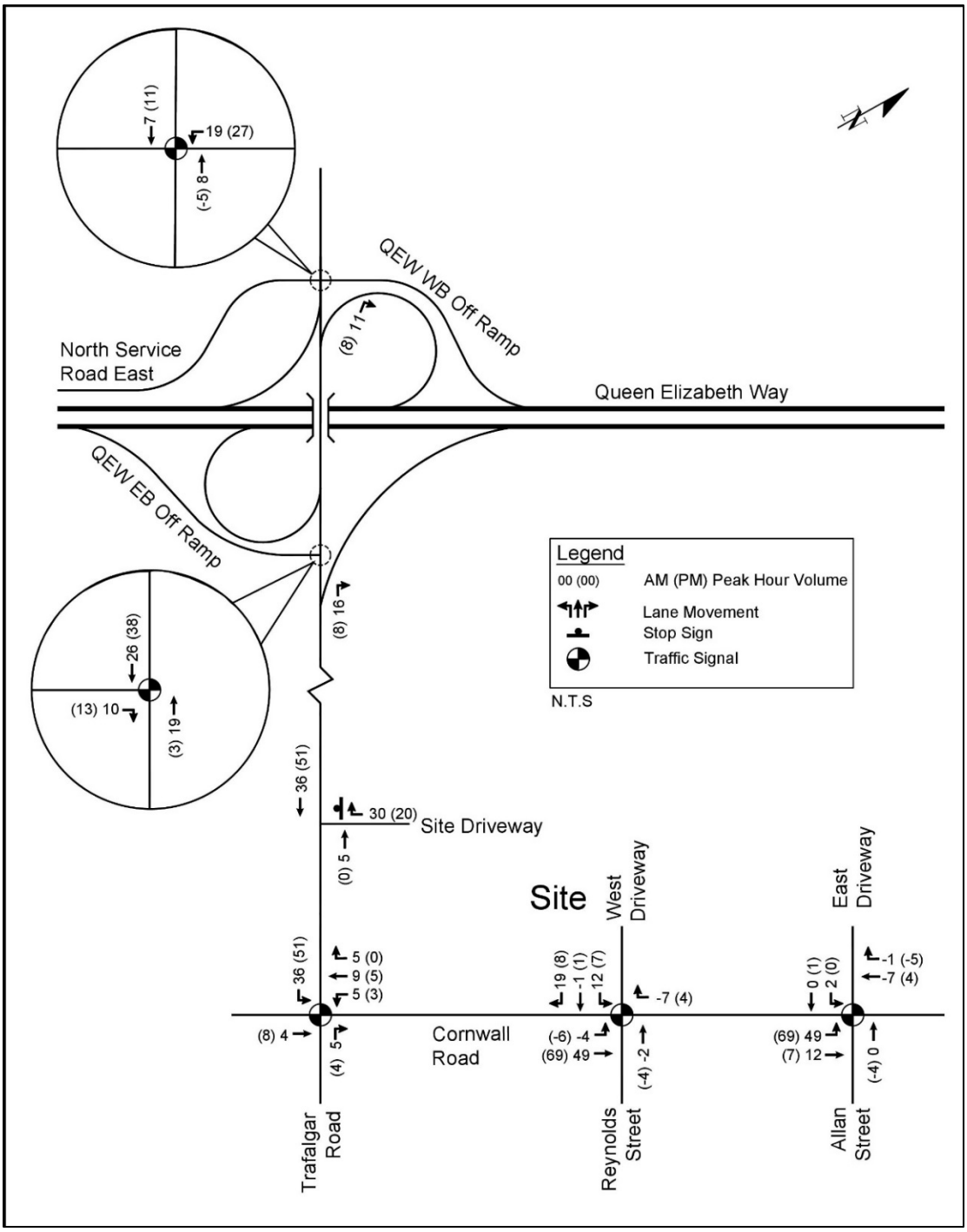
Figure 10 - Site Traffic Assignment, Weekday AM and PM Peak Hours, Scenario 1



APPENDIX H.6

Excerpts – Olde Oakville Market Place Transportation Study

Figure 9: Site Traffic - Access Scenario 1

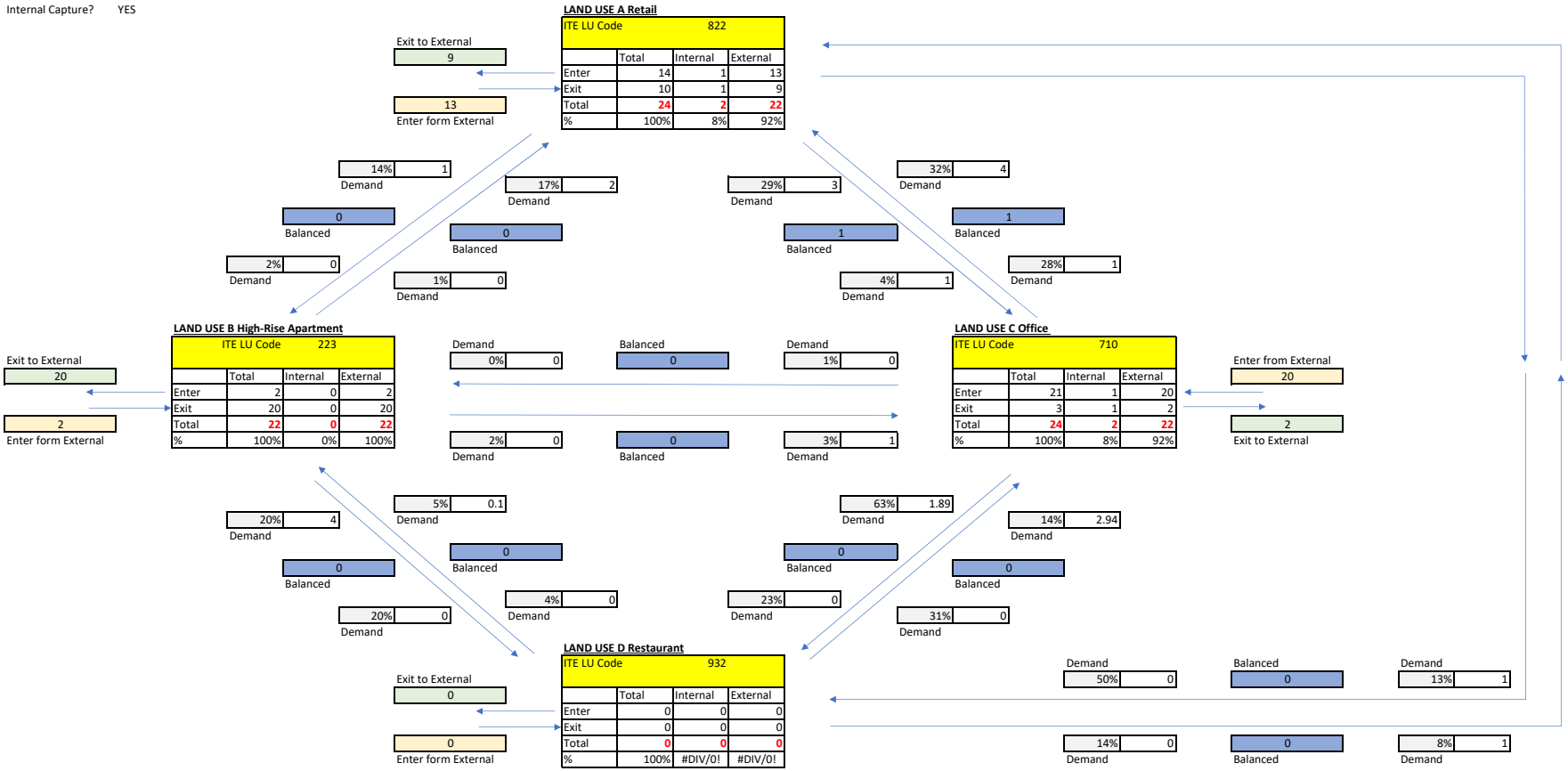


APPENDIX I

Internal Trip Capture Analysis

A.M. Peak Hour

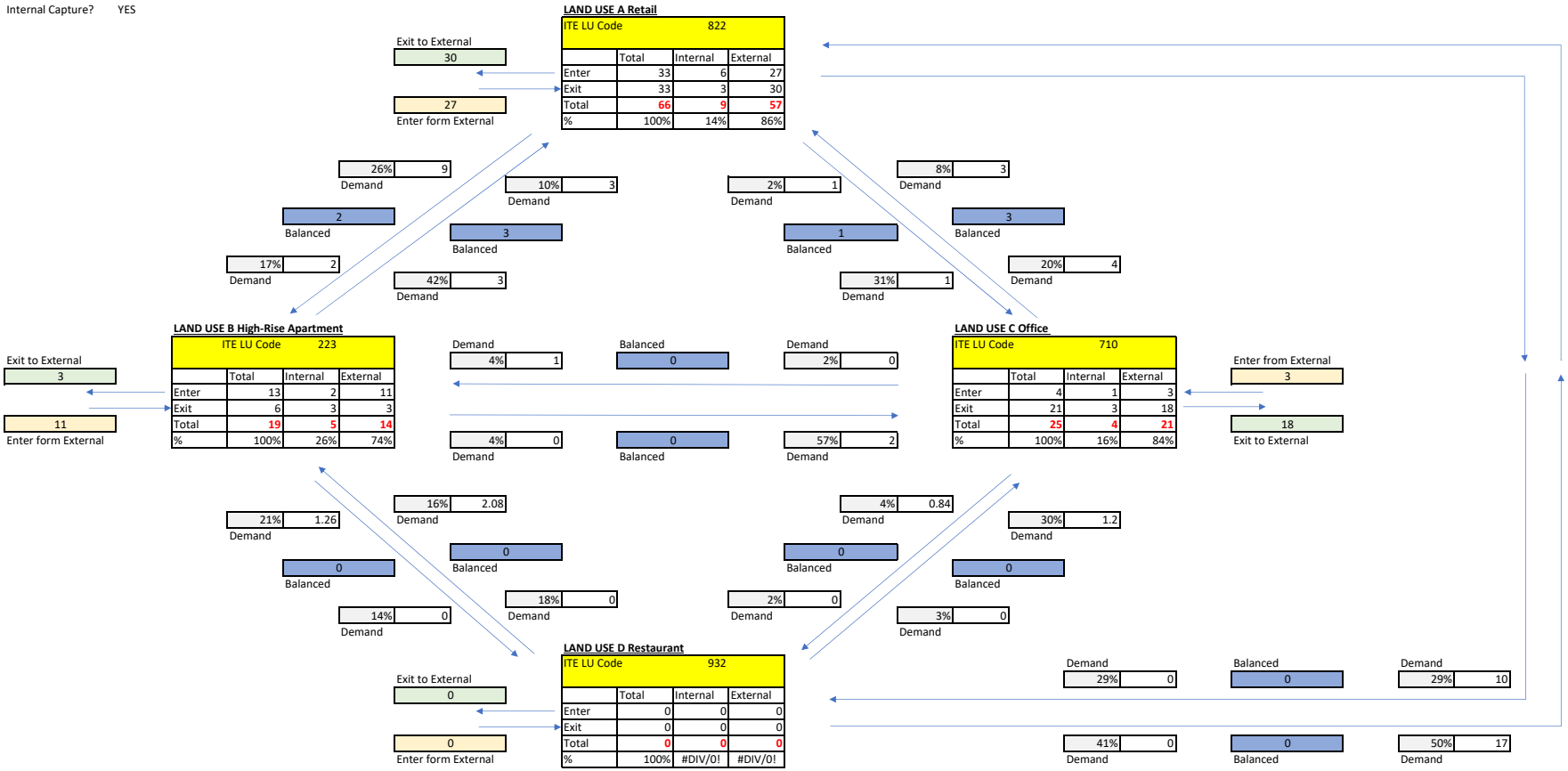
Internal Capture? YES



Net External Trips for Multi-Use Development							
	LAND USE A	LAND USE B	LAND USE C	LAND USE D	TOTAL		
Enter	13	2	20	0	35		
Exit	9	20	2	0	31		
Total	22	22	22	0	66		INTERNAL CAPTURE
Single-Use Trip Gen. Est.	24	22	24	0	70		6%

P.M. Peak Hour

Internal Capture? YES



Net External Trips for Multi-Use Development							
	LAND USE A	LAND USE B	LAND USE C	LAND USE D	TOTAL		
Enter	27	11	3	0	41		
Exit	30	3	18	0	51		
Total	57	14	21	0	92		INTERNAL CAPTURE
Single-Use Trip Gen. Est.	66	19	25	0	110		16%

APPENDIX J

Transportation Tomorrow Survey Data

Existing Mode Split (Zone)
TTS Zones Used

	AM Peak	PM Peak		
	1	2	Total	
Transit excluding GO rail	67	71	138	1.3%
Cycle	0	17	17	0.2%
Auto driver	3864	4690	8554	82.8%
GO rail only	202	87	289	2.8%
Joint GO rail and local transit	103	99	202	2.0%
Auto passenger	192	774	966	9.4%
Walk	14	148	162	1.6%
			10328	100.0%

Existing Mode Split (Halton Region)

	1	2	Total	
Transit excluding GO rail	8035	9189	17224	2.1%
Cycle	3785	4063	7848	1.0%
Auto driver	277409	329273	606682	73.6%
GO rail only	10574	9987	20561	2.5%
Joint GO rail and local transit	5122	5111	10233	1.2%
Motorcycle	319	395	714	0.1%
Other	311	329	640	0.1%
Auto passenger	36906	53978	90884	11.0%
School bus	14745	11322	26067	3.2%
Taxi passenger	309	405	714	0.1%
Paid rideshare	212	301	513	0.1%
Walk	21406	20455	41861	5.1%
SUM			823941	100.0%

	1	2	Total	
Transit excluding GO rail	3775	5022	8797	2.6%
Cycle	1916	2004	3920	1.2%
Auto driver	113233	128647	241880	72.3%
GO rail only	6526	5940	12466	3.7%
Joint GO rail and local transit	2621	2772	5393	1.6%
Motorcycle	37	139	176	0.1%
Other	76	93	169	0.1%
Auto passenger	15615	20112	35727	10.7%
School bus	5706	4498	10204	3.0%
Taxi passenger	146	119	265	0.1%
Paid rideshare	123	143	266	0.1%
Walk	8313	7177	15490	4.6%
SUM			334753	100.0%

Column1.1	Column1.2	Column1.3
Tue Mar 29 2022 16:49:53 GMT-0400 (Eastern Daylight Time) - Run Time: 2687ms		
Cross Tabulation Query Form - Trip - 2016 v1.1		
Row: Primary travel mode of trip - mode_prime		
Column: Start time of trip - start_time		
RowG:		
ColG:(600-900)(1500-1800)		
TblG:		
Filters:		
(Planning district of origin - pd_orig In 39		
or		
Planning district of destination - pd_dest In 39	)	
Trip 2016		
Table:		
	1	2
Transit excluding GO rail	3775	5022
Cycle	1916	2004
Auto driver	113233	128647
GO rail only	6526	5940
Joint GO rail and local transit	2621	2772
Motorcycle	37	139
Other	76	93
Auto passenger	15615	20112
School bus	5706	4498
Taxi passenger	146	119
Paid rideshare	123	143
Walk	8313	7177

Column1.1	Column1.2	Column1.3
Tue Mar 29 2022 16:31:10 GMT-0400 (Eastern Daylight Time) - Run Time: 2581ms		
Cross Tabulation Query Form - Trip - 2016 v1.1		
Row: Primary travel mode of trip - mode_prime		
Column: Start time of trip - start_time		
RowG:		
ColG:(600-900)(1500-1800)		
TblG:		
Filters:		
(Regional municipality of origin - region_orig In 5		
or		
Regional municipality of destination - region_dest In 5	)	
Trip 2016		
Table:		
	1	2
Transit excluding GO rail	8035	9189
Cycle	3785	4063
Auto driver	277409	329273
GO rail only	10574	9987
Joint GO rail and local transit	5122	5111
Motorcycle	319	395
Other	311	329
Auto passenger	36906	53978
School bus	14745	11322
Taxi passenger	309	405
Paid rideshare	212	301
Walk	21406	20455

Tue Mar 29 2022 10:22:17 GMT-0400 (Eastern Daylight Time) - Run Time: 2724ms	Column1	_1
Cross Tabulation Query Form - Trip - 2016 v1.1		
Row: Primary travel mode of trip - mode_prime		
Column: Start time of trip - start_time		
RowG:		
ColG:(600-900)(1500-1800)		
TblG:		
Filters:		
(2006 GTA zone of origin - gta06_orig In 4014		
or		
2006 GTA zone of destination - gta06_dest In 4014)		
Trip 2016		
Table:		
	1	2
Transit excluding GO rail	67	71
Cycle	0	17
Auto driver	3864	4690
GO rail only	202	87
Joint GO rail and local transit	103	99
Auto passenger	192	774
Walk	14	148

SUM_ALL

	I	NW_I	N_I	NE_I	E_I	SE_I	S_I	SW_I	W_I	NW_E	N_E	NE_E	E_E	SE_E	S_E	SW_E	W_E	TOTAL	% to use	%	Possible Boundary Road Network entry/exit points
Trips	316	587	664	348	377	224	196	992	921	596	652	1087	712	0	0	15	1029	8716	5%	6.9%	1 South Service Road East e/of Davis Road
%	3.6%	6.7%	7.6%	4.0%	4.3%	2.6%	2.2%	11.4%	10.6%	6.8%	7.5%	12.5%	8.2%	0.0%	0.0%	0.2%	11.8%	100%	11%	11.4%	2 Cornwall Road West
% w/o trip:	0.0%	7.0%	7.9%	4.1%	4.5%	2.7%	2.3%	11.8%	11.0%	7.1%	7.8%	12.9%	8.5%	0.0%	0.0%	0.2%	12.3%	100%	2%	1.8%	3 Cornwall Road East
Approach?	3/8	7	7	7	1	1	4	2	6	7	7	5	5	0	0	5	6		2%	2.2%	4 Trafalgar Road South
AM_IN																			21%	20.8%	5 QEW East
	I	NW_I	N_I	NE_I	E_I	SE_I	S_I	SW_I	W_I	NW_E	N_E	NE_E	E_E	SE_E	S_E	SW_E	W_E	TOTAL	22%	22.4%	6 QEW West
Trips	29	247	205	152	28	92	26	237	256	264	251	295	281	0	0	0	488	2851	33%	32.7%	7 Trafalgar Road North
%	0.0102	0.0866	0.0719	0.0533	0.0098	0.0323	0.0091	0.0831	0.0898	0.0926	0.088	0.1035	0.0986	0	0	0	0.1712	1	4%	1.8%	8 Cross Avenue
% w/o trip:	0	0.0875	0.0726	0.0539	0.0099	0.0326	0.0092	0.084	0.0907	0.0936	0.0889	0.1045	0.0996	0	0	0	0.1729	1	100%	100.0%	9

AM_OUT

	I	NW_I	N_I	NE_I	E_I	SE_I	S_I	SW_I	W_I	NW_E	N_E	NE_E	E_E	SE_E	S_E	SW_E	W_E	TOTAL
Trips	29	78	186	53	0	20	32	108	163	59	37	194	47	0	0	0	41	1047
%	2.77%	7.45%	17.77%	5.06%	0.00%	1.91%	3.06%	10.32%	15.57%	5.64%	3.53%	18.53%	4.49%	0.00%	0.00%	0.00%	3.92%	100.00%
% w/o trip:	0.00%	7.66%	18.27%	5.21%	0.00%	1.96%	3.14%	10.61%	16.01%	5.80%	3.63%	19.06%	4.62%	0.00%	0.00%	0.00%	4.03%	100.00%

PM_IN

	I	NW_I	N_I	NE_I	E_I	SE_I	S_I	SW_I	W_I	NW_E	N_E	NE_E	E_E	SE_E	S_E	SW_E	W_E	TOTAL
Trips	129	62	108	70	244	52	62	282	224	65	131	281	81	0	0	0	117	1908
%	6.76%	3.25%	5.66%	3.67%	12.79%	2.73%	3.25%	14.78%	11.74%	3.41%	6.87%	14.73%	4.25%	0.00%	0.00%	0.00%	6.13%	100.00%
% w/o trip:	0.00%	3.49%	6.07%	3.93%	13.72%	2.92%	3.49%	15.85%	12.59%	3.65%	7.36%	15.80%	4.55%	0.00%	0.00%	0.00%	6.58%	100.00%

PM_OUT

	I	NW_I	N_I	NE_I	E_I	SE_I	S_I	SW_I	W_I	NW_E	N_E	NE_E	E_E	SE_E	S_E	SW_E	W_E	TOTAL
Trips	129	200	165	73	105	60	76	365	278	208	233	317	303	0	0	15	383	2910
%	4.43%	6.87%	5.67%	2.51%	3.61%	2.06%	2.61%	12.54%	9.55%	7.15%	8.01%	10.89%	10.41%	0.00%	0.00%	0.52%	13.16%	100.00%
% w/o trip:	0.00%	7.19%	5.93%	2.62%	3.78%	2.16%	2.73%	13.12%	10.00%	7.48%	8.38%	11.40%	10.90%	0.00%	0.00%	0.54%	13.77%	100.00%

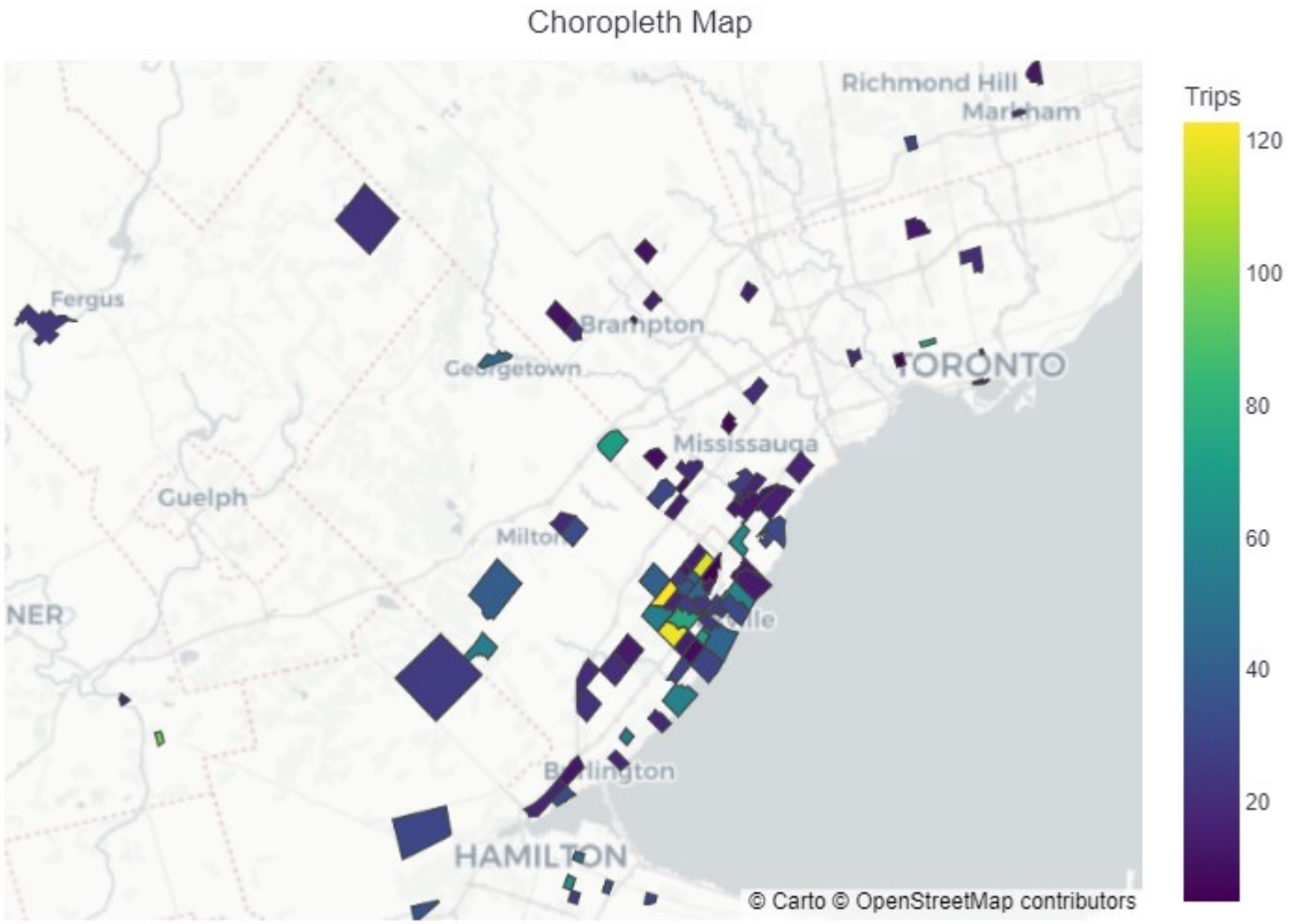
Column1.1	Column1.2	Column1.3
Thu Mar 31 2022 14:26:58 GMT-0400 (Eastern Daylight Time) - Run Time: 2636ms		
Cross Tabulation Query Form - Trip - 2016 v1.1		
Row: Planning district of origin - pd_orig		
Column: Start time of trip - start_time		
RowG:		
ColG:(600-900)(1500-1800)		
TblG:		
Filters:		
(2006 GTA zone of destination - gta06_dest In 4014		
and		
Primary travel mode of trip - mode_prime In D	M	U
and		
Start time of trip - start_time In 600-900	1500-1800)	
Trip 2016		
Table:		
	1	2
PD 1 of Toronto	49	0
PD 2 of Toronto	5	0
PD 3 of Toronto	77	0
PD 5 of Toronto	20	0
PD 7 of Toronto	0	26
PD 8 of Toronto	19	15
PD 9 of Toronto	0	37
PD 10 of Toronto	0	15
PD 11 of Toronto	13	0
Markham	33	0
Vaughan	30	0
Brampton	65	0
Mississauga	377	321
Halton Hills	45	30
Milton	93	60
Oakville	1272	1233
Burlington	271	130
Flamborough	57	0
Ancaster	36	0
Stoney Creek	31	0
Hamilton	175	23
Cambridge	117	0
Centre Wellington	25	0
Erin	23	0
Orangeville	0	20
Essa	16	0

Column1.1	Column1.2	Column1.3
Thu Mar 31 2022 14:29:15 GMT-0400 (Eastern Daylight Time) - Run Time: 2248ms		
Cross Tabulation Query Form - Trip - 2016 v1.1		
Row: Planning district of destination - pd_dest		
Column: Start time of trip - start_time		
RowG:		
ColG:(600-900)(1500-1800)		
TblG:		
Filters:		
(2006 GTA zone of origin - gta06_orig In 4014		
and		
Primary travel mode of trip - mode_prime In D	M	U
and		
Start time of trip - start_time In 600-900	1500-1800)	
Trip 2016		
Table:		
	1	2
PD 1 of Toronto	30	5
PD 3 of Toronto	0	77
PD 5 of Toronto	0	20
PD 6 of Toronto	0	10
PD 7 of Toronto	0	26
PD 8 of Toronto	0	19
PD 9 of Toronto	0	10
Markham	0	33
Vaughan	0	30
Brampton	0	67
Mississauga	248	384
Halton Hills	0	45
Milton	22	130
Oakville	668	1453
Burlington	55	184
Flamborough	0	57
Ancaster	0	36
Stoney Creek	0	31
Hamilton	23	115
Cambridge	0	117
Centre Wellington	0	25
Erin	0	23
Barrie	0	13

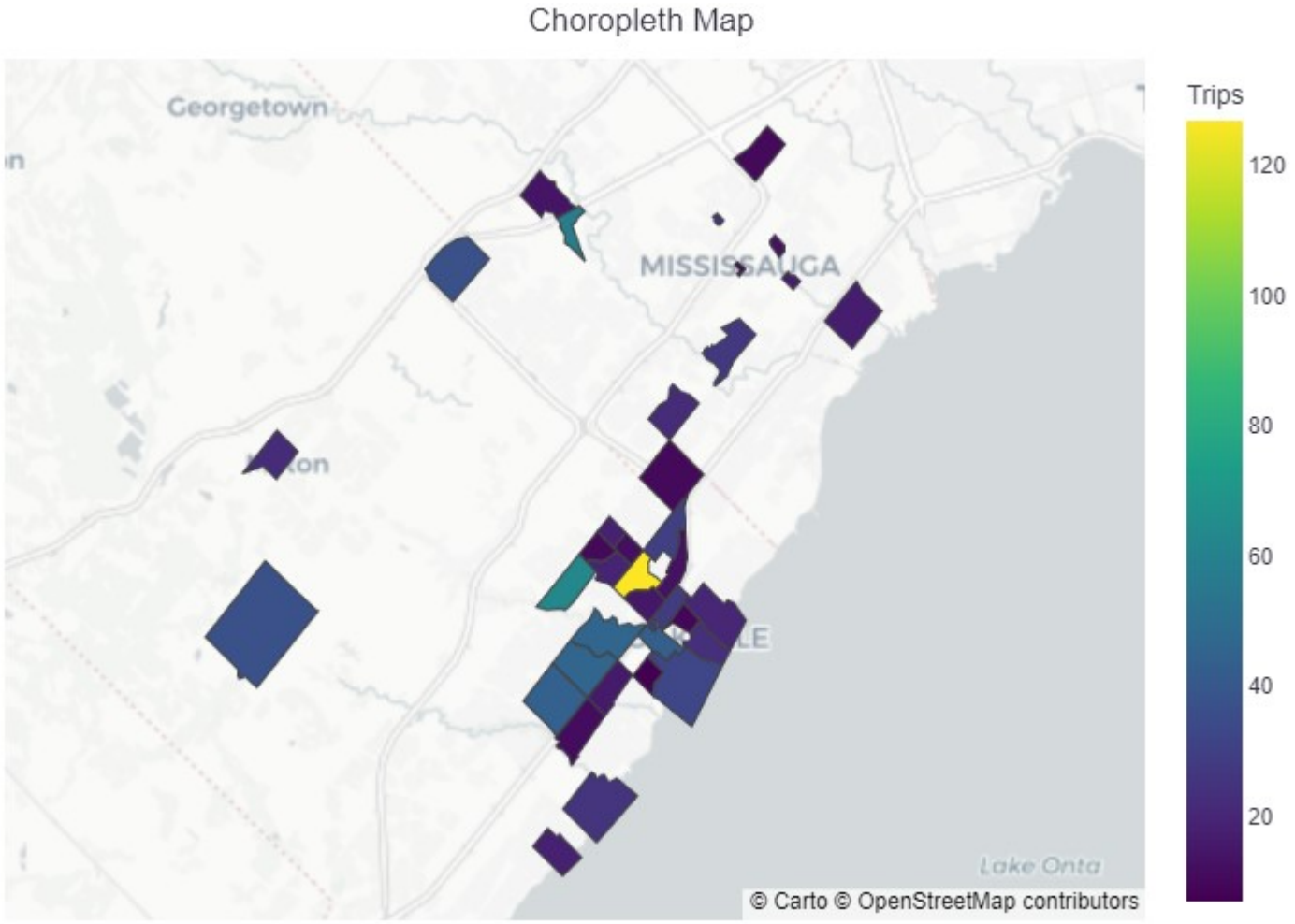
Column1	Column2	Column3
Wed May 04 2022 16:48:50 GMT-0400 (Eastern Daylight Time) - Run Time: 2376ms		
Cross Tabulation Query Form - Trip - 2016 v1.1		
Row: 2006 GTA zone of destination - gta06_dest		
Column: 2006 GTA zone of origin - gta06_orig		
Filters:		
2006 GTA zone of origin - gta06_orig In 4014		
and		
Start time of trip - start_time In 600-900		
and		
Primary travel mode of trip - mode_prime In D	M	U
Trip 2016		
Table:		
	4014	
47	30	
3611	58	
3617	37	
3618	14	
3648	17	
3658	13	
3662	22	
3664	27	
3700	10	
3833	25	
3847	8	
3862	17	
4001	25	
4003	11	
4008	16	
4010	7	
4011	33	
4012	43	
4014	29	
4015	9	
4016	23	
4017	20	
4024	10	
4026	30	
4027	13	
4029	127	
4030	15	
4032	12	
4034	18	
4035	10	
4036	19	
4037	63	
4040	46	
4041	46	
4042	44	
4074	18	
4099	37	
4126	22	
5198	23	

Column1	Column2	Column3
Thu Mar 31 2022 15:01:00 GMT-0400 (Eastern Daylight Time) - Run Time: 2412ms		
Cross Tabulation Query Form - Trip - 2016 v1.1		
Row: 2006 GTA zone of origin - gta06_orig		
Column: 2006 GTA zone of destination - gta06_dest		
Filters:		
2006 GTA zone of destination - gta06_dest In 4014		
and		
Start time of trip - start_time In 1500-1800		
and		
Primary travel mode of trip - mode_prime In D	M	U
Trip 2016		
Table:		
	4014	
294	26	
342	15	
358	37	
420	15	
3607	18	
3611	58	
3618	14	
3633	10	
3642	8	
3648	17	
3658	13	
3671	38	
3680	22	
3691	22	
3700	10	
3701	31	
3809	50	
3847	8	
4003	41	
4004	41	
4005	13	
4006	21	
4008	16	
4009	21	
4011	78	
4012	170	
4014	129	
4015	22	
4016	40	
4017	15	
4018	37	
4019	77	
4020	146	
4021	21	
4024	21	
4027	42	
4028	7	
4029	51	
4030	22	
4032	34	
4035	23	
4037	40	
4040	29	
4041	12	
4045	15	
4053	26	
4056	11	
4059	25	
4076	17	
4078	15	
4097	37	
4120	17	
4123	14	
4126	22	
4127	6	
4167	17	
4177	13	
4186	49	
5198	23	
8403	20	

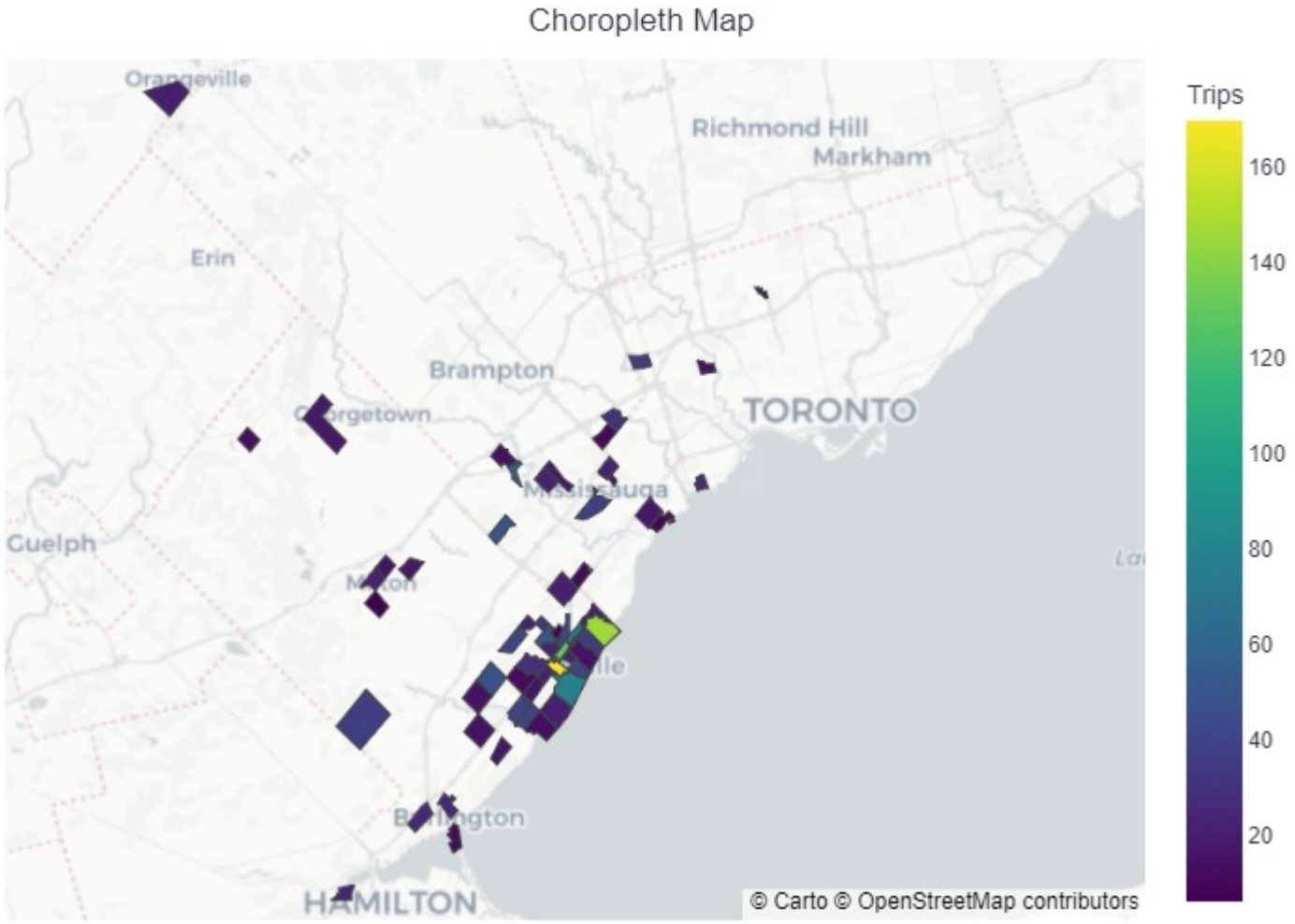
2016 TTS Midtown Oakville AM Peak Period Inbound Trips



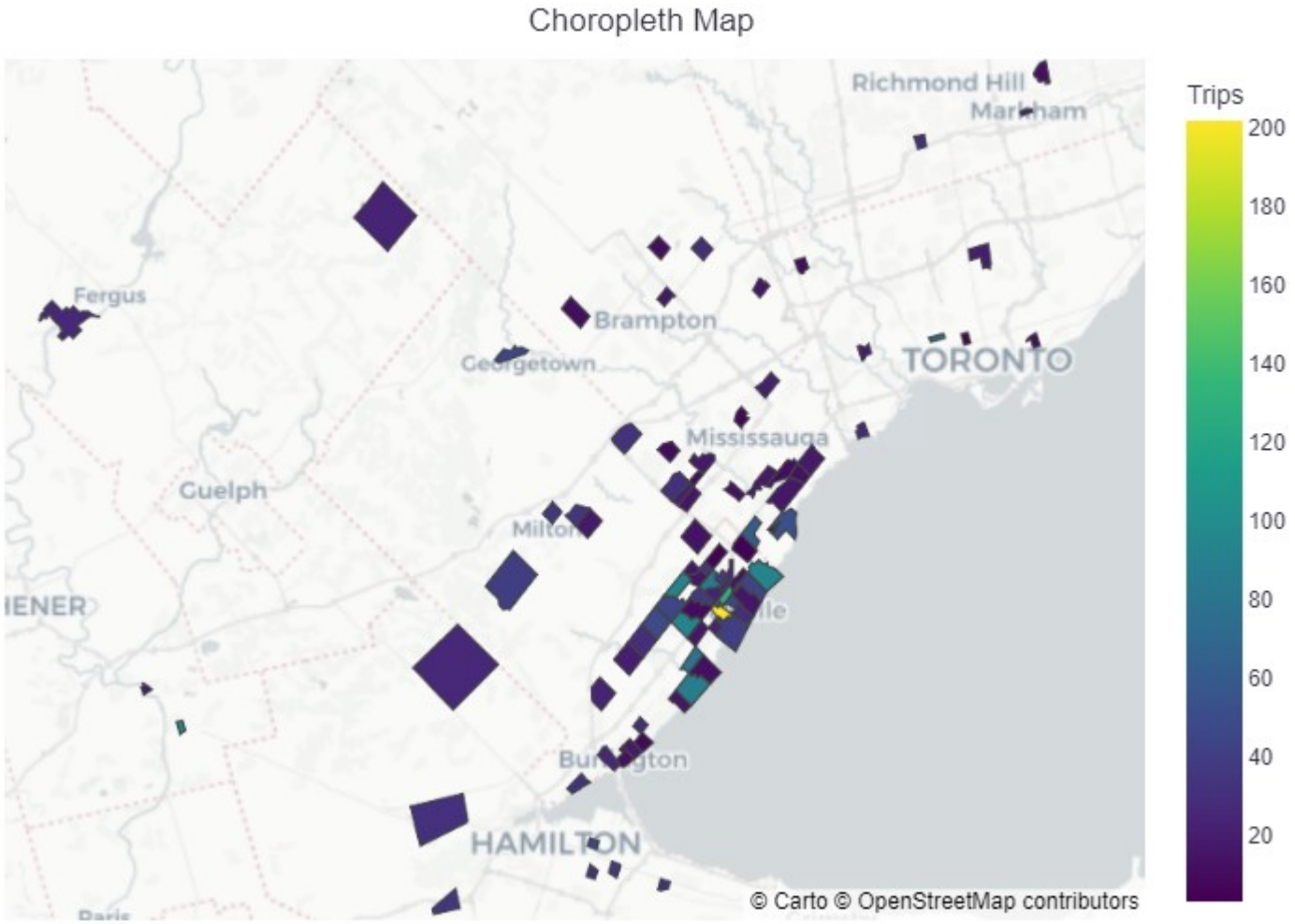
2016 TTS Midtown Oakville AM Peak Period Outbound Trips



2016 TTS Midtown Oakville PM Peak Period Inbound Trips



2016 TTS Midtown Oakville PM Peak Period Outbound Trips



APPENDIX K

Signal Warrants

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? South Service Road East and Davis Road

What is the direction of the Main Road street? North-South

When was the data collected? 2030 Future Total Traffic

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	0	81	29	1	0	1	4	97	1	32	0	3	0
8:00	0	81	29	1	0	1	4	97	1	32	0	3	0
9:00	0	81	29	1	0	1	4	97	1	32	0	3	0
12:00	0	81	29	1	0	1	4	97	1	32	0	3	0
13:00	0	81	29	1	0	1	4	97	1	32	0	3	0
16:00	0	81	29	1	0	1	4	97	1	32	0	3	0
17:00	0	81	29	1	0	1	4	97	1	32	0	3	0
18:00	0	81	29	1	0	1	4	97	1	32	0	3	0
Total	**0**	**648**	**232**	**8**	**0**	**8**	**32**	**776**	**8**	**256**	**0**	**24**	**0**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: South Service Road East and Davis Road

Count Date: 2030 Future Total Traffic

Justification 1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
1A	480	720	600	900	249	249	249	249	249	249	249	249		
	COMPLIANCE %				28	28	28	28	28	28	28	28	221	28
1B	120	170	120	170	37	37	37	37	37	37	37	37		
	COMPLIANCE %				22	22	22	22	22	22	22	22	174	22
Restricted Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours					Yes		No		
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours					Yes ☐		No ☑		

Justification 2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
2A	480	720	600	900	212	212	212	212	212	212	212	212		
	COMPLIANCE %				24	24	24	24	24	24	24	24	188	24
2B	50	75	50	75	33	33	33	33	33	33	33	33		
	COMPLIANCE %				44	44	44	44	44	44	44	44	352	44
Restricted Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours					Yes ☐		No ☑		
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours					Yes ☐		No ☑		

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES	NO ☑		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	7:00	212	35	669	5 %	5 %
	8:00	212	35	669	5 %	
	9:00	212	35	669	5 %	
	12:00	212	35	669	5 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

Intersection: South Service Road East and Davis Road Count Date: 2030 Future Total Traffic

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	28	%	☐	☑
	B	Crossing Volume	22	%		
2. Delay to Cross Traffic	A	Main Road	24	%	☐	☑
	B	Crossing Road	44	%		
3. Combination	A	Justificaton 1	22	%	☐	☑
	B	Justification 2	24	%		
4. 4-Hr Volume			5	%	☐	☑
5. Collision Experience			0	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? South Service Road East and Davis Road / QEW EB off-ramp

What is the direction of the Main Road street? North-South

When was the data collected? 2035 Future Total Traffic

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	0	81	24	86	5	63	4	97	0	32	0	3	0
8:00	0	81	24	86	5	63	4	97	0	32	0	3	0
9:00	0	81	24	86	5	63	4	97	0	32	0	3	0
12:00	0	81	24	86	5	63	4	97	0	32	0	3	0
13:00	0	81	24	86	5	63	4	97	0	32	0	3	0
16:00	0	81	24	86	5	63	4	97	0	32	0	3	0
17:00	0	81	24	86	5	63	4	97	0	32	0	3	0
18:00	0	81	24	86	5	63	4	97	0	32	0	3	0
Total	**0**	**648**	**192**	**688**	**40**	**504**	**32**	**776**	**0**	**256**	**0**	**24**	**0**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: South Service Road East and Davis Road / QEW EB off-ramp Count Date: 2035 Future Total Traffic

Justification 1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☑	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
1A	480	720	600	900	395	395	395	395	395	395	395	395		
	COMPLIANCE %				44	44	44	44	44	44	44	44	351	44
1B	120	170	120	170	189	189	189	189	189	189	189	189		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
Restricted Flow Signal Justification 1:					**Both 1A and 1B 100% Fullfilled each of 8 hours**								**Yes** ☐ **No** ☑	
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								**Yes** ☐ **No** ☑	

Justification 2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☑	7:00	8:00	9:00	12:00	13:00	16:00	17:00	18:00		
2A	480	720	600	900	206	206	206	206	206	206	206	206		
	COMPLIANCE %				23	23	23	23	23	23	23	23	183	23
2B	50	75	50	75	123	123	123	123	123	123	123	123		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
Restricted Flow Signal Justification 2:					**Both 2A and 2B 100% Fullfilled each of 8 hours**								**Yes** ☐ **No** ☑	
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								**Yes** ☐ **No** ☑	

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☐	NO ☑		**NOT JUSTIFIED**

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	7:00	206	154	674	23 %	23 %
	8:00	206	154	674	23 %	
	9:00	206	154	674	23 %	
	12:00	206	154	674	23 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

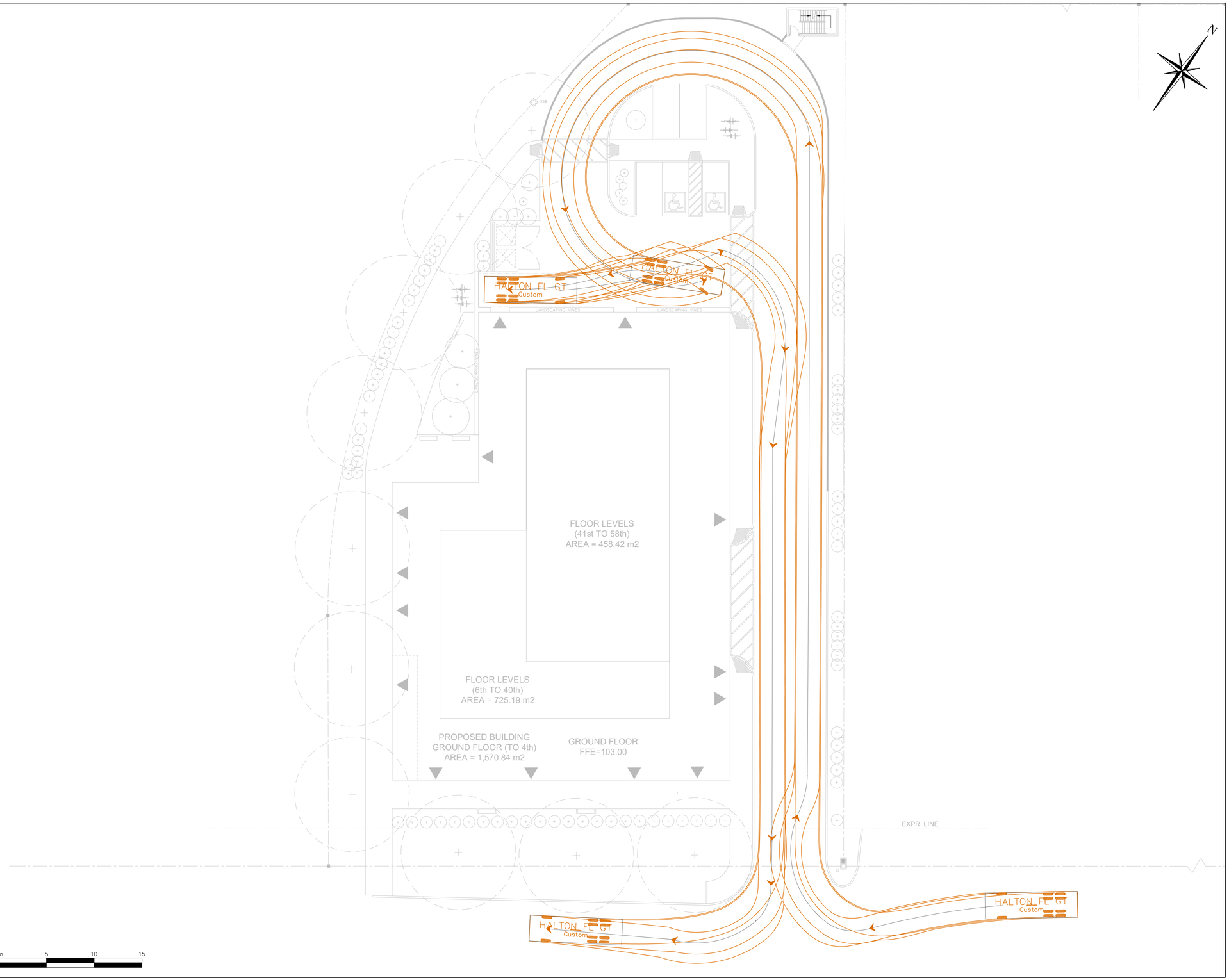
Intersection: South Service Road East and Davis Road / QEW EB Count Date: 2035 Future Total Traffic

Summary Results

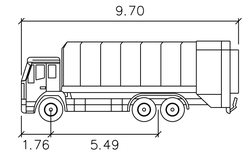
Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	44	%	☐	☑
	B	Crossing Volume	100	%		
2. Delay to Cross Traffic	A	Main Road	23	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	44	%	☐	☑
	B	Justification 2	23	%		
4. 4-Hr Volume			23	%	☐	☑
5. Collision Experience			0	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

APPENDIX L

Vehicle Turning Diagrams



VEHICLE PROFILE



HALTON FL GT

	meters
Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 35.3

1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. DO NOT SCALE THE DRAWINGS.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

No.	ISSUE	DATE: MMM/DD/YYYY
0	ISSUED FOR REVIEW	05/03/2022
1	ISSUED FOR SUBMISSION	08/18/2022

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Project

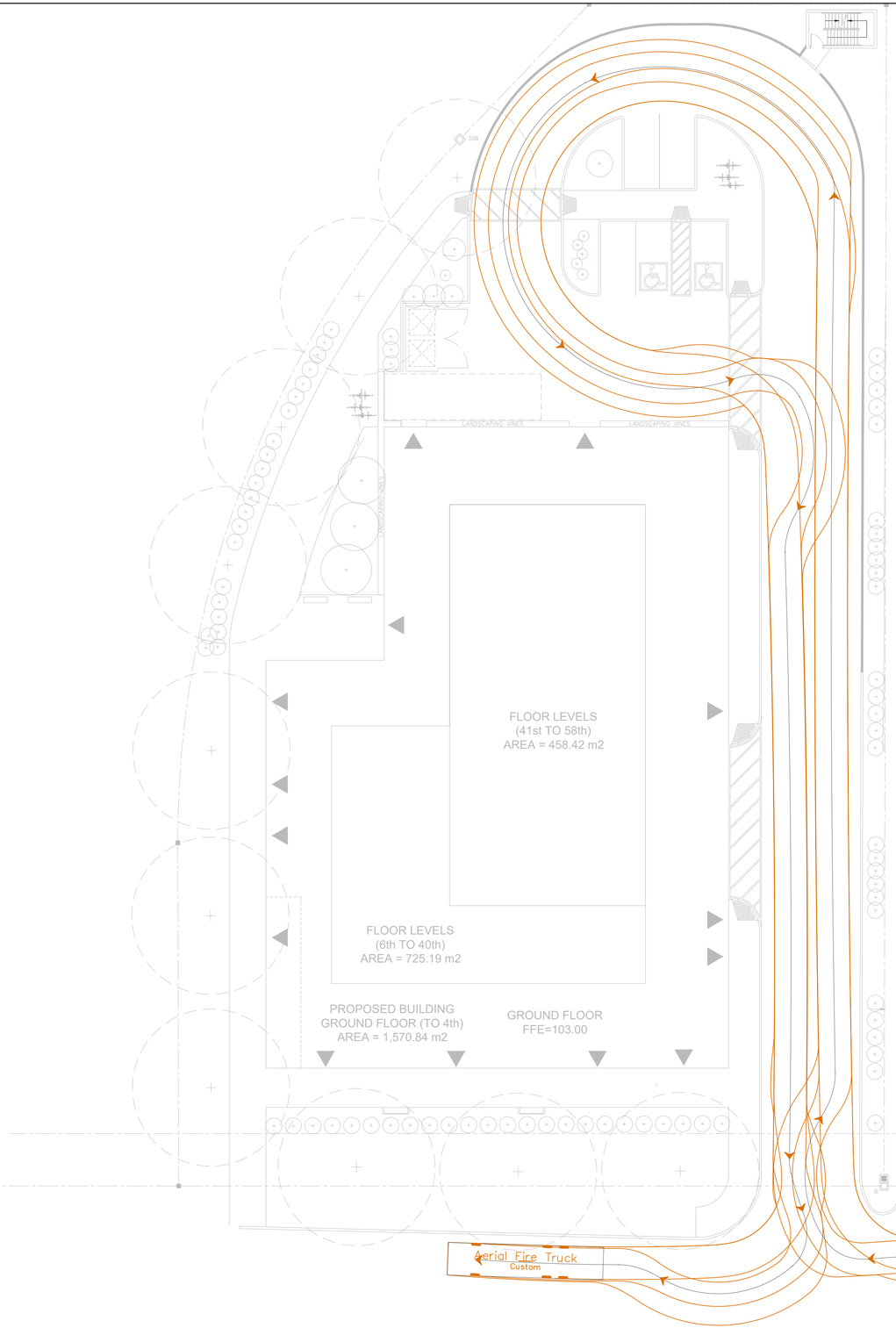
349 DAVIS ROAD
TOWN OF OAKVILLE

Drawing

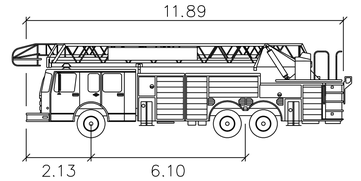
SITE CIRCULATION DIAGRAM
GARBAGE TRUCK

CROZIER
CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON, M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	
T.K.			2259-6324
Check By	Check By	Scale	Drawing
A.H.		1:200	T300



VEHICLE PROFILE



Aerial Fire Truck

	meters
Width	: 2.49
Track	: 2.49
Lock to Lock Time	: 5.0
Steering Angle	: 45.0

No.	ISSUE	DATE: MMM/DD/YYYY
0	ISSUED FOR REVIEW	05/03/2022
1	ISSUED FOR SUBMISSION	08/18/2022

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Project

349 DAVIS ROAD
TOWN OF OAKVILLE

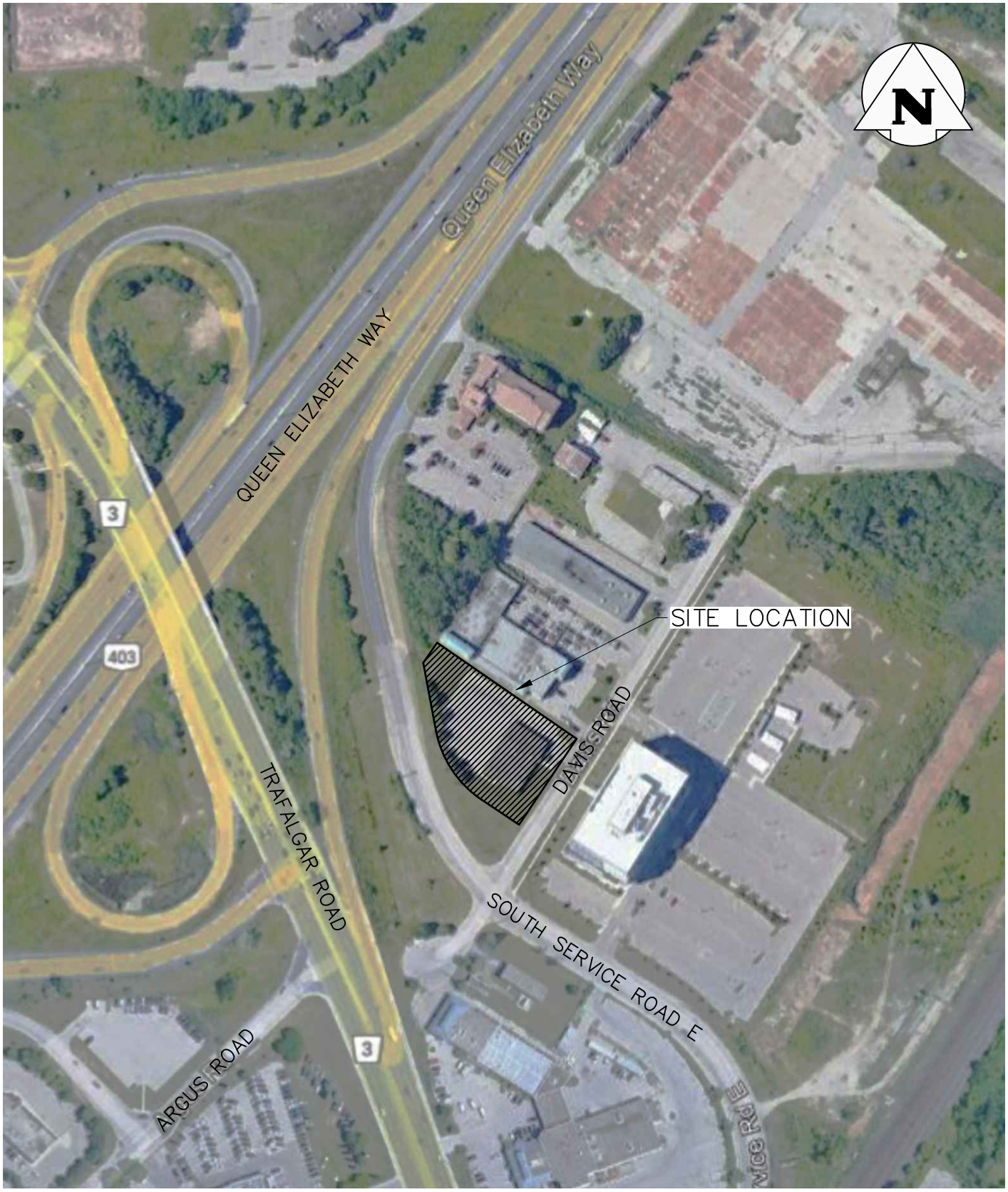
Drawing

SITE CIRCULATION DIAGRAM
AERIAL FIRE TRUCK

CROZIER
CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON, M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By: T.K.	Design By:	Project: 2259-6324	
Check By: A.H.	Check By:	Scale: 1:200	Drawing: T301

FIGURES



349 DAVIS ROAD
TOWN OF OAKVILLE

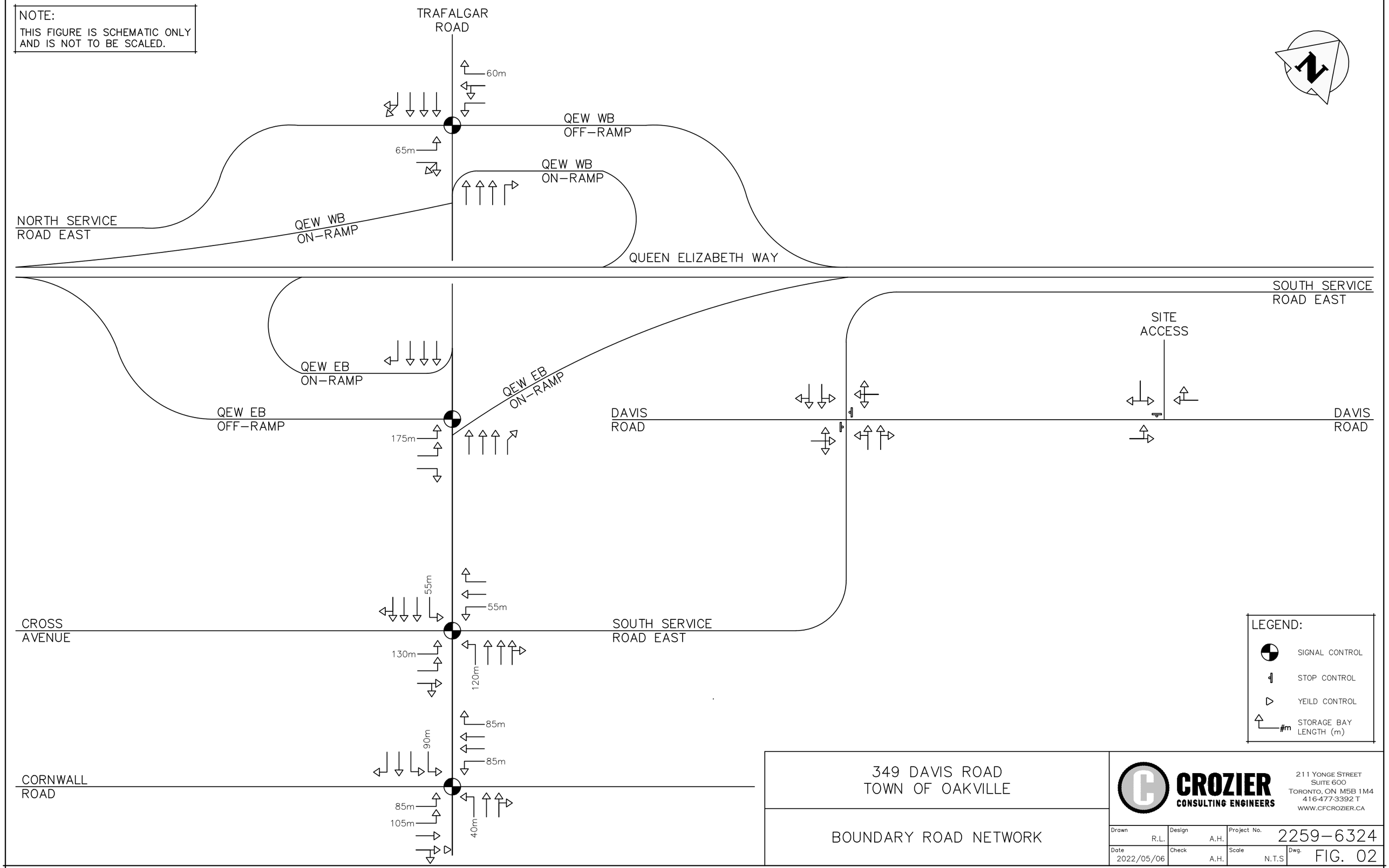
SITE LOCATION

CROZIER
CONSULTING ENGINEERS

211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 01

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- #m STORAGE BAY LENGTH (m)

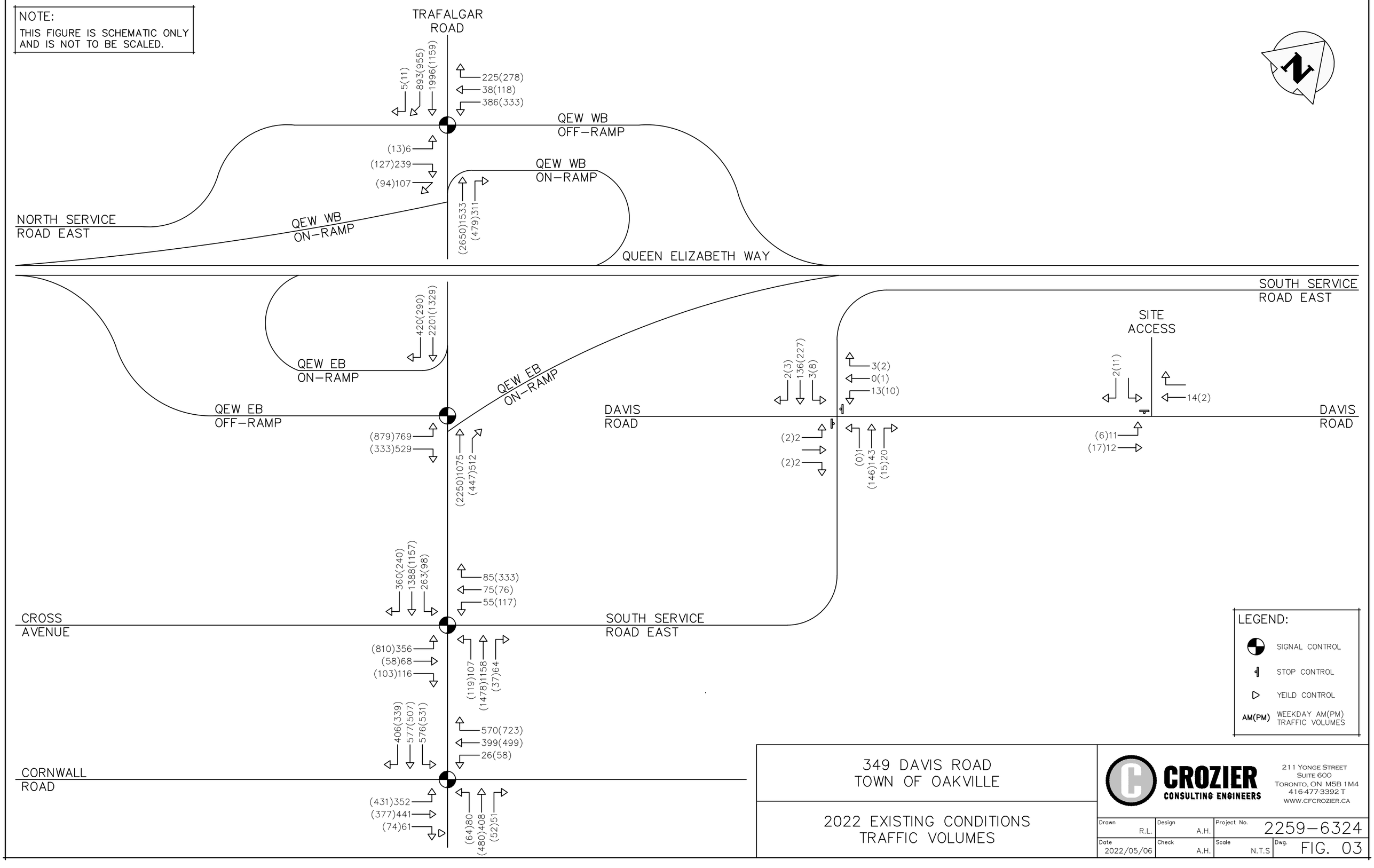
349 DAVIS ROAD
TOWN OF OAKVILLE

BOUNDARY ROAD NETWORK

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 02

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

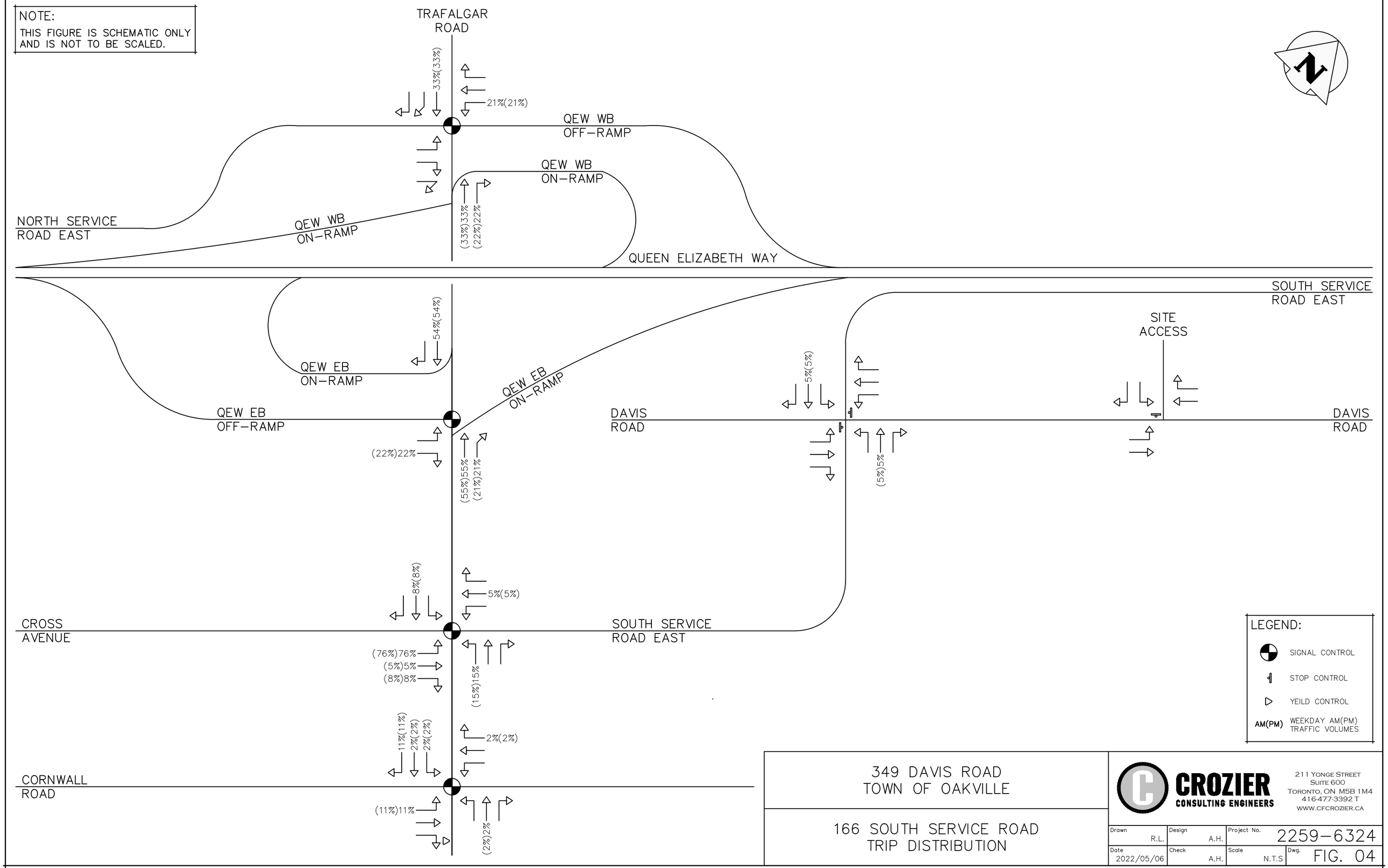
349 DAVIS ROAD
TOWN OF OAKVILLE

2022 EXISTING CONDITIONS TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 03

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

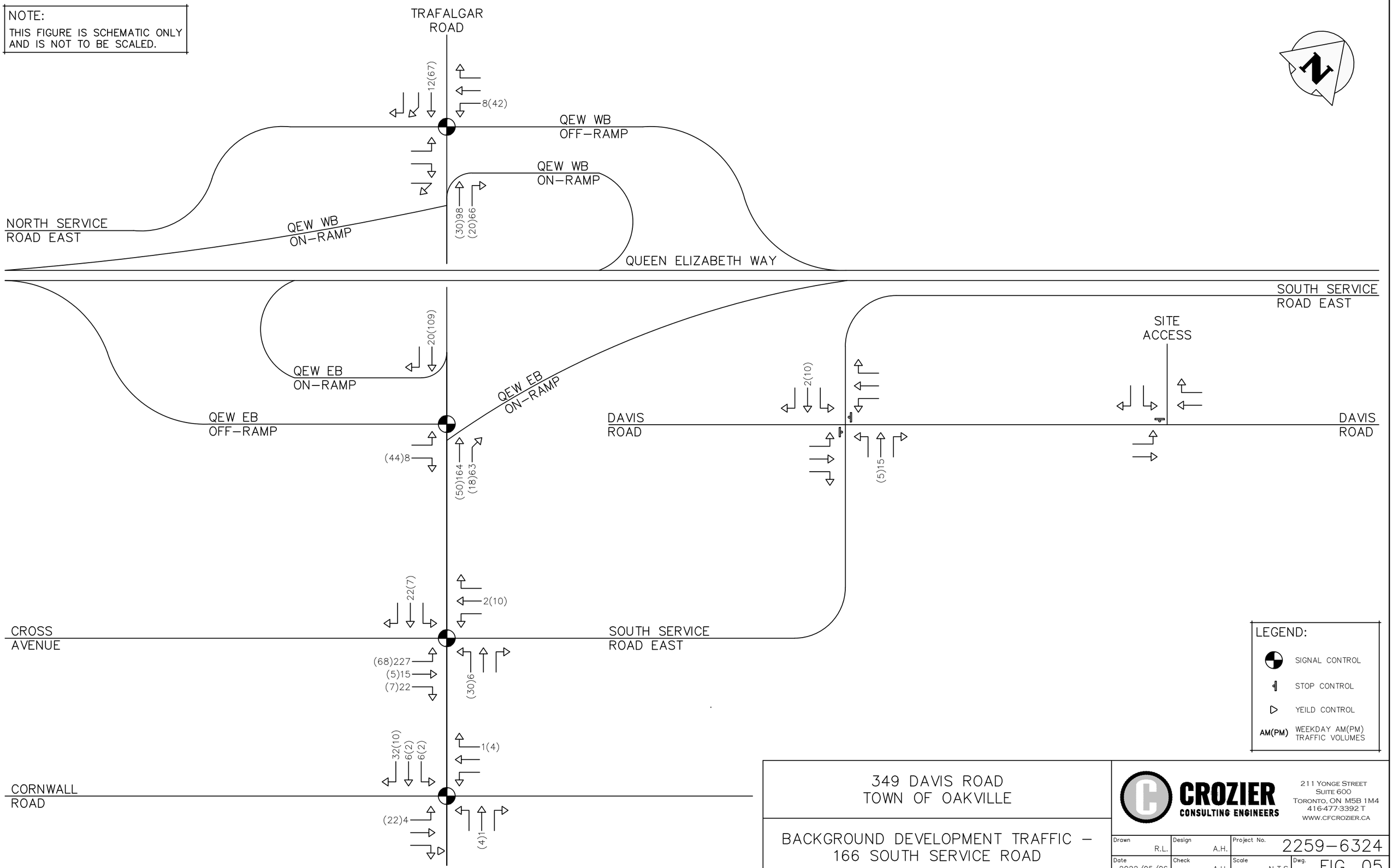
349 DAVIS ROAD
TOWN OF OAKVILLE

166 SOUTH SERVICE ROAD
TRIP DISTRIBUTION

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 04

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

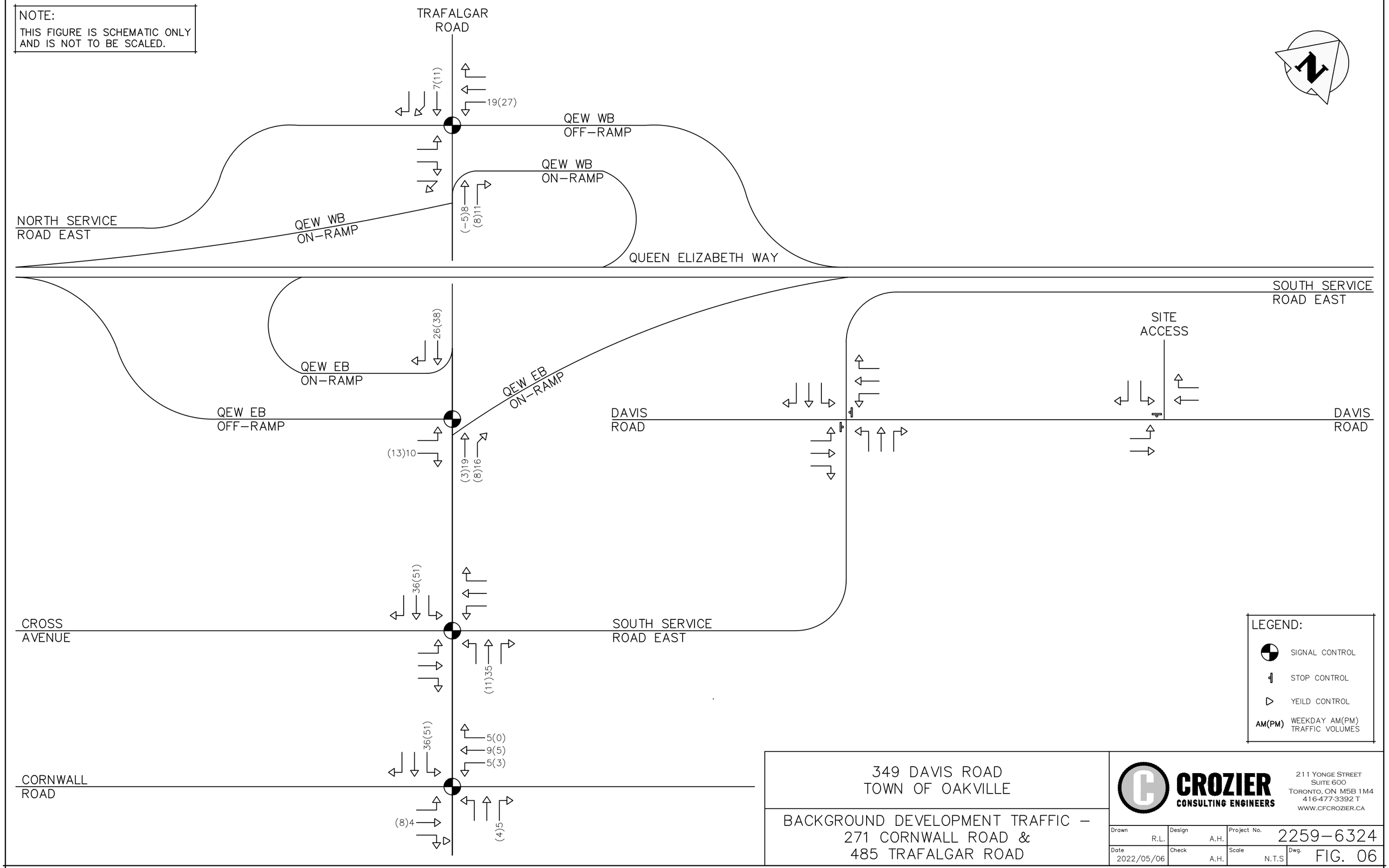
349 DAVIS ROAD
TOWN OF OAKVILLE

BACKGROUND DEVELOPMENT TRAFFIC – 166 SOUTH SERVICE ROAD

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259–6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 05

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

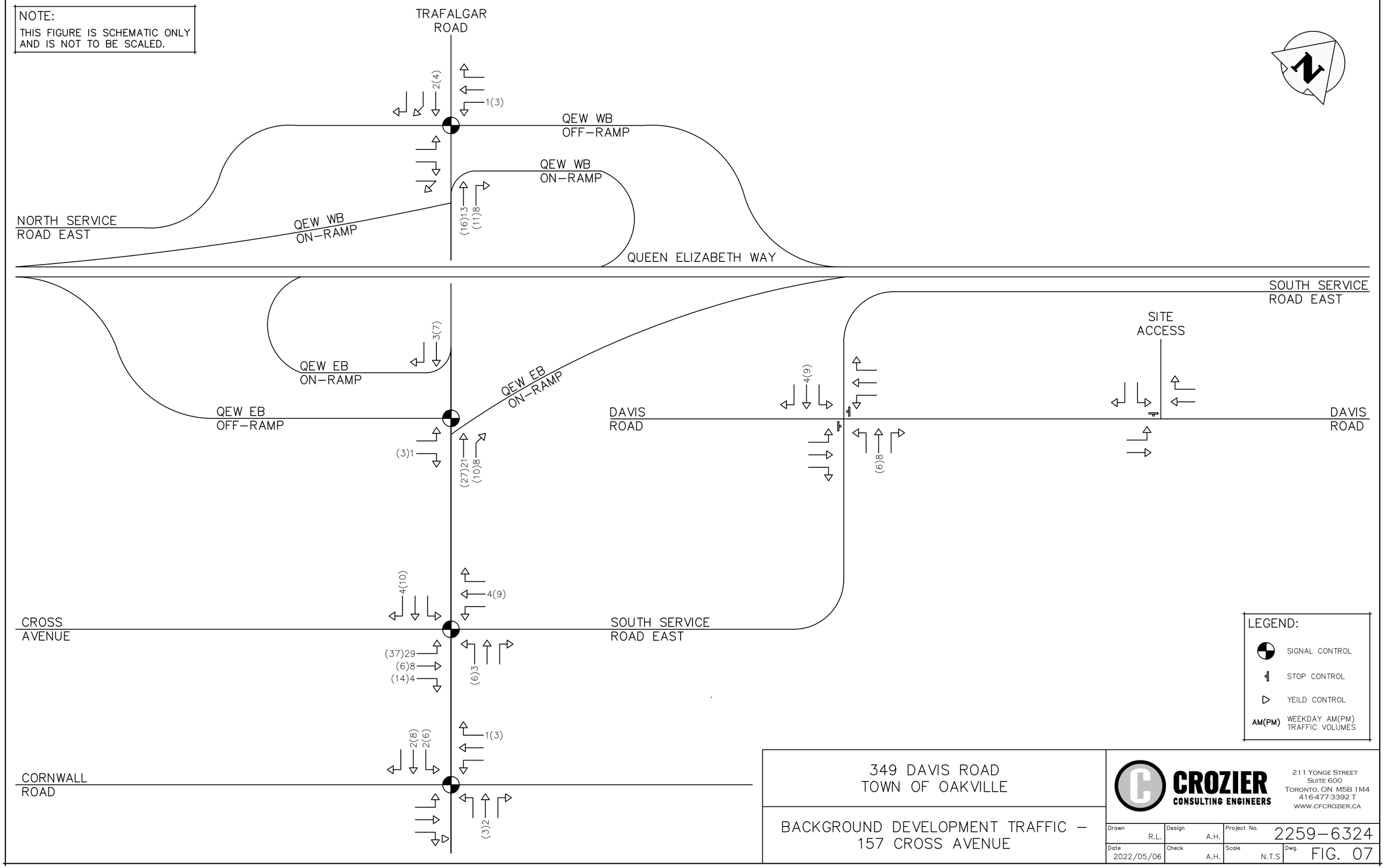
349 DAVIS ROAD
TOWN OF OAKVILLE

BACKGROUND DEVELOPMENT TRAFFIC –
271 CORNWALL ROAD &
485 TRAFALGAR ROAD

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 06

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

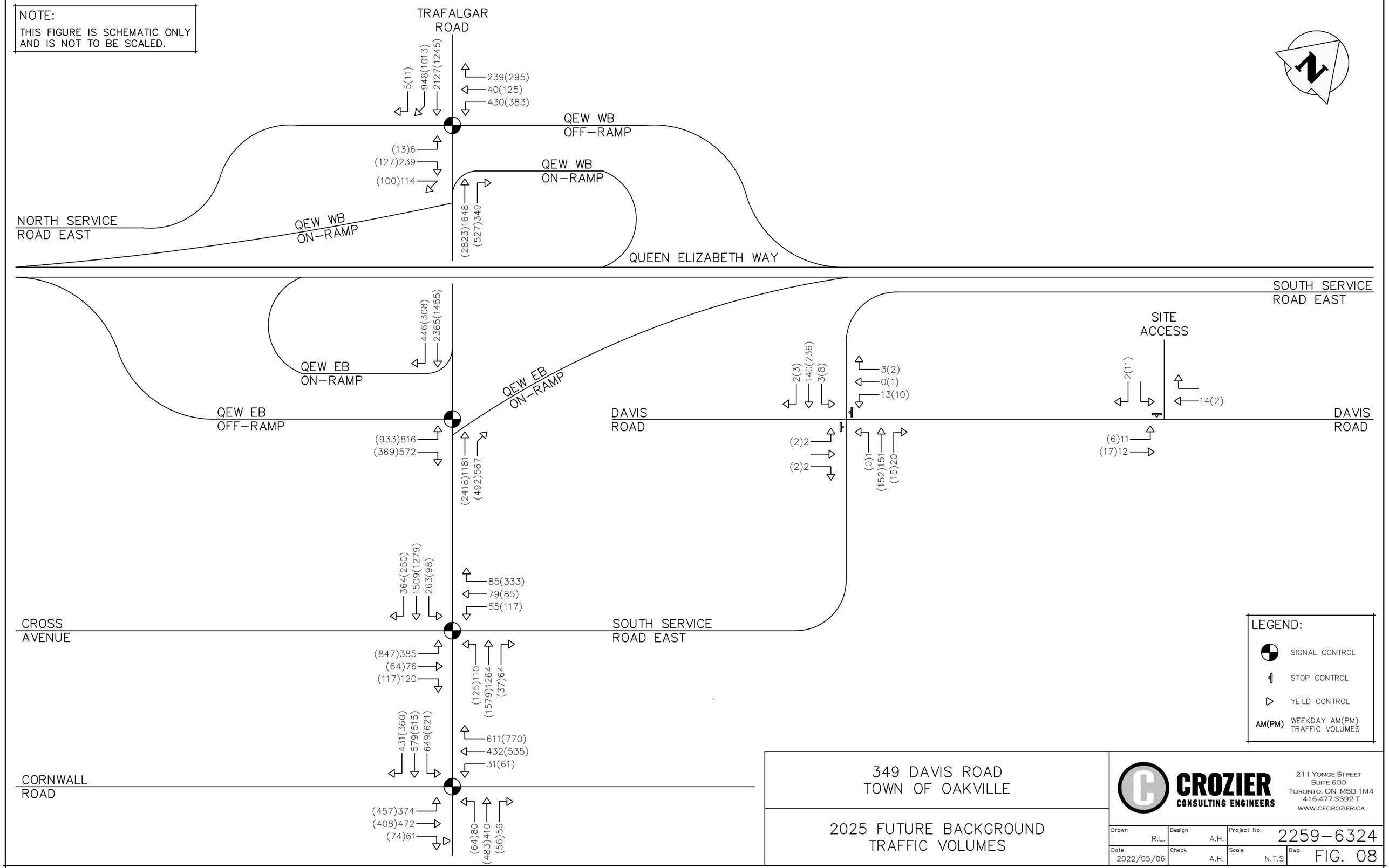
349 DAVIS ROAD
TOWN OF OAKVILLE

BACKGROUND DEVELOPMENT TRAFFIC – 157 CROSS AVENUE

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259–6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 07

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

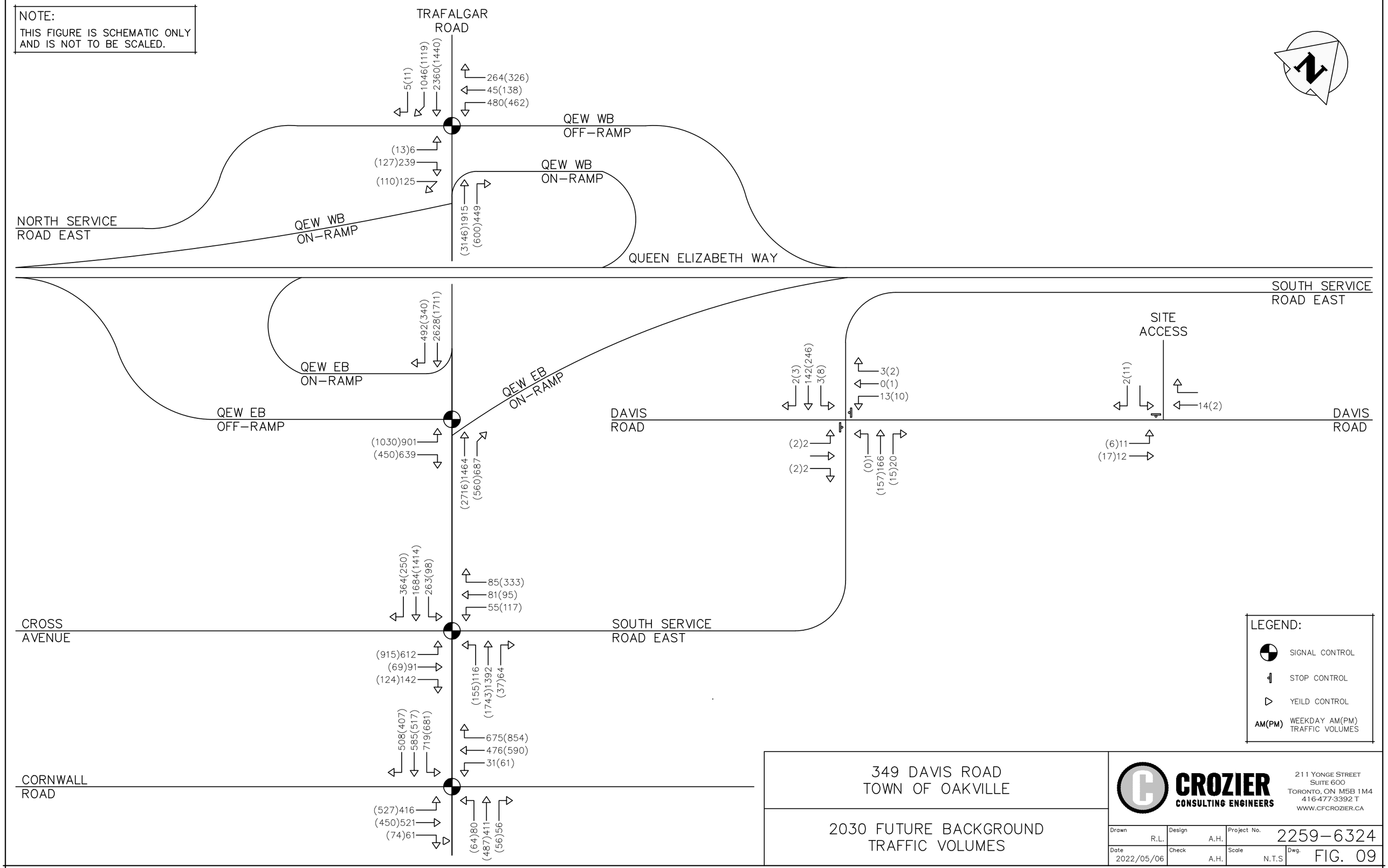
349 DAVIS ROAD
TOWN OF OAKVILLE

2025 FUTURE BACKGROUND TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 08

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

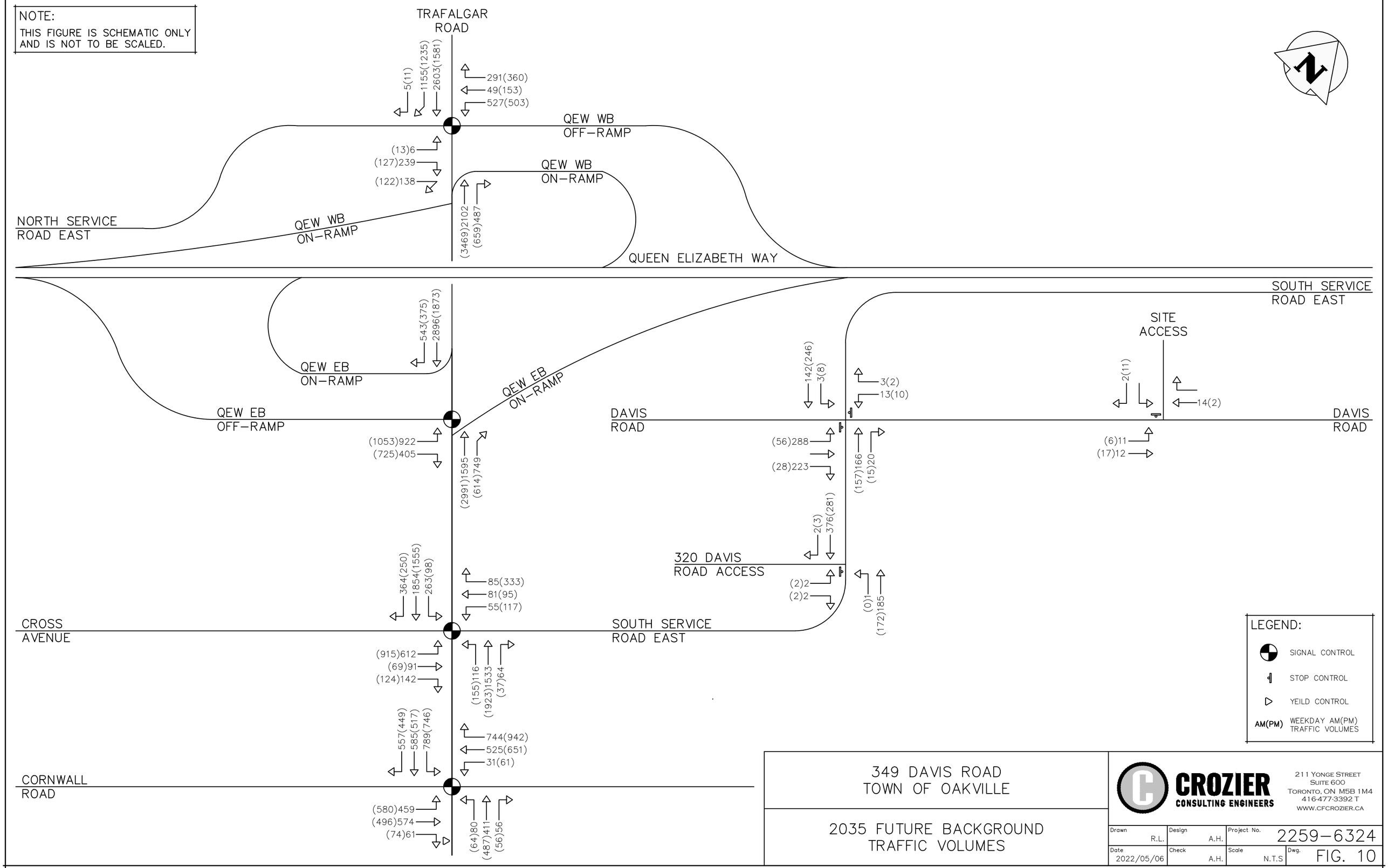
349 DAVIS ROAD
TOWN OF OAKVILLE

2030 FUTURE BACKGROUND TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 09

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

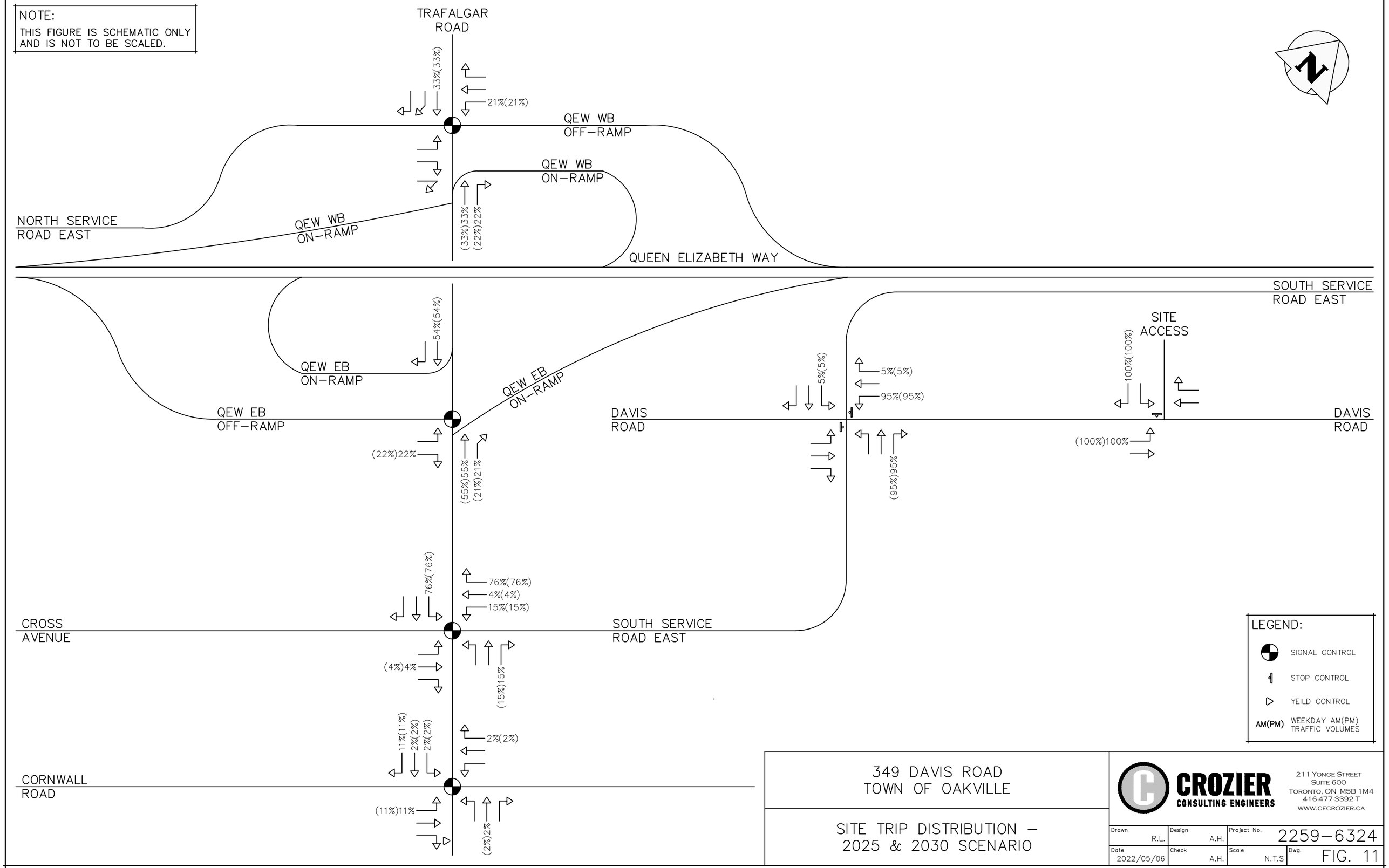
349 DAVIS ROAD
TOWN OF OAKVILLE

2035 FUTURE BACKGROUND TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 10

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

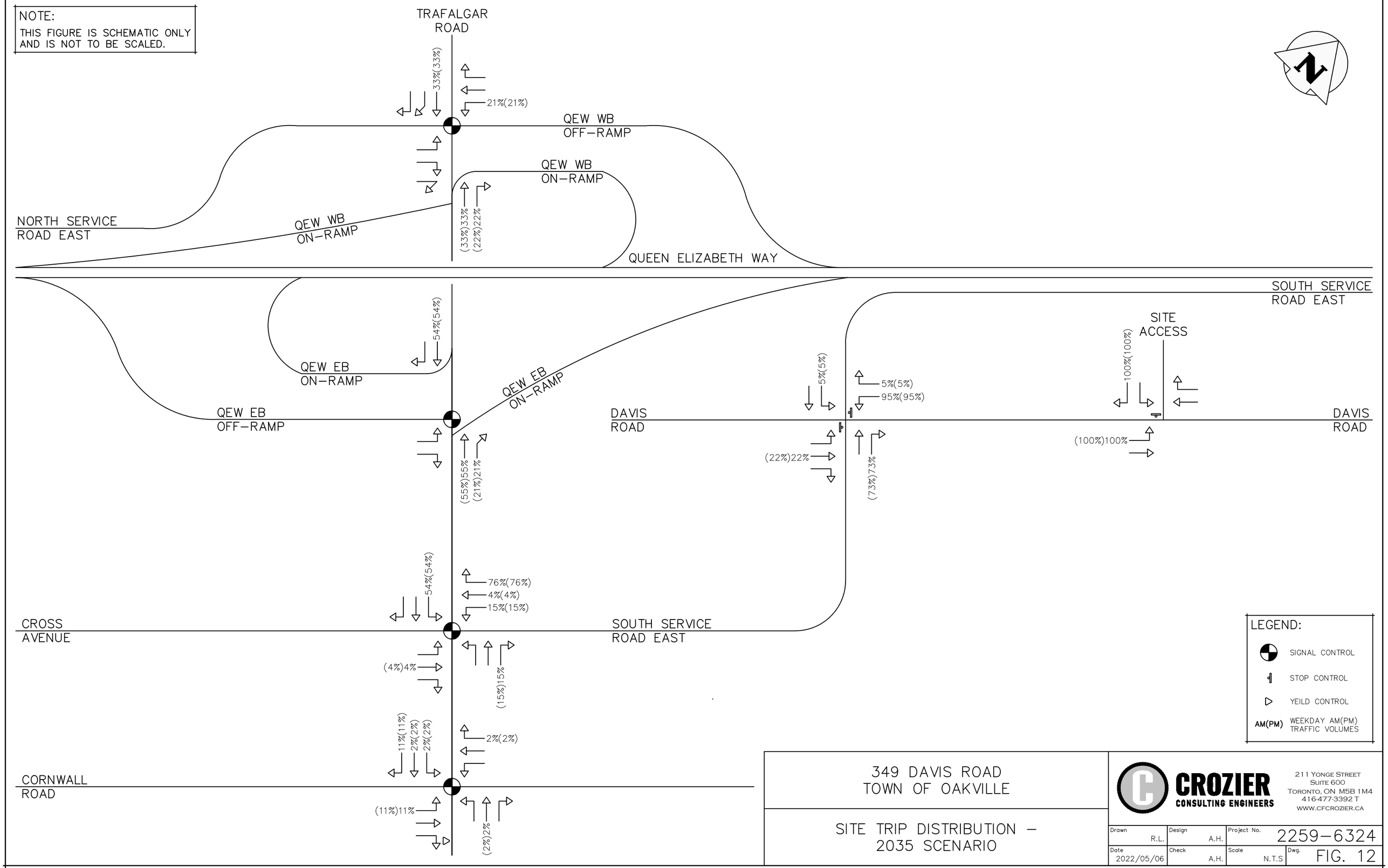
349 DAVIS ROAD
TOWN OF OAKVILLE

SITE TRIP DISTRIBUTION – 2025 & 2030 SCENARIO

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259–6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 11

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

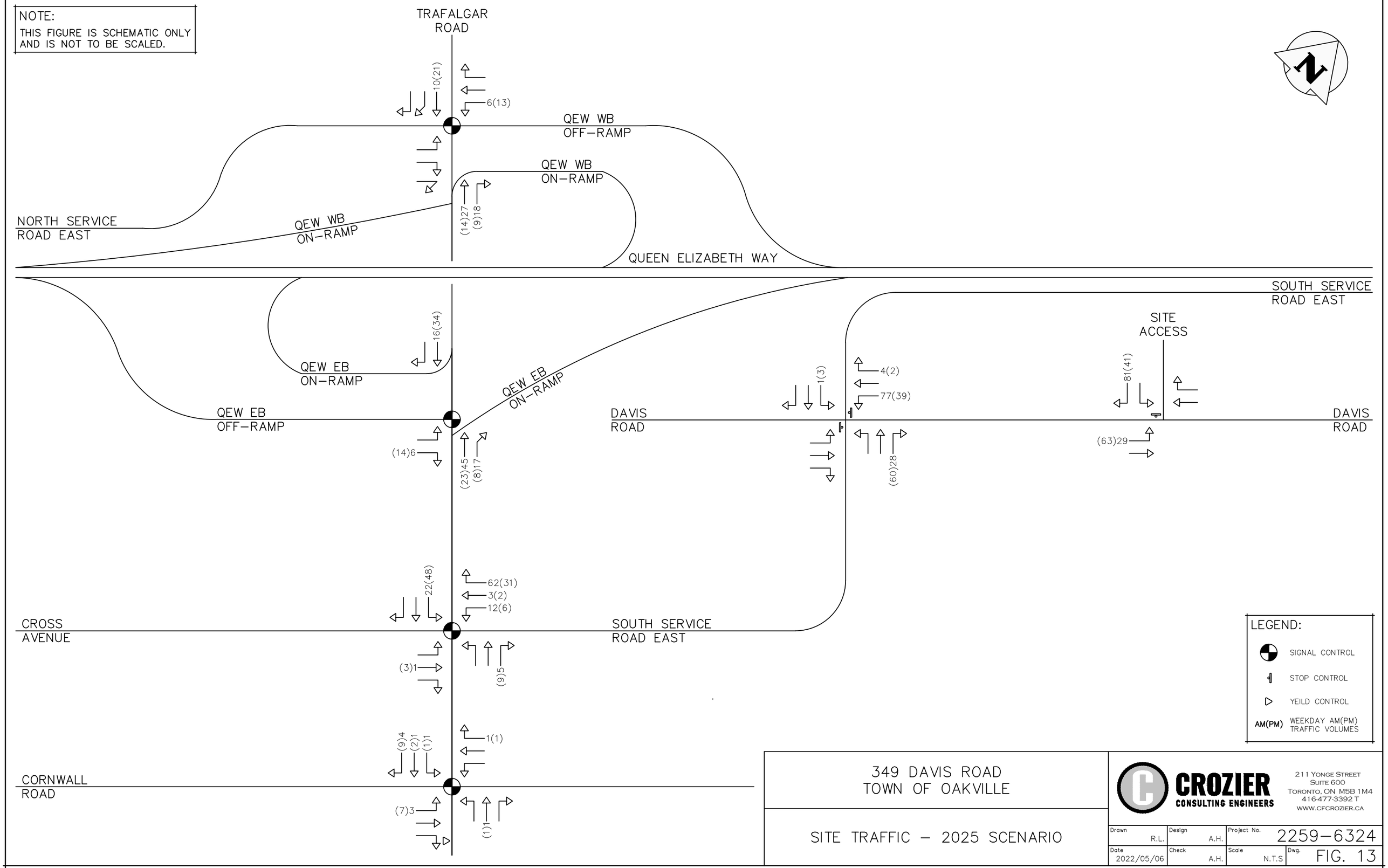
349 DAVIS ROAD
TOWN OF OAKVILLE

SITE TRIP DISTRIBUTION – 2035 SCENARIO

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259–6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 12

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

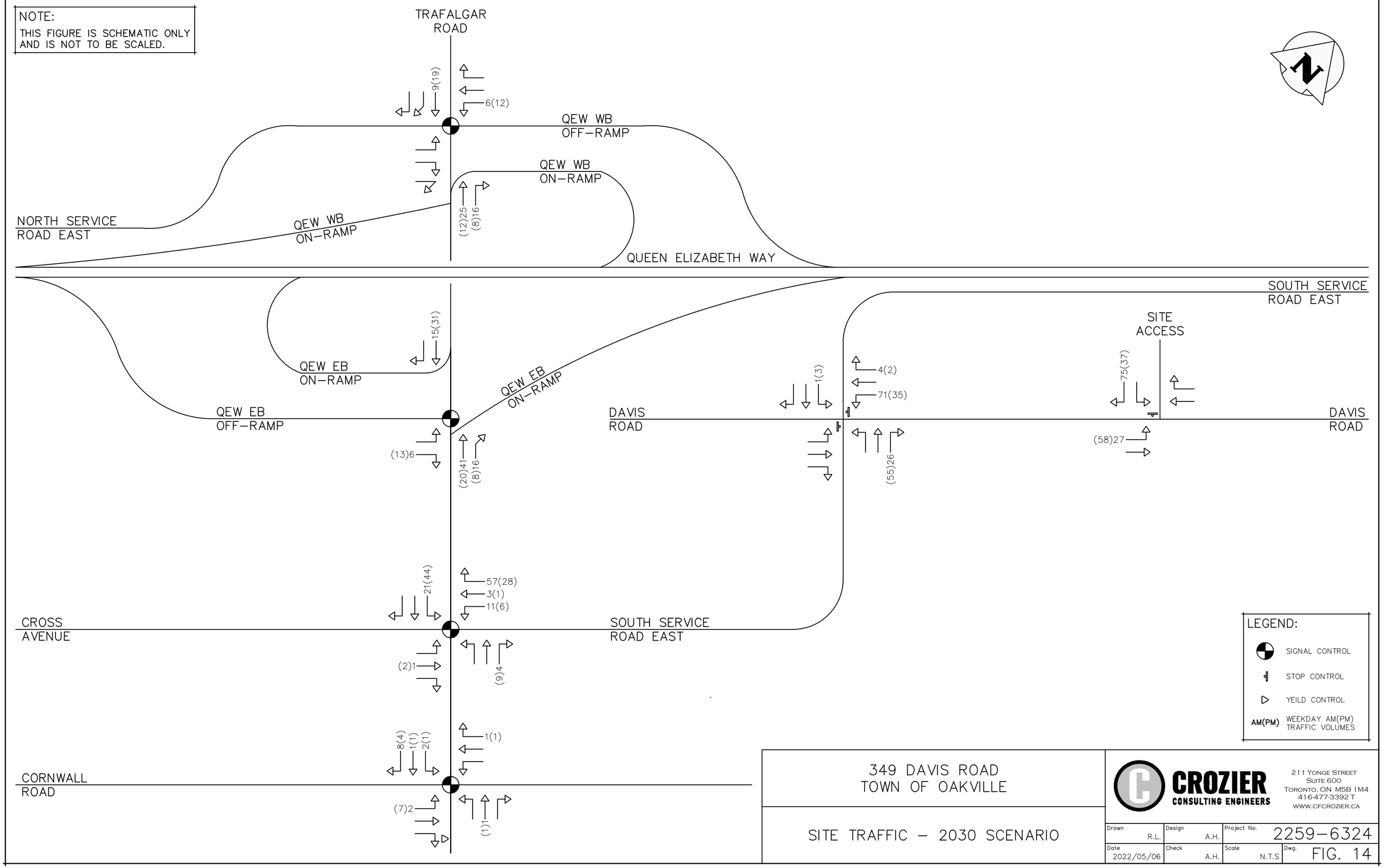
349 DAVIS ROAD
TOWN OF OAKVILLE

SITE TRAFFIC – 2025 SCENARIO

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259–6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 13

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

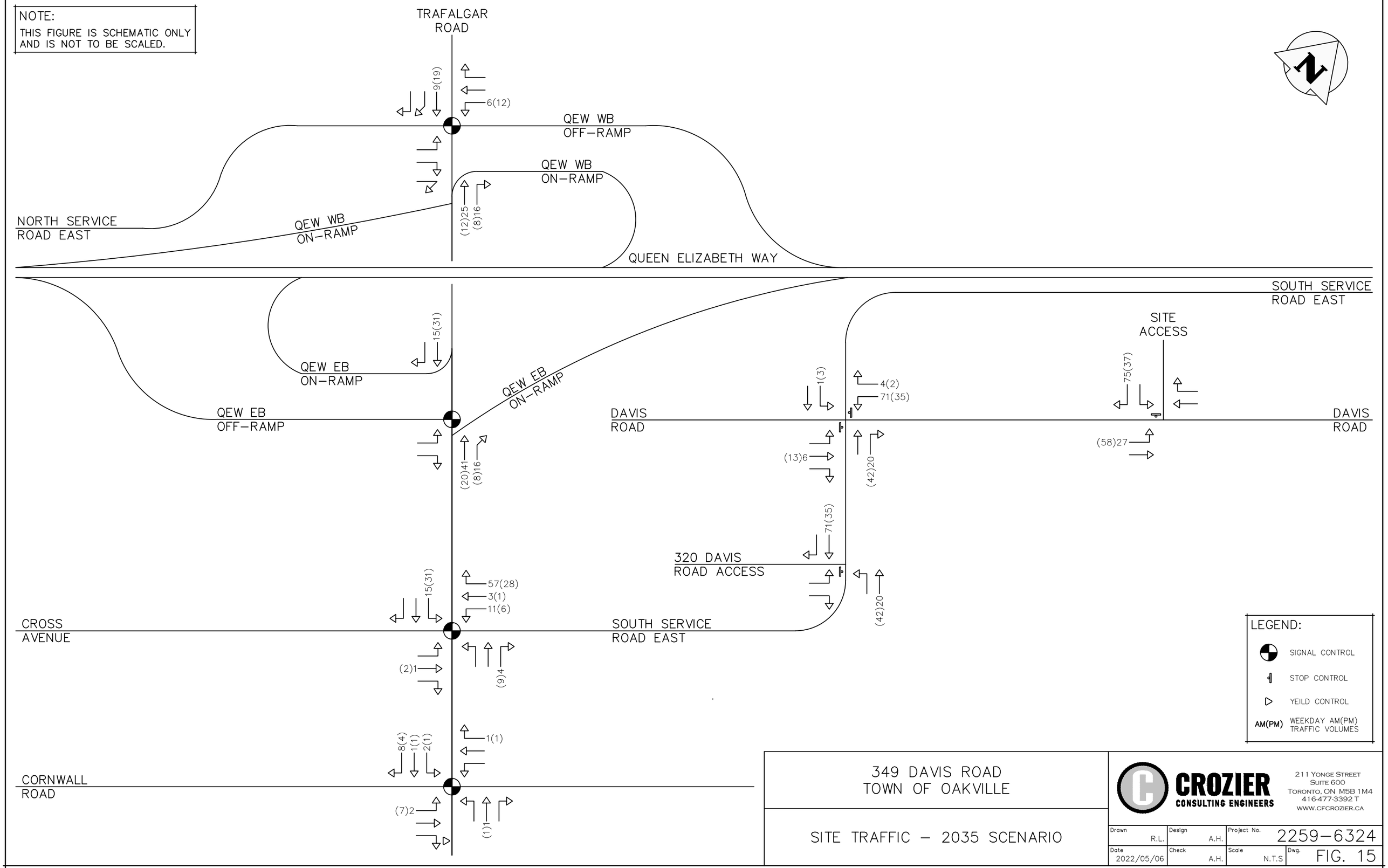
349 DAVIS ROAD
TOWN OF OAKVILLE

SITE TRAFFIC – 2030 SCENARIO

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259–6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 14

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

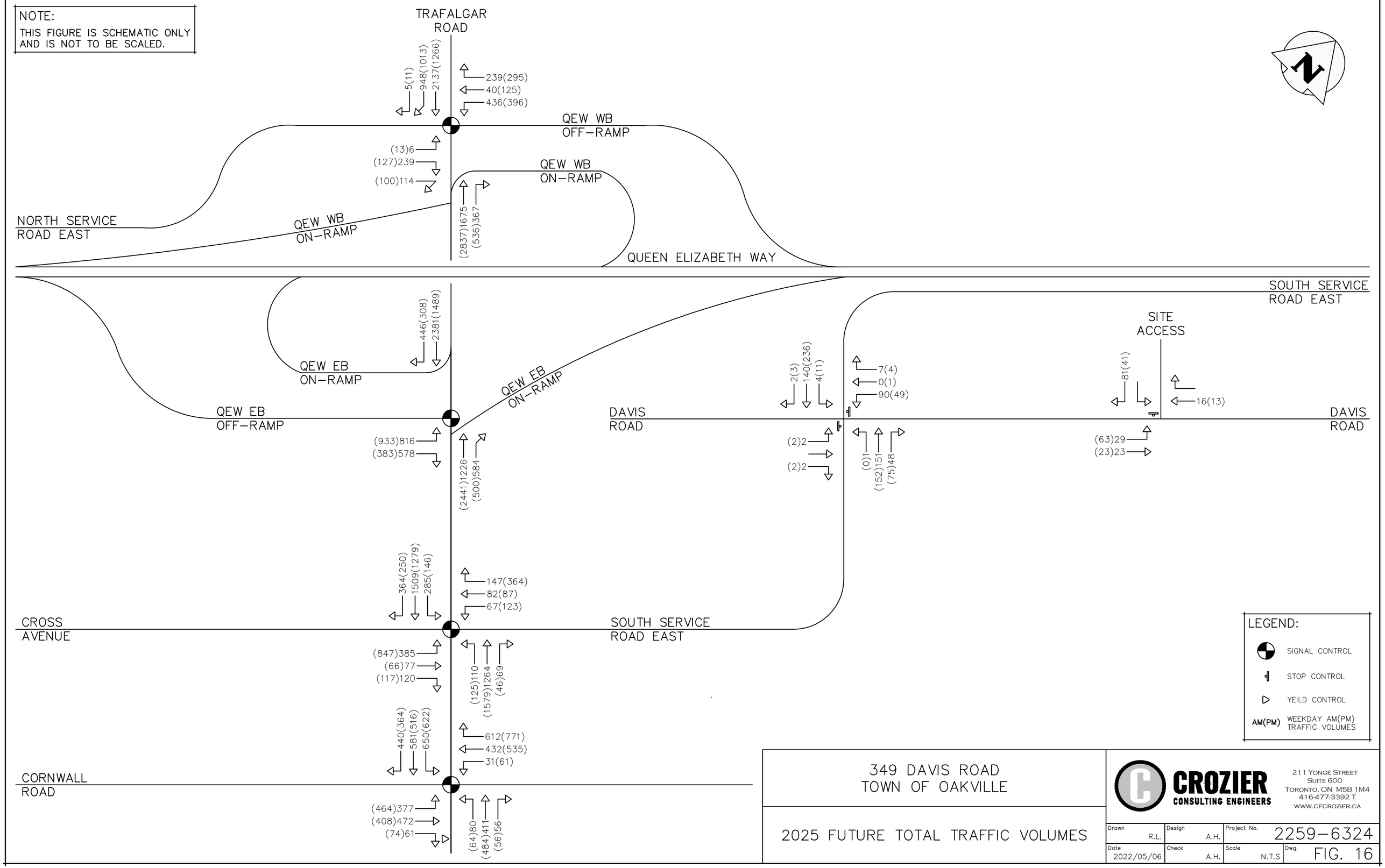
349 DAVIS ROAD
TOWN OF OAKVILLE

SITE TRAFFIC – 2035 SCENARIO

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 15

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

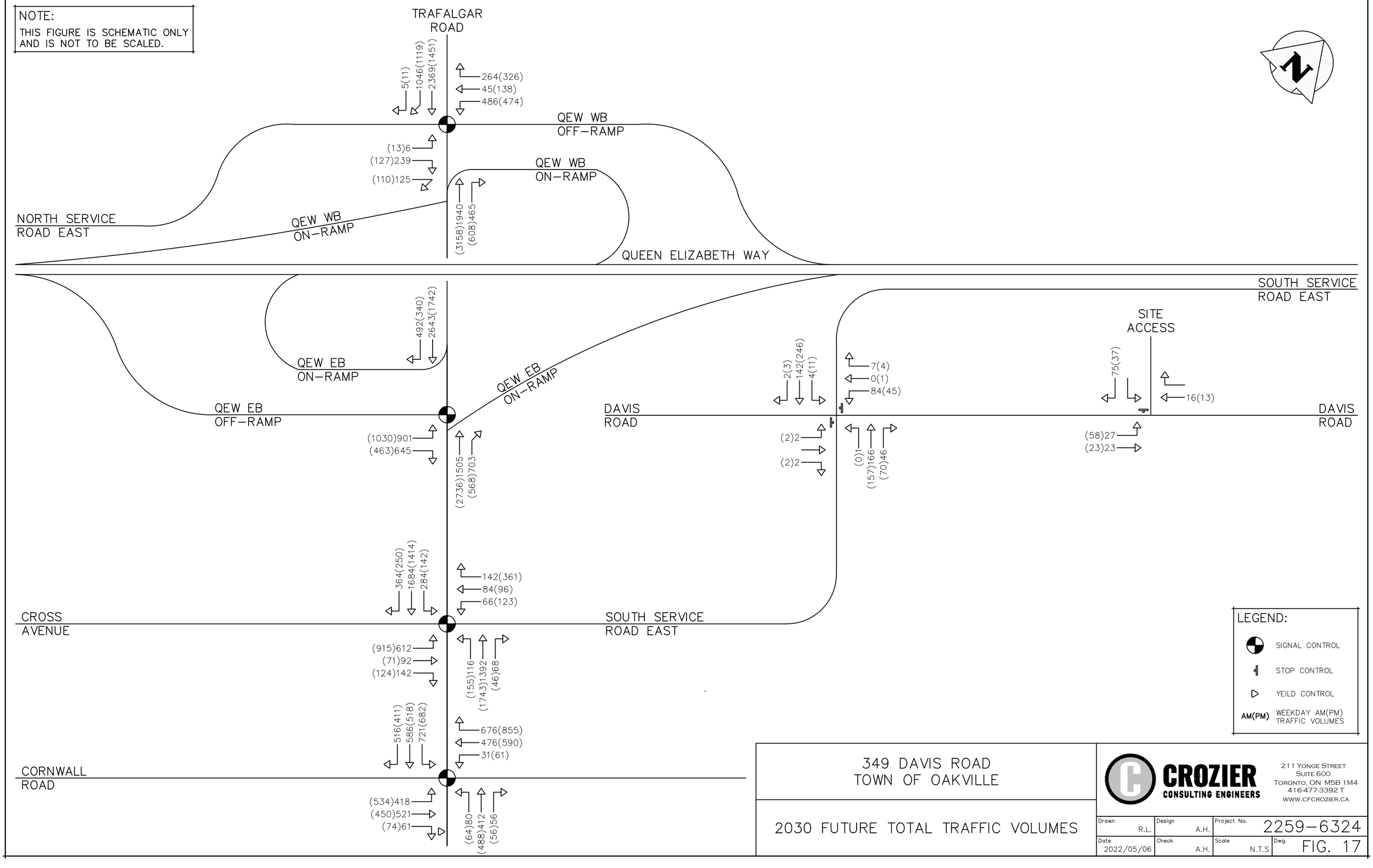
349 DAVIS ROAD
TOWN OF OAKVILLE

2025 FUTURE TOTAL TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 16

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

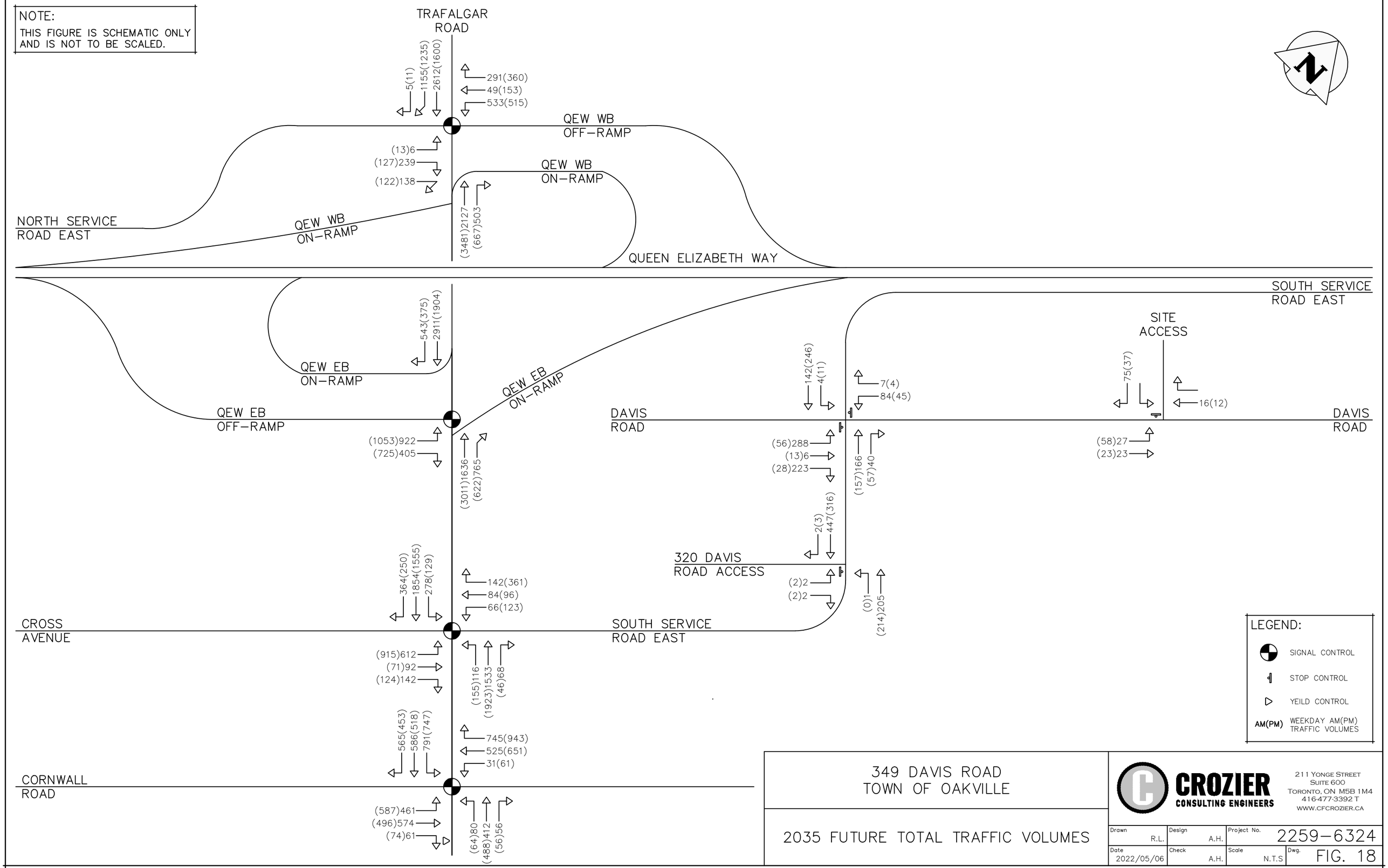
349 DAVIS ROAD
TOWN OF OAKVILLE

2030 FUTURE TOTAL TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 17

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

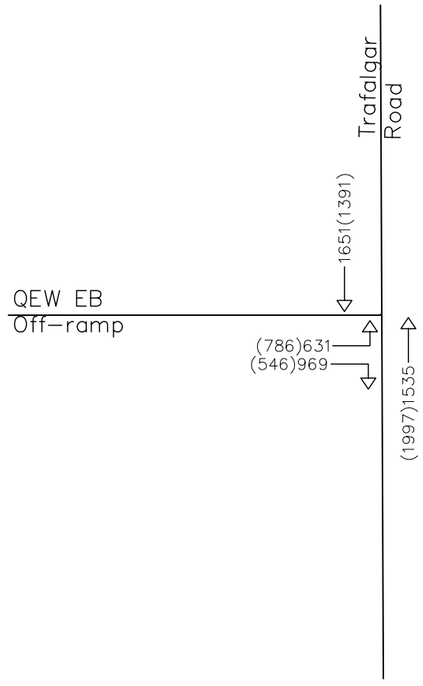
349 DAVIS ROAD
TOWN OF OAKVILLE

2035 FUTURE TOTAL TRAFFIC VOLUMES

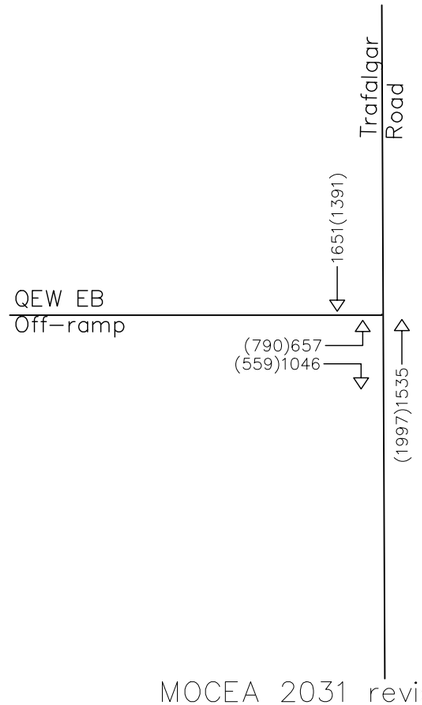
CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 18

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



MOCEA 2031 preferred scenerio
volumes (with underpass off-ramp)



MOCEA 2031 revised volumes
(without underpass off-ramp)

2031 Future Traffic Volumes – MOCEA Scenarios Comparison

349 DAVIS ROAD
TOWN OF OAKVILLE

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
I.A.	I.A.		2259-6324
Date	Check	Scale	Dwg.
2023/03/22	A.H.	N.T.S	FIG 19