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Transportation Impact Study

PROPOSED MIXED-USE DEVELOPMENT

3005 Dundas Street West
OAKVILLE, ONTARIO

April 2023
Project No: NT-22-271

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nexTrans CONSULTING ENGINEERS

NextEng Consulting Group Inc.

April 27, 2023

Attention: Arash Kamali

Enirox 3005 Dundas LP
101 Railside Road
Toronto, ON M3A 1B2

Re: Transportation Impact Study
Proposed Mixed-Use Development
3005 Dundas Street West, Town of Oakville
Our Project No. NT-22-271

Nextrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study for the above noted site in support of proposed Official Plan Amendment, Zoning By-law Amendment and Site Plan applications for a proposed mixed-use development.

The proposed residential development is located at 3005 Dundas Street West, north-west quadrant of the Bronte Road and Dundas Street West intersection, in the Town of Oakville. The subject site is currently vacant. The proposed mixed-use development consists of two high-rise towers (27-storey and 30-storey, with 3-storey podiums), for a total 690 residential dwelling units and 569.43 m^2 of ground related retail gross floor area. The proposed development full moves access is provided via Old Bronte Road. The proposed development also provides a total of 698 vehicle parking spaces, with 552 spaces for residential and 146 spaces for visitor and retail components.

The transportation impact study is prepared in accordance with the Town of Oakville and the Region of Halton Transportation Impact Study guidelines, and consistent with background transportation studies conducted in the area. The Study concludes that the proposed development can adequately be accommodated by the existing and future transportation network, future transit services for the area, as well as the recommended measures identified in this report.

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

Yours truly,

Nextrans Consulting Engineers
A Division of NextEng Consulting Group Inc.

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Report Submission Record

Identification	Date	Description of issued and/or revision
Final Report	April 27, 2023	For Final Submission

EXECUTIVE SUMMARY

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by Enirox 3005 Dundas LP (the 'Client') to undertake a Transportation Impact Study in support of proposed Official Plan Amendment, Zoning By-law Amendment and Site Plan applications for a proposed mixed-use development. The proposed residential development is located at 3005 Dundas Street West, north-west quadrant of the Bronte Road and Dundas Street West intersection, in the Town of Oakville.

The transportation impact study is prepared in accordance with the Town of Oakville and the Region of Halton Transportation Impact Study guidelines, and consistent with background transportation studies conducted in the area.

Proposed Development

The subject site is currently vacant. The proposed mixed-use development consists of two high-rise towers (27-storey and 30-storey, with 3-storey podiums), for a total 690 residential dwelling units and 569.43 m^2 of ground related retail gross floor area.

Proposed Development Access

The proposed development full moves access is provided via Old Bronte Road, at the most northerly limit of the site. The intersection capacity analysis indicates that the proposed access is expected to operate at acceptable levels of service with minimum delay or queue. The lane configurations include:

- One inbound lane (minimum 3.5 m width);
- One outbound lane (minimum 3.5 min width); and
- One shared southbound through/right lane and one northbound shared through/left lane on Old Bronte Road

Capacity Analysis

The proposed development is expected to generate:

- 104 total two-way transit trips (55 inbound and 49 outbound) and 48 total two-way transit trips (28 inbound and 20 outbound) during the morning and afternoon peak hours, respectively; and
- 176 total two-way auto trips (61 inbound and 115 outbound) and 224 total two-way auto trips (124 inbound and 100 outbound) during the morning and afternoon peak hours, respectively

Auto Mode Assessment

Based on the intersection capacity analysis, under the existing, future background and future total traffic conditions, all unsignalized intersections considered in the analysis are expected to operate at acceptable levels of service during both the morning and afternoon peak hours. The signalized intersection of Bronte Road/William Halton Parkway intersection is also expected to operate at acceptable levels of service, with no improvements are required during both the morning and afternoon peak hours. Some signal timing optimization may be required for the existing condition during the afternoon peak hour. This improvement is very minimal.

The proposed development access is also expected to operate at acceptable levels of service with minimum delays or queues during both the morning and afternoon peak hours.

However, under all horizons (existing, future background and future total conditions) the signalized intersection of Dundas Street W/Bronte Road intersection are expected to operate at high delay and queues during both the morning and afternoon peak hours. This is due to significant growth in the area through background corridor growth and two major background developments. It should be noted that the proposed development adds very little delays to the existing boundary roadway intersections.

Potential Mitigation Measures for Auto Mode

To address the operational shortfall of the Dundas Street W/Bronte Road intersection, Nextrans recommends the following potential improvements:

- Signal timing optimization – the analysis indicates that the critical movements can improve slightly better

- Widening of Bronte Road to provide one additional through lane, and provide an exclusive westbound right turn lane for Dundas Street W, with the combination of signal timing optimization – the analysis indicates that this combination will significantly provide additional capacity for the intersection and addresses the critical movements.

It is Nextrans understanding that Bronte Road improvements have been identified in the Halton Region Transportation Master Plan for the 2031 horizon, with the widening of Bronte Road to provide 4 general purpose lanes and two HOV/transit lane. Given that these improvements are beyond the horizon year considered in this analysis and the analysis indicates that signal timing optimization can help in the interim conditions, these improvements can be delayed until 2031 as per the proposed Transportation Master Plan improvements. The potential signal timing plans with and without improvements are illustrated below.

Nextrans recommends that the Region and the Town require all new developments to management vehicle parking supply and provide TDM measures to discourage new residents from using private vehicles and to reduce the numbers of single-occupant-vehicle to and from this area.

Active Transportation Mode Assessment

Walking

Under the existing conditions, sidewalks are available on the south side of Dundas Street W, both sides on Old Bronte Road south of Dundas Street W, and both sides on Bronte Road south of Dundas Street W. Sidewalk is available on the east side of Old Bronte Road north of Dundas Street W, and south side of William Halton Parkway east of Bronte Road. It is Nextrans' understanding that sidewalks will be provided on both sides of all internal streets within the North Oakville West Secondary Plan to facilitate pedestrians. Therefore, in the future, a complete sidewalk network will be provided and constructed by the proposed developments in the area.

As part of the proposed development, sidewalks will be maintained and provided on Old Bronte Road and Dundas Street W, along the frontage of the site. Sufficient illumination will be provided along frontage of the site to enhance security for the pedestrians. Direct sidewalk connections from the proposed building main entrances to these sidewalk facilities will also be provided. **Figure 14** of this Study illustrates the potential sidewalks along the frontage of the proposed development.

Cycling

Currently, there are dedicated cycling routes along Colonel William Parkway, Grand Oak Trail, Pine Glen Road and Postmaster Drive in the vicinity of the study area. There are also multi-use trails along Dundas Street W east of Bronte Road and on Bronte Road south of Dundas Street W. Similar to the walking network, it is Nextrans' understanding that cycling facilities will be constructed in phases, as per the Town's proposed cycling network phasing and priority projects. On this basis, the proposed development will support the Town's initiative with regards to the cycling facility, where appropriate.

As part of the proposed development, a total of 200 bicycle parking spaces will be provided to encourage future residents from the proposed development to use active modes of transportation to school, to work, and to other destinations without driving a private car. Nextrans also recommends that the proposed development provides a publicly accessible bicycle repair station on-site. The final location will be provided as part of the final site plan, where appropriate. The potential location is illustrated in **Figure 14** of this Study.

Transit Mode Assessment

The proposed development is expected to generate 104 total two-way transit trips (55 inbound and 49 outbound) and 48 total two-way transit trips (28 inbound and 20 outbound) during the morning and afternoon peak hours, respectively. The area is current serviced by three existing Oakville Transit Bus Routes 5 & 5A Dundas, 34 Pine Glen and 13 Westoak Trails.

As the proposed development will be located close to the future primary route on Dundas Street W, and secondary routes on William Halton Parkway and Bronte Road, the proposed development will have good transit service in the future. Therefore, there is sufficient transit capacity to accommodate the anticipated transit ridership from the proposed development under the horizon year considered. No additional improvements are required beyond the planned and proposed transit network in the area.

Vehicle Parking Assessment

Based on the assessment noted above, the proposed development would be required to provide a maximum of 1,020 vehicle parking spaces, inclusive of residential, visitor and retail uses. These vehicle parking rates are excessive and do not support the sustainability vision of the North Oakville Secondary Plan and the Town Official Plan.

Based on the recommended vehicle parking rates, the proposed development will provide a total of 698 vehicle parking spaces for both residential, visitor and retail components. This includes 552 residential vehicle parking spaces for residential, 138 for visitor and 8 spaces for retail use. The proposed development will also provide a minimum of 23 accessible parking spaces as part of the total spaces provided as noted above.

Bicycle Parking Assessment

Based on the assessment indicated above, the proposed development is required to provide a total of 200 bicycle parking spaces, with 150 spaces for residential and 50 spaces for visitor and retail components, based on the Notwithstanding Clause 5.7 (iv) of the Zoning By-Law no. 2009-189.

Transportation Demand Management Measures and Incentives

The Report identifies and recommends appropriate Transportation Demand Management measures and incentives to support active transportation and transit, to meet the objectives and requirements of the Town and the Region. These potential measures are included in Section 11 of this Study.

Study Conclusions and Recommendations

Based on the findings of this Study, the following recommendations are provided:

- The Town and the Region approve the proposed mixed-use development;
- The proposed development only provides the recommended vehicle parking rates outlined in this Study;
- The proposed development provides direct shared pedestrian/bicycle connections from the proposed development to Dundas Street W and Old Bronte Road, where appropriate;
- Provide a total of 200 bicycle parking spaces on-site;
- Provide two bicycle repair stations on-site;
- The proposed development implements the TDM measures and incentives identified in this report to support active transportation and transit and to reduce the numbers of single-occupant-vehicle trips to and from the proposed development; and
- The Region and the Town to monitor the intersection of Dundas Street W and Bronte Road for potential road improvements such as additional through lane on Bronte Road and westbound exclusive right turn lane for Dundas Street W

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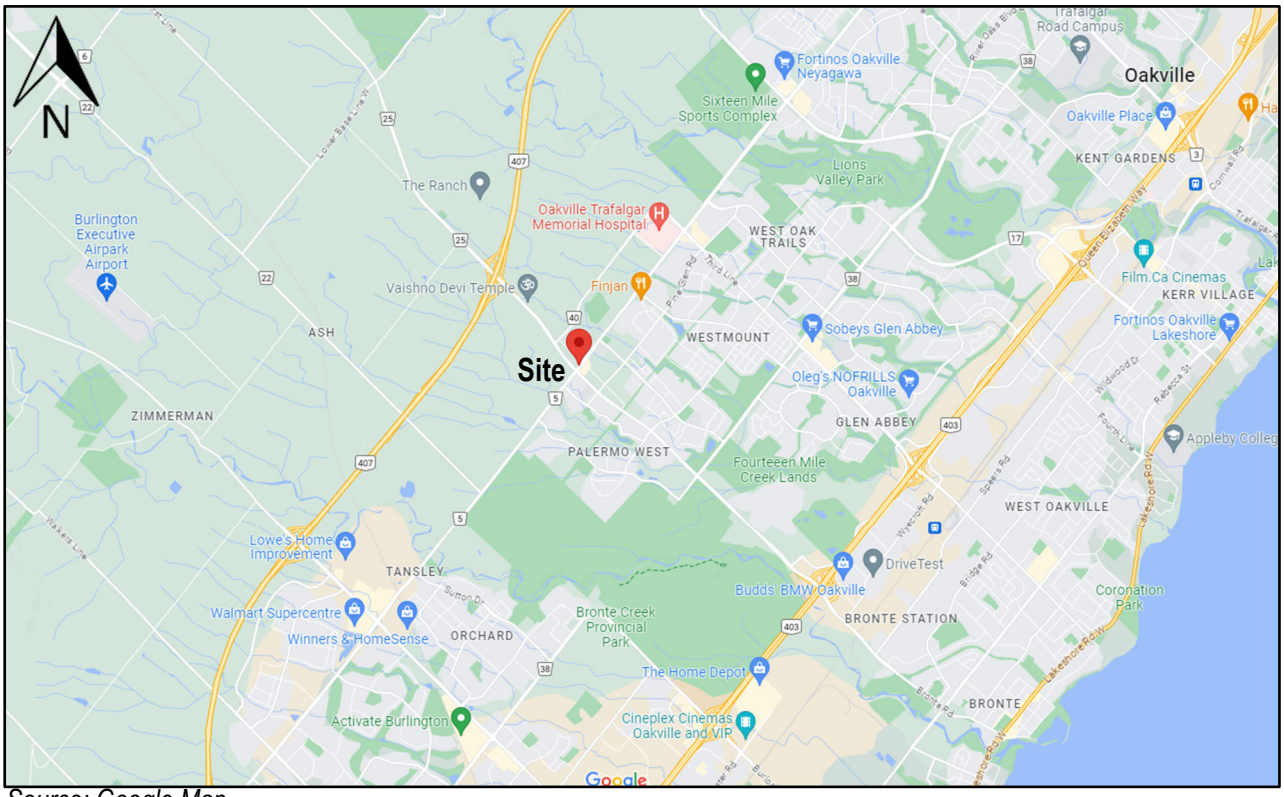
1.0 INTRODUCTION

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by Enirox 3005 Dundas LP (the 'Client') to undertake a Transportation Impact Study in support of proposed Official Plan Amendment, Zoning By-law Amendment and Site Plan applications for a proposed mixed-use development. The proposed residential development is located at 3005 Dundas Street West, north-west quadrant of the Bronte Road and Dundas Street West intersection, in the Town of Oakville. The location of the proposed development is illustrated in **Figure 1**.

The transportation impact study is prepared in accordance with the Town of Oakville and the Region of Halton Transportation Impact Study guidelines, and consistent with background transportation studies conducted in the area.

Figure 1 – Proposed Development Location



Source: Google Map

The subject site is currently vacant. The proposed mixed-use development consists of two high-rise towers (27-storey and 30-storey, with 3-storey podiums), for a total 690 residential dwelling units and 569.43 m^2 of ground related retail gross floor area.

The proposed development full moves access is provided via Old Bronte Road. The proposed development also provides a total of 698 vehicle parking spaces, with 552 spaces for residential and 146 spaces for visitor and retail components. **Figure 2** illustrates the proposed development site plan.

2.0 EXISTING CONDITION ASSESSMENT

2.1. Existing Road Network

As indicated, the proposed residential development is located south of Burnhamthorpe Road E, north of Dundas Street East between Eighth Line and Ninth Line in the North Oakville East Secondary Plan, in the Town of Oakville. The

description of the existing road network in the study area is summarizes in **Table 1** below.

Figure 2 – Proposed Site Plan

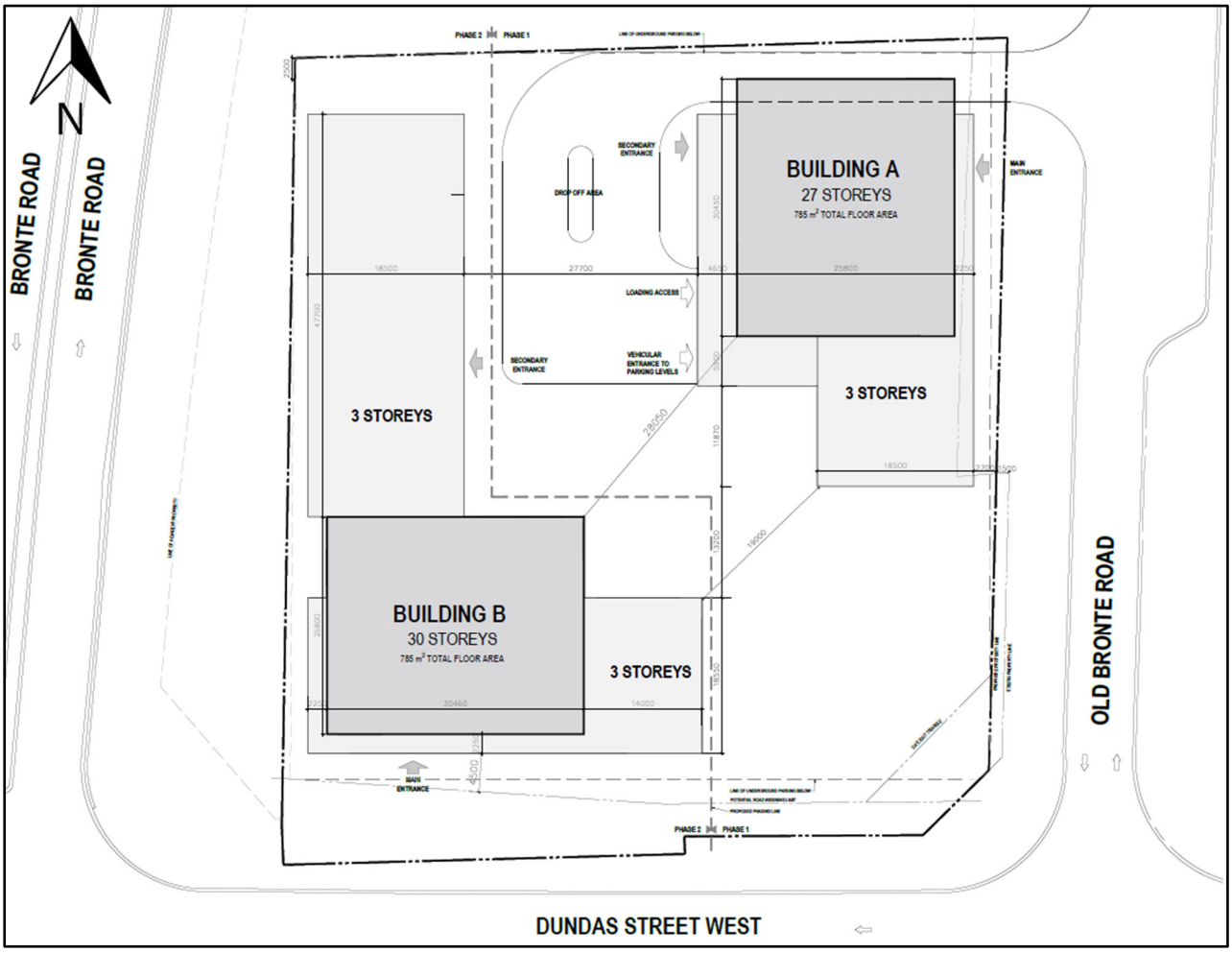


Table 1 – Summary of the Existing Road Network in the Study Area

Road Name	Jurisdiction	Number of Lanes	Posted Speed	Road Type	Sidewalk/Cycling
Dundas Street W	Halton Region	6 lanes	70 km/h	Major Arterial	Sidewalk on both sides
Bronte Road	Halton Region	4 lanes	70 km/h	Collector Road	Sidewalk on both sides
Old Bronte Road	Town of Oakville	2 lanes	50 km/h	Local Road	Sidewalk on the east side
William Halton Parkway	Town of Oakville	2 lanes	60 km/h	Collector Road	Sidewalk on the south side

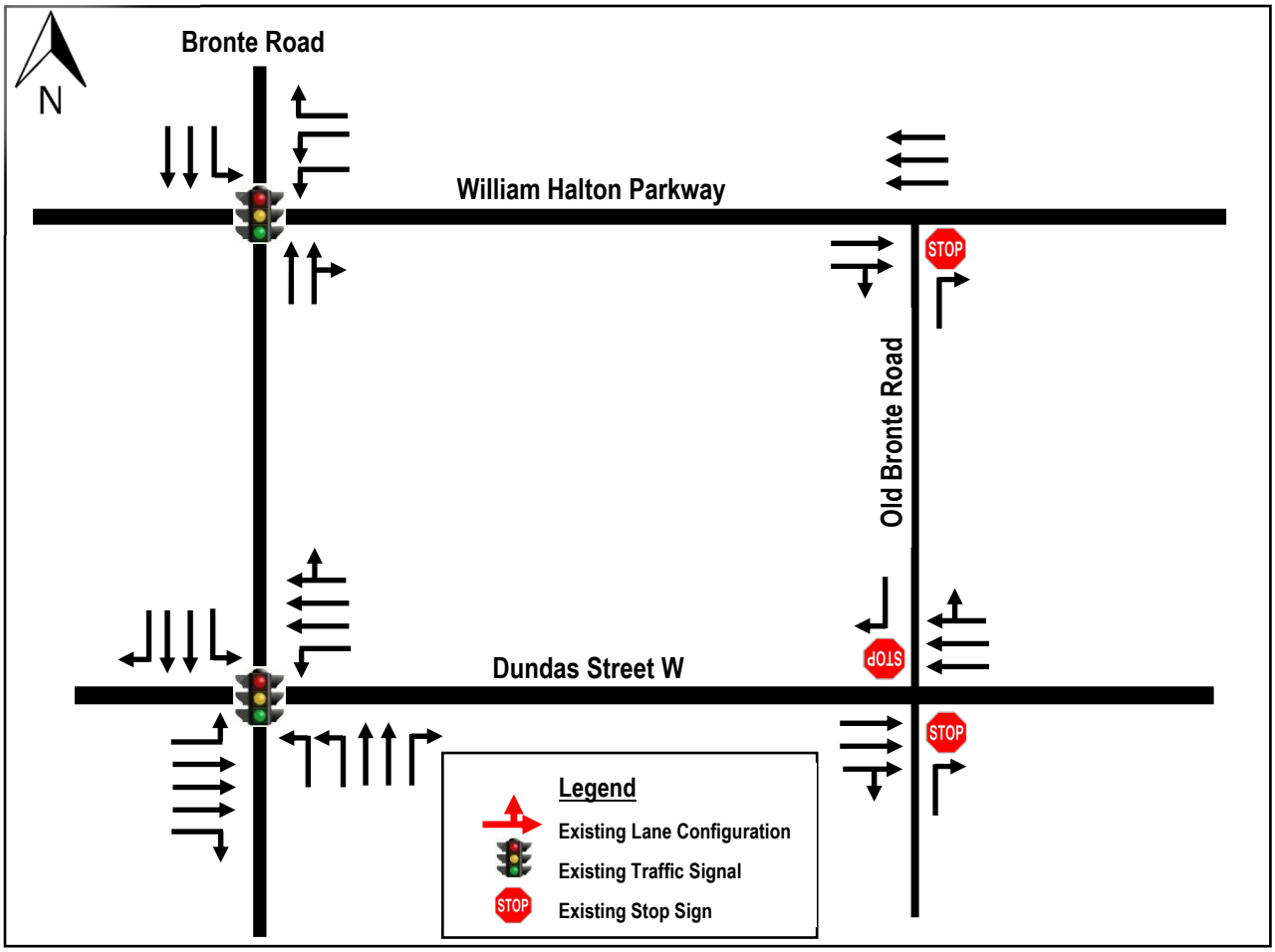
Figure 3 illustrates the existing lane configurations and traffic control devices for the intersections considered in the analysis.

2.2. Existing and Previously Proposed Active Transportation Network and Assessment

Nextrans has reviewed the existing active transportation network in the area based on site visit and review of the Town of Oakville Information Map, as well as the Town's 2017 Active Transportation Master Plan (ATMP). It should be noted that the Town's 2017 Active Transportation Master Plan (ATMP) will be reviewed in more detail under the future total conditions as part of this Study.

Figure 4 illustrates the existing cycling network in the study area.

Figure 3 – Existing Lane Configuration and Traffic Control



Walking

Under the existing conditions, sidewalks are available on the south side of Dundas Street W, both sides on Old Bronte Road south of Dundas Street W, and both sides on Bronte Road south of Dundas Street W. Sidewalk is available on the east side of Old Bronte Road north of Dundas Street W, and south side of William Halton Parkway east of Bronte Road.

Cycling

Currently, there are dedicated cycling routes along Colonel William Parkway, Grand Oak Trail, Pine Glen Road and Postmaster Drive in the vicinity of the study area. There are also multi-use trails along Dundas Street W east of Bronte Road and on Bronte Road south of Dundas Street W.

Nextrans will review the future plan proposed by the Town of Oakville and Halton Region in the subsequent sections of this Study.

2.3. Existing Oakville Transit System

The area is current serviced by three existing Oakville Transit Bus Routes 5 & 5A Dundas, 34 Pine Glen and 13 Westoak Trails. **Figure 6** illustrates the existing Oakville Transit System.

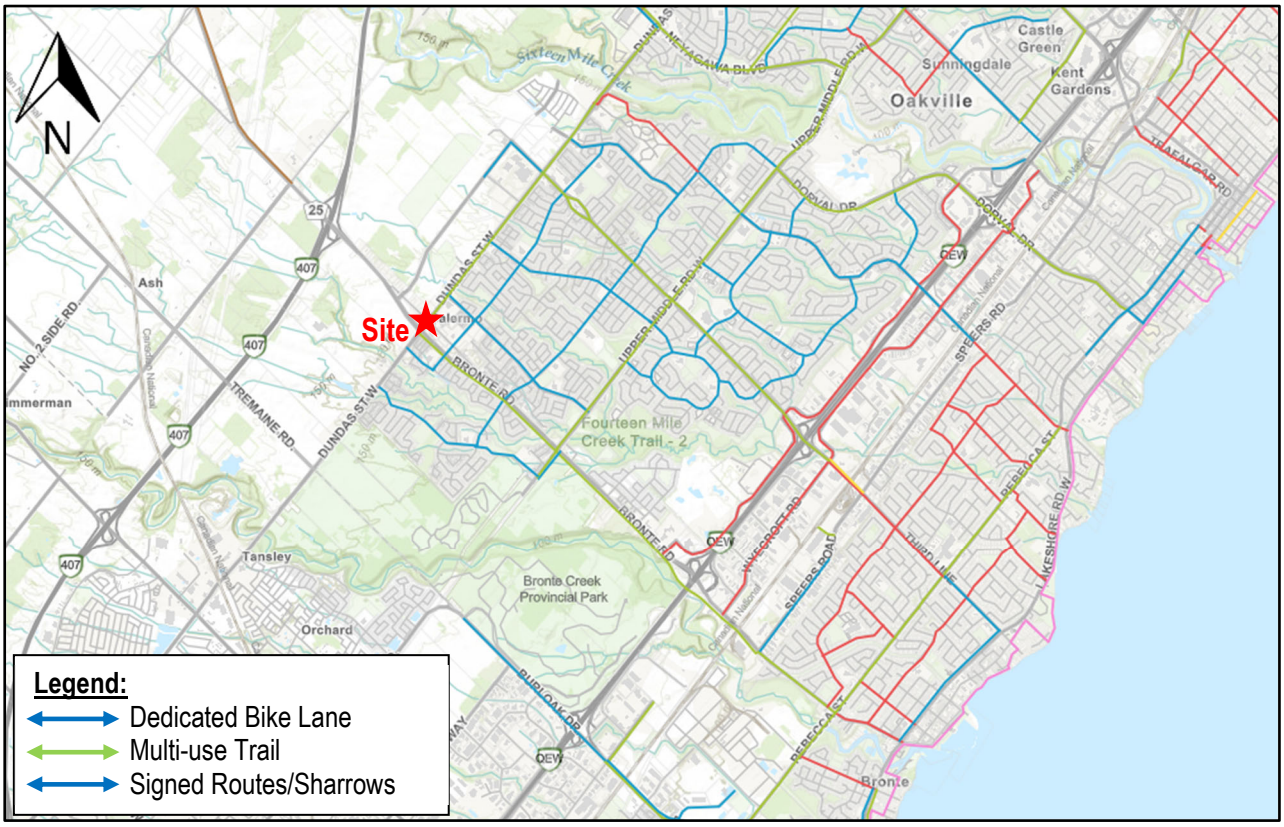
Below are the bus route descriptions based on the information provided on the Oakville Transit Website (https://www.oakvilletransit.ca/schedules-and-maps.html):

- **Route 5 & 5A Dundas** – The Dundas Route travels generally in the east-west direction from Oakville GO to Dundas/Hwy 407 GO Carpool Lot. This service runs early in the morning until after midnight during the weekday. The service frequency is approximately 15-minute during the peak periods.

- **Route 34 Pine Glen** – The Pine Glen route travels in a loop from north - south to east-west, from Bronte GO and return to Bronte GO. This service runs Monday to Friday from the early morning until 8:17 pm. The service frequency is approximately 30-minute during the peak periods.

- **Route 13 Westoak Trail** – The Westoak Trail route travels east-west and north-south from Oakville GO Train Station to Bronte GO Station. This service runs 7 days a week from the early morning until 10 pm. The service frequency is approximately 7-minute during the weekday peak periods and approximately 60-minute during the weekend.

Figure 4 – Existing and Proposed Cycling Conditions



Source: Town of Oakville Information Map

2.3. Existing Area Context

Nextrans has conducted a comprehensive review of the area with both site visit and desktop review. The immediate area to the south of the site has several mid-rise residential buildings and mid-rise office/commercial buildings. The area immediately to the east of the site consists mostly low-rise residential developments. The existing Oakville Trafalgar Memorial Hospital and FreshCo grocery store are located approximately 1.7km east of the site. There are several schools in the area such as Emily Carr Public School, Holy Trinity Catholic High School, Captain R. Wilson Public School and St. Mary Catholic Elementary School.

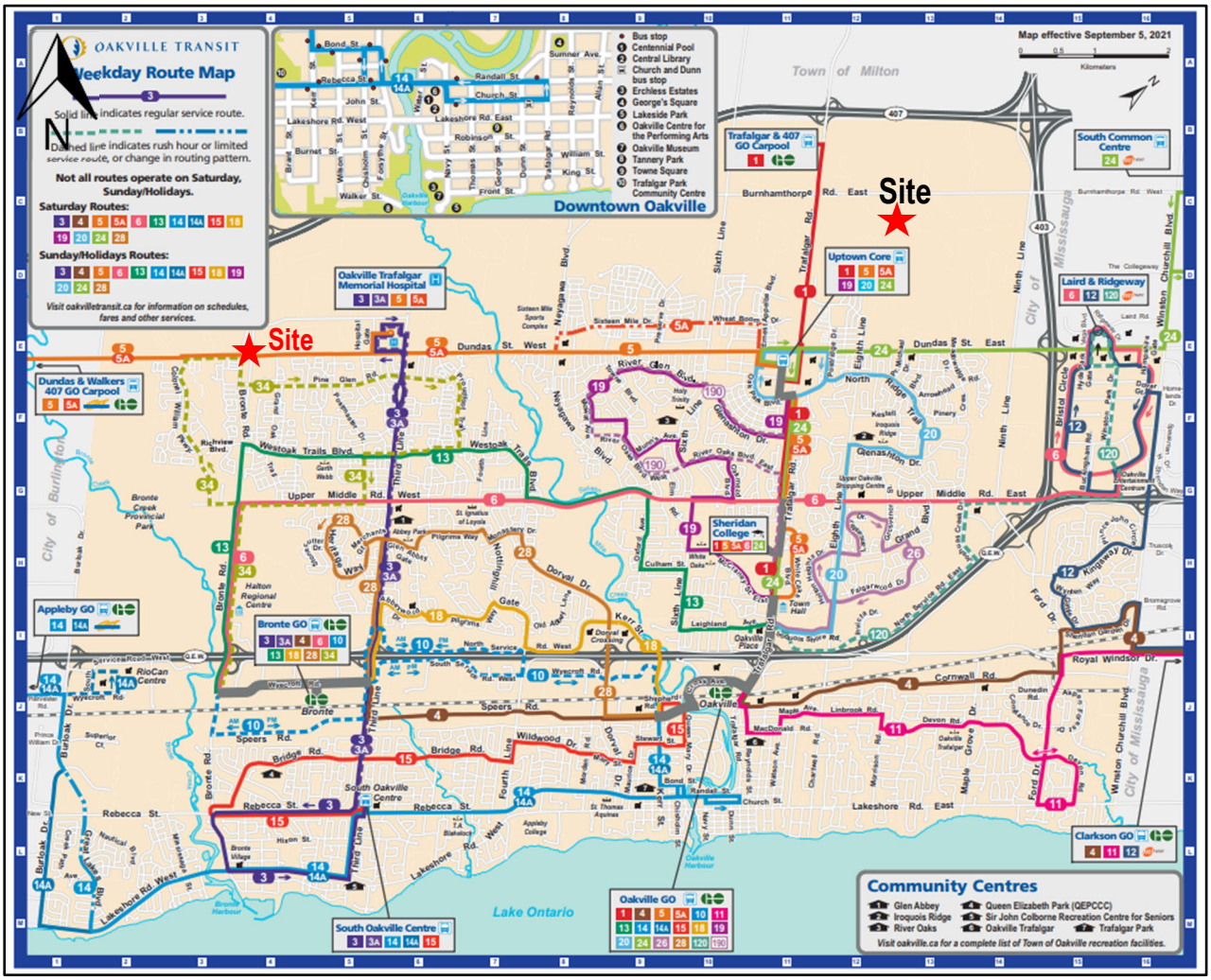
As indicated in the previous sections of this Study, the area has a complete network of sidewalk, cycling facilities and sufficient transit services. Therefore, the analysis indicates that the proposed development is consistent and appropriate from a transportation planning perspective.

2.4. North Oakville West Secondary Plan

The proposed development is located within the approved North Oakville West Secondary Plan, bounded by Dundas Street W to the south, Hwy 407 to the north, Tremaine Road to the west and Sixteen Mile Creek to the east, in the Town of Oakville.

Based on the vision and objectives of the approved Secondary Plan, along with the completed Transportation Master Plan by Halton Region, this area will be built into a vibrant community with complete network of sidewalk and cycling facilities, along with future dedicated transit along Dundas Street W and transit in semi-exclusive/exclusive right-of-way as per Halton Region Transportation Master Plan (September 2011).

Figure 5 – Existing Oakville Transit Network



Source: Oakville Transit website

2.5. Existing Traffic Volumes

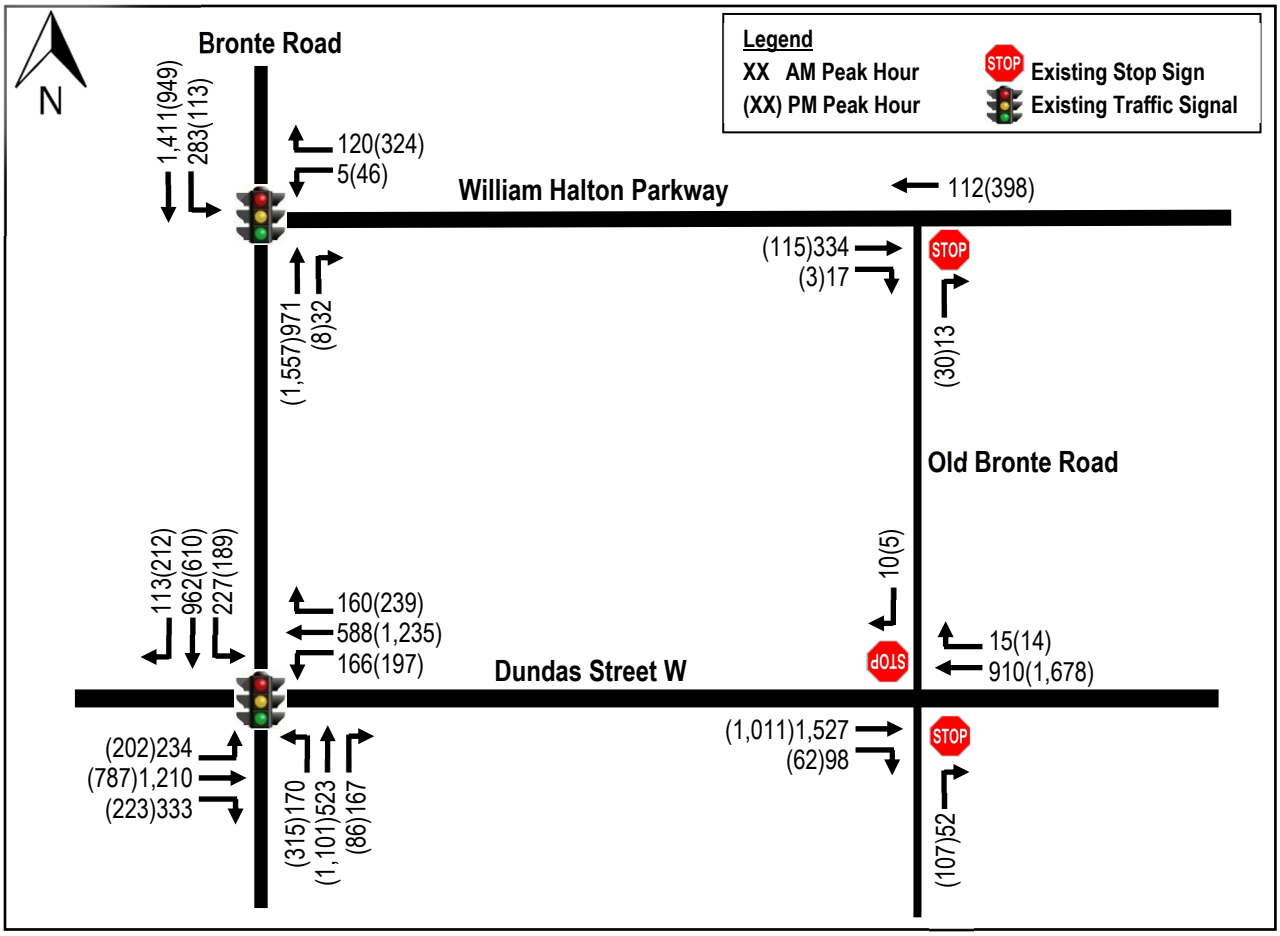
The turning movement counts were undertaken by Spectrum for the four intersections considered in the study area. The turning movement counts were conducted on Thursday April 20, 2023. The existing traffic volumes were undertaken during the morning (7:00 a.m. to 10:00 a.m.) and afternoon (4:00 p.m. to 7:00 p.m.) peak periods for all area intersections.

Figure 6 illustrates the existing traffic volumes for the study area intersections, with the detailed turning movement counts are included in **Appendix A**.

2.6. Existing Condition Assessment

The existing volumes in **Figure 6** were analyzed using Synchro Version 11 software. The methodology of the software follows the procedures described and outlined in the Highway Capacity Manual, HCM 2000, published by the Transportation Research Board. It should be noted that the printouts for unsignalized intersections are based on HCM outputs and the results for signalized intersections are based on Synchro so that queues and more detailed information can be provided. The results are provided in **Appendix C** and summarized in **Table 2**.

Figure 6 – Existing Traffic Volumes



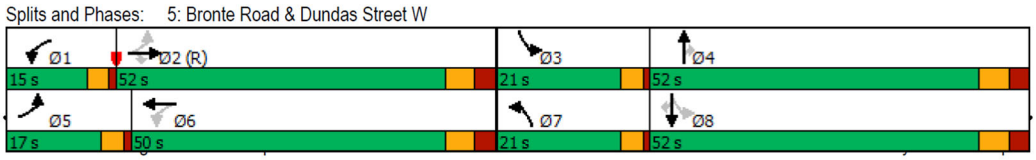
2.7. Finding Summary

Based on the intersection capacity analysis, under the existing traffic conditions, all intersections considered in the analysis are operating at acceptable levels of service, from overall intersection operational perspective, during both the morning and afternoon peak hours. However, during the afternoon peak hour, the eastbound left turn at the Dundas Street W/Bronte Road and westbound right turn at the Bronte Road/William Halton Parkway intersections are currently operating at slightly higher delay. This is due to the heavy turning movement traffic volumes and insufficient green time allocation.

2.8. Potential Mitigation Measures

Nextrans has optimized the existing signal timing plan to improve these movements. The revised analysis indicates that these two movements can be improved with additional green time allocation. The potential signal timing plan is illustrated below for both intersections. It should be noted that these are just suggestions and it is solely the discretion of the Region and the Town to optimize the intersection as appropriate.

Dundas Street W/Bronte Road Intersection PM Peak Hour



Bronte Road/William Halton Parkway Intersection PM Peak Hour

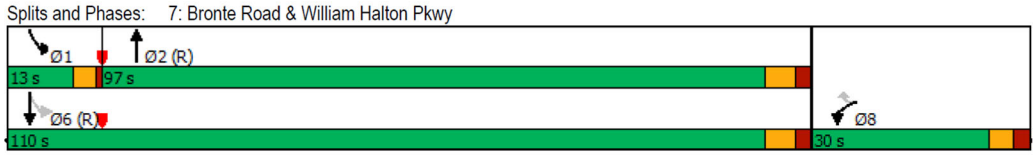


Table 2 – Existing Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95th Queue (m)	LOS (v/c)	Delay (s)	95th Queue (m)	
Dundas Street W/ Bronte Road (signalized)	**Overall**	**D (0.94)**	**45**		**D (1.06)**	**52**		
	EB – L	E (0.89)	60	84	F (1.06)	116	104	~100
	EB – T	E (0.91)	58	171	D (0.50)	39	84	~190
	EB – R	B (0.55)	12	49	A (0.35)	6	19	~90
	WB – L	E (0.83)	63	76	D (0.69)	38	55	~115
	WB – TR	D (0.54)	37	82	E (0.95)	58	190	~430
	NB – LL	E (0.58)	67	40	E (0.78)	73	66	~185
	NB – T	D (0.54)	40	93	E (0.98)	68	232	~335
	NB – R	A (0.29)	6	17	A (0.17)	6	12	~75
	SB – L	C (0.60)	25	46	E (0.78)	67	66	~170
	SB – T	E (0.94)	55	217	D (0.56)	37	102	~400
	SB – R	A (0.22)	5	10	A (0.35)	7	15	~75
Dundas Street W/ Bronte Road (signalized) With signal timing optimization	**Overall**	Not required	Not required	Not required	**D (0.99)**	**54**		
	EB – L				F (0.95)	84	97	~100
	EB – T				D (0.50)	39	84	~190
	EB – R				A (0.35)	6	19	~90
	WB – L				D (0.69)	38	55	~115
	WB – TR				E (0.99)	67	198	~430
	NB – LL				E (0.78)	73	66	~185
	NB – T				E (0.98)	68	232	~335
	NB – R				A (0.17)	6	12	~75
	SB – L				E (0.78)	69	65	~170
	SB – T				D (0.56)	36	102	~400
	SB – R				A (0.35)	6	13	~75
Bronte Road/ William Halton Pkwy (signalized)	**Overall**	**A (0.63)**	**7**		**B (1.00)**	**17**		
	WB – LL	E (0.03)	59	3	D (0.10)	53	13	~125
	WB – R	B (0.52)	18	20	F (1.00)	84	131	~100
	NB – TR	A (0.43)	9	72	B (0.69)	10	68	~400
	SB – L	A (0.63)	8	18	B (0.51)	13	15	~50
	SB – T	A (0.54)	4	69	A (0.37)	5	49	~500
Bronte Road/ William Halton Pkwy (signalized) With signal timing optimization	**Overall**	Not required	Not required	Not required	**B (0.92)**	**17**		
	WB – LL				D (0.08)	49	12	~125
	WB – R				E (0.92)	65	119	~100
	NB – TR				B (0.72)	13	99	~400
	SB – L				B (0.53)	16	20	~50
	SB – T				A (0.38)	6	59	~500
Dundas Street W/ Old Bronte Road (unsignalized)	EB – T	A (0.40)	0	0	A (0.26)	0	0	~100
	WB – TR	A (0.24)	0	0	A (0.43)	0	0	~315
	NB – R	A (0.07)	10	2	A (0.12)	9	3	~100
	SB – R	B (0.02)	11	0	B (0.01)	13	0	~100
William Halton Pkwy/ Old Bronte Road (unsignalized)	EB – TR	A (0.14)	0	0	A (0.06)	0	0	~50
	WB – T	A (0.04)	0	0	A (0.14)	0	0	~500
	NB – R	A (0.02)	10	0	A (0.04)	9	1	~100

3.0 TRANSPORTATION PLANNING CONTEXT IN THE AREA

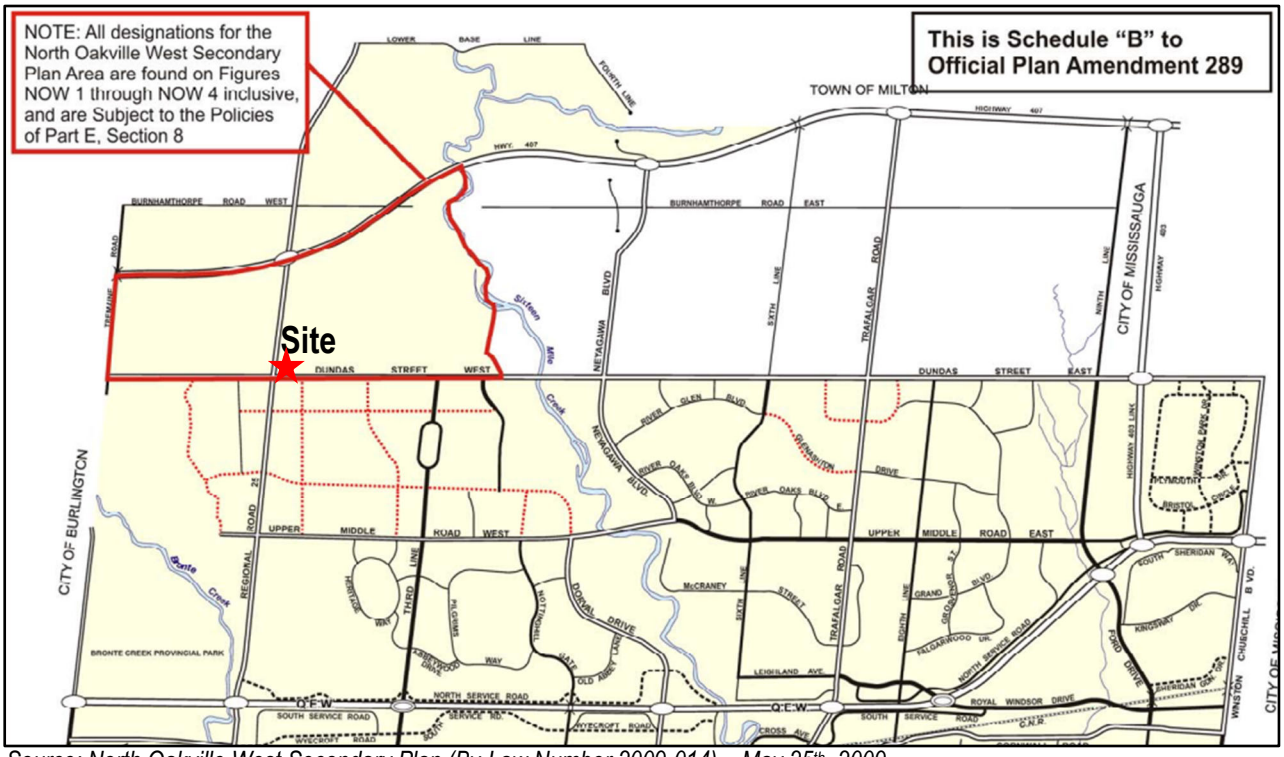
3.1. Existing Land Use Context and Amenities

As indicated previously, Nextrans has conducted a comprehensive review of the area with both site visit and desktop review. The immediate area to the south of the site has several mid-rise residential buildings and mid-rise office/commercial buildings. The area immediately to the east of the site consists mostly low-rise residential developments. The existing Oakville Trafalgar Memorial Hospital and FreshCo grocery store are located approximately 1.7km east of the site. There are several schools in the area such as Emily Carr Public School, Holy Trinity Catholic High School, Captain R. Wilson Public School and St. Mary Catholic Elementary School. As indicated in the previous sections of this Study, the area has a complete network of sidewalk, cycling facilities and sufficient transit services. Therefore, the analysis indicates that the proposed development is consistent and appropriate from a transportation planning perspective.

3.2. Transportation Planning Context

As the community is building through different phases, the road network, active transportation network and transit network will also be built at different phases. This is a typical process through-out the Greater Toronto and Hamilton Area. However, once completed, the area will have a complete fine grid transportation network consists of transit, active transportation and road network. **Figure 7** illustrates the proposed North Oakville West Secondary Plan Area transportation network.

Figure 7 – North Oakville East Secondary Plan Transportation Network



Source: North Oakville West Secondary Plan (By-Law Number 2009-014) – May 25th, 2009

4.0 FUTURE BACKGROUND CONDITIONS

4.1. Analysis Horizon

For the purposes of this assessment, 2028 horizon year has been carried out for the study analysis. This provision is

consistent with the Town of Oakville and Halton Region's Traffic Impact Study Guidelines, as well as the approved Study Terms of Reference. This is also consistent with other background transportation studies conducted in the area.

4.2. Future Background Corridor Growth

Based on the Town of Oakville and Halton Region's requirements, a 1% per annum compounded growth rate will be applied to the 2023 traffic volumes to estimate the 2028 projected traffic volumes. This is equivalent to 5% total growth from 2023 to 2028. **Figure 8** illustrates the background corridor through traffic growth.

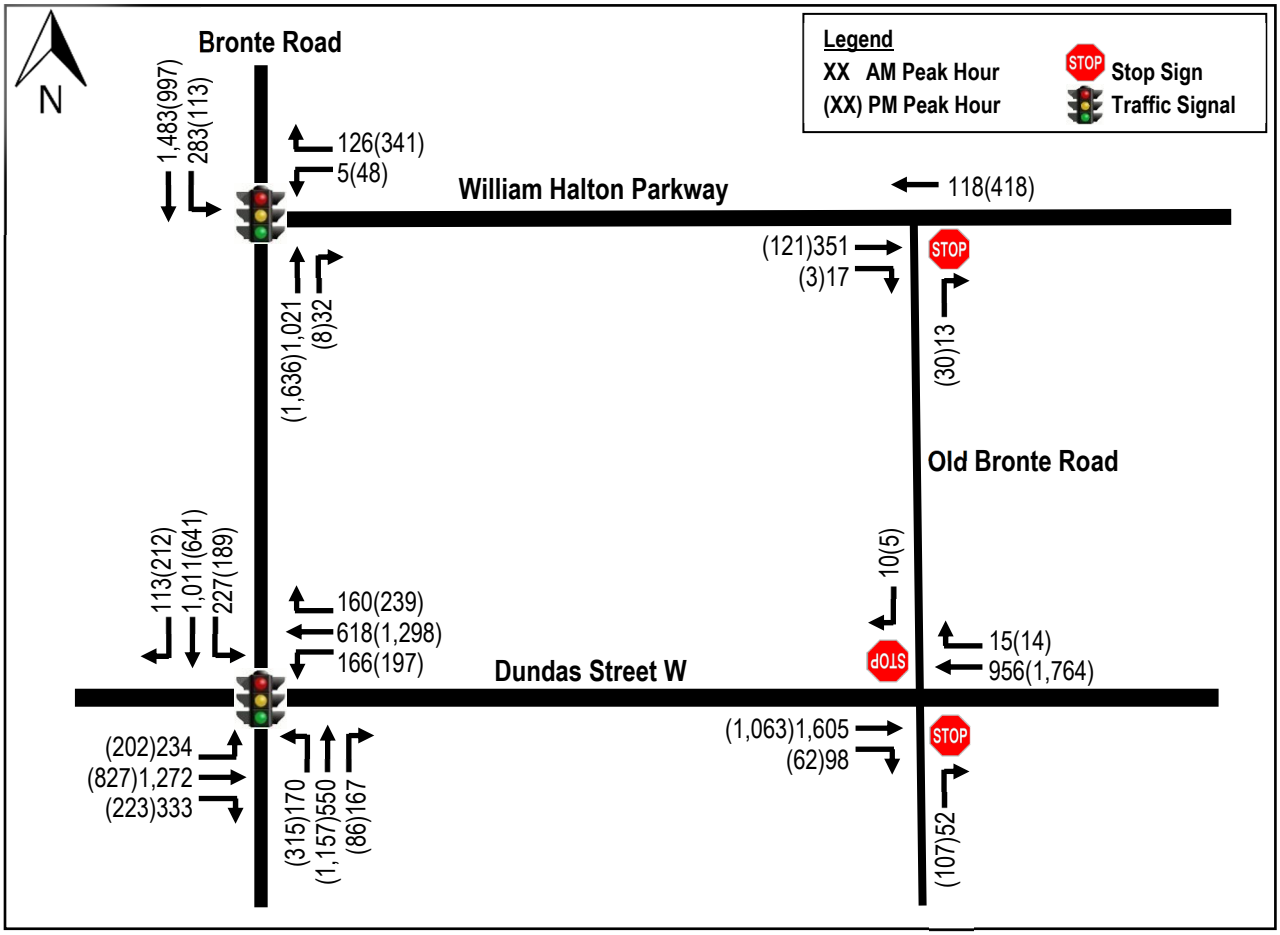
4.3. Background Development Applications

Based on Nextrans' review of the proposed active development applications in the area, using the Town's development application website for Ward 7 (https://www.oakville.ca/business/planning-applications-ward-7.html), the following background developments have been identified and will be included in the analysis:

- Oakville Green Developments Inc. - Part of Lot 25, Concession 1, NDS - Z.1325.08 (Dundas Street W and Third Line) – MMM Group TIS dated October 2016; and
- QuadReal Property Group/bcIMC Realty Corporation/Bentall - 3269 & 3271 Dundas Street West - Z.1333.01 and 24T-11001/1333 – MMM Group TIS dated August 2013

For the purposes of this assessment, the proposed background development site trip generation and trip assignment are extracted from the background transportation impact studies noted above. **Figure 9** illustrates background development traffic volumes. The detailed TIS traffic volume information is included in **Appendix D**.

Figure 8 – 2028 Background Corridor Through Traffic Growth



4.4. Future Background Condition Assessment

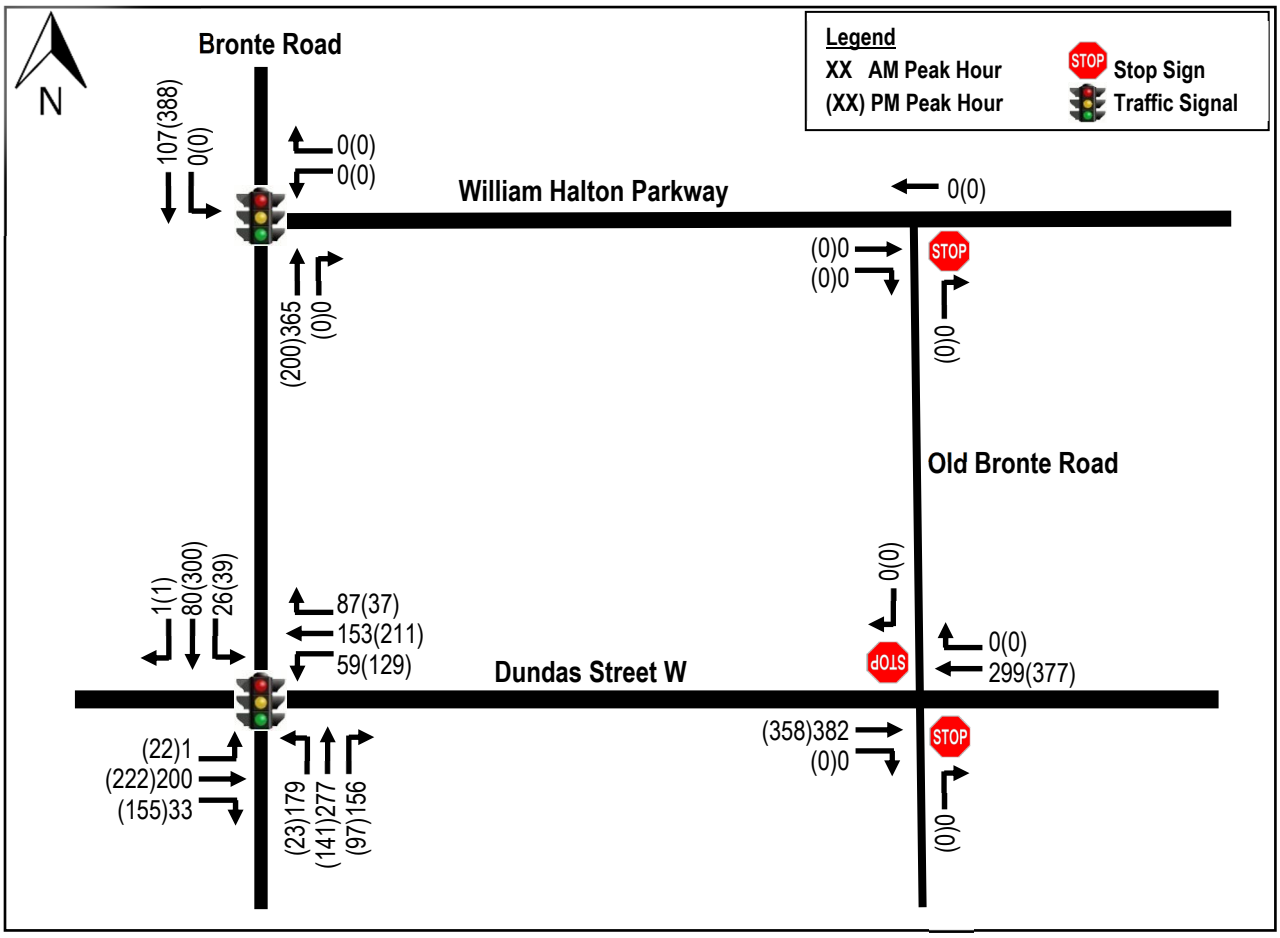
The estimated 2028 future background traffic volumes are illustrated in **Figure 10** (future background traffic growth traffic volumes + background development traffic volumes) and were analyzed using Synchro Version 11 software. The detailed calculations are provided in **Appendix E** and summarized in **Table 3**.

4.5. Finding Summary

Based on the intersection capacity analysis, under the future background traffic conditions, all unsignalized intersections considered in the analysis are expected to operate at acceptable levels of service during both the morning and afternoon peak hours. The signalized intersection of Bronte Road/William Halton Parkway intersection is also expected to operate at acceptable levels of service, with no improvements are required during both the morning and afternoon peak hours.

However, the signalized intersection of Dundas Street W/Bronte Road intersection are expected to operate at high delay and queues during both the morning and afternoon peak hours. This is due to significant growth in the area through background corridor growth and two major background developments.

Figure 9 – Background Development Traffic Volumes



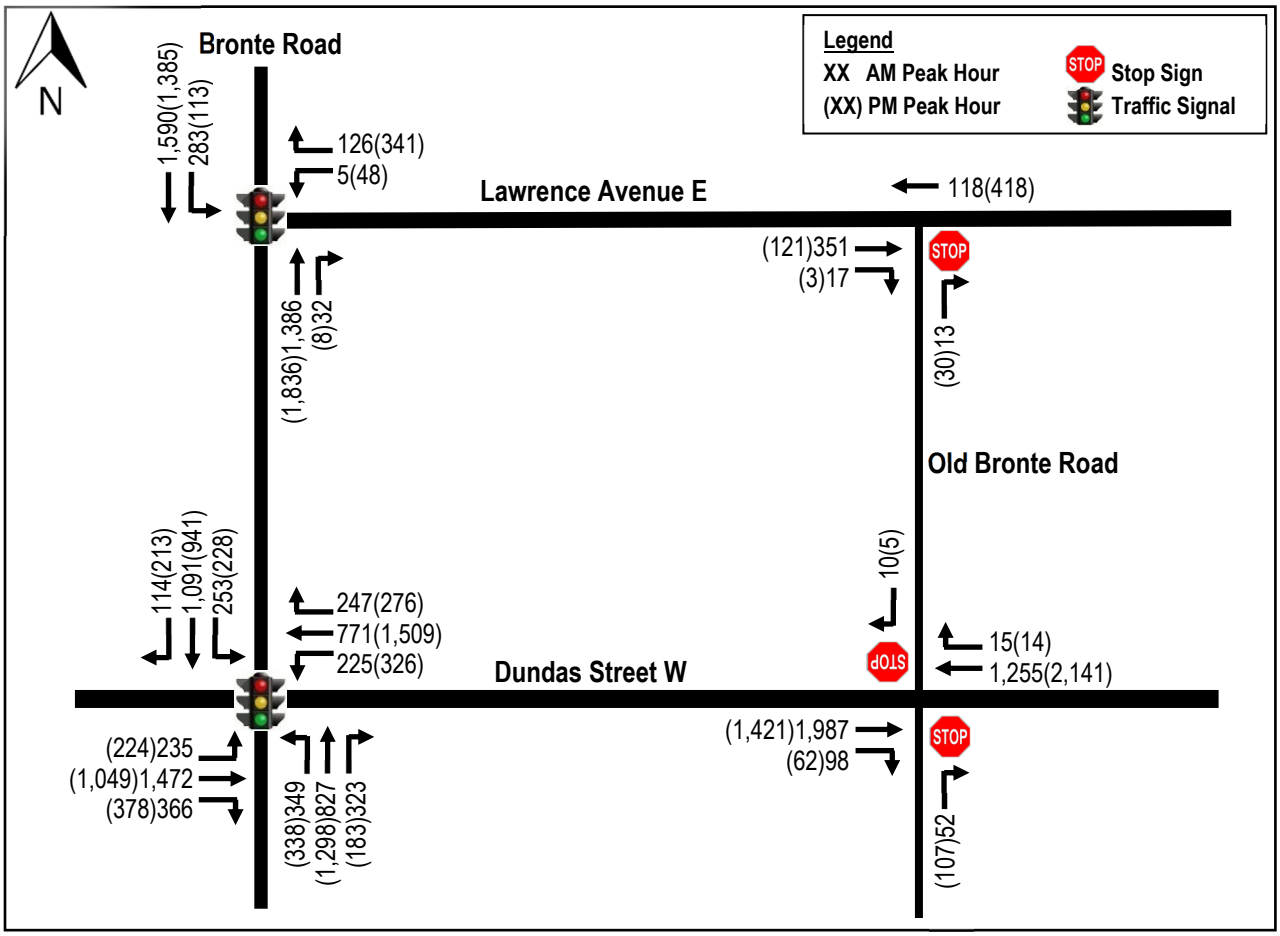
4.6. Potential Mitigation Measures

To address the operational shortfall of the Dundas Street W/Bronte Road intersection, Nextrans recommends the following potential improvements:

- Signal timing optimization – the analysis indicates that the critical movements can improve slightly better

- Widening of Bronte Road to provide one additional through lane, and provide an exclusive westbound right turn lane for Dundas Street W, with the combination of signal timing optimization – the analysis indicates that this combination will significantly provide additional capacity for the intersection and addresses the critical movements.

Figure 10 – 2028 Future Background Traffic Volumes

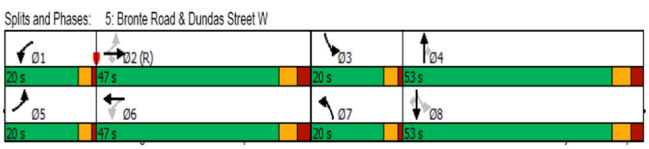


It is Nextrans understanding that Bronte Road improvements have been identified in the Halton Region Transportation Master Plan for the 2031 horizon, with the widening of Bronte Road to provide 4 general purpose lanes and two HOV/transit lane. Given that these improvements are beyond the horizon year considered in this analysis and the analysis indicates that signal timing optimization can help in the interim conditions, these improvements can be delayed until 2031 as per the proposed Transportation Master Plan improvements. The potential signal timing plans with and without improvements are illustrated below.

Nextrans recommends that the Region and the Town require all new developments to management vehicle parking supply and provide TDM measures to discourage new residents from using private vehicles and to reduce the numbers of single-occupant-vehicle to and from this area.

Dundas Street W/Bronte Road Intersection Signal Timing Plan (No Road Improvements)

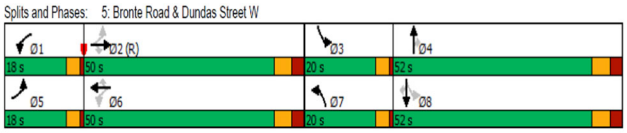
AM Peak Hour



PM Peak Hour

Dundas Street W/Bronte Road Intersection Signal Timing Plan (No Road Improvements)

AM Peak Hour



PM Peak Hour

Table 3 – 2028 Future Background Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95th Queue (m)	LOS (v/c)	Delay (s)	95th Queue (m)	
Dundas Street W/ Bronte Road (signalized)	**Overall**	**E (1.06)**	**62**		**F (1.40)**	**90**		
	EB – L	F (0.99)	85	98	F (1.03)	105	110	~100
	EB – T	F (1.06)	88	206	D (0.65)	42	114	~190
	EB – R	B (0.58)	15	55	B (0.56)	14	58	~90
	WB – L	F (0.96)	87	108	F (1.40)	228	166	~115
	WB – TR	D (0.67)	41	107	F (1.18)	128	262	~430
	NB – LL	F (0.88)	83	81	E (0.82)	76	73	~185
	NB – T	D (0.79)	49	145	F (1.16)	125	288	~335
	NB – R	B (0.49)	12	46	B (0.35)	17	38	~75
	SB – L	D (0.81)	49	78	F (0.87)	80	92	~170
	SB – T	F (1.05)	82	231	D (0.85)	44	167	~400
	SB – R	A (0.21)	4	8	A (0.35)	6	14	~75
Dundas Street W/ Bronte Road (signalized) With only signal timing optimization	**Overall**	**E (1.03)**	**60**		**F (1.23)**	**86**		
	EB – L	E (0.87)	59	92	F (0.97)	90	106	~100
	EB – T	E (1.03)	80	202	D (0.73)	48	121	~190
	EB – R	B (0.58)	16	61	B (0.60)	17	65	~90
	WB – L	F (1.01)	100	111	F (1.06)	104	149	~115
	WB – TR	D (0.75)	46	114	F (1.13)	107	254	~430
	NB – LL	F (0.93)	92	84	F (0.85)	80	77	~185
	NB – T	D (0.78)	48	143	F (1.23)	151	296	~335
	NB – R	A (0.47)	9	36	B (0.36)	15	34	~75
	SB – L	D (0.82)	49	79	F (0.89)	87	101	~170
	SB – T	E (1.03)	75	228	D (0.90)	49	179	~400
	SB – R	A (0.22)	8	12	A (0.36)	7	17	~75
Dundas Street W/ Bronte Road (signalized) With both road improvements and signal timing optimization	**Overall**	**D (0.96)**	**46**		**D (0.96)**	**49**		
	EB – L	C (0.67)	32	63	F (0.94)	82	107	~100
	EB – T	E (0.96)	62	191	D (0.72)	48	121	~190
	EB – R	B (0.56)	15	59	B (0.59)	15	59	~90
	WB – L	E (0.90)	74	120	E (0.96)	75	141	~115
	WB – T	D (0.48)	38	84	D (0.90)	52	177	~430
	WB – R	A (0.37)	6	20	B (0.41)	11	38	~50
	NB – LL	F (0.93)	92	84	E (0.82)	76	73	~185
	NB – T	D (0.62)	44	89	E (0.93)	61	166	~335
	NB – R	B (0.53)	13	45	B (0.37)	13	30	~75
	SB – L	D (0.77)	40	56	F (0.86)	82	96	~170
	SB – T	D (0.82)	47	123	D (0.68)	39	91	~400
	SB – R	A (0.23)	5	9	A (0.36)	4	11	~75
Bronte Road/ William Halton Pkwy (signalized) With signal timing optimization similar to existing conditions	**Overall**	**A (0.74)**	**9**		**C (0.94)**	**21**		
	WB – LL	E (0.03)	59	3	D (0.08)	48	12	~125
	WB – R	B (0.53)	18	21	E (0.94)	72	130	~100
	NB – TR	B (0.62)	10	89	C (0.83)	20	90	~400
	SB – L	C (0.74)	25	58	D (0.65)	38	34	~50
	SB – T	A (0.59)	4	79	A (0.55)	**8**	98	~500
Dundas Street W/ Old Bronte Road (unsignalized)	EB – T	A (0.52)	0	0	A (0.36)	0	0	~100
	WB – TR	A (0.33)	0	0	A (0.55)	0	0	~315
	NB – R	B (0.07)	10	2	A (0.13)	10	4	~100
	SB – R	B (0.02)	12	1	C (0.01)	16	0	~100
William Halton Pkwy/ Old Bronte Road (unsignalized)	EB – TR	A (0.15)	0	0	A (0.06)	0	0	~50
	WB – T	A (0.04)	0	0	A (0.15)	0	0	~500
	NB – R	A (0.02)	10	0	A (0.04)	9	1	~100

5.0 SITE TRAFFIC

5.1. Proposed Development

As indicated, the subject site is currently vacant. The proposed mixed-use development consists of two high-rise towers (27-storey and 30-storey, with 3-storey podiums), for a total 690 residential dwelling units and 569.43 m^2 (or 6,129 ft^2) of ground related retail gross floor area.

For the purposes of this assessment and consistent with other background traffic impact studies prepared for other developments in the area, the *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE) and 2016 TTS information will be utilized in this Study.

5.2. Non-auto Modal Split

Table 4 summarizes the travel mode split information based on the review of the 2016 Transportation Tomorrow Survey data for Traffic Zones 4039, 4045, 4185 and 4186. The 2016 TTS data extraction is included in **Appendix F**.

Table 4 – Modal Split based on 2016 TTS Data for Traffic Zones

Time	Trips Made by Traffic Zones				
	Auto Driver	Auto Passenger	Transit	Cycle	Walk
AM Peak Period (6:00Am – 9:00AM)	64%	15%	10%	1%	10%
PM Peak Period (4:00PM – 7:00PM)	72%	15%	10%	1%	2%

Based on the information above, the non-auto mode of transportation (transit + walking + carpooling) accounts for near 36% during the morning peak period and 28% during the afternoon peak period. Although this is a great trend, however, the auto driver mode is still very high, which is not sustainable and does not meet the sustainable objective of the Town Official Plan policies and directions. In addition, there is none or very little bicycle trips, despite there are existing cycling facilities. Nextrans' review of the background traffic impact studies and understands that the Regional staff would support 18% non-auto modal split for the area, including 10% transit, 5% active transportation and 3% transportation demand management. For the purposes of this assessment and to be consistent with other studies, a target non-auto modal split of 18% will be applied to the proposed development.

5.3. Sit Trip Generation

The ITE Trip Generation Manual 11th Edition Land Use Codes (LUC) 201 "Single-Family Detached Housing General Urban/Suburban" and LUC 215 "Single-Family Attached Housing General Urban/Suburban" fitted curve equations have been utilized for the proposed development. The site trip generation is summarized in **Table 6**.

Table 5 – Site Traffic Trip Generation Based on ITE Trip Rates (11th Edition)

ITE Land Use	Magnitude (units/ft^2)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) Not Close to Rail Transit LUC 222	690	Vehicle Trip Rates AM - T = 0.22(X) + 18.85 PM - T = 0.26(X) + 23.12	0.09	0.16	0.25	0.16	0.13	0.29
		Vehicle Trips	**58**	**113**	**171**	**114**	**89**	**203**
Multifamily Housing (High-Rise) Not Close to Rail Transit LUC 222	690	Transit Trip Rates	0.08	0.07	0.15	0.04	0.03	0.07
		Transit Trips	**55**	**49**	**104**	**28**	**20**	**48**
Shopping Centre LUC 820	6,129	Vehicle Trip Rates - Average	0.52	0.32	0.84	1.63	1.77	3.40
		Vehicle Trips	**3**	**2**	**5**	**10**	**11**	**21**
Total New Vehicle Trips			***61***	***115***	***176***	***124***	***100***	***224***
Total New Transit Trips			***55***	***49***	***104***	***28***	***20***	***48***

Based on the analysis noted above, the proposed development is expected to generate:

- 104 total two-way transit trips (55 inbound and 49 outbound) and 48 total two-way transit trips (28 inbound and 20 outbound) during the morning and afternoon peak hours, respectively; and
- 176 total two-way auto trips (61 inbound and 115 outbound) and 224 total two-way auto trips (124 inbound and 100 outbound) during the morning and afternoon peak hours, respectively

5.4. Site Trip Distribution Based on Existing Site

The 2016 Transportation Tomorrow Survey (TTS) data was reviewed for Traffic Zones 4033 and 4035 in order to estimate the general trip distribution for the proposed development. **Table 6** summarizes the planning district/traffic zones distribution based on the 2016 TTS data, with **Table 7** summarizing the site trip assignment based on the 2016 TTS data and the existing traffic turning movement counts in the area.

Table 6 – General Trip Distribution for the Proposed Development

Oakville	Peel Region	Burlington	Milton/ Halton Hills	Toronto	Durham Region	York Region	Hamilton Area	Niagara Region	Total
Auto Trips									
56%	21%	2%	6%	8%	0%	2%	5%	0%	100%
Transit Trips									
62%	4%	0%	0%	32%	0%	0%	1%	0%	100%

Table 7 – Site Trip Assignment for the Proposed Development

General Direction (To/From)	Auto Trips	Transit Trips
East	30%	38%
West	15%	2%
North	20%	0%
South	35%	60%
Total	100%	100%

Figure 11 illustrates the proposed development generated traffic volumes. It should be noted that the auto site trip distribution and assignment have been taken into consideration the 2016 TTS information above, existing turning restrictions and available road network in the study area.

6.0 FUTURE TOTAL TRAFFIC CONDITIONS

6.1. Future Total Traffic Assessment for Auto Mode

The estimated future total traffic volumes (future background traffic volumes + site generated traffic volumes) are illustrated in **Figure 12**, and were analyzed using Synchro Version 11 software. The detailed calculations are provided in **Appendix G** and summarized in **Table 8**.

6.2. Finding Summary

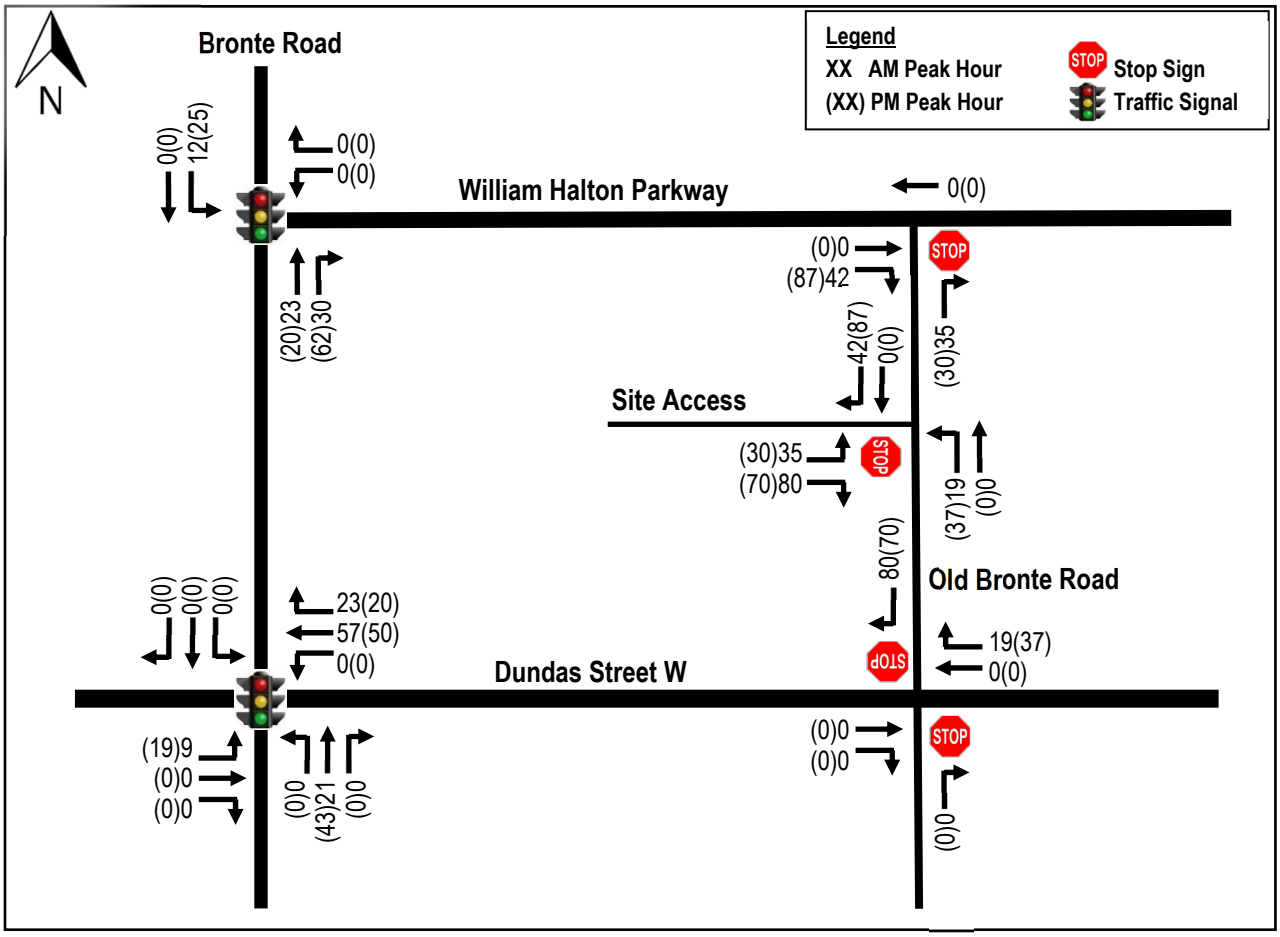
Based on the intersection capacity analysis, under the future total traffic conditions, all unsignalized intersections considered in the analysis are expected to operate at acceptable levels of service during both the morning and afternoon peak hours. The signalized intersection of Bronte Road/William Halton Parkway intersection is also expected to operate at acceptable levels of service, with no improvements are required during both the morning and afternoon peak hours.

The proposed development access is also expected to operate at acceptable levels of service with minimum delays or queues during both the morning and afternoon peak hours.

However, similar to the future background traffic conditions, the signalized intersection of Dundas Street W/Bronte Road intersection are expected to operate at high delay and queues during both the morning and afternoon peak hours. This

is due to significant growth in the area through background corridor growth and two major background developments. It should be noted that the proposed development add very little delays to the existing boundary roadway intersections.

Figure 11 – Site Traffic Volumes



6.3. Potential Mitigation Measures

To address the operational shortfall of the Dundas Street W/Bronte Road intersection, Nextrans recommends the following potential improvements:

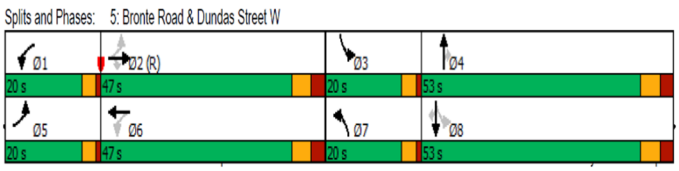
- Signal timing optimization – the analysis indicates that the critical movements can improve slightly better
- Widening of Bronte Road to provide one additional through lane, and provide an exclusive westbound right turn lane for Dundas Street W, with the combination of signal timing optimization – the analysis indicates that this combination will significantly provide additional capacity for the intersection and addresses the critical movements.

It is Nextrans understanding that Bronte Road improvements have been identified in the Halton Region Transportation Master Plan for the 2031 horizon, with the widening of Bronte Road to provide 4 general purpose lanes and two HOV/transit lane. Given that these improvements are beyond the horizon year considered in this analysis and the analysis indicates that signal timing optimization can help in the interim conditions, these improvements can be delayed until 2031 as per the proposed Transportation Master Plan improvements. The potential signal timing plans with and without improvements are illustrated below.

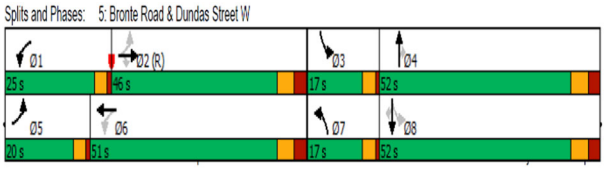
Nextrans recommends that the Region and the Town require all new developments to management vehicle parking supply and provide TDM measures to discourage new residents from using private vehicles and to reduce the numbers of single-occupant-vehicle to and from this area.

Dundas Street W/Bronte Road Intersection Signal Timing Plan (No Road Improvements)

AM Peak Hour

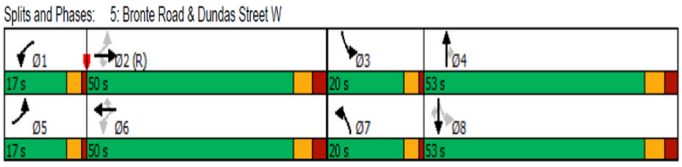


PM Peak Hour



Dundas Street W/Bronte Road Intersection Signal Timing Plan (With Road Improvements)

AM Peak Hour



PM Peak Hour

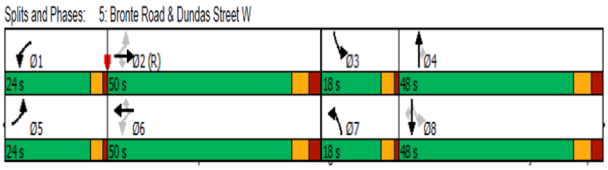


Figure 12 – 2028 Future Total Traffic Volumes

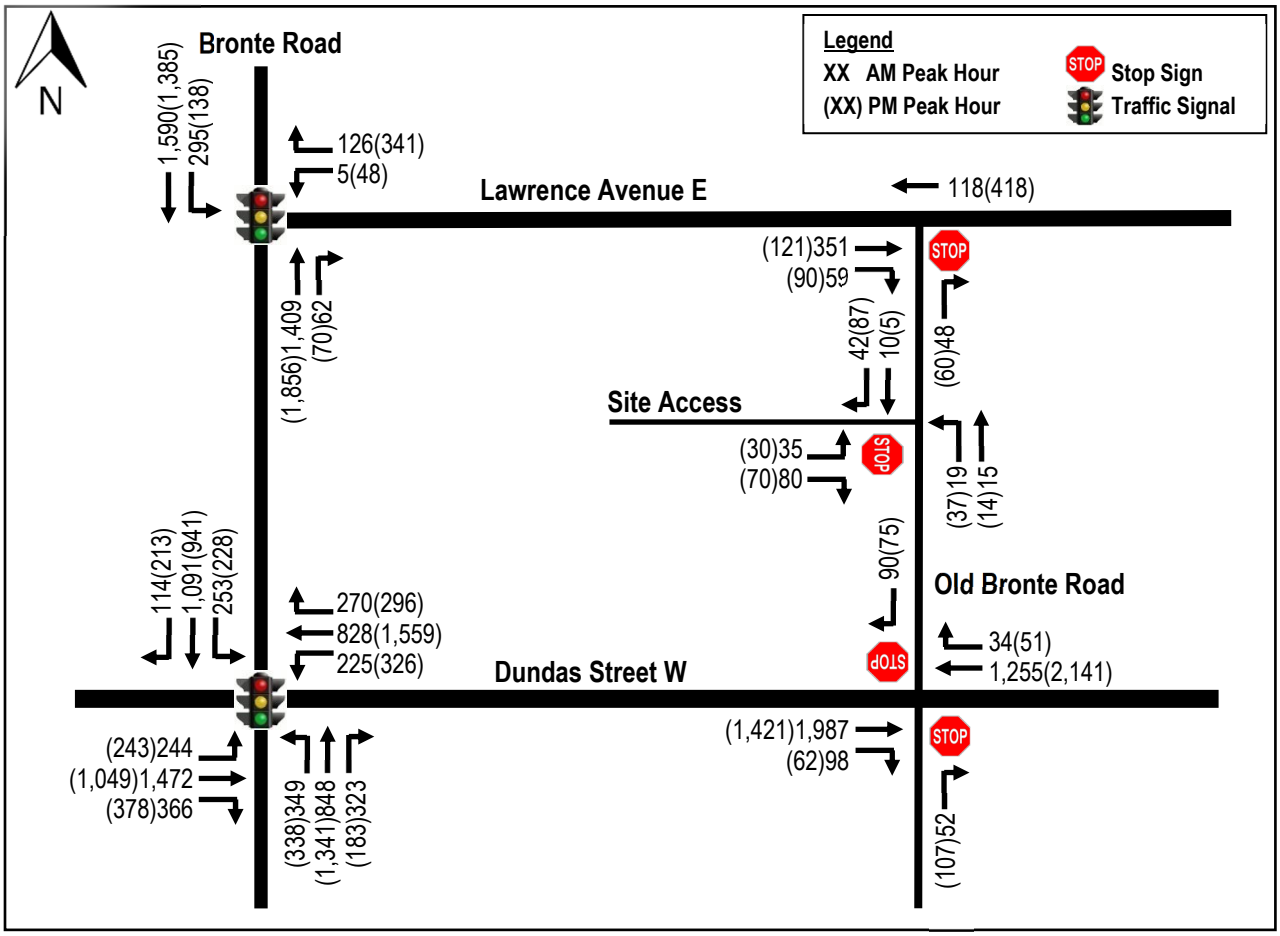


Table 8 – 2028 Future Total Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95th Queue (m)	LOS (v/c)	Delay (s)	95th Queue (m)	
Dundas Street W/ Bronte Road (signalized) With only signal timing optimization	**Overall**	**E (1.03)**	**61**		**F (1.22)**	**95**		
	EB – L	E (0.94)	78	109	F (0.96)	85	112	~100
	EB – T	E (1.03)	80	202	D (0.75)	49	122	~190
	EB – R	B (0.58)	16	61	C (0.64)	23	78	~90
	WB – L	F (1.01)	100	111	F (1.00)	87	144	~115
	WB – TR	D (0.81)	49	125	F (1.20)	135	273	~430
	NB – LL	F (0.93)	92	84	F (1.03)	117	88	~185
	NB – T	D (0.80)	49	148	F (1.22)	150	302	~335
	NB – R	A (0.47)	9	37	B (0.35)	14	34	~75
	SB – L	D (0.83)	52	83	F (1.01)	112	112	~170
	SB – T	F (1.03)	75	228	D (0.86)	45	167	~400
	SB – R	A (0.22)	8	12	A (0.35)	7	17	~75
Dundas Street W/ Bronte Road (signalized) With both road improvements and signal timing optimization	**Overall**	**D (0.96)**	**46**		**D (0.99)**	**53**		
	EB – L	D (0.72)	36	75	E (0.86)	64	97	~100
	EB – T	E (0.96)	62	191	D (0.68)	44	117	~190
	EB – R	B (0.56)	15	60	B (0.59)	18	70	~90
	WB – L	E (0.91)	77	123	E (0.99)	80	139	~115
	WB – T	D (0.52)	39	90	E (0.98)	65	210	~430
	WB – R	A (0.40)	6	21	B (0.46)	14	47	~50
	NB – LL	F (0.93)	92	84	F (0.96)	100	84	~185
	NB – T	D (0.63)	44	90	E (0.93)	60	172	~335
	NB – R	B (0.53)	14	48	B (0.37)	13	31	~75
	SB – L	D (0.78)	41	58	F (0.96)	101	108	~170
	SB – T	D (0.81)	46	122	D (0.66)	38	89	~400
	SB – R	A (0.23)	5	9	A (0.35)	4	10	~75
Bronte Road/ William Halton Pkwy (signalized) With signal timing optimization similar to existing conditions	**Overall**	**B (0.76)**	**10**		**C (0.94)**	**21**		
	WB – LL	E (0.03)	59	3	D (0.08)	48	12	~125
	WB – R	B (0.53)	18	21	E (0.94)	72	131	~100
	NB – TR	B (0.66)	11	98	B (0.87)	17	73	~400
	SB – L	C (0.76)	32	81	E (0.81)	64	61	~50
	SB – T	A (0.59)	4	79	A (0.55)	8	98	~500
Dundas Street W/ Old Bronte Road (unsignalized)	EB – T	A (0.52)	0	0	A (0.36)	0	0	~100
	WB – TR	A (0.33)	0	0	A (0.55)	0	0	~315
	NB – R	B (0.08)	10	2	A (0.13)	10	4	~100
	SB – R	B (0.19)	13	6	C (0.25)	19	8	~100
William Halton Pkwy/ Old Bronte Road (unsignalized)	EB – TR	A (0.15)	0	0	A (0.06)	0	0	~50
	WB – T	A (0.04)	0	0	A (0.15)	0	0	~500
	NB – R	B (0.07)	10	2	A (0.08)	9	2	~100
Old Bronte Road/ Site Access (unsignalized)	EB – LR	A (0.13)	9	4	A (0.12)	10	3	~20
	NB – TL	A (0.01)	4	0	A (0.03)	6	1	~100
	SB – TR	A (0.03)	0	0	A (0.06)	0	0	~100

6.4. Active Transportation Mode Assessment

Walking

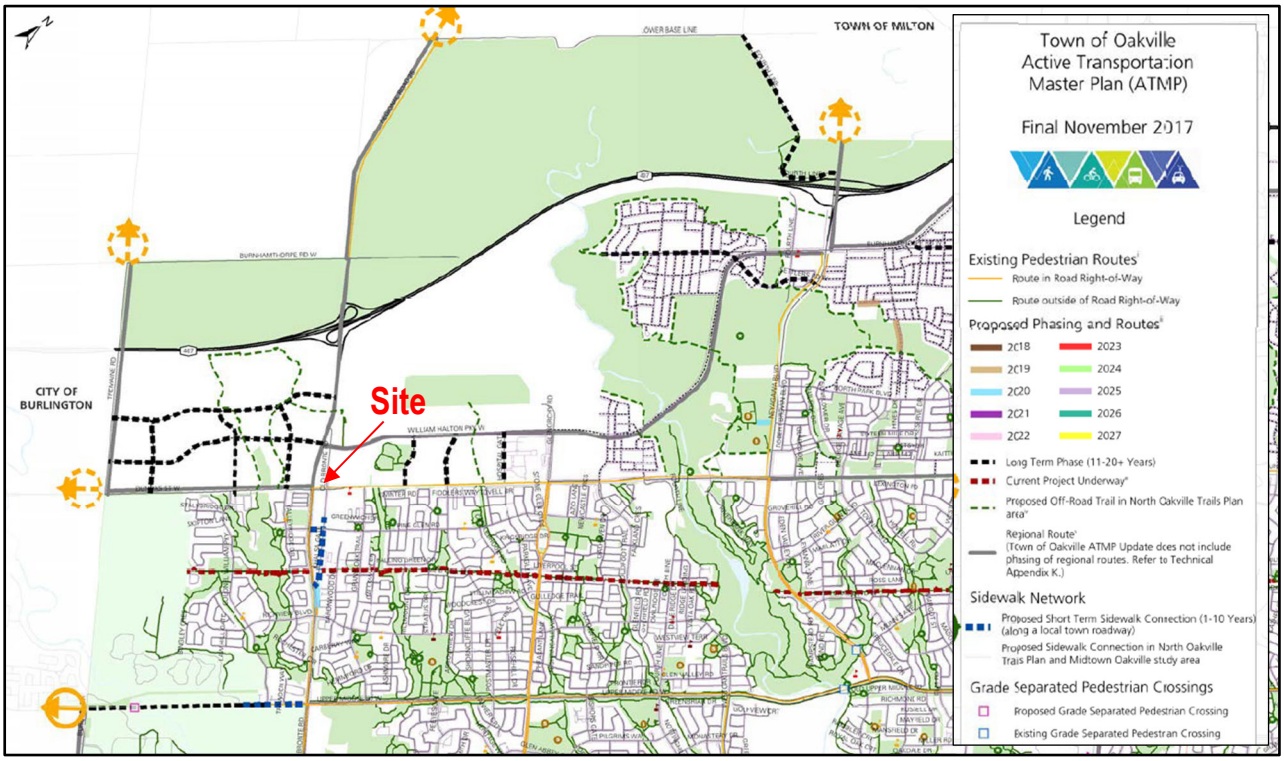
Under the existing conditions, sidewalks are available on the south side of Dundas Street W, both sides on Old Bronte Road south of Dundas Street W, and both sides on Bronte Road south of Dundas Street W. Sidewalk is available on the east side of Old Bronte Road north of Dundas Street W, and south side of William Halton Parkway east of Bronte Road.

It is Nextrans' understanding that sidewalks will be provided on both sides of all internal streets within the North Oakville West Secondary Plan to facilitate pedestrians. Therefore, in the future, a complete sidewalk network will be provided and constructed by the proposed developments in the area. For an illustration of the big picture for the future community network, **Figure 13** illustrates the Town of Oakville Proposed Pedestrian Network Phasing (*excerpt from the Town of Oakville 2017 ATMP, Map 8).*

As part of the proposed development, sidewalks will be maintained and provided on Old Bronte Road and Dundas Street W, along the frontage of the site. Sufficient illumination will be provided along frontage of the site to enhance security for the pedestrians. Direct sidewalk connections from the proposed building main entrances to these sidewalk facilities will also be provided.

Figure 14 illustrates the potential sidewalks along the frontage of the proposed development.

Figure 13 – Town of Oakville Proposed Pedestrian Network Phasing



Cycling

Currently, there are dedicated cycling routes along Colonel William Parkway, Grand Oak Trail, Pine Glen Road and Postmaster Drive in the vicinity of the study area. There are also multi-use trails along Dundas Street W east of Bronte Road and on Bronte Road south of Dundas Street W.

Similar to the walking network, it is Nextrans' understanding that cycling facilities will be constructed in phases, as per the Town's proposed cycling network phasing and priority projects. For an illustration of the big for this new community, **Figure 14** illustrates the Town of Oakville Proposed Cycling Network Phasing and Priority Projects (*excerpt from the Town of Oakville 2017 ATMP, Map 9*), with **Figure 15** illustrating the North Oakville Trails Plan (Updated as of 2019). On this basis, the proposed development will support the Town's initiative with regards to the cycling facility, where appropriate.

As part of the proposed development, a total of 200 bicycle parking spaces will be provided to encourage future residents from the proposed development to use active modes of transportation to school, to work, and to other destinations without driving a private car.

Nextrans also recommends that the proposed development provides a publicly accessible bicycle repair station on-site. The final location will be provided as part of the final site plan, where appropriate. The potential location is illustrated in **Figure 14**.

Figure 14 – Potential Sidewalk Connections Along the Frontage of the Proposed Development

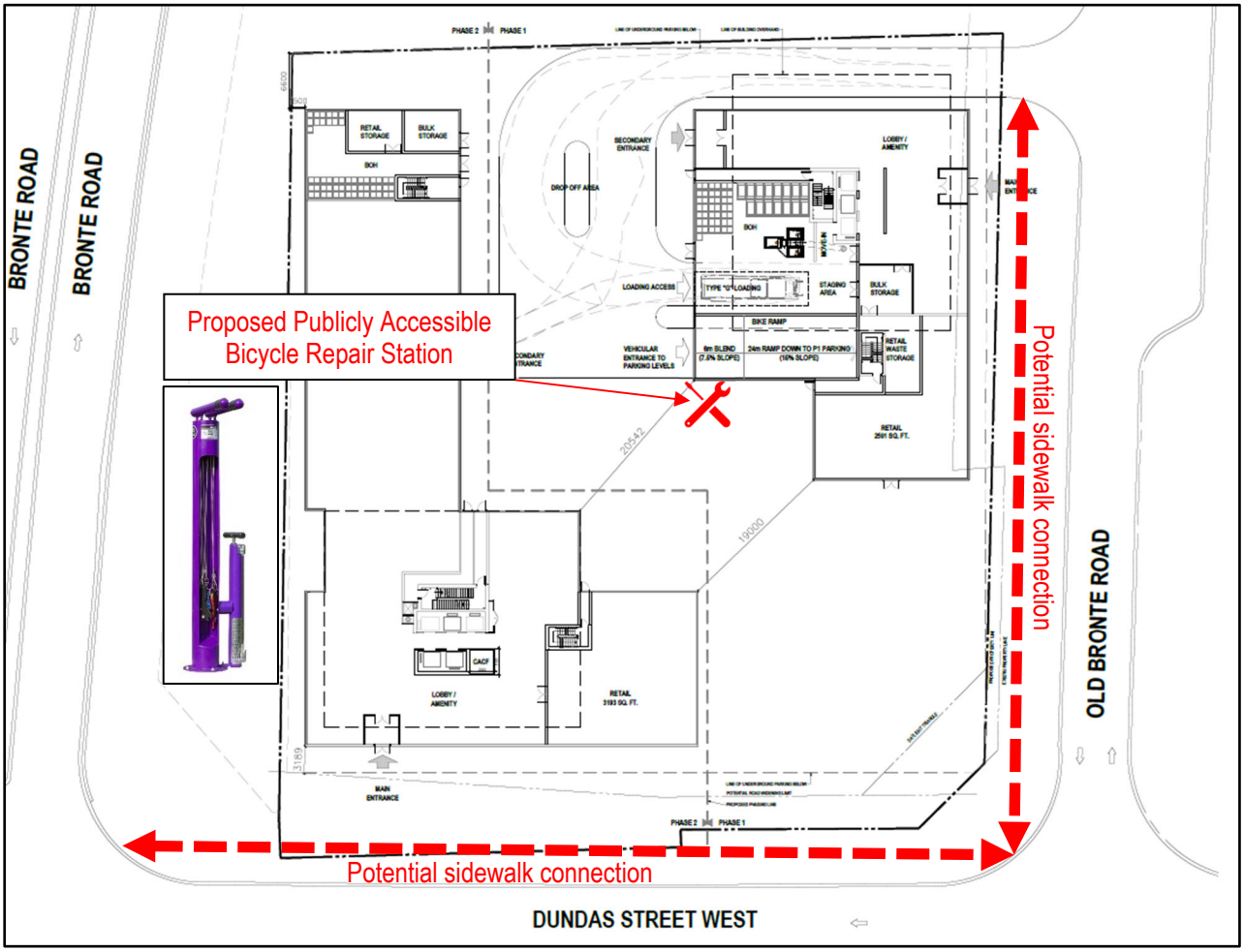


Figure 15 – Town of Oakville Proposed Cycling Network Phasing and Priority Projects

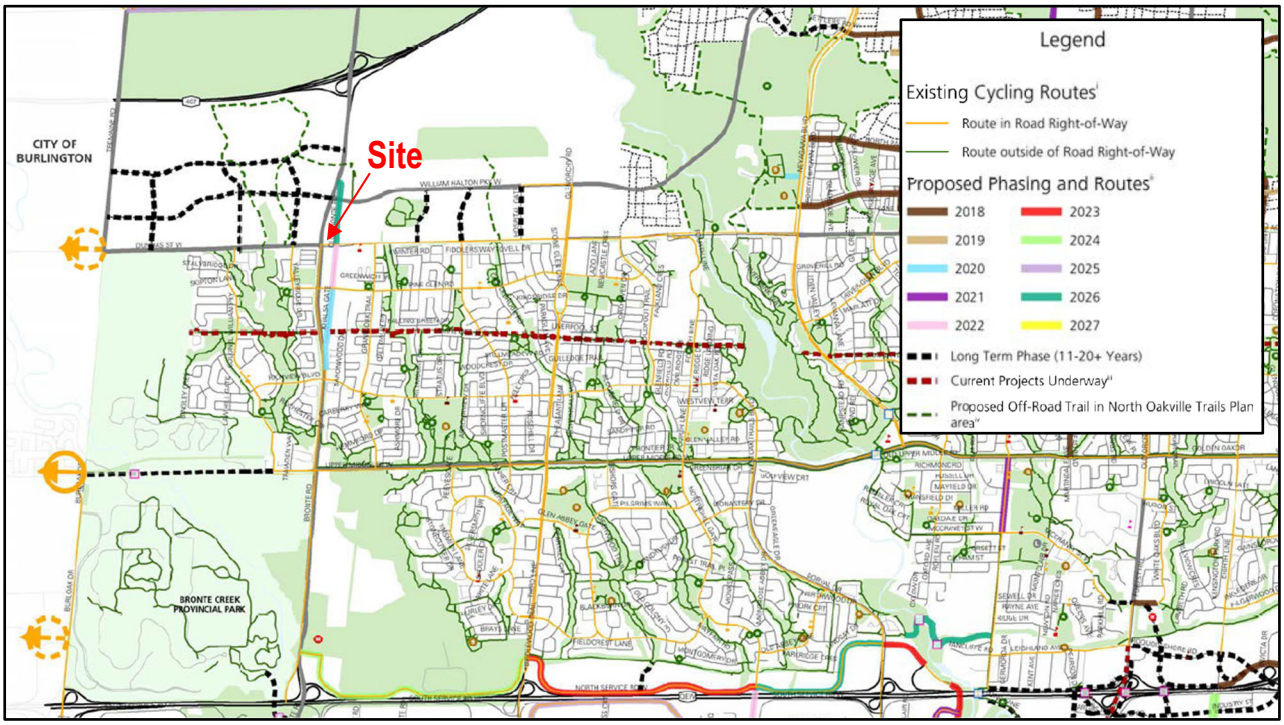
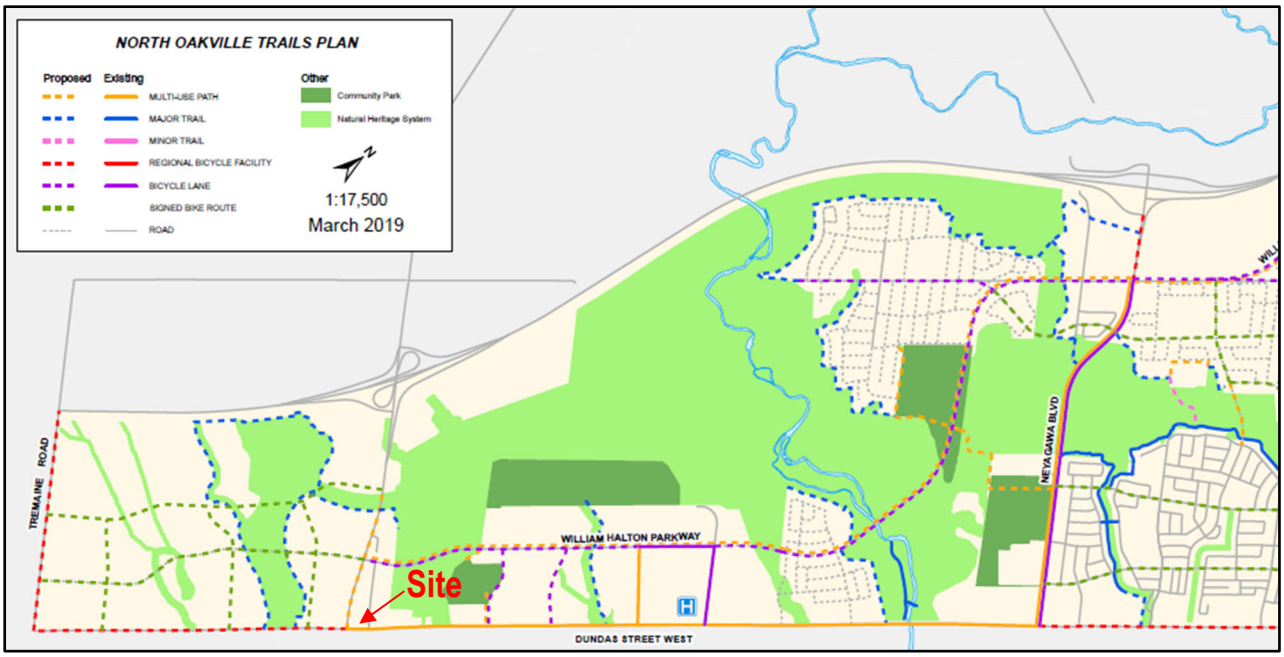


Figure 16 – North Oakville Trails Plan



Source: North Oakville Trail Plan - 2019

6.5. Transit Mode Assessment

As indicated in Section 5.3 of this Study, the proposed development is expected to generate 104 total two-way transit trips (55 inbound and 49 outbound) and 48 total two-way transit trips (28 inbound and 20 outbound) during the morning and afternoon peak hours, respectively.

As indicated in Section 2.3 of this Study, the area is current serviced by three existing Oakville Transit Bus Routes 5 & 5A Dundas, 34 Pine Glen and 13 Westoak Trails.

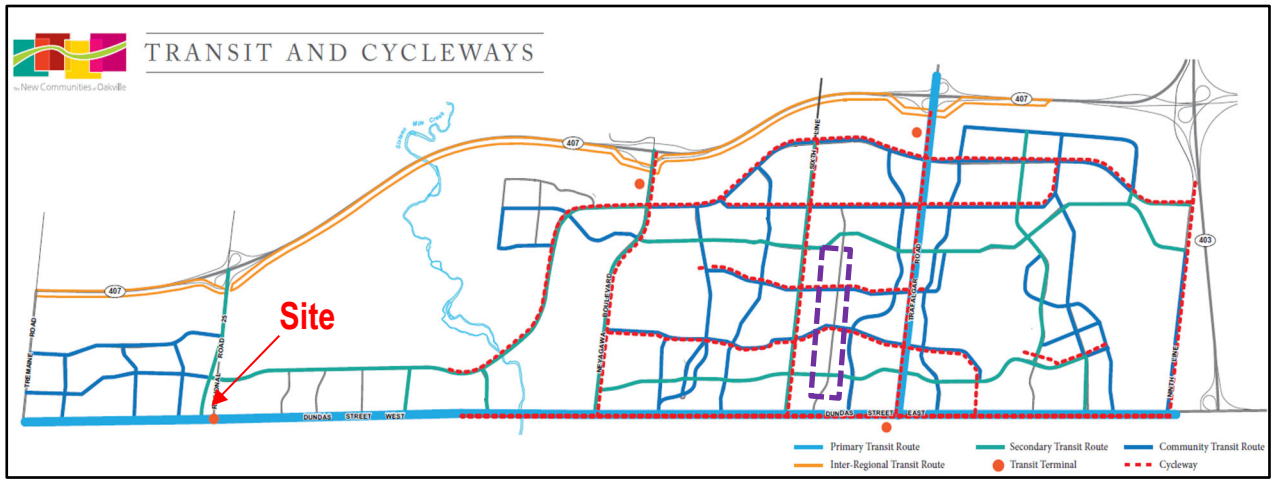
Based on Nextrans' review of the future proposed transit network for this new community, there will be:

- Primary transit routes running along Dundas Street W;
- Secondary transit routes running along Bronte Road and William Halton Pkwy;
- Inter-regional transit route along Highway 407; and
- A proposed transit terminal at the Dundas Street W/Old Bronte Road intersection

As the proposed development will be located close to the future primary route on Dundas Street W, and secondary routes on William Halton Parkway and Bronte Road, the proposed development will have good transit service in the future. Therefore, there is sufficient transit capacity to accommodate the anticipated transit ridership from the proposed development under the horizon year considered. No additional improvements are required beyond the planned and proposed transit network in the area.

Figure 17 illustrates the contemplated North Oakville East Secondary Plan future transit network.

Figure 17 – North Oakville East Secondary Plan Future Transit Network



Source: The New Communities of Oakville Brochure (Prepared by the Town of Oakville)

7.0 PROPOSED SITE PLAN REVIEW

7.1. Loading Space

As per the Town of Oakville Zoning By-law No. 2009-189, an on-site loading space will be provided for the proposed development with the following minimum dimensions: 3.5 m width, 12.0 m length and 4.2 m vertical clearance. The proposed loading space is located within Building A, however, it is connected with Building B. The vehicle turning movements have been generated using AutoTURN software. The vehicle turning movements are illustrates in **Figures 21** and **22** of this Study.

7.2. Solid Waste Management

On the day of garbage collection, garbage bins will be moved to the staging area. The garbage truck will enter the loading area in forward motion. Once the operation is completed, it will backout onto the laneway and exit the site in forward motion.

As for the recycling truck, it will enter the loading bay in forward motion, backout onto the laneway, drive up and backing into the loading area. Once the operation is completed, it exits the loading area and exit the site in forward motion via the laneway.

7.3. Proposed Development Access

The proposed development full moves access is provided via Old Bronte Road, at the most northerly limit of the site. The intersection capacity analysis indicates that the proposed access is expected to operate at acceptable levels of service with minimum delay or queue. The lane configurations include:

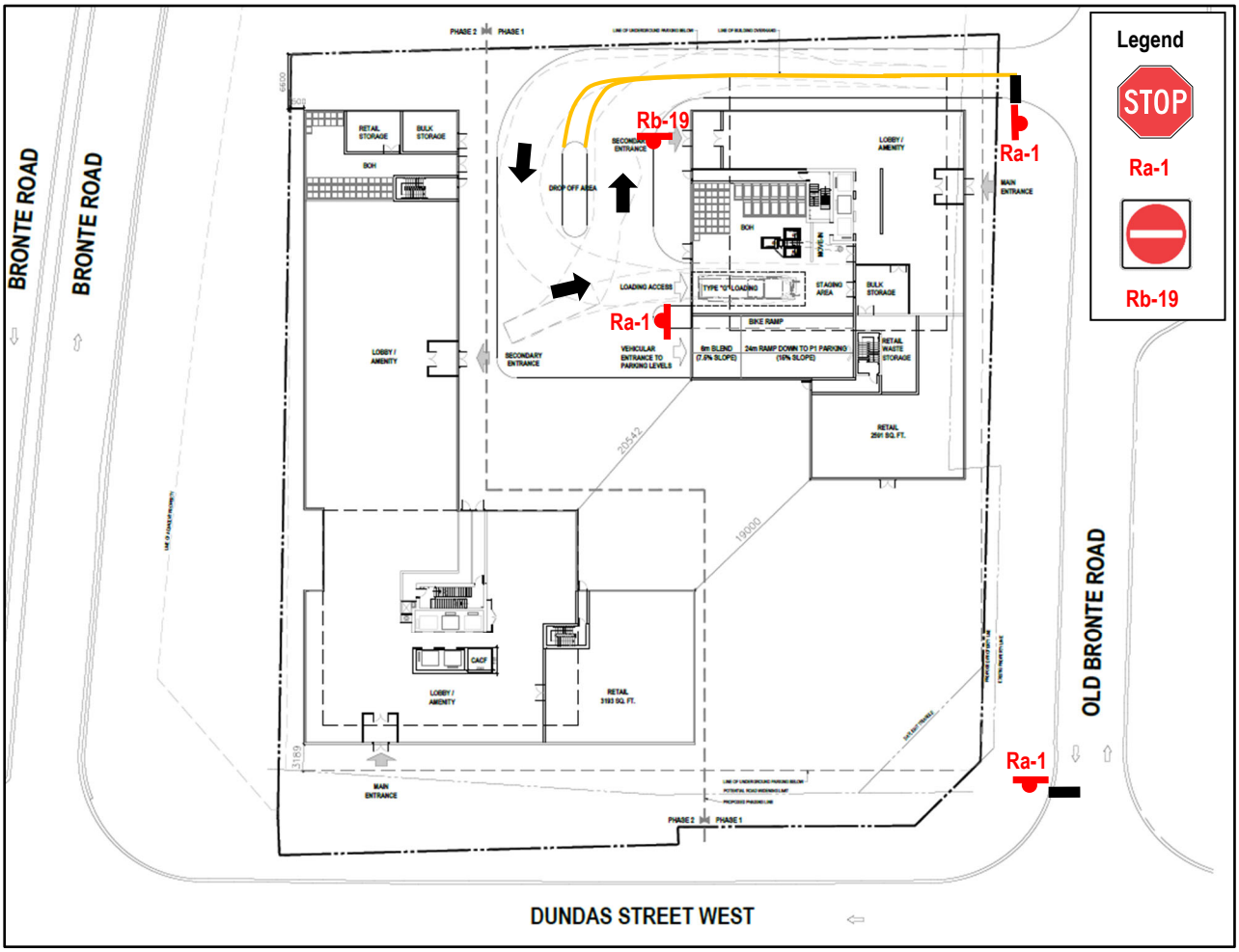
- One inbound lane (minimum 3.5 m width);
- One outbound lane (minimum 3.5 min width); and
- One shared southbound through/right lane and one northbound shared through/left lane on Old Bronte Road

7.4. Internal Traffic Control, Signage, Pavement Marking and Lane Configuration

As indicated, the proposed development access will have one inbound and one outbound lane. The internal circulation will be one-way system to separate the inbound and outbound traffic so that the drop-off/pick-up area, as well as the underground parking ramp and proposed loading area can operate adequately and efficiently.

Figure 18 illustrates the proposed traffic control, signage, pavement marking and lane configurations for the internal site circulation. This plan will be finalized as part of the final site plan submission.

Figure 18 – Internal Intersection Traffic Control and Lane Configurations



7.5. Access Sightlines

Nextrans has conducted a sightline analysis for the proposed site access. Based on the Transportation Association of Canada Geometric Design Guide for Canadian Road (TAC-2017), the required stopping sight distance for the northbound and southbound is 65 m (based on 50km/m design speed). The design speed is based on posted speed plus 10km/h, in this case 40km/h posted speed for both northbound and southbound.

The analysis illustrated in **Figure 19** indicates that 65m sightline distance can be achieved based on the existing road profile and configurations.

7.6. Traffic Calming

Given that Old Bronte Road has a very short segment between Dundas Street W and William Halton Parkway, there is very limited chance for speeding through this road. Therefore, based on the context of Old Bronte Road and future traffic conditions, no traffic calming is required under this horizon year or as part of this proposed development.

Figure 19 – Site Access Stopping Sight Distance

Source: Google Map

8.0 VEHICLE PARKING ASSESSMENT

8.1. Zoning By-law Vehicle Parking Requirement

The Town of Oakville Zoning By-law No. 2009-189 has been reviewed for vehicle parking requirements. **Table 9** below summarizes the vehicle parking requirements based on the noted Zoning By-law requirements.

Table 9 – Town of Oakville Zoning By-law Vehicle Parking Requirements

Unit Type	No. of Unit/GFA	Maximum Parking Rates	Parking Requirement
Residential (more than 4-storey)	690 units	1.25 space/unit	863 spaces
Visitor	690 units	0.20 spaces/unit for visitor	138 spaces
Retail	569.43 m^2	1.00 space/30m^2	19 spaces
Total			***1,020 spaces***

Based on the assessment noted above, the proposed development would be required to provide a ***maximum*** of 1,020 vehicle parking spaces, inclusive of residential, visitor and retail uses. These vehicle parking rates are excessive and do not support the sustainability vision of the North Oakville Secondary Plan and the Town Official Plan. In order to encourage residents to take more sustainable modes of transportation, parking rates should and must be reduced as parking management is the best Transportation Demand Management measure.

It should be noted that the proposed development is expected to generate only 176 total two-way auto trips (61 inbound and 115 outbound) and 224 total two-way auto trips (124 inbound and 100 outbound) during the morning and afternoon peak hours, respectively. Effectively, the maximum vehicle parking requirement based on the auto trip generation is 224 vehicle parking spaces.

8.2. Benefits of Vehicle Parking Reduction

8.2.1.1 Appropriate Parking Management is the best TDM Measure

Appropriate parking demand management is the best transportation demand management measure at this time because:

- Limited available parking spaces will encourage residents not to own a car
- It encourages residents to take other sustainable modes of transportation available in the area such as walking, cycling and public transit
- It maximizes transit ridership and therefore maximizes the impact of major transit infrastructure improvements

8.2.1.2 Support Alternative Modes of Transportation

Public Transit is an important mode of transportation for both short and longer distance trips to and from the proposed development. As indicated in Section 2.3 of this Study, the area is current serviced by three existing Oakville Transit Bus Routes 5 & 5A Dundas, 34 Pine Glen and 13 Westoak Trails.

Based on Nextrans' review of the future proposed transit network for this new community, there will be:

- Primary transit routes running along Dundas Street W;
- Secondary transit routes running along Bronte Road and William Halton Pkwy;
- Inter-regional transit route along Highway 407; and
- A proposed transit terminal at the Dundas Street W/Old Bronte Road intersection

As the proposed development will be located close to the future primary route on Dundas Street W, and secondary routes on William Halton Parkway and Bronte Road, the proposed development will have good transit service in the future. Therefore, there is sufficient transit capacity to accommodate the anticipated transit ridership from the proposed development under the horizon year considered. With the recent gas price increases and capital cost of owning a vehicle (new vehicle shortage due to supply chain problem), more residents will choose to use more convenient and effective mode of transportation such as public transit, walking and cycling.

8.3. Recommended Vehicle Parking Requirement for the Proposed Development

Given the reasons noted above, this area will be transformed into a complete community that supports all modes of transportation including excellent transit and active transportation network. These modes of transportation are sustainable and cheaper than owning a private vehicle. These modes of transportation will also help reducing congestion and pollution in the area.

The following are recommended parking rates (**Table 10**) for the proposed development, based on the parking justification provided in subsequent sections of this Study.

Table 10 – Recommended Vehicle Parking Rates for the Proposed Development

Unit Type	No. of Unit/GFA	Maximum Parking Rates	Parking Requirement
Residential (more than 4-storey)	690 units	0.80 spaces/unit	552 spaces
Visitor	690 units	0.20 spaces/unit for visitor	138 spaces
Retail	569.43 m^2	1.00 space/70m^2	8 spaces
Total			***698 spaces***

Based on the recommended vehicle parking rates, the proposed development will provide a total of 698 vehicle parking spaces for both residential, visitor and retail components. This includes 552 residential vehicle parking spaces for residential, 138 for visitor and 8 spaces for retail use.

The proposed development will also provide a minimum of 23 accessible parking spaces as part of the total spaces provided as noted above.

9.0 VEHICLE PARKING JUSTIFICATION

9.1. Subject Site Strategic Location

The proposed development is located within the approved North Oakville West Secondary Plan, bounded by Dundas Street W to the south, Hwy 407 to the north, Tremaine Road to the west and Sixteen Mile Creek to the east, in the Town of Oakville. Based on the vision and objectives of the approved Secondary Plan, along with the completed Transportation Master Plan by Halton Region, this area will be built into a vibrant community with complete network of sidewalk and cycling facilities, along with future dedicated transit along Dundas Street W and transit in semi-exclusive/exclusive right-of-way as per Halton Region Transportation Master Plan (September 2011).

9.2. Future Conditions in the Area

As indicated through out this Study, the area will be transformed into a complete community. Based on Nextrans' review of the future proposed transit network for this new community, the area will have:

- Primary transit routes running along Dundas Street W;
- Secondary transit routes running along Bronte Road and William Halton Pkwy;
- Inter-regional transit route along Highway 407; and
- A proposed transit terminal at the Dundas Street W/Old Bronte Road intersection

As the proposed development will be located close to the future primary route on Dundas Street W, and secondary routes on William Halton Parkway and Bronte Road, the proposed development will have good transit service in the future. Therefore, there is sufficient transit capacity to accommodate the anticipated transit ridership from the proposed development under the horizon year considered. With the recent gas price increases and capital cost of owning a vehicle (new vehicle shortage due to supply chain problem), more residents will choose to use more convenient and effective mode of transportation such as public transit, walking and cycling.

9.3. Subject Site Walk Score

Nextrans has reviewed the walk score for the subject site using the information in www.walkscore.com website. **Table 11** below summarizes the walk score for the subject site.

Table 11 – Walk Score for 3005 Dundas Street W, Oakville

Mode	Score	Description
Walking	22	Almost all errands require a car
Public Transit	37	A few nearby public transportation options
Cycling	72	Biking is convenient for most trips

As the area is currently consisting of mostly vacant lands, there are limited walking and transit service due to the population density. However, as indicated throughout the report, the area will be developed in phases with walking, biking and public transit infrastructures will be provided in the future.

9.4. Existing Mode Share

Table 12 summarizes the travel mode split information based on the review of the 2016 Transportation Tomorrow Survey data for Traffic Zones 4039, 4045, 4185 and 4186. The 2016 TTS data extraction is included in **Appendix E**.

Table 12 – Modal Split based on 2016 TTS Data for Traffic Zones

Time	Trips Made by Traffic Zones				
	Auto Driver	Auto Passenger	Transit	Cycle	Walk
AM Peak Period (6:00Am – 9:00AM)	64%	15%	10%	1%	10%
PM Peak Period (4:00PM – 7:00PM)	72%	15%	10%	1%	2%

Based on the information above, the non-auto mode of transportation (transit + walking + carpooling) accounts for near 36% during the morning peak period and 28% during the afternoon peak period. Although this is a great trend, however, the auto driver mode is still very high, which is not sustainable and does not meet the sustainable objective of the Town Official Plan policies and directions. There is 1% bicycle trip, which is significant for the area with the existing conditions.

9.5. More Housing Supply for the Town of Oakville

Demand for new housing is all time high; especially during the on-going COVID-19 pandemic. Once the pandemic is fully over, housing availability and affordability are expected to further decline. One component that increases the cost of new units in multi-storey buildings, is the requirement to provide a minimum rate of parking; even in areas well serviced by transit with historically low vehicle ownership and use rates. The cost of providing one underground parking space is in the range of $48,000 to $160,000 per space due to the aggregate impact of land costs, constructability, site constraints and other factors leading to high construction costs (*Source: City of Toronto Presentation: Review of Parking Requirements for New Development - Sept 2021*).

Furthermore, the more residential or visitor parking spaces that a proposed development has to provide, the more expensive the maintenance costs will be for the owners. Monthly maintenance cost for a parking space could be up to $100 per month, on top of the capital costs of a parking space. The provision of less parking can reduce overall maintenance costs and result in lower housing costs/greater housing affordability.

9.6. Hybrid Working Model

As the COVID-19 pandemic is still impacting globally, in Canada, the Province of Ontario, and particularly, the Town of Oakville and Halton Region, this pandemic will permanently alter the way people work and travel in the future. Based on various reporting from media, this hybrid working from home trend for office workers may continue even when the pandemic is over. Hybrid working is described as employes are working at the official several days a week and several days at home. Both employees and employers have invested in equipment and technology to accommodate this hybrid working model.

9.7. High Residential Vehicle Parking Rates Result in More Car Ownership and More Driving While Reducing Transit Usage

Many municipalities have historically required new development projects to include parking, out of fear that if new residents are not provided with parking they will park around the local community and this will cause issues. The assumption here, behind both the policy and the pushback on reductions, is that people will always choose to drive, and the urban environment should be designed to accommodate that inevitable choice. But new research shows how that assumption is often backwards — offering the strongest evidence yet that parking doesn't just follow driving in cities, but can actually cause it. The new work comes from a group of urban planning scholars at UCLA and UC-Santa Cruz, led by Adam Millard-Ball, and has been published in an issue of the journal Urban Studies. Using an innovative and elegant study method, the researchers show clearly that "increased parking causes more car ownership and more driving while reducing transit use." They continue: "In summary, the evidence from our study robustly supports that urban residents' transportation behavior — but not their employment — is affected by local features of the built environment, and particularly so by parking." The conclusion underscores the importance of urban design in shaping behavior.

This new study distinguishes itself by finding a way to effectively (and ethically) randomize a population: San Francisco's housing lottery. In San Francisco, inclusionary zoning regulations typically require new developments with 10 or more

residential units to provide affordable housing, which is offered to income-eligible households through a lottery. This is the gold standard for showing causation through a randomized trial.

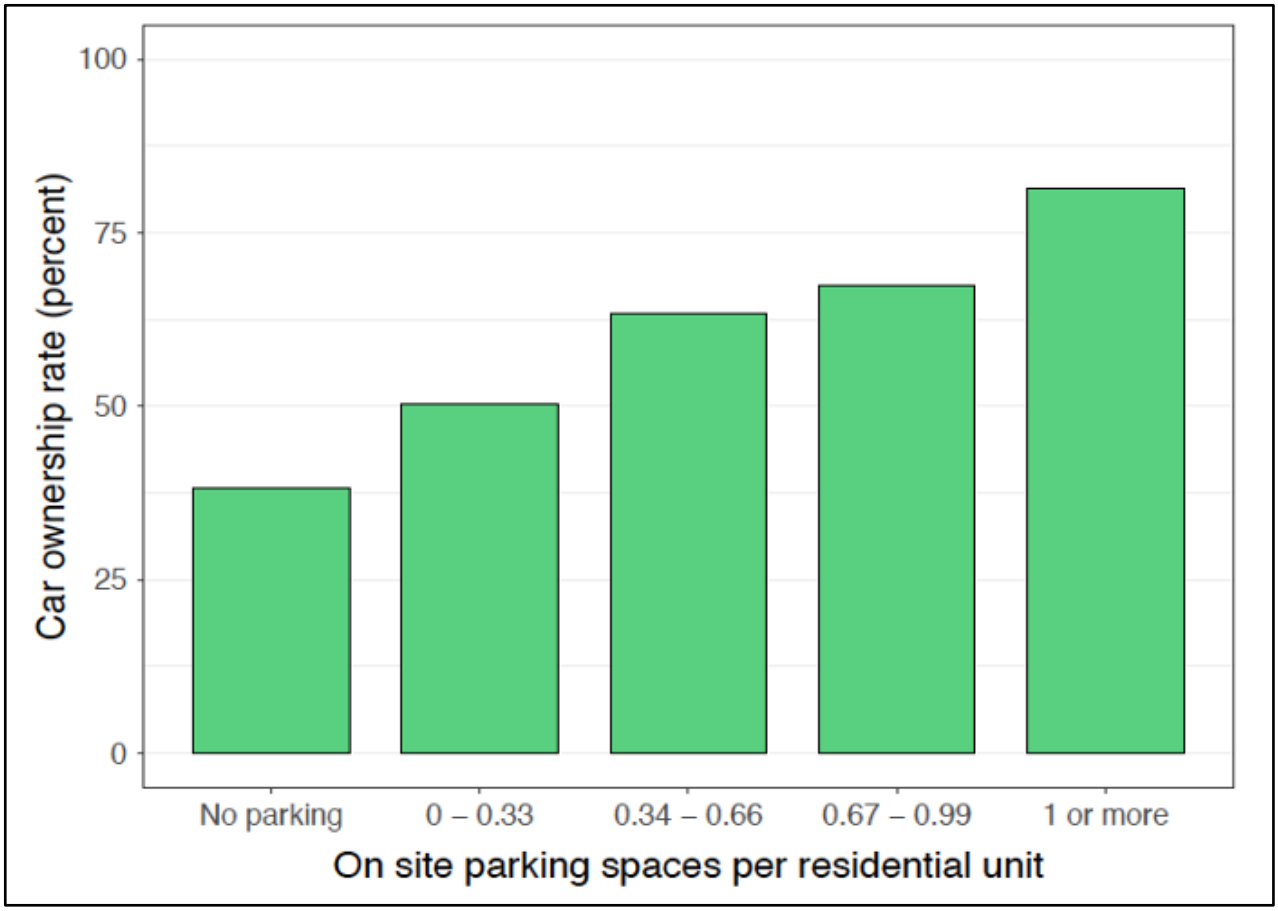
In spring 2019 — pre-pandemic — the researchers mailed a travel behavior survey to housing lottery winners in 197 development projects across San Francisco. The short questionnaire, provided in four different languages, asked about typical travel mode (car, transit, bike, walking), car-ownership status, and employment status. Roughly 780 households responded.

When the researchers matched travel behavior to parking requirements, they found "a clear and substantive trend:" as parking supply rose, so did car-ownership. In buildings without any parking, only 38 percent of respondents owned a car. Car-ownership climbed as parking requirements increased, reaching 81 percent of respondents in buildings that required one parking space per housing unit. **Figure 20** illustrates the survey responses for car ownership by residential parking ratio.

Owning a car isn't the same as using it, but further analysis found a statistically significant relationship between parking supply and driving, too. Generally speaking, households that lived near public transit, or that had good walking or cycling access, tended to use those options more often than households that did not. But when it came to using transit, in particular, the effect of a building's parking ratio was "more than twice as large" as that of its transit access.

In other words, even in buildings with transit access, parking supply was the stronger pull — increasing driving behavior by the same amount it reduced transit use. When buildings provide ample parking, residents buy a car and drive. But when buildings have transit access without easy parking, residents use other ways to get around.

Figure 20 – Survey Responses for Car Ownership by Residential Parking Ratio



"Where streets are relatively walkable and transit service is frequent," writes the research team, "parking emerges as the key factor shaping household travel behavior."

One final, critical result: the researchers found no connection at all between parking supply and full-time employment status. That's very important, because it suggests that reducing or eliminating parking spaces won't negatively impact a household's ability to keep a job, as is often feared.

The study represents a significant step forward for urban mobility policy and offers robust, conclusive and definitive evidence through a controlled study that parking minimums do indeed cause more driving. In alignment with this study, San Francisco eliminated parking minimums. And likewise, supported by this study, San Jose; Cambridge, Massachusetts; Culver City, California; Lexington, Kentucky; and Anchorage, Alaska have all eliminated parking minimums as of October of this year.

(Source: https://people.ucsc.edu/~jwest1/articles/MillardBall_West_Rezaei_Desai_SFBMR_UrbanStudies.pdf).

9.8. A Reduction to the Minimum Vehicle Parking Requirements Increases the Supply of Housing

Increasing the supply of affordable housing is a Provincial and local municipality priority. Parking minimums increase the cost of housing, by adding to construction costs which may in turn be passed on to residents. Typical underground parking costs in the GTA Complex conditions can add up to $200/ft^2 more (*Source: AltusGroup - 2021 Canadian Cost Guide*). This translates to a $48,000 - $160,000 increase in the cost of housing. There are also short term and long-term maintenance/condo fees related to this parking. The ability to avoid the cost of parking by choosing housing without parking is limited by the existence of minimum parking requirements. Many municipalities in Ontario, Canada and abroad have acknowledged that current automobile parking standards represent a barrier to the City achieving its housing vision and have recently made decisions to severely reduce and / or eliminate parking minimums in areas well-served by transit:

9.8.1. City of Toronto

The City of Toronto has recognized that the requirement of excessive parking is a barrier to achieving the City's housing needs and objectives, auto-independence and promoting other modes of transportation such as public transit, walking and cycling. In March, 2022, the City of Toronto Council has adopted Zoning By-Law Amendments that removed the minimum parking requirement for residential component, instead, the Zoning By-law only speaks to the maximum parking rates that can be applied to a proposed residential development (By-law 89-2022 - removal of minimum residential parking space requirements and the establishment of residential parking maximums provided in Provision 18).

9.8.2. City of Edmonton

In June of 2020, the City of Edmonton Council voted unanimously to change the Zoning By-law with no minimum vehicle parking requirements. Maximum parking requirements will remain in effect downtown and are being expanded in transit-oriented developments and main street areas.

9.8.3. Other Cities in the United States

A number of American cities have eliminated minimum parking requirements on new developments:

- City of Buffalo, 2017
- City of Minneapolis, 2021
- City of San Diego, 2021
- City of San Jose, 2022
- City of San Francisco, 2018
- City of Portland,
- City of Berkeley, 2021
- City of Sacramento, 2021
- City of South Bend, 2021
- City of Alameda, 2021
- City of Richmond, 2021
- City of St. Paul, 2021

- City of Emeryville, 2019
- City of Raleigh, 2022
- City of Ann Arbor, 2022
- City of Canandaigua, 2020
- City of Jackson, 2021
- Culvert City, 2022
- City of Dunwoody, 2019
- City of Lexington, 2022
- City of Albemarle, 2021
- City of Hudson, 2019

9.8.4. City of Vaughan

The City of Vaughan Council passed Zoning By-law 001-2021 in October of 2021 (part of the By-law is being appealed to the LPAT), that includes a reduction in the minimum number of parking spaces required. Under the previous Zoning By-law No. 1-88, a minimum of 1.5 parking spaces per dwelling unit was required. The City's new Zoning By-law No. 001-2021 will include a notable reduction in parking rates in the Vaughan Metropolitan Centre (VMC) area, with a rate of only 0.55 spaces/unit (0.40 spaces/unit for residents and 0.15 spaces/unit for visitors). While the Zoning By-law rates have been set, we do know that lower rates than the new by-law rates have been approved in the VMC. It should be noted that the VMC shares similar characteristics with the subject site's area with significant transit investments by all levels of government.

9.8.5. City of Ottawa

The City of Ottawa Zoning By-Law parking requirements were revised to eliminate minimum parking requirements for developments within 600 metres of an LRT station, and similar to the City of Toronto, it adopts a maximum allowable parking rates for new development. This is to support the new major transit investment of the Confederation Line which opened in December 2019 and services through the downtown area. New residential developments near LRT stations are not required to provide any resident parking and only require to provide visitor parking at a rate of 0.10 spaces per unit.

9.8.6. North Oakville (Town of Oakville)

The Town of Oakville Council passed Zoning By-Law No. 2009-189 for the area of North Oakville. The Zoning By-law No. 2009-198 provides maximum allowable parking rates for new residential developments, such as apartment buildings with more than 4-storey (up to 1.25 spaces per dwelling unit for residents plus 0.20 for visitors). This Zoning By-Law is in line with the North Oakville Parking Strategy study, prepared in November, 2009, which provided the Town with a strategy to create a pedestrian friendly and a more transit-oriented suburb by encouraging a more efficient use of private and public parking resources and provide a reduced parking requirement to reflect transit planning goals.

9.8.7. City of Brampton

The City of Brampton has adopted Zoning By-law Amendment No. 45-2021 to the Zoning By-law No. 270-2004 for the Downtown, Central Area and Hurontario/Main Street Corridor. The By-law states that, notwithstanding any minimum parking requirement prescribed in Sections 10.9.2(a), 10.9.3, 20.3.1 and 30.5, there shall be no minimum required parking for any use within the boundaries of Schedule B-7 (**Appendix I**).

This is a very encouraging provision to support and address housing affordability and shortage in the City of Brampton. This is also in-line with other jurisdictions in the GTA such as the City of Toronto as indicated above. Given that the proposed development is located adjacent to three rapid transit lines (Hurontario LRT, Milton GO Line and Dundas BRT further to the south). We recommend the proposed development have a much lower rate, or no minimum, similar to the City of Brampton and the City of Toronto, as presented in this Study.

The municipalities that have severely reduced and / or remove parking minimums have not re-imposed them, noting that they have been successful. They have found that the reduction to the minimum automobile parking requirements does not remove or prohibit parking in new developments but rather recognizes that parking minimums embedded in their prevailing zoning by-laws may not be nuanced enough or be updated frequently enough to be applicable in all situations and equitable access, such as for accessible parking, can still maintain. Specifically, the City of Toronto cited:

".. the amount of parking that is required sorts itself out through market mechanisms. If someone wants a parking spot, they can get one through renting or purchasing a property that includes a parking spot. If developers realize they are unable to sell units without parking, parking will be provided."

9.9. A Reduction to the Minimum Vehicle Parking Requirements Will Help Supporting Local Businesses

A lower parking rate can help to support local businesses and improve the overall vibrancy of the community. When tenants are encouraged to use alternative forms of transportation, they are more likely to walk or bike to local shops, restaurants, and other businesses. This can help to support the local economy and create a more vibrant and dynamic community. A study from London England found that implementing policies aimed at reducing auto-dependence and encouraging transportation alternatives to automobiles, increased retail spend by 30% in local town centres and on main streets. And over a month, people who walk to the main street spend up to 40% more than people who drive there. *(Source: https://content.tfl.gov.uk/town-centres-report-13.pdf).*

This is consistent with other policy and design interventions implemented in other cities like the City of Toronto, New York City and Seattle. For example, the introduction of bike lanes, and the recent removal of parking minimums, on Vanderbilt Avenue, in New York City, led to a 102% increase in retails sales and, similarly, on Latona Avenue and 65 Street, in Seattle, a similar intervention increased retail sales by 400%.

(Source: https://www.toronto.ca/wp-content/uploads/2019/11/8fd3-Bloor-Bike-Lane-Economic-Impact-Research-Summary-2019.pdf).

9.10. A Reduction to the Minimum Vehicle Parking Requirements has a Number of General Benefits

A reduction in the minimum parking requirements which decreases vehicle trips and increases transit usage (as proven via the UCLA study above) also provides the following benefits:

- Reduced traffic congestion in the area. Refer to Section 3.2 (2016 TTS Mode Share) of this report which demonstrates that a reduction in vehicle parking reduces the number single-occupancy trips.
- Reduced GHG emissions. The grams of CO2 per person kilometer traveled for a car is 243.8 grams, 20 grams for a streetcar, and zero grams for walking and biking.

  (Source: https://sensibletransport.org.au/project/transport-and-climate-change/)
- Safer streets for all road users, other drivers, bicyclists, pedestrians. A new controlled study from the Department of Safety and the Environment Institute of Transport Economics in Oslo, Norway showed that the more bikes there were, the more drivers saw bikes and were able to coexist safely with riders. The number of accidents between cars and bicycles decreased substantially as the number of people riding bicycles increased.

9.11. Sustainable Halton – Maintaining and Improving the Urban System - Transit First

Through the Working Paper #1 of the Sustainable Halton (prepared by Urban Strategies Inc.) indicates that priority for transit is a fundamental principle in developing growth management concepts. Opportunities are being sought to enhance transit service and access and increase ridership through new opportunities for higher density, a mix of uses and a focus on nodes and corridors in both existing and new development areas. There are opportunities to reinforce existing higher order GO Transit services and planned investment in Bus Rapid Transit (BRT). A potential new GO Transit station is also being considered along the Milton Rail Corridor east of 16 Mile Creek. Recent proposals issued by Metrolinx also suggest a potential transit node in this area that would connect with BRT services along Highway 407. Capturing opportunities to support all of these potential transit investments is a key consideration in development growth management concepts for Halton.

Therefore, the proposed development is supportive of this strategy and will provide a health transit ridership supply to the future transit system for the area. However, in order to continue to support this initiative, reducing vehicle parking supply is a must to make it a reality.

9.12. Town of Oakville Official Plan – North Oakville West Secondary Plan

Section 8.2.3.4 (Transportation) of the North Oakville West Secondary Plan indicates that:

a. To create a system of roads and transportation corridors which promotes the safe, efficient circulation of traffic, including transit and non-vehicular traffic.

b. To establish an efficient and linked, safe pedestrian movement system (cycleways and walkways) along with an appropriate distribution of land uses so that employees do not need to rely on the automobile to meet the recreational, shopping and commuter needs of daily life.

c. To establish a transportation system that complements and supports the existing and future urban structure and land use pattern.

d. To promote transit opportunities through community design, including a “transit first” policy to ensure that development including the phasing of development, proceeds in a manner which will be supportive of the early provision of transit services.

e. To explore all modes of transportation including the use of HOV lanes, express bus lanes and transit rights-of-way on the existing and future road network in Oakville, as well as other innovative approaches to transit.

f. To promote both local and higher order transit opportunities through land use arrangements, building orientation and streetscape design.

Furthermore, Section 8.4.2 (Development Form) of the Secondary Plan indicates that the North Oakville West Secondary Plan has been based on a conceptual design which, when combined with North Oakville East, maximizes the potential for sustainable development through such features as a modified grid road system which enhances the opportunity to provide transit, and a Natural Heritage and Open Space System.

In addition to the general direction implicit in the Plan, the Town will actively encourage development which is specifically based on the principle of sustainable development, including the development of Town facilities. The Town will also work with other public agencies to encourage them to follow these principles. Such development will be designed to:

a. reduce the consumption of energy, land and other non-renewable resources;

b. minimize the waste of materials, water and other limited resources;

c. create livable, healthy and productive environments; and,

d. reduce greenhouse gases.

In order to meet these objectives and directions, vehicle parkin supply must be reduced to support reduction of greenhouse gases, construction costs and increase ridership to support future transit investments in the area by all levels of government.

9.13. Conclusion on Why Vehicle Parking Rate Reduction is Justified

Based on the comprehensive justifications provided above, it is concluded that reduction to the residential parking rate is justified, desirable and would support the Town of Oakville Official Plan and North Oakville West Secondary Plan Sustainability Policies and Objectives:

- The proposed parking rate reductions would be consistent with the PPS, the Growth Plan, Halton Region Official Plan and the Town Official Plan sustainability objectives. In particular, the experience in these other cited municipalities demonstrates that automobile parking minimums can be eliminated and still achieve Official Plan policies which require adequate or sufficient parking off-street or on-site.
- Given these considerations, and in the context of the future transit improvements in the area, the proposed reduction to the minimum automobile parking requirements is justified, desirable and would better support various planning requirements to:
    - create compact complete communities
    - encourage transportation alternatives to automobiles
    - be consistent with policies aimed at reducing auto-dependence
    - support and encourage land- and cost-efficient forms
    - provide for efficient use of land next to planned transit

10.0 BICYCLE PARKING ASSESSMENT

Table 13 summarizes the Town of Oakville Zoning By-law No. 2009-189 bicycle parking requirement for the proposed development to support TDM and active transportation.

Table 13 – Bicycle Parking Space Requirements

Land Use	No. of Unit / GFA	Visitor		Residential		Total
		Rates	Spaces	Rates	Spaces	
Zoning By-Law No. 2009-189 Requirements (Table 5.7A)						
Residential	690 units	0.25 spaces/unit	172	0.75 spaces/unit	518	690
Zoning By-Law No. 2009-189 Requirements (Notwithstanding Clause 5.7 iv.)						
Residential	690 units	NA	50	NA	150	200

Based on the assessment indicated above, the proposed development is required to provide a total of 200 bicycle parking spaces, with 150 spaces for residential and 50 spaces for visitor and retail components, based on the Notwithstanding Clause 5.7 (iv) of the Zoning By-Law no. 2009-189.

11.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a co-ordinated series of actions aimed at maximizing the people moving capability of the transportation system. Intended to reduce single-occupant auto use, potential TDM measures include: TDM supportive land use, bicycle and pedestrian programs and facilities, public transit improvements, preferential treatments for buses and ridesharing, where appropriate.

As the gas price is record high, along with increasing inflation, the residents will automatically find ways to conduct hybrid working as noted in Section 9 of this Study, carpool or taking transit to curb the costs of living. It is the responsibility of the Region and the Town to provide these major infrastructure options for residents, such as providing public transit and active transportation facilities, which are beyond the scope and ability of the proposed development.

The following TDM incentives are recommended for the proposed residential development, based on Nextrans' review of the development area context:

- Given that parking management is the best TDM measures, the proposed development should implement the recommended parking rates provided in this Study based on the comprehensive parking justifications to support TDM and minimize the numbers of single-occupant-vehicle trips;
- The proposed development only provides the recommended vehicle parking rates outlined in this Study;
- Provide direct shared pedestrian/bicycle connections from the proposed development to Dundas Street W and Old Bronte Road, where appropriate;
- Provide a total of 200 bicycle parking spaces on-site;
- Provide two bicycle repair stations on-site;
- Provide information package for new residents. The information package will include Oakville Transit schedules, GO Transit schedules, and community and cycling maps. The Information Package can be distributed at the sale office

These measures will be implemented through site plan submission, agreement and prior to unit occupancy.

12.0 CONCLUSIONS / FINDINGS

12.1. Study Conclusions

The findings and conclusions of the analysis are as follows:

- The proposed development is expected to generate:
    - 104 total two-way transit trips (55 inbound and 49 outbound) and 48 total two-way transit trips (28 inbound and 20 outbound) during the morning and afternoon peak hours, respectively; and
    - 176 total two-way auto trips (61 inbound and 115 outbound) and 224 total two-way auto trips (124 inbound and 100 outbound) during the morning and afternoon peak hours, respectively
- Based on the intersection capacity analysis, under the existing, future background and future total traffic conditions, all unsignalized intersections considered in the analysis are expected to operate at acceptable levels of service during both the morning and afternoon peak hours. The signalized intersection of Bronte Road/William Halton Parkway intersection is also expected to operate at acceptable levels of service, with no improvements are required during both the morning and afternoon peak hours. Some signal timing optimization may be required for the existing condition during the afternoon peak hour. This improvement is very minimal.

  The proposed development access is also expected to operate at acceptable levels of service with minimum delays or queues during both the morning and afternoon peak hours.

  However, under all horizons (existing, future background and future total conditions) the signalized intersection of Dundas Street W/Bronte Road intersection are expected to operate at high delay and queues during both the morning and afternoon peak hours. This is due to significant growth in the area through background corridor growth and two major background developments. It should be noted that the proposed development adds very little delays to the existing boundary roadway intersections.
- The potential mitigation measures to address these operational issues have been provided under both the future background condition and future total condition assessment.
- The transit analysis indicates that as the proposed development will be located close to the future primary route on Dundas Street W, and secondary routes on William Halton Parkway and Bronte Road, the proposed development will have good transit service in the future. Therefore, there is sufficient transit capacity to accommodate the anticipated transit ridership from the proposed development under the horizon year

considered. No additional improvements are required beyond the planned and proposed transit network in the area.

- The area will also have a complete network of active transportation facility in the future as identified in the North Oakville West Secondary Plan and this network can accommodate the proposed development. Therefore, no improvements are required beyond the identified plans.

- Based on the assessment noted above, the proposed development would be required to provide a maximum of 1,020 vehicle parking spaces, inclusive of residential, visitor and retail uses. These vehicle parking rates are excessive and do not support the sustainability vision of the North Oakville Secondary Plan and the Town Official Plan.

  Based on the recommended vehicle parking rates, the proposed development will provide a total of 698 vehicle parking spaces for both residential, visitor and retail components. This includes 552 residential vehicle parking spaces for residential, 138 for visitor and 8 spaces for retail use. The proposed development will also provide a minimum of 23 accessible parking spaces as part of the total spaces provided as noted above.

- Based on the assessment indicated above, the proposed development is required to provide a total of 200 bicycle parking spaces, with 150 spaces for residential and 50 spaces for visitor and retail components, based on the Notwithstanding Clause 5.7 (iv) of the Zoning By-Law no. 2009-189.

- As per the Town of Oakville Zoning By-law No. 2009-189, an on-site loading space will be provided for the proposed development with the following minimum dimensions: 3.5 m width, 12.0 m length and 4.2 m vertical clearance. The proposed loading space is located within Building A, however, it is connected with Building B. The vehicle turning movements have been generated using AutoTURN software. The vehicle turning movements are illustrates in Figures 21 and 22 of this Study.

12.2. Study Recommendations

Based on the findings of this Study, the following recommendations are provided:

- The Town and the Region approve the proposed mixed-use development;

- The proposed development only provides the recommended vehicle parking rates outlined in this Study;

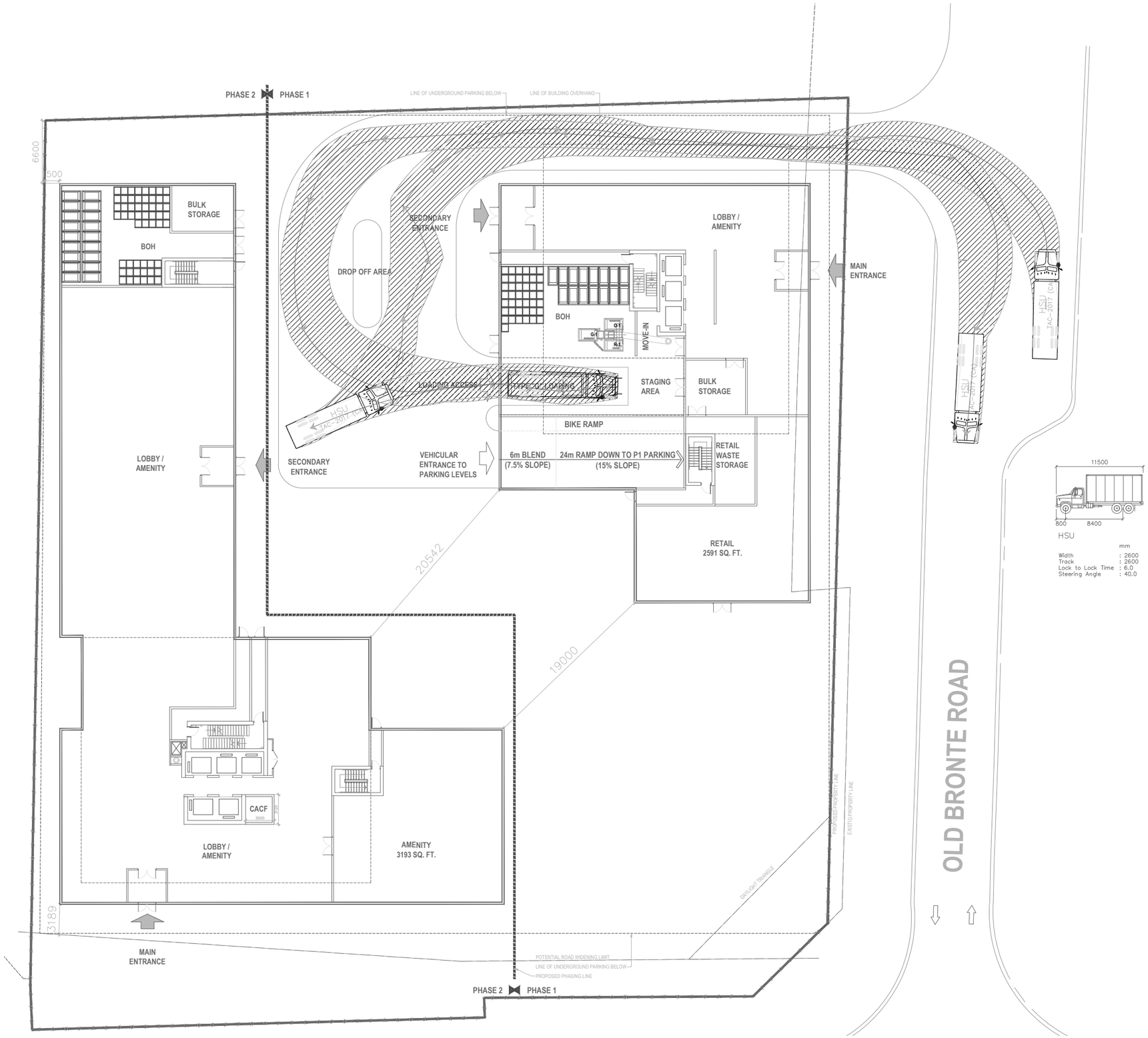
- The proposed development provides direct shared pedestrian/bicycle connections from the proposed development to Dundas Street W and Old Bronte Road, where appropriate;

- Provide a total of 200 bicycle parking spaces on-site;

- Provide two bicycle repair stations on-site;

- The proposed development implements the TDM measures and incentives identified in this report to support active transportation and transit and to reduce the numbers of single-occupant-vehicle trips to and from the proposed development; and

- The Region and the Town to monitor the intersection of Dundas Street W and Bronte Road for potential road improvements such as additional through lane on Bronte Road and westbound exclusive right turn lane for Dundas Street W



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

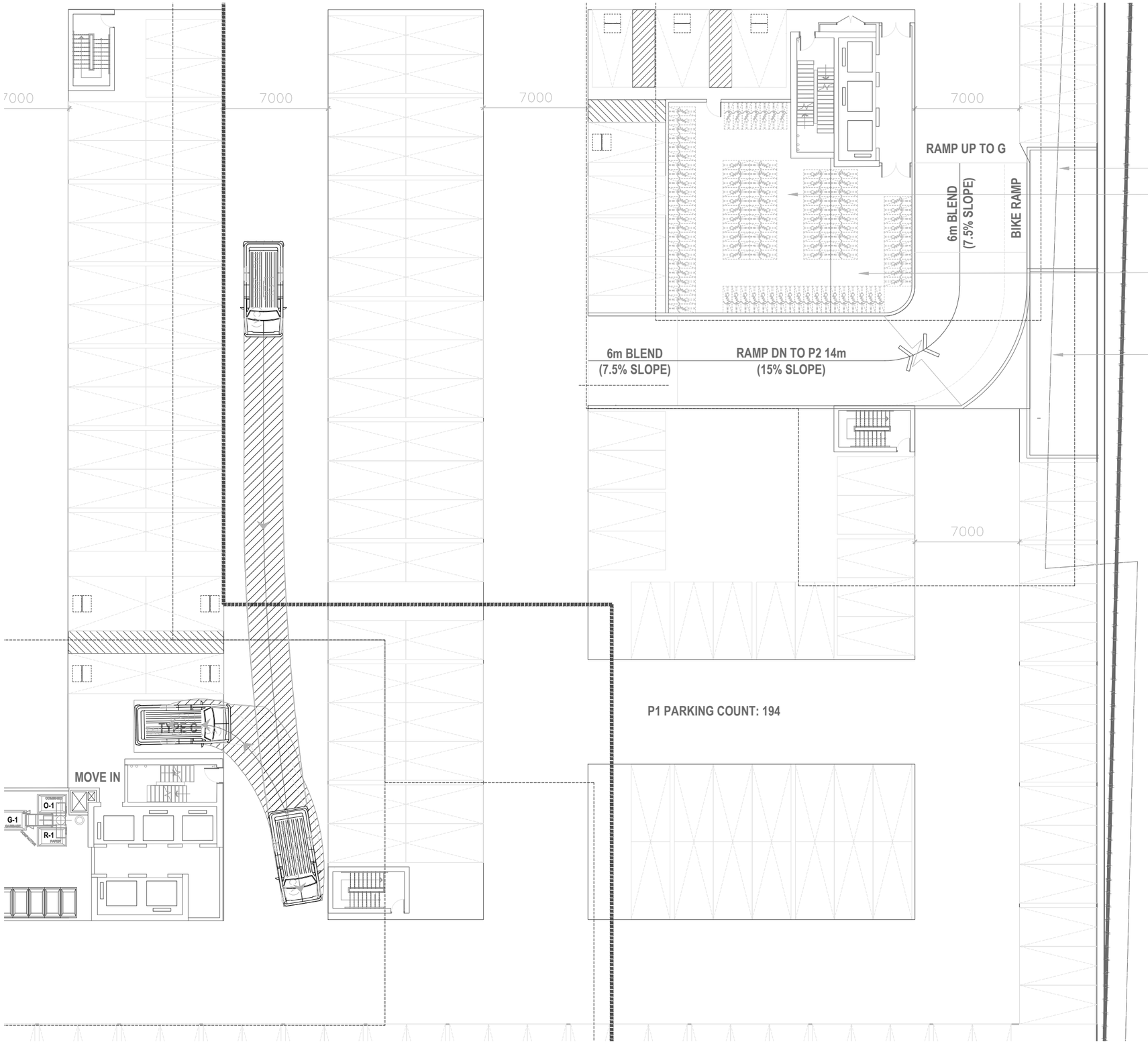
STAMP

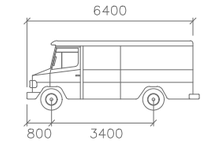
nextrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
Residential Development
3005 Dundas Street
Town of Oakville

DRAWING TITLE:
AutoTURN Analysis
HSU TAC-2017

DESIGN BY: K.A.	DATE: April 27, 2023
CHECKED BY: R.P.	PROJECT NO. NT-22-271
DRAWN BY: K.A.	
SCALE: NTS	DRAWING NO. Figure 21





LSU

	mm
Width	: 2600
Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

STAMP

nexTrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
Residential Development
3005 Dundas Street
Town of Oakville

DRAWING TITLE:
AutoTURN Analysis
LSU TAC-2017

DESIGN BY: K.A.	DATE: April 27, 2023
CHECKED BY: R.P.	PROJECT NO. NT-22-271
DRAWN BY: K.A.	
SCALE: NTS	DRAWING NO. Figure 22

Appendix A
Study Terms of Reference

From: Khan, Ayesha <Ayesha.Khan@halton.ca>
Sent: Friday, March 24, 2023 4:44 PM
To: Sam Nguyen <sam@nextrans.ca>
Cc: Steiger, Bernie <Bernie.Steiger@halton.ca>; Krusto, Matt <Matt.Krusto@halton.ca>
Subject: RE: 3005 Dundas Street W - TIS Terms of Reference

Good afternoon Sam,
Thank you for providing the terms of reference for our review. Please see my comments below:

Development Proposal – Mixed-use development proposing two 27 and 30-storey, respectively. Access proposed off of Old Bronte Road

Study Area

a. Dundas Street W at Bronte Road (signalized);
b. Dundas Street W at Old Bronte Road (unsignalized);
c. Proposed Site Accesses

Please also include the following intersections in your analysis:

- Bronte Road at William Halton Parkway
- William Halton Parkway at Old Bronte Road

Horizon Year

a. Anticipated project completion by 2027-2028
b. Analysis horizon year 2028 (*five year horizon from 2023)*

The above is acceptable.

Background Developments and Growth Rate

a. Background corridor through traffic growth – assumed 1.0% or based on background studies – Acceptable.
b. Please let us know if any proposed background developments in the area – The Town can provide you with this info
c. Please send us any available TIS for the background developments in the area, if available – Same as above.

Traffic Data

Traffic data requests (traffic signal timing, turning movement counts) can be obtained from Halton's Road Operations group via request through accesshalton@halton.ca

All plan and study submission should only be directed to the Planners on the file for Halton Region and the Town of Oakville.

Other **General** study comments include:

The TIS report must 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
- Appendices with Terms of Reference correspondence from all agencies.

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

Thanks,
Ayesha

Ayesha Khan
Transportation Planning Coordination PM1
Infrastructure Planning & Policy
Public Works
Halton Region
905-825-6000, ext. | 1-866-442-5866

This message, including any attachments, is intended only for the person(s) named above and may contain confidential and/or privileged information. Any use, distribution, copying or disclosure by anyone other than the intended recipient is strictly prohibited. If you are not the intended recipient, please notify us immediately by telephone or e-mail and permanently delete the original transmission from us, including any attachments, without making a copy.

From: Steiger, Bernie <Bernie.Steiger@halton.ca>
Sent: Friday, March 17, 2023 2:42 PM
To: Khan, Ayesha <Ayesha.Khan@halton.ca>
Cc: sam@nextrans.ca
Subject: FW: 3005 Dundas Street W - TIS Terms of Reference

Hi Ayesha,
Can you assist Sam with his request.

Sam, apologies for the delay here on my part.
Thanks.

Bernie

Bernie Steiger, MCIP, RPP
Acting Manager-South
Planning Services
Legislative & Planning Services
Halton Region
905-825-6057 Ext. 7060 | 1-866-442-5866

From: Sam Nguyen <sam@nextrans.ca>
Sent: Friday, March 03, 2023 12:55 PM
To: Partridge, Shelley <Shelley.Partridge@halton.ca>
Subject: 3005 Dundas Street W - TIS Terms of Reference

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. If you are unsure or need assistance please contact the IT Service Desk.

Hi Shelley,

We have been retained to undertake a TIS to support a proposed mixed-use development located at 3005 Dundas Street W, in the Town of Oakville. The following is a proposed scope of the TIS that takes into consideration both the Town and the Region's Traffic Impact Study Guidelines (January 2015):

1. Study Area intersection:
    a. Dundas Street W at Bronte Road (signalized);
    b. Dundas Street W at Old Bronte Road (unsignalized);
    c. Proposed Site Accesses
2. Horizon Year
    a. Anticipated project completion by 2027-2028
    b. Analysis horizon year 2028 (*five year horizon from 2023)*
3. Background Developments and Growth Rate
    a. Background corridor through traffic growth – assumed 1.0% or based on background studies
    b. Please let us know if any proposed background developments in the area
    c. Please send us any available TIS for the background developments in the area, if available
4. Trip Generation
    a. ITE Trip Generation Manual 11th Edition
    b. Use engineering judgement, local knowledge, trip generation parameters and other data, where appropriate
5. Trip Distribution
    a. Extract 2016 TTS data based on the surrounding traffic zones or use existing trip distribution, where appropriate
    b. Use engineering judgement, catchment area or marketing information, where appropriate
6. Transportation Assessment
    a. Existing conditions

b. Future background conditions; and
c. Future total conditions
d. The following tasks will be conducted:
    i. Intersection operation assessment for Auto Mode (using existing signal timing and optimize as necessary) *(use existing signal timings. If optimized timings are provided, they are to be provided in addition to the existing signal timings)*
    ii. Non-auto mode assessment (walking, cycling and public transit)
    iii. Proposed development access assessment
    iv. Vehicular and Bicycle Parking Assessment
    v. Internal Site Circulation and loading assessment

7. Transit, Active Transportation and TDM
    a. Conduct a review of the existing and proposed future transit network in the area. Based on these findings, appropriate recommendations will be provided to ensure adequate walking distances to/from the proposed development to transit stations/stops.
    b. Review the existing and proposed future active transportation network in the area. Based on these findings, Nextrans will identify missing gaps and additional interconnections and connections from the proposed development to adjacent land uses, the City facilities, as well as to transit stations/stops.
    c. A Transportation Demand Management (TDM) assessment will be undertaken to identify specific measures and programs to reduce single-occupant-vehicle trips to/from the proposed development. These TDM measures and programs may include but not limited to, Carpooling, Auto Share, Bike racks, Parking management strategies, etc. The TDM report will be completed and included as part of this Study for submission purposes submitted in accordance with the City requirements. *(The Applicant does not have to do a TDM report, but Transportation Planning requires:*
        - *Short-term bicycle parking within the property limits as per applicable Zoning Bylaw;*
        - *Long-term bicycle parking that is secure and shielded from the elements as per applicable Zoning Bylaw;*
    d. Transportation Planning recommends that the Applicant provides
        - *Transit incentives;*
        - *Carshare spaces;*
        - *Bike repair station*
8. Parking Justification Study if necessary

Sam (Trang) Nguyen
Transportation Analyst

o: 905-503-2563 ext. 207
e: sam@nextrans.ca
w: www.nextrans.ca

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

Appendix B
Existing Traffic Data and Signal Timing Plans

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.

Sequence 13																
Ring 1	**1**	**2**	**3**	**4**	**9**	**10**	**13**	**14**	.	.	.	.	.	.	.	.
Ring 2	**6**	**5**	**8**	**7**	**12**	**11**	**16**	**15**	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	**2**	**1**	**3**	**4**	**10**	**9**	**13**	**14**	.	.	.	.	.	.	.	.
Ring 2	**6**	**5**	**8**	**7**	**12**	**11**	**16**	**15**	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	**1**	**2**	**4**	**3**	**9**	**10**	**14**	**13**	.	.	.	.	.	.	.	.
Ring 2	**6**	**5**	**8**	**7**	**12**	**11**	**16**	**15**	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	**2**	**1**	**4**	**3**	**10**	**9**	**14**	**13**	.	.	.	.	.	.	.	.
Ring 2	**6**	**5**	**8**	**7**	**12**	**11**	**16**	**15**	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Phases In Use	X	X	X	X	X	X	X	X								
Exclusive Ped																

Phase Compatibility (MM) 1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Approach	W	E	N	S	E	W	S	N	N	N	N	N	N	N	N	N
Movement	L	T	L	T	L	T	L	T								
Associated PED																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock CRC	No
CRC (16 bit)	2C3E
Enable Automatic Backup to Datakey	No

Backup Prevent (MM) 1-1-3

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing 1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phases 2	X		.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	X		.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	X		.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	X		.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	X		.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	X		.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	X		.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	X		.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	X		.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	X		.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM) 1-1-4

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase 6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
Must 7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap 8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
With 9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase 10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	V				-	Auto	X		
4	4	V				-	Auto	X		X
5	5	V				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	V				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	P				-	Auto			

10	4	P				-	Auto			
11	6	P				+	Auto			
12	8	P				+	Auto			
13	0	O				-	Auto	X		
14	0	O				+	Auto	X		X
15	0	O				-	Auto	X		
16	0	O				+	Auto	X		X

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Configuration Port 1 (SDLC)

Port 1 SDLC (MM) 1-4-1

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X	X						

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
1	15
2	5
2	6
2	9
2	11
2	13
2	15
3	7
3	8
3	12
3	16
4	7
4	8
4	10
4	12
4	14
4	16
5	9
5	13
6	9
6	11
6	13
6	15

7	10
7	14
8	10
8	12
8	14
8	16
9	11
9	13
9	15
10	12
10	14
10	16
11	13
11	15
12	14
12	16
13	15
14	16

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Red		X		X		X		X	X	X	X	X	X	X	X	X

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Configuration Communications 1 (SDLC)

Ethernet Port Configuration (MM) 1-5-1

Controller IP:	172.16.2.13
Subnet Mask:	255.255.0.0
Default Gateway IP:	10.104.0.1
Server IP:	172.16.1.254

NTCIP (MM) 1-5-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2 Priority (Port C50S for 2070):	4
Port 3A Priority (Port C21S for 2070):	2
Port 3B Priority (Port C22S for 2070):	3

Port Configuration (MM) 1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	None	Auto	Auto
Protocol	ECPIP	NTCIP	ECPIP
Enable	Yes	No	No
Data Rate (BPS)	9600	19.2K	1200
Data, Parity, Stop	8 N 1	8 N 1	8 O 1
Address	0	0	11
Telemetry Response Delay	10.0	0.0	0.9
Duplex - Half or Full	Full	Full	Full
Flow Control	No	Yes	Yes
Group Address	0	0	0
Single Flag Enable	Yes	Yes	Yes
RTS to CTS Delay	n/a	n/a	3.0
RTS Turn Off Delay	n/a	n/a	2.0
Dropout Time	1	10	300
Early RTS	n/a	n/a	No
Telemetry Mode	n/a	n/a	FSK
ATCS Railroad	0	n/a	n/a
ATCS Railroad Line	0	n/a	n/a
ATCS Group	0	n/a	n/a
Wayside Device	0	n/a	n/a
ATC Device	0	n/a	n/a
Wayside Subnode	0	n/a	n/a
ATC Subnode	0	n/a	n/a

ECPIP (MM) 1-5-6

Controller Address:	11
Expanded System Detector Address:	0

System Detector Assignment

System Detector	Local Detector

Wireless Configuration (MM) 1-5-7

Wireless Channel Number: 1
Wireless Access Code:

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	No	Detector Errors	No
Coordination Errors	No	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	Yes
Switch to Graphics Mode:	No
LED Mode:	Auto
Display Mode:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World
Sign On Message Line 2:

Software Modules (MM) 8-7

Application Version: 32.64.00
OS (Boot) Version: 06.04.00

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Logic Processor Page 1

Logic Statement Control (MM) 1-8-1

Logic #	Statement Control

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Logic Processor Page 2

Logic Statements (MM) 1-8-2

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Min Green	7	20	10	10	7	20	7	10	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	35	0	37	0	35	0	37	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	6.0	3.0	5.0	3.0	6.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	11	55	15	30	11	45	15	30	35	35	35	35	35	35	35	35
Max2	15	55	15	35	15	55	15	35	40	40	40	40	40	40	40	40
Max3	15	55	25	35	15	55	25	35	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	3.0	1.0	3.0	1.0	3.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green
A	2	Yes	No	No	No		No	No	.
B	4	Yes	No	No	No		No	No	.
C	6	Yes	No	No	No		No	No	.
D	8	Yes	No	No	No		No	No	.

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

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ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Controller Pedestrian Overlaps
Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Controller Start / Flash Data (MM) 2-5

Start Up

Phase	Phase Setting
1	.
2	Y
3	.
4	.
5	.
6	Y
7	.
8	.
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap
A
B
C
D

Flash Thru Mon: Yes
Flash Time: 0
All Red: 0
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit
A
B
C
D

Flash Thru Mon:	Yes
Exit Flash:	W
Minimum Flash:	8
Mimimum Recall:	No
Cycle Through Phase:	No

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I		X				X										
Non-Act II																
Dual Entry		X		X		X		X								
Cond Service																
Cond Reservice																
Ped Re-Service		X				X										
Rest In Walk																
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Percent	Offsets In	Percent
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	Yes
Local Zero Override	Yes	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Percent
Cycle	140	Std (COS)	9	Offsets In	Percent
Offset Value	35%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	MAXINH	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 1)	11	37	15	37	11	37	15	37	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Percent
Cycle	140	Std (COS)	17	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	MAXINH	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 2)	11	37	15	37	11	37	15	37	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0	
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0	

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Percent
Cycle	140	Std (COS)	25	Offsets In	Percent
Offset Value	55%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	MAXINH	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 3)	12	35	23	30	12	35	12	41	0	0	0	0	0	0	0	0

Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 4

Split Pattern	4	TS2 (Pat-Off)	1-1	Splits In	Percent
Cycle	140	Std (COS)	33	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	MAXINH	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 4)	11	37	15	37	11	37	15	37	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0	
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0	

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 10

Split Pattern	10	TS2 (Pat-Off)	3-1	Splits In	Percent
Cycle	120	Std (COS)	105	Offsets In	Percent
Offset Value	31%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	MAXINH	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
	10	40	13	37	12	38	11	39	0	0	0	0	0	0	0	0

Splits (Split Pat 10)																
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 11

Split Pattern	11	TS2 (Pat-Off)	3-2	Splits In	Percent
Cycle	120	Std (COS)	137	Offsets In	Percent
Offset Value	77%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 11)	11	40	12	37	11	40	10	39	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0	
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0	

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 12

Split Pattern	12	TS2 (Pat-Off)	3-3	Splits In	Percent
Cycle	130	Std (COS)	145	Offsets In	Percent
Offset Value	18%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N

Splits (Split Pat 12)	10	37	17	36	10	37	14	39	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0	
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0	

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 13

Split Pattern	13	TS2 (Pat-Off)	4-1	Splits In	Percent
Cycle	120	Std (COS)	153	Offsets In	Percent
Offset Value	77%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 13)	11	40	12	37	11	40	10	39	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Split (percent)	11	37	15	37	11	37	15	37	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Split (percent)	11	37	15	37	11	37	15	37	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Split (percent)	12	35	23	30	12	35	12	41	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Split (percent)	11	37	15	37	11	37	15	37	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 10

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Split (percent)	10	40	13	37	12	38	11	39	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 11

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Split (percent)	11	40	12	37	11	40	10	39	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 12

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Split (percent)	10	37	17	36	10	37	14	39	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	**1**	**2**	**3**	**4**
Split Sum	100%	100%	0%	0%

Split Pattern # 13

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	W-L	E-T	N-L	S-T	E-L	W-T	S-L	N-T	N	N	N	N	N	N	N	N
Split (percent)	11	40	12	37	11	40	10	39	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	**1**	**2**	**3**	**4**
Split Sum	100%	100%	0%	0%

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Preempt Plan

Preempt Plan (MM) 4-1

Preempt Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	X	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	No	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	Yes
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	7	2	4.0	2.0
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	4.0	1.0
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	0	0.0	0	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	.	X	.	.	X	.	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	No	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	Yes
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	7	2	4.0	2.0
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	4.0	1.0
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**

Dwell / Cycle-Exit	0	0.0	0	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 5

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	.	.	X	.	.	.	.	X	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases				X				X								
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	No	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	**1**	**2**	**3**	**4**
Free During Pmt	No	No	No	No

Timing	**Walk**	**Ped Clr**	**Min Grn**	**Yellow**	**Red**
Entrance	0	7	2	4.0	2.0
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	4.0	1.0
				Yellow	**Red**

	Min Dwell	Pmt Ext	Max Time		
Dwell / Cycle-Exit	0	0.0	0	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	.	.	.	X	.	.	X	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases				X				X								
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	No	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	Yes
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	7	2	4.0	2.0
	Min Grn	Ext Grn	Max Grn	Yellow	Red

Track Clear	0	0	0	4.0	1.0
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	0	0.0	0	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Preempt Preempt Filtering
Enable Preempt Filtering &
TSP/SCP (MM) 4-2

Input	Solid	Pulsing
1	...BYPASSED...	...BYPASSED...
2	...BYPASSED...	...BYPASSED...
3	PREEMPTION 3	PREEMPTION 7
4	PREEMPTION 4	PREEMPTION 8
5	PREEMPTION 5	PREEMPTION 9
6	PREEMPTION 6	PREEMPTION 10
7	...BYPASSED...	...BYPASSED...
8	...BYPASSED...	...BYPASSED...
9	...BYPASSED...	...BYPASSED...
10	...BYPASSED...	...BYPASSED...

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MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Preempt TSP/SCP Plan and Split

TSP / SCP Plan (MM) 4-3

TSP/SCP Plan	Enable Option	Signal Type	Det Lock	Delay Time	Max Presence	PMT Enables Reservice	No Delay in TSP	Action SF Inhibit	Reservice Cycles	Bus Heading
1	No	Solid	No	0	0	No	False	0	0	NB
2	No	Solid	No	0	0	No	False	0	0	SB
3	No	Solid	No	0	0	No	False	0	0	EB
4	No	Solid	No	0	0	No	False	0	0	WB
5	No	Solid	No	0	0	No	False	0	0	.
6	No	Solid	No	0	0	No	False	0	0	.

Mode: TSP
Free Default Pattern: 120
Headway Allowance: 0

TSP/SCP Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TSP / SCP Split Pattern (MM) 4-4

TSP/SCP Split Pattern	Max Type	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	Max Reduction	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255

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MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Action Plan:	0
SYNC Reference Time:	03:15
SYNC Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

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MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1 - "cord 0"

Pattern	1	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2 - "cord 1"

Pattern	2	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3 - "cord 2"

Pattern	3	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 4 - "cord 3"

Pattern	4	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 5 - "free"

Pattern	5	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 10 - "10"

Pattern	10	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 11 - "11"

Pattern	11	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 12 - "12"

Pattern	12	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 13 - "13"

Pattern	13	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Action Plan	Start Time
1	1	06:00
2	2	09:00
3	3	15:15
4	4	18:00
5	5	21:00

Day Plan #2 - "PANAM"

Event	Action Plan	Start Time
1	10	06:00
2	11	10:00
3	12	15:15
4	13	19:00
5	5	22:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Schedule Number - 3

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
								X				

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
				X	X	X	X	X	X	X	X

	12	13	14	15	16	17	18	19	20	21	22
	X	X									
	23	24	25	26	27	28	29	30	31		

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Detectors

Detectors - Pg 1

Veh Det Phase Assignment (MM) 6-1

Vehicle Detector Plan Number - 1

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4	8	S
5	5		S
6	6		S
7	7		S
9	8	4	S
10	8	4	S
11	8	4	S
12	4	8	S
13	3		N
14	3		N
17	1		S
18	2		S
19	3		S
20	4	8	S
21	5		S
22	6		S
23	7		S
24	8	4	S
28	4		S
32	8		S

Vehicle Detector Plan Number - 2

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S

12	12		S
13	13		N
14	14		N
15	15		N
16	16		N

Vehicle Detector Plan Number - 3

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		N
14	14		N
15	15		N
16	16		N

Vehicle Detector Plan Number - 4

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		N
14	14		N
15	15		N
16	16		N

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	S-STANDARD	Yes	
2	S-STANDARD	Yes	
3	S-STANDARD	Yes	
4	S-STANDARD	Yes	

5	S-STANDARD	Yes	
6	S-STANDARD	Yes	
7	S-STANDARD	Yes	
8	S-STANDARD	Yes	
9	S-STANDARD	Yes	
10	S-STANDARD	Yes	
11	S-STANDARD	Yes	
12	S-STANDARD	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	No	
16	N-NTCIP	No	
17	S-STANDARD	Yes	
18	S-STANDARD	Yes	
19	S-STANDARD	Yes	
20	S-STANDARD	Yes	
21	S-STANDARD	Yes	
22	S-STANDARD	Yes	
23	S-STANDARD	Yes	
24	S-STANDARD	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	S-STANDARD	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	S-STANDARD	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	

56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	4	No	Yes	7.0	Passage	0.0	0	No	0	None	No	No	No
32	8	No	Yes	7.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 3

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 4

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Ped Detector Phase Assignment (MM) 6-3

Mode: NTCIP

Called Phase	Detector
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12

Called Phase	Detector
13	13
14	14
15	15
16	16

Town of Oakville, ON

ECONOLITE

MOVING TRAFFIC FORWARD

REG1218 - Bronte Rd @ Dundas St - Econolite Type - Cobalt

Detectors

Detectors - Pg 2

Log - Speed Detector Setup (MM) 6-4

NTCIP Log Period: 60 | ECPI Log Period: 0 | Length Unit: Inches

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM) 6-5

Veh Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Pedestrian Detector Diagnostics (MM) 6-6

Ped Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.

Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X				X		X								
Exclusive Ped																

Phase Compatibility (MM) 1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	S	N	N	N	N	S	W	W	N	N	N	N	N	N	N	N
Movement	L	TR				T		LR								
Associated PED																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock CRC	No
CRC (16 bit)	1263
Enable Automatic Backup to Datakey	No

Backup Prevent (MM) 1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing	**1**		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phases	**2**	X		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	X		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	X		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	X		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM) 1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	**6**	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	**7**	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	**8**	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
With	**9**	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	**10**	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	V				-	Auto	X		
4	4	V				-	Auto	X		X
5	5	V				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	V				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	P				-	Auto			
10	4	P				-	Auto			
11	6	P				+	Auto			
12	8	P				+	Auto			
13	1	O				-	Auto	X		

14	2	O				+	Auto	X		X
15	3	O				-	Auto	X		
16	4	O				+	Auto	X		X

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Configuration Port 1 (SDLC)

Port 1 SDLC (MM) 1-4-1

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X							

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: No
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green																
Yellow																
Red																

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No

Town of Oakville

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REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	Yes
Switch to Graphics Mode:	No
LED Mode:	Auto
Display Mode:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World
Sign On Message Line 2:

Software Modules (MM) 8-7

Application Version: 32.64.00
OS (Boot) Version: 06.04.00

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Logic Processor Page 1

Logic Statement Control (MM) 1-8-1

Logic #	Statement Control

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-TR**	**N**	**N**	**N**	**S-T**	**W**	**W-LR**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Min Green	7	20	0	0	0	20	0	10	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	0	0	0	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	27	0	0	0	0	0	0	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	15	45	0	0	0	45	0	45	35	35	35	35	35	35	35	35
Max2	20	55	0	0	0	55	0	55	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.2	0.0	0.0	0.0	4.2	0.0	3.3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.2	0.0	0.0	0.0	2.2	0.0	2.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Town of Oakville

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MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Controller Start / Flash Data (MM) 2-5

Start Up

Phase	Phase Setting
1	.
2	Y
3	.
4	.
5	.
6	Y
7	.
8	.
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap

Flash Thru Mon: Yes
Flash Time: 0
All Red: 6
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit
A
B
C
D

Flash Thru Mon: Yes
Exit Flash: W
Minimum Flash: 8

Mimimum Recall: No
Cycle Through Phase: No

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MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I		X				X										
Non-Act II				X				X								
Dual Entry																
Cond Service																
Cond Reservice																
Ped Re-Service		X														
Rest In Walk																
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Town of Oakville

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MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Percent	Offsets In	Percent
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Percent
Cycle	140	Std (COS)	9	Offsets In	Percent
Offset Value	72%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-TR	N	N	N	S-T	W	W-LR	N	N	N	N	N	N	N	N
Splits (Split Pat 1)	9	73	0	18	0	82	0	18	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Percent
Cycle	120	Std (COS)	17	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-TR	N	N	N	S-T	W	W-LR	N	N	N	N	N	N	N	N
Splits (Split Pat 2)	15	45	0	40	0	60	0	40	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Percent
Cycle	140	Std (COS)	25	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-TR	N	N	N	S-T	W	W-LR	N	N	N	N	N	N	N	N
Splits (Split Pat 3)	9	73	0	18	0	82	0	18	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Special Funciton Outputs								

Coordinator Pattern # 4

Split Pattern	4	TS2 (Pat-Off)	1-1	Splits In	Percent
Cycle	120	Std (COS)	33	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-TR	N	N	N	S-T	W	W-LR	N	N	N	N	N	N	N	N
Splits (Split Pat 4)	10	50	0	40	0	60	0	40	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Town of Oakville

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MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-TR	N	N	N	S-T	W	W-LR	N	N	N	N	N	N	N	N
Split (percent)	9	73	0	18	0	82	0	18	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-TR	N	N	N	S-T	W	W-LR	N	N	N	N	N	N	N	N
Split (percent)	15	45	0	40	0	60	0	40	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-TR	N	N	N	S-T	W	W-LR	N	N	N	N	N	N	N	N
Split (percent)	9	73	0	18	0	82	0	18	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-TR	N	N	N	S-T	W	W-LR	N	N	N	N	N	N	N	N

Split (percent)	10	50	0	40	0	60	0	40	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	**1**	**2**	**3**	**4**
Split Sum	100%	100%	0%	0%

Town of Oakville

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MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Preempt Plan

Preempt Plan (MM) 4-1

Preempt Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases																
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	Yes	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	7	5	4.2	2.3
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	4.0	1.0
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	0	0.0	0	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases																
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	Yes	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	7	5	3.7	2.2
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	4.0	1.0
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	0	0.0	0	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Time Base Clock/Calendar
Clock/Calendar Data (MM) 5-1

Manual Action Plan:	0
SYNC Reference Time:	03:15
SYNC Reference:	Reference Time
Day Light Savings:	USDLS
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	-5

Town of Oakville

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MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1 - "1"

Pattern	1	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2 - "2"

Pattern	2	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3 - "3"

Pattern	3	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 4 - "4"

Pattern	4	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 5 - "5"

Pattern	5	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Action Plan	Start Time
1	1	06:00
2	2	10:00
3	3	15:00
4	4	19:00
5	5	22:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

REG1228 - Bronte Rd @ William Halton Pkwy - Econolite Type - Cobalt

Detectors

Detectors - Pg 1

Veh Det Phase Assignment (MM) 6-1

Vehicle Detector Plan Number - 1

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	8		S
4	8		S
5	2		S
6	6		S
7	6		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 2

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	2		S
10	2		S
11	4		S
12	4		S
13	6		S
14	6		S
15	8		S
16	8		S
17	1		S
18	2		S
19	3		S
20	4		S
21	5		S
22	6		S

23	7		S
24	8		S
25	2		S
26	4		S
27	6		S
28	8		S

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	S-STANDARD	Yes	
2	S-STANDARD	Yes	
3	S-STANDARD	Yes	
4	S-STANDARD	Yes	
5	S-STANDARD	Yes	
6	S-STANDARD	Yes	
7	S-STANDARD	Yes	
8	S-STANDARD	Yes	
9	S-STANDARD	Yes	
10	S-STANDARD	Yes	
11	S-STANDARD	Yes	
12	S-STANDARD	Yes	
13	S-STANDARD	Yes	
14	S-STANDARD	Yes	
15	S-STANDARD	Yes	
16	S-STANDARD	Yes	
17	S-STANDARD	Yes	
18	S-STANDARD	Yes	
19	S-STANDARD	Yes	
20	S-STANDARD	Yes	
21	S-STANDARD	Yes	
22	S-STANDARD	Yes	
23	S-STANDARD	Yes	
24	S-STANDARD	Yes	
25	S-STANDARD	Yes	
26	S-STANDARD	Yes	
27	S-STANDARD	Yes	
28	S-STANDARD	Yes	
29	S-STANDARD	Yes	
30	S-STANDARD	Yes	
31	S-STANDARD	Yes	
32	S-STANDARD	Yes	
33	S-STANDARD	Yes	
34	S-STANDARD	Yes	
35	S-STANDARD	Yes	
36	S-STANDARD	Yes	
37	S-STANDARD	Yes	
38	S-STANDARD	Yes	
39	S-STANDARD	Yes	
40	S-STANDARD	Yes	
41	S-STANDARD	Yes	
42	S-STANDARD	Yes	
43	S-STANDARD	Yes	
44	S-STANDARD	Yes	
45	S-STANDARD	Yes	
46	S-STANDARD	Yes	
47	S-STANDARD	Yes	

48	S-STANDARD	Yes	
49	S-STANDARD	Yes	
50	S-STANDARD	Yes	
51	S-STANDARD	Yes	
52	S-STANDARD	Yes	
53	S-STANDARD	Yes	
54	S-STANDARD	Yes	
55	S-STANDARD	Yes	
56	S-STANDARD	Yes	
57	S-STANDARD	Yes	
58	S-STANDARD	Yes	
59	S-STANDARD	Yes	
60	S-STANDARD	Yes	
61	S-STANDARD	Yes	
62	S-STANDARD	Yes	
63	S-STANDARD	Yes	
64	S-STANDARD	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	8	No	Yes	5.0	Passage	0.0	0	No	0	None	No	No	No
4	8	No	Yes	15.0	Passage	0.0	0	No	0	None	No	No	No
5	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	5.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

19	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Ped Detector Phase Assignment
(MM) 6-3

Mode: NTCIP

Called Phase	Detector
1	1
2	2
3	3
4	4

Called Phase	Detector
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

Spectrum

Turning Movement Count
Location Name: DUNDAS ST W & BRONTE RD
Date: Thu, Apr 20, 2023 Deployment Lead: Walter Fugaj

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

Turning Movement Count (1 . DUNDAS ST W & BRONTE RD)

Start Time	N Approach BRONTE RD						E Approach DUNDAS ST W						S Approach BRONTE RD						W Approach DUNDAS ST W						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	24	141	29	0	0	194	26	62	34	1	0	123	37	82	20	0	0	139	45	198	56	0	0	299	755	
07:15:00	22	212	42	0	0	276	18	68	25	0	0	111	45	142	24	0	0	211	63	237	60	0	0	360	958	
07:30:00	28	219	58	0	0	305	38	100	30	1	2	169	46	151	26	0	0	223	91	306	55	0	0	452	1149	
07:45:00	40	274	71	0	0	385	40	101	30	0	1	171	42	166	27	0	1	235	87	269	60	0	1	416	1207	4069
08:00:00	26	214	58	0	0	298	48	141	30	1	0	220	47	141	37	0	0	225	91	301	61	0	0	453	1196	4510
08:15:00	27	246	58	0	0	331	39	138	31	6	1	214	50	163	56	0	0	269	66	334	55	0	0	455	1269	4821
08:30:00	30	274	56	0	0	360	45	165	47	5	1	262	36	117	29	0	0	182	78	235	62	0	0	375	1179	4851
08:45:00	30	228	55	0	0	313	28	144	45	1	2	218	34	102	48	0	0	184	98	340	56	0	0	494	1209	4853
09:00:00	22	201	44	0	0	267	21	133	41	5	1	200	30	94	38	0	1	162	45	235	37	0	0	317	946	4603
09:15:00	25	175	43	0	0	243	32	112	27	1	0	172	30	104	41	1	0	176	66	198	36	0	0	300	891	4225
09:30:00	20	173	35	0	0	228	37	131	44	5	2	217	34	94	25	1	0	154	67	173	31	0	0	271	870	3916
09:45:00	32	157	47	1	0	237	28	109	39	8	0	184	39	109	44	0	0	192	66	181	29	0	0	276	889	3596
BREAK																										
16:00:00	62	143	56	0	0	261	51	334	46	6	0	437	28	238	98	0	0	364	52	164	41	0	0	257	1319	
16:15:00	56	152	44	0	0	252	59	347	43	2	0	451	38	264	89	0	0	391	50	207	59	0	0	316	1410	
16:30:00	43	151	50	0	0	244	58	303	51	2	1	414	21	264	82	0	1	367	57	179	42	1	0	279	1304	
16:45:00	60	187	54	1	0	302	49	256	47	2	2	354	7	298	47	0	3	352	56	190	49	0	0	295	1303	5336
17:00:00	53	120	40	0	0	213	73	329	46	4	0	452	20	275	97	0	1	392	60	211	51	0	0	322	1379	5396
17:15:00	48	152	55	0	0	255	50	299	52	4	0	405	46	304	85	0	1	435	45	168	51	0	0	264	1359	5345
17:30:00	33	139	42	0	0	214	63	317	40	4	4	424	18	237	90	0	4	345	69	247	54	0	0	370	1353	5394
17:45:00	57	131	52	0	0	240	46	245	42	3	1	336	23	277	103	0	0	403	39	170	52	0	0	261	1240	5331
18:00:00	48	134	37	0	0	219	32	237	45	3	1	317	26	215	61	0	0	302	41	161	28	0	0	230	1068	5020
18:15:00	35	139	52	0	0	226	33	205	36	3	1	277	33	175	53	0	3	261	48	168	46	0	0	262	1026	4687
18:30:00	30	144	46	0	0	220	33	185	35	1	1	254	29	201	66	0	0	296	39	159	32	0	0	230	1000	4334
18:45:00	25	134	41	0	0	200	37	138	31	3	0	209	19	127	48	0	1	194	39	129	34	0	0	202	805	3899
Grand Total	876	4240	1165	2	0	6283	984	4599	937	71	21	6591	778	4340	1334	2	16	6454	1458	5160	1137	1	1	7756	**27084**	-
Approach%	13.9%	67.5%	18.5%	0%		-	14.9%	69.8%	14.2%	1.1%		-	12.1%	67.2%	20.7%	0%		-	18.8%	66.5%	14.7%	0%		-	-	-
Totals %	3.2%	15.7%	4.3%	0%		23.2%	3.6%	17%	3.5%	0.3%		24.3%	2.9%	16%	4.9%	0%		23.8%	5.4%	19.1%	4.2%	0%		28.6%	-	-
Heavy	58	333	30	0		-	31	194	107	0		-	47	298	59	0		-	50	154	62	0		-	-	-
Heavy %	6.6%	7.9%	2.6%	0%		-	3.2%	4.2%	11.4%	0%		-	6%	6.9%	4.4%	0%		-	3.4%	3%	5.5%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (3.74 °C)

Start Time	N Approach BRONTE RD						E Approach DUNDAS ST W						S Approach BRONTE RD						W Approach DUNDAS ST W						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	26	214	58	0	0	298	48	141	30	1	0	220	47	141	37	0	0	225	91	301	61	0	0	453	1196
08:15:00	27	246	58	0	0	331	39	138	31	6	1	214	50	163	56	0	0	269	66	334	55	0	0	455	1269
08:30:00	30	274	56	0	0	360	45	165	47	5	1	262	36	117	29	0	0	182	78	235	62	0	0	375	1179
08:45:00	30	228	55	0	0	313	28	144	45	1	2	218	34	102	48	0	0	184	98	340	56	0	0	494	1209
Grand Total	113	962	227	0	0	1302	160	588	153	13	4	914	167	523	170	0	0	860	333	1210	234	0	0	1777	**4853**
Approach%	8.7%	73.9%	17.4%	0%		-	17.5%	64.3%	16.7%	1.4%		-	19.4%	60.8%	19.8%	0%		-	18.7%	68.1%	13.2%	0%		-	**-**
Totals %	2.3%	19.8%	4.7%	0%		26.8%	3.3%	12.1%	3.2%	0.3%		18.8%	3.4%	10.8%	3.5%	0%		17.7%	6.9%	24.9%	4.8%	0%		36.6%	**-**
PHF	0.94	0.88	0.98	0		0.9	0.83	0.89	0.81	0.54		0.87	0.84	0.8	0.76	0		0.8	0.85	0.89	0.94	0		0.9	**-**
Heavy	15	106	3	0		124	13	45	30	0		88	6	60	17	0		83	9	35	11	0		55	**-**
Heavy %	13.3%	11%	1.3%	0%		9.5%	8.1%	7.7%	19.6%	0%		9.6%	3.6%	11.5%	10%	0%		9.7%	2.7%	2.9%	4.7%	0%		3.1%	**-**
Lights	98	856	224	0		1178	147	543	123	13		826	161	463	153	0		777	324	1175	223	0		1722	**-**
Lights %	86.7%	89%	98.7%	0%		90.5%	91.9%	92.3%	80.4%	100%		90.4%	96.4%	88.5%	90%	0%		90.3%	97.3%	97.1%	95.3%	0%		96.9%	**-**
Single-Unit Trucks	11	50	1	0		62	5	14	8	0		27	4	31	6	0		41	6	18	5	0		29	**-**
Single-Unit Trucks %	9.7%	5.2%	0.4%	0%		4.8%	3.1%	2.4%	5.2%	0%		3%	2.4%	5.9%	3.5%	0%		4.8%	1.8%	1.5%	2.1%	0%		1.6%	**-**
Buses	1	4	0	0		5	5	21	0	0		26	1	1	9	0		11	2	10	1	0		13	**-**
Buses %	0.9%	0.4%	0%	0%		0.4%	3.1%	3.6%	0%	0%		2.8%	0.6%	0.2%	5.3%	0%		1.3%	0.6%	0.8%	0.4%	0%		0.7%	**-**
Articulated Trucks	3	52	2	0		57	3	10	22	0		35	1	28	2	0		31	1	7	5	0		13	**-**
Articulated Trucks %	2.7%	5.4%	0.9%	0%		4.4%	1.9%	1.7%	14.4%	0%		3.8%	0.6%	5.4%	1.2%	0%		3.6%	0.3%	0.6%	2.1%	0%		0.7%	**-**
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	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: DUNDAS ST W & BRONTE RD
Date: Thu, Apr 20, 2023 Deployment Lead: Walter Fugaj

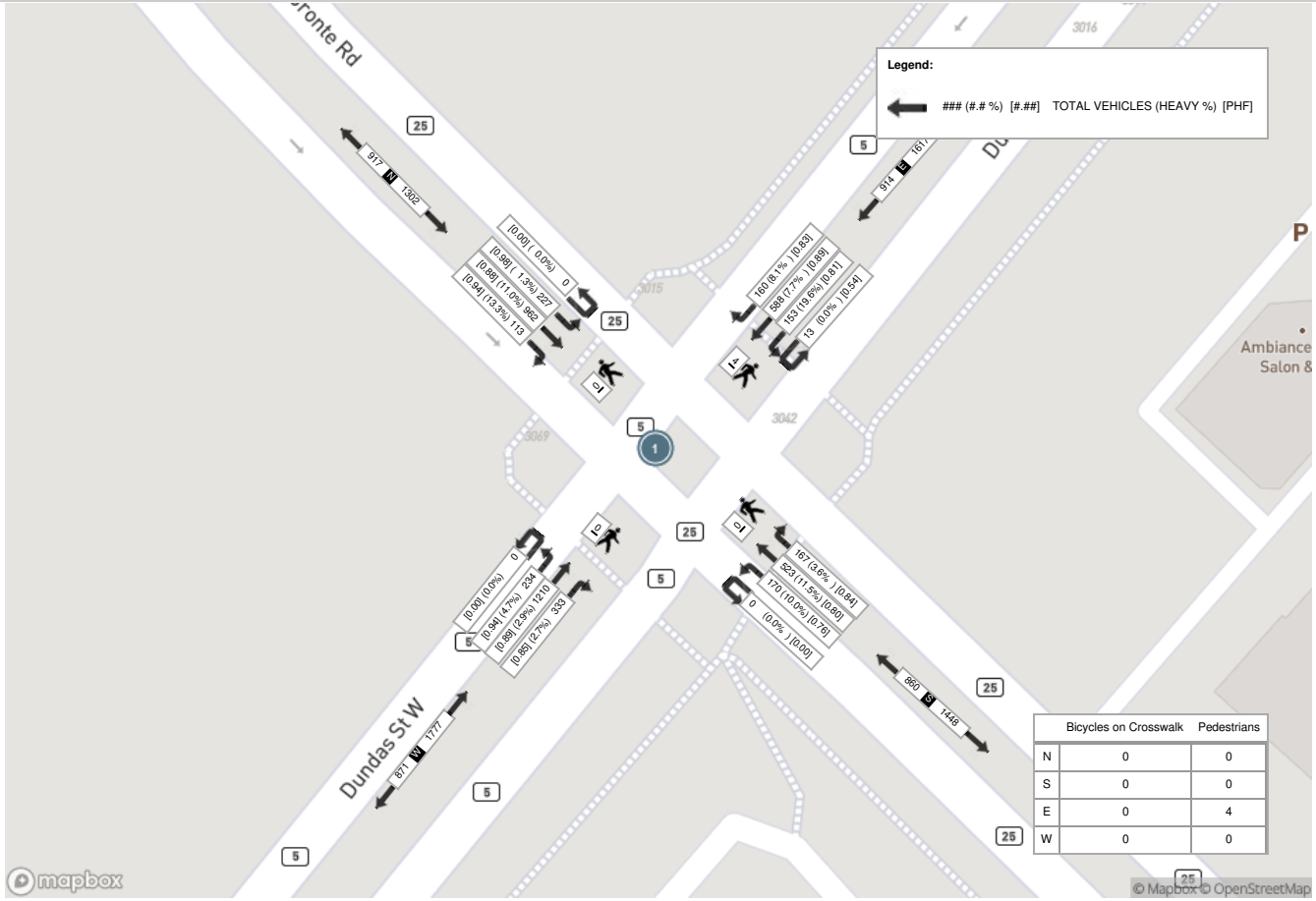
NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (8.4 °C)

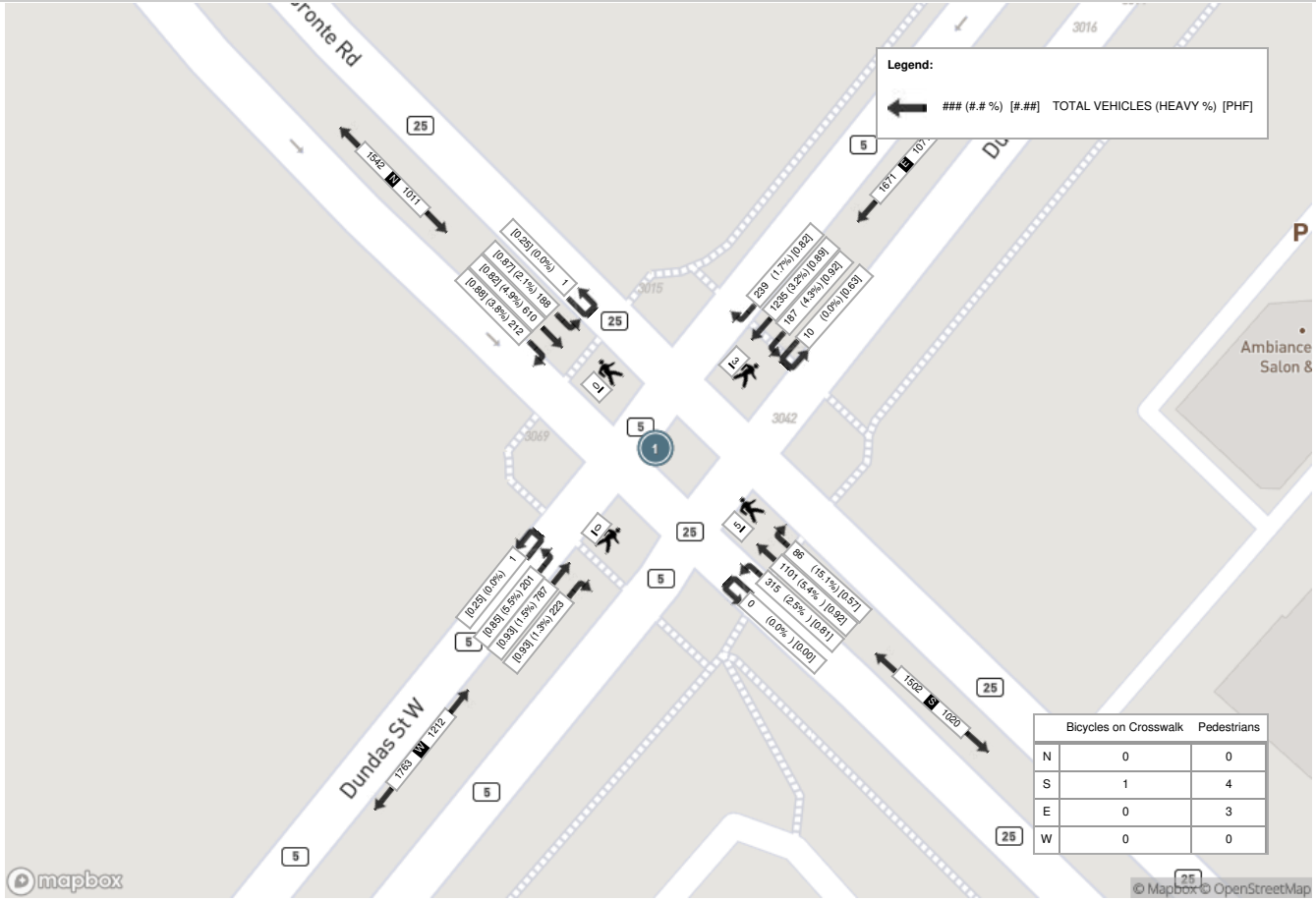
Start Time	N Approach BRONTE RD						E Approach DUNDAS ST W						S Approach BRONTE RD						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	56	152	44	0	0	252	59	347	43	2	0	451	38	264	89	0	0	391	50	207	59	0	0	316	1410
16:30:00	43	151	50	0	0	244	58	303	51	2	1	414	21	264	82	0	1	367	57	179	42	1	0	279	1304
16:45:00	60	187	54	1	0	302	49	256	47	2	2	354	7	298	47	0	3	352	56	190	49	0	0	295	1303
17:00:00	53	120	40	0	0	213	73	329	46	4	0	452	20	275	97	0	1	392	60	211	51	0	0	322	1379
Grand Total	212	610	188	1	0	1011	239	1235	187	10	3	1671	86	1101	315	0	5	1502	223	787	201	1	0	1212	**5396**
Approach%	21%	60.3%	18.6%	0.1%		-	14.3%	73.9%	11.2%	0.6%		-	5.7%	73.3%	21%	0%		-	18.4%	64.9%	16.6%	0.1%		-	**-**
Totals %	3.9%	11.3%	3.5%	0%		18.7%	4.4%	22.9%	3.5%	0.2%		31%	1.6%	20.4%	5.8%	0%		27.8%	4.1%	14.6%	3.7%	0%		22.5%	**-**
PHF	0.88	0.82	0.87	0.25		0.84	0.82	0.89	0.92	0.63		0.92	0.57	0.92	0.81	0		0.96	0.93	0.93	0.85	0.25		0.94	**-**
Heavy	8	30	4	0		42	4	39	8	0		51	13	59	8	0		80	3	12	11	0		26	**-**
Heavy %	3.8%	4.9%	2.1%	0%		4.2%	1.7%	3.2%	4.3%	0%		3.1%	15.1%	5.4%	2.5%	0%		5.3%	1.3%	1.5%	5.5%	0%		2.1%	**-**
Lights	204	580	184	1		969	235	1196	179	10		1620	73	1042	307	0		1422	220	775	190	1		1186	**-**
Lights %	96.2%	95.1%	97.9%	100%		95.8%	98.3%	96.8%	95.7%	100%		96.9%	84.9%	94.6%	97.5%	0%		94.7%	98.7%	98.5%	94.5%	100%		97.9%	**-**
Single-Unit Trucks	6	14	2	0		22	3	11	3	0		17	5	26	3	0		34	1	2	7	0		10	**-**
Single-Unit Trucks %	2.8%	2.3%	1.1%	0%		2.2%	1.3%	0.9%	1.6%	0%		1%	5.8%	2.4%	1%	0%		2.3%	0.4%	0.3%	3.5%	0%		0.8%	**-**
Buses	0	0	1	0		1	1	23	0	0		24	0	6	4	0		10	2	3	1	0		6	**-**
Buses %	0%	0%	0.5%	0%		0.1%	0.4%	1.9%	0%	0%		1.4%	0%	0.5%	1.3%	0%		0.7%	0.9%	0.4%	0.5%	0%		0.5%	**-**
Articulated Trucks	2	16	1	0		19	0	5	5	0		10	8	27	1	0		36	0	7	3	0		10	**-**
Articulated Trucks %	0.9%	2.6%	0.5%	0%		1.9%	0%	0.4%	2.7%	0%		0.6%	9.3%	2.5%	0.3%	0%		2.4%	0%	0.9%	1.5%	0%		0.8%	**-**
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	-	-	-	-	-	4	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	37.5%		-	-	-	-	50%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	12.5%		-	-	-	-	0%		**-**

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

Peak Hour: 08:00 AM - 09:00 AM **Weather: Light Rain (3.74 °C)**



Peak Hour: 04:15 PM - 05:15 PM **Weather: Overcast Clouds (8.4 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	1	4
E	0	3
W	0	0

Spectrum

Turning Movement Count
Location Name: DUNDAS ST W & OLD BRONTE RD
Date: Thu, Apr 20, 2023 Deployment Lead: Walter Fugaj

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

Turning Movement Count (2 . DUNDAS ST W & OLD BRONTE RD)

Start Time	N Approach OLD BRONTE RD						E Approach DUNDAS ST W						S Approach OLD BRONTE RD						W Approach DUNDAS ST W						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	0	0	0	0	0	0	126	0	0	0	126	9	0	0	0	1	9	10	253	0	0	0	263	398	
07:15:00	0	0	0	0	0	0	0	127	0	0	0	127	7	0	0	0	1	7	14	315	0	0	0	329	463	
07:30:00	0	0	0	0	0	0	0	154	0	0	0	154	9	0	0	0	0	9	12	404	0	0	0	416	579	
07:45:00	1	0	0	0	0	1	0	180	0	0	0	180	15	0	0	0	2	15	7	375	0	0	0	382	578	2018
08:00:00	0	0	0	0	0	0	3	212	0	0	0	215	16	0	0	0	0	16	14	397	0	0	0	411	642	2262
08:15:00	2	0	0	0	0	2	3	231	0	0	0	234	13	0	0	0	1	13	26	423	0	0	0	449	698	2497
08:30:00	3	0	0	0	0	3	4	252	0	0	0	256	13	0	0	0	0	13	32	304	0	0	0	336	608	2526
08:45:00	5	0	0	0	0	5	5	215	0	0	0	220	10	0	0	0	1	10	26	403	0	0	0	429	664	2612
09:00:00	4	0	0	0	0	4	1	186	0	0	0	187	16	0	0	0	2	16	18	298	0	0	0	316	523	2493
09:15:00	0	0	0	0	0	0	2	191	0	0	0	193	18	0	0	0	1	18	12	257	0	0	0	269	480	2275
09:30:00	2	0	0	0	0	2	2	202	0	0	0	204	19	0	0	0	0	19	19	234	0	0	0	253	478	2145
09:45:00	0	0	0	0	0	0	1	180	0	0	0	181	22	0	0	0	1	22	25	241	0	0	0	266	469	1950
BREAK																										
16:00:00	5	0	0	0	0	5	2	436	0	0	0	438	19	0	0	0	1	19	12	238	0	0	0	250	712	
16:15:00	2	0	0	0	0	2	3	426	0	0	0	429	29	0	0	0	0	29	9	289	0	0	0	298	758	
16:30:00	1	0	0	0	0	1	4	427	0	0	0	431	26	0	0	0	1	26	28	215	0	0	0	243	701	
16:45:00	0	0	0	0	0	0	4	364	0	0	0	368	27	0	0	0	2	27	11	244	0	0	0	255	650	2821
17:00:00	2	0	0	0	0	2	3	461	0	0	0	464	25	0	0	0	2	25	14	263	0	0	0	277	768	2877
17:15:00	0	0	0	0	0	0	2	378	0	0	0	380	31	0	0	0	3	31	20	252	0	0	0	272	683	2802
17:30:00	0	0	0	0	1	0	4	411	0	0	0	415	22	0	0	0	0	22	14	298	0	0	0	312	749	2850
17:45:00	1	0	0	0	0	1	1	357	0	0	0	358	19	0	0	0	0	19	11	240	0	0	0	251	629	2829
18:00:00	2	0	0	0	0	2	2	303	0	0	0	305	18	0	0	0	1	18	10	216	0	0	0	226	551	2612
18:15:00	1	0	0	0	0	1	1	264	0	0	0	265	10	0	0	0	5	10	13	253	0	0	0	266	542	2471
18:30:00	0	0	0	0	0	0	1	261	0	0	0	262	19	0	0	0	2	19	10	216	0	0	0	226	507	2229
18:45:00	1	0	0	0	0	1	0	203	0	0	0	203	8	0	0	0	2	8	11	181	0	0	0	192	404	2004
Grand Total	32	0	0	0	1	32	48	6547	0	0	0	6595	420	0	0	0	29	420	378	6809	0	0	0	7187	**14234**	-
Approach%	100%	0%	0%	0%		-	0.7%	99.3%	0%	0%		-	100%	0%	0%	0%		-	5.3%	94.7%	0%	0%		-	-	-
Totals %	0.2%	0%	0%	0%		0.2%	0.3%	46%	0%	0%		46.3%	3%	0%	0%	0%		3%	2.7%	47.8%	0%	0%		50.5%	-	-
Heavy	0	0	0	0		-	1	332	0	0		-	8	0	0	0		-	6	229	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	2.1%	5.1%	0%	0%		-	1.9%	0%	0%	0%		-	1.6%	3.4%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (3.74 °C)

Start Time	N Approach OLD BRONTE RD						E Approach DUNDAS ST W						S Approach OLD BRONTE RD						W Approach DUNDAS ST W						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	0	0	0	0	0	0	3	212	0	0	0	215	16	0	0	0	0	16	14	397	0	0	0	411	642
08:15:00	2	0	0	0	0	2	3	231	0	0	0	234	13	0	0	0	1	13	26	423	0	0	0	449	698
08:30:00	3	0	0	0	0	3	4	252	0	0	0	256	13	0	0	0	0	13	32	304	0	0	0	336	608
08:45:00	5	0	0	0	0	5	5	215	0	0	0	220	10	0	0	0	1	10	26	403	0	0	0	429	664
Grand Total	10	0	0	0	0	10	15	910	0	0	0	925	52	0	0	0	2	52	98	1527	0	0	0	1625	**2612**
Approach%	100%	0%	0%	0%		-	1.6%	98.4%	0%	0%		-	100%	0%	0%	0%		-	6%	94%	0%	0%		-	**-**
Totals %	0.4%	0%	0%	0%		0.4%	0.6%	34.8%	0%	0%		35.4%	2%	0%	0%	0%		2%	3.8%	58.5%	0%	0%		62.2%	**-**
PHF	0.5	0	0	0		0.5	0.75	0.9	0	0		0.9	0.81	0	0	0		0.81	0.77	0.9	0	0		0.9	**-**
Heavy	0	0	0	0		0	1	93	0	0		94	2	0	0	0		2	0	46	0	0		46	**-**
Heavy %	0%	0%	0%	0%		0%	6.7%	10.2%	0%	0%		10.2%	3.8%	0%	0%	0%		3.8%	0%	3%	0%	0%		2.8%	**-**
Lights	10	0	0	0		10	14	817	0	0		831	50	0	0	0		50	98	1481	0	0		1579	**-**
Lights %	100%	0%	0%	0%		100%	93.3%	89.8%	0%	0%		89.8%	96.2%	0%	0%	0%		96.2%	100%	97%	0%	0%		97.2%	**-**
Single-Unit Trucks	0	0	0	0		0	1	29	0	0		30	1	0	0	0		1	0	25	0	0		25	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	6.7%	3.2%	0%	0%		3.2%	1.9%	0%	0%	0%		1.9%	0%	1.6%	0%	0%		1.5%	**-**
Buses	0	0	0	0		0	0	28	0	0		28	1	0	0	0		1	0	11	0	0		11	**-**
Buses %	0%	0%	0%	0%		0%	0%	3.1%	0%	0%		3%	1.9%	0%	0%	0%		1.9%	0%	0.7%	0%	0%		0.7%	**-**
Articulated Trucks	0	0	0	0		0	0	36	0	0		36	0	0	0	0		0	0	10	0	0		10	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	4%	0%	0%		3.9%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.6%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	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: DUNDAS ST W & OLD BRONTE RD
Date: Thu, Apr 20, 2023 Deployment Lead: Walter Fugaj

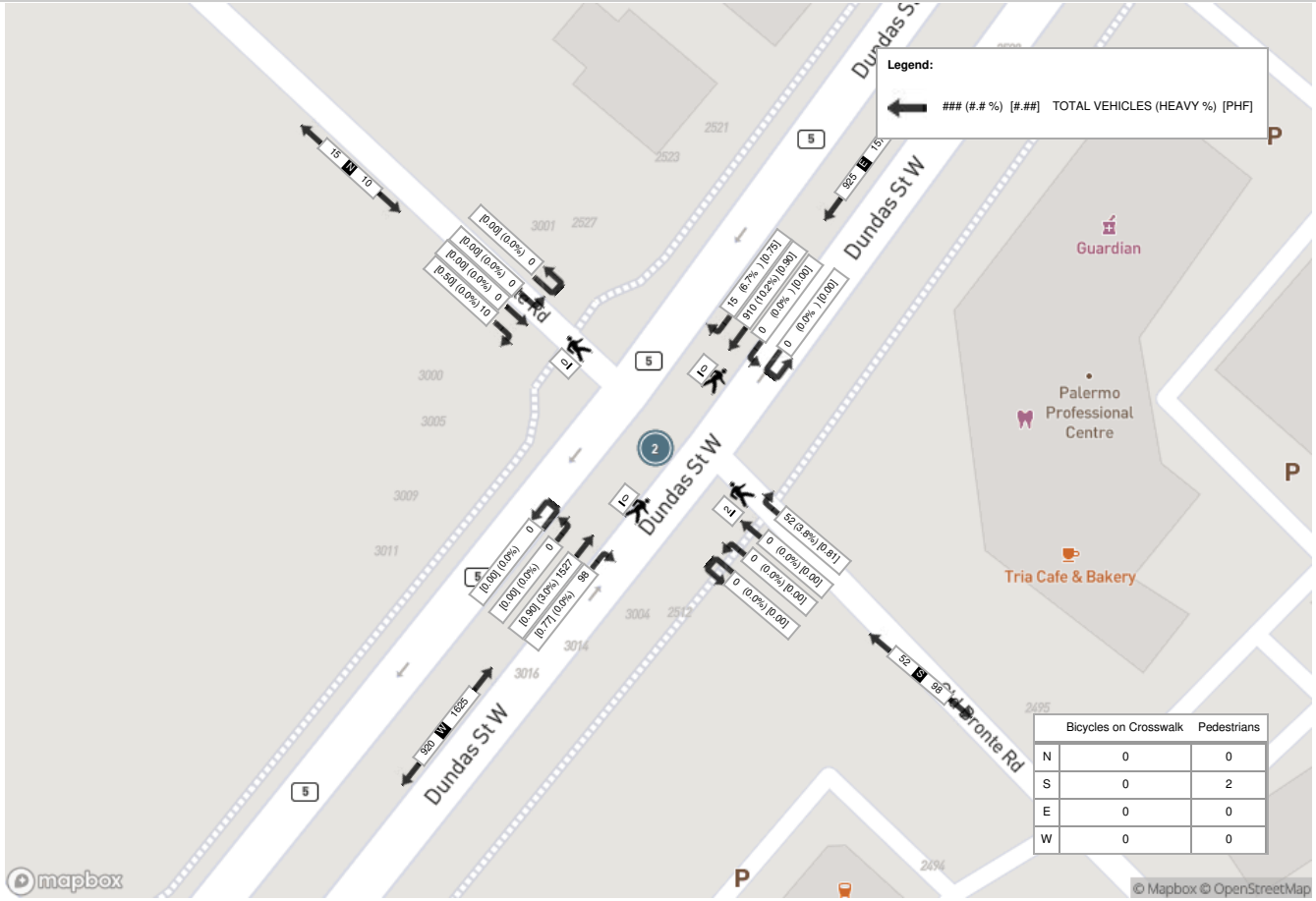
NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (8.4 °C)

Start Time	N Approach OLD BRONTE RD						E Approach DUNDAS ST W						S Approach OLD BRONTE RD						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	2	0	0	0	0	2	3	426	0	0	0	429	29	0	0	0	0	29	9	289	0	0	0	298	758
16:30:00	1	0	0	0	0	1	4	427	0	0	0	431	26	0	0	0	1	26	28	215	0	0	0	243	701
16:45:00	0	0	0	0	0	0	4	364	0	0	0	368	27	0	0	0	2	27	11	244	0	0	0	255	650
17:00:00	2	0	0	0	0	2	3	461	0	0	0	464	25	0	0	0	2	25	14	263	0	0	0	277	768
Grand Total	5	0	0	0	0	5	14	1678	0	0	0	1692	107	0	0	0	5	107	62	1011	0	0	0	1073	**2877**
Approach%	100%	0%	0%	0%		-	0.8%	99.2%	0%	0%		-	100%	0%	0%	0%		-	5.8%	94.2%	0%	0%		-	**-**
Totals %	0.2%	0%	0%	0%		0.2%	0.5%	58.3%	0%	0%		58.8%	3.7%	0%	0%	0%		3.7%	2.2%	35.1%	0%	0%		37.3%	**-**
PHF	0.63	0	0	0		0.63	0.88	0.91	0	0		0.91	0.92	0	0	0		0.92	0.55	0.87	0	0		0.9	**-**
Heavy	0	0	0	0		0	0	52	0	0		52	2	0	0	0		2	0	30	0	0		30	**-**
Heavy %	0%	0%	0%	0%		0%	0%	3.1%	0%	0%		3.1%	1.9%	0%	0%	0%		1.9%	0%	3%	0%	0%		2.8%	**-**
Lights	5	0	0	0		5	14	1626	0	0		1640	105	0	0	0		105	62	981	0	0		1043	**-**
Lights %	100%	0%	0%	0%		100%	100%	96.9%	0%	0%		96.9%	98.1%	0%	0%	0%		98.1%	100%	97%	0%	0%		97.2%	**-**
Single-Unit Trucks	0	0	0	0		0	0	19	0	0		19	2	0	0	0		2	0	10	0	0		10	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1.1%	1.9%	0%	0%	0%		1.9%	0%	1%	0%	0%		0.9%	**-**
Buses	0	0	0	0		0	0	23	0	0		23	0	0	0	0		0	0	4	0	0		4	**-**
Buses %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	**-**
Articulated Trucks	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	0	16	0	0		16	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		1.5%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	80%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	20%		-	-	-	-	0%		**-**

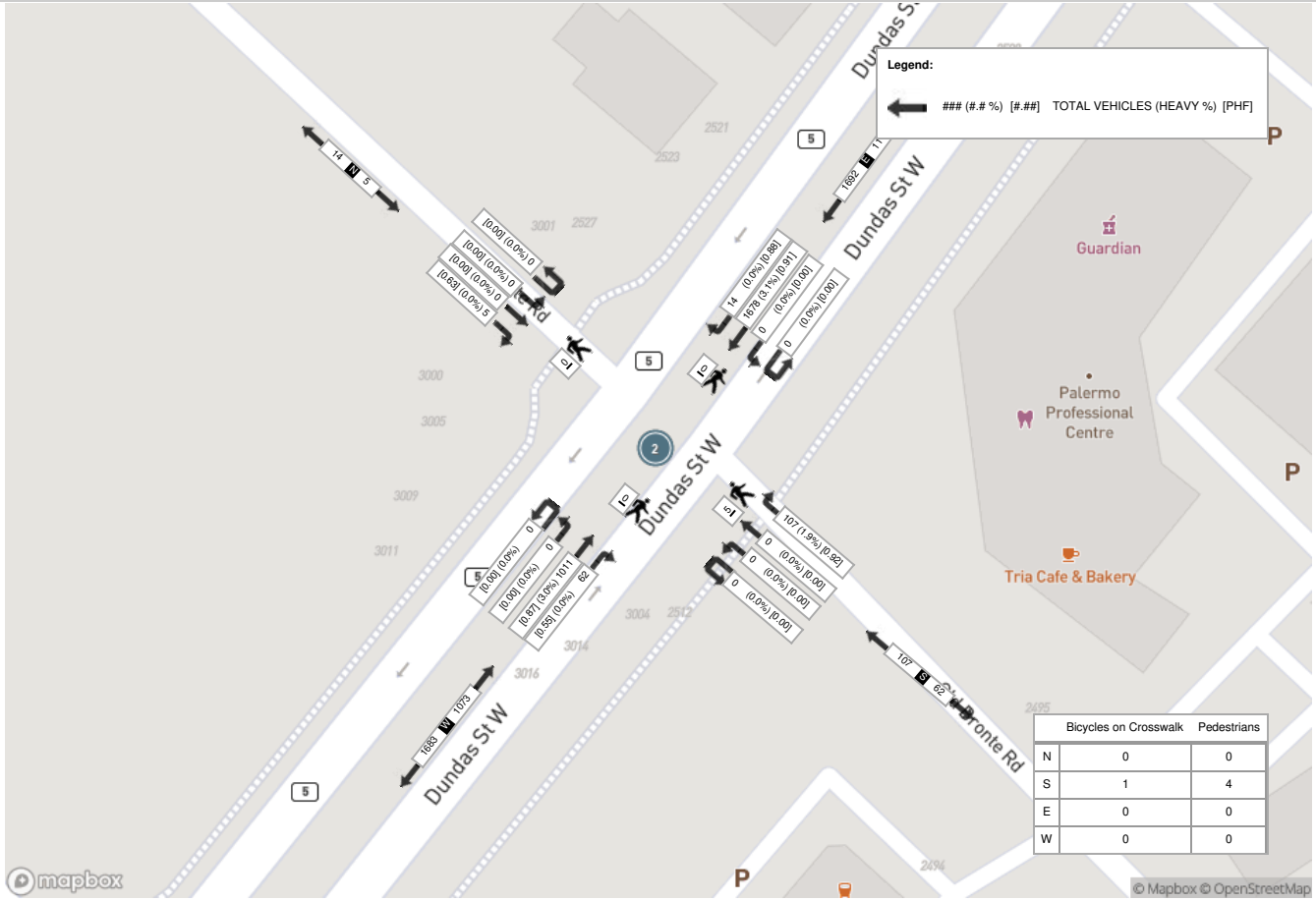
NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather: Light Rain (3.74 °C)**



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

Peak Hour: 04:15 PM - 05:15 PM **Weather: Overcast Clouds (8.4 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	1	4
E	0	0
W	0	0

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

Turning Movement Count (3 . WILLIAM HALTON PKWY & BRONTE RD)

Start Time	N Approach BRONTE RD					E Approach WILLIAM HALTON PKWY					S Approach BRONTE RD					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:00:00	221	54	0	0	275	23	0	0	0	23	8	160	0	0	168	466	
07:15:00	245	52	0	0	297	16	1	0	0	17	2	215	0	0	217	531	
07:30:00	343	47	0	0	390	43	1	0	0	44	5	236	0	0	241	675	
07:45:00	388	88	0	0	476	24	0	0	0	24	7	238	0	0	245	745	2417
08:00:00	328	62	0	0	390	27	2	0	0	29	13	253	0	0	266	685	2636
08:15:00	352	86	0	0	438	26	2	0	0	28	7	244	0	0	251	717	2822
08:30:00	322	79	0	0	401	19	1	1	0	21	7	224	0	0	231	653	2800
08:45:00	325	78	0	0	403	33	1	0	0	34	14	178	0	0	192	629	2684
09:00:00	249	34	0	0	283	22	1	0	0	23	2	152	0	0	154	460	2459
09:15:00	238	40	0	0	278	25	0	0	0	25	1	164	0	0	165	468	2210
09:30:00	233	34	0	0	267	14	2	0	0	16	5	162	0	0	167	450	2007
09:45:00	241	19	0	0	260	17	1	0	0	18	5	157	0	0	162	440	1818
BREAK																	
16:00:00	250	20	0	0	270	108	14	0	0	122	1	314	1	0	316	708	
16:15:00	245	38	0	0	283	95	22	0	0	117	2	400	0	0	402	802	
16:30:00	251	20	0	0	271	79	10	0	0	89	1	362	0	0	363	723	
16:45:00	250	29	0	0	279	63	7	0	0	70	2	389	0	0	391	740	2973
17:00:00	203	26	0	0	229	87	7	0	0	94	3	406	1	0	410	733	2998
17:15:00	250	20	0	0	270	64	2	0	0	66	0	406	0	0	406	742	2938
17:30:00	231	25	0	0	256	51	0	0	1	51	3	353	0	0	356	663	2878
17:45:00	236	12	0	0	248	41	2	0	0	43	1	359	0	0	360	651	2789
18:00:00	214	21	0	0	235	35	1	0	2	36	3	262	0	0	265	536	2592
18:15:00	218	13	1	0	232	26	1	0	0	27	1	279	0	0	280	539	2389
18:30:00	226	12	0	0	238	14	1	0	0	15	1	260	0	0	261	514	2240
18:45:00	192	22	0	0	214	29	2	0	0	31	3	201	0	0	204	449	2038
Grand Total	6251	931	1	0	7183	981	81	1	3	1063	97	6374	2	0	6473	**14719**	-
Approach%	87%	13%	0%		-	92.3%	7.6%	0.1%		-	1.5%	98.5%	0%		-	**-**	-
Totals %	42.5%	6.3%	0%		48.8%	6.7%	0.6%	0%		7.2%	0.7%	43.3%	0%		44%	**-**	-
Heavy	421	11	0		-	18	4	0		-	2	387	0		-	**-**	-
Heavy %	6.7%	1.2%	0%		-	1.8%	4.9%	0%		-	2.1%	6.1%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Light Rain (3.74 °C)

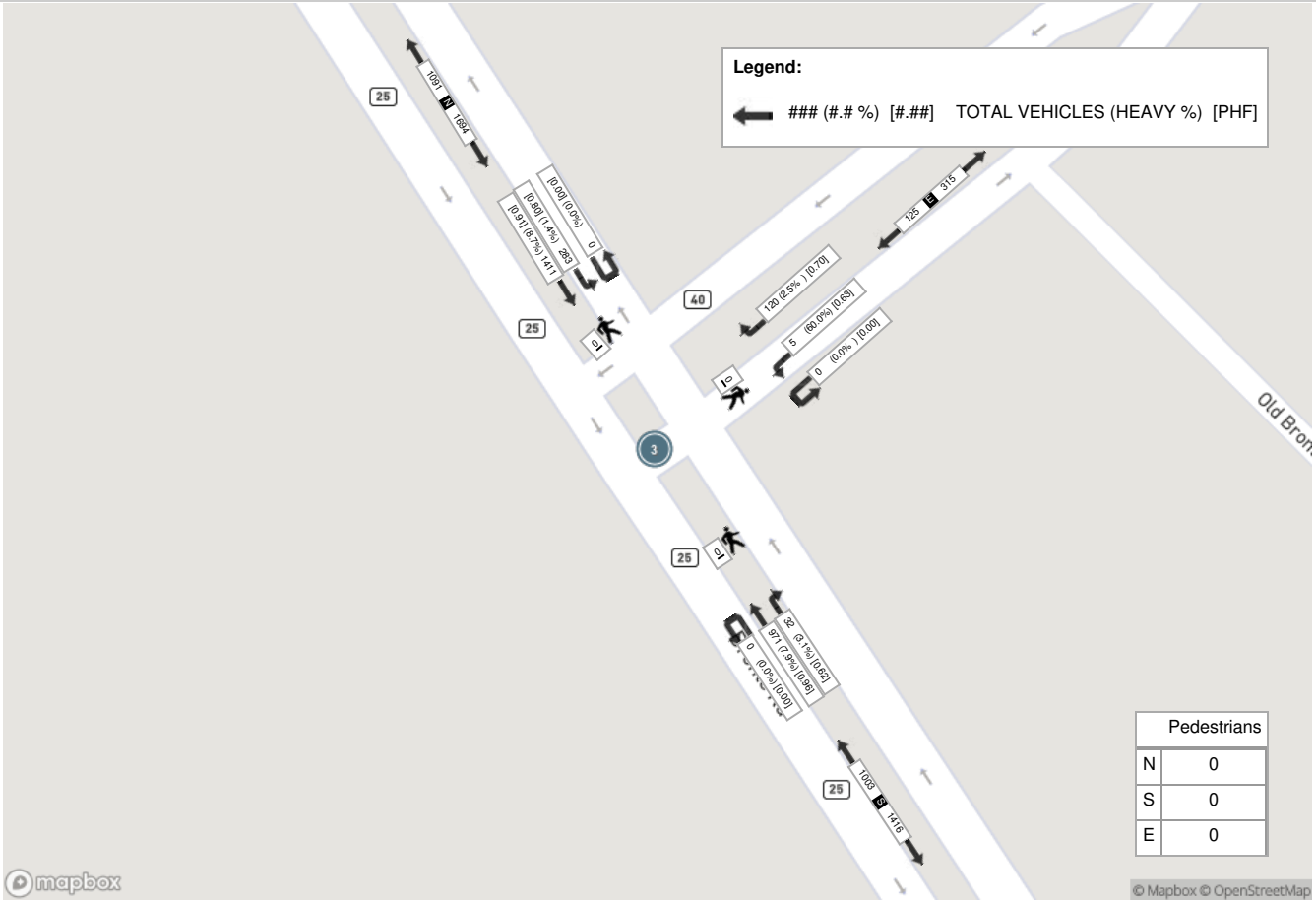
Start Time	N Approach BRONTE RD					E Approach WILLIAM HALTON PKWY					S Approach BRONTE RD					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
07:30:00	343	47	0	0	390	43	1	0	0	44	5	236	0	0	241	675
07:45:00	388	88	0	0	476	24	0	0	0	24	7	238	0	0	245	745
08:00:00	328	62	0	0	390	27	2	0	0	29	13	253	0	0	266	685
08:15:00	352	86	0	0	438	26	2	0	0	28	7	244	0	0	251	717
Grand Total	1411	283	0	0	1694	120	5	0	0	125	32	971	0	0	1003	**2822**
Approach%	83.3%	16.7%	0%		-	96%	4%	0%		-	3.2%	96.8%	0%		-	**-**
Totals %	50%	10%	0%		60%	4.3%	0.2%	0%		4.4%	1.1%	34.4%	0%		35.5%	**-**
PHF	0.91	0.8	0		0.89	0.7	0.63	0		0.71	0.62	0.96	0		0.94	**-**
Heavy	123	4	0		127	3	3	0		6	1	77	0		78	**-**
Heavy %	8.7%	1.4%	0%		7.5%	2.5%	60%	0%		4.8%	3.1%	7.9%	0%		7.8%	**-**
Lights	1288	279	0		1567	117	2	0		119	31	894	0		925	**-**
Lights %	91.3%	98.6%	0%		92.5%	97.5%	40%	0%		95.2%	96.9%	92.1%	0%		92.2%	**-**
Single-Unit Trucks	59	0	0		59	1	2	0		3	1	45	0		46	**-**
Single-Unit Trucks %	4.2%	0%	0%		3.5%	0.8%	40%	0%		2.4%	3.1%	4.6%	0%		4.6%	**-**
Buses	14	4	0		18	1	0	0		1	0	9	0		9	**-**
Buses %	1%	1.4%	0%		1.1%	0.8%	0%	0%		0.8%	0%	0.9%	0%		0.9%	**-**
Articulated Trucks	50	0	0		50	1	1	0		2	0	23	0		23	**-**
Articulated Trucks %	3.5%	0%	0%		3%	0.8%	20%	0%		1.6%	0%	2.4%	0%		2.3%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (8.4 °C)

Start Time	N Approach BRONTE RD					E Approach WILLIAM HALTON PKWY					S Approach BRONTE RD					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:15:00	245	38	0	0	283	95	22	0	0	117	2	400	0	0	402	802
16:30:00	251	20	0	0	271	79	10	0	0	89	1	362	0	0	363	723
16:45:00	250	29	0	0	279	63	7	0	0	70	2	389	0	0	391	740
17:00:00	203	26	0	0	229	87	7	0	0	94	3	406	1	0	410	733
Grand Total	949	113	0	0	1062	324	46	0	0	370	8	1557	1	0	1566	**2998**
Approach%	89.4%	10.6%	0%		-	87.6%	12.4%	0%		-	0.5%	99.4%	0.1%		-	**-**
Totals %	31.7%	3.8%	0%		35.4%	10.8%	1.5%	0%		12.3%	0.3%	51.9%	0%		52.2%	**-**
PHF	0.95	0.74	0		0.94	0.85	0.52	0		0.79	0.67	0.96	0.25		0.95	**-**
Heavy	40	3	0		43	6	0	0		6	0	75	0		75	**-**
Heavy %	4.2%	2.7%	0%		4%	1.9%	0%	0%		1.6%	0%	4.8%	0%		4.8%	**-**
Lights	909	110	0		1019	318	46	0		364	8	1482	1		1491	**-**
Lights %	95.8%	97.3%	0%		96%	98.1%	100%	0%		98.4%	100%	95.2%	100%		95.2%	**-**
Single-Unit Trucks	21	1	0		22	3	0	0		3	0	36	0		36	**-**
Single-Unit Trucks %	2.2%	0.9%	0%		2.1%	0.9%	0%	0%		0.8%	0%	2.3%	0%		2.3%	**-**
Buses	1	2	0		3	2	0	0		2	0	8	0		8	**-**
Buses %	0.1%	1.8%	0%		0.3%	0.6%	0%	0%		0.5%	0%	0.5%	0%		0.5%	**-**
Articulated Trucks	18	0	0		18	1	0	0		1	0	31	0		31	**-**
Articulated Trucks %	1.9%	0%	0%		1.7%	0.3%	0%	0%		0.3%	0%	2%	0%		2%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

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

Peak Hour: 07:30 AM - 08:30 AM Weather: Light Rain (3.74 °C)



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

Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (8.4 °C)

Spectrum

Turning Movement Count
Location Name: WILLIAM HALTON PKWY & OLD BRONTE RD
Date: Thu, Apr 20, 2023 Deployment Lead: Walter Fugaj

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

Turning Movement Count (4 . WILLIAM HALTON PKWY & OLD BRONTE RD)

Start Time	E Approach WILLIAM HALTON PKWY					S Approach OLD BRONTE RD					W Approach WILLIAM HALTON PKWY					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:00:00	23	0	0	0	23	0	0	0	0	0	1	61	0	0	62	85	
07:15:00	18	0	0	0	18	0	0	0	0	0	2	52	0	0	54	72	
07:30:00	41	0	0	2	41	1	0	0	0	1	1	51	0	0	52	94	
07:45:00	28	0	0	0	28	1	0	0	0	1	0	94	0	0	94	123	374
08:00:00	27	0	0	0	27	2	0	0	0	2	1	74	0	0	75	104	393
08:15:00	28	0	0	0	28	0	0	0	0	0	1	94	0	0	95	123	444
08:30:00	24	0	0	0	24	1	0	0	0	1	4	86	0	0	90	115	465
08:45:00	33	0	0	0	33	10	0	0	0	10	11	80	0	0	91	134	476
09:00:00	32	0	0	0	32	4	0	0	0	4	4	32	0	0	36	72	444
09:15:00	26	0	0	0	26	2	0	0	0	2	1	41	0	0	42	70	391
09:30:00	16	0	0	0	16	2	0	0	0	2	2	36	0	0	38	56	332
09:45:00	17	0	0	0	17	0	0	0	0	0	0	25	0	0	25	42	240
BREAK																	
16:00:00	123	0	0	0	123	10	0	0	0	10	0	22	0	0	22	155	
16:15:00	118	0	0	0	118	9	0	0	0	9	0	41	0	0	41	168	
16:30:00	84	0	0	0	84	5	0	0	0	5	1	21	0	0	22	111	
16:45:00	73	0	0	0	73	6	0	0	0	6	2	31	0	0	33	112	546
17:00:00	91	0	0	0	91	3	0	0	0	3	1	26	0	0	27	121	512
17:15:00	69	0	0	0	69	2	0	0	0	2	0	21	0	0	21	92	436
17:30:00	50	0	0	1	50	3	0	0	0	3	1	26	0	0	27	80	405
17:45:00	44	0	0	0	44	3	0	0	0	3	1	12	0	0	13	60	353
18:00:00	34	0	0	2	34	2	0	0	1	2	2	22	0	0	24	60	292
18:15:00	29	0	0	0	29	0	0	0	0	0	0	14	0	0	14	43	243
18:30:00	13	0	0	0	13	1	0	0	0	1	0	15	0	0	15	29	192
18:45:00	31	0	0	0	31	2	0	0	0	2	1	22	0	0	23	56	188
Grand Total	1072	0	0	5	1072	69	0	0	1	69	37	999	0	0	1036	**2177**	-
Approach%	100%	0%	0%		-	100%	0%	0%		-	3.6%	96.4%	0%		-	**-**	-
Totals %	49.2%	0%	0%		49.2%	3.2%	0%	0%		3.2%	1.7%	45.9%	0%		47.6%	**-**	-
Heavy	25	0	0		-	1	0	0		-	0	14	0		-	**-**	-
Heavy %	2.3%	0%	0%		-	1.4%	0%	0%		-	0%	1.4%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

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

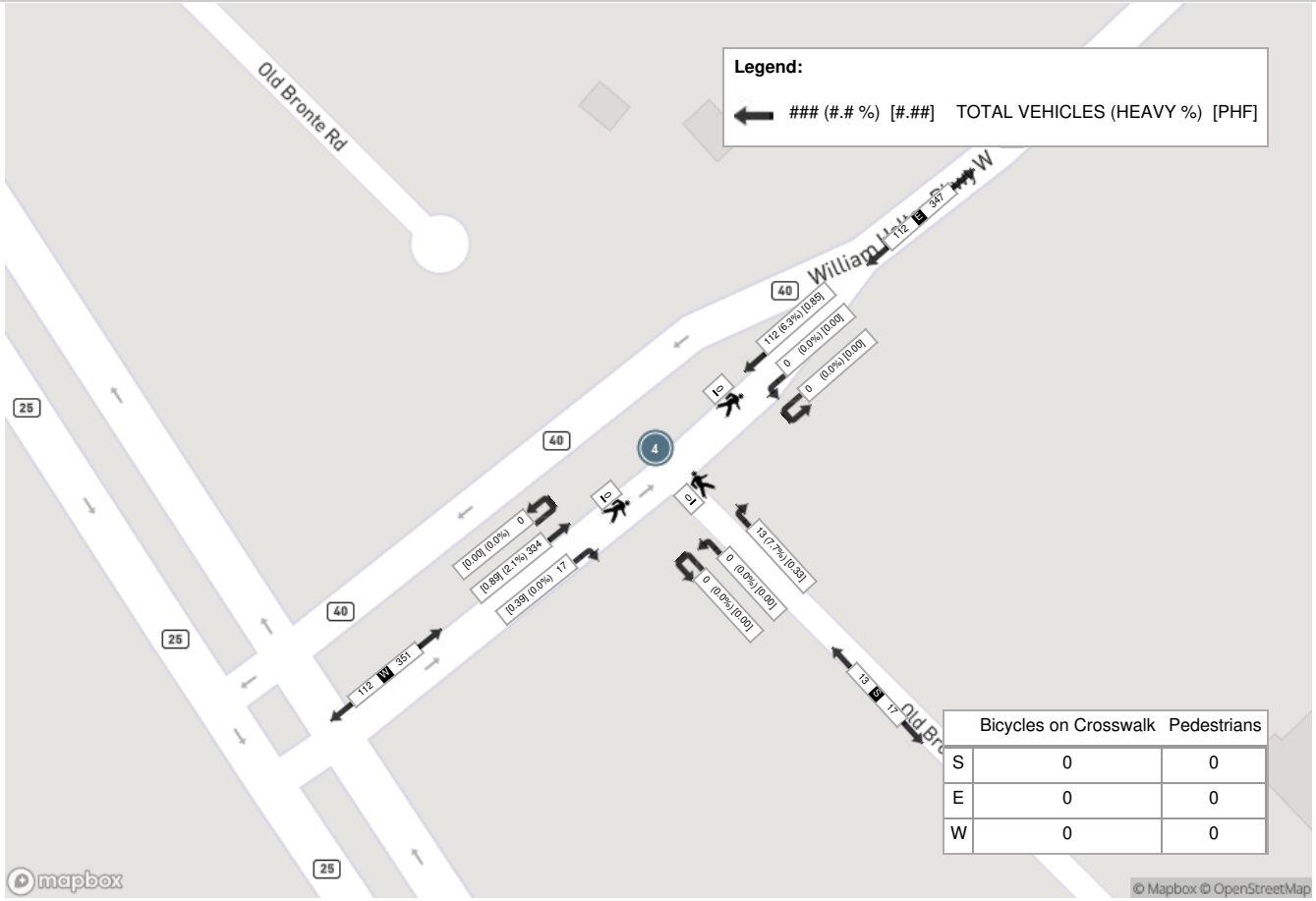
Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (3.74 °C)

Start Time	E Approach WILLIAM HALTON PKWY					S Approach OLD BRONTE RD					W Approach WILLIAM HALTON PKWY					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:00:00	27	0	0	0	27	2	0	0	0	2	1	74	0	0	75	104
08:15:00	28	0	0	0	28	0	0	0	0	0	1	94	0	0	95	123
08:30:00	24	0	0	0	24	1	0	0	0	1	4	86	0	0	90	115
08:45:00	33	0	0	0	33	10	0	0	0	10	11	80	0	0	91	134
Grand Total	112	0	0	0	112	13	0	0	0	13	17	334	0	0	351	**476**
Approach%	100%	0%	0%		-	100%	0%	0%		-	4.8%	95.2%	0%		-	**-**
Totals %	23.5%	0%	0%		23.5%	2.7%	0%	0%		2.7%	3.6%	70.2%	0%		73.7%	**-**
PHF	0.85	0	0		0.85	0.33	0	0		0.33	0.39	0.89	0		0.92	**-**
Heavy	7	0	0		7	1	0	0		1	0	7	0		7	**-**
Heavy %	6.3%	0%	0%		6.3%	7.7%	0%	0%		7.7%	0%	2.1%	0%		2%	**-**
Lights	105	0	0		105	12	0	0		12	17	327	0		344	**-**
Lights %	93.8%	0%	0%		93.8%	92.3%	0%	0%		92.3%	100%	97.9%	0%		98%	**-**
Single-Unit Trucks	3	0	0		3	1	0	0		1	0	2	0		2	**-**
Single-Unit Trucks %	2.7%	0%	0%		2.7%	7.7%	0%	0%		7.7%	0%	0.6%	0%		0.6%	**-**
Buses	2	0	0		2	0	0	0		0	0	5	0		5	**-**
Buses %	1.8%	0%	0%		1.8%	0%	0%	0%		0%	0%	1.5%	0%		1.4%	**-**
Articulated Trucks	2	0	0		2	0	0	0		0	0	0	0		0	**-**
Articulated Trucks %	1.8%	0%	0%		1.8%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (8.4 °C)

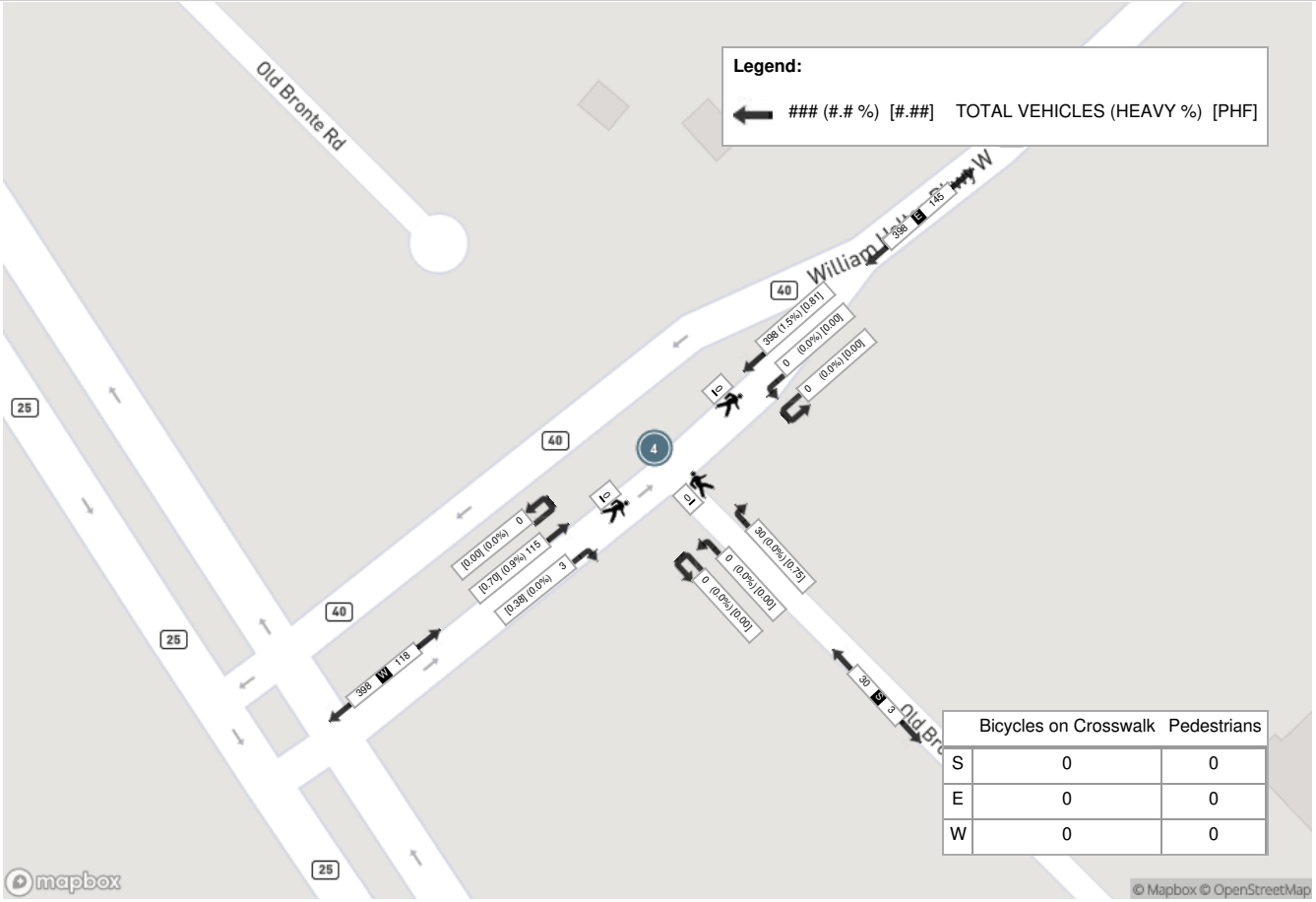
Start Time	E Approach WILLIAM HALTON PKWY					S Approach OLD BRONTE RD					W Approach WILLIAM HALTON PKWY					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:00:00	123	0	0	0	123	10	0	0	0	10	0	22	0	0	22	155
16:15:00	118	0	0	0	118	9	0	0	0	9	0	41	0	0	41	168
16:30:00	84	0	0	0	84	5	0	0	0	5	1	21	0	0	22	111
16:45:00	73	0	0	0	73	6	0	0	0	6	2	31	0	0	33	112
Grand Total	398	0	0	0	398	30	0	0	0	30	3	115	0	0	118	**546**
Approach%	100%	0%	0%		-	100%	0%	0%		-	2.5%	97.5%	0%		-	**-**
Totals %	72.9%	0%	0%		72.9%	5.5%	0%	0%		5.5%	0.5%	21.1%	0%		21.6%	**-**
PHF	0.81	0	0		0.81	0.75	0	0		0.75	0.38	0.7	0		0.72	**-**
Heavy	6	0	0		6	0	0	0		0	0	1	0		1	**-**
Heavy %	1.5%	0%	0%		1.5%	0%	0%	0%		0%	0%	0.9%	0%		0.8%	**-**
Lights	392	0	0		392	30	0	0		30	3	114	0		117	**-**
Lights %	98.5%	0%	0%		98.5%	100%	0%	0%		100%	100%	99.1%	0%		99.2%	**-**
Single-Unit Trucks	1	0	0		1	0	0	0		0	0	1	0		1	**-**
Single-Unit Trucks %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	0.9%	0%		0.8%	**-**
Buses	4	0	0		4	0	0	0		0	0	0	0		0	**-**
Buses %	1%	0%	0%		1%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Articulated Trucks	1	0	0		1	0	0	0		0	0	0	0		0	**-**
Articulated Trucks %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (3.74 °C)



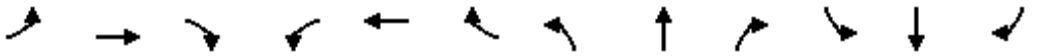
	Bicycles on Crosswalk	Pedestrians
S	0	0
E	0	0
W	0	0

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (8.4 °C)



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

Appendix C
Existing Traffic Level of Service Calculations

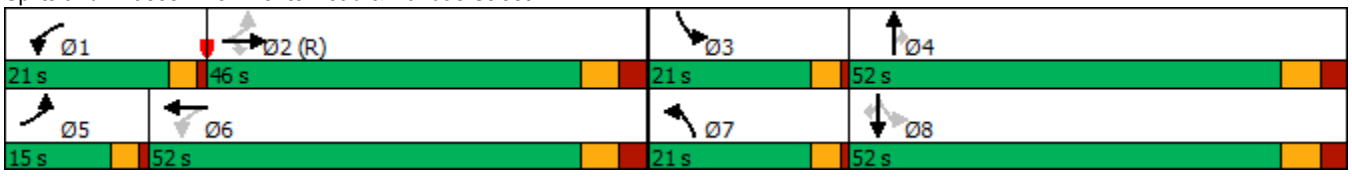


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	1210	333	166	588	160	170	523	167	227	962	113
Future Volume (vph)	234	1210	333	166	588	160	170	523	167	227	962	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1700	4980	1551	1487	4597	0	3148	3187	1536	1767	3216	1413
Flt Permitted	0.259			0.090			0.950			0.302		
Satd. Flow (perm)	463	4980	1551	141	4597	0	3148	3187	1507	561	3216	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			297		52				186			125
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	3%	3%	20%	8%	8%	10%	12%	4%	1%	11%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	260	1344	370	184	831	0	189	581	186	252	1069	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	15.0	46.0	46.0	21.0	52.0		21.0	52.0	52.0	21.0	52.0	52.0
Total Split (%)	10.7%	32.9%	32.9%	15.0%	37.1%		15.0%	37.1%	37.1%	15.0%	37.1%	37.1%
Maximum Green (s)	11.0	39.0	39.0	17.0	45.0		17.0	45.0	45.0	17.0	45.0	45.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	56.5	41.5	41.5	63.5	46.0		14.6	47.4	47.4	68.9	49.4	49.4
Actuated g/C Ratio	0.40	0.30	0.30	0.45	0.33		0.10	0.34	0.34	0.49	0.35	0.35
v/c Ratio	0.89	0.91	0.55	0.83	0.54		0.58	0.54	0.29	0.60	0.94	0.22
Control Delay	60.3	57.8	12.4	62.6	37.3		66.6	40.0	5.7	25.2	55.3	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	57.8	12.4	62.6	37.3		66.6	40.0	5.7	25.2	55.3	4.6
LOS	E	E	B	E	D		E	D	A	C	E	A
Approach Delay		49.6			41.9			38.6			45.7	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	47.8	140.8	16.0	37.7	67.8		27.4	73.1	0.0	33.5	158.8	0.3
Queue Length 95th (m)	#83.8	#171.3	48.7	#75.5	82.3		39.8	93.0	17.4	45.9	#217.2	9.7
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	292	1475	668	237	1545		404	1080	633	432	1135	579
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.91	0.55	0.78	0.54		0.47	0.54	0.29	0.58	0.94	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 45.1		Intersection LOS: D	
Intersection Capacity Utilization 80.7%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Bronte Road & Dundas Street W



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	120	971	32	283	1411
Future Volume (vph)	5	120	971	32	283	1411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	100.0		0.0	50.0	
Storage Lanes	2	1		0	1	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	2164	1551	3294	0	1767	3275
Flt Permitted	0.950				0.234	
Satd. Flow (perm)	2164	1551	3294	0	435	3275
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		128	5			
Link Speed (k/h)	60		70			70
Link Distance (m)	72.5		220.9			247.9
Travel Time (s)	4.4		11.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	60%	3%	8%	3%	1%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	128	1067	0	301	1501
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	41.2		9.5	41.2
Total Split (s)	25.0	25.0	102.0		13.0	115.0
Total Split (%)	17.9%	17.9%	72.9%		9.3%	82.1%
Maximum Green (s)	19.2	19.2	95.6		9.0	108.6
Yellow Time (s)	3.3	3.3	4.2		3.0	4.2
All-Red Time (s)	2.5	2.5	2.2		1.0	2.2
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.8	4.8	5.4		3.0	5.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Dont Walk (s)	0.0	0.0	27.0			27.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	11.5	11.5	104.7		120.7	118.3
Actuated g/C Ratio	0.08	0.08	0.75		0.86	0.84
v/c Ratio	0.03	0.52	0.43		0.63	0.54
Control Delay	58.8	17.6	8.7		8.0	4.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	58.8	17.6	8.7		8.0	4.0
LOS	E	B	A		A	A
Approach Delay	19.2		8.7			4.7
Approach LOS	B		A			A
Queue Length 50th (m)	0.7	0.0	59.6		10.3	49.4
Queue Length 95th (m)	3.0	20.2	m71.5		17.8	68.6
Internal Link Dist (m)	48.5		196.9			223.9
Turn Bay Length (m)		100.0			50.0	
Base Capacity (vph)	312	333	2465		478	2767
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.02	0.38	0.43		0.63	0.54

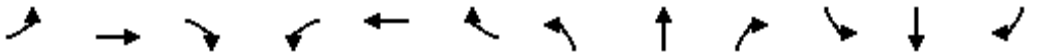
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 101 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 6.7		Intersection LOS: A	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Bronte Road & William Halton Pkwy

HCM Unsignalized Intersection Capacity Analysis
10: Old Bronte Road & Dundas Street W

04-26-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1527	98	0	910	15	0	0	52	0	0	10
Future Volume (Veh/h)	0	1527	98	0	910	15	0	0	52	0	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1697	109	0	1011	17	0	0	58	0	0	11
Pedestrians								2				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		140										
pX, platoon unblocked				0.74			0.74	0.74	0.74	0.74	0.74	
vC, conflicting volume	1028			1808			2102	2782	622	1643	2828	346
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1028			873			1268	2185	0	651	2247	346
tC, single (s)	4.1			4.1			7.5	6.5	7.0	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	93	100	100	98
cM capacity (veh/h)	683			579			93	34	799	246	31	656

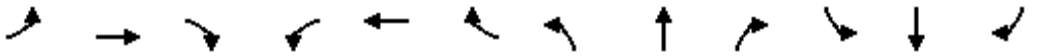
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	679	679	448	404	404	219	58	11
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	109	0	0	17	58	11
cSH	1700	1700	1700	1700	1700	1700	799	656
Volume to Capacity	0.40	0.40	0.26	0.24	0.24	0.13	0.07	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.9	10.6
Lane LOS							A	B
Approach Delay (s)	0.0			0.0			9.9	10.6
Approach LOS							A	B

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	41.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	334	17	0	112	0	13
Future Volume (Veh/h)	334	17	0	112	0	13
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)	363	18	0	122	0	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	73					
pX, platoon unblocked						
vC, conflicting volume			381		433	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			381		433	190
tC, single (s)			4.1		6.8	7.1
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		100	98
cM capacity (veh/h)			1189		556	801

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	242	139	61	61	14
Volume Left	0	0	0	0	0
Volume Right	0	18	0	0	14
cSH	1700	1700	1700	1700	801
Volume to Capacity	0.14	0.08	0.04	0.04	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	9.6
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.6
Approach LOS					A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		



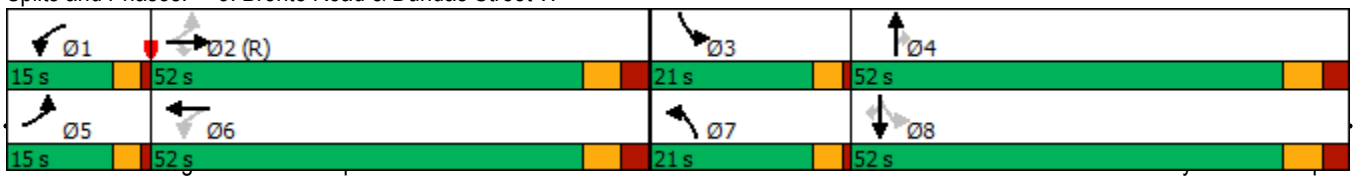
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	787	223	197	1235	239	315	1101	86	189	610	212
Future Volume (vph)	202	787	223	197	1235	239	315	1101	86	189	610	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1684	5029	1581	1716	4868	0	3362	3400	1389	1750	3400	1536
Flt Permitted	0.087			0.238			0.950			0.086		
Satd. Flow (perm)	154	5029	1550	429	4868	0	3362	3400	1365	158	3400	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			232		30				94			175
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)			5	5					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	1%	4%	3%	2%	3%	5%	15%	2%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	820	232	205	1535	0	328	1147	90	197	635	221
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	15.0	52.0	52.0	15.0	52.0		21.0	52.0	52.0	21.0	52.0	52.0
Total Split (%)	10.7%	37.1%	37.1%	10.7%	37.1%		15.0%	37.1%	37.1%	15.0%	37.1%	37.1%
Maximum Green (s)	11.0	45.0	45.0	11.0	45.0		17.0	45.0	45.0	17.0	45.0	45.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	61.0	46.0	46.0	61.0	46.0		17.4	48.1	48.1	65.4	46.6	46.6
Actuated g/C Ratio	0.44	0.33	0.33	0.44	0.33		0.12	0.34	0.34	0.47	0.33	0.33
v/c Ratio	1.06	0.50	0.35	0.69	0.95		0.78	0.98	0.17	0.78	0.56	0.35
Control Delay	115.5	38.9	5.5	37.5	58.0		73.2	67.6	6.4	67.0	36.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.5	38.9	5.5	37.5	58.0		73.2	67.6	6.4	67.0	36.5	7.1
LOS	F	D	A	D	E		E	E	A	E	D	A
Approach Delay		45.5			55.6			65.3			36.0	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	~50.4	70.1	0.0	36.2	157.2		48.2	~185.3	0.0	39.1	81.9	4.2
Queue Length 95th (m)	#104.4	84.2	18.9	54.8	#189.7		65.6	#231.8	11.8	#65.5	102.4	15.0
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	198	1653	665	297	1619		432	1169	531	281	1131	627
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.50	0.35	0.69	0.95		0.76	0.98	0.17	0.70	0.56	0.35

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 52.4 Intersection LOS: D
Intersection Capacity Utilization 98.0% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W



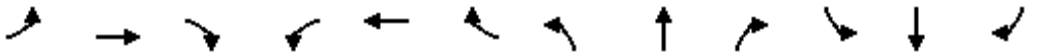
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	46	324	1557	8	113	949
Future Volume (vph)	46	324	1557	8	113	949
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	100.0		0.0	50.0	
Storage Lanes	2	1		0	1	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	3463	1566	3397	0	1733	3433
Flt Permitted	0.950				0.095	
Satd. Flow (perm)	3463	1566	3397	0	173	3433
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		135	1			
Link Speed (k/h)	60		70			70
Link Distance (m)	72.5		220.9			247.9
Travel Time (s)	4.4		11.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	0%	3%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	341	1647	0	119	999
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	41.2		9.5	41.2
Total Split (s)	25.0	25.0	102.0		13.0	115.0
Total Split (%)	17.9%	17.9%	72.9%		9.3%	82.1%
Maximum Green (s)	19.2	19.2	95.6		9.0	108.6
Yellow Time (s)	3.3	3.3	4.2		3.0	4.2
All-Red Time (s)	2.5	2.5	2.2		1.0	2.2
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.8	4.8	5.4		3.0	5.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Dont Walk (s)	0.0	0.0	27.0			27.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	20.2	20.2	98.0		112.0	109.6
Actuated g/C Ratio	0.14	0.14	0.70		0.80	0.78
v/c Ratio	0.10	1.00	0.69		0.51	0.37
Control Delay	52.7	84.4	10.1		12.5	5.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	52.7	84.4	10.1		12.5	5.1
LOS	D	F	B		B	A
Approach Delay	80.5		10.1			5.9
Approach LOS	F		B			A
Queue Length 50th (m)	6.3	64.3	65.5		6.3	40.2
Queue Length 95th (m)	12.7	#131.4	m67.8		14.5	48.6
Internal Link Dist (m)	48.5		196.9			223.9
Turn Bay Length (m)		100.0			50.0	
Base Capacity (vph)	499	341	2379		249	2687
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.10	1.00	0.69		0.48	0.37

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 101 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 71.9%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Bronte Road & William Halton Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1011	62	0	1678	14	0	0	107	0	0	5
Future Volume (Veh/h)	0	1011	62	0	1678	14	0	0	107	0	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1099	67	0	1824	15	0	0	116	0	0	5
Pedestrians								5				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		140										
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	1839			1171			1750	2976	405	2314	3002	616
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1839			688			1352	2756	0	1997	2785	616
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	88	100	100	99
cM capacity (veh/h)	336			796			95	17	943	28	17	439

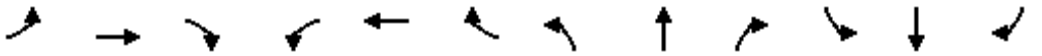
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	440	440	287	730	730	380	116	5
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	67	0	0	15	116	5
cSH	1700	1700	1700	1700	1700	1700	943	439
Volume to Capacity	0.26	0.26	0.17	0.43	0.43	0.22	0.12	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.4	13.3
Lane LOS							A	B
Approach Delay (s)	0.0			0.0			9.4	13.3
Approach LOS							A	B

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	42.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	115	3	0	398	0	30
Future Volume (Veh/h)	115	3	0	398	0	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	142	4	0	491	0	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	73					
pX, platoon unblocked						
vC, conflicting volume			146		390	73
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			146		390	73
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			1448		592	981

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	95	51	246	246	37
Volume Left	0	0	0	0	0
Volume Right	0	4	0	0	37
cSH	1700	1700	1700	1700	981
Volume to Capacity	0.06	0.03	0.14	0.14	0.04
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	0.0	0.0	8.8
Lane LOS					A
Approach Delay (s)	0.0		0.0		8.8
Approach LOS					A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		



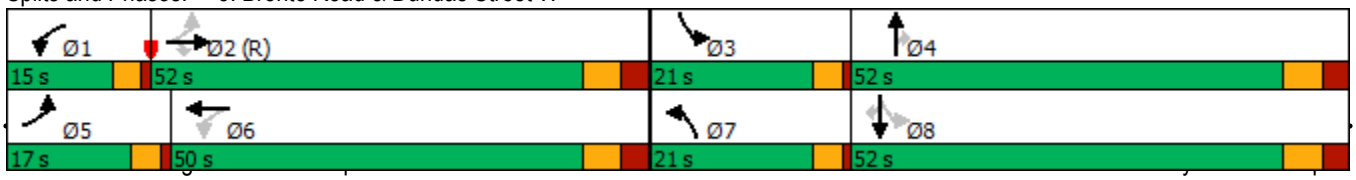
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	787	223	197	1235	239	315	1101	86	189	610	212
Future Volume (vph)	202	787	223	197	1235	239	315	1101	86	189	610	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1684	5029	1581	1716	4868	0	3362	3400	1389	1750	3400	1536
Flt Permitted	0.087			0.249			0.950			0.086		
Satd. Flow (perm)	154	5029	1550	449	4868	0	3362	3400	1365	158	3400	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			232		30				94			180
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)			5	5					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	1%	4%	3%	2%	3%	5%	15%	2%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	820	232	205	1535	0	328	1147	90	197	635	221
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	17.0	52.0	52.0	15.0	50.0		21.0	52.0	52.0	21.0	52.0	52.0
Total Split (%)	12.1%	37.1%	37.1%	10.7%	35.7%		15.0%	37.1%	37.1%	15.0%	37.1%	37.1%
Maximum Green (s)	13.0	45.0	45.0	11.0	43.0		17.0	45.0	45.0	17.0	45.0	45.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	63.0	46.0	46.0	59.0	44.0		17.4	48.1	48.1	65.4	46.6	46.6
Actuated g/C Ratio	0.45	0.33	0.33	0.42	0.31		0.12	0.34	0.34	0.47	0.33	0.33
v/c Ratio	0.95	0.50	0.35	0.69	0.99		0.78	0.98	0.17	0.78	0.56	0.35
Control Delay	83.6	38.9	5.5	37.7	67.3		73.2	67.6	6.4	68.5	35.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.6	38.9	5.5	37.7	67.3		73.2	67.6	6.4	68.5	35.5	6.0
LOS	F	D	A	D	E		E	E	A	E	D	A
Approach Delay		40.2			63.8			65.3			35.5	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	44.9	70.1	0.0	36.2	160.7		48.2	~185.3	0.0	39.1	81.8	3.2
Queue Length 95th (m)	#96.9	84.2	18.9	54.8	#197.5		65.6	#231.8	11.8	#65.4	102.3	12.9
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	222	1653	665	297	1550		432	1169	531	281	1131	630
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.50	0.35	0.69	0.99		0.76	0.98	0.17	0.70	0.56	0.35

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 53.6 Intersection LOS: D
Intersection Capacity Utilization 98.0% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	46	324	1557	8	113	949
Future Volume (vph)	46	324	1557	8	113	949
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	100.0		0.0	50.0	
Storage Lanes	2	1		0	1	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	3463	1566	3397	0	1733	3433
Flt Permitted	0.950				0.088	
Satd. Flow (perm)	3463	1566	3397	0	161	3433
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		132	1			
Link Speed (k/h)	60		70			70
Link Distance (m)	72.5		220.9			247.9
Travel Time (s)	4.4		11.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	0%	3%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	341	1647	0	119	999
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	41.2		9.5	41.2
Total Split (s)	30.0	30.0	97.0		13.0	110.0
Total Split (%)	21.4%	21.4%	69.3%		9.3%	78.6%
Maximum Green (s)	24.2	24.2	90.6		9.0	103.6
Yellow Time (s)	3.3	3.3	4.2		3.0	4.2
All-Red Time (s)	2.5	2.5	2.2		1.0	2.2
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.8	4.8	5.4		3.0	5.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Dont Walk (s)	0.0	0.0	27.0			27.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	23.4	23.4	94.6		108.8	106.4
Actuated g/C Ratio	0.17	0.17	0.68		0.78	0.76
v/c Ratio	0.08	0.92	0.72		0.53	0.38
Control Delay	48.5	64.6	12.9		15.8	6.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	48.5	64.6	12.9		15.8	6.4
LOS	D	E	B		B	A
Approach Delay	62.6		12.9			7.4
Approach LOS	E		B			A
Queue Length 50th (m)	6.0	62.3	85.7		7.7	48.5
Queue Length 95th (m)	12.1	#118.6	m98.5		19.5	58.5
Internal Link Dist (m)	48.5		196.9			223.9
Turn Bay Length (m)		100.0			50.0	
Base Capacity (vph)	623	390	2296		237	2608
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.08	0.87	0.72		0.50	0.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 101 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 17.1		Intersection LOS: B	
Intersection Capacity Utilization 71.9%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Bronte Road & William Halton Pkwy

Appendix D
Background Development Traffic Volumes

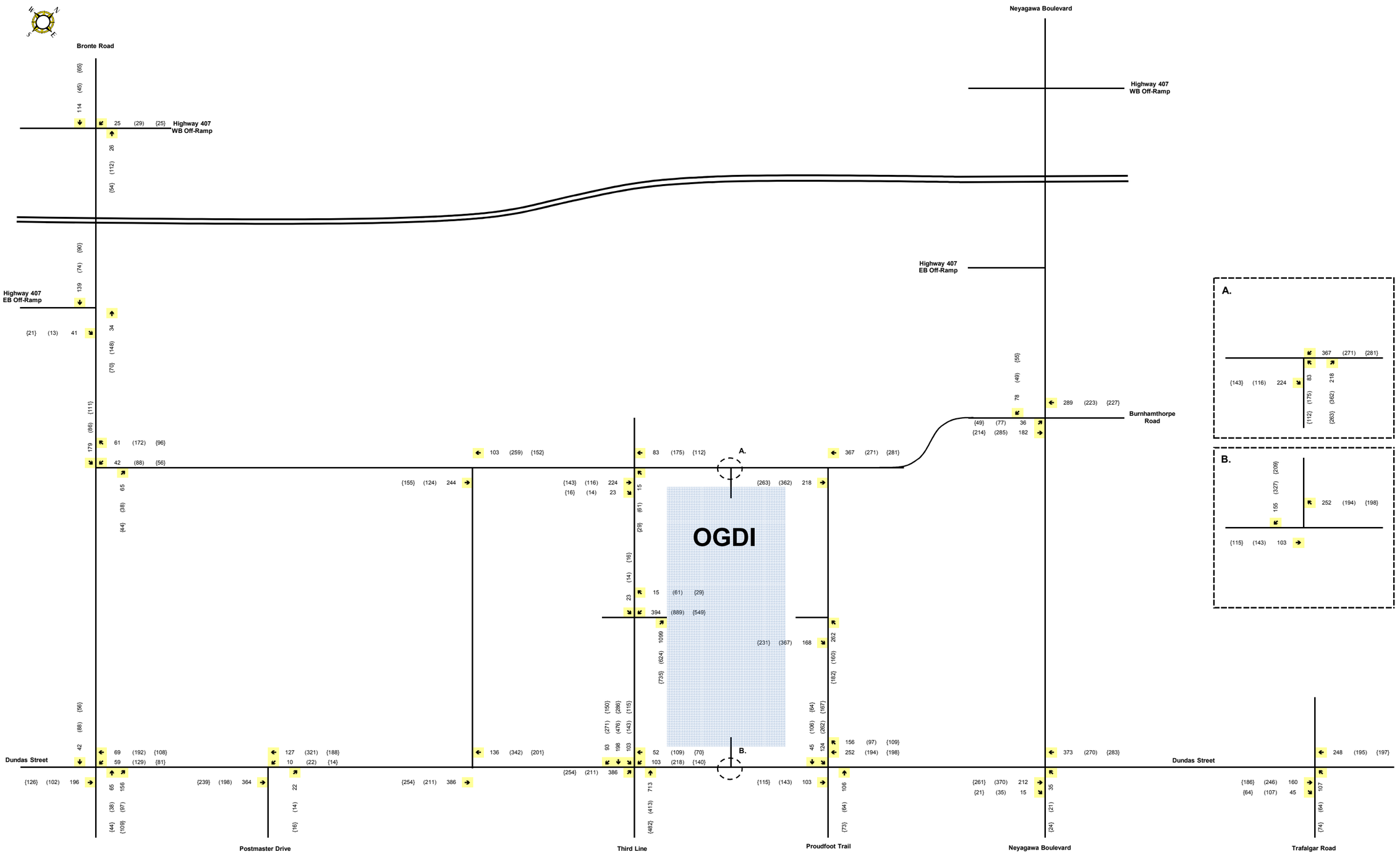
Prepared for: Oakville Green Development Inc.

TRANSPORTATION IMPACT STUDY OAKVILLE GREEN LIFE SCIENCES AND TECHNOLOGY DISTRICT

TOWN OF OAKVILLE

1415034-001-TR1 | October 2016

WSP | MMM GROUP



LEGEND

XX AM Peak Hour Volumes
(XX) PM Peak Hour Volumes
{XX} SAT Peak Hour Volumes

WSP | MMM GROUP

FIGURE 30

Trip Assignment - Year 2030
(Northern)

TRANSPORTATION IMPACT STUDY (2ND SUBMISSION)

August 2013

Lazy Pat Farm Property
(3269 Dundas Street West), North Oakville West

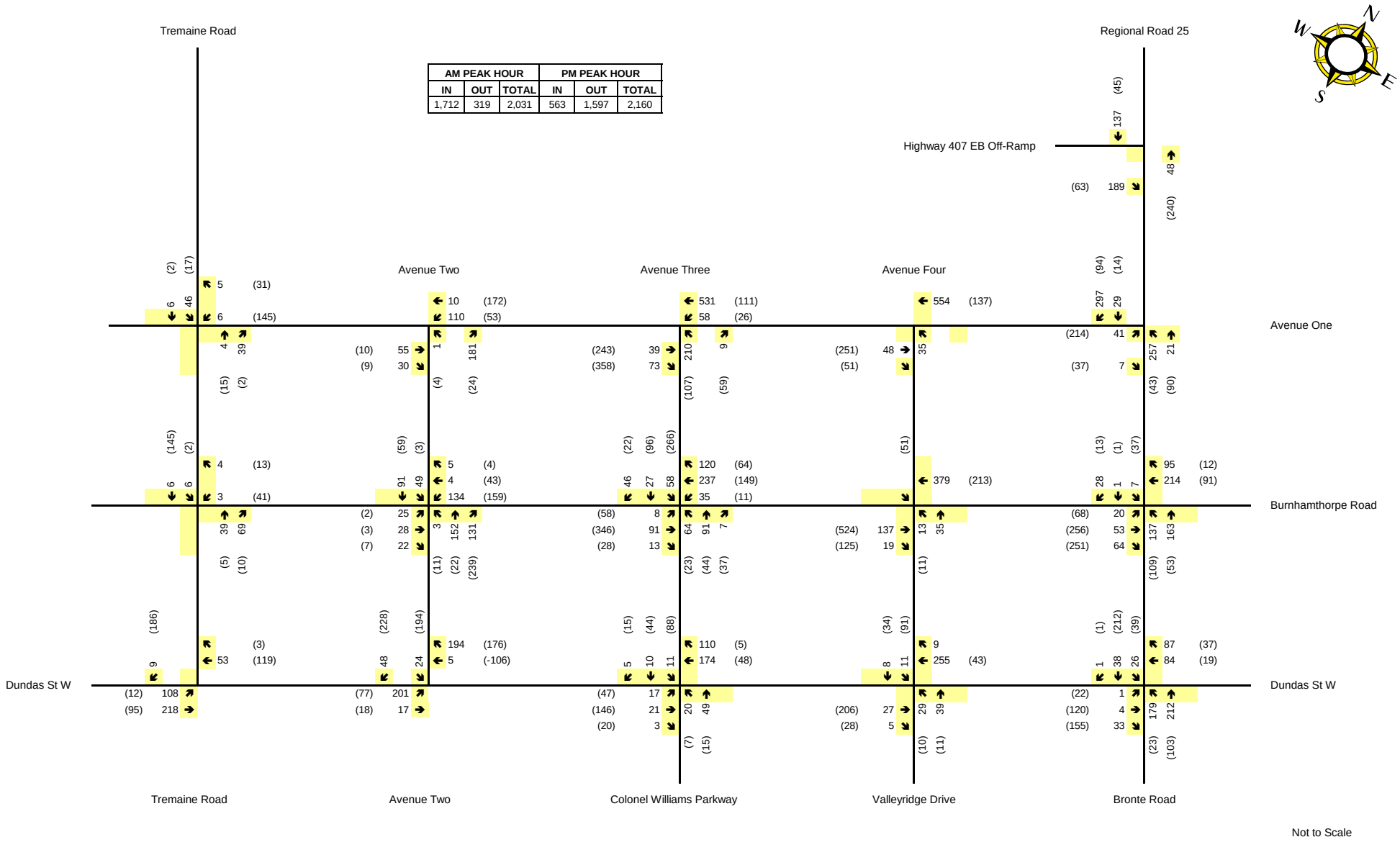
PREPARED FOR:

Bentall Kennedy

PREPARED BY:

MMM GROUP

D14-011-18



AM PEAK HOUR			PM PEAK HOUR		
IN	OUT	TOTAL	IN	OUT	TOTAL
1,712	319	2,031	563	1,597	2,160

MMM GROUP

LEGEND

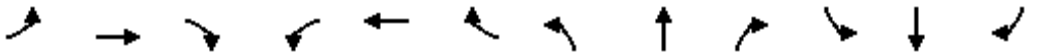
XX A.M. Peak Hour Volumes

(XX) P.M. Peak Hour Volumes

FIGURE 8C

2031 Site Generated Traffic Volumes

Appendix E
Future Background Level of Service Calculations



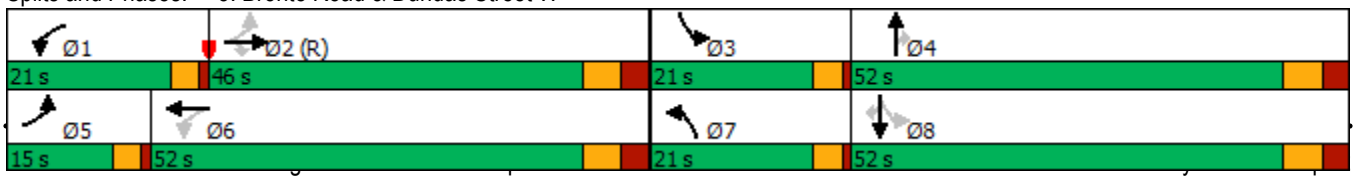
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	1472	366	225	771	247	349	827	323	253	1091	114
Future Volume (vph)	235	1472	366	225	771	247	349	827	323	253	1091	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1700	4980	1551	1487	4578	0	3148	3187	1536	1767	3216	1413
Flt Permitted	0.176			0.093			0.950			0.163		
Satd. Flow (perm)	315	4980	1551	146	4578	0	3148	3187	1507	303	3216	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			282		61				251			125
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	3%	3%	20%	8%	8%	10%	12%	4%	1%	11%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	1502	373	230	1039	0	356	844	330	258	1113	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	15.0	46.0	46.0	21.0	52.0		21.0	52.0	52.0	21.0	52.0	52.0
Total Split (%)	10.7%	32.9%	32.9%	15.0%	37.1%		15.0%	37.1%	37.1%	15.0%	37.1%	37.1%
Maximum Green (s)	11.0	39.0	39.0	17.0	45.0		17.0	45.0	45.0	17.0	45.0	45.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	55.0	40.0	40.0	64.0	46.0		17.9	47.0	47.0	66.0	46.1	46.1
Actuated g/C Ratio	0.39	0.29	0.29	0.46	0.33		0.13	0.34	0.34	0.47	0.33	0.33
v/c Ratio	0.99	1.06	0.58	0.96	0.67		0.88	0.79	0.49	0.81	1.05	0.21
Control Delay	85.3	87.9	14.5	87.4	40.5		83.4	48.6	11.9	48.6	82.2	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.3	87.9	14.5	87.4	40.5		83.4	48.6	11.9	48.6	82.2	3.9
LOS	F	F	B	F	D		F	D	B	D	F	A
Approach Delay		74.7			49.0			48.8			70.2	
Approach LOS		E			D			D			E	
Queue Length 50th (m)	43.5	~175.0	20.2	52.5	90.2		53.2	118.2	16.3	39.1	~186.3	1.1
Queue Length 95th (m)	#98.1	#206.3	54.8	#107.6	107.1		#80.9	145.0	45.6	#77.6	#231.4	8.1
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	242	1422	644	239	1545		404	1071	672	333	1057	548
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.99	1.06	0.58	0.96	0.67		0.88	0.79	0.49	0.77	1.05	0.21

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 62.4 Intersection LOS: E
Intersection Capacity Utilization 97.7% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W



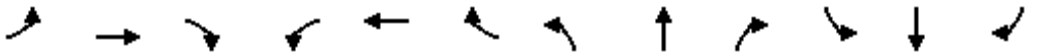
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	126	1386	32	283	1590
Future Volume (vph)	5	126	1386	32	283	1590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	100.0		0.0	50.0	
Storage Lanes	2	1		0	1	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	2164	1551	3299	0	1767	3275
Flt Permitted	0.950				0.133	
Satd. Flow (perm)	2164	1551	3299	0	247	3275
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		129	4			
Link Speed (k/h)	60		70			70
Link Distance (m)	72.5		220.9			247.9
Travel Time (s)	4.4		11.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	60%	3%	8%	3%	1%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	129	1447	0	289	1622
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	41.2		9.5	41.2
Total Split (s)	25.0	25.0	102.0		13.0	115.0
Total Split (%)	17.9%	17.9%	72.9%		9.3%	82.1%
Maximum Green (s)	19.2	19.2	95.6		9.0	108.6
Yellow Time (s)	3.3	3.3	4.2		3.0	4.2
All-Red Time (s)	2.5	2.5	2.2		1.0	2.2
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.8	4.8	5.4		3.0	5.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Dont Walk (s)	0.0	0.0	27.0			27.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	11.5	11.5	98.7		120.7	118.3
Actuated g/C Ratio	0.08	0.08	0.70		0.86	0.84
v/c Ratio	0.03	0.53	0.62		0.74	0.59
Control Delay	58.8	17.6	10.1		24.7	4.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	58.8	17.6	10.1		24.7	4.4
LOS	E	B	B		C	A
Approach Delay	19.1		10.1			7.5
Approach LOS	B		B			A
Queue Length 50th (m)	0.7	0.0	79.1		21.4	57.2
Queue Length 95th (m)	3.0	20.5	m88.6		58.0	79.4
Internal Link Dist (m)	48.5		196.9			223.9
Turn Bay Length (m)		100.0			50.0	
Base Capacity (vph)	312	334	2326		393	2767
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.02	0.39	0.62		0.74	0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 101 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 75.2%		ICU Level of Service D	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Bronte Road & William Halton Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1987	98	0	1255	15	0	0	52	0	0	10
Future Volume (Veh/h)	0	1987	98	0	1255	15	0	0	52	0	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2208	109	0	1394	17	0	0	58	0	0	11
Pedestrians								2				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		140										
pX, platoon unblocked				0.72			0.72	0.72	0.72	0.72	0.72	
vC, conflicting volume	1411			2319			2740	3676	792	2196	3722	473
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1411			1476			2060	3357	0	1306	3421	473
tC, single (s)	4.1			4.1			7.5	6.5	7.0	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	93	100	100	98
cM capacity (veh/h)	490			333			23	6	776	80	5	543

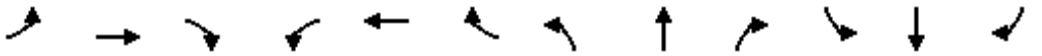
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	883	883	551	558	558	296	58	11
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	109	0	0	17	58	11
cSH	1700	1700	1700	1700	1700	1700	776	543
Volume to Capacity	0.52	0.52	0.32	0.33	0.33	0.17	0.07	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.0	11.8
Lane LOS							B	B
Approach Delay (s)	0.0			0.0			10.0	11.8
Approach LOS							B	B

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	50.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	351	17	0	118	0	13
Future Volume (Veh/h)	351	17	0	118	0	13
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)	382	18	0	128	0	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	73					
pX, platoon unblocked						
vC, conflicting volume			400		455	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			400		455	200
tC, single (s)			4.1		6.8	7.1
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		100	98
cM capacity (veh/h)			1170		539	789

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	255	145	64	64	14
Volume Left	0	0	0	0	0
Volume Right	0	18	0	0	14
cSH	1700	1700	1700	1700	789
Volume to Capacity	0.15	0.09	0.04	0.04	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	9.6
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.6
Approach LOS					A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		



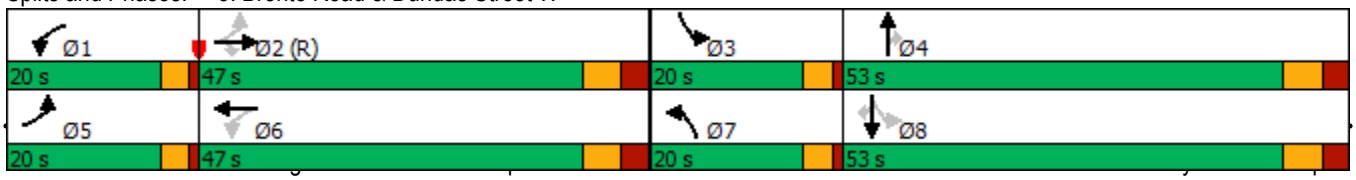
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	1472	366	225	771	247	349	827	323	253	1091	114
Future Volume (vph)	235	1472	366	225	771	247	349	827	323	253	1091	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1700	4980	1551	1487	4578	0	3148	3187	1536	1767	3216	1413
Flt Permitted	0.135			0.097			0.950			0.166		
Satd. Flow (perm)	242	4980	1551	152	4578	0	3148	3187	1507	308	3216	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			262		58				281			94
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	3%	3%	20%	8%	8%	10%	12%	4%	1%	11%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	1502	373	230	1039	0	356	844	330	258	1113	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	20.0	47.0	47.0	20.0	47.0		20.0	53.0	53.0	20.0	53.0	53.0
Total Split (%)	14.3%	33.6%	33.6%	14.3%	33.6%		14.3%	37.9%	37.9%	14.3%	37.9%	37.9%
Maximum Green (s)	16.0	40.0	40.0	16.0	40.0		16.0	46.0	46.0	16.0	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

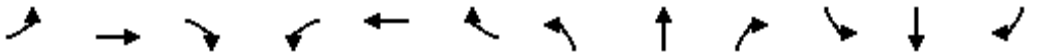
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	60.6	41.0	41.0	61.4	41.4		17.0	47.6	47.6	66.4	47.0	47.0
Actuated g/C Ratio	0.43	0.29	0.29	0.44	0.30		0.12	0.34	0.34	0.47	0.34	0.34
v/c Ratio	0.87	1.03	0.58	1.01	0.75		0.93	0.78	0.47	0.82	1.03	0.22
Control Delay	58.5	79.7	16.3	100.0	45.9		92.3	47.7	8.9	48.6	75.4	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	79.7	16.3	100.0	45.9		92.3	47.7	8.9	48.6	75.4	7.8
LOS	E	E	B	F	D		F	D	A	D	E	A
Approach Delay		66.1			55.7			49.7			65.5	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	45.0	~171.1	25.6	~53.8	95.7		53.7	116.9	9.8	37.9	~182.5	2.8
Queue Length 95th (m)	#92.1	#202.4	60.5	#111.0	113.6		#84.4	143.4	36.3	#79.0	#227.6	12.2
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	282	1458	639	228	1393		382	1083	697	324	1079	536
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.85	1.03	0.58	1.01	0.75		0.93	0.78	0.47	0.80	1.03	0.22

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 60.0 Intersection LOS: E
Intersection Capacity Utilization 97.7% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W





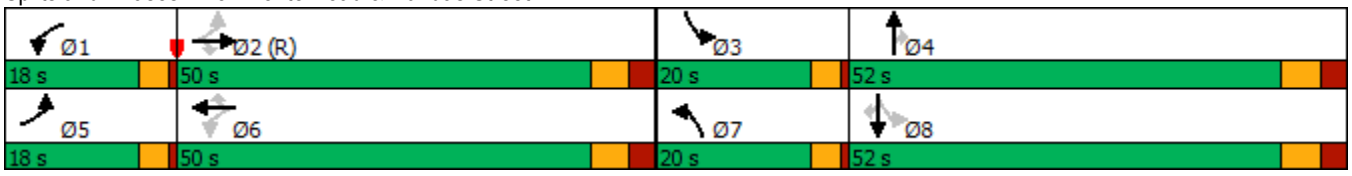
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	1472	366	225	771	247	349	827	323	253	1091	114
Future Volume (vph)	235	1472	366	225	771	247	349	827	323	253	1091	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1700	4980	1551	1487	4749	1479	3148	4580	1536	1767	4621	1413
Flt Permitted	0.285			0.085			0.950			0.214		
Satd. Flow (perm)	510	4980	1551	133	4749	1479	3148	4580	1507	398	4621	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			261			252			254			113
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	3%	3%	20%	8%	8%	10%	12%	4%	1%	11%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	1502	373	230	787	252	356	844	330	258	1113	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6			4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0	33.0	9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	18.0	50.0	50.0	18.0	50.0	50.0	20.0	52.0	52.0	20.0	52.0	52.0
Total Split (%)	12.9%	35.7%	35.7%	12.9%	35.7%	35.7%	14.3%	37.1%	37.1%	14.3%	37.1%	37.1%
Maximum Green (s)	14.0	43.0	43.0	14.0	43.0	43.0	16.0	45.0	45.0	16.0	45.0	45.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0

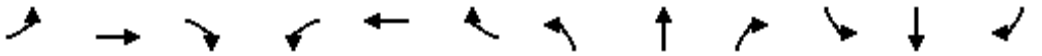
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	62.6	44.0	44.0	68.0	48.2	48.2	17.0	41.7	41.7	60.8	41.2	41.2
Actuated g/C Ratio	0.45	0.31	0.31	0.49	0.34	0.34	0.12	0.30	0.30	0.43	0.29	0.29
v/c Ratio	0.67	0.96	0.56	0.90	0.48	0.37	0.93	0.62	0.53	0.77	0.82	0.23
Control Delay	32.1	62.1	15.1	74.3	38.2	5.7	92.3	44.2	12.6	39.6	46.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	62.1	15.1	74.3	38.2	5.7	92.3	44.2	12.6	39.6	46.8	5.4
LOS	C	E	B	E	D	A	F	D	B	D	D	A
Approach Delay		50.4			38.3			48.6			42.3	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	40.5	157.5	24.9	53.1	68.7	0.0	53.7	77.3	16.4	34.7	109.5	2.1
Queue Length 95th (m)	63.3	#190.5	58.7	#119.6	83.5	20.2	#84.4	88.9	44.7	56.3	123.1	9.2
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	366	1565	666	255	1633	674	382	1504	665	340	1518	540
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.96	0.56	0.90	0.48	0.37	0.93	0.56	0.50	0.76	0.73	0.21

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 45.7 Intersection LOS: D
Intersection Capacity Utilization 88.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W





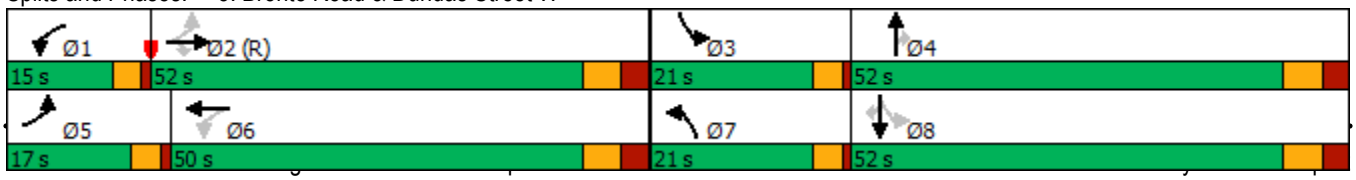
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	1049	378	326	1509	276	338	1298	183	228	941	213
Future Volume (vph)	224	1049	378	326	1509	276	338	1298	183	228	941	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1684	5029	1581	1716	4873	0	3362	3400	1389	1750	3400	1536
Flt Permitted	0.087			0.150			0.950			0.086		
Satd. Flow (perm)	154	5029	1550	271	4873	0	3362	3400	1365	158	3400	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			273		27				107			171
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)			5	5					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	1%	4%	3%	2%	3%	5%	15%	2%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1070	386	333	1822	0	345	1324	187	233	960	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	17.0	52.0	52.0	15.0	50.0		21.0	52.0	52.0	21.0	52.0	52.0
Total Split (%)	12.1%	37.1%	37.1%	10.7%	35.7%		15.0%	37.1%	37.1%	15.0%	37.1%	37.1%
Maximum Green (s)	13.0	45.0	45.0	11.0	43.0		17.0	45.0	45.0	17.0	45.0	45.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	63.0	46.0	46.0	59.0	44.0		17.6	46.9	46.9	66.5	46.4	46.4
Actuated g/C Ratio	0.45	0.33	0.33	0.42	0.31		0.13	0.34	0.34	0.48	0.33	0.33
v/c Ratio	1.03	0.65	0.56	1.40	1.18		0.82	1.16	0.35	0.87	0.85	0.35
Control Delay	105.2	42.3	14.3	228.4	127.8		75.7	124.6	17.2	80.3	44.4	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.2	42.3	14.3	228.4	127.8		75.7	124.6	17.2	80.3	44.4	5.8
LOS	F	D	B	F	F		E	F	B	F	D	A
Approach Delay		44.4			143.4			104.7			44.4	
Approach LOS		D			F			F			D	
Queue Length 50th (m)	~54.6	97.4	24.6	~101.9	~230.6		51.0	~243.5	16.6	50.5	138.7	4.1
Queue Length 95th (m)	#110.4	114.0	58.4	#165.7	#261.6		#72.8	#288.4	38.2	#91.5	167.2	13.8
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	222	1652	692	238	1550		432	1139	528	280	1127	623
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.65	0.56	1.40	1.18		0.80	1.16	0.35	0.83	0.85	0.35

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 90.2 Intersection LOS: F
Intersection Capacity Utilization 112.9% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W



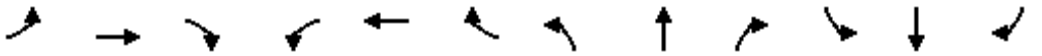
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	341	1836	8	113	1385
Future Volume (vph)	48	341	1836	8	113	1385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	100.0		0.0	50.0	
Storage Lanes	2	1		0	1	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	3463	1566	3397	0	1733	3433
Flt Permitted	0.950				0.051	
Satd. Flow (perm)	3463	1566	3397	0	93	3433
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		119	1			
Link Speed (k/h)	60		70			70
Link Distance (m)	72.5		220.9			247.9
Travel Time (s)	4.4		11.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	0%	3%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	348	1881	0	115	1413
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	41.2		9.5	41.2
Total Split (s)	30.0	30.0	97.0		13.0	110.0
Total Split (%)	21.4%	21.4%	69.3%		9.3%	78.6%
Maximum Green (s)	24.2	24.2	90.6		9.0	103.6
Yellow Time (s)	3.3	3.3	4.2		3.0	4.2
All-Red Time (s)	2.5	2.5	2.2		1.0	2.2
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.8	4.8	5.4		3.0	5.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Dont Walk (s)	0.0	0.0	27.0			27.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	24.3	24.3	93.5		107.9	105.5
Actuated g/C Ratio	0.17	0.17	0.67		0.77	0.75
v/c Ratio	0.08	0.94	0.83		0.65	0.55
Control Delay	48.3	71.6	20.3		38.2	8.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	48.3	71.6	20.3		38.2	8.3
LOS	D	E	C		D	A
Approach Delay	68.7		20.3			10.5
Approach LOS	E		C			B
Queue Length 50th (m)	6.1	69.1	133.6		12.5	82.7
Queue Length 95th (m)	12.3	#130.1	m90.3		34.3	97.6
Internal Link Dist (m)	48.5		196.9			223.9
Turn Bay Length (m)		100.0			50.0	
Base Capacity (vph)	623	379	2267		189	2587
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.08	0.92	0.83		0.61	0.55

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 101 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 80.6%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Bronte Road & William Halton Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1421	62	0	2141	14	0	0	107	0	0	5
Future Volume (Veh/h)	0	1421	62	0	2141	14	0	0	107	0	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1545	67	0	2327	15	0	0	116	0	0	5
Pedestrians								5				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		140										
pX, platoon unblocked				0.82			0.82	0.82	0.82	0.82	0.82	
vC, conflicting volume	2342			1617			2364	3926	554	2966	3952	783
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2342			991			1901	3801	0	2632	3832	783
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	87	100	100	99
cM capacity (veh/h)	214			577			35	3	887	8	3	341

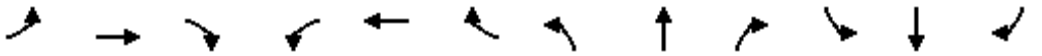
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	618	618	376	931	931	480	116	5
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	67	0	0	15	116	5
cSH	1700	1700	1700	1700	1700	1700	887	341
Volume to Capacity	0.36	0.36	0.22	0.55	0.55	0.28	0.13	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.7	15.7
Lane LOS							A	C
Approach Delay (s)	0.0			0.0			9.7	15.7
Approach LOS							A	C

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	51.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	121	3	0	418	0	30
Future Volume (Veh/h)	121	3	0	418	0	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	149	4	0	516	0	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	73					
pX, platoon unblocked						
vC, conflicting volume			153		409	76
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			153		409	76
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			1440		576	976

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	99	54	258	258	37
Volume Left	0	0	0	0	0
Volume Right	0	4	0	0	37
cSH	1700	1700	1700	1700	976
Volume to Capacity	0.06	0.03	0.15	0.15	0.04
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	0.0	0.0	8.8
Lane LOS					A
Approach Delay (s)	0.0		0.0		8.8
Approach LOS					A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		



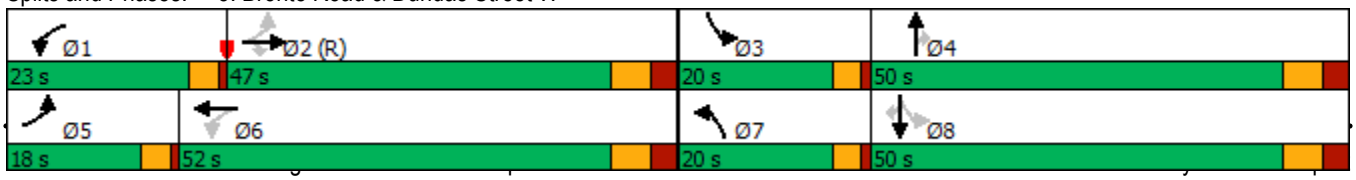
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	1049	378	326	1509	276	338	1298	183	228	941	213
Future Volume (vph)	224	1049	378	326	1509	276	338	1298	183	228	941	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1684	5029	1581	1716	4873	0	3362	3400	1389	1750	3400	1536
Flt Permitted	0.098			0.113			0.950			0.090		
Satd. Flow (perm)	174	5029	1550	204	4873	0	3362	3400	1365	166	3400	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			265		28				125			167
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)			5	5					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	1%	4%	3%	2%	3%	5%	15%	2%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1070	386	333	1822	0	345	1324	187	233	960	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	18.0	47.0	47.0	23.0	52.0		20.0	50.0	50.0	20.0	50.0	50.0
Total Split (%)	12.9%	33.6%	33.6%	16.4%	37.1%		14.3%	35.7%	35.7%	14.3%	35.7%	35.7%
Maximum Green (s)	14.0	40.0	40.0	19.0	45.0		16.0	43.0	43.0	16.0	43.0	43.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

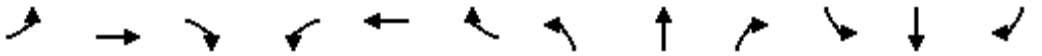
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	59.0	41.0	41.0	67.0	46.0		16.8	44.5	44.5	63.7	44.2	44.2
Actuated g/C Ratio	0.42	0.29	0.29	0.48	0.33		0.12	0.32	0.32	0.46	0.32	0.32
v/c Ratio	0.97	0.73	0.60	1.06	1.13		0.85	1.23	0.36	0.89	0.90	0.36
Control Delay	90.2	47.9	17.1	104.1	107.4		80.3	150.7	15.0	86.9	49.2	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.2	47.9	17.1	104.1	107.4		80.3	150.7	15.0	86.9	49.2	7.0
LOS	F	D	B	F	F		F	F	B	F	D	A
Approach Delay		46.6			106.9			123.9			49.0	
Approach LOS		D			F			F			D	
Queue Length 50th (m)	50.5	102.9	28.6	~85.4	~222.6		51.4	~251.3	13.0	55.1	141.6	5.3
Queue Length 95th (m)	#106.2	120.5	64.6	#149.2	#253.6		#76.6	#296.2	34.4	#100.7	#179.2	16.8
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	235	1472	641	313	1619		408	1080	518	268	1072	599
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.73	0.60	1.06	1.13		0.85	1.23	0.36	0.87	0.90	0.36

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 85.5 Intersection LOS: F
Intersection Capacity Utilization 112.9% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W





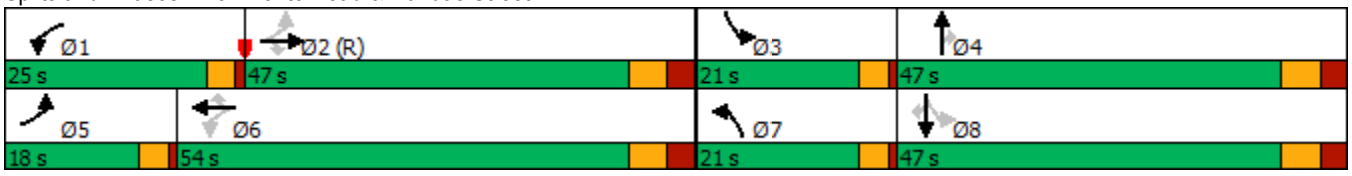
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	1049	378	326	1509	276	338	1298	183	228	941	213
Future Volume (vph)	224	1049	378	326	1509	276	338	1298	183	228	941	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1684	5029	1581	1716	4980	1566	3362	4885	1389	1750	4885	1536
Flt Permitted	0.097			0.114			0.950			0.099		
Satd. Flow (perm)	172	5029	1550	206	4980	1566	3362	4885	1365	182	4885	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			284			215			145			214
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)			5	5					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	1%	4%	3%	2%	3%	5%	15%	2%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1070	386	333	1540	282	345	1324	187	233	960	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6			4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0	33.0	9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	18.0	47.0	47.0	25.0	54.0	54.0	21.0	47.0	47.0	21.0	47.0	47.0
Total Split (%)	12.9%	33.6%	33.6%	17.9%	38.6%	38.6%	15.0%	33.6%	33.6%	15.0%	33.6%	33.6%
Maximum Green (s)	14.0	40.0	40.0	21.0	47.0	47.0	17.0	40.0	40.0	17.0	40.0	40.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	60.0	41.3	41.3	70.0	48.2	48.2	17.6	40.8	40.8	60.7	40.5	40.5
Actuated g/C Ratio	0.43	0.30	0.30	0.50	0.34	0.34	0.13	0.29	0.29	0.43	0.29	0.29
v/c Ratio	0.94	0.72	0.59	0.96	0.90	0.41	0.82	0.93	0.37	0.86	0.68	0.36
Control Delay	82.3	47.6	15.1	75.2	51.7	10.8	75.7	60.6	12.6	81.7	39.3	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.3	47.6	15.1	75.2	51.7	10.8	75.7	60.6	12.6	81.7	39.3	3.8
LOS	F	D	B	E	D	B	E	E	B	F	D	A
Approach Delay		44.9			50.0			58.6			40.8	
Approach LOS		D			D			E			D	
Queue Length 50th (m)	50.7	102.9	23.0	76.2	156.1	13.4	51.0	137.5	9.0	54.6	79.6	0.0
Queue Length 95th (m)	#106.5	120.5	58.6	#141.2	177.4	37.8	#72.8	#166.0	30.1	#96.0	90.9	10.7
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	243	1481	656	347	1715	680	432	1430	502	281	1430	601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.72	0.59	0.96	0.90	0.41	0.80	0.93	0.37	0.83	0.67	0.36

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 49.2 Intersection LOS: D
Intersection Capacity Utilization 95.9% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W



Appendix F
2016 Transportation Tomorrow Survey (TTS) Data Analysis

Mode of Transportation - AM Peak Period

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of household - gta06_hhld

Filters:
Primary travel mode of trip - mode_prime In B C D G J M P T U W
and
2006 GTA zone of household - gta06_hhld In 4039 4045 4185 4186
and
Start time of trip - start_time In 600-900

Trip 2016
Table:

Mode of Transportation/Traffic Zones	4039	4045	4186	Total	Percentage
Transit excluding GO rail	230	91	269	590	3%
Cycle	90	117	87	294	1%
Auto driver	4168	2976	7206	14350	64%
GO rail only	317	365	461	1143	5%
Joint GO rail and local transit	52	81	282	415	2%
Auto passenger	817	631	1882	3330	15%
Walk	848	141	1250	2239	10%
Total	6522	4402	11437	22361	100%

Mode of Transportation - PM Peak Period

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of household - gta06_hhld

Filters:
Primary travel mode of trip - mode_prime In B C D G J M P T U W
and
2006 GTA zone of household - gta06_hhld In 4039 4045 4185 4186
and
Start time of trip - start_time In 1600-1900

Trip 2016
Table:

Mode of Transportation/Traffic Zones	4039	4045	4186	Total	Percentage
Transit excluding GO rail	222	32	261	515	2%
Cycle	46	45	72	163	1%
Auto driver	4426	4009	6644	15079	72%
GO rail only	307	392	446	1145	5%
Joint GO rail and local transit	43	108	293	444	2%
Auto passenger	856	635	1710	3201	15%
Paid rideshare	0	31	17	48	0%
Walk	213	45	131	389	2%
Total	6113	5297	9574	20984	100%

Auto Distribution - External

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Planning district of destination - pd_dest

Filters:
Primary travel mode of trip - mode_prime In (M, P, T, U)
and
2006 GTA zone of origin - gta06_orig In (4039, 4045, 4185, 4186)
and
Start time of trip - start_time In (600-900)

Trip 2016
Table:

	PD 1 of Toronto	PD 2 of Toronto	PD 3 of Toronto	PD 4 of Toronto	PD 5 of Toronto	PD 7 of Toronto	PD 8 of Toronto	PD 9 of Toronto	PD 10 of Toronto	PD 11 of Toronto	PD 12 of Toronto	PD 13 of Toronto	PD 15 of Toronto	PD 16 of Toronto	Pickering	Richmond Hill	Whitchurch-Stouffville	Markham	Vaughan	Caledon	Brampton	Mississauga	Halton Hills	Milton	Oakville	Burlington	Ancaster	Glanbrook	Stoney Creek	Hamilton	St. Catharines	Niagara Falls	Waterloo	Cambridge	City of Guelph	Brantford	
4039	72	0	0	24	9	0	60	11	27	9	17	26	0	19	0	0	46	0	0	37	142	935	0	80	2524	247	26	0	12	166	0	0	0	0	0	0	
4045	90	21	0	9	82	0	41	5	0	0	0	0	0	0	0	0	0	49	75	0	54	372	0	75	1713	271	0	0	12	35	11	14	0	60	0	0	
4185	0	0	0	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	0	37	76	0	0	0	0	27	0	0	0	0	0	0	
4186	271	113	9	0	0	20	100	165	10	16	21	21	17	0	27	57	0	34	90	0	141	1603	15	117	4631	440	9	15	36	196	0	0	48	0	24	36	
	433	134	9	33	91	20	239	181	37	25	38	47	17	19	27	57	46	83	165	37	337	2990	15	309	8944	958	35	15	60	424	11	14	48	60	24	36	16018
	3%	1%	0%	0%	1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	2%	19%	0%	2%	56%	6%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	100%

Oakville	55.84%
Toronto	8.26%
Peel Region	21.00%
York Region	2.19%
Durham Region	0.17%
Burlington	1.93%
Milton/Halton Hills	6.07%
Hamilton Area	4.38%
Niagara Region	0.16%
	100%

Auto Distribution - Oakville

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Ward number of destination - ward_dest

Filters:
Primary travel mode of trip - mode_prime In D | M | P | T | U
and
2006 GTA zone of origin - gta06_orig In 4039 | 4045 | 4185 | 4186
and
Start time of trip - start_time In 60-900
and
Ward number of destination - ward_dest In 159-164

Trip 2016
Table:

	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6	
	159	160	161	162	163	164	
4,039	1,771	771	581	600	0	0	
4045	66	273	143	1084	111	56	
4185	0	0	0	49	6	20	
4,186	3082	781	553	200	0	0	
	4,919	1,825	1,277	1,933	117	76	10,147
	48%	18%	13%	19%	1%	1%	100%
Oakville							
56%	27%	10%	7%	11%	1%	0%	56%

Transit Distribution - External

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Planning district of destination - pd_dest

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of origin - gta06_orig In 4039 4045 4185 4186
and
Start time of trip - start_time In 600-900

Trip 2016
Table:

	PD 1 of Toronto	PD 2 of Toronto	PD 3 of Toronto	PD 4 of Toronto	PD 6 of Toronto	PD 11 of Toronto	PD 13 of Toronto	Brampton	Mississauga	Oakville	Burlington	Hamilton	Centre Wellington	
4039	309	0	0	0	0	11	5	0	38	1027	0	53	0	
4045	415	0	0	10	0	0	0	0	0	321	0	0	18	
4186	607	24	12	50	12	0	0	17	134	1494	15	0	0	
	1331	24	12	60	12	11	5	17	172	2842	15	53	18	4572
	29%	1%	0%	1%	0%	0%	0%	0%	4%	62%	0%	1%	0%	100%

Toronto	32%
Oakville	62%
Mississauga	4%
Hamilton	2%
	100%

Transit Distribution - Oakville

Cross Tabulation Query Form - Trip - 2016 v1.1

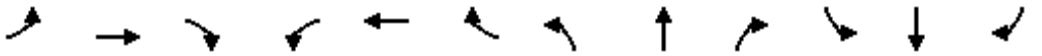
Row: 2006 GTA zone of origin - gta06_orig
Column: Ward number of destination - ward_dest

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of origin - gta06_orig In 4039 4045 4185 4186
and
Start time of trip - start_time In 60-900
and
Ward number of destination - ward_dest In 159-164

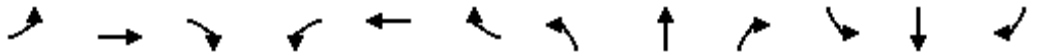
Trip 2016
Table:

	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6	
	159	160	161	162	163	164	
4039	0	0	0	933	53	42	
4045	0	12	0	309	0	0	
4186	30	0	22	1399	20	23	
	30	12	22	2641	73	65	2843
	1%	0%	1%	93%	3%	2%	100%
Oakville							
62%	0.7%	0.3%	0.5%	57.7%	1.6%	1.4%	62%

Appendix G
Future Total Level of Service Calculations



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	1472	366	225	828	270	349	848	323	253	1091	114
Future Volume (vph)	244	1472	366	225	828	270	349	848	323	253	1091	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1700	4980	1551	1487	4574	0	3148	3187	1536	1767	3216	1413
Flt Permitted	0.105			0.098			0.950			0.156		
Satd. Flow (perm)	188	4980	1551	153	4574	0	3148	3187	1507	290	3216	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			262		59				280			94
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	3%	3%	20%	8%	8%	10%	12%	4%	1%	11%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	1502	373	230	1121	0	356	865	330	258	1113	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	20.0	47.0	47.0	20.0	47.0		20.0	53.0	53.0	20.0	53.0	53.0
Total Split (%)	14.3%	33.6%	33.6%	14.3%	33.6%		14.3%	37.9%	37.9%	14.3%	37.9%	37.9%
Maximum Green (s)	16.0	40.0	40.0	16.0	40.0		16.0	46.0	46.0	16.0	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

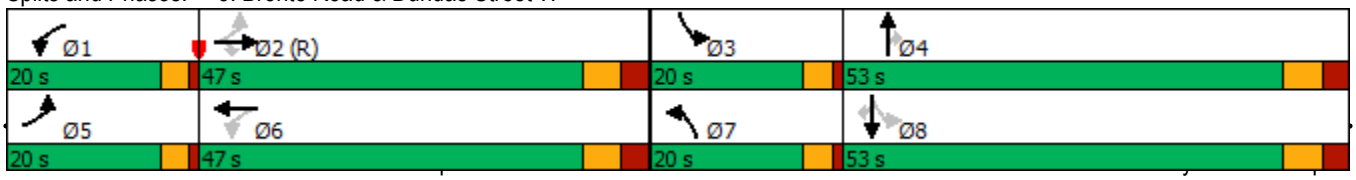


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	61.0	41.0	41.0	61.0	41.0		17.0	47.6	47.6	66.4	47.0	47.0
Actuated g/C Ratio	0.44	0.29	0.29	0.44	0.29		0.12	0.34	0.34	0.47	0.34	0.34
v/c Ratio	0.94	1.03	0.58	1.01	0.81		0.93	0.80	0.47	0.83	1.03	0.22
Control Delay	77.9	79.7	16.3	100.4	49.0		92.3	48.7	9.0	51.8	75.4	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.9	79.7	16.3	100.4	49.0		92.3	48.7	9.0	51.8	75.4	7.8
LOS	E	E	B	F	D		F	D	A	D	E	A
Approach Delay		68.4			57.7			50.2			66.0	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	54.4	~171.1	25.6	~53.6	106.1		53.7	120.8	10.0	39.9	~182.5	2.8
Queue Length 95th (m)	#109.4	#202.4	60.5	#110.8	125.1		#84.4	148.1	36.6	#83.0	#227.6	12.2
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	265	1458	639	228	1381		382	1082	696	318	1079	536
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.03	0.58	1.01	0.81		0.93	0.80	0.47	0.81	1.03	0.22

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 61.3 Intersection LOS: E
Intersection Capacity Utilization 97.7% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W



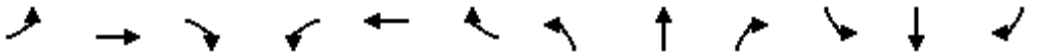
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	126	1409	62	295	1590
Future Volume (vph)	5	126	1409	62	295	1590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	100.0		0.0	50.0	
Storage Lanes	2	1		0	1	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	2164	1551	3292	0	1767	3275
Flt Permitted	0.950				0.118	
Satd. Flow (perm)	2164	1551	3292	0	220	3275
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		129	7			
Link Speed (k/h)	60		70			70
Link Distance (m)	72.5		220.9			247.9
Travel Time (s)	4.4		11.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	60%	3%	8%	3%	1%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	129	1501	0	301	1622
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	41.2		9.5	41.2
Total Split (s)	25.0	25.0	102.0		13.0	115.0
Total Split (%)	17.9%	17.9%	72.9%		9.3%	82.1%
Maximum Green (s)	19.2	19.2	95.6		9.0	108.6
Yellow Time (s)	3.3	3.3	4.2		3.0	4.2
All-Red Time (s)	2.5	2.5	2.2		1.0	2.2
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.8	4.8	5.4		3.0	5.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Dont Walk (s)	0.0	0.0	27.0			27.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	11.5	11.5	96.6		120.7	118.3
Actuated g/C Ratio	0.08	0.08	0.69		0.86	0.84
v/c Ratio	0.03	0.53	0.66		0.76	0.59
Control Delay	58.8	17.6	11.3		31.5	4.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	58.8	17.6	11.3		31.5	4.4
LOS	E	B	B		C	A
Approach Delay	19.1		11.3			8.6
Approach LOS	B		B			A
Queue Length 50th (m)	0.7	0.0	88.6		32.4	57.2
Queue Length 95th (m)	3.0	20.5	m97.8		#81.1	79.4
Internal Link Dist (m)	48.5		196.9			223.9
Turn Bay Length (m)		100.0			50.0	
Base Capacity (vph)	312	334	2273		395	2767
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.02	0.39	0.66		0.76	0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 101 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Bronte Road & William Halton Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1987	98	0	1255	34	0	0	52	0	0	90
Future Volume (Veh/h)	0	1987	98	0	1255	34	0	0	52	0	0	90
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2208	109	0	1394	38	0	0	58	0	0	100
Pedestrians								2				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		140										
pX, platoon unblocked				0.71			0.71	0.71	0.71	0.71	0.71	
vC, conflicting volume	1432			2319			2829	3696	792	2207	3732	484
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1432			1446			2160	3375	0	1289	3424	484
tC, single (s)	4.1			4.1			7.5	6.5	7.0	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	92	100	100	81
cM capacity (veh/h)	481			339			16	6	768	81	5	534

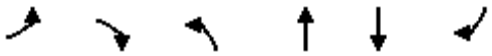
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	883	883	551	558	558	317	58	100
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	109	0	0	38	58	100
cSH	1700	1700	1700	1700	1700	1700	768	534
Volume to Capacity	0.52	0.52	0.32	0.33	0.33	0.19	0.08	0.19
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	2.0	5.5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.1	13.3
Lane LOS							B	B
Approach Delay (s)	0.0			0.0			10.1	13.3
Approach LOS							B	B

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	50.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	351	59	0	118	0	48
Future Volume (Veh/h)	351	59	0	118	0	48
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)	382	64	0	128	0	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	73					
pX, platoon unblocked						
vC, conflicting volume			446		478	223
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			446		478	223
tC, single (s)			4.1		6.8	7.1
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		100	93
cM capacity (veh/h)			1125		521	762

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	255	191	64	64	52
Volume Left	0	0	0	0	0
Volume Right	0	64	0	0	52
cSH	1700	1700	1700	1700	762
Volume to Capacity	0.15	0.11	0.04	0.04	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.8
Control Delay (s)	0.0	0.0	0.0	0.0	10.1
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.1
Approach LOS					B

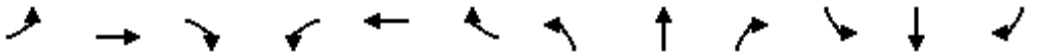
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	21.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	80	19	15	10	42
Future Volume (Veh/h)	35	80	19	15	10	42
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)	38	87	21	16	11	46
Pedestrians	10			10	10	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	112	54	67			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112	54	67			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	91	99			
cM capacity (veh/h)	858	997	1522			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	125	37	57
Volume Left	38	21	0
Volume Right	87	0	46
cSH	950	1522	1700
Volume to Capacity	0.13	0.01	0.03
Queue Length 95th (m)	3.6	0.3	0.0
Control Delay (s)	9.4	4.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	4.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		



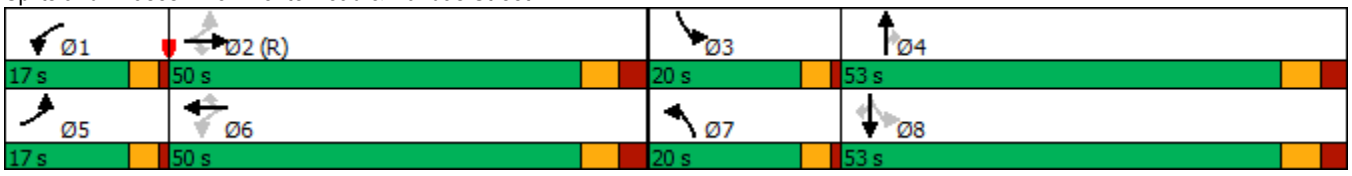
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	1472	366	225	828	270	349	848	323	253	1091	114
Future Volume (vph)	244	1472	366	225	828	270	349	848	323	253	1091	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1700	4980	1551	1487	4749	1479	3148	4580	1536	1767	4621	1413
Flt Permitted	0.251			0.085			0.950			0.206		
Satd. Flow (perm)	449	4980	1551	133	4749	1479	3148	4580	1507	383	4621	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			258			276			242			114
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	3%	3%	20%	8%	8%	10%	12%	4%	1%	11%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	1502	373	230	845	276	356	865	330	258	1113	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6			4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0	33.0	9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	17.0	50.0	50.0	17.0	50.0	50.0	20.0	53.0	53.0	20.0	53.0	53.0
Total Split (%)	12.1%	35.7%	35.7%	12.1%	35.7%	35.7%	14.3%	37.9%	37.9%	14.3%	37.9%	37.9%
Maximum Green (s)	13.0	43.0	43.0	13.0	43.0	43.0	16.0	46.0	46.0	16.0	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0

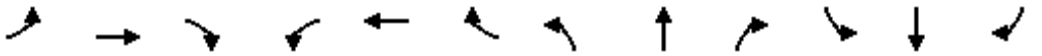
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	63.0	44.0	44.0	67.7	47.5	47.5	17.0	42.0	42.0	61.1	41.5	41.5
Actuated g/C Ratio	0.45	0.31	0.31	0.48	0.34	0.34	0.12	0.30	0.30	0.44	0.30	0.30
v/c Ratio	0.72	0.96	0.56	0.91	0.52	0.40	0.93	0.63	0.53	0.78	0.81	0.23
Control Delay	36.4	62.1	15.4	76.5	39.3	5.7	92.3	44.2	13.7	41.0	46.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	62.1	15.4	76.5	39.3	5.7	92.3	44.2	13.7	41.0	46.3	5.1
LOS	D	E	B	E	D	A	F	D	B	D	D	A
Approach Delay		50.9			38.8			48.8			42.2	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	42.4	157.5	25.8	53.3	75.2	0.0	53.7	79.5	19.1	34.7	109.4	2.1
Queue Length 95th (m)	#74.9	#190.5	59.7	#122.9	90.2	21.4	#84.4	90.4	47.6	#57.6	121.6	8.9
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	345	1565	664	252	1611	684	382	1537	666	336	1551	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.96	0.56	0.91	0.52	0.40	0.93	0.56	0.50	0.77	0.72	0.21

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 45.9 Intersection LOS: D
Intersection Capacity Utilization 88.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W





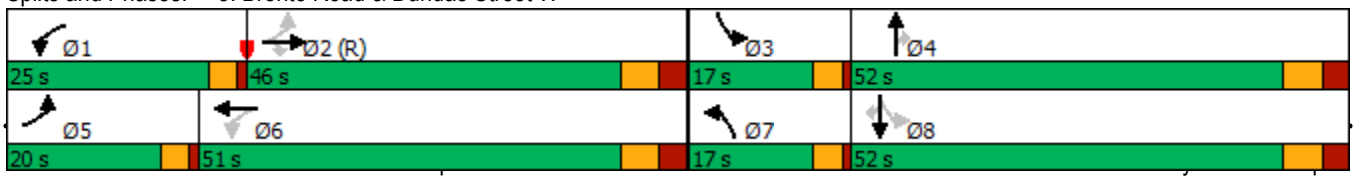
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	1049	378	326	1559	296	338	1341	183	228	941	213
Future Volume (vph)	243	1049	378	326	1559	296	338	1341	183	228	941	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1684	5029	1581	1716	4868	0	3362	3400	1389	1750	3400	1536
Flt Permitted	0.100			0.108			0.950			0.087		
Satd. Flow (perm)	177	5029	1550	195	4868	0	3362	3400	1365	160	3400	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			227		29				125			171
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)			5	5					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	1%	4%	3%	2%	3%	5%	15%	2%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	1070	386	333	1893	0	345	1368	187	233	960	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0		9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	20.0	46.0	46.0	25.0	51.0		17.0	52.0	52.0	17.0	52.0	52.0
Total Split (%)	14.3%	32.9%	32.9%	17.9%	36.4%		12.1%	37.1%	37.1%	12.1%	37.1%	37.1%
Maximum Green (s)	16.0	39.0	39.0	21.0	44.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max		None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0			10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	60.0	40.0	40.0	68.0	45.0		14.0	46.0	46.0	63.0	46.0	46.0
Actuated g/C Ratio	0.43	0.29	0.29	0.49	0.32		0.10	0.33	0.33	0.45	0.33	0.33
v/c Ratio	0.96	0.75	0.64	1.00	1.20		1.03	1.22	0.35	1.01	0.86	0.35
Control Delay	85.3	49.2	22.6	87.4	135.1		116.7	149.6	14.3	112.0	44.8	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.3	49.2	22.6	87.4	135.1		116.7	149.6	14.3	112.0	44.8	6.7
LOS	F	D	C	F	F		F	F	B	F	D	A
Approach Delay		48.4			127.9			130.3			50.0	
Approach LOS		D			F			F			D	
Queue Length 50th (m)	55.8	104.0	40.2	78.2	~242.5		~55.1	~257.5	12.7	~56.7	138.7	5.0
Queue Length 95th (m)	#111.8	121.7	77.9	#144.3	#273.3		#87.8	#302.4	33.6	#112.2	166.8	16.8
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	258	1436	605	333	1584		336	1117	532	231	1117	619
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.75	0.64	1.00	1.20		1.03	1.22	0.35	1.01	0.86	0.35

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 94.7 Intersection LOS: F
Intersection Capacity Utilization 116.5% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W



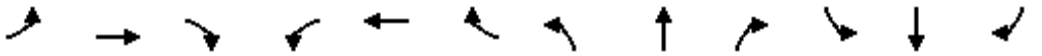
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	341	1856	70	138	1385
Future Volume (vph)	48	341	1856	70	138	1385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	100.0		0.0	50.0	
Storage Lanes	2	1		0	1	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	3463	1566	3389	0	1733	3433
Flt Permitted	0.950				0.042	
Satd. Flow (perm)	3463	1566	3389	0	77	3433
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		118	5			
Link Speed (k/h)	60		70			70
Link Distance (m)	72.5		220.9			247.9
Travel Time (s)	4.4		11.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	0%	3%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	348	1965	0	141	1413
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	41.2		9.5	41.2
Total Split (s)	30.0	30.0	97.0		13.0	110.0
Total Split (%)	21.4%	21.4%	69.3%		9.3%	78.6%
Maximum Green (s)	24.2	24.2	90.6		9.0	103.6
Yellow Time (s)	3.3	3.3	4.2		3.0	4.2
All-Red Time (s)	2.5	2.5	2.2		1.0	2.2
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.8	4.8	5.4		3.0	5.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Dont Walk (s)	0.0	0.0	27.0			27.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	24.3	24.3	92.8		107.9	105.5
Actuated g/C Ratio	0.17	0.17	0.66		0.77	0.75
v/c Ratio	0.08	0.94	0.87		0.81	0.55
Control Delay	48.3	71.9	17.3		64.4	8.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	48.3	71.9	17.3		64.4	8.3
LOS	D	E	B		E	A
Approach Delay	69.0		17.3			13.4
Approach LOS	E		B			B
Queue Length 50th (m)	6.1	69.5	108.2		24.3	82.7
Queue Length 95th (m)	12.3	#130.6	m73.4		#60.8	97.6
Internal Link Dist (m)	48.5		196.9			223.9
Turn Bay Length (m)		100.0			50.0	
Base Capacity (vph)	623	378	2247		177	2586
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.08	0.92	0.87		0.80	0.55

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 101 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 21.0		Intersection LOS: C	
Intersection Capacity Utilization 83.1%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Bronte Road & William Halton Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1421	62	0	2141	51	0	0	107	0	0	75
Future Volume (Veh/h)	0	1421	62	0	2141	51	0	0	107	0	0	75
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1545	67	0	2327	55	0	0	116	0	0	82
Pedestrians								5				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		140										
pX, platoon unblocked				0.82			0.82	0.82	0.82	0.82	0.82	
vC, conflicting volume	2382			1617			2441	3966	554	2986	3972	803
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2382			991			1994	3850	0	2657	3857	803
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	87	100	100	75
cM capacity (veh/h)	206			577			22	3	887	8	3	331

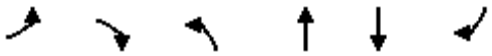
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	618	618	376	931	931	520	116	82
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	67	0	0	55	116	82
cSH	1700	1700	1700	1700	1700	1700	887	331
Volume to Capacity	0.36	0.36	0.22	0.55	0.55	0.31	0.13	0.25
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	3.6	7.7
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.7	19.4
Lane LOS							A	C
Approach Delay (s)	0.0			0.0			9.7	19.4
Approach LOS							A	C

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	53.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	121	90	0	418	0	60
Future Volume (Veh/h)	121	90	0	418	0	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	149	111	0	516	0	74
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	73					
pX, platoon unblocked						
vC, conflicting volume			260		462	130
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			260		462	130
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	92
cM capacity (veh/h)			1316		533	902

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	99	161	258	258	74
Volume Left	0	0	0	0	0
Volume Right	0	111	0	0	74
cSH	1700	1700	1700	1700	902
Volume to Capacity	0.06	0.09	0.15	0.15	0.08
Queue Length 95th (m)	0.0	0.0	0.0	0.0	2.1
Control Delay (s)	0.0	0.0	0.0	0.0	9.3
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.3
Approach LOS					A

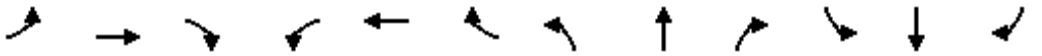
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	70	37	14	5	87
Future Volume (Veh/h)	30	70	37	14	5	87
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)	33	76	40	15	5	95
Pedestrians	10			10	10	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	168	72	110			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168	72	110			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	92	97			
cM capacity (veh/h)	788	974	1468			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	109	55	100
Volume Left	33	40	0
Volume Right	76	0	95
cSH	909	1468	1700
Volume to Capacity	0.12	0.03	0.06
Queue Length 95th (m)	3.3	0.7	0.0
Control Delay (s)	9.5	5.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	5.5	0.0
Approach LOS	A		

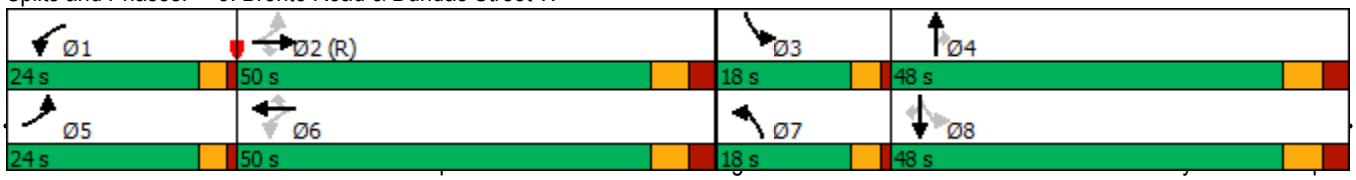
Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	1049	378	326	1559	296	338	1341	183	228	941	213
Future Volume (vph)	243	1049	378	326	1559	296	338	1341	183	228	941	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		90.0	115.0		0.0	185.0		75.0	170.0		75.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1684	5029	1581	1716	4980	1566	3362	4885	1389	1750	4885	1536
Flt Permitted	0.091			0.130			0.950			0.095		
Satd. Flow (perm)	161	5029	1550	235	4980	1566	3362	4885	1365	175	4885	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			242			214			142			217
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		262.5			140.1			311.5			216.9	
Travel Time (s)		13.5			7.2			16.0			11.2	
Confl. Peds. (#/hr)			5	5					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	1%	4%	3%	2%	3%	5%	15%	2%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	1070	386	333	1591	302	345	1368	187	233	960	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6			4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.5	33.0	33.0	9.5	33.0	33.0	9.5	33.0	33.0	9.5	33.0	33.0
Total Split (s)	24.0	50.0	50.0	24.0	50.0	50.0	18.0	48.0	48.0	18.0	48.0	48.0
Total Split (%)	17.1%	35.7%	35.7%	17.1%	35.7%	35.7%	12.9%	34.3%	34.3%	12.9%	34.3%	34.3%
Maximum Green (s)	20.0	43.0	43.0	20.0	43.0	43.0	14.0	41.0	41.0	14.0	41.0	41.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	66.5	44.0	44.0	68.9	45.5	45.5	15.0	42.0	42.0	60.0	42.0	42.0
Actuated g/C Ratio	0.48	0.31	0.31	0.49	0.32	0.32	0.11	0.30	0.30	0.43	0.30	0.30
v/c Ratio	0.86	0.68	0.59	0.99	0.98	0.46	0.96	0.93	0.37	0.96	0.66	0.35
Control Delay	63.5	44.4	18.4	79.9	65.3	13.7	99.6	60.1	12.8	100.5	37.8	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.5	44.4	18.4	79.9	65.3	13.7	99.6	60.1	12.8	100.5	37.8	3.5
LOS	E	D	B	E	E	B	F	E	B	F	D	A
Approach Delay		41.3			60.5			62.6			42.9	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	53.3	99.5	34.0	73.3	~179.0	18.6	52.3	142.3	9.5	54.9	78.1	0.0
Queue Length 95th (m)	#97.0	116.5	69.7	#138.9	#210.2	46.9	#84.1	#171.9	30.6	#108.2	89.3	10.1
Internal Link Dist (m)		238.5			116.1			287.5			192.9	
Turn Bay Length (m)	100.0		90.0	115.0			185.0		75.0	170.0		75.0
Base Capacity (vph)	306	1580	653	338	1620	653	360	1465	508	243	1465	612
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.68	0.59	0.99	0.98	0.46	0.96	0.93	0.37	0.96	0.66	0.35

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 49 (35%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 53.1 Intersection LOS: D
Intersection Capacity Utilization 98.8% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bronte Road & Dundas Street W