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# Transportation Impact Study

# PROPOSED DAM CHARITY & RESIDENTIAL

3115 Hurontario Street, MISSISSAUGA, ONTARIO

September 2022 Project No: NT-21-262

#### 520 Industrial Parkway South, Suite 201 Aurora ON L4G 6W8

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NextEng Consulting Group Inc.

September 9, 2022

Attention: Aiden Sweeny, President

The Six Real Estate Developments Inc. 134 Peter Street, Suite 1601 Toronto, ON M5V 2H2

Re: Transportation Impact Study

**Proposed Mixed-use Development** 

3115 Hurontario Street, City of Mississauga

Our Project No. NT-21-262

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 Official Plan Amendment and Zoning By-law Amendment Applications for a proposed mixed-use development. The subject site is located at 3115 Hurontario Street, southeast quadrant of Hurontario Street and Kirwin Avenue, in the City of Mississauga.

The subject site is located adjacent to the future Hurontario LRT (Hazel McCallion Line) and approximately 350 m (or less than 5-minute walk) to the future Dundas Station and only 250 m (or about 3-minute walk) to the intermodal LRT Stop at Cooksville GO Station. The subject site will be re-developed as a sustainable mixed-use transit-oriented development which will support the future transit improvements by Metrolinx, the Region and the City. These major transit improvements include the future Hurontario LRT, Dundas Street BRT, Cooksville GO Train Station improvements and GO Expansion Project, as well as Major Transit Station Areas at the Dundas Street/Hurontario Street and Cooksville GO Station. The re-development of the area will also bring a transformative change to a more compact and sustainable land uses that will address the housing shortage, affordability and climate change. In addition to the inclusion of some charity components as part of the proposed development, the proposed development also recognizes, understands and builds on the value and importance of the extraordinary transit and road infrastructure improvements coming to the area and is therefore planned with great emphasis on a sustainable non-automobile-oriented mobility plan promoted by the Official Plans, City of Mississauga Council and Provincial initiatives.

The Transportation Impact Study has been prepared in accordance with the approved terms of reference by the City and concludes that the proposed development can adequately be accommodated by the existing transportation network, existing and future transit services, as well as the Transportation Demand Management measures and incentives recommended in this Study.

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** 

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Final Report	September 9, 2022	For Final Submission

#### **EXECUTIVE SUMMARY**

#### **Overview**

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by The Six Real Estate Developments Inc. (the 'Client') to undertake a Transportation Impact Study in support of Official Plan Amendment and Zoning By-law Amendment Applications for a proposed a Mixed-Use Development project (DAM CHARITY & RESIDENTIAL). The subject site is located at 3115 Hurontario Street, southeast quadrant of Hurontario Street and Kirwin Avenue, in the City of Mississauga.

It should be noted that the Transportation Impact Study has been prepared based on the study terms of reference, where appropriate, that reflected the City of Mississauga and Peel Region Traffic Impact Study Guidelines. The terms of reference has been submitted to the City staff on January 28, 2022 (**Appendix A**).

The subject site is located adjacent to the future Hurontario LRT (Hazel McCallion Line) and approximately 350 m (or less than 5-minute walk) to the future Dundas Station and only 250 m (or about 3-minute walk) to the intermodal LRT Stop at Cooksville GO Station.

As such, the subject site will be re-developed as a sustainable mixed-use transit-oriented development which will support the future transit improvements by Metrolinx, the Region and the City. These major transit improvements include the future Hurontario LRT, Dundas Street BRT, Cooksville GO Train Station improvements and GO Expansion Project, as well as Major Transit Station Areas at the Dundas Street/Hurontario Street.

The re-development of the area will also bring a transformative change to a more compact and sustainable land uses that will address the housing shortage, affordability and climate change. In addition to the inclusion of some charity components as part of the proposed development, the proposed re-development also recognizes, understands and builds on the value and importance of the extraordinary transit and road infrastructure improvements coming to the area and is therefore planned with great emphasis on a sustainable non-automobile-oriented mobility plan promoted by the Official Plans, City of Mississauga Council and Provincial initiatives.

The Transportation Impact Study has been prepared in accordance with the approved terms of reference by the City and concludes that the proposed development can adequately be accommodated by the existing transportation network, existing and future transit services, as well as the Transportation Demand Management measures and incentives recommended in this Study.

#### **Proposed Development**

Currently, the subject site consists of a stone facade building which is operated by Dam Youth Drop-in Community Service. The existing land uses are under-utilized given the major transit improvements for the area.

The proposed redevelopment of the site consists of a 35-storey mixed-use building with a total of 431 residential dwelling units, as well as a ground related retail gross floor area of 217 m<sup>2</sup>. The proposed development will provide a total of 280 parking spaces and 281 bicycle parking spaces.

#### **Development Access Arrangement**

A shared full moves access will be provided onto Kirwin Avenue, with a shared right-in/right-out will be provided onto Hurontario Street to service the proposed development. It should be noted that both of these accesses will be shared with the adjacent development.

The analysis indicates that the proposed accesses are expected to operate at acceptable levels of service with minimum queue or delay. Therefore, it is concluded that the proposed site access arrangement is appropriate. The lane configurations for the proposed development include:

- Hurontario Street right-in/right-out access: one inbound and one outbound lane (3.0 to 3.5 m width per lane), one northbound shared through/right on Hurontario Street
- Kirwin Avenue full moves access: one inbound and one outbound lane (3.0 to 3.5 m width per lane), eastbound shared through/right and westbound shared through/left on Kirwin Avenue

#### **Transportation Assessment**

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

- 175 total two-way trips (100 inbound and 75 outbound) and 185 total two-way trips (90 inbound and 95 outbound) during the morning and afternoon peak hours, respectively;
- 100 total two-way auto trips (35 inbound and 65 outbound) and 120 total two-way auto trips (70 inbound and 50 outbound) during the morning and afternoon peak hours, respectively; and
- 75 total two-way non-auto trips (65 inbound and 10 outbound) and 65 total two-way transit trips (20 inbound and 45 outbound) during the morning and afternoon peak hours, respectively.

#### Auto Mode Assessment

The analysis indicates that under the future background and future total conditions, all intersections are expected to operate at acceptable levels of service during the morning peak hour and afternoon peak hour, with the exception of the Hurontario Street/Dundas Street W intersection during the afternoon peak hour. With the recommended lane configurations for the Dundas Street westbound, the intersection is expected to have higher delay. It is Nextrans' opinion that given the area will have significant transit capacity in the future, no further improvements are required. However, for sensitivity analysis, Nextrans has tested the lane configuration on Dundas Street with a shared through/right lane instead of an exclusive right turn lane.

Potential mitigation measures may include but not limited to: reduce vehicle parking to minimize single-occupant-vehicle trips, TDM measures and incentives, support active transportation and sufficient bicycle parking spaces.

#### Active Transportation Mode Assessment

#### **Walking Mode**

As indicated in the previous section of this Study, the area is currently well-serviced by a sufficient network of sidewalks, with sidewalks are available on both sides of Hurontario Street, Kirwin Avenue, Hillcrest Avenue, Jaguar Valley Drive, John Street and Agnes Street in the study area. In addition, sidewalks are reasonably maintained therefore no improvement are required at this time. The sidewalk along Hurontario Street may be impacted by the LRT construction activities, however, this is a temporary condition and sidewalk will be reinstated and enhanced as part of the LRT project.

The proposed development will provide direct pedestrian access onto Hurontario Street and internal shared roadway. Sidewalk will be provided along the internal shared roadway to accommodate pedestrian access

#### **Cycling Mode**

Under the existing conditions, there are dedicated bicycle lanes on Kirwin Avenue/Camila Road, Confederation Parkway, King Street E. There are also some signed routes on Hillcrest Avenue, Paisley Boulevard and Fairview Road W in the study are.

It is Nextrans' opinion that the existing cycling network can be improved in the future as part of the City of Mississauga Cycling Master Plan, and through the LRT and BRT projects to install more bicycle facilities such as bicycle lanes or signed routes along Hurontario Street and Dundas Street. This will encourage existing and future residents to use these facilities instead of driving single-occupant-vehicles.

Although, the current Zoning By-law does not require new development to provide bicycle parking spaces, however, the proposed development will provide a total of 281 bicycle parking spaces on-site to encourage residents to use active modes of transportation and to support vehicle parking rate reduction.

#### **Transit Mode**

The analysis indicates that the transit passenger demands generated by the proposed development can be accommodated by the existing and major future transit improvements for the area, including Hurontario LRT, Milton GO Line expansion and Dundas BRT.

#### **Vehicle Parking Review**

It is Nextrans' understanding that the City of Mississauga Council has recently approved the new vehicle parking rate amendment to the existing Zoning By-law No. 0225-2007. It is Nextrans' understanding that the proposed development is located within the new Precinct 1, with the blended rates of 0.8 space/unit for resident and 0.2 spaces/unit for visitor/ground related retail use, for the proposed condominium apartment land use category.

Based on this requirement, the proposed development will require to provide approximately 431 vehicle parking spaces, inclusive of residential, visitor and retail uses. It is Nextrans' opinion that these rates are still excessive and do not support the Hurontario LRT investment by Metrolinx and the City of Mississauga. It is Nextrans' opinion that the parking rates should be further reduced as parking management is the best Transportation Demand Management measure.

It should be noted that the proposed development is expected to generate only 100 total two-way auto trips (35 inbound and 65 outbound) and 120 total two-way auto trips (70 inbound and 50 outbound) during the morning and afternoon peak hours, respectively. These trips were estimated from the ITE Trip Generation 11<sup>th</sup> Edition without applying any modal split. On this basis, the proposed development only requires to provide a maximum of 120 parking spaces.

Based on the recommended vehicle parking rates of this Study, the proposed development will provide a total of 280 vehicle parking spaces for both resident, visitor and retail components. This includes 215 residential vehicle parking spaces and 65 visitor/retail shared vehicle parking spaces. This is about 35% parking reduction from the applicable Zoning By-law. It should be noted that the current non-auto modal split in the general area is 40% and 36% during the morning and afternoon peak periods, respectively. Therefore, based on the current trend alone, the proposed parking reduction is supportable and reasonable. The recommended vehicle parking rates justifications for the proposed development are outlined below. The justifications are based on current policies, directions and best practices in the Greater Toronto Area and in the City of Mississauga.

#### **Bicycle Parking Review**

It is Nextrans' understanding that the City of Mississauga currently does not have bicycle requirements in the current Zoning By-law. Based on the recommended bicycle parking rates provided in this Study, the proposed development will provide a total of 281 bicycle parking spaces, including 22 short-term spaces and 259 long-term spaces.

It is Nextrans' opinion that the proposed bicycle parking supply by the proposed development will support the vehicle parking reduction as this will encourage residents to take active mode of transportation to work, school and discretionary trips instead of driving private vehicles.

#### **Transportation Demand Management**

The TDM measures and incentives related to the proposed development have been assessed and recommended in Section 10 of this report to support active transportation and transit, to meet the objectives and requirements of the City of Mississauga and Region of Peel sustainable transportation objectives.

#### **Loading Requirement**

Under the City's By-Law Zoning By-law 0225-2007, one loading space is required for residential component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length, with 7.3 m vertical clearance. The proposed development meets this requirement and has been reflected in the proposed site plan.

Vehicle turning movement templates will be provided as part of the subsequent site plan application.

#### **Study Conclusions and Recommendations**

Based on the Study assessment, the following recommendations are provided:

- Reduce parking rates for the proposed developments to encourage alternative modes of transportation such as walking, cycling and public transit;
- The proposed development provides 281 bicycle parking spaces to encourage active modes of transportation and support vehicle parking reduction;
- The proposed development provides direct sidewalk connection onto Hurontario Street; and
- Proposed development provides TDM measures and incentives to encourage alternative mode of transportation in the area

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#### 1.0 INTRODUCTION

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by The Six Real Estate Developments Inc. (the 'Client') to undertake a Transportation Impact Study in support of Official Plan Amendment and Zoning By-law Amendment Applications for a proposed a Mixed-Use Development project (DAM CHARITY & RESIDENTIAL). The subject site is located at 3115 Hurontario Street, southeast quadrant of Hurontario Street and Kirwin Avenue, in the City of Mississauga. The location of the proposed development is illustrated in **Figure 1**.

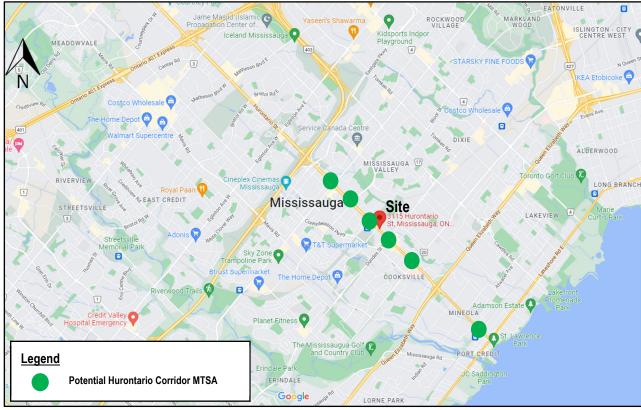


Figure 1 – Proposed Development Location

Source: Google Map

Currently, the subject site consists of a stone facade building which is operated by Dam Youth Drop-in Community Service. The existing land uses are under-utilized given the major transit improvements for the area.

The subject site is located adjacent to the future Hurontario LRT (Hazel McCallion Line) and approximately 350 m (or less than 5-minute walk) to the future Dundas Station and only 250 m (or about 3-minute walk) to the intermodal LRT Stop at Cooksville GO Station.

For these reasons, the subject site will be re-developed as a sustainable mixed-use transit-oriented development which will support the future transit improvements by Metrolinx, the Region and the City. These major transit improvements include but not limited to, the future Hurontario LRT, Dundas Street BRT, Cooksville GO Train Station improvements and GO Expansion Project, as well as Major Transit Station Areas at the Dundas Street/Hurontario Street.

The re-development of the area will also bring a transformative change to a more compact and sustainable land uses that will address the housing shortage, affordability and climate change. In addition to the inclusion of some charity components as part of the proposed development, the proposed re-development also recognizes, understands and builds on the value and importance of the extraordinary transit and road infrastructure improvements coming to the area and is



therefore planned with great emphasis on a sustainable non-automobile-oriented mobility plan promoted by the Official Plans. City Council and Provincial initiatives.

This Transportation Impact Study is prepared to support the proposed mixed-use development. This Study has been prepared based on the study terms of reference, where appropriate, that reflected the City of Mississauga and Peel Region Traffic Impact Study Guidelines. The terms of reference have been submitted to the City staff on January 28, 2022.

#### 2.0 STUDY AREA OVERVIEW AND CONTEXT

#### 2.1. Hurontario Light-Rail-Transit (LRT) - Expected Completion 2024

It is Nextrans' understanding that Metrolinx is partnered with the City of Mississauga and the City of Brampton to build the new 18-km Hurontario LRT (19 stations) that services Mississauga and Brampton with better and more convenient way of travel. Based on the project website information (<a href="http://www.metrolinx.com/en/greaterregion/projects/hurontario-lrt.aspx">http://www.metrolinx.com/en/greaterregion/projects/hurontario-lrt.aspx</a>) Metrolinx and Infrastructure Ontario (IO) have officially announced the winning bidder for the Hurontario Light Rail Transit project. Mobilinx, the winning team, will design, build, finance, operate and maintain the new transit project for a 30-year term. **Figure 2** illustrates the Hurontario LRT alignment.

Metrolinx has announced the naming the Hurontario light-rail-transit (LRT) project as the Hazel McCallion Line, to commemorate the former Mississauga mayor. The project will continue to be referred to as the Hurontario LRT project while construction is underway, but will adopt the name once the line opens.

Once in service, the 18-kilometre Hazel McCallion Line will bring a new, environmentally friendly and reliable method of transportation to a rapidly growing region. The new transit system will feature 19 stations, travel through two urban growth centres and connect to major transit systems including GO Transit (Milton and Lakeshore West lines), the Mississauga Transitway, Brampton Transit, ZUM and MiWay. The Hazel McCallion Line will operate in its own dedicated lane ensuring a smooth, reliable and convenient ride along the region's busiest street.

As Mississauga and Brampton expands with new residents, businesses and amenities, sustainable and reliable transit becomes vital. The Hazel McCallion Line will operate with clean, electrically powered light rail vehicles, producing near zero emissions. So, not only does the LRT line get cars off the road, but it's a more sustainable, environmentally conscious way to travel!

The future residents in the proposed development can connect with the future Hurontario LRT by taking a few minutes walk to the Dundas Station or Cooksville Station. It is Nextrans' opinion that this project will further encourage existing and future residents to take more convenient and sustainable mode of transportation in transit, instead of driving single-occupant-vehicles.

#### 2.2. Future Dundas BRT

The Minster of Environment has given the notice to proceed with Dundas Bus Rapid Transit Mississauga East on April 27th, 2022.

Based on the information provided in the project website (<a href="https://www.metrolinx.com/en/greaterregion/projects/dundas-bus-rapid-transit.aspx">https://www.metrolinx.com/en/greaterregion/projects/dundas-bus-rapid-transit.aspx</a>), Metrolinx has initiated the Dundas Bus-Rapid-Transit (BRT) Project. The purpose of this project is to evaluate the proposed transit corridor along a 48 kilometre stretch of Dundas Street from Highway 6 in the City of Hamilton through to the Kipling Transit Hub in the City of Toronto, linking Etobicoke and Mississauga City Centres. More than 20 kilometres, of the 48 kilometre BRT, will operate in bus lanes or in a dedicated right-of-way, separate from other traffic, allowing faster and more reliable transit connections.





Figure 2 – Hurontario LRT

Source: https://www.mississauga.ca/projects-and-strategies/city-projects/hurontario-light-rail-transit/

Identified in Metrolinx's 2041 Regional Transportation Plan (RTP) for the Greater Toronto and Hamilton Area (GTHA), the BRT aims to improve the overall transportation network in one of Canada's fastest growing regions. Metrolinx's Dundas BRT Initial Business Case, released in 2020, indicates prior to COVID-19, the population of the GTHA is forecasted to grow to approximately 10 million by 2041. The BRT is part of a suite of public transportation alternatives that will address potential future constraints and contribute to the overall livability and economic development of the region. Figure illustrates the potential Dundas BRT alignment.

This project will provide a tremendous connectivity and capacity to the City of Mississauga, especially it will compliment and support the Hurontario LRT, which is currently under construction.



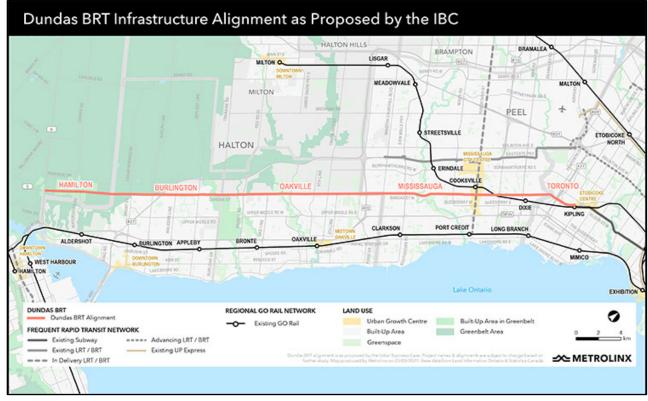


Figure 3 – Dundas BRT Alignment

Source: Metrolinx Website

# 2.3. Dundas Street Major Transit Station Area (MTSA)

The Provincial Growth Plan, 2019, introduced new direction for upper-tier municipalities to work collaboratively with lower-tier municipalities to align transit investment and land use planning by directing transit-supportive densities to MTSAs along priority transit corridors.

Major Transit Station Areas are lands located within an approximate 500-800 metre radius of a transit station or stop, primarily along existing or planned transit corridors. MTSAs are intended to be developed as high density, mixed-use, transit-supportive neighbourhoods that provide access to local amenities, jobs, housing, and recreation opportunities.

As part of the Peel 2051 Official Plan and Municipal Comprehensive Review, the Region developed a strategy and policies to guide how growth is accommodated within Major Transit Station Areas across the Region. This work was undertaken in collaboration with Brampton, Caledon, and Mississauga.

As the proposed development is located within 800 m radius of the potential Dundas/Hurontario MTSA, the proposed development is considered as part this potential MTSA.

Once theses potential MTSA locations are approved by the Regional Council, it will be included in the Mississauga Official Plan Update and relevant policies.

**Figure 4** illustrates the potential/proposed MTSA in the City of Mississauga by transit line.



Figure 4 – Potential MTSA by Transit Line in the City of Mississauga

Source: Region of Peel Website

#### 3.0 PROPOSED DEVELOPMENT

#### 3.1. Strategic Location of the Proposed Development

The subject site is located adjacent to the future Hurontario LRT (Hazel McCallion Line) and approximately 350 m (or less than 5-minute walk) to the future Dundas Station and only 250 m (or about 3-minute walk) to the intermodal LRT Stop at Cooksville GO Station. The subject site will be re-developed as a sustainable mixed-use transit-oriented development which will support the future transit improvements by Metrolinx, the Region and the City. These major transit improvements include but not limited to, the future Hurontario LRT, Dundas Street BRT, Cooksville GO Train Station improvements and GO Expansion Project, as well as Major Transit Station Areas at the Dundas Street/Hurontario Street.

The re-development of the subject site will also bring a transformative change to a more compact and sustainable land uses that will address the housing shortage, affordability and climate change. In addition to the inclusion of some charity components such as the Dam Youth Community Service, the proposed re-development also recognizes, understands and builds on the value and importance of the extraordinary transit and road infrastructure improvements coming to the area and is therefore planned with great emphasis on a sustainable non-automobile-oriented mobility plan promoted by the Official Plans, City Council and Provincial initiatives.

#### 3.2. Existing Mode Share in the Area

**Table 1** summarizes the travel mode information, based on the review of the 2016 Transportation Tomorrow Survey data for several representative Traffic Zones (3632, 3653, 3657 and 3659) in the area. The detailed analysis is included in **Appendix B**.



Table 1 - Modes of Travel based on 2016 TTS Data for Traffic Zones

Time Period	Auto Driver	Auto Passenger	Taxi/Paid Ride Share	Transit	Cycle	Walk
AM Peak Period (6:00-9:00 AM)	60%	10%	0%	24%	0%	6%
PM Peak Period (3:00-6:00 PM)	64%	7%	0%	26%	0%	3%

Based on the information outlined in the table above, the existing non-auto modal split in the area is approximately 40% and 36% during the morning and afternoon peak periods, respectively. This assessment suggests that there are viable alternative modes of transportation other than driving private automobiles. It is anticipated that with the future Hurontario LRT, the modal split along this corridor and this area will be much higher (i.e. 50% for all modal split).

# 3.3. Proposed Development Statistics

Currently, the subject site consists of a stone facade building which is operated by Dam Youth Drop-in Community Service. The existing land uses are under-utilized given the major transit improvements for the area.

The proposed redevelopment of the site consists of a 35-storey mixed-use building with a total of 431 residential dwelling units, as well as a ground related retail gross floor area of 217 m<sup>2</sup>. The proposed development will provide a total of 280 parking spaces and 281 bicycle parking spaces. A full moves access will be provided onto Kirwin Avenue, with a right-in/right-out will be provided onto Hurontario Street to service the proposed development. It should be noted that both of these accesses will be shared with the adjacent development. **Figure 4** illustrates the proposed development site plan.

Figure 5 – Proposed Site Plan



#### 3.4. Site Trip Generation

For the purposes of this assessment, trip generation forecasts for the proposed development is estimated using the information outlined in the Trip Generation Manual, 11<sup>th</sup> Edition, published by the Institute of Transportation Engineers (ITE). For the purposes of this assessment, the ITE Land Use Code (LUC) 222 "Multifamily Housing (High-Rise) Close to Rail Transit" and LUC 820 "Shopping Centre" average rates have been utilized for the proposed development.

Given that the proposed retail component is very small and it is intended to service the future residents in the proposed development, adjacent developments and residents within walking distance. It is not anticipated to generate any auto trips to and from the site, however, to be conservative, it has been included in the analysis. The estimated trip generation calculations are provided in **Tables 2**.

ITE Land Use	Magnitude		Morning Peak Hour			Afternoon Peak Hour				
II E Lallu USE	(units)		Parameters			Total	In	Out	Total	
Multifamily Housing		Vehicle Trips	Trip Rates (use average as no equations were given)	0.08	0.15	0.23	0.15	0.11	0.26	
(High-Rise)	431		Total Trips	33	66	99	64	48	112	
LUC 222 Close to Rail Transit	431	Walk + Bike + Transit	no equations were given)		0.15	0.02	0.17	0.05	0.10	0.15
			Total Trips	65	8	73	22	43	65	
Shopping Centre	2,333	Vehicle Trips	Trip Rates (use average rates due to small GFA)	0.52	0.32	0.84	1.63	1.77	3.40	
LUC (820)		•	Total Trips	1	1	2	4	4	8	
	Total Trips (round off to nearest 5 trips)					175	90	95	185	
<b>N</b>	New Non-Auto Trips (Walk + Bike + Transit)					75	20	45	65	
	Ne	ew Auto Trips	·	35	65	100	70	50	120	

Table 2 - Site Trip Generation

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

- 175 total two-way trips (100 inbound and 75 outbound) and 185 total two-way trips (90 inbound and 95 outbound) during the morning and afternoon peak hours, respectively;
- 100 total two-way auto trips (35 inbound and 65 outbound) and 120 total two-way auto trips (70 inbound and 50 outbound) during the morning and afternoon peak hours, respectively; and
- 75 total two-way non-auto trips (65 inbound and 10 outbound) and 65 total two-way transit trips (20 inbound and 45 outbound) during the morning and afternoon peak hours, respectively.

#### 3.5. Existing Land Use Generation

As indicated, currently, the subject site consists of a stone facade building which is operated by Dam Youth Drop-in Community Service. It is anticipated the land uses will generate some auto trips, transit trips, as well as some walking and cycling trips to and from the proposed developments.

Typically, turning movement counts will be undertaken at the existing access points to capture the existing trip generations for comparison purposes. However, due to the pandemic, counts are not possible at this time.

To be conservative and for the purpose of this assessment, the existing trips from the proposed development will not be removed from the existing intersection counts in the study area. Therefore, the analysis is conservative.

#### 3.6. Site Trip Distribution and Assignment

The 2016 Transportation Tomorrow Survey (TTS) data was reviewed for Traffic Zones (3632, 3653, 3657 and 3659) in order to estimate the general trip distribution for the proposed development. **Table 4** summarizes the planning



district/traffic zones distribution based on the 2016 TTS data, with **Table 5** summarizing the site trip assignment based on the 2016 TTS data detailed and existing transportation network in the area.

Table 3 – Site General Trip Distribution

N	Mode of Travel	Mississauga	Brampton	Toronto	York Region	Halton Region	Total
	Auto	71%	4%	14%	3%	8%	100%
	Transit	65%	0%	32%	1%	2%	100%

Table 4 – Site Trip Distribution

General Direction	Auto %	Transit Routes	Transit %
North (Hurontario Street, Cawthra Road, Confederation Parkway, Mavis Road)	28%	North (Hurontario)	24%
South (Hurontario Street, Cawthra Road, Confederation Parkway, Mavis Road)	21%	South (Hurontario)	15%
East (Dundas Street, The Queensway, Central Parkway, Burnhamthorpe Road, Hwy 403)	27%	East (Dundas, Burnhamthorpe, Milton GO Line)	42%
West (Dundas Street, The Queensway, Central Parkway, Burnhamthorpe Road, Hwy 403)	24%	East (Dundas, Burnhamthorpe, Milton GO Line)	19%
Total	100%		100%

Figure 6 illustrates the proposed development generated traffic volumes for the morning and afternoon peak hours, respectively.

It should be noted that the auto site trip distribution and assignment have been taken into consideration the 2016 TTS information, the future access configurations and logical routing.

#### 4.0 EXISTING CONDITION ASSESSMENT

#### 4.1. Existing Road Network

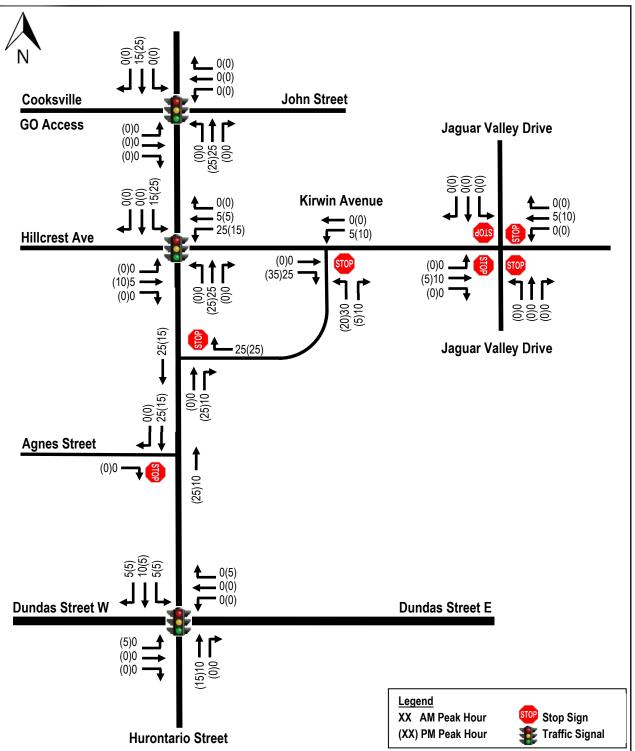
The existing road network, lane configuration and existing traffic control for the study area are shown in **Figure 6** (Existing Lane Configurations). The characteristics of the main road network are described below.

- **Hurontario Street**: is a north-south arterial road under the jurisdiction of the City of Mississauga. It currently has six-lane cross-section through the study area and maintains a posted speed limit of 50 km/h to 60 km/h at various sections of the road. The LRT construction has started and anticipated completion is 2024.
- Dundas Street: is an east-west arterial road under the jurisdiction of the City of Mississauga. It has a four-lane cross-section with turning lanes at major intersections. It maintains a posted speed limit of 50 km/h near the subject site. Dundas Street is identified as a BRT corridor.
- **Kirwin Avenue:** is an east-west major collector under the jurisdiction of the City of Mississauga. It generally has a two-lane cross-section with turning lanes at the major intersections. It maintains a posted speed limit of 50 km/h near the subject site.
- **Hillcrest Avenue**: is an east-west major collector under the jurisdiction of the City of Mississauga. It generally has a four-lane cross-section with turning lanes at the major intersections. It maintains a posted speed limit of 50 km/h near the subject site.
- **John Street**: is an east-west local road under the jurisdiction of the City of Mississauga. It generally has a two-lane cross-section with turning lanes at the major intersections. It maintains a posted speed limit of 50 km/h near the subject site.
- Agnes Street: is an east-west local road under the jurisdiction of the City of Mississauga. It generally has a
  two-lane cross-section.



• **Jaguar Valley Drive**: is north-south local road under the jurisdiction of the City of Mississauga. It generally has a two-lane cross-section.

Figure 6 – Site Traffic Volumes





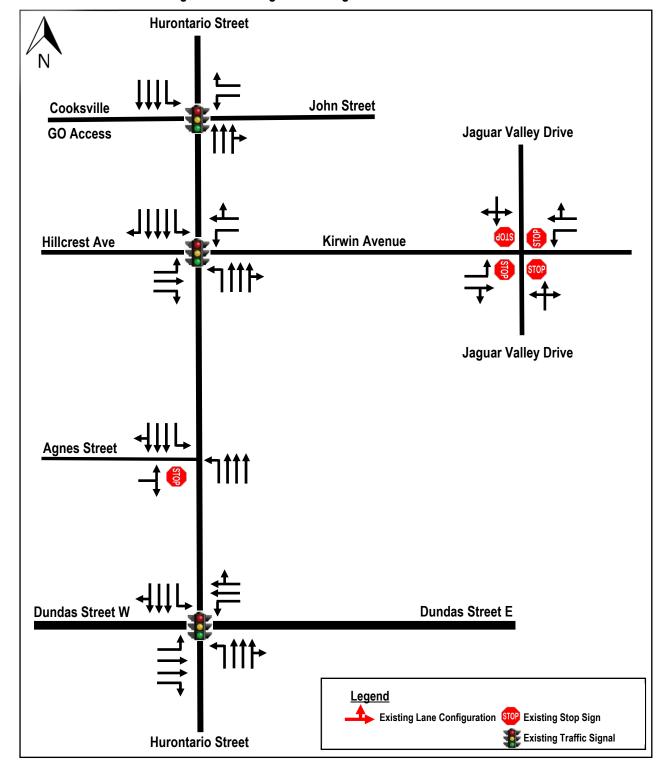


Figure 7 – Existing Lane Configuration and Traffic Control

# 4.2. Existing Active Transportation Mode Assessment

**Figure 8** illustrates the existing active transportation network in the study area.



#### Walking

The area is currently well-serviced by a sufficient network of sidewalks, with sidewalks are available on both sides of Hurontario Street, Kirwin Avenue, Hillcrest Avenue, Jaguar Valley Drive, John Street and Agnes Street in the study area. In addition, sidewalks are reasonably maintained therefore no improvement are required at this time. The sidewalk along Hurontario Street may be impacted by the LRT construction activities, however, this is a temporary condition and sidewalk will be reinstated and enhanced as part of the LRT project.

#### Cycling

Under the existing conditions, there are dedicated bicycle lanes on Kirwin Avenue/Camila Road, Confederation Parkway, King Street E. There are also some signed routes on Hillcrest Avenue, Paisley Boulevard and Fairview Road W in the study are.

It is Nextrans' opinion that the existing cycling network can be improved in the future as part of the City of Mississauga Cycling Master Plan, and through the LRT and BRT projects to install more bicycle facilities such as bicycle lanes or signed routes along Hurontario Street and Dundas Street. This will encourage existing and future residents to use these facilities instead of driving single-occupant-vehicles.

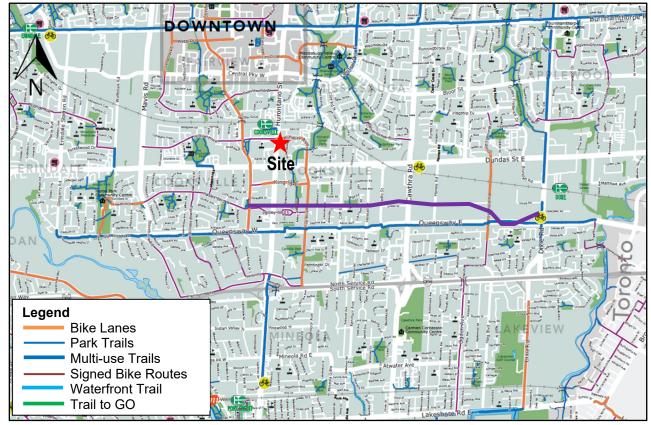


Figure 8 – Existing Cycling Network in the Study Area

Source: City of Mississauga Cycling Map (https://www.mississaugabikes.ca/wp-content/uploads/2021/05/Mississauga-Cycling-Map-2021-Web-version.pdf)

#### 4.3. Existing Mississauga Transit Service Assessment

Under the existing conditions, the proposed development is located adjacent to Mississauga Transit Bus Routes 2 and 53 Hurontario, only 250 m (or about 3-minute walk) to the Cooksville GO Station and approximately 350 m (or less than 5-minute walk) to Bus Route 1 and 101 Dundas. The existing transit network in the area is illustrated in **Figure 9**.



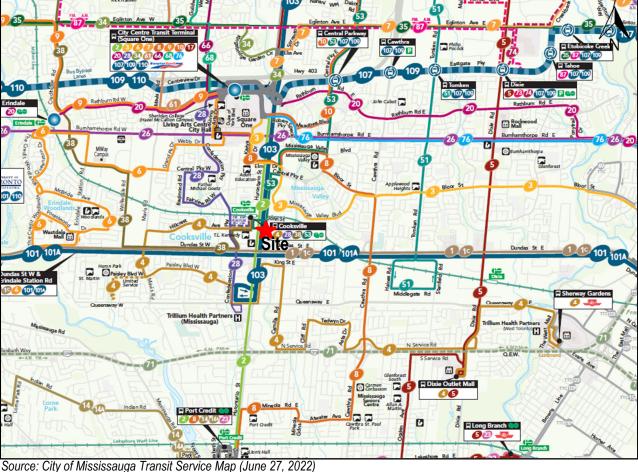


Figure 9 – Existing Transit Network in the Study Area

Currently, due to the COVID-19, Mississauga Transit is operating based on a reduced schedule, while some routes have been cancelled until further notice. Based on Nextrans review of the existing Mississauga Transit schedule, as well as the context of the study area, it is concluded that the area is currently has excellent transit service, especially the proposed development is located within a few minutes walking distance to the Cooksville GO Train Station and Bus Terminal. There is no anticipated capacity issues at this time.

#### 4.3. **Existing Traffic Volumes**

Given the on-going pandemic, the City of Mississauga staff through the Terms of Refence requested that new counts should not be used in the analysis. However, based on Nextrans' working experience through various projects in other jurisdictions such as the Cities of Toronto, Brampton, Hamilton, Vaughan, Markham and others, it is indicated that most of the traffic are back to normal, with the exception that the peak hours are not as concentrated as before but rather spread out during the peak period.

In addition, this will be the new normal until such time that the pandemic is fully over and all offices require employees to go back to the office. However, it is Nextrans' understanding that many work places have invested and adapt to this new normal with hybrid work.

For these reasons, Nextrans came up with a reasonable and conservative methodology that addresses both the City's concerns and the new "normal" situation that we are currently facing. This methodology is described in detailed below. The estimated existing traffic volumes using this methodology is illustrated in **Figure 10**.



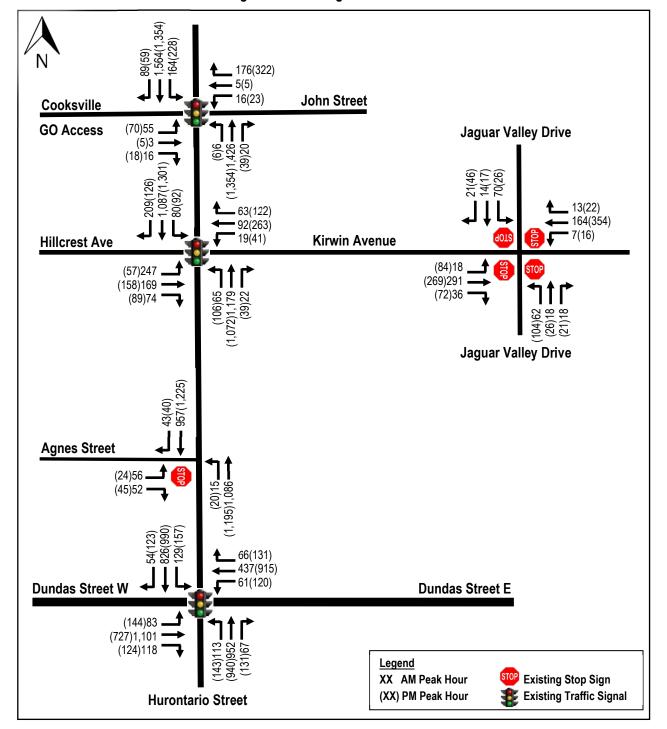


Figure 10 – Existing Traffic Volumes

- Nextrans has obtained new traffic counts from Spectrum for the following intersections (Appendix C):
  - Hurontario Street and Dundas Street (signalized) Thursday September 19, 2019, this is pre-pandemic and less than 3 years-old. Nextrans also reviewed the City's old traffic counts in 2019 for this intersection (reviewed through CGH Transport Traffic Impact Study dated July, 2021 for 3085 Hurontario Street)
  - Hurontario Street and Dundas Street (signalized) Tuesday March 22, 2022, most of the pandemic restrictions were lifted at this time



- Hurontario Street at Kirwin Avenue/Hillcrest Avenue (signalized) Tuesday March 22, 2022, most of the pandemic restrictions were lifted at this time. Nextrans also reviewed the City's old traffic counts in 2015 for this intersection (reviewed through CGH Transport Traffic Impact Study dated July, 2021 for 3085 Hurontario Street)
- Hurontario Street at John Street/Cooksville GO Train Station access (signalized) – Tuesday March 22, 2022, most of the pandemic restrictions were lifted at this time. Nextrans also reviewed the City's old traffic counts in 2015 for this intersection (reviewed through CGH Transport Traffic Impact Study dated July, 2021 for 3085 Hurontario Street)
- Hurontario Street at Agnes Street (unsignalized) Tuesday March 22, 2022, most of the pandemic restrictions were lifted at this time
- Kirwin Avenue at Jaguar Valley Drive (unsignalized) Tuesday March 22, 2022, most of the pandemic restrictions were lifted at this time. Nextrans also reviewed the City's old traffic counts in 2005 for this intersection (reviewed through CGH Transport Traffic Impact Study dated July, 2021 for 3085 Hurontario Street)
- Nextrans has combined the old counts obtained from the City and various reports prepared in the area with the
  new counts, using the highest turning movement numbers from both the new and old counts to ensure that the
  estimation is conservative

It should be noted that the turning movement counts were generally conducted during the morning (7:00 a.m. to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) peak periods for all area intersections.

#### 4.4. Existing Auto Mode Assessment

As indicated, the area will be going through a major change in both traffic pattern and transit pattern with the implementation of the Hurontario LRT, Dundas Street BRT and the GO Expansion project along the Milton GO Line. Therefore, it is expected that the existing traffic conditions will change dramatically with the lane reduction on Hurontario Street and other streets in the area.

Given these changes, it is not appropriate to assess the existing traffic conditions and make recommendations as these recommendations would be throw away costs for both the City and the developers. However, Nextrans has assessed the existing traffic conditions through site observations and traffic cameras. The analysis indicated that the area is currently operating sufficiently with minimal delay or queues during the peak hours. A review of the through traffic data on both Hurontario Street and Dundas Street indicates that the through traffic volumes have been reduced at this time compared to the pre-pandemic conditions. This is also a good indication of how the future lane reduction on Hurontario Street and Dundas Street with the LRT and BRT projects will affect the auto volumes.

#### 5.0 FUTURE BACKGROUND CONDITION ASSESSMENT

# 5.1. Analysis Horizon

For the purposes of this assessment and requirement from the City through the terms of reference, a five-year horizon (2022 to 2027) has been carried out for the study analysis. This is consistent with the City of Mississauga Traffic Impact Study Guidelines and background studies conducted in the area.

#### 5.2. Future Background Corridor Growth

Nextrans has received the corridor growth rate recommendations from the City of Mississauga (**Appendix D**). These growth rate recommendations are based on the modelling effort, in combination with historical data analysis, as well as the informative changes through these corridors in the future.

**Table 5** summarizes the recommended growth rates provided by the City of Mississauga.



Table 5 – Recommended Growth Rates for the Study Area Corridors

Corridor	Direction	Existing	to 2026	2026 - 2027		
Corridor	Direction	AM Peak	PM Peak	AM Peak	PM Peak	
Llurantaria Ctraat	NB	-20%	-20.5%	1.0%	0.5%	
Hurontario Street	SB	-23.5%	-18.5%	0.5%	0.5%	
Dundan Chrook	NB	0.0%	0.0%	0.0%	0.0%	
Dundas Street	SB	0.5%	0.5%	0.0%	0.0%	
Kirwin Avenue/	NB	0.5%	0.0%	0.0%	0.5%	
Hillcrest Avenue	SB	0.5%	0.5%	0.5%	0.0%	

On this basis, Nextrans has estimated the future background traffic volumes using the following methodologies:

- The estimated existing traffic volumes illustrated in **Figure 10** have been balanced through out the corridor for both north-south and east-west directions;
- Using the growth above to estimate the existing to 2026 traffic volumes (Appendix D);
- Using the growth above to estimate the 2026-2027 traffic volumes (Appendix D);
- All estimated volumes have been rounded up to the nearest 5 trips;
- The traffic volumes have been balanced through out the corridor for both north-south and east-west directions

**Figure 11** illustrates the 2027 corridor background through traffic growth based on the methodology and steps noted above, for the morning and afternoon peak hours, respectively.

## 5.3. Background Development Applications

A full review of active developments within the study area was conducted based on the information extracted from the City of Mississauga development website. **Table 6** below summarizes the background developments in the area along with the associated traffic impact study. It should be noted that the background development traffic volumes are obtained from the respective traffic studies.

Table 6 - Background Development Information in the Study Area

Address	Description	TIS Information
3085 Hurontario Street	1,081 residential units and 11,044 ft <sup>2</sup> of retail	CGH TIS, 2021
3420-3442 Hurontario Street	680 residential units and 2,000 m <sup>2</sup> of retail	Crozier TIS, 2020
1 Fairview East	485 residential units and 270 m <sup>2</sup> of retail	LEA Consulting TIS, 2020
3575 Kaneff Crescent	282 residential units	Nextrans TIS, 2020
86-90 Dundas Street E	334 residential units and 324 m <sup>2</sup> of retail	GHD TIS, 2019
86-95 Dundas Street W	405 residential units and 5,490 m <sup>2</sup> of retail	GHD TIS, 2020
2512,2522 and 2532 Argyle Road	101 residential units	Nextrans TIS, 2019
2570-2590 Argyle Road	253 residential units	BA Group TIS, 2020

The background development traffic volumes are obtained from the respective traffic studies and summarized in **Figure 12** (**Appendix E**). It should be noted that the background development traffic volumes have been rounded up to nearest 5 trips to be consistent with the methodology of this Study.

**Figure 13** illustrates the 2027 future background traffic volumes, which were derived from the 2027 background corridor growth estimates adding the background development traffic volumes.



#### 5.4. Future Lane Configurations

As indicated in various sections of this Study, the future Hurontario LRT will alter the lane configurations for the existing intersections in the study area. Nextrans has reviewed the Preliminary Design/TPAP Environmental Project Report dated June, 2014 prepared by Metrolinx. The intersection lane configurations were obtained from the ERP design templates and illustrated in **Figure 14** (**Appendix F**).

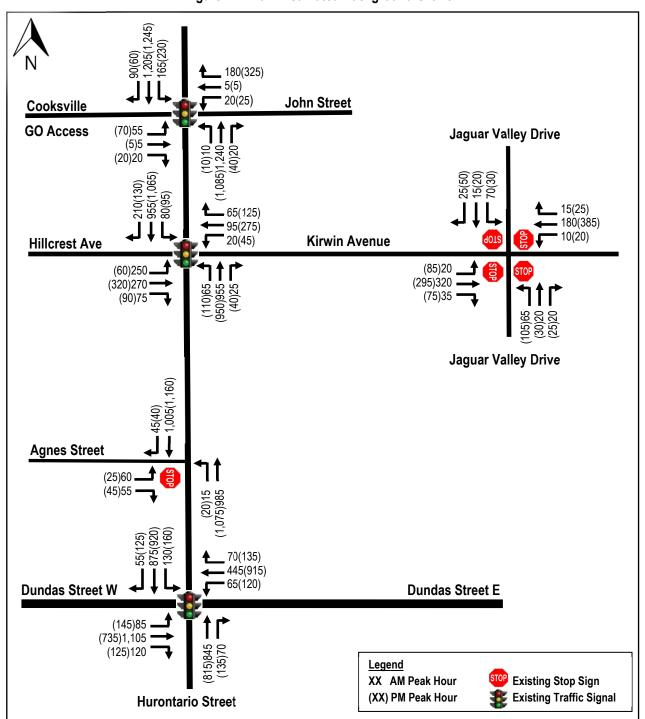


Figure 11 - 2027 Estimated Background Growth



John Street Cooksville **GO Access Jaguar Valley Drive** Kirwin Avenue 10(5) 5(15) 75(55) **-** 5(15) **Hillcrest Ave** (0)0(0)0(70)25(10)15 (10)5 (0)0 (0)0**-** 125(125) 55(40) **Jaguar Valley Drive Agnes Street** 20(20) 20(30) **Dundas Street W Dundas Street E** (10)10 (40)35 (0)0Legend **Existing Stop Sign** XX AM Peak Hour Existing Traffic Signal (XX) PM Peak Hour **Hurontario Street** 

Figure 12 - Background Development Traffic Volumes



165(230) 180(325) 5(5) 20(25) Cooksville John Street **GO Access** (70)55**Jaguar Valley Drive** (5)5 (20)20 Kirwin Avenue 15(25) 65(125) 270(540) 185(400) 105(280) 10(20) 5(15) 95(100) **Hillcrest Ave** (455)375 (85)20(60)250(70)25(305)335 =(330)275(60)85 (10)15 (10) (90)75 (75)35**←**1,175(1,325) 55(40) **Jaguar Valley Drive Agnes Street** (1,215)1,055 (45)5590(155) 465(945) **Dundas Street W Dundas Street E** (155)95 (775)1,140 (125)120Legend XX AM Peak Hour **Existing Stop Sign** (XX) PM Peak Hour **Existing Traffic Signal Hurontario Street** 

Figure 13 – 2027 Future Background Traffic Volumes



**Hurontario Street John Street** Cooksville **Jaguar Valley Drive GO Access Hillcrest Ave** Kirwin Avenue **Jaguar Valley Drive RIRO Access Agnes Street Dundas Street W Dundas Street E** Legend **Future Lane Configuration** Stop Sign Traffic Signal **Hurontario Street** 

Figure 14 – Future Lane Configuration and Traffic Control with Hurontario LRT

# 5.5. Typical Cross-Sections for LRT and BRT

#### **Hurontario LRT**

The proposed development is located adjacent to the future Hurontario LRT. This project not just increase the user experience for transit, but also enhance the experience for pedestrians and cyclists along Hurontario Street. The



completion of the LRT is expected in 2024. The proposed development is located within walk a few minutes walking distance to the Cooksville Station and Dundas Station. **Figures 15** and **16** illustrate the proposed Hurontario Street cross-sections at Cooksville and Dundas Street, based on the excerpts from Hurontario LRT Preliminary Design Environmental Project Report dated June. 2014.

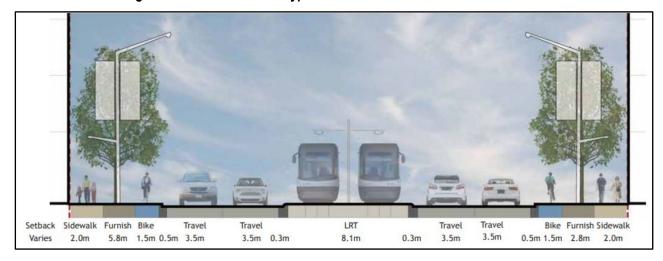
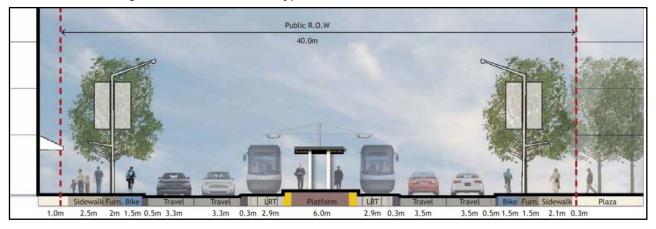


Figure 15 – Hurontario LRT Typical Cross-Section at Cooksville Station

Figure 16 – Hurontario LRT Typical Cross-Section at Cooksville Station



#### **Dundas BRT**

As indicated, Metrolinx has initiated the Dundas BRT project. Based on the information provided in the project website, Metrolinx has initiated the Dundas Bus-Rapid-Transit (BRT) Project. The purpose of this project is to evaluate the proposed transit corridor along a 48 kilometre stretch of Dundas Street from Highway 6 in the City of Hamilton through to the Kipling Transit Hub in the City of Toronto, linking Etobicoke and Mississauga City Centres. More than 20 kilometres, of the 48 kilometre BRT, will operate in bus lanes or in a dedicated right-of-way, separate from other traffic, allowing faster and more reliable transit connections. At this time, no cross-section has been identified for the Dundas Street in this area. However, the Region of Halton and other Regions have a typical cross-section with the BRT design. Typically, the cross-section of the BRT would be similar to the LRT, with the exception that there will be a physical separation between the general-purpose lane and the dedicated centre lane.

#### 5.6. Future Background Condition Assessment

The estimated 2027 future background traffic volumes are illustrated in **Figure 12** (background corridor growth + background development traffic), and were analyzed using Synchro Version 11 software. The detailed calculations are



provided in Appendix G and summarized in Table 7.

Table 7 – 2027 Future Background Levels of Service

Novement   LOS (v/c)   Delay (s)   (m)   LOS (v/c)   Delay (s)   (m)   Store (m)	-40 -25 -440 -25 -440 -25 -150 -50 -130
Overall   D (0.95)   53	~40 .180 25 25 .440 25 .150 50 .130
Hurontario Street/ Dundas Street (Signalized)  Hurontario Street/ Dundas St	180 ~25 ~25 440 ~25 150 ~50 130
Hurontario Street/ Dundas Street (Signalized)  Hurontario Street/ Dundas Street (Signalized)  EB - T E (0.95)  B (0.23)  17 30 B (0.24) 17 32 32 30 B (0.25) 17 30 B (0.24) 17 32 32 32 32 32 32 32 32 32 32 32 32 32	180 ~25 ~25 440 ~25 150 ~50 130
Hurontario Street/ Dundas Street (Signalized)  EB - R WB - L WB - T Dundas Street (Signalized)  WB - R NB - TR SB - L SB - R C (0.78) SB - L SB - TR C (0.71) SB - L SB - TR C (0.71) SB - TR C (	~25 ~25 .440 ~25 .150 ~50 .130
WB - L   E (0.78)   67   43   C (0.51)   28   39   552   70   70   70   70   70   70   70   7	~25 -440 ~25 -150 ~50 -130
WB - T   D (0.75)   52   192   F (1.46)   249   552   70   70   70   70   70   70   70   7	440 -25 -150 -50 -130
(Signalized) WB - R B (0.18) 13 20 C (0.30) 21 42 20 20 20 20 20 20 20 20 20 20 20 20 20	~25 .150 ~50 .130
NB - TR   E (0.91)   63   223   F (1.06)   98   263   ~~     SB - L   F (0.83)   113   89   F (1.33)   238   136   ~~     SB - TR   C (0.71)   32   150   D (0.88)   46   178   ~~     Overall   EB - L   EB - T   D (0.67)   46   149   ~~     Dundas Street with Potential two   D (0.25)   19   33   33   ~~     Overall   EB - R   D (0.74)   F2   40   40   40   40   40   40   40     Overall   EB - R   D (0.74)   F2   40   40   40   40   40   40   40   4	-150 50 -130 40
SB - L   F (0.83)   113   89   F (1.33)   238   136   238	~50 ·130 ~40
SB - TR   C (0.71)   32   150   D (0.88)   46   178   ~	130 ~40
Overall   E (1.05)   65	~40
Hurontario Street/ Dundas Street with Potential two  EB – L  EB – T  EB – R  Dundas Street with Potential two  Dundas Street with Potential two  EB – R  Dundas Street with Potential two  EB – R  Dundas Street with Potential two  EB – R  Dundas Street with Potential two	-
Dundas Street with Potential two EB – R B (0.25) 19 33 5	
Dundas Street with Potential two BB (0.25) 19 33	180
	~25
1 - A	~25
shared WB through/right WB – TR UB – T	350
(Signalized) NB – TR E (0.99) 75 248 ~	~25
SB-L F (0.95) 122 114 ~	150
	130
Overall D (0.83) 40 D (0.80) 44	
	~30
	215
	~45
	~80
	~50
	300
	~50 ·135
SB - TR   C (0.72)   21   87   C (0.76)   22   105   ~   Overall   C (0.78)   32   D (0.90)   36	133
	100
	150
	~40
	150
	~25
	140
	~40
	170
	~25
Hurontario Street/ EB - R A (0.08) 10 2 B (0.07) 10 2 ~	·185
	130
	200
	~20
	~80
	`15
$  \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad   \qquad \qquad \qquad \qquad \qquad   \qquad \qquad \qquad \qquad   \qquad \qquad \qquad \qquad   \qquad \qquad \qquad \qquad \qquad   \qquad \qquad \qquad \qquad \qquad   \qquad$	180
	115
	~75 ~80
	200
	100
	~80
	~80
(unsignalized) NB – LR A (0.17) 12 5 C (0.18) 15 5 ~	

The analysis indicates that under the future background conditions, all intersections are expected to operate at acceptable levels of service during the morning peak hour and afternoon peak hour, with the exception of the Hurontario Street/Dundas Street W intersection during the afternoon peak hour. With the recommended lane configurations for the Dundas Street westbound, the intersection is expected to have higher delay. It is Nextrans' opinion that given the area will have significant transit capacity in the future, no further improvements are required. However, for sensitivity analysis, Nextrans has tested the lane configuration on Dundas Street with a shared through/right lane instead of an exclusive right turn lane.



# 6.0 FUTURE TOTAL CONDITION ASSESSMENT

#### 6.1. Future Total Traffic Assessment for Auto Mode

The estimated 2027 future total traffic volumes are illustrated in **Figure 17** (future background traffic + site), for the morning and afternoon peak hours, respectively, and were analyzed using Synchro Version 11 software. The detailed calculations are provided in **Appendix H** and summarized in **Table 8**.

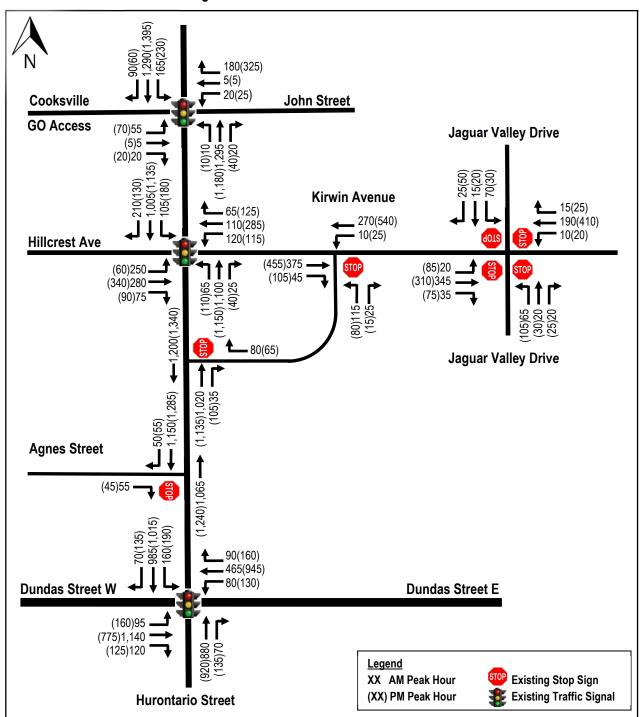


Figure 17 – 2027 Future Total Traffic Volumes



Table 8 – 2027 Future Total Levels of Service

	Vari	Wee	kday AM Peal	k Hour	Wee	kday PM Pea	k Hour	Available/
Intersection	Key Movement	LOS (v/c)	Delay (s)	95th Queue	LOS (v/c)	Delay (s)	95 <sup>th</sup> Queue	Assumed
				(m)	` '		(m)	Storage (m)
	Overall	D (0.95)	54		F (1.46)	107		
	EB – L	C (0.44)	31	32	F (0.99)	105	95	~40
	EB – T	E (0.95)	64	257	D (0.62)	41	143	~180
Hurontario Street/	EB – R	B (0.23)	17	30	B (0.24)	17	32	~25
Dundas Street	WB – L	E (0.78)	67	43	C (0.51)	28	39	~25
(Signalized)	WB – T	D (0.75)	52	192	F (1.46)	249	552	~440
(oignanzoa)	WB – R	B (0.18)	13	20	C (0.31)	22	44	~25
	NB – TR	E (0.92)	65	227	F (1.08)	102	269	~150
	SB – L	F (0.85)	112	92	F (1.37)	251	140	~50
	SB – TR	C (0.73)	33	154	D (0.89)	47	182	~130
	Overall				E (1.08)	68		
	EB – L				F (0.98)	102	95	~40
Hurontario Street/	EB – T				D (0.67)	46	149	~180
Dundas Street with Potential	EB – R				B (0.25)	19	33	~25
two shared WB through/right	WB – L	-	-	-	D (0.71)	52	48	~25
(Signalized)	WB – TR				F (1.08)	100	279	~350
(Signalized)	NB – TR				E (1.00)	79	254	~25
	SB – L				F (0.98)	127	119	~150
	SB – TR				D (0.77)	35	169	~130
	Overall	D (0.80)	43		D (0.81)	47		
	EB – L	E (0.80)	68	103	D (0.36)	50	29	~30
Hurontario Street/	EB – TR	E (0.78)	73	79	E (0.81)	72	94	~215
Hillcrest Avenue/Kirwin	WB – L	D (0.53)	51	50	F (0.79)	82	57	~45
Avenue	WB – TR	D (0.39)	40	31	E (0.71)	62	85	~80
(signalized)	NB – L	F (0.57)	81	32	E (0.69)	77	45	~50
(Signalized)	NB – TR	D (0.70)	44	133	D (0.79)	45	121	~300
	SB – L	F (0.68)	100	63	F (0.75)	102	98	~50
	SB – TR	C (0.73)	22	88	C (0.76)	22	128	~135
	Overall	D (0.78)	37		D (0.90)	38		
	EB – L	E (0.51)	71	30	E (0.66)	72	32	~100
	EB – TR	C (0.16)	30	12	C (0.09)	23	10	~150
Hurontario Street/	WB – L	D (0.11)	54	14	D (0.09)	43	14	~40
John Street/Cooksville GO	WB – TR	D (0.78)	42	48	D (0.90)	54	90	~150
Train Station Access	NB – L	F (0.16)	102	6	F (0.16)	109	5	~25
(signalized)	NB – TR	E (0.78)	58	262	D (0.82)	46	220	~140
	SB – L	E (0.53)	65	92	E (0.78)	78	169	~40
	SB – T	B (0.56)	12	168	C (0.67)	21	251	~170
	SB – R	A (0.10)	3	10	A (0.07)	3	6	~25
Hurontario Street/	EB – R	A (0.08)	10	2	B (0.07)	10	2	~185
Agnes Street	NB – T	A (0.34)	0	0	A (0.40)	0	0	~130
(unsignalized)	SB – TR	A (0.49)	0	0	A (0.55)	0	0	~200
	EB – L	C (0.04)	8	-	C (0.18)	10	-	~20
Kirwin Avenue/	EB – TR	A (0.63)	16	-	A (0.73)	23	-	~80
Jaguar Valley Drive	WB – L	B (0.02)	8	-	D (0.04)	9	-	`15
(unsignalized)	WB – TR	A (0.36)	11	-	A (0.84)	33	-	~180
(anoignanzou)	NB – LTR	B (0.19)	10	-	B (0.34)	14	-	~115
	SB – LTR	B (0.20)	10	-	B (0.21)	12	-	~75
Hurontario Street/	WB – R	A (0.11)	10	3	B (0.09)	10	3	~80
Proposed RIRO Access	NB – TR	A (0.43)	0	0	A (0.48)	0	0	~200
(unsignalized)	SB – T	A (0.38)	0	0	A (0.43)	0	0	~100
Kirwin Avenue/Proposed	EB – TR	A (0.16)	0	0	A (0.19)	0	0	~80
Shared Full Moves Access	WB – TL	A (0.11)	1	0	A (0.02)	1	0	~80
(unsignalized)	NB – LR	B (0.25)	13	8	C (0.26)	17	8	~100

The analysis indicates that under the future total conditions, similar to the future background conditions, all intersections are expected to operate at acceptable levels of service during the morning peak hour and afternoon peak hour, with the exception of the Hurontario Street/Dundas Street W intersection during the afternoon peak hour. With the recommended lane configurations for the Dundas Street westbound, the intersection is expected to have higher delay. It is Nextrans' opinion that given the area will have significant transit capacity in the future, no further improvements are required. However, for sensitivity analysis, Nextrans has tested the lane configuration on Dundas Street with a shared through/right lane instead of an exclusive right turn lane.



#### 6.2. Potential Mitigation Measure to Improve Intersection Operation

It is Nextrans' opinion that with the future transit improvements in the area, the existing traffic pattern will be altered and reduced due to the diversion of auto mode to the transit mode, as well as the reduction of the lane on Hurontario Street. Any additional improvements to accommodate the auto mode will impact other modes such as walking, cycling and transit.

To address the current climate change crisis, more sustainable directions and objectives are included within the Official Plans, Transportation Master Plans and the Provincial Growth Plan to minimize the climate change and impact on human lives, it is no longer desirable to widen existing roads in the City and the Region for the sole purpose of encouraging more single-occupant-vehicle trips within and throughout the Region. It is more supportable to effectively utilize the existing and future infrastructures to encourage the residents to use alternative modes of transportation such as public transit, cycling and walking. Therefore, the following mitigation measures are recommended for all new developments in the area:

- The City and the Region to review the existing signal timing plans for the area and optimize them as appropriate
  to optimize the intersection operations;
- Reduce parking rates for all proposed developments to encourage alternative modes of transportation such as walking, cycling and public transit;
- The Region and the City to work with Metrolinx and York Region to implement the future BRT upgrades and enhancements along Dundas Street;
- New proposed developments in the area provide adequate bicycle parking spaces to encourage active modes
  of transportation;
- New proposed developments provide enhanced sidewalk and pedestrian connections through-out the site that connect with the surrounding network; and
- New proposed developments provide TDM measures and incentives to encourage alternative mode of transportation in the area

#### 6.3. Active Transportation Assessment

#### **Walking Mode**

As indicated in the previous section of this Study, the area is currently well-serviced by a sufficient network of sidewalks, with sidewalks are available on both sides of Hurontario Street, Kirwin Avenue, Hillcrest Avenue, Jaguar Valley Drive, John Street and Agnes Street in the study area. In addition, sidewalks are reasonably maintained therefore no improvement are required at this time. The sidewalk along Hurontario Street may be impacted by the LRT construction activities, however, this is a temporary condition and sidewalk will be reinstated and enhanced as part of the LRT project.

The proposed development will provide direct pedestrian access onto Hurontario Street and internal shared roadway. Sidewalk will be provided along the internal shared roadway to accommodate pedestrian access

#### **Cycling Mode**

Under the existing conditions, there are dedicated bicycle lanes on Kirwin Avenue/Camila Road, Confederation Parkway, King Street E. There are also some signed routes on Hillcrest Avenue, Paisley Boulevard and Fairview Road W in the study are.

It is Nextrans' opinion that the existing cycling network can be improved in the future as part of the City of Mississauga Cycling Master Plan, and through the LRT and BRT projects to install more bicycle facilities such as bicycle lanes or signed routes along Hurontario Street and Dundas Street. This will encourage existing and future residents to use these facilities instead of driving single-occupant-vehicles.



Although, the current Zoning By-law does not require new development to provide bicycle parking spaces, however, the proposed development will provide a total of 281 bicycle parking spaces on-site to encourage residents to use active modes of transportation and to support vehicle parking rate reduction.

#### 6.4. Transit Mode Assessment

As indicated, the proposed development is expected to generate 73 total two-way non-auto trips (65 inbound and 8 outbound) and 65 total two-way transit trips (22 inbound and 43 outbound) during the morning and afternoon peak hours, respectively. For the purposed of this assessment, it is assumed that all these trips are related to transit trips.

The subject site is located adjacent to the future Hurontario LRT (Hazel McCallion Line) and approximately 350 m (or less than 5-minute walk) to the future Dundas Station and only 250 m (or about 3-minute walk) to the intermodal LRT Stop at Cooksville GO Station.

For these reasons, the proposed development transit ridership will have many ways to access transit and these trips will be spread out to different transit routes. It is Nextrans' opinion that these transit trips can be accommodate by the proposed transit improvements in this area.

#### 7.0 SITE PLAN REVIEW

#### 7.1. Waste Management Plan

Nextrans has reviewed the existing garbage pick up schedule for the existing development, as well as the Waste Management Plan for Official Plan Amendment/Rezoning Applications guidelines from Region of Peel website (<a href="https://www.peelregion.ca/waste/calendar/">https://www.peelregion.ca/waste/calendar/</a>). Figure 18 summarizes the current waste pick-up schedule for the area. Based on the current solid waste pick-up schedule, garbage and recycling pick-up occurs on alternate Wednesday of the weeks. Organics waste will be picked up every Wednesday of the week.

Sun Mon Tue Wed Thu Fri Sat 26 27 28 30 1 2 Garbage Canada Day Organics 3 4 5 7 9 8 Recycling Organics Yard Waste 10 11 12 13 14 15 16 Garbage Organics 22 17 18 19 20 21 23 Recycling Organics Yard Waste 26 24 25 28 29 30 27 Garbage Organics 5 31 2 3 4 6 Civic Holiday Recycling Organics Yard Waste

Figure 18 – Waste Collection Schedule



#### 7.2. Loading Space Requirement

The City of Mississauga Zoning By-law 0225-2007 was reviewed to determine the loading requirement for the proposed development. **Table 13** summarizes the loading requirement based on the current Zoning By-law.

Table 9 – City of Mississauga Zoning By-law Loading Requirements

Land Use	Magnitude	Loading Rates	Spaces Required
Residential	195 units	Minimum of 30 dwelling units	1 space
Retail	217 m <sup>2</sup>	Less than 250 m <sup>2</sup>	None required

Under the City's By-Law Zoning By-law 0225-2007, one loading space is required for residential component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length, with 7.3 m vertical clearance. The proposed development meets this requirement and has been reflected in the proposed site plan.

Vehicle turning movement templates will be provided as part of the subsequent site plan application.

#### **7.3.** Waste Management Operation

On the garbage pick-up day, garbage bins will be moved from the garbage storage area to the garbage staging area. Garbage truck with front-end loader will make a right turn or left turn from the laneway into the site designated loading area. Once garbage has been picked up, garbage truck will be backing into the designed hammerhead area and then exit the site in forward motion. For recycling and regular garbage pick up, garbage truck will back into the designated site loading area from the laneway and using the designated hammerhead. When the operation is completed, garbage truck will exit the site in a forward motion directly from the loading area to the laneway. Waste operations shall be further refined as part of detailed design at the Site Plan Approval stage.

#### 7.4. Proposed Development Access

A shared full moves access will be provided onto Kirwin Avenue, with a shared right-in/right-out will be provided onto Hurontario Street to service the proposed development. It should be noted that both of these accesses will be shared with the adjacent development.

The analysis indicates that the proposed accesses are expected to operate at acceptable levels of service with minimum queue or delay. Therefore, it is concluded that the proposed site access arrangement is appropriate. The lane configurations for the proposed development include:

- Hurontario Street right-in/right-out access: one inbound and one outbound lane (3.0 to 3.5 m width per lane), one northbound shared through/right on Hurontario Street
- Kirwin Avenue full moves access: one inbound and one outbound lane (3.0 to 3.5 m width per lane), eastbound shared through/right and westbound shared through/left on Kirwin Avenue

#### 7.5. Safety Review

#### 7.5.1. Sightlines

Based on Nextrans' review of the area context, site observation and review of the survey plan, Hurontario Street and Kirwin Avenue are relatively flat and straight with no significant horizon curves or vertical curves in the vicinity of the proposed site accesses. The proposed future access conditions are relatively similar to the existing conditions.



#### **7.5.2.** Weaving

As indicated, the proposed development will have one right-in/right-out access onto Hurontario Street and one full moves access onto Kirwin Avenue. Both of these accesses are shared with the adjacent land development. Based on this access arrangement, it is anticipated that there will be not weaving issue with the proposed right-in/right-out access as drivers will have options using the full moves access onto Kirwin Avenue.

#### 7.5.3. Pedestrian and Cycling Safety

Based on Nextrans' review of the Hurontario LRT cross-section, a minimum of 2.1 m sidewalk will be provided on both sides of Hurontario Street. In addition, a 1.5 m bicycle lane will be provided on both sides of Hurontario Street with 0.5 m buffer. For these reasons, it is Nextrans' opinion that the pedestrian and cycling safety will be improved along this corridor.

#### 8.0 VEHICLE PARKING ASSESSMENT

#### 8.1. Zoning By-law Vehicle Parking Requirement

It is Nextrans' understanding that the City of Mississauga Council has recently approved the new vehicle parking rate amendment to the existing Zoning By-law No. 0225-2007 (**Appendix I**). It is Nextrans' understanding that the proposed development is located within the new Precinct 1, with the blended rates of 0.8 space/unit for resident and 0.2 spaces/unit for visitor/ground related retail use, for the proposed condominium apartment land use category. **Table 10** below summarizes the vehicle parking requirements for the newly approved City of Mississauga Zoning By-law amendment.

**Unit Type** No. of Unit **Parking Rates Parking Requirement** Residential 431 units 0.8 spaces/unit 345 Visitor 431 units 0.20 spaces/unit for visitor 86 217 m<sup>2</sup> To be shared with visitor Retail 0 Total 431 spaces

Table 10 – City of Mississauga Zoning By-law No. 0225-2007 Vehicle Parking Requirements

Based on the assessment noted above, the proposed development will require to provide approximately 431 vehicle parking spaces, inclusive of residential, visitor and retail uses. It is Nextrans' opinion that these rates are still excessive and do not support the Hurontario LRT investment by Metrolinx and the City of Mississauga. It is Nextrans' opinion that the parking rates should be further reduced as parking management is the best Transportation Demand Management measure.

It should be noted that the proposed development is expected to generate only 100 total two-way auto trips (35 inbound and 65 outbound) and 120 total two-way auto trips (70 inbound and 50 outbound) during the morning and afternoon peak hours, respectively. These trips were estimated from the ITE Trip Generation 11<sup>th</sup> Edition without applying any modal split. On this basis, the proposed development only requires to provide a maximum of 120 parking spaces.

However, Nextrans provides more comprehensive justifications in support of reduced parking rates for the proposed development in the subsequent sections below.

#### No minimum parking requirement provision in City of Toronto and City of Brampton

#### **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 December 2021, the City of Toronto Council has adopted Zoning By-Law Amendments that will remove the minimum parking requirement for residential development. It is Nextrans' understanding that there is an imminent parking policy amendment to the current Zoning By-law No. 569-2013 (end of March), which will remove minimum parking rate requirement across the City for this type of development.

#### **City of Brampton**

It is Nextrans' understanding that based on the recent adopted City of Brampton Zoning By-law Amendment 45-2021 to the Zoning By-law 270-2004 for the Downtown, Central Area and Hurontario/Main Street Corridor, 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 (illustrated in **Figure 19** and **Appendix I**).

It is Nextrans' opinion that 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 line (Hurontario LRT, Milton GO Line and Dundas BRT), the proposed development should have much lower rate, or no minimum, similar to the City of Brampton, as presented in this Study.

STEELES AVE W ST

Figure 19 – Zoning By-law 45-2021 As Amended with No Minimum Parking Requirement Schedule B-7 Map

#### **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 resident not to own a car; and
- It encourages residents to take other sustainable modes of transportation available in the area such as walking, cycling and public transit:



#### **Available Sustainable Modes of Transportation in the Area**

Public Transit is an important mode of transportation for both short and longer distance trips to and from the proposed development. Based on Nextrans review of the overall transportation network in the area, it is evident that the transportation network will be significantly transformed in the future with the following improvements:

- Hurontario Light-Rail-Transit (LRT);
- Dundas Bus-Rapid-Transit (BRT);
- Milton GO Line Expansion with all day two-way and 15-minute service frequency;
- Aggressive active transportation network by the City and the Region; and
- Aggressive Transportation Demand Management plan

As indicated in previous sections of this Study, the proposed development is located adjacent to the Hurontario LRT and only a few minutes walking distance to the Cooksville Intermodal Station and future Dundas BRT Station, there are many efficient, quick and sustainable way to travel instead of owning and driving private vehicles. With the recent gas price increases and capital cost of owning a vehicle (new vehicle shortage due to supply chain problem), more residents will chose to use more convenient and effective mode of transportation such as public transit, walking and cycling.

#### Proxy Site Parking Utilization Survey is NOT Possible at this time

Nextrans contacted several condominium building managements to ask for permission to undertake parking utilization survey and building information such as unit breakdowns and parking supply. However, due to COVID-19 protocols, new variant concerns and other security reasons, it is not permitted at this time. This is also the case in the City of Mississauga, City of Toronto, City of Vaughan and other adjacent municipalities. For these reasons, it is Nextrans' opinion that a proxy site parking utilization survey is not required at this time and the City of Mississauga should consider appropriate parking management as an effective TDM measure that will help the City manage congestion, delays, accidents and costly road widening and maintenance. Also, reduce parking will help housing affordability and housing shortage due to construction and other expensive costs, which will be explained in the subsequent sections of this Study.

#### 8.2. Recommended Vehicle Parking Requirement for the Proposed Development

Given the reasons noted above, this area will be transformed into a major transportation mobility hub for all modes of transportation including excellent transit and active transportation. 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 11**) for the proposed development, based on the parking justification provided in subsequent sections of this Study. Based on the recommended vehicle parking rates, the proposed development will provide a total of 280 vehicle parking spaces for both resident, visitor and retail components. This includes 215 residential vehicle parking spaces and 65 visitor/retail shared vehicle parking spaces. This is about 35% parking reduction from the applicable Zoning By-law. It should be noted that the current non-auto modal split in the general area is 40% and 36% during the morning and afternoon peak periods, respectively. Therefore, based on the current trend alone, the proposed parking reduction is supportable and reasonable. The recommended vehicle parking rates justifications for the proposed development are outlined below. The justifications are based on current policies, directions and best practices in the Greater Toronto Area and in the City of Mississauga.

Table 11 – Recommended Vehicle Parking Rates for the Proposed Development

Unit Type	No. of Unit	Parking Rates	Parking Requirement
Residential	431 units	0.50 spaces/unit	215
Visitor	431 units	0.15 spaces/unit for visitor	65
Retail	217 m <sup>2</sup>	To be shared with visitor	0
	280 spaces		



#### 8.3. Vehicle Parking Justification

#### 8.3.1. Subject Site Strategic Location

The subject site is located adjacent to the future Hurontario LRT (Hazel McCallion Line) and approximately 350 m (or less than 5-minute walk) to the future Dundas Station and only 250 m (or about 3-minute walk) to the intermodal LRT Stop at Cooksville GO Station. The subject site will be re-developed as a sustainable mixed-use transit-oriented development which will support the future transit improvements by Metrolinx, the Region and the City. These major transit improvements include but not limited to, the future Hurontario LRT, Dundas Street BRT, Cooksville GO Train Station improvements and GO Expansion Project, as well as Major Transit Station Areas at the Dundas Street/Hurontario Street.

The re-development of the subject site will also bring a transformative change to a more compact and sustainable land uses that will address the housing shortage, affordability and climate change. In addition to the inclusion of some charity components such as the Dam Youth Community Service, the proposed re-development also recognizes, understands and builds on the value and importance of the extraordinary transit and road infrastructure improvements coming to the area and is therefore planned with great emphasis on a sustainable non-automobile-oriented mobility plan promoted by the Official Plans, City Council and Provincial initiatives.

#### **8.3.2.** Housing Affordability and Crisis

The Greater Toronto Area, including the City of Mississauga, is currently facing a housing shortage and affordability crisis. Demand for new housing is high; especially during the COVID-19 pandemic. Once the pandemic is over, housing availability and affordability are expected to further decline. One component that increases the cost of new units in multistorey buildings, is the requirement to provide a minimum rate of parking; even in areas well serviced by transit with historically low vehicle ownership 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.

#### 8.3.3. Covid-19 Pandemic and Working from Home

As the COVID-19 pandemic is still impacting globally, in Canada, the Province of Ontario, and particularly, the City of Brampton and Peel Region, this pandemic will permanently alter the way people work and travel in the future. For example, since the lockdown in March, 2020, the City experienced a significant decrease in peak hour travel on both private vehicles and other trips in general. This is due to the fact that many office employees and employers elected to work from home. This trend has continued into November 2021; at the time of the preparation of this Study.

It is Nextrans' opinion that this working from home trend for office workers will continue even when the pandemic is over as both employees and employers have invested tremendously in remote working equipment and infrastructure, as well as faster internet and online meeting platforms such as Zoom, Microsoft Teams and Skype for business.

It is Nextrans' opinion that in the future, residents living in the proposed development will not require or depend on owning a private car given that the proposed development is located adjacent to Route 7 Kennedy and Route 9 Vodden bus stops at the Kennedy Road N and Vodden Street E intersection. The propose development is also located approximately 800 m (or about 10-minute walk) to the Queen Street/Kennedy Road Zum stops, about 400 m (or 4-minute walk) to the Rutherford Road N/Vodden Street E Route 8 Centre bus stops, and about 2.2 km to the Brampton GO Train Station on Kitchener GO Line.



#### 8.3.4. Existing Mode Share

**Table 12** summarizes the travel mode information, based on the review of the 2016 Transportation Tomorrow Survey data for several representative Traffic Zones (3632, 3653, 3657 and 3659) in the area. The detailed analysis is included in **Appendix F**.

Table 12 – Modes of Travel based on 2016 TTS Data for Traffic Zones

Time Period	Auto Driver	Auto Passenger	Taxi/Paid Ride Share	Transit	Cycle	Walk
AM Peak Period (6:00-9:00 AM)	60%	10%	0%	24%	0%	6%
PM Peak Period (3:00-6:00 PM)	64%	7%	0%	26%	0%	3%

Based on the information outlined in the table above, the existing non-auto modal split in the area is approximately 40% and 36% during the morning and afternoon peak periods, respectively. This assessment suggests that there are viable alternative modes of transportation other than driving private automobiles. It is anticipated that with the future Hurontario LRT, the modal split along this corridor and this area will be much higher (i.e. 50% for all modal split).

As parking management is the best Transportation Demand Management measure and the best incentive to promote transit usage, less parking shall be provided by new developments in the area in order to increase the mode share targets set out by various policies and objectives in the City and the Region Official Plans, Transportation Master Plans and Provincial Growth Statement.

Given that the majority of the residents will move into the proposed condo development are young professionals, new family or empty nester downsizing their properties will not own a car and accept the life style adjacent to major transit mobility hub. In addition, with no car ownership, it will help keep the housing and cost of living more affordable.

Therefore, it is Nextrans' opinion that parking reduction is justified and must be implemented in order to achieve the sustainable policies and requirements.

#### 8.3.5. Future Conditions

The Region of Peel is planning for more than 500,000 new residents and 250,000 new jobs in the Region by 2041. For this reason, as part of the Region of Peel Official Plan Review (Peel 2051), the Region is conducting Major Transit Station Areas Study along higher order transit corridors such as GO Train line, Light Trail Transit and Bus Rapid Transit.

A MTSA is identified at the Dundas Street/Hurontario Street and Cooksville Intermodal Station. MTSAs are lands generally located within 800 metre radius (or about 10-minute walk) of a transit station or stop along higher order transit lines. MTSAs are intended to encourage intensification, transit-oriented development mixed-use development that will utilize the future transit investments and support sustainable objectives in the Region's Official Plan.

In addition to higher order transit along Hurontario Street and Dundas Street, other active transportation facilities such as complete network of sidewalk and bicycle facilities will be constructed in the area to compliment the MTSA and encourage future residents to walk and cycle to the MTSA.

#### 8.3.6. Region of Peel Sustainable Transportation Strategy

It is Nextrans' understanding that in February 2018, the Regional Council approved the goal of a 50% modal split by 2041. The Sustainable Transportation Strategy Report (February 2018) provides the following framework for the Region to meet its goals by:

- increase the current 37% share of trips by walking, cycling, transit, carpooling and telework in Peel Region, to achieve a 50% sustainable mode share by 2041,
- accommodate growth in a way that prioritizes environmental, societal and economic sustainability, and



• contribute to a Regional transportation system that is safe, convenient, efficient, multi-modal, well-integrated and sustainable.

The Strategy focused on building complete street to provide sidewalks and cycling facilities, expand carpool lot and promote more carpooling, telework and parking management.

It is Nextrans' opinion that parking management is the best measure to support this Strategy given that reduce parking in new development will encourage new residents to consider other sustainable modes of transportation such as walking, cycling and public transit.

#### 8.3.7. City of Mississauga Official Plan

Based on the City of Mississauga Official Plan Chapter 4 (Vision), "the City will plan for a strong, diversified economy supported by a range of mobility options and a variety of housing and community infrastructure to create distinct, complete communities".

One of the Guiding Principles (Section 4.4) states that "Mississauga will provide a range of mobility options (e.g., walking, cycling, transit, vehicular) for people of all ages and abilities by connecting people with places through coordinated land use, urban design and transportation planning efforts".

Furthermore, Policies 8.1.1 and 8.1.8 state that "Through the creation of a multi-modal transportation system, Mississauga will provide transportation choices that encourage a shift in lifestyle toward more sustainable transportation modes, such as transit and active transportation" and "To better utilize existing infrastructure, Mississauga will encourage the application of transportation demand management (TDM) techniques, such as car-pooling, alternative work arrangements and shared parking". It is Nextrans' opinion that TDM techniques such as parking management is one of the best and most effective TDM measures that could help the City achieves those visions and policies.

#### 8.3.8. City of Mississauga Cycling Master Plan Update

It is Nextrans' understanding that the City of Mississauga has recently completed the Cycling Master Plan Update the final document has been approved by Mississauga City Council. The Cycling Master Plan Update includes recommendations for the City's cycling network which includes 897 kilometres of infrastructure to be built over 27 years. The updated Cycling Master Plan focuses on a few key areas:

- Cycling infrastructure planning and design best practices have changed significantly and updates are required to achieve best practices
- The cycling network must be safe, connected, convenient and comfortable for residents, and visitors of all ages
  and riding ability to try cycling Implementation of new cycling infrastructure will be coordinated with road
  rehabilitation and major road construction projects, where possible
- Cycle tracks where a bicycle lane is physically separated from the road by a curb and is either at sidewalk level
  or slightly lower, reserved for bicycles only
- Bicycle lanes separated from traffic lanes by flexible posts, planters, parking stalls, curbs or other barriers, reserved for bicycles only
- Bicycle lanes where cyclists travel in a lane beside regular traffic lanes, reserved for bicycles only
- Multi-use trails along boulevards and also through parks
- Shared routes between cyclists and motorists on roads with lower speeds

As the proposed development provides a significant amount of bicycle parking spaces to support the City's Cycling initiatives, it is Nextrans' opinion that the proposed development vehicle parking supply should be reduced to support cycling initiatives, otherwise residents will continue to own private vehicles and drive single-occupant-vehicles.



#### 8.3.9. Other Jurisdiction Parking Strategy

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 December 2021, the City of Toronto Council has adopted Zoning By-Law Amendments that will remove the minimum parking requirement for residential development. It is Nextrans' understanding that there is an imminent parking policy amendment to the current Zoning By-law No. 569-2013 (end of March), which will remove minimum parking rate requirement across the City for this type of development.

It is Nextrans' understanding that based on the recent adopted City of Brampton Zoning By-law Amendment 45-2021 to the Zoning By-law 270-2004 for the Downtown, Central Area and Hurontario/Main Street Corridor.

It is Nextrans' opinion that 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 line (Hurontario LRT, Milton GO Line and Dundas BRT), the proposed development should have much lower rate, or no minimum, similar to the City of Brampton, as presented in this Study.

#### 8.3.10. Proxy Site Parking Utilization Survey

Nextrans contacted several condominium building managements to ask for permission to undertake parking utilization survey and building information such as unit breakdowns and parking supply. However, due to COVID-19 protocols, new variant concerns and other security reasons, it is not permitted at this time. This is also the case in the City of Mississauga, City of Toronto, City of Vaughan and other adjacent municipalities.

For these reasons, it is Nextrans' opinion that a proxy site parking utilization survey is not required at this time and the City of Mississauga should consider appropriate parking management as an effective TDM measure that will help the City manage congestion, delays, accidents and costly road widening and maintenance. Also, reduce parking will help housing affordability and housing shortage due to construction and other expensive costs, which will be explained in the subsequent sections of this Study.

#### 9.0 BICYCLE PARKING ASSESSMENT

It is Nextrans' understanding that the City of Mississauga currently does not have bicycle requirements in the current Zoning By-law. However, the City of Mississauga Cycling Master Plan recommends some parking rates to support active transportation. **Table 13** summarizes the recommended bicycle parking spaces for the proposed development to support TDM and active transportation.

Table 13 – Recommended Bicycle Parking Requirements

Land Use	No. of Unit / GFA	Short Term		Long Term	Total	
Lanu USE	NO. OI UIIIL / GFA	Rates	Spaces	Rates	Spaces	TOLAT
Residential	431 units	0.05 spaces/unit	22	0.60 spaces/unit	259	281

Based on the recommendations above, the proposed development will provide a total of 281 bicycle parking spaces, including 22 short-term spaces and 259 long-term spaces.

It is Nextrans' opinion that the proposed bicycle parking supply by the proposed development will support the vehicle parking reduction as this will encourage residents to take active mode of transportation to work, school and discretionary trips instead of driving private vehicles.



#### 10.0 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.

The following TDM incentives are recommended for the proposed residential development, based on Nextrans' review of the City of Mississauga Cycling Master Plan, Official Plan and Region of Peel TDM Strategy:

- 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 provides the recommended vehicle parking rates outlined in this Study;
- Provide direct shared pedestrian/bicycle connections from the proposed development to Hurontario Street;
- Consider providing 281 bicycle parking spaces on-site;
- Provide information package for new residents. The information package will include Mississauga Transit schedules, GO Transit schedules, and community and cycling maps. The Information Package can be distributed at the sale office; and
- Provide pre-load PRESTO Cards with the starting value of \$100 (inclusive of the registration fee) to the residents
  on demand basis. This will help the future residents to consider taking Mississauga Transit as an alternative
  mode of transportation. The pre-loaded PRESTO Cards can be distributed in conjunction with the Information
  Package at the time of purchase or at occupancy.

#### 11.0 CONCLUSIONS / FINDINGS

#### 11.1. Study Conclusions

The findings and conclusions of the analysis are as follows:

- Based on the analysis indicated above, the proposed development is expected to generate:
  - o 175 total two-way trips (100 inbound and 75 outbound) and 185 total two-way trips (90 inbound and 95 outbound) during the morning and afternoon peak hours, respectively;
  - 100 total two-way auto trips (35 inbound and 65 outbound) and 120 total two-way auto trips (70 inbound and 50 outbound) during the morning and afternoon peak hours, respectively; and
  - 75 total two-way non-auto trips (65 inbound and 10 outbound) and 65 total two-way transit trips (20 inbound and 45 outbound) during the morning and afternoon peak hours, respectively.
- The analysis indicates that under the future background and future total conditions, all intersections are expected to operate at acceptable levels of service during the morning peak hour and afternoon peak hour, with the exception of the Hurontario Street/Dundas Street W intersection during the afternoon peak hour. With the recommended lane configurations for the Dundas Street westbound, the intersection is expected to have higher delay. It is Nextrans' opinion that given the area will have significant transit capacity in the future, no further improvements are required. However, for sensitivity analysis, Nextrans has tested the lane configuration on Dundas Street with a shared through/right lane instead of an exclusive right turn lane.
- Potential mitigation measures may include but not limited to: reduce vehicle parking to minimize single-occupant-vehicle trips, TDM measures and incentives, support active transportation and sufficient bicycle parking spaces.



- The analysis indicates that the transit passenger demands generated by the proposed development can be accommodated by the existing and major future transit improvements for the area, including Hurontario LRT, Milton GO Line expansion and Dundas BRT.
- It is Nextrans' understanding that the City of Mississauga Council has recently approved the new vehicle parking
  rate amendment to the existing Zoning By-law No. 0225-2007. It is Nextrans' understanding that the proposed
  development is located within the new Precinct 1, with the blended rates of 0.8 space/unit for resident and 0.2
  spaces/unit for visitor/ground related retail use, for the proposed condominium apartment land use category.

Based on this requirement, the proposed development will require to provide approximately 431 vehicle parking spaces, inclusive of residential, visitor and retail uses. It is Nextrans' opinion that these rates are still excessive and do not support the Hurontario LRT investment by Metrolinx and the City of Mississauga. It is Nextrans' opinion that the parking rates should be further reduced as parking management is the best Transportation Demand Management measure.

It should be noted that the proposed development is expected to generate only 100 total two-way auto trips (35 inbound and 65 outbound) and 120 total two-way auto trips (70 inbound and 50 outbound) during the morning and afternoon peak hours, respectively. These trips were estimated from the ITE Trip Generation 11<sup>th</sup> Edition without applying any modal split. On this basis, the proposed development only requires to provide a maximum of 120 parking spaces.

Based on the recommended vehicle parking rates of this Study, the proposed development will provide a total of 280 vehicle parking spaces for both resident, visitor and retail components. This includes 215 residential vehicle parking spaces and 65 visitor/retail shared vehicle parking spaces. This is about 35% parking reduction from the applicable Zoning By-law. It should be noted that the current non-auto modal split in the general area is 40% and 36% during the morning and afternoon peak periods, respectively. Therefore, based on the current trend alone, the proposed parking reduction is supportable and reasonable. The recommended vehicle parking rates justifications for the proposed development are outlined below. The justifications are based on current policies, directions and best practices in the Greater Toronto Area and in the City of Mississauga.

It is Nextrans' understanding that the City of Mississauga currently does not have bicycle requirements in the
current Zoning By-law. Based on the recommended bicycle parking rates provided in this Study, the proposed
development will provide a total of 281 bicycle parking spaces, including 22 short-term spaces and 259 longterm spaces.

It is Nextrans' opinion that the proposed bicycle parking supply by the proposed development will support the vehicle parking reduction as this will encourage residents to take active mode of transportation to work, school and discretionary trips instead of driving private vehicles.

• Under the City's By-Law Zoning By-law 0225-2007, one loading space is required for residential component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length, with 7.3 m vertical clearance. The proposed development meets this requirement and has been reflected in the proposed site plan.

Vehicle turning movement templates will be provided as part of the subsequent site plan application.

 A shared full moves access will be provided onto Kirwin Avenue, with a shared right-in/right-out will be provided onto Hurontario Street to service the proposed development. It should be noted that both of these accesses will be shared with the adjacent development.

The analysis indicates that the proposed accesses are expected to operate at acceptable levels of service with minimum queue or delay. Therefore, it is concluded that the proposed site access arrangement is appropriate. The lane configurations for the proposed development include:



- O Hurontario Street right-in/right-out access: one inbound and one outbound lane (3.0 to 3.5 m width per lane), one northbound shared through/right on Hurontario Street
- Kirwin Avenue full moves access: one inbound and one outbound lane (3.0 to 3.5 m width per lane),
   eastbound shared through/right and westbound shared through/left on Kirwin Avenue

#### 11.2. Study Recommendations

Based on the Study assessment, the following recommendations are provided:

- Reduce parking rates for the proposed developments to encourage alternative modes of transportation such as walking, cycling and public transit;
- The proposed development provides 281 bicycle parking spaces to encourage active modes of transportation and support vehicle parking reduction;
- The proposed development provides direct sidewalk connection onto Hurontario Street; and
- Proposed development provides TDM measures and incentives to encourage alternative mode of transportation in the area

# **Appendix A**Study Terms of Reference

From: Michael Turco < Michael. Turco@mississauga.ca >

Sent: Sunday, February 6, 2022 9:41 AM To: Sam Nguyen < sam@nextrans.ca>

Cc: Trans Projects < Trans. Projects@mississauga.ca >

Subject: RE: Term of Reference for 3115 Hurontario Street

Hello Sam,

Thank you for providing a TIS Terms of Reference for the proposed development at 3115 Hurontario Street. Please see my comments below in green. Please be advised that all comments shall be considered preliminary and subject to change until after the formal pre-consultation / DARC meeting.

Should you have any questions, please feel free to contact me.

Thank you,



#### Michael Turco, C.E.T., CPT, MITE

Traffic Planning Technologist T 905-615-3200 ext. 3597 michael.turco@mississauga.ca

City of Mississauga | Transportation & Works Department 201 City Centre Drive, Suite 800 | Mississauga ON | L5B 2T4

Please consider the environment before printing.

From: Ryan Au < Ryan.Au@mississauga.ca > Sent: Friday, January 28, 2022 12:33 PM

To: Michael Turco < Michael. Turco@mississauga.ca >

Cc: Lin Rogers < Lin.Rogers@mississauga.ca>

Subject: FW: Term of Reference for 3115 Hurontario Street

From: Sam Nguyen <<u>sam@nextrans.ca</u>>
Sent: Friday, January 28, 2022 10:11 AM
To: Ryan Au <Ryan.Au@mississauga.ca>

Subject: Term of Reference for 3115 Hurontario Street

Hi Ryan,

It's me again.

We are currently working on a TIS to support the proposed development located at 3115 Hurontario Street, in the City of Mississauga. The proposed scope of work is provided below. If possible, please provide us with your comments at your earliest convenient.

- 1. Study Area intersection (depending on available counts, given the COVID-19 situation). We would like to use the available City counts as much as possible for the following intersection:
  - Kirwin Avenue / Hurontario Street (signalized);
  - Dundas Street / Hurontario Street (signalized);
  - Huontario Street / John Street (signalized);
  - Hurontario Street / Agnes Street (unsignalized);
  - Kirwin Avenue / Jaguar Valley Drive (unsignalized); and
  - Proposed site accesses Please be advised that the subject site will be required to share mutual accesses
    with the adjacent property to the south/east (3085 Hurontario Street), including one proposed RIRO access
    to Hurontario Street and one proposed full moves access to Kirwin Avenue;
  - Due to the ongoing pandemic, new traffic counts will not be accepted at this time. If traffic counts are older than two (2) years old, they will be required to be grown to existing baseline conditions. In order to grow traffic volumes to existing 2022 levels, please obtain historical traffic data counts and utilize regression analysis to determine appropriate growth rates. The report must thoroughly justify all proposed growth rates and the methodology utilized to calculate them. Furthermore, all background work to calculate the growth rates must be appended to the report in a format that is easily verifiable to the reviewer;
  - Please contact Tyler Xuereb from Transportation Planning Section (<a href="mailto:tyler.xuereb@mississauga.ca">tyler.xuereb@mississauga.ca</a>, Ext. 4783) for historical AADT data and Turning Movement Counts.
  - Signal timing plans for signalized intersections can be obtained from Jim Kartsomanis (Jim.Kartsomanis@mississauga.ca, Ext. 3964).
- 2. Horizon Year
  - a. Project completion by 2025
  - b. Analysis horizon year 2030 (5 year horizon)
- The horizon year shall be 5 years from the date of the report
- 2. Background Developments and Growth Rate
  - a. Obtain growth rate from the City/Region Please contact Tyler Xuereb from Transportation Planning Section (tyler.xuereb@mississauga.ca, Ext. 4783) for growth rates
  - b. Background developments:
    - 3085 Hurontario Street
    - 3420 and 3442 Hurontario Street
    - All in-stream and recently approved background developments within approximately 1km from the subject site must be included
    - Please use the following link to gather information on any developments proposed in the area for background traffic: <a href="http://www.mississauga.ca/portal/residents/developmentinformation">http://www.mississauga.ca/portal/residents/developmentinformation</a>
- 4. Trip Generation
  - a. ITE Trip Generation Manual 10<sup>th</sup> 11<sup>th</sup> Edition
  - b. Multimodal trip generation using 2016 TTS modal split data
- 5. Trip Distribution
  - a. Extract 2016 TTS data based on the surrounding traffic zones where appropriate
- 5. Future Total Assessment
  - The following tasks will be conducted for the future total conditions:
  - Future Total Traffic Assessment for Auto Mode
  - Future Transit Mode Assessment
  - Future Active Transportation Mode Assessment
  - Proposed Access and Operation/Safety Assessment
  - Loading Requirement and Assessment
  - Vehicular and Bicycle Parking Assessment
  - Internal Site Circulation (if necessary)

- On-Site Circulation & Garbage Loading
  - Truck Access and Circulation (AutoTurn Swept-Path Analysis) ensure that truck traffic
     (garbage/loading/fire) can enter and exit the site in a forward motion and access to the
     garbage, loading, and fire route areas are functional. On separate plans, illustrate truck
     turning movements with one continuous path with AutoTURN and insert the design
     vehicles on the plan. The site must be able to accommodate the largest design vehicles
     which will be accessing the property. An evaluation of the parking areas and ramps
     using a PTAC design vehicle should also be included.
- 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 and the Region's facilities, as well as to transition 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 and the Region requirements. The TDM Plan shall be comprehensive and support the City's vision for the Hurontario Corridor.
- 8. Parking Justification Study Please be advised that this Section does not review Parking Studies. Please contact the Planning Section (<a href="mailto:ParkingStudy.Review@mississauga.ca">Parking Study.Review@mississauga.ca</a>) to confirm the terms of reference for the Parking Study.
- 9. Community Impacts: Any transportation related impacts on the existing community and comments from the public through the planning approvals process shall be addressed in the report.
- 10. Detailed Recommendations regarding on-site/off-site roadway improvements, site access, site circulation, and TDM measures shall be made.
- HURONTARIO LRT Please be advised that Infrastructure Ontario and Metrolinx have awarded a contract for the
  Hurontario LRT. Design work will begin immediately with construction to follow. The anticipated completion
  date of the Hurontario LRT is scheduled for late 2024. Please review project details as there will be impacts to
  this site. Project details can be found at: <a href="https://www.mississauga.ca/projects-and-strategies/city-projects/hurontario-light-rail-transit/">https://www.mississauga.ca/projects-and-strategies/city-projects/hurontario-light-rail-transit/</a>
- DUNDAS BRT Please be advised that Dundas Street is a major east-west arterial road in Mississauga and is
  identified in the City's Official Plan as an intensification corridor. The City of Mississauga has completed a master
  plan study of Dundas Street through the Dundas Connects project. This study explores ways to incorporate
  higher order transit on Dundas Street and investigate opportunities for associated transit-orientated
  development. Please review project details as there may be impacts to this site. Project details can be found at:
  <a href="https://www.mississauga.ca/projects-and-strategies/city-projects/dundas-connects/">https://www.mississauga.ca/projects-and-strategies/city-projects/dundas-connects/</a>

Thanks,

#### 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

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## **Appendix B**

**2016 Transportation Tomorrow Survey 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:

 $Primary \ travel \ mode \ of \ trip - mode\_prime \ ln \ B \qquad \qquad C \qquad \qquad D \qquad \qquad G \qquad \qquad J \qquad \qquad M \qquad \qquad P \qquad \qquad T \qquad \qquad U \qquad \qquad W$ 

and

2006 GTA zone of household - gta06\_hhld In 3632 3653 3657 3659

and

Start time of trip - start\_time In 600-900 and

Type of dwelling unit - dwell\_type In 2

Trip 2016 Table:

Mode of Transportation/Traffic Zones	3632	3653	3657	3659	Total	Percentage
Transit excluding GO rail	0	541	783	148	1472	19%
Cycle	0	35	0	0	35	0%
Auto driver	58	2400	1931	284	4673	60%
GO rail only	0	52	58	0	110	1%
Joint GO rail and local transit	0	85	122	0	207	3%
Auto passenger	0	509	195	92	796	10%
Taxi passenger	0	20	0	0	20	0%
Walk	0	142	292	66	500	6%
Total	58	3784	3381	590	7813	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  $\hspace{1.5cm}$  C  $\hspace{1.5cm}$  D  $\hspace{1.5cm}$  G  $\hspace{1.5cm}$  J  $\hspace{1.5cm}$  M  $\hspace{1.5cm}$  P  $\hspace{1.5cm}$  T  $\hspace{1.5cm}$  W

and

2006 GTA zone of household - gta06\_hhld In 3632 3653 3657 3659

and

Start time of trip - start\_time In 1600-1900

and

Type of dwelling unit - dwell\_type In 2

Trip 2016 Table:

Mode of Transportation/Traffic Zones	3632	3653	3657	3659	Total	Percentage
Transit excluding GO rail	14	450	703	215	1382	20.3%
Auto driver	58	2366	1770	171	4365	64.0%
GO rail only	0	33	58	0	91	1.3%
Joint GO rail and local transit	0	160	117	29	306	4.5%
Auto passenger	10	224	225	37	496	7.3%
Taxi passenger	0	0	13	0	13	0.2%
Walk	0	12	113	37	162	2.4%
Total	82	3245	2999	489	6815	100%

#### Auto Distribution

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 D
 M
 P

 and
 2006 GTA zone of origin - gta06\_orig In 3632
 3653

M P T U

Start time of trip - start\_time In 600-900

and

Type of dwelling unit - dwell\_type In 2

Trip 2016 Table:

	PD 1 of Toronto	PD 3 of Toronto	PD 4 of Toronto	PD 5 of Toronto	PD 6 of Toronto	PD 7 of Toronto	PD 8 of Toronto	PD 9 of Toronto	PD 10 of Toronto	PD 13 of Toronto	Markham	Vaughan	Brampton	Mississauga	Milton	Oakville	Burlington	External	
3632	0	0	0	0	0	0	0	0	0	0	9	0	0	189	0	0	0	0	
3653	62	18	0	12	23	0	149	107	25	16	0	57	97	1858	25	33	76	12	
3657	20	0	65	0	0	92	86	0	0	0	28	71	93	1205	0	34	164	0	
3659	15	0	0	0	0	0	0	0	0	0	0	0	0	328	0	67	0	0	
	97	18	65	12	23	92	235	107	25	16	37	128	190	3580	25	134	240	12	5036
	2%	0%	1%	0%	0%	2%	5%	2%	0%	0%	1%	3%	4%	71%	0%	3%	5%	0%	100%

 Mississauga
 71%

 Toronto
 14%

 York Region
 3%

 Brampton
 4%

 Halton
 8%

 Durham
 0%

 100%
 100%

#### Transit Distribution

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 T and and 2006 GTA zone of origin - gta06\_orig In 3632 3653 3657 3659

and

Start time of trip - start\_time In 600-900

Type of dwelling unit - dwell\_type In 2

---

Ward number of destination - ward\_dest In 136-146

Trip 2016 Table:

	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6	Ward 7	Ward 8	Ward 9	Ward 11	
	136	137	138	139	140	141	142	143	144	146	
3632	59	0	0	19	0	0	75	0	0	36	
3653	328	24	27	70	214	0	833	247	91	26	
3657	150	216	0	94	182	71	357	111	0	24	
3659	45	10	0	0	64	11	198	0	0	0	
	718	387	165	322	600	223	1605	501	235	232	4988
		00/	201								

% of toal 71%

21%

21%

13%

16%

71%

North

South

East

West

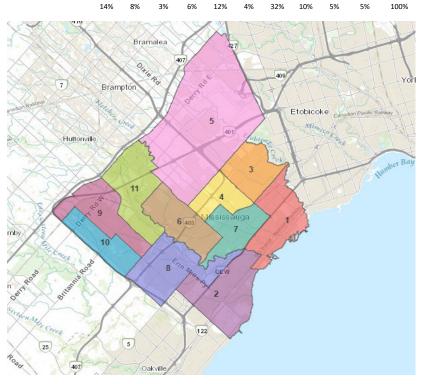
29%

30%

18%

23%

100%



#### **Auto Distribution**

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

2006 GTA zone of origin - gta06\_orig In 3632

and

Start time of trip - start\_time In 600-900

and

Type of dwelling unit - dwell\_type In 2

Trip 2016 Table:

> PD 1 of Toronto PD 2 of Toronto PD 6 of Toronto PD 7 of Toronto PD 8 of Toronto PD 9 of Toronto PD 1 of Toronto Richmond Hill Mississauga Oakville 65% 100% 13% 4% 1% 1% 5% 7% 1% 1% 2%

Mississauga 65%
Toronto 32%
York Region 1%
Oakville 2%
100%

G

W

1488 100%

North South East West

35% 23% 15% 26% 100%

% of total 65% 23% 15% 10% 17% 65%

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06\_orig Column: Ward number of destination - ward\_dest

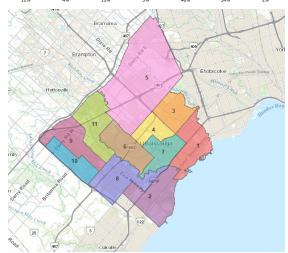
Filters:

Primary travel mode of trip - mode\_prime In B
and
2006 GTA zone of origin - glad6, orig In 3632
and
Start time of trip - start\_time In 600-900
and
Type of dwelling unit - dwell\_type In 2
and
Ward number of destination - ward\_dest In 136-146

Trip 2016 Table:

	Ward 1	Ward 4	Ward 5	Ward 6	Ward 7	Ward 8	Ward 11
	136	139	140	141	142	143	146
3632	0	14	0	0	0	0	Ō
3653	72	0	98	25	240	102	Ō
3657	68	46	153	19	326	92	31
3659	37	0	32	0	114	19	0
	177	60	283	44	680	213	31
	17%	4%	19%	3%	46%	14%	2%

C G J



## **Appendix C**Traffic Data

## **Signal Timing Report**

Runtime: 2021-04-04 9:05

	Dev	vice: 1401						nullillie. 2	:021-04-04 9.03
Region: Mississ	auga	Signal ID:	1401	Loc	cation: HURC	ONTARIO STRE	ET N at Dundas	s Street E	
Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	14	0	16	0	14	0	16
Ped Clear	Sec	0	20	0	22	0	20	0	22
Min Green	Sec	5	8	5	8	5	8	5	8
Passage	Sec	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Maximum 1	Sec	10	15	10	40	10	15	10	40
Maximum 2 Yellow Change	Sec Sec	10 3.0	15 4.0	10 3.0	40 4.0	10 3.0	15 4.0	10 3.0	40 4.0
Red Clearance	Sec	0.0	3.0	0.0	3.5	0.0	3.0	0.0	3.5
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce Reduce By	Sec Sec	0 0.0	0.0	0	0	0 0.0	0	0.0	0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	phaseNotOn	phaseNotOn	phaseNotOn	redClear	phaseNotOn	phaseNotOn
[P2] Options	Bit	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Ped Recall Dual Entry	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Ped Recall Dual Entry
[P2] Ring	Ring	1	1	1	1	2	2	2	2
[P2] Concurrency	Phase (,)	(5,6)	(5,6)	(7,8)	(7,8)	(1,2)	(1,2)	(3,4)	(3,4)
Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	72	88	130	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode Split 1 - Time	Enum Sec	none 14	none 66	none 14	none 66	none 14	none 66	none 14	none 66
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	18	61	16	65	18	61	16	65
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	14	61	14	71	14	61	14	71
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false
TB Schedule	Units Bit	1 JFMAMJJASOND	2 JFMAMJJASOND	3	4 J	5 -F	6 J	<b>7</b> -F	8
Day of Week	Bit	-MTWTF-	S	JFMAMJJASOND S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	A SMTWTFS
Day of Month	Bit		1234567890123456						4
		678901234567890 1	789012345678901	678901234567890 1					
Day Plan	Number	1	3	2	3	3	3	3	3
TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	M	J	A	S	O	D	D	D
Day of Week Day of Month	Bit Bit	SMTWTFS2	SMTWTFS 3	SMTWTFS 7	SMTWTFS	SMTWTFS 9	SMTWTFS	SMTWTFS	SMTWTFS 6
buy or month	Dit .			'			5		7
Day Plan	Number	3	3	3	3	3	3	3	3
TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action Plan 2 Hour	Number Hour	8	1 7	2	3	2	7 0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0	0	0
TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Pattern 7	Free
Aux. Functions Spec. Functions	Bit Bit	0	0	0	0	0	0	0	0
opeo. i unionono	Dit	•	J	·	5	v	J	5	J

District: Mississ	auga	ID: 2	2115	Loc	ation: HURC	NTARIO STREI	ET N @ Hillcres	st Avenue / Kirv	vin Avenue
Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	14	0	15	0	14	0	15
Ped Clear	Sec	0	30	0	33	0	30	0	33
Min Green	Sec	7	8	5	8	5	8	0	8
Passage	Sec	2.0	3.0	2.0	3.0	2.0	3.0	0.0	3.0
Maximum 1	Sec	15	35	15	25	15	35	0	25
Maximum 2	Sec	15	35	15	25	15	35	0	25
Yellow Change Red Clearance	Sec Sec	3.0 0.0	4.0 3.5	3.0 0.0	4.0 4.0	3.0 0.0	4.0 3.5	3.0 0.0	4.0 4.0
Red Clearance Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec Sec	0	0	0.0	0	0	0	0	0
Dynamic Max Step [P2] Start Up	Enum	phaseNotOn	redClear	phaseNotOn	phaseNotOn	phaseNotOn	redClear	other	phaseNotOn
[P2] Options	Bit	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det Dual Entry	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det Dual Entry
[P2] Ring	Ring	1	1	1	1	2	2	0	2
[P2] Concurrency	Phase (,)	(5,6)	(5,6)	(8)	(8)	(1,2)	(1,2)	0	(3,4)
Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	160	160	0	0	0
Offset	Sec	99	93	107	62	104 5	0 6	0 7	0
Split Sequence	Split Sequence	1	1	3	1	1	1	1	8 1
Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	13	62	21	64	13	62	0	85
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	13	78	13	56	13	78	0	69
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	16	54	26	64	16	54	0	90
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false
Split 4 - Mode Split 4 - Time	Enum Sec	none 13	none 62	none 21	pedRecall 64	none 13	none 62	none 0	pedRecall 85
Split 4 - Coord	Enum	false	true	false	false	false	true	false	false
Split 5 - Mode	Enum	none	none	none	none	none	none	none	none
Split 5 - Time	Sec	13	78	13	56	13	78	0	69
Split 5 - Coord	Enum	false	true	false	false	false	true	false	false
TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J	-F	A	M	J
Day of Week	Bit	-MTWTF-	S	S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345 678901234567890 1	123456789012345 678901234567890 1	123456789012345 678901234567890 1	1	55	-2	4	
Day Plan	Number	1	3	2	3	3	3	3	3
TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	A	S	O	D	D	D	0	0
Day of Week Day of Month	Bit Bit	SMTWTFS -2	SMTWTFS6	SMTWTFS1	SMTWTFS7	SMTWTFS 	SMTWTFS 	SMTWTFS 4 0	SMTWTFS 0
Day Plan	Number	3	3	3	3	3	3	0	0
TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	7	9	9	15	3	16
Plan 1 Minute	Min	0	0	0	0	30	0	0	0
Plan 1 Action	Number	8	1	4	1	2	5	7	3
Plan 2 Hour	Hour	0	7	0	0	0	0	3	0
Plan 2 Minute	Min Number	8	0	0	0	0	0	0 7	0
Plan 2 Action Plan 3 Hour	Hour	0	8	23	0	0	0	3	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	0	0	0	7	0
TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

### **Signal Timing Report**

Runtime: 2022-04-04 15:38

	Dev	vice: 2117						riunino. 2	.022 04 04 13.00
Region: Mississ	auga	Signal ID: 2	2117	Loc	cation: HUR	ONTARIO STREI	ET N at John St	reet	
Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	10	0	12	0	10	0	12
Ped Clear	Sec	0	21	0	26	0	21	0	26
Min Green Passage	Sec Sec	5 2.0	3.0	5 2.0	3.0	5 2.0	8 3.0	0	8 3.0
Maximum 1	Sec	15	30	15	35	15	30	0	35
Maximum 2	Sec	15	30	15	35	15	30	0	35
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.0	0.0	4.0	0.0	3.0	0.0	4.0
Red Revert Added Initial	Sec Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce Reduce By	Sec Sec	0.0	0	0	0	0	0	0	0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	phaseNotOn	phaseNotOn	phaseNotOn	redClear	other	phaseNotOn
[P2] Options	Bit	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det Dual Entry	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	0	Enabled Non Lock Det Dual Entry
[P2] Ring	Ring	1	1	1	1	2	2	0	2
[P2] Concurrency	Phase (,)	(5,6)	(5,6)	(8)	(8)	(1,2)	(1,2)	0	(3,4)
Coord Pattern	Units	1	2	3	4	5	<b>6</b> 0	<b>7</b> 0	8
Cycle Time Offset	Sec Sec	160 107	160 102	160 115	160 107	160 115	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode Split 1 - Time	Enum Sec	none 20	none 79	none 15	none 46	none 20	none 79	none 0	none 61
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	20	79	15	46	20	79	0	61
Split 2 - Coord Split 3 - Mode	Enum Enum	false	true	false	false	false	true	false	false
Split 3 - Mode Split 3 - Time	Sec	none 20	none 74	none 20	none 46	none 20	none 74	none 0	none 66
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false
Split 4 - Mode	Enum	none	none	none	pedRecall	none	none	none	pedRecall
Split 4 - Time	Sec	20	79	15	46	20	79	0	61
Split 4 - Coord Split 5 - Mode	Enum Enum	false none	true none	false none	false pedRecall	false none	true none	false none	false pedRecall
Split 5 - Time	Sec	20	74	20	46	20	74	0	66
Split 5 - Coord	Enum	false	true	false	false	false	true	false	false
TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J	-F	A	M	J
Day of Week Day of Month	Bit Bit	-MTWTF- 12345678901234	S 123456789012345	S 123456789012345	SMTWTFS 1	SMTWTFS 5	SMTWTFS 2	SMTWTFS	SMTWTFS 1
		56789012345678 901	678901234567890 1	678901234567890 1					
Day Plan TB Schedule	Number Units	1 9	3 10	2 11	3 <b>12</b>	3 <b>13</b>	3 14	3 <b>15</b>	3 <b>16</b>
Month	Bit	A	S	O	D	D	D	0	0
Day of Week Day of Month	Bit Bit	SMTWTFS -2	SMTWTFS 6	SMTWTFS 1	SMTWTFS 	SMTWTFS 	SMTWTFS	SMTWTFS 0	SMTWTFS 0
Day Plan	Number	3	3	3	3	3	3	0	0
TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	7	9	9	15	16	18
Plan 1 Minute	Min	0	0	0	0	30	0	30	30
Plan 1 Action Plan 2 Hour	Number Hour	8	1 7	4 0	1	2	3	5	3
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	0	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	0	0	0	0	0
Plan 3 Minute Plan 3 Action	Min Number	0 8	0	0	0	0	0	0	0
TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Pattern 7	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

Α Jaguar Valley Drive £ 63(122) Hurontario Street 13(22) ← 164(354) → 7(16) 92(263) 19(41) 61(157) 1382(1114) 113(115) ← 174(426) Hillcrest Avenue 1 1 1 18(84) <del>1</del> 291(269) <del>3</del> 36(72) <del>1</del> ኅ ሰ ሶ Kirwin Avenue 116(69) 271(289) → 363(555) → 277(267) 22(39) 1179(1072) 65(106) 18(21) 18(26) 62(104) Central Parkway 1 1 ሰ 145(101) 466(438) 70(49) 50(89) 1353(1371) 51(86) Site Access #1 385(19) 1564(1354) 164(228) 176(322) ← 5(5) 16(23) 1180(1431) Cooksville GO John Station Street 37(104) 20(39) 1426(1354) 3(1) Site Access #2 1266(1217) Α Α 17(49) 53(96) 225(181) 25(39) 1(6) 14(12) £ 63(139) 14(37) ↑ 74(332) ← 495(1214) 472(1001) 74(142) ← 575(1270) 32(89) F 2(22) Dundas 12(24) <u>†</u> 1161(764) <u>†</u> 51(41) <u>†</u> Street 102(91) 11(46) 1031(696) 95(155) 1265(812) 96(101) 992(948) 106(158) 11(21) 0(6) 2(6) 43(51) 42(116) 20(53) 2(12) Camilla Road 60 Dundas Plaza Access Note: the figure is not to scale and is for illustration purposes only Hurontario Street

Figure 4: Existing Traffic Volumes



Bicycle %

## Turning Movement Count Location Name: DUNDAS ST & HURONTARIO ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

HURONTARIO ST DUNDAS ST C15 min) (1 h																										
Start Time			Н	N Approac	ch O ST					E Approa	ch ST				н						,	W Approacl	h T			Int. Total (1 hr)
Start Time	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	6	98	16	0	8	120	5	59	6	0	5	70	5	86	22	0	22	113	4	91	5	0	13	100	403	
07:15:00	8	106	13	0	9	127	5	50	3	0	9	58	4	104	25	0	12	133	11	107	9	0	20	127	445	
07:30:00	6	117	23	0	9	146	13	76	8	0	20	97	9	111	28	0	24	148	9	112	4	0	36	125	516	
07:45:00	9	147	25	0	3	181	12	63	10	0	6	85	6	148	33	0	26	187	13	144	15	0	26	172	625	1989
08:00:00	10	132	33	0	5	175	14	105	5	0	12	124	13	126	32	0	26	171	7	157	9	0	33	173	643	2229
08:15:00	10	112	39	0	5	161	19	95	12	0	7	126	13	127	33	0	29	173	9	145	20	0	32	174	634	2418
08:30:00	8	127	26	0	6	161	12	91	9	0	12	112	15	140	41	0	21	196	9	143	14	0	30	166	635	2537
08:45:00	17	112	21	0	10	150	12	95	14	0	14	121	10	152	29	0	22	191	19	159	17	0	22	195	657	2569
09:00:00	17	119	18	0	4	154	12	84	11	0	6	107	23	116	14	0	19	153	15	140	19	0	21	174	588	2514
09:15:00	12	102	31	0	9	145	17	58	11	0	14	86	14	141	37	0	32	192	17	114	13	0	26	144	567	2447
09:30:00	12	110	23	0	10	145	20	88	8	0	12	116	12	119	23	0	27	154	18	130	17	0	18	165	580	2392
09:45:00	17	142	32	0	13	191	27	70	19	0	20	116	22	137	30	0	31	189	19	123	22	0	23	164	660	2395
***BREAK	**												-													
16:00:00	21	147	30	0	31	198	32	184	24	0	28	240	15	180	30	0	62	225	21	149	27	0	41	197	860	
16:15:00	29	176	41	0	32	246	28	160	25	0	46	213	27	167	42	0	47	236	22	140	30	0	45	192	887	
16:30:00	25	159	34	0	28	218	28	188	26	0	27	242	15	154	30	0	51	199	16	159	21	0	81	196	855	
16:45:00	26	158	26	0	27	210	32	213	31	0	26	276	16	146	30	0	79	192	26	176	23	0	47	225	903	3505
17:00:00	31	169	38	0	23	238	28	154	15	0	38	197	25	186	40	0	35	251	22	133	19	0	47	174	860	3505
17:15:00	23	157	42	0	22	222	25	223	20	0	30	268	23	155	32	0	28	210	22	164	29	0	51	215	915	3533
17:30:00	25	169	33	0	19	227	40	185	22	0	26	247	22	167	33	0	52	222	31	142	26	0	50	199	895	3573
17:45:00	34	159	30	0	19	223	43	167	21	0	27	231	20	177	37	0	24	234	30	120	28	0	53	178	866	3536
18:00:00	27	137	41	0	22	205	46	187	18	0	16	251	24	144	49	0	30	217	27	129	23	1	34	180	853	3529
18:15:00	17	186	39	0	5	242	43	157	19	0	21	219	32	180	25	0	43	237	20	123	23	0	58	166	864	3478
18:30:00	23	151	38	0	12	212	35	164	21	0	26	220	16	152	37	0	30	205	13	113	21	1	21	148	785	3368
18:45:00	23	168	39	0	18	230	30	154	27	0	34	211	25	146	44	0	34	215	26	125	25	0	32	176	832	3334
Grand Total	436	3360	731	0	349	4527	578	3070	385	0	482	4033	406	3461	776	0	806	4643	426	3238	459	2	860	4125	17328	-
Approach%	9.6%	74.2%	16.1%	0%		-	14.3%	76.1%	9.5%	0%		-	8.7%	74.5%	16.7%	0%		-	10.3%	78.5%	11.1%	0%		-	-	-
Totals %	2.5%	19.4%	4.2%	0%		26.1%	3.3%	17.7%	2.2%	0%		23.3%	2.3%	20%	4.5%	0%		26.8%	2.5%	18.7%	2.6%	0%		23.8%	-	-
Heavy	9	138	20	0		-	22	136	9	0		-	7	135	24	0		-	9	130	9	0		-	-	-
Heavy %	2.1%	4.1%	2.7%	0%		-	3.8%	4.4%	2.3%	0%		-	1.7%	3.9%	3.1%	0%		-	2.1%	4%	2%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Bicycles on Crosswalk%

- 0.7%

## Turning Movement Count Location Name: DUNDAS ST & HURONTARIO ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

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

								Pea	k Hour	: 08:00	AM - 09	:00 AM Wea	ther: B	oken C	louds (	-1.15 °C	;)								
Start Time			Н	N Approac	ch O ST					E Approa	<b>ch</b> ST				F	S Approa	ch O ST					W Approac	:h ST		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	10	132	33	0	5	175	14	105	5	0	12	124	13	126	32	0	26	171	7	157	9	0	33	173	643
08:15:00	10	112	39	0	5	161	19	95	12	0	7	126	13	127	33	0	29	173	9	145	20	0	32	174	634
08:30:00	8	127	26	0	6	161	12	91	9	0	12	112	15	140	41	0	21	196	9	143	14	0	30	166	635
08:45:00	17	112	21	0	10	150	12	95	14	0	14	121	10	152	29	0	22	191	19	159	17	0	22	195	657
Grand Total	45	483	119	0	26	647	57	386	40	0	45	483	51	545	135	0	98	731	44	604	60	0	117	708	2569
Approach%	7%	74.7%	18.4%	0%		-	11.8%	79.9%	8.3%	0%		-	7%	74.6%	18.5%	0%		-	6.2%	85.3%	8.5%	0%		-	-
Totals %	1.8%	18.8%	4.6%	0%		25.2%	2.2%	15%	1.6%	0%		18.8%	2%	21.2%	5.3%	0%		28.5%	1.7%	23.5%	2.3%	0%		27.6%	-
PHF	0.66	0.91	0.76	0		0.92	0.75	0.92	0.71	0		0.96	0.85	0.9	0.82	0		0.93	0.58	0.95	0.75	0		0.91	-
Heavy	2	33	6	0		41	8	37	4	0		49	0	33	8	0		41	4	27	5	0		36	
Heavy %	4.4%	6.8%	5%	0%		6.3%	14%	9.6%	10%	0%		10.1%	0%	6.1%	5.9%	0%		5.6%	9.1%	4.5%	8.3%	0%		5.1%	<del>.</del>
Lights	43	450	113	0		606	49	349	36	0		434	51	512	127	0		690	40	577	55	0		672	-
Lights %	95.6%	93.2%	95%	0%		93.7%	86%	90.4%	90%	0%		89.9%	100%	93.9%	94.1%	0%		94.4%	90.9%	95.5%	91.7%	0%		94.9%	-
Single-Unit Trucks	2	9	2	0		13	2	17	1	0		20	0	11	5	0		16	3	10	1	0		14	-
Single-Unit Trucks %	4.4%	1.9%	1.7%	0%		2%	3.5%	4.4%	2.5%	0%		4.1%	0%	2%	3.7%	0%		2.2%	6.8%	1.7%	1.7%	0%		2%	-
Buses	0	24	2	0		26	6	19	0	0		25	0	21	3	0		24	1	15	4	0		20	-
Buses %	0%	5%	1.7%	0%		4%	10.5%	4.9%	0%	0%		5.2%	0%	3.9%	2.2%	0%		3.3%	2.3%	2.5%	6.7%	0%		2.8%	-
Articulated Trucks	0	0	2	0		2	0	1	3	0		4	0	1	0	0		1	0	2	0	0		2	-
Articulated Trucks %	0%	0%	1.7%	0%		0.3%	0%	0.3%	7.5%	0%		0.8%	0%	0.2%	0%	0%		0.1%	0%	0.3%	0%	0%		0.3%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	24	-	-	-	-	-	45	-	-	-	-	-	97	-	-	-	-	-	117	-	-
Pedestrians%	-	-	-	-	8.4%		-	-	-	-	15.7%		-	-	-	-	33.9%		-	-	-	-	40.9%		-
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-

0.3%

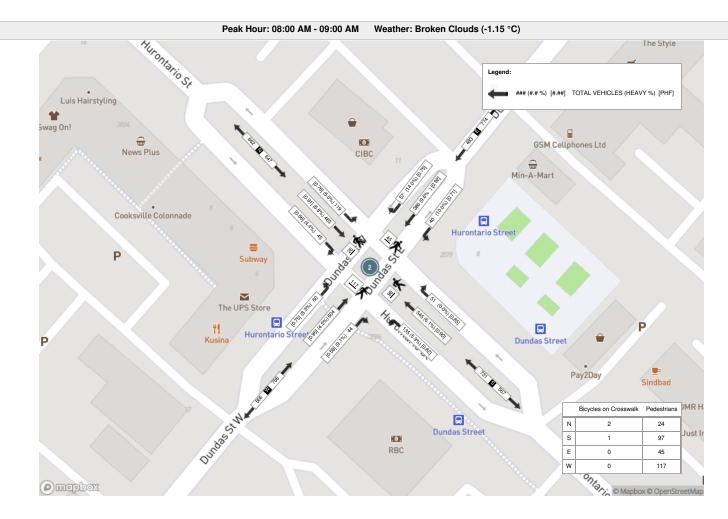


#### Turning Movement Count Location Name: DUNDAS ST & HURONTARIO ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

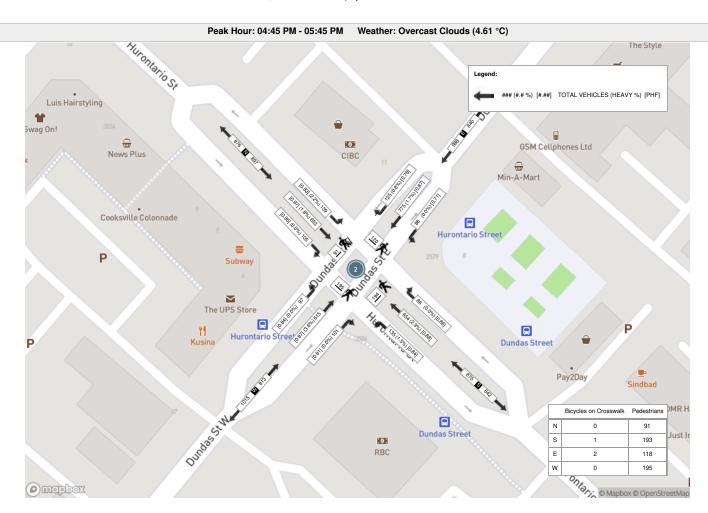
NexTrans SUITE 204 15260 YONGE ST AURORA ONTARIO, L4G 1N4 CANADA

								Peak	( Hour	: 04:45 I	PM - 05	:45 PM Weat	her: Ov	ercast	Clouds	(4.61 °C	C)								
Start Time			н	N Approa	ch O ST					E Approa	<b>ch</b> ST				ŀ	S Approa	ch IO ST					W Approac	ch ST		Int. Tota (15 min
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	26	158	26	0	27	210	32	213	31	0	26	276	16	146	30	0	79	192	26	176	23	0	47	225	903
17:00:00	31	169	38	0	23	238	28	154	15	0	38	197	25	186	40	0	35	251	22	133	19	0	47	174	860
17:15:00	23	157	42	0	22	222	25	223	20	0	30	268	23	155	32	0	28	210	22	164	29	0	51	215	915
17:30:00	25	169	33	0	19	227	40	185	22	0	26	247	22	167	33	0	52	222	31	142	26	0	50	199	895
Grand Total	105	653	139	0	91	897	125	775	88	0	120	988	86	654	135	0	194	875	101	615	97	0	195	813	3573
Approach%	11.7%	72.8%	15.5%	0%		-	12.7%	78.4%	8.9%	0%		-	9.8%	74.7%	15.4%	0%		-	12.4%	75.6%	11.9%	0%		-	-
Totals %	2.9%	18.3%	3.9%	0%		25.1%	3.5%	21.7%	2.5%	0%		27.7%	2.4%	18.3%	3.8%	0%		24.5%	2.8%	17.2%	2.7%	0%		22.8%	-
PHF	0.85	0.97	0.83	0		0.94	0.78	0.87	0.71	0		0.89	0.86	0.88	0.84	0		0.87	0.81	0.87	0.84	0		0.9	-
Heavy		12	3	0		15	1	13	0	0		14	0	19	2	0		21	0	22	0	0		22	
Heavy %	0%	1.8%	2.2%	0%		1.7%	0.8%	1.7%	0%	0%		1.4%	0%	2.9%	1.5%	0%		2.4%	0%	3.6%	0%	0%		2.7%	-
Lights	105	641	136	0		882	124	762	88	0		974	86	635	133	0		854	101	593	97	0		791	
Lights %	100%	98.2%	97.8%	0%		98.3%	99.2%	98.3%	100%	0%		98.6%	100%	97.1%	98.5%	0%		97.6%	100%	96.4%	100%	0%		97.3%	-
Single-Unit Trucks	0	2	2	0		4	1	1	0	0		2	0	6	2	0		8	0	11	0	0		11	-
Single-Unit Trucks %	0%	0.3%	1.4%	0%		0.4%	0.8%	0.1%	0%	0%		0.2%	0%	0.9%	1.5%	0%		0.9%	0%	1.8%	0%	0%		1.4%	-
Buses	0	10	1	0		11	0	11	0	0		11	0	12	0	0		12	0	10	0	0		10	-
Buses %	0%	1.5%	0.7%	0%		1.2%	0%	1.4%	0%	0%		1.1%	0%	1.8%	0%	0%		1.4%	0%	1.6%	0%	0%		1.2%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	1	0	0		1	0	1	0	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0.2%	0%	0%		0.1%	0%	0.2%	0%	0%		0.1%	-
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	-	-	-	-	91	-	-	-	-	-	118	=	-	-	-	-	193	-	-	-	-	-	195	=	-
Pedestrians%	-	-	-	-	15.2%		-	-	-	-	19.7%		-	-	-	-	32.2%		-	-	-	-	32.5%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0.3%		-	-	-	-	0.2%		-	-	-	-	0%		-

## Turning Movement Count Location Name: DUNDAS ST & HURONTARIO ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis



## Turning Movement Count Location Name: DUNDAS ST & HURONTARIO ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis



## Turning Movement Count Location Name: HUONTARIO ST & JOHN ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

										Tu	rning <b>I</b>	Movement Coun	t (3 . H	UONTA	RIO ST	& JOH	N ST)									
				N Approac						E Approa	ch T				Н	S Approad	ch O ST					W Approac	;h		Int. Total (15 min)	Int. Total (1 hr)
Start Time	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	31	120	11	1	0	163	19	0	2	0	0	21	3	113	4	0	2	120	2	1	12	0	1	15	319	
07:15:00	11	114	8	0	4	133	21	0	0	0	2	21	1	123	0	0	3	124	3	0	7	0	4	10	288	
07:30:00	36	151	14	1	4	202	28	0	3	0	3	31	2	140	1	0	2	143	2	0	24	0	10	26	402	
07:45:00	18	184	12	1	2	215	25	0	2	0	3	27	3	183	0	0	1	186	3	1	13	0	9	17	445	1454
08:00:00	42	209	30	1	13	282	22	0	1	0	11	23	1	150	2	0	1	153	8	1	23	0	21	32	490	1625
08:15:00	17	168	20	0	5	205	33	1	1	0	11	35	1	240	3	0	3	244	5	0	9	0	26	14	498	1835
08:30:00	12	176	28	0	2	216	30	0	0	0	7	30	6	168	1	0	2	175	0	1	10	0	8	11	432	1865
08:45:00	19	167	29	1	0	216	27	4	1	0	4	32	4	174	2	0	6	180	3	1	12	0	8	16	444	1864
09:00:00	6	167	28	0	0	201	23	0	1	0	3	24	5	158	1	0	3	164	2	2	7	0	5	11	400	1774
09:15:00	3	168	23	0	1	194	25	0	2	0	4	27	3	177	0	1	0	181	2	0	4	0	4	6	408	1684
09:30:00	6	165	19	0	1	190	20	3	2	0	3	25	6	165	0	0	1	171	0	0	6	0	3	6	392	1644
09:45:00	6	197	32	0	1	235	35	0	1	0	5	36	5	191	0	1	0	197	3	0	5	0	3	8	476	1676
***BREAK	**																									
16:00:00	8	205	34	0	12	247	37	4	4	0	24	45	5	247	1	0	7	253	1	1	14	0	18	16	561	
16:15:00	11	270	30	1	3	312	37	0	3	0	16	40	10	233	1	0	7	244	0	0	11	0	8	11	607	
16:30:00	13	238	27	0	10	278	40	0	7	0	10	47	4	251	2	0	3	257	5	0	6	0	6	11	593	
16:45:00	21	194	43	1	6	259	35	0	5	0	6	40	8	218	0	0	10	226	2	1	29	0	15	32	557	2318
17:00:00	17	240	31	1	4	289	32	1	3	0	7	36	9	239	2	0	3	250	3	1	23	0	4	27	602	2359
17:15:00	12	267	22	0	6	301	48	2	3	0	7	53	6	266	1	0	5	273	4	1	4	0	12	9	636	2388
17:30:00	16	229	38	0	8	283	33	0	3	0	6	36	7	228	0	0	19	235	8	3	24	0	17	35	589	2384
17:45:00	14	226	24	0	3	264	35	1	2	0	2	38	6	265	3	0	1	274	3	0	19	0	6	22	598	2425
18:00:00	10	218	37	0	3	265	47	1	2	0	6	50	8	216	2	0	4	226	0	1	4	0	8	5	546	2369
18:15:00	25	217	19	3	9	264	38	1	7	0	12	46	3	249	2	0	7	254	6	2	23	0	12	31	595	2328
18:30:00	14	231	22	0	4	267	38	2	2	0	3	42	6	220	0	0	2	226	1	1	17	0	15	19	554	2293
18:45:00	5	236	29	0	1	270	24	1	5	0	8	30	1	234	1	0	3	236	3	1	7	0	9	11	547	2242
Grand Total	373	4757	610	11	102	5751	752	21	62	0	163	835	113	4848	29	2	95	4992	69	19	313	0	232	401	11979	-
Approach%	6.5%	82.7%	10.6%	0.2%		-	90.1%	2.5%	7.4%	0%		-	2.3%	97.1%	0.6%	0%		-	17.2%	4.7%	78.1%	0%		-	-	-
Totals %	3.1%	39.7%	5.1%	0.1%		48%	6.3%	0.2%	0.5%	0%		7%	0.9%	40.5%	0.2%	0%		41.7%	0.6%	0.2%	2.6%	0%		3.3%	-	-
Heavy	28	165	8	0		-	8	0	1	0		-	2	194	1	0		-	7	0	8	0		-	-	-
Heavy %	7.5%	3.5%	1.3%	0%		-	1.1%	0%	1.6%	0%		-	1.8%	4%	3.4%	0%		-	10.1%	0%	2.6%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

## Turning Movement Count Location Name: HUONTARIO ST & JOHN ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

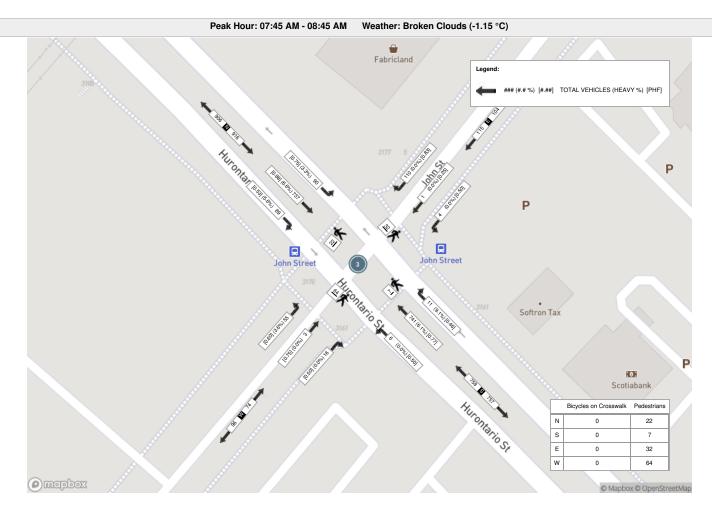
								Peak	Hour:	07:45 A	M - 08:4	5 AM Weath	er: Bro	ken Clo	uds (-1	.15 °C)									
Start Time			н	N Approac	h O ST					E Approa	i <b>ch</b> T				Н	S Approac	:h O ST					W Approa	<b>ch</b> T		Int. Tot (15 mir
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	18	184	12	1	2	215	25	0	2	0	3	27	3	183	0	0	1	186	3	1	13	0	9	17	44
08:00:00	42	209	30	1	13	282	22	0	1	0	11	23	1	150	2	0	1	153	8	1	23	0	21	32	49
08:15:00	17	168	20	0	5	205	33	1	1	0	11	35	1	240	3	0	3	244	5	0	9	0	26	14	49
08:30:00	12	176	28	0	2	216	30	0	0	0	7	30	6	168	1	0	2	175	0	1	10	0	8	11	43
Grand Total	89	737	90	2	22	918	110	1	4	0	32	115	11	741	6	0	7	758	16	3	55	0	64	74	180
Approach%	9.7%	80.3%	9.8%	0.2%		-	95.7%	0.9%	3.5%	0%		-	1.5%	97.8%	0.8%	0%		-	21.6%	4.1%	74.3%	0%		-	
Totals %	4.8%	39.5%	4.8%	0.1%		49.2%	5.9%	0.1%	0.2%	0%		6.2%	0.6%	39.7%	0.3%	0%		40.6%	0.9%	0.2%	2.9%	0%		4%	
PHF	0.53	0.88	0.75	0.5		0.81	0.83	0.25	0.5	0		0.82	0.46	0.77	0.5	0		0.78	0.5	0.75	0.6	0		0.58	
Heavy	5	49	3	0		57	0	0	0	0		0	1	45	0	0		46	0	0	2	0		2	
Heavy %	5.6%	6.6%	3.3%	0%		6.2%	0%	0%	0%	0%		0%	9.1%	6.1%	0%	0%		6.1%	0%	0%	3.6%	0%		2.7%	
Lights	84	688	87	2		861	110	1	4	0		115	10	696	6	0		712	16	3	53	0		72	
Lights %	94.4%	93.4%	96.7%	100%		93.8%	100%	100%	100%	0%		100%	90.9%	93.9%	100%	0%		93.9%	100%	100%	96.4%	0%		97.3%	
Single-Unit Trucks	0	13	1	0		14	0	0	0	0		0	0	13	0	0		13	0	0	0	0		0	
Single-Unit Trucks %	0%	1.8%	1.1%	0%		1.5%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.7%	0%	0%	0%	0%		0%	
Buses	5	34	2	0		41	0	0	0	0		0	1	32	0	0		33	0	0	2	0		2	
Buses %	5.6%	4.6%	2.2%	0%		4.5%	0%	0%	0%	0%		0%	9.1%	4.3%	0%	0%		4.4%	0%	0%	3.6%	0%		2.7%	
Articulated Trucks	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	
Articulated Trucks %	0%	0.3%	0%	0%		0.2%	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	
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	
Pedestrians	-	-	-	-	22	-	-	-	-	-	32	-	-	-	-	-	7	-	-	-	-	-	64	-	
Pedestrians%	-	-	-	-	17.6%		-	-	-	-	25.6%		-	-	-	-	5.6%		-	-	-	-	51.2%		
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		



## Turning Movement Count Location Name: HUONTARIO ST & JOHN ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

								Peak	( Hour:	05:00 I	PM - 06:	00 PM Weath	er: Ove	rcast C	louds	(4.61 °C	;)								
Start Time			F	N Approa	ch IO ST					E Approa	ach ST				н	S Approac	ch O ST					W Approa	ch T		Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	17	240	31	1	4	289	32	1	3	0	7	36	9	239	2	0	3	250	3	1	23	0	4	27	602
17:15:00	12	267	22	0	6	301	48	2	3	0	7	53	6	266	1	0	5	273	4	1	4	0	12	9	636
17:30:00	16	229	38	0	8	283	33	0	3	0	6	36	7	228	0	0	19	235	8	3	24	0	17	35	589
17:45:00	14	226	24	0	3	264	35	1	2	0	2	38	6	265	3	0	1	274	3	0	19	0	6	22	598
Grand Total	59	962	115	1	21	1137	148	4	11	0	22	163	28	998	6	0	28	1032	18	5	70	0	39	93	2425
Approach%	5.2%	84.6%	10.1%	0.1%		-	90.8%	2.5%	6.7%	0%		-	2.7%	96.7%	0.6%	0%		-	19.4%	5.4%	75.3%	0%		-	-
Totals %	2.4%	39.7%	4.7%	0%		46.9%	6.1%	0.2%	0.5%	0%		6.7%	1.2%	41.2%	0.2%	0%		42.6%	0.7%	0.2%	2.9%	0%		3.8%	-
PHF	0.87	0.9	0.76	0.25		0.94	0.77	0.5	0.92	0		0.77	0.78	0.94	0.5	0		0.94	0.56	0.42	0.73	0		0.66	-
Heavy	5	17	0	0		22	1					1	0	22	0	0		22	2	0	0	0		2	
Heavy %	8.5%	1.8%	0%	0%		1.9%	0.7%	0%	0%	0%		0.6%	0%	2.2%	0%	0%		2.1%	11.1%	0%	0%	0%		2.2%	-
Lights	54	945	115	1		1115	147	4	11			162	27	976	6	0		1009	16	5	70	0		91	
Lights %	91.5%	98.2%	100%	100%		98.1%	99.3%	100%	100%	0%		99.4%	96.4%	97.8%	100%	0%		97.8%	88.9%	100%	100%	0%		97.8%	-
Single-Unit Trucks	0	6	0	0		6	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	-
Single-Unit Trucks %	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	-
Buses	5	11	0	0		16	1	0	0	0		1	0	15	0	0		15	2	0	0	0		2	-
Buses %	8.5%	1.1%	0%	0%		1.4%	0.7%	0%	0%	0%		0.6%	0%	1.5%	0%	0%		1.5%	11.1%	0%	0%	0%		2.2%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	3.6%	0%	0%	0%		0.1%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	21	-	-	-	-	-	21	-	-	-	-	-	28	-	-	-	-	-	38	-	-
Pedestrians%	-		-	-	19.1%		-	-	-	-	19.1%		-		-	-	25.5%		-	-	-	-	34.5%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0.9%		-	-	-	-	0%		-	-	-	-	0.9%		-





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

# Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (4.61 °C) Lagend: ### (#.# %) [#.##] TOTAL VEHICLES (HEAVY %) [PHF] John Street John Street

# Turning Movement Count Location Name: HURONTARIO ST & AGNES ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

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

### Turning Movement Count (4 . HURONTARIO ST & AGNES ST)

Ohant Times				proach ITARIO S		· <b>3</b>		S An	proach NTARIO S	T		,	W Ap	proach NES ST		Int. Total (15 min)	Int. Total (1 hr)
Start Time	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	2	116	0	0	118	102	0	0	0	102	5	4	0	0	9	229	
07:15:00	4	127	1	0	132	119	0	0	0	119	3	4	0	3	7	258	
07:30:00	3	151	0	0	154	123	3	0	0	126	3	10	0	3	13	293	
07:45:00	9	161	0	1	170	172	3	0	1	175	12	2	0	2	14	359	1139
08:00:00	7	172	0	3	179	145	1	0	0	146	15	16	0	10	31	356	1266
08:15:00	7	139	2	0	148	177	4	0	0	181	21	28	0	15	49	378	1386
08:30:00	10	155	0	1	165	164	2	0	0	166	7	7	0	4	14	345	1438
08:45:00	19	153	0	0	172	166	8	0	0	174	9	5	0	4	14	360	1439
09:00:00	14	154	1	0	169	145	9	1	0	155	3	6	0	2	9	333	1416
09:15:00	17	139	1	0	157	167	3	0	0	170	9	5	0	2	14	341	1379
09:30:00	9	151	2	0	162	153	5	1	0	159	9	7	0	2	16	337	1371
09:45:00	14	173	0	1	187	179	8	0	0	187	11	5	0	2	16	390	1401
***BREAK*	***																
16:00:00	9	185	4	1	198	251	3	0	1	254	16	6	0	10	22	474	
16:15:00	17	232	2	4	251	225	5	0	0	230	9	4	0	13	13	494	
16:30:00	13	211	3	0	227	200	4	0	0	204	10	9	0	7	19	450	
16:45:00	16	189	1	1	206	198	2	0	0	200	22	13	0	8	35	441	1859
17:00:00	9	225	1	1	235	222	2	0	0	224	11	12	0	12	23	482	1867
17:15:00	15	218	0	2	233	212	3	0	1	215	10	10	0	9	20	468	1841
17:30:00	7	230	2	3	239	234	6	0	0	240	5	8	0	11	13	492	1883
17:45:00	12	204	0	0	216	248	3	0	0	251	17	6	1	7	24	491	1933
18:00:00	11	200	1	2	212	219	5	1	0	225	10	7	0	13	17	454	1905
18:15:00	10	220	1	2	231	246	6	1	0	253	13	3	0	14	16	500	1937
18:30:00	12	195	0	1	207	195	5	0	0	200	13	4	0	4	17	424	1869
18:45:00	13	226	1	1	240	214	2	0	0	216	15	5	0	12	20	476	1854
Grand Total	259	4326	23	24	4608	4476	92	4	3	4572	258	186	1	169	445	9625	-
Approach%	5.6%	93.9%	0.5%		-	97.9%	2%	0.1%		-	58%	41.8%	0.2%		-	-	-
Totals %	2.7%	44.9%	0.2%		47.9%	46.5%	1%	0%		47.5%	2.7%	1.9%	0%		4.6%	-	-
Heavy	8	159	0		-	166	2	0		-	8	7	0		-	-	-
Heavy %	3.1%	3.7%	0%		-	3.7%	2.2%	0%		-	3.1%	3.8%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-

Bicycles on Crosswalk%

0%

# Turning Movement Count Location Name: HURONTARIO ST & AGNES ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

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

2.7%

				F	Peak Hour: 08:00	AM - 09:	00 AM	Weathe	r: Broke	en Clouds (-1.15 °	C)					
Start Time				<b>proach</b> ITARIO ST					roach TARIO ST	-				proach NES ST		Int. Tota (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
08:00:00	7	172	0	3	179	145	1	0	0	146	15	16	0	10	31	356
08:15:00	7	139	2	0	148	177	4	0	0	181	21	28	0	15	49	378
08:30:00	10	155	0	1	165	164	2	0	0	166	7	7	0	4	14	345
08:45:00	19	153	0	0	172	166	8	0	0	174	9	5	0	4	14	360
Grand Total	43	619	2	4	664	652	15	0	0	667	52	56	0	33	108	1439
Approach%	6.5%	93.2%	0.3%		-	97.8%	2.2%	0%		-	48.1%	51.9%	0%		-	-
Totals %	3%	43%	0.1%		46.1%	45.3%	1%	0%		46.4%	3.6%	3.9%	0%		7.5%	-
PHF	0.57	0.9	0.25		0.93	0.92	0.47	0		0.92	0.62	0.5	0		0.55	-
Heavy	4	38	0		42	44	1	0		45	3	2	0		5	
Heavy %	9.3%	6.1%	0%		6.3%	6.7%	6.7%	0%		6.7%	5.8%	3.6%	0%		4.6%	-
Lights	39	581	2		622	608	14	0		622	49	54	0		103	
Lights %	90.7%	93.9%	100%		93.7%	93.3%	93.3%	0%		93.3%	94.2%	96.4%	0%		95.4%	-
Single-Unit Trucks	0	13	0		13	14	0	0		14	0	0	0		0	-
Single-Unit Trucks %	0%	2.1%	0%		2%	2.1%	0%	0%		2.1%	0%	0%	0%		0%	-
Buses	4	23	0		27	29	1	0		30	3	2	0		5	-
Buses %	9.3%	3.7%	0%		4.1%	4.4%	6.7%	0%		4.5%	5.8%	3.6%	0%		4.6%	-
Articulated Trucks	0	2	0		2	1	0	0		1	0	0	0		0	-
Articulated Trucks %	0%	0.3%	0%		0.3%	0.2%	0%	0%		0.1%	0%	0%	0%		0%	-
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	32	-	-
Pedestrians%	-	-	-	10.8%		-	-	-	0%		-	-	-	86.5%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-

0%

Bicycles on Crosswalk%

0%

# Turning Movement Count Location Name: HURONTARIO ST & AGNES ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

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

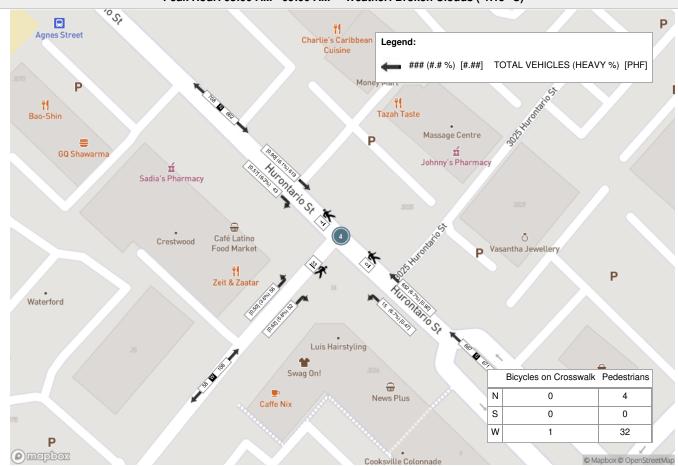
0%

				F	Peak Hour: 05:30	PM - 06:	30 PM	Weather	: Overc	ast Clouds (4.61 °	°C)					
Start Time				pproach NTARIO ST					oroach TARIO ST	Г				proach NES ST		Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
17:30:00	7	230	2	3	239	234	6	0	0	240	5	8	0	11	13	492
17:45:00	12	204	0	0	216	248	3	0	0	251	17	6	1	7	24	491
18:00:00	11	200	1	2	212	219	5	1	0	225	10	7	0	13	17	454
18:15:00	10	220	1	2	231	246	6	1	0	253	13	3	0	14	16	500
Grand Total	40	854	4	7	898	947	20	2	0	969	45	24	1	45	70	1937
Approach%	4.5%	95.1%	0.4%		-	97.7%	2.1%	0.2%		-	64.3%	34.3%	1.4%		-	-
Totals %	2.1%	44.1%	0.2%		46.4%	48.9%	1%	0.1%		50%	2.3%	1.2%	0.1%		3.6%	-
PHF	0.83	0.93	0.5		0.94	0.95	0.83	0.5		0.96	0.66	0.75	0.25		0.73	-
Heavy	0	16	0		16	17	0	0		17	0	0	0		0	
Heavy %	0%	1.9%	0%		1.8%	1.8%	0%	0%		1.8%	0%	0%	0%		0%	-
Lights	40	838	4		882	930	20	2		952	45	24	1		70	·
Lights %	100%	98.1%	100%		98.2%	98.2%	100%	100%		98.2%	100%	100%	100%		100%	-
Single-Unit Trucks	0	2	0		2	5	0	0		5	0	0	0		0	-
Single-Unit Trucks %	0%	0.2%	0%		0.2%	0.5%	0%	0%		0.5%	0%	0%	0%		0%	-
Buses	0	13	0		13	11	0	0		11	0	0	0		0	-
Buses %	0%	1.5%	0%		1.4%	1.2%	0%	0%		1.1%	0%	0%	0%		0%	-
Articulated Trucks	0	1	0		1	1	0	0		1	0	0	0		0	-
Articulated Trucks %	0%	0.1%	0%		0.1%	0.1%	0%	0%		0.1%	0%	0%	0%		0%	-
Pedestrians	-	-	-	7	-	-	-	-	0	-	-	-	-	45	-	-
Pedestrians%	-	-	-	13.5%		-	-	-	0%		-	-	-	86.5%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

0%

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

### Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-1.15 °C)



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

### Peak Hour: 05:30 PM - 06:30 PM Weather: Overcast Clouds (4.61 °C)



# Turning Movement Count Location Name: HURONTARIO ST & DUNDAS ST Date: Thu, Sep 19, 2019 Deployment Lead: David Chu

										Turn	ing Mo	vement Count (	1 . HUF	RONTAI	RIO ST	& DUNE	DAS ST	)								
				N Approac						E Approac	<b>h</b> ST				н	S Approac						W Approacl			Int. Total (15 min)	Int. Total (1 hr)
Start Time	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	9	158	21	0	12	188	10	55	6	0	13	71	12	130	16	0	7	158	15	204	11	0	11	230	647	
07:15:00	9	175	20	0	12	204	7	69	7	0	15	83	16	170	27	0	19	213	20	227	14	0	36	261	761	
07:30:00	7	186	26	0	9	219	8	95	16	0	19	119	21	212	26	0	14	259	16	278	16	0	21	310	907	
07:45:00	14	219	33	1	8	267	8	85	18	0	17	111	13	212	31	0	17	256	23	274	13	0	26	310	944	3259
08:00:00	17	194	46	0	19	257	15	91	15	0	23	121	17	231	22	0	23	270	26	270	16	0	43	312	960	3572
08:15:00	6	248	31	0	22	285	15	105	21	0	23	141	13	235	29	0	14	277	30	319	22	0	33	371	1074	3885
08:30:00	14	202	30	0	13	246	14	106	12	0	23	132	15	217	29	0	15	261	33	285	18	0	32	336	975	3953
08:45:00	17	182	22	0	22	221	22	135	13	0	28	170	22	269	33	0	17	324	29	227	27	0	31	283	998	4007
09:00:00	17	168	30	0	22	215	17	102	21	0	39	140	9	232	30	0	21	271	27	260	25	0	43	312	938	3985
09:15:00	17	166	27	0	19	210	17	102	19	0	45	138	18	203	33	0	25	254	22	236	42	0	34	300	902	3813
09:30:00	22	168	25	1	24	216	19	116	18	0	38	153	27	217	26	0	27	270	23	192	25	0	38	240	879	3717
09:45:00	17	194	38	0	14	249	17	122	25	0	34	164	19	207	32	0	31	258	26	186	29	0	51	241	912	3631
***BREAK*	**	*************																								
16:00:00	26	197	43	1	32	267	36	237	25	0	40	298	25	202	28	0	41	255	32	156	21	0	45	209	1029	
16:15:00	24	251	36	1	22	312	35	187	27	1	48	250	24	278	42	0	36	344	37	171	33	0	67	241	1147	
16:30:00	33	209	30	0	44	272	32	258	24	1	48	316	29	216	43	0	48	288	33	186	36	0	82	255	1131	
16:45:00	25	266	31	1	35	323	21	260	22	0	41	303	20	194	40	1	44	255	28	218	29	0	52	275	1156	4463
17:00:00	40	254	29	0	33	323	38	214	23	0	68	275	28	230	34	0	43	292	29	159	32	0	77	220	1110	4544
17:15:00	28	262	38	0	32	328	35	262	38	0	65	335	24	248	36	1	34	309	34	173	36	0	54	243	1215	4612
17:30:00	25	294	40	0	37	359	31	185	31	0	42	247	37	217	39	0	46	293	29	193	36	1	81	259	1158	4639
17:45:00	35	238	41	0	23	314	31	245	26	0	56	302	37	227	34	0	37	298	28	184	37	0	69	249	1163	4646
18:00:00	35	196	38	0	18	269	34	223	25	0	43	282	33	248	34	0	26	315	33	177	35	0	45	245	1111	4647
18:15:00	31	252	48	2	32	333	31	187	40	0	49	258	21	216	44	0	36	281	28	188	43	0	78	259	1131	4563
18:30:00	32	219	49	0	31	300	41	207	38	0	44	286	20	240	32	0	36	292	36	146	29	0	59	211	1089	4494
18:45:00	25	214	46	1	28	286	41	183	32	0	51	256	19	250	42	0	43	311	42	164	32	0	59	238	1091	4422
Grand Total	525	5112	818	8	563	6463	575	3831	542	2	913	4951	519	5301	782	2	700	6604	679	5073	657	1	1167	6410	24428	-
Approach%	8.1%	79.1%	12.7%	0.1%		-	11.6%	77.4%	10.9%	0%		-	7.9%	80.3%	11.8%	0%		-	10.6%	79.1%	10.2%	0%		-	-	-
Totals %	2.1%	20.9%	3.3%	0%		26.5%	2.4%	15.7%	2.2%	0%		20.3%	2.1%	21.7%	3.2%	0%		27%	2.8%	20.8%	2.7%	0%		26.2%	-	-
Heavy	15	182	19	0		-	28	168	9	0		-	14	189	34	0		-	20	175	13	0		-	-	-
Heavy %	2.9%	3.6%	2.3%	0%		-	4.9%	4.4%	1.7%	0%		-	2.7%	3.6%	4.3%	0%		-	2.9%	3.4%	2%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

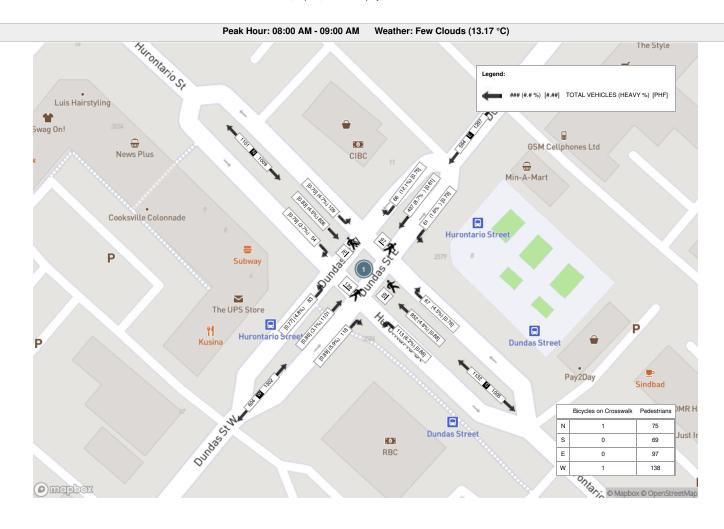
# Turning Movement Count Location Name: HURONTARIO ST & DUNDAS ST Date: Thu, Sep 19, 2019 Deployment Lead: David Chu

								Pe	ak Hou	ır: 08:00	AM - 0	9:00 AM We	ather: F	ew Clo	uds (1	3.17 °C)									
Start Time			н	N Approac	e <b>h</b> O ST					E Approa	ch ST				H	S Approad	ch O ST					W Approac	e <b>h</b> ST		Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	17	194	46	0	19	257	15	91	15	0	23	121	17	231	22	0	23	270	26	270	16	0	43	312	960
08:15:00	6	248	31	0	22	285	15	105	21	0	23	141	13	235	29	0	14	277	30	319	22	0	33	371	1074
08:30:00	14	202	30	0	13	246	14	106	12	0	23	132	15	217	29	0	15	261	33	285	18	0	32	336	975
08:45:00	17	182	22	0	22	221	22	135	13	0	28	170	22	269	33	0	17	324	29	227	27	0	31	283	998
Grand Total	54	826	129	0	76	1009	66	437	61	0	97	564	67	952	113	0	69	1132	118	1101	83	0	139	1302	4007
Approach%	5.4%	81.9%	12.8%	0%		-	11.7%	77.5%	10.8%	0%		-	5.9%	84.1%	10%	0%		-	9.1%	84.6%	6.4%	0%		-	-
Totals %	1.3%	20.6%	3.2%	0%		25.2%	1.6%	10.9%	1.5%	0%		14.1%	1.7%	23.8%	2.8%	0%		28.3%	2.9%	27.5%	2.1%	0%		32.5%	
PHF	0.79	0.83	0.7	0		0.89	0.75	0.81	0.73	0		0.83	0.76	0.88	0.86	0		0.87	0.89	0.86	0.77	0		0.88	-
Heavy	2	37	6	0		45	8	38	1	0		47	3	46	7	0		56	7	34	4	0		45	
Heavy %	3.7%	4.5%	4.7%	0%		4.5%	12.1%	8.7%	1.6%	0%		8.3%	4.5%	4.8%	6.2%	0%		4.9%	5.9%	3.1%	4.8%	0%		3.5%	-
Lights	52	789	123	0		964	58	399	60	0		517	64	906	106	0		1076	111	1067	79	0		1257	
Lights %	96.3%	95.5%	95.3%	0%		95.5%	87.9%	91.3%	98.4%	0%		91.7%	95.5%	95.2%	93.8%	0%		95.1%	94.1%	96.9%	95.2%	0%		96.5%	-
Single-Unit Trucks	0	9	3	0		12	0	12	1	0		13	2	10	5	0		17	3	14	2	0		19	-
Single-Unit Trucks %	0%	1.1%	2.3%	0%		1.2%	0%	2.7%	1.6%	0%		2.3%	3%	1.1%	4.4%	0%		1.5%	2.5%	1.3%	2.4%	0%		1.5%	-
Buses	2	26	2	0		30	7	22	0	0		29	1	34	1	0		36	3	16	2	0		21	-
Buses %	3.7%	3.1%	1.6%	0%		3%	10.6%	5%	0%	0%		5.1%	1.5%	3.6%	0.9%	0%		3.2%	2.5%	1.5%	2.4%	0%		1.6%	-
Articulated Trucks	0	2	1	0		3	1	4	0	0		5	0	2	1	0		3	1	4	0	0		5	-
Articulated Trucks %	0%	0.2%	0.8%	0%		0.3%	1.5%	0.9%	0%	0%		0.9%	0%	0.2%	0.9%	0%		0.3%	0.8%	0.4%	0%	0%		0.4%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	75	-	-	-	-	-	97	-	-	-	-	-	69	-	-	-	-	-	138	-	-
Pedestrians%	-	-	-	-	19.7%		-	-	-	-	25.5%		-	-	-	-	18.1%		-	-	-	-	36.2%		-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0.3%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0.3%		-

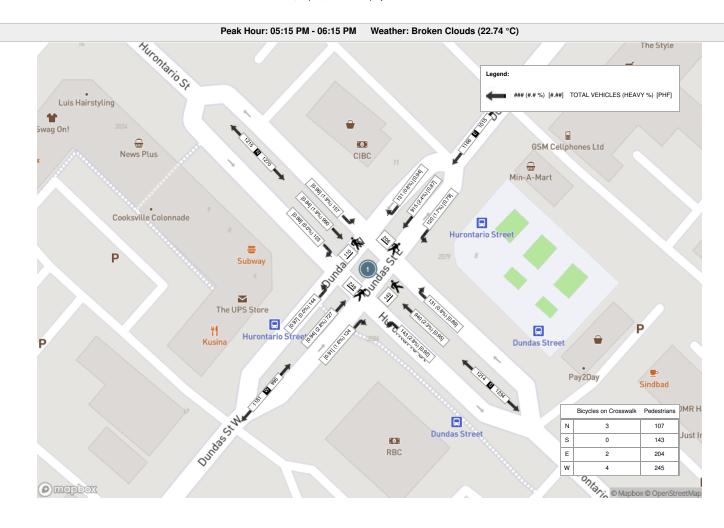
# Turning Movement Count Location Name: HURONTARIO ST & DUNDAS ST Date: Thu, Sep 19, 2019 Deployment Lead: David Chu

								Pea	k Hour	: 05:15	PM - 06	:15 PM Wea	ther: Br	oken C	louds (	22.74 °C	<b>:</b> )								
Start Time			н	N Approad	ch O ST					E Approac	e <b>h</b> ST				F	S Approac	ch O ST					W Approac	h T		Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
17:15:00	28	262	38	0	32	328	35	262	38	0	65	335	24	248	36	1	34	309	34	173	36	0	54	243	1215
17:30:00	25	294	40	0	37	359	31	185	31	0	42	247	37	217	39	0	46	293	29	193	36	1	81	259	1158
17:45:00	35	238	41	0	23	314	31	245	26	0	56	302	37	227	34	0	37	298	28	184	37	0	69	249	1163
18:00:00	35	196	38	0	18	269	34	223	25	0	43	282	33	248	34	0	26	315	33	177	35	0	45	245	1111
Grand Total	123	990	157	0	110	1270	131	915	120	0	206	1166	131	940	143	1	143	1215	124	727	144	1	249	996	4647
Approach%	9.7%	78%	12.4%	0%		-	11.2%	78.5%	10.3%	0%		-	10.8%	77.4%	11.8%	0.1%		-	12.4%	73%	14.5%	0.1%		-	-
Totals %	2.6%	21.3%	3.4%	0%		27.3%	2.8%	19.7%	2.6%	0%		25.1%	2.8%	20.2%	3.1%	0%		26.1%	2.7%	15.6%	3.1%	0%		21.4%	-
PHF	0.88	0.84	0.96	0		0.88	0.94	0.87	0.79	0		0.87	0.89	0.95	0.92	0.25		0.96	0.91	0.94	0.97	0.25		0.96	-
Heavy	0	19	3	0		22	1	22	2	0		25	1	22	4	0		27	2	20	0	0		22	
Heavy %	0%	1.9%	1.9%	0%		1.7%	0.8%	2.4%	1.7%	0%		2.1%	0.8%	2.3%	2.8%	0%		2.2%	1.6%	2.8%	0%	0%		2.2%	-
Lights	123	971	154	0		1248	129	893	118	0		1140	130	918	139	1		1188	122	707	144	1		974	
Lights %	100%	98.1%	98.1%	0%		98.3%	98.5%	97.6%	98.3%	0%		97.8%	99.2%	97.7%	97.2%	100%		97.8%	98.4%	97.2%	100%	100%		97.8%	-
Single-Unit Trucks	0	3	1	0		4	1	10	1	0		12	0	5	4	0		9	2	5	0	0		7	-
Single-Unit Trucks %	0%	0.3%	0.6%	0%		0.3%	0.8%	1.1%	0.8%	0%		1%	0%	0.5%	2.8%	0%		0.7%	1.6%	0.7%	0%	0%		0.7%	-
Buses	0	16	2	0		18	0	11	0	0		11	0	16	0	0		16	0	11	0	0		11	-
Buses %	0%	1.6%	1.3%	0%		1.4%	0%	1.2%	0%	0%		0.9%	0%	1.7%	0%	0%		1.3%	0%	1.5%	0%	0%		1.1%	-
Articulated Trucks	0	0	0	0		0	0	1	1	0		2	1	1	0	0		2	0	4	0	0		4	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.1%	0.8%	0%		0.2%	0.8%	0.1%	0%	0%		0.2%	0%	0.6%	0%	0%		0.4%	-
Bicycles on Road	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0.8%	0%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	107	-	-	-	-	-	204	-	-	-	-	-	143	=	-	-	-	-	245	-	-
Pedestrians%	-	-	-	-	15.1%		-	-	-	-	28.8%		-	-	-	-	20.2%		-	-	-	-	34.6%		-
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	0	=	-	-	-	-	4	-	-
Bicycles on Crosswalk%	-	-	-	-	0.4%		-	-	-	-	0.3%		-	-	-	-	0%		-	-	-	-	0.6%		-











										Turr	ing Mo	ovement Count	(1 . KIR	WIN A	/E & HI	JRONT	ARIO S	ST)								
			Н	N Approa						E Approac	:h /E				F	S Approa IURONTAR	ch IO ST				н	W Approac	h AVE		Int. Total (15 min)	Int. Total (1 hr)
Start Time	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	8	100	3	1	1	112	11	9	6	0	0	26	2	92	8	0	2	102	14	10	10	0	2	34	274	
07:15:00	7	121	3	1	1	132	9	6	0	0	1	15	4	111	10	0	3	125	20	17	8	0	5	45	317	
07:30:00	8	140	7	0	1	155	18	10	4	0	4	32	2	129	3	0	2	134	15	19	14	0	4	48	369	
07:45:00	14	153	11	1	7	179	12	18	2	0	3	32	3	132	11	0	6	146	19	24	17	0	6	60	417	1377
08:00:00	10	210	8	0	2	228	8	17	4	0	13	29	3	146	9	0	19	158	20	35	20	0	22	75	490	1593
08:15:00	9	152	8	0	1	169	25	15	7	0	5	47	5	168	19	1	14	193	20	23	27	0	35	70	479	1755
08:30:00	12	160	6	0	1	178	13	23	9	0	7	45	6	149	17	0	11	172	8	36	18	0	8	62	457	1843
08:45:00	17	148	10	0	1	175	14	21	6	0	5	41	5	156	10	0	2	171	20	23	18	0	8	61	448	1874
09:00:00	11	142	10	0	1	163	11	22	8	0	3	41	4	127	5	0	0	136	18	29	13	0	2	60	400	1784
09:15:00	10	151	13	0	0	174	12	22	4	0	2	38	8	160	8	0	1	176	11	15	11	0	3	37	425	1730
09:30:00	12	142	13	0	2	167	10	13	7	0	4	30	3	140	6	1	2	150	19	30	19	0	4	68	415	1688
09:45:00	15	173	11	1	3	200	20	20	4	0	8	44	6	165	12	0	13	183	13	16	12	0	4	41	468	1708
***BREAK	**	·····										-	-					-								
16:00:00	28	166	11	0	4	205	32	47	4	0	23	83	9	218	27	1	3	255	16	26	17	0	6	59	602	
16:15:00	15	222	20	0	4	257	19	47	9	0	17	75	11	183	13	0	11	207	9	33	22	0	12	64	603	
16:30:00	21	211	19	0	6	251	27	54	6	0	7	87	9	208	22	0	4	239	20	28	18	0	5	66	643	
16:45:00	16	176	11	1	4	204	24	56	8	0	15	88	7	187	22	0	3	216	16	40	23	0	7	79	587	2435
17:00:00	25	189	21	0	5	235	23	51	7	0	9	81	5	181	19	1	7	206	21	30	27	0	8	78	600	2433
17:15:00	23	223	21	0	16	267	26	69	6	0	20	101	8	224	10	3	6	245	10	36	20	0	12	66	679	2509
17:30:00	28	186	15	0	6	229	17	64	10	0	10	91	6	192	33	0	14	231	24	29	26	0	7	79	630	2496
17:45:00	24	202	15	0	4	241	25	56	3	0	8	84	12	220	28	1	4	261	26	33	22	0	9	81	667	2576
18:00:00	23	177	9	0	14	209	25	57	6	0	13	88	6	189	22	0	4	217	18	42	20	0	8	80	594	2570
18:15:00	19	188	8	0	13	215	26	44	8	0	18	78	7	193	21	0	11	221	19	23	20	0	7	62	576	2467
18:30:00	23	209	11	0	8	243	18	42	5	0	14	65	7	182	24	0	4	213	17	29	24	0	6	70	591	2428
18:45:00	25	184	21	0	7	230	19	45	9	1	21	74	7	182	23	0	7	212	16	14	27	0	12	57	573	2334
Grand Total	403	4125	285	5	112	4818	444	828	142	1	230	1415	145	4034	382	8	153	4569	409	640	453	0	202	1502	12304	-
Approach%	8.4%	85.6%	5.9%	0.1%		-	31.4%	58.5%	10%	0.1%		-	3.2%	88.3%	8.4%	0.2%		-	27.2%	42.6%	30.2%	0%		-	-	-
Totals %	3.3%	33.5%	2.3%	0%		39.2%	3.6%	6.7%	1.2%	0%		11.5%	1.2%	32.8%	3.1%	0.1%		37.1%	3.3%	5.2%	3.7%	0%		12.2%	-	-
Heavy	14	152	5	0		-	13	10	3	0		-	4	146	21	0		-	15	3	34	0		-	-	-
Heavy %	3.5%	3.7%	1.8%	0%		-	2.9%	1.2%	2.1%	0%		-	2.8%	3.6%	5.5%	0%		-	3.7%	0.5%	7.5%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Bicycles on Crosswalk%

# Turning Movement Count Location Name: KIRWIN AVE & HURONTARIO ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

								Pea	k Hour	: 08:00	AM - 09	:00 AM Weat	her: Bro	oken Cl	ouds (-	1.15 °C)									
Start Time			Н	N Approac	h O ST					E Approa	ch VE				Н	S Approac	<b>h</b> D ST				ı	W Approad	ch AVE		Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	10	210	8	0	2	228	8	17	4	0	13	29	3	146	9	0	19	158	20	35	20	0	22	75	490
08:15:00	9	152	8	0	1	169	25	15	7	0	5	47	5	168	19	1	14	193	20	23	27	0	35	70	479
08:30:00	12	160	6	0	1	178	13	23	9	0	7	45	6	149	17	0	11	172	8	36	18	0	8	62	457
08:45:00	17	148	10	0	1	175	14	21	6	0	5	41	5	156	10	0	2	171	20	23	18	0	8	61	448
Grand Total	48	670	32	0	5	750	60	76	26	0	30	162	19	619	55	1	46	694	68	117	83	0	73	268	1874
Approach%	6.4%	89.3%	4.3%	0%		-	37%	46.9%	16%	0%		-	2.7%	89.2%	7.9%	0.1%		-	25.4%	43.7%	31%	0%		-	-
Totals %	2.6%	35.8%	1.7%	0%		40%	3.2%	4.1%	1.4%	0%		8.6%	1%	33%	2.9%	0.1%		37%	3.6%	6.2%	4.4%	0%		14.3%	-
PHF	0.71	0.8	0.8	0		0.82	0.6	0.83	0.72	0		0.86	0.79	0.92	0.72	0.25		0.9	0.85	0.81	0.77	0		0.89	-
Heavy	2	38	1	0		41	3	5	2	0		10	1	34	10	0		45	5	0	10	0		15	
Heavy %	4.2%	5.7%	3.1%	0%		5.5%	5%	6.6%	7.7%	0%		6.2%	5.3%	5.5%	18.2%	0%		6.5%	7.4%	0%	12%	0%		5.6%	-
Lights	46	632	31	0		709	57	71	24	0		152	18	585	45	1		649	63	117	73	0		253	-
Lights %	95.8%	94.3%	96.9%	0%		94.5%	95%	93.4%	92.3%	0%		93.8%	94.7%	94.5%	81.8%	100%		93.5%	92.6%	100%	88%	0%		94.4%	-
Single-Unit Trucks	0	11	1	0		12	2	1	0	0		3	0	15	0	0		15	2	0	0	0		2	-
Single-Unit Trucks %	0%	1.6%	3.1%	0%		1.6%	3.3%	1.3%	0%	0%		1.9%	0%	2.4%	0%	0%		2.2%	2.9%	0%	0%	0%		0.7%	-
Buses	2	25	0	0		27	1	4	2	0		7	1	18	10	0		29	3	0	10	0		13	-
Buses %	4.2%	3.7%	0%	0%		3.6%	1.7%	5.3%	7.7%	0%		4.3%	5.3%	2.9%	18.2%	0%		4.2%	4.4%	0%	12%	0%		4.9%	-
Articulated Trucks	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Articulated Trucks %	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	30	-	-	-	-	-	46	-	-	-	-	-	73	-	-
Pedestrians%	-	-	-	-	3.2%		-	-	-	-	19.5%		-	-	-	-	29.9%		-	-	-	-	47.4%		-
Bicycles on Crosswalk	-	-	-	-	0	=	-	-	-	-	0	=	-	-	-	-	0	=	-	-	-	-	0	-	-



Bicycles on Crosswalk%

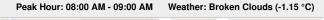
- - 0.7%

# Turning Movement Count Location Name: KIRWIN AVE & HURONTARIO ST Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

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

								Peak	Hour:	05:00 P	M - 06:	00 PM Weatl	ner: Ov	ercast (	Clouds	(4.61 °C	C)								
Start Time			F	N Approa	i <b>ch</b> IIO ST					E Approac	ch VE				ŀ	S Approa IURONTAR	<b>ch</b> IO ST				ŀ	W Approad	ch AVE		Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	25	189	21	0	5	235	23	51	7	0	9	81	5	181	19	1	7	206	21	30	27	0	8	78	600
17:15:00	23	223	21	0	16	267	26	69	6	0	20	101	8	224	10	3	6	245	10	36	20	0	12	66	679
17:30:00	28	186	15	0	6	229	17	64	10	0	10	91	6	192	33	0	14	231	24	29	26	0	7	79	630
17:45:00	24	202	15	0	4	241	25	56	3	0	8	84	12	220	28	1	4	261	26	33	22	0	9	81	667
Grand Total	100	800	72	0	31	972	91	240	26	0	47	357	31	817	90	5	31	943	81	128	95	0	36	304	2576
Approach%	10.3%	82.3%	7.4%	0%		-	25.5%	67.2%	7.3%	0%		-	3.3%	86.6%	9.5%	0.5%		-	26.6%	42.1%	31.3%	0%		-	-
Totals %	3.9%	31.1%	2.8%	0%		37.7%	3.5%	9.3%	1%	0%		13.9%	1.2%	31.7%	3.5%	0.2%		36.6%	3.1%	5%	3.7%	0%		11.8%	-
PHF	0.89	0.9	0.86	0		0.91	0.88	0.87	0.65	0		0.88	0.65	0.91	0.68	0.42		0.9	0.78	0.89	0.88	0		0.94	-
Heavy	1	17	0	0		18	0	0	0	0		0	0	17	0	0		17	0	0	4	0		4	
Heavy %	1%	2.1%	0%	0%		1.9%	0%	0%	0%	0%		0%	0%	2.1%	0%	0%		1.8%	0%	0%	4.2%	0%		1.3%	-
Lights	99	783	72	0		954	91	240	26	0		357	31	800	90	5		926	81	128	91	0		300	
Lights %	99%	97.9%	100%	0%		98.1%	100%	100%	100%	0%		100%	100%	97.9%	100%	100%		98.2%	100%	100%	95.8%	0%		98.7%	-
Single-Unit Trucks	1	5	0	0		6	0	0	0	0		0	0	5	0	0		5	0	0	1	0		1	-
Single-Unit Trucks %	1%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0%	0%	1.1%	0%		0.3%	-
Buses	0	12	0	0		12	0	0	0	0		0	0	11	0	0		11	0	0	3	0		3	-
Buses %	0%	1.5%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.2%	0%	0%	3.2%	0%		1%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	30	-	-	-	-	-	45	-	-	-	-	-	31	-	-	-	-	-	36	-	-
Pedestrians%	-	-	-	-	20.7%		-	-	-	-	31%		-	-	-	-	21.4%		-	-	-	-	24.8%		-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-

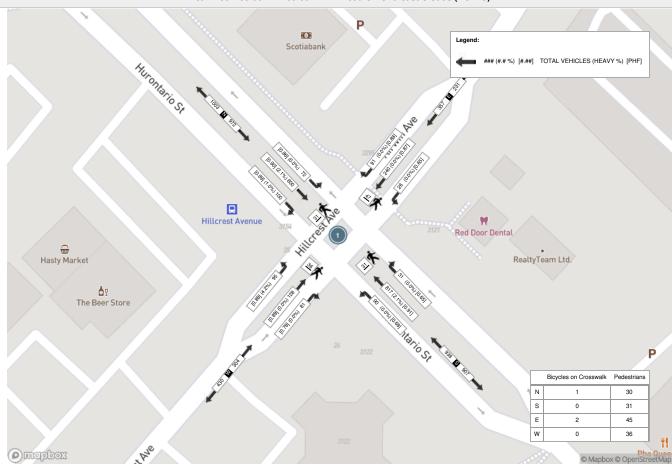
1.4%





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

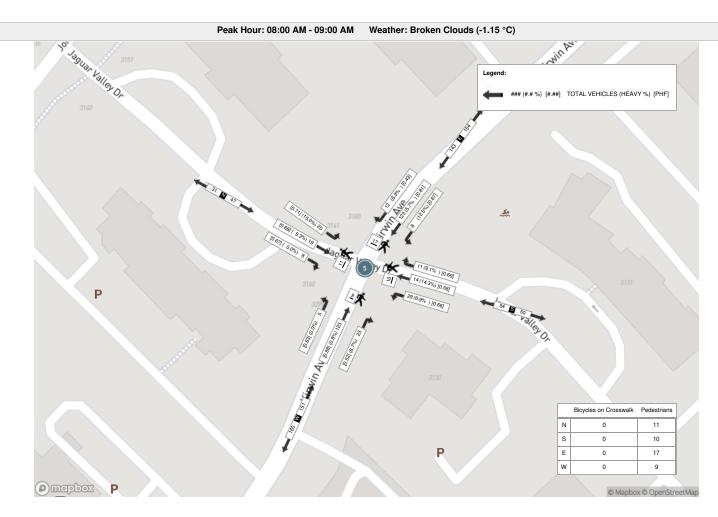
### Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (4.61 °C)

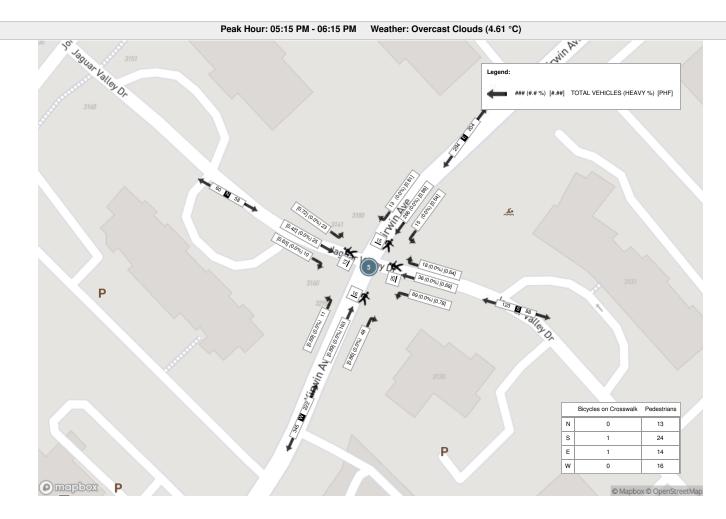


										Turnin	g Move	ement Count (5	. KIRWII	N AVE 8	JAGL	JAR VA	LLEY C	OR)								
			JAG	N Approac	h EY DR					E Approa	ch VE				JAC	S Approac	h EY DR					W Approac	ch VE		Int. Total (15 min)	Int. Total (1 hr)
Start Time	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left 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	3	3	0	2	6	0	15	0	0	0	15	1	1	7	0	2	9	1	10	1	0	2	12	42	
07:15:00	1	4	1	0	0	6	1	8	5	0	0	14	0	4	4	0	4	8	6	15	2	0	2	23	51	
07:30:00	2	1	2	0	2	5	5	18	2	0	0	25	3	3	11	0	1	17	6	23	0	0	1	29	76	
07:45:00	1	3	1	0	6	5	0	18	0	0	3	18	5	4	12	0	5	21	1	34	0	0	2	35	79	248
08:00:00	0	5	6	0	3	11	2	21	2	0	3	25	4	3	9	0	5	16	11	35	1	0	5	47	99	305
08:15:00	3	2	7	0	3	12	3	26	3	0	8	32	2	3	11	0	4	16	4	26	2	0	1	32	92	346
08:30:00	2	7	1	0	3	10	7	38	2	0	4	47	2	2	6	0	1	10	2	30	1	0	3	33	100	370
08:45:00	3	5	6	0	2	14	0	38	1	0	2	39	3	6	3	0	0	12	6	32	1	0	0	39	104	395
09:00:00	5	6	1	0	1	12	2	29	0	0	1	31	2	6	5	0	4	13	8	30	0	0	5	38	94	390
09:15:00	4	4	6	0	0	14	1	26	1	0	1	28	2	4	7	0	1	13	5	22	1	0	1	28	83	381
09:30:00	3	6	1	0	4	10	1	18	1	0	0	20	4	4	4	0	3	12	6	25	2	0	1	33	75	356
09:45:00	5	9	7	0	1	21	4	31	0	0	1	35	1	4	9	1	4	15	5	25	3	0	4	33	104	356
***BREAK	***	<b></b>				-	-											-	-						-	
16:00:00	2	11	6	0	3	19	4	57	4	0	5	65	4	4	15	0	3	23	10	32	0	0	3	42	149	
16:15:00	1	6	4	0	5	11	2	49	4	0	2	55	6	6	11	0	4	23	10	41	2	0	3	53	142	
16:30:00	4	4	7	0	1	15	0	68	1	0	3	69	5	7	15	0	6	27	11	45	2	0	1	58	169	
16:45:00	7	7	7	0	5	21	3	68	3	0	1	74	8	4	14	0	4	26	15	39	4	0	2	58	179	639
17:00:00	4	7	2	0	7	13	6	65	5	0	2	76	5	7	14	0	6	26	9	38	4	0	1	51	166	656
17:15:00	2	1	3	0	2	6	1	75	2	0	1	78	3	13	22	0	7	38	12	38	4	0	6	54	176	690
17:30:00	4	3	7	0	4	14	4	68	7	0	2	79	7	5	9	0	6	21	12	36	0	0	4	48	162	683
17:45:00	1	6	8	0	3	15	4	65	4	0	2	73	5	10	18	0	5	33	14	43	4	0	2	61	182	686
18:00:00	3	15	5	0	4	23	4	58	2	0	10	64	3	8	20	0	7	31	10	46	3	0	4	59	177	697
18:15:00	2	3	3	0	3	8	5	50	2	0	1	57	5	13	8	0	4	26	6	29	3	0	3	38	129	650
18:30:00	4	7	3	0	2	14	5	40	2	0	4	47	4	10	19	0	3	33	10	32	2	0	8	44	138	626
18:45:00	7	10	6	0	3	23	3	46	1	0	4	50	2	8	12	0	3	22	10	27	1	0	4	38	133	577
Grand Total	70	135	103	0	69	308	67	995	54	0	60	1116	86	139	265	1	92	491	190	753	43	0	68	986	2901	-
Approach%	22.7%	43.8%	33.4%	0%		-	6%	89.2%	4.8%	0%		-	17.5%	28.3%	54%	0.2%		-	19.3%	76.4%	4.4%	0%		-	-	-
Totals %	2.4%	4.7%	3.6%	0%		10.6%	2.3%	34.3%	1.9%	0%		38.5%	3%	4.8%	9.1%	0%		16.9%	6.5%	26%	1.5%	0%		34%	-	-
Heavy	2	2	3	0		-	1	18	2	0		-	2	2	6	0		-	3	6	2	0		-	-	-
Heavy %	2.9%	1.5%	2.9%	0%		-	1.5%	1.8%	3.7%	0%		-	2.3%	1.4%	2.3%	0%		-	1.6%	0.8%	4.7%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

												:00 AM Wear	ther: Br		•										
Start Time			JA	N Approa GUAR VALI	ch LEY DR					E Approa	ch VE				JAG	S Approac SUAR VALLI	:h EY DR					W Approa	ch /E		Int. T (15 r
	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	5	6	0	3	11	2	21	2	0	3	25	4	3	9	0	5	16	11	35	1	0	5	47	9
08:15:00	3	2	7	0	3	12	3	26	3	0	8	32	2	3	11	0	4	16	4	26	2	0	1	32	
08:30:00	2	7	1	0	3	10	7	38	2	0	4	47	2	2	6	0	1	10	2	30	1	0	3	33	
08:45:00	3	5	6	0	2	14	0	38	1	0	2	39	3	6	3	0	0	12	6	32	1	0	0	39	
Grand Total	8	19	20	0	11	47	12	123	8	0	17	143	11	14	29	0	10	54	23	123	5	0	9	151	
Approach%	17%	40.4%	42.6%	0%		-	8.4%	86%	5.6%	0%		-	20.4%	25.9%	53.7%	0%		-	15.2%	81.5%	3.3%	0%		-	
Totals %	2%	4.8%	5.1%	0%		11.9%	3%	31.1%	2%	0%		36.2%	2.8%	3.5%	7.3%	0%		13.7%	5.8%	31.1%	1.3%	0%		38.2%	
PHF	0.67	0.68	0.71	0		0.84	0.43	0.81	0.67	0		0.76	0.69	0.58	0.66	0		0.84	0.52	0.88	0.63	0		0.8	
Heavy	0	1	3	0		4	1	7	1	0		9	1	2	2	0		5	2	1	0	0		3	
Heavy %	0%	5.3%	15%	0%		8.5%	8.3%	5.7%	12.5%	0%		6.3%	9.1%	14.3%	6.9%	0%		9.3%	8.7%	0.8%	0%	0%		2%	
Lights	8	18	17	0		43	11	116	7	0		134	10	12	27	0		49	21	122	5	0		148	
Lights %	100%	94.7%	85%	0%		91.5%	91.7%	94.3%	87.5%	0%		93.7%	90.9%	85.7%	93.1%	0%		90.7%	91.3%	99.2%	100%	0%		98%	
Single-Unit Trucks	0	0	0	0		0	0	2	0	0		2	0	0	1	0		1	1	0	0	0		1	
single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		1.4%	0%	0%	3.4%	0%		1.9%	4.3%	0%	0%	0%		0.7%	
Buses	0	1	3	0		4	1	5	1	0		7	1	2	1	0		4	1	1	0	0		2	
Buses %	0%	5.3%	15%	0%		8.5%	8.3%	4.1%	12.5%	0%		4.9%	9.1%	14.3%	3.4%	0%		7.4%	4.3%	0.8%	0%	0%		1.3%	
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	
Pedestrians	-	-	-	-	11	-	-	-	-	-	17	=	-	-	-	-	10	-	-	-	-	-	9	=	
Pedestrians%	-	-	-	-	23.4%		-	-	-	-	36.2%		-	-	-	-	21.3%		-	-	-	-	19.1%		
icycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	
voles on Crosswalk%	_			_	0%				_	_	0%				_	_	0%		_				0%		

								Peal	( Hour	05:15	PM - 06	:15 PM Weat	her: Ove	ercast C	Clouds (	(4.61 °C	)								
Start Time			JA	N Approa	ch LEY DR					E Approa	<b>ch</b> VE				JAG	S Approac	h EY DR					W Approa	ch /E		Int. Tota (15 min
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:15:00	2	1	3	0	2	6	1	75	2	0	1	78	3	13	22	0	7	38	12	38	4	0	6	54	176
17:30:00	4	3	7	0	4	14	4	68	7	0	2	79	7	5	9	0	6	21	12	36	0	0	4	48	162
17:45:00	1	6	8	0	3	15	4	65	4	0	2	73	5	10	18	0	5	33	14	43	4	0	2	61	182
18:00:00	3	15	5	0	4	23	4	58	2	0	10	64	3	8	20	0	7	31	10	46	3	0	4	59	177
Grand Total	10	25	23	0	13	58	13	266	15	0	15	294	18	36	69	0	25	123	48	163	11	0	16	222	697
Approach%	17.2%	43.1%	39.7%	0%		-	4.4%	90.5%	5.1%	0%		-	14.6%	29.3%	56.1%	0%		-	21.6%	73.4%	5%	0%		-	-
Totals %	1.4%	3.6%	3.3%	0%		8.3%	1.9%	38.2%	2.2%	0%		42.2%	2.6%	5.2%	9.9%	0%		17.6%	6.9%	23.4%	1.6%	0%		31.9%	-
PHF	0.63	0.42	0.72	0		0.63	0.81	0.89	0.54	0		0.93	0.64	0.69	0.78	0		0.81	0.86	0.89	0.69	0		0.91	-
Heavy		0	0	0		0		0	0	0		0	0	0	0	0		0	0	0	0			0	
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Lights	10	25	23	0		58	12	266	15	0		293	18	36	69	0		123	48	163	11	0		222	
Lights %	100%	100%	100%	0%		100%	92.3%	100%	100%	0%		99.7%	100%	100%	100%	0%		100%	100%	100%	100%	0%		100%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	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	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	7.7%	0%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	13	-	-	-	-	-	14	-	-	-	-	-	24	-	-	-	-	-	16	-	-
Pedestrians%	-	-	-	-	18.8%		-	-	-	-	20.3%		-	-	-	-	34.8%		-	-	-	-	23.2%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	1.4%		-	-	-	-	1.4%		-	-	-	-	0%		-







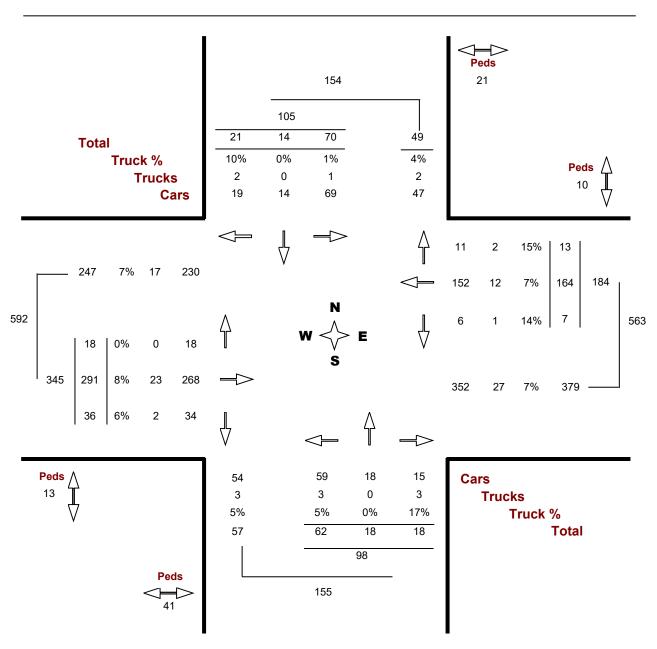
## **Turning Movements Report - AM Period**

Location........... JAGUAR VALLEY DR @ KIRWIN AVE

Municipality...... Mississauga GeolD...... 349562

**Count Date......** Monday, 06 June, 2005 **Peak Hour.....** 07:45 AM \_\_\_\_ 08:45 AM

Road 1 JAGUAR VALLEY DR Road 2 KIRWIN AVE





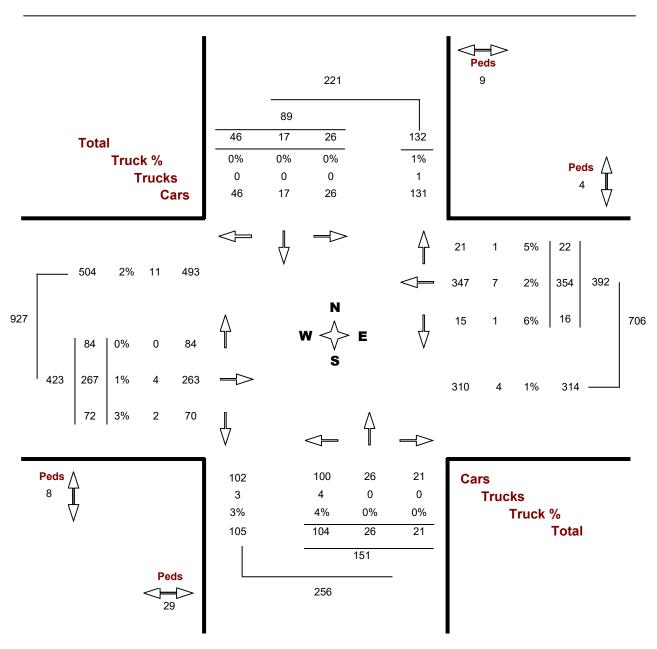
### **Turning Movements Report - PM Period**

Location........... JAGUAR VALLEY DR @ KIRWIN AVE

Municipality...... Mississauga GeolD...... 349562

**Count Date......** Monday, 06 June, 2005 **Peak Hour.....** 05:00 PM \_\_\_ 06:00 PM

Road 1 JAGUAR VALLEY DR Road 2 KIRWIN AVE



# **Appendix D**Growth Rate Recommendations

From: Tyler Xuereb < Tyler.Xuereb@mississauga.ca > Sent: Wednesday, February 9, 2022 12:01 PM

To: Sam Nguyen < <a href="mailto:sam@nextrans.ca">sam@nextrans.ca</a>>

**Subject:** RE: Term of Reference for 3115 Hurontario Street

### Good Morning Sam,

Below are the recommended growth rates along Hurontario Street and Dundas Street.

### Hurontario Street.

		h from Existing to 2026	
	NB	SB	
AM Peak Hour	-20.0%	-23.5%	
PM Peak Hour	-20.5%	-18.5%	

	Compounded Annual Growth from 2026 to 2027		
	NB SB		
AM Peak Hour	1.0%	0.5%	
PM Peak Hour	0.5%	0.5%	

### **Dundas Street**

	Compounded Annual Growth from Existing to 2026	
	EB WB	
AM Peak	0.0%	1.0%
PM Peak	0.5%	0.0%

	Compounded Annual Growth from 2026 to 2027  EB WB	
AM Peak	0.0%	0.0%
PM Peak	0.0%	0.0%

### Kirwin/Hillcrest

	Compounded Annual Growth from Existing to 2026	
	EB WB	
AM Peak	0.5%	0.5%
PM Peak	0.5%	0.5%

	Compounded Annual Growth from 2026 to 2027	
	EB WB	
AM Peak	0.0%	0.5%
		·
PM Peak	0.5%	0.0%

-Rates along Hurontario Street from existing to 2026 represent a one-time total change; this reflects the lane reductions along Hurontario Street due to LRT implementation.

### Regards,



### **Tyler Xuereb**

Transportation Planning Analyst T 905-615-3200 ext.4783
Tyler.xuereb@mississauga.ca

<u>City of Mississauga</u> | Transportation and Works Department, Infrastructure Planning and Engineering Services Division

Please consider the environment before printing.

From: Sam Nguyen < <a href="mailto:sam@nextrans.ca">sent: Monday, February 7, 2022 10:21 AM</a>
To: Tyler Xuereb <a href="mailto:Tyler.Xuereb@mississauga.ca">Tyler.Xuereb@mississauga.ca</a>

Subject: FW: Term of Reference for 3115 Hurontario Street

Figure 1 – Corridor Growth from Existing to 2026 (Based on City's Recommended Growth Rates)

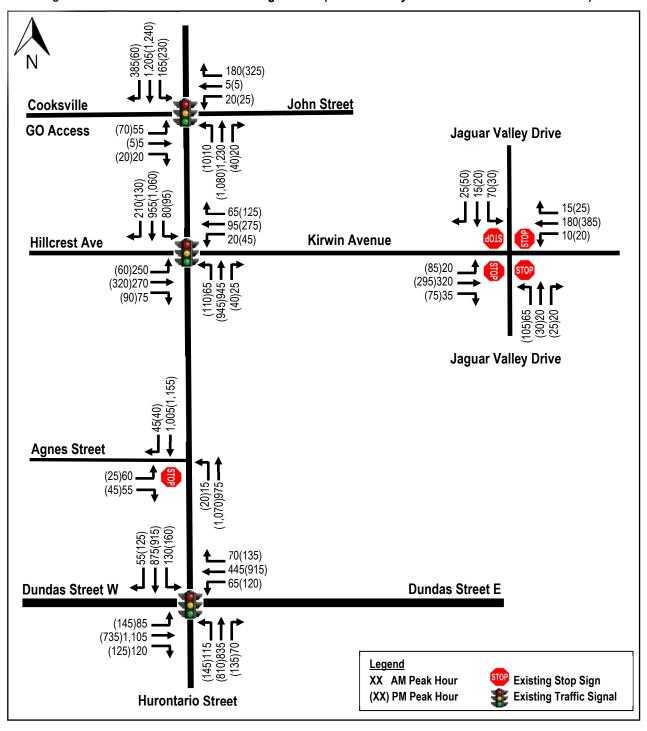


Figure 2 – Background Growth from 2026 to 2027 (Based on City Recommended Growth Rates)

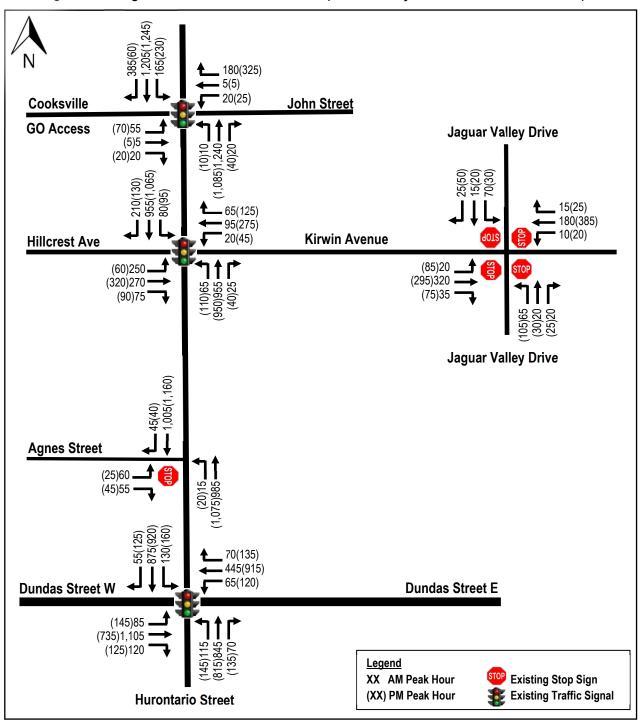
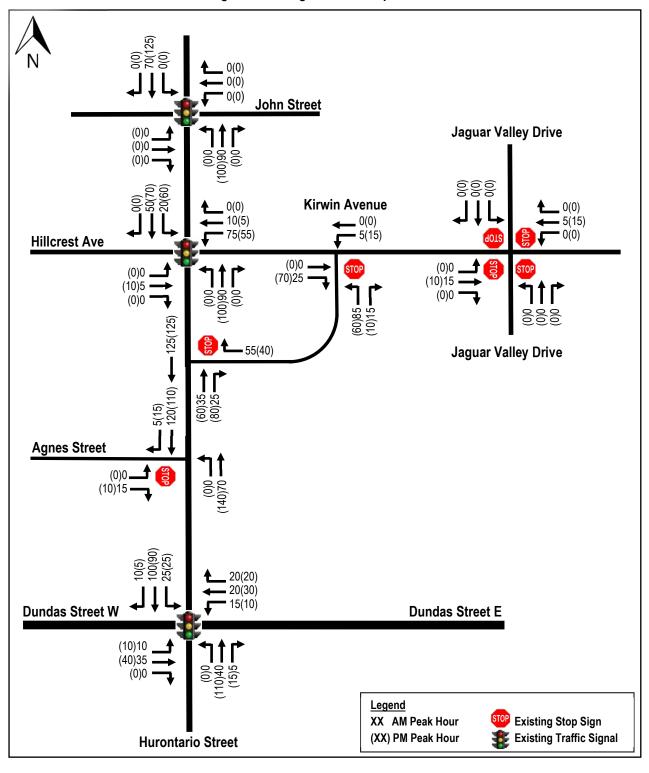


Figure 3 – Background Developments



# **Appendix E**Background Developments

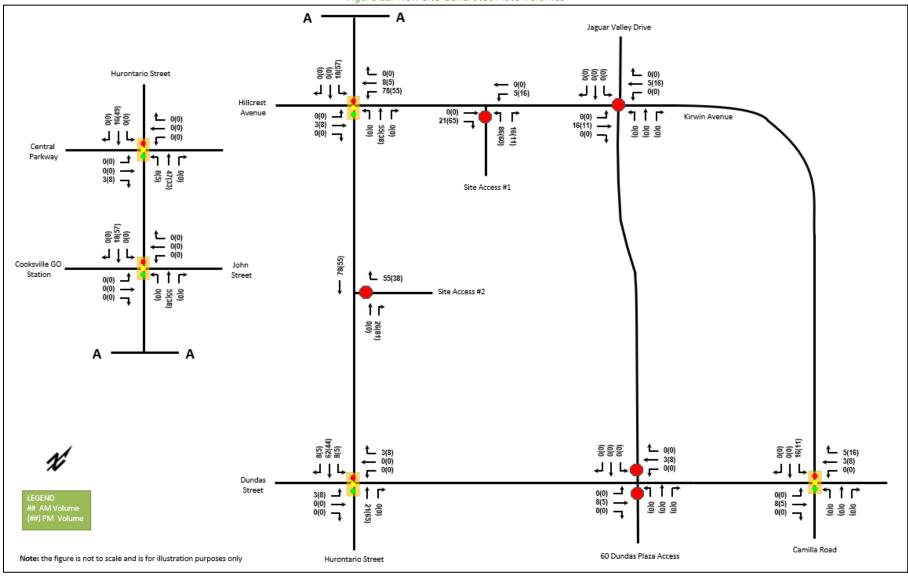


Figure 12: New Site Generated Auto Volumes



### 4.3 TRIP DISTRIBUTION AND ASSIGNMENT

Directional trip distribution of site traffic was derived using Transportation Tomorrow Survey (TTS) 2016 data. The estimated auto trip distribution is outlined in **Table 4-3**.

Table 4-3: Auto Trip Distribution

Gateway		AM Peak Hour		PM Peak Hour	
No.	No. Locations		Out	In	Out
1	Hurontario St (N of Central Pkway)	33%	49%	51%	37%
2	Hurontario St (S of Fairview Rd)	34%	13%	14%	13%
3	Central Pkwy W	22%	15%	13%	26%
4	Central Pkwy E	11%	21%	20%	22%
5	5 Fairview Rd W		2%	3%	2%
	Total	100%	100%	100%	100%

Note - Trip distribution of respective peak hour direction was adopted.

The site traffic was assigned to the road network based on trip patterns in the study area, location and configuration of the site accesses, and logical routing. As mentioned in Section 1, the site will be accessed from Fairview Rd E. Site traffic volumes are illustrated in **Figure 4.1**.

Figure 4.1: Site Traffic Volumes

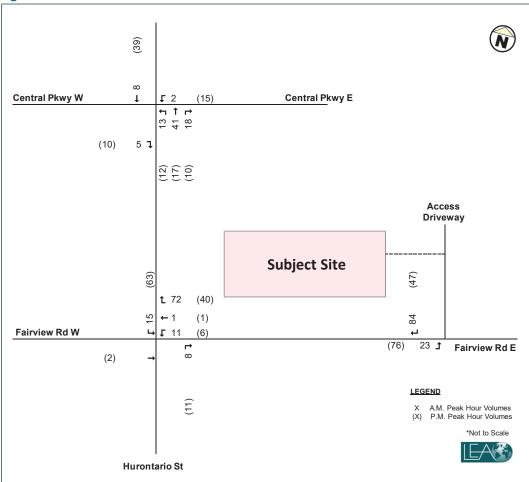
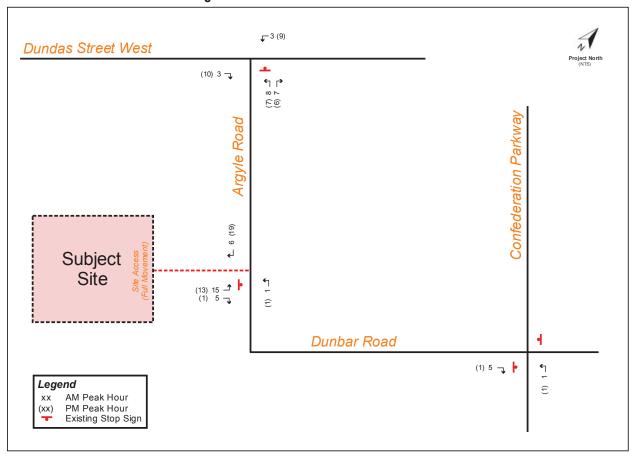


Table 4.2 – Site Traffic Trip Distribution

Direction	Via	AM Peak Hour		PM Peak Hour	
Direction		Inbound	Outbound	Inbound	Outbound
South	Confederation Parkway	24%	24%	4%	4%
East	Dundas Street West	37%	37%	47%	47%
West	Dundas Street West	39%	39%	49%	49%
Total		100%	100%	100%	100%

Figure 4-1 – Site Generated Traffic Volumes



### 5.0 FUTURE TOTAL TRAFFIC CONDITIONS

The forecasted 2023 future total traffic volumes (future background traffic volumes plus site generated traffic volumes) are illustrated in **Figure 5-1** and were analyzed using Synchro 10 software SimTraffic simulations for queue analysis. The detailed calculations are provided in **Appendix H** and summarized in **Table 5.1**.

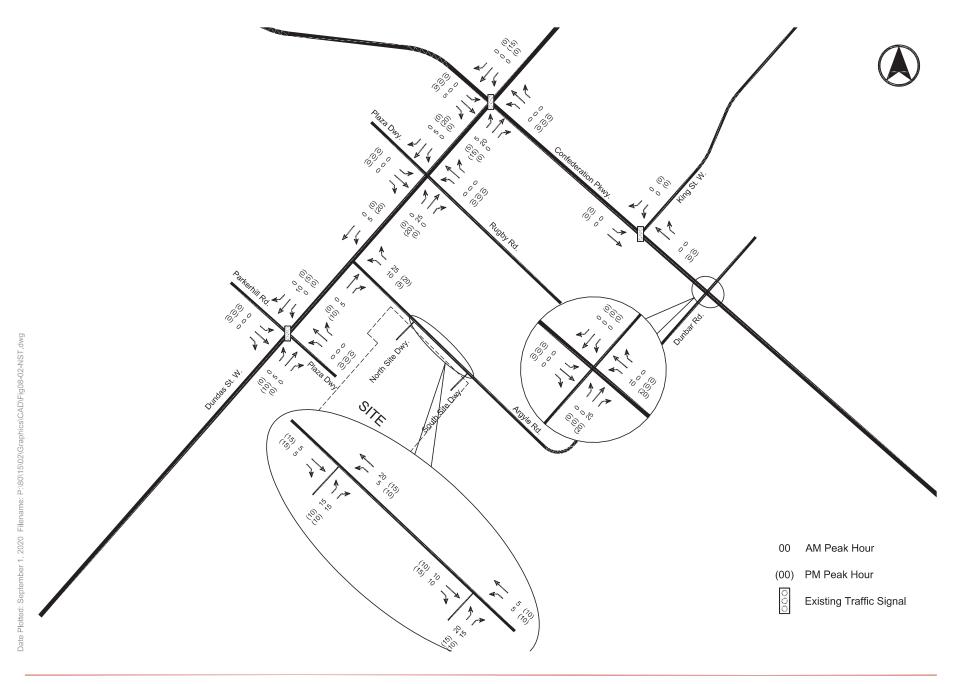
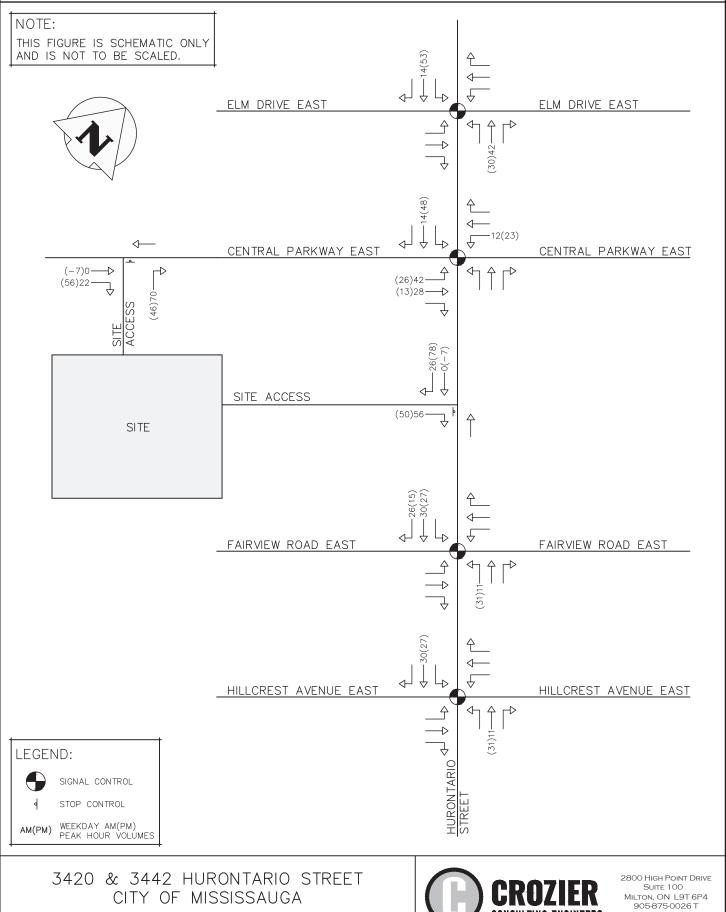


FIGURE 8 NEW SITE TRAFFIC VOLUMES



SITE TRAFFIC-ASSIGNMENT



905-875-4915 F WWW.CFCROZIER.CA

Drawn	T.D.S.	Design K.S.	Project No.	932-5666
Check	T.D.S.	Check K.S.	Scale N.T.S	FIG. 05



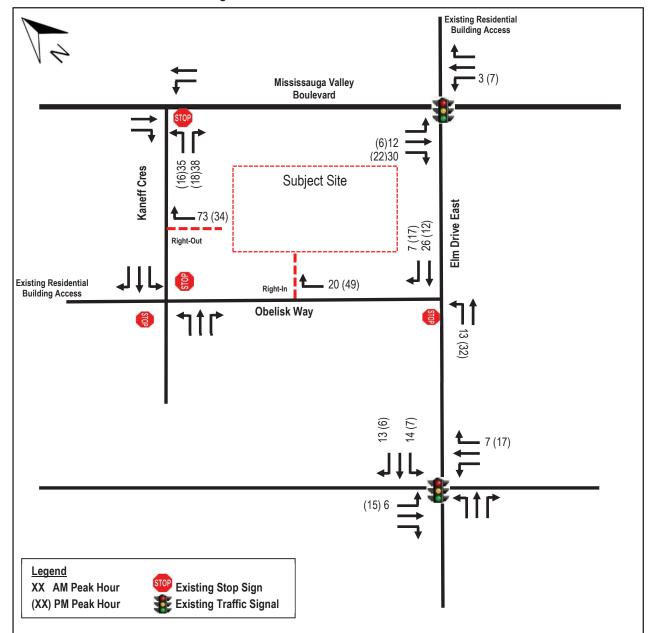


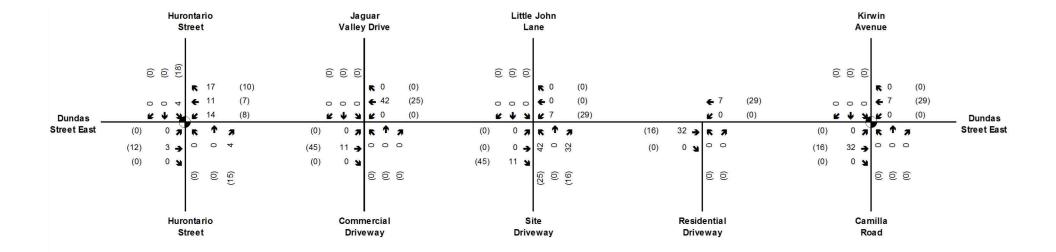
Figure 9 – Site Generated Traffic Volumes

### 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 plus site generated traffic volumes) are illustrated in **Figure 10**, and were analyzed using Synchro Version 9 software. The detailed calculations are provided in **Appendix G** and summarized in **Table 7**.

The future total traffic volumes are illustrated in Figure 10, based on the layering of Figure 9 and Figure 8.



Legend

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes Signalized Intersection





Higher Living Inc. Proposed Residential Condominium 86-90 Dundas Street East Job Number | 12431 Revision A Date | Sept 2018

Combined Site Trips

Figure 9

The Sernas Group Inc. (A GHD Company)

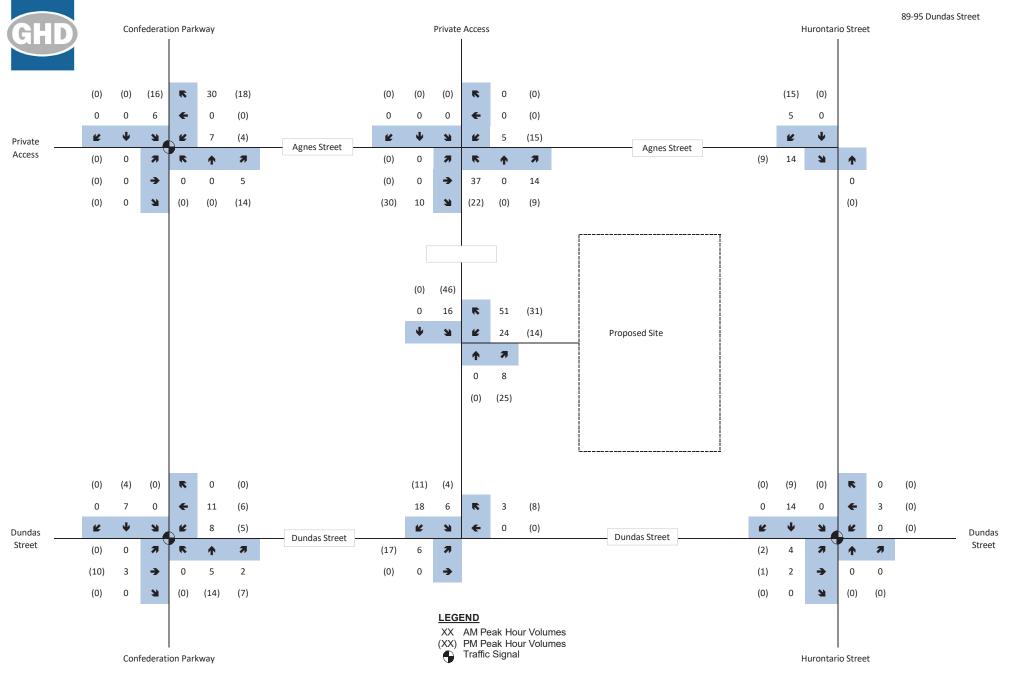
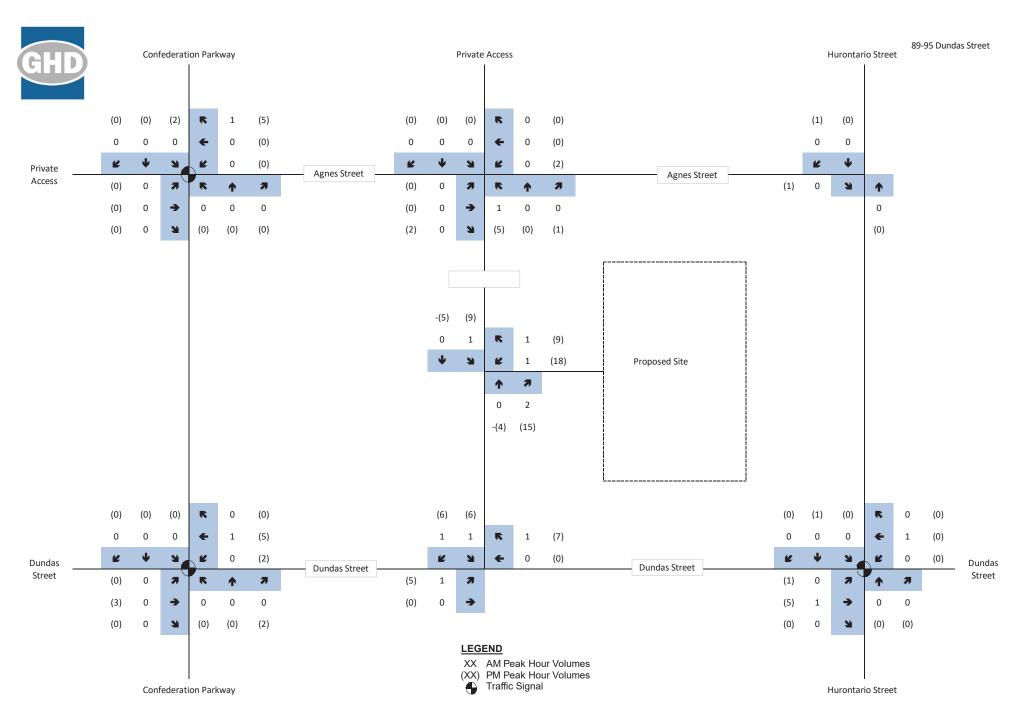


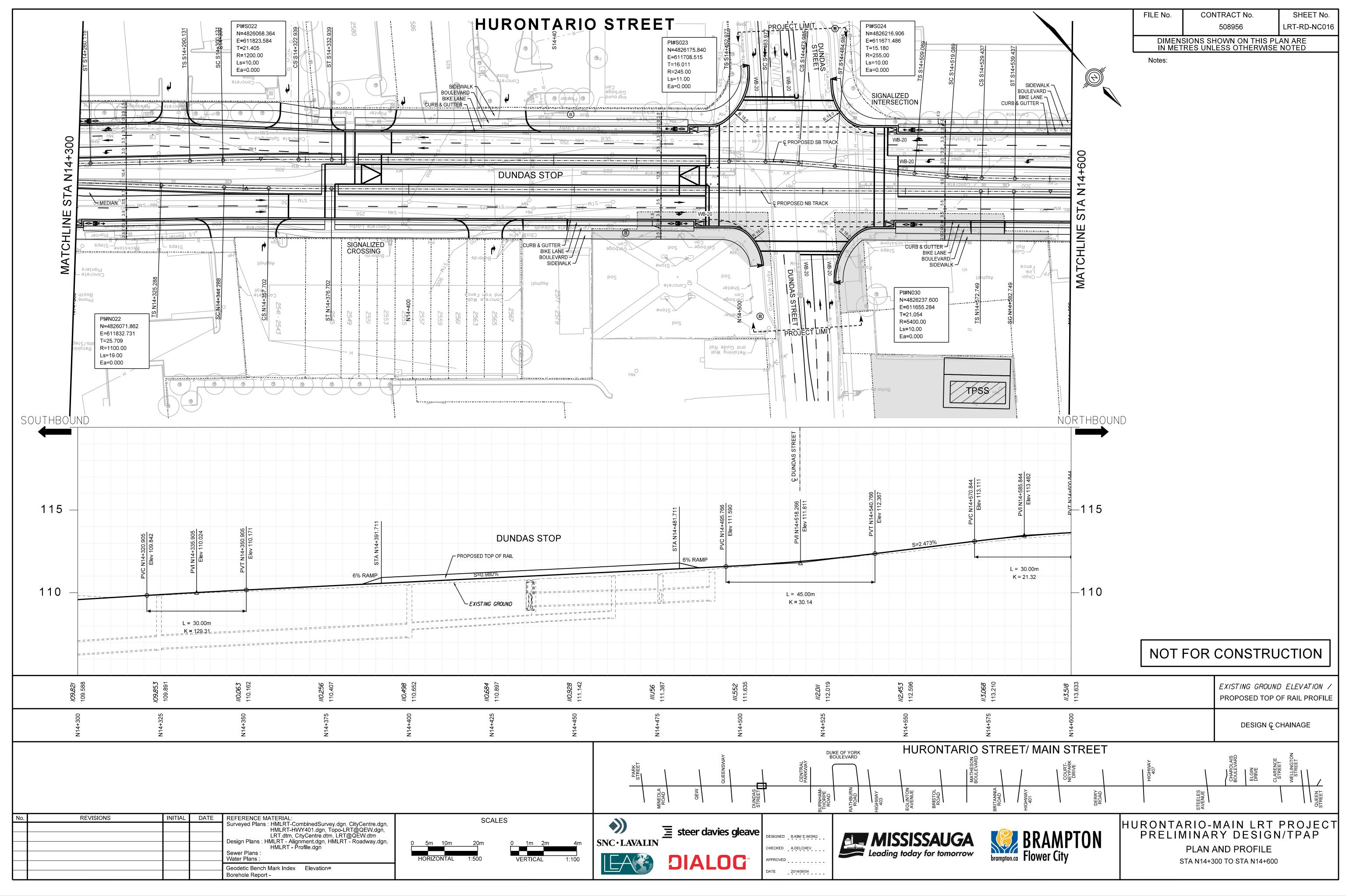
Figure 9 Estimated Residential Site Trips



**Figure 10 Estimated Commercial Trips** 

# **Appendix F**

**Hurontario LRT Environmental Project Report** 



DATE 2014/06/04

Geodetic Bench Mark Index Elevation=

Borehole Report -

Borehole Report -

# **Appendix G**

**Future Background Traffic Level of Service Calculations** 

# Lanes, Volumes, Timings 3: Hurontario Street & Dundas Street W/Dundas Street E

	ၨ	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	~	<b>/</b>	ļ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>^</b>	7	ሻ	<b>†</b>	7		<b>↑</b> ↑		ሻ	<b>↑</b> Ъ	
Traffic Volume (vph)	95	1140	120	80	465	90	0	870	70	155	975	65
Future Volume (vph)	95	1140	120	80	465	90	0	870	70	155	975	65
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	40.0		25.0	25.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1713	3433	1351	1713	1807	1351	0	3400	0	1617	3329	0
Flt Permitted	0.220			0.067						0.950		
Satd. Flow (perm)	397	3433	1351	121	1807	1351	0	3400	0	1617	3329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			68		5			6	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		185.1			367.5			141.9			126.5	
Travel Time (s)		13.3			26.5			10.2			9.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)					•				•			J
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	1239	130	87	505	98	0	1022	0	168	1131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.0			3.0	
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	1.04	1.01	1.22	1.04	1.01	1.22	1.04	1.01	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm		NA		Prot	NA	
Protected Phases	7	4	1 01111	3	8	1 01111		2		1	6	
Permitted Phases	4	•	4	8		8		_				
Detector Phase	7	4	4	3	8	8		2		1	6	
Switch Phase	•	<u>'</u>								•		
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Minimum Split (s)	9.0	45.5	45.5	9.0	45.5	45.5		41.0		9.0	41.0	
Total Split (s)	10.0	69.0	69.0	9.0	68.0	68.0		57.0		25.0	82.0	
Total Split (%)	6.3%	43.1%	43.1%	5.6%	42.5%	42.5%		35.6%		15.6%	51.3%	
Maximum Green (s)	7.0	61.5	61.5	6.0	60.5	60.5		50.0		22.0	75.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5	3.5	0.0	3.5	3.5		3.0		0.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.5	7.5	3.0	7.5	7.5		7.0		3.0	7.0	
TOTAL FOR THILE (2)	3.0	1.3	1.3	3.0	1.5	1.5		1.0		3.0	1.0	

#### 3: Hurontario Street & Dundas Street W/Dundas Street E

	ᄼ	<b>→</b>	•	•	<b>←</b>	•		<b>†</b>	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Recall Mode	None	None	None	None	None	None		C-Max		None	C-Max	
Walk Time (s)		16.0	16.0		16.0	16.0		14.0			14.0	
Flash Dont Walk (s)		22.0	22.0		22.0	22.0		20.0			20.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	72.1	60.6	60.6	70.1	59.6	59.6		52.9		20.0	75.9	
Actuated g/C Ratio	0.45	0.38	0.38	0.44	0.37	0.37		0.33		0.12	0.47	
v/c Ratio	0.44	0.95	0.23	0.78	0.75	0.18		0.91		0.83	0.71	
Control Delay	30.7	64.2	17.0	66.8	51.8	12.7		63.3		112.9	32.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	30.7	64.2	17.0	66.8	51.8	12.7		63.3		112.9	32.0	
LOS	С	Е	В	Е	D	В		Е		F	С	
Approach Delay		57.7			48.1			63.3			42.4	
Approach LOS		Е			D			Е			D	
Queue Length 50th (m)	19.2	209.8	13.4	16.1	145.6	6.4		176.9		59.7	84.1	
Queue Length 95th (m)	31.8	#256.6	30.0	#43.4	192.4	20.2		#222.7		m#88.5	150.0	
Internal Link Dist (m)		161.1			343.5			117.9			102.5	
Turn Bay Length (m)	40.0		25.0	25.0		25.0				50.0		
Base Capacity (vph)	236	1319	561	112	683	553		1127		222	1582	
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	
Reduced v/c Ratio	0.44	0.94	0.23	0.78	0.74	0.18		0.91		0.76	0.71	

#### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 88 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 53.1 Intersection LOS: D
Intersection Capacity Utilization 89.8% ICU Level of Service E

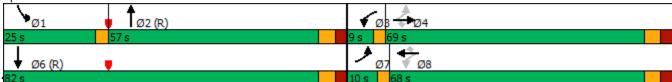
Analysis Period (min) 15

# 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: 3: Hurontario Street & Dundas Street W/Dundas Street E



	۶	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	~	<b>&gt;</b>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>↑</b> ↑		ሻ	<b>∱</b> }		ሻ	<b>∱</b> }		ሻ	<b>∱</b> }	
Traffic Volume (vph)	250	275	75	95	105	65	65	1075	25	100	1005	210
Future Volume (vph)	250	275	75	95	105	65	65	1075	25	100	1005	210
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	45.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1617	3262	0	1617	3184	0	1617	3347	0	1617	3279	0
Flt Permitted	0.551			0.382			0.950			0.950		
Satd. Flow (perm)	938	3262	0	650	3184	0	1617	3347	0	1617	3279	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			71			2			17	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		218.5			80.6			104.7			136.8	
Travel Time (s)		19.7			7.3			7.5			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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)	272	381	0	103	185	0	71	1195	0	109	1320	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.0	<u> </u>		3.0	, i		3.0			3.0	J
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	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.5	5.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	9.0	56.0		9.0	56.0		9.0	51.5		9.5	51.5	
Total Split (s)	20.0	56.0		20.0	56.0		20.0	64.0		20.0	64.0	
Total Split (%)	12.5%	35.0%		12.5%	35.0%		12.5%	40.0%		12.5%	40.0%	
Maximum Green (s)	17.0	48.0		17.0	48.0		17.0	56.5		17.0	56.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	4.0		0.0	4.0		0.0	3.5		0.0	3.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0		3.0	8.0		3.0	7.5		3.0	7.5	

	۶	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	<b>/</b>	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		15.0			15.0			14.0			14.0	
Flash Dont Walk (s)		33.0			33.0			30.0			30.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	43.9	23.4		38.1	19.8		12.4	85.7		16.0	89.4	
Actuated g/C Ratio	0.27	0.15		0.24	0.12		0.08	0.54		0.10	0.56	
v/c Ratio	0.83	0.77		0.44	0.41		0.57	0.67		0.67	0.72	
Control Delay	71.4	72.2		48.7	40.5		80.0	30.3		99.1	20.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	4.9		0.0	0.1	
Total Delay	71.4	72.2		48.7	40.5		80.0	35.3		99.1	20.5	
LOS	Е	Е		D	D		F	D		F	С	
Approach Delay		71.9			43.5			37.8			26.5	
Approach LOS		Е			D			D			С	
Queue Length 50th (m)	79.3	62.0		26.7	18.5		24.8	106.2		38.5	119.9	
Queue Length 95th (m)	103.1	78.2		40.5	29.8		m31.4	130.3		61.1	86.7	
Internal Link Dist (m)		194.5			56.6			80.7			112.8	
Turn Bay Length (m)	30.0			45.0			50.0			50.0		
Base Capacity (vph)	329	994		272	1004		172	1793		185	1839	
Starvation Cap Reductn	0	0		0	0		0	0		0	58	
Spillback Cap Reductn	0	0		0	5		0	522		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.83	0.38		0.38	0.19		0.41	0.94		0.59	0.74	

#### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 93 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83 Intersection Signal Delay: 39.9 Intersection Capacity Utilization 80.7%

Intersection LOS: D
ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & Hillcrest Avenue/Kirwin Avenue



# Lanes, Volumes, Timings 9: Hurontario Street & Cooksville GO Station Access/John Street

	۶	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	~	<b>/</b>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		ሻ	<b>∱</b> }		ሻ	<b>^</b>	7
Traffic Volume (vph)	55	5	20	20	5	180	10	1270	20	165	1275	90
Future Volume (vph)	55	5	20	20	5	180	10	1270	20	165	1275	90
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		0.0	40.0		0.0	25.0		0.0	40.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1617	1575	0	1617	1537	0	1617	3350	0	1617	3355	1321
Flt Permitted	0.265			0.740			0.950			0.950		
Satd. Flow (perm)	451	1575	0	1259	1537	0	1617	3350	0	1617	3355	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			146			2				75
Link Speed (k/h)		20			40			50			50	
Link Distance (m)		154.5			149.3			136.8			171.7	
Travel Time (s)		27.8			13.4			9.8			12.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)						•	•					J
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	27	0	22	201	0	11	1402	0	179	1386	98
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)		3.0			3.0	1 9.11		3.0			3.0	
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	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8				_				6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase								_				J
Minimum Initial (s)	5.0	10.0		6.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.0	46.0		9.0	46.0		9.0	38.0		9.0	38.0	38.0
Total Split (s)	10.0	46.0		10.0	46.0		10.0	94.0		10.0	94.0	94.0
Total Split (%)	6.3%	28.8%		6.3%	28.8%		6.3%	58.8%		6.3%	58.8%	58.8%
Maximum Green (s)	7.0	38.0		7.0	38.0		7.0	87.0		7.0	87.0	87.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		0.0	4.0		0.0	3.0		0.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0		3.0	8.0		3.0	7.0		3.0	7.0	7.0
. Star ESSE Timo (S)	0.0	0.0		5.0	0.0		0.0	7.0		5.0	7.0	7.0

#### 9: Hurontario Street & Cooksville GO Station Access/John Street

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	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
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0			12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0			26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	24.3	15.1		23.5	13.1		6.7	87.2		33.7	119.6	119.6
Actuated g/C Ratio	0.15	0.09		0.15	0.08		0.04	0.54		0.21	0.75	0.75
v/c Ratio	0.50	0.16		0.11	0.78		0.16	0.77		0.53	0.55	0.10
Control Delay	70.9	29.6		54.5	41.3		101.5	19.7		64.3	11.4	3.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	27.3		0.0	0.0	0.0
Total Delay	70.9	29.7		54.5	41.3		101.5	47.0		64.3	11.4	3.0
LOS	Е	С		D	D		F	D		Е	В	Α
Approach Delay		58.1			42.6			47.4			16.6	
Approach LOS		Е			D			D			В	
Queue Length 50th (m)	17.8	1.6		6.4	18.2		3.9	123.7		53.9	81.4	1.5
Queue Length 95th (m)	30.5	11.9		14.5	46.7		m6.0	257.1		#90.6	163.2	10.0
Internal Link Dist (m)		130.5			125.3			112.8			147.7	
Turn Bay Length (m)	100.0			40.0			25.0			40.0		25.0
Base Capacity (vph)	119	390		201	476		74	1826		340	2506	1006
Starvation Cap Reductn	0	0		0	0		0	488		0	0	0
Spillback Cap Reductn	0	38		0	0		0	0		0	100	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.50	0.08		0.11	0.42		0.15	1.05		0.53	0.58	0.10

#### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 102 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78
Intersection Signal Delay: 3

Intersection Signal Delay: 32.2 Intersection LOS: C
Intersection Capacity Utilization 79.8% ICU Level of Service D

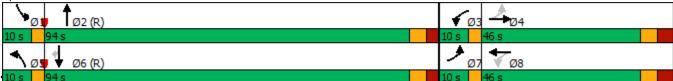
Analysis Period (min) 15

# 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: 9: Hurontario Street & Cooksville GO Station Access/John Street



	•	*	4	<b>†</b>	<b>+</b>	4
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		<b>^</b>	<b>∱</b> %	
Traffic Volume (veh/h)	0	55	0	1055	1125	50
Future Volume (Veh/h)	0	55	0	1055	1125	50
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)	0	60	0	1147	1223	54
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				126	313	
pX, platoon unblocked	0.85	0.73	0.73			
vC, conflicting volume	1824	638	1277			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	202	0	647			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	100			
cM capacity (veh/h)	654	794	684			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	60	574	574	815	462	
Volume Left	0	0	0	010	0	
Volume Right	60	0	0	0	54	
cSH	794	1700	1700	1700	1700	
Volume to Capacity	0.08	0.34	0.34	0.48	0.27	
Queue Length 95th (m)	2.0	0.0	0.0	0.40	0.0	
Control Delay (s)	9.9	0.0	0.0	0.0	0.0	
Lane LOS	9.9 A	0.0	0.0	0.0	0.0	
Approach Delay (s)	9.9	0.0		0.0		
Approach LOS	3.5 A	0.0		0.0		
	А					
Intersection Summary			0.0			
Average Delay	_1:		0.2		NIII	. ( O '
Intersection Capacity Utiliz	ation		43.3%	IC	CU Level of	of Service
Analysis Period (min)			15			

	۶	<b>→</b>	$\rightarrow$	•	<b>←</b>	•	•	<b>†</b>	<i>&gt;</i>	<b>&gt;</b>	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	¥	ĵ.		¥	f)			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	335	35	10	185	15	65	20	20	70	15	25
Future Volume (vph)	20	335	35	10	185	15	65	20	20	70	15	25
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)	22	364	38	11	201	16	71	22	22	76	16	27
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	22	402	11	217	115	119						
Volume Left (vph)	22	0	11	0	71	76						
Volume Right (vph)	0	38	0	16	22	27						
Hadj (s)	0.53	0.00	0.53	0.01	0.05	0.03						
Departure Headway (s)	6.1	5.5	6.3	5.8	5.9	5.9						
Degree Utilization, x	0.04	0.62	0.02	0.35	0.19	0.19						
Capacity (veh/h)	567	637	540	594	536	543						
Control Delay (s)	8.1	15.7	8.2	10.6	10.3	10.3						
Approach Delay (s)	15.3		10.5		10.3	10.3						
Approach LOS	С		В		В	В						
Intersection Summary												
Delay			12.7									
Level of Service			В									
Intersection Capacity Utilizati	on		33.9%	IC	U Level o	of Service			Α			
Analysis Period (min)			15									

	•	•	<b>†</b>	~	<b>/</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		7	<b>↑</b> ↑			<b>^</b>
Traffic Volume (veh/h)	0	55	1020	25	0	1175
Future Volume (Veh/h)	0	55	1020	25	0	1175
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)	0	60	1109	27	0	1277
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			335			105
pX, platoon unblocked	0.85	0.73			0.73	
vC, conflicting volume	1761	568			1136	
vC1, stage 1 conf vol	1701	000			1100	
vC2, stage 2 conf vol						
vCu, unblocked vol	92	0			430	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	0.0	0.0				
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	92			100	
cM capacity (veh/h)	764	787			817	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	60	739	397	638	638	
Volume Left	0	0	0	0	0	
Volume Right	60	0	27	0	0	
cSH	787	1700	1700	1700	1700	
Volume to Capacity	0.08	0.43	0.23	0.38	0.38	
Queue Length 95th (m)	2.0	0.0	0.0	0.0	0.0	
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	
Lane LOS	Α					
Approach Delay (s)	10.0	0.0		0.0		
Approach LOS	Α					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization	ation		39.6%	IC	ا ا مرما ر	of Service
Analysis Period (min)	adon		15	10	O LUVEI (	or octation
Analysis Feliou (IIIII)			10			

	-	$\rightarrow$	•	•	•	~
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<b>↑</b> ↑			414	W	
Traffic Volume (veh/h)	375	25	5	270	85	15
Future Volume (Veh/h)	375	25	5	270	85	15
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)	408	27	5	293	92	16
Pedestrians	100			200	V <u>-</u>	
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	140110			140110		
Upstream signal (m)	80					
pX, platoon unblocked	00		0.91		0.91	0.91
vC, conflicting volume			435		578	218
vC1, stage 1 conf vol			700		370	210
vC2, stage 2 conf vol						
vCu, unblocked vol			167		325	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)			7.1		0.0	0.0
tF (s)			2.2		3.5	3.3
p0 queue free %			100		84	98
cM capacity (veh/h)			1275		581	982
						302
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	272	163	103	195	108	
Volume Left	0	0	5	0	92	
Volume Right	0	27	0	0	16	
cSH	1700	1700	1275	1700	618	
Volume to Capacity	0.16	0.10	0.00	0.11	0.17	
Queue Length 95th (m)	0.0	0.0	0.1	0.0	5.0	
Control Delay (s)	0.0	0.0	0.4	0.0	12.1	
Lane LOS			Α		В	
Approach Delay (s)	0.0		0.1		12.1	
Approach LOS					В	
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utiliza	tion		23.6%	IC	U Level c	f Service
Analysis Period (min)			15	10	2 23101 0	

# Lanes, Volumes, Timings 3: Hurontario Street & Dundas Street W/Dundas Street E

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>†</b> †	7	ች	<b>†</b>	7		<b>↑</b> ↑		*	<b>†</b> }	
Traffic Volume (vph)	155	775	125	130	945	155	0	905	135	185	1010	130
Future Volume (vph)	155	775	125	130	945	155	0	905	135	185	1010	130
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	40.0		25.0	25.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1713	3433	1351	1713	1807	1351	0	3376	0	1617	3306	0
Flt Permitted	0.063			0.211						0.950		
Satd. Flow (perm)	114	3433	1351	380	1807	1351	0	3376	0	1617	3306	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			68		11			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		185.1			367.5			141.9			126.5	
Travel Time (s)		13.3			26.5			10.2			9.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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 (%)		• • • • • • • • • • • • • • • • • • • •			0,0			• • • • • • • • • • • • • • • • • • • •			• , ,	
Lane Group Flow (vph)	168	842	136	141	1027	168	0	1131	0	201	1239	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.0			3.0	
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		1.0			1.0			1.0			1.0	
Headway Factor	1.04	1.01	1.22	1.04	1.01	1.22	1.04	1.01	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25	1.01	15	25	1.01	15	25	1.01	15	25	1.01	15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm		NA		Prot	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4	•	4	8		8		_		•		
Detector Phase	7	4	4	3	8	8		2		1	6	
Switch Phase	<u>'</u>	•	•					_		•		
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Minimum Split (s)	9.0	45.5	45.5	9.0	45.5	45.5		41.0		9.0	41.0	
Total Split (s)	15.0	70.0	70.0	15.0	70.0	70.0		57.0		18.0	75.0	
Total Split (%)	9.4%	43.8%	43.8%	9.4%	43.8%	43.8%		35.6%		11.3%	46.9%	
Maximum Green (s)	12.0	62.5	62.5	12.0	62.5	62.5		50.0		15.0	68.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5	3.5	0.0	3.5	3.5		3.0		0.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		7.5	7.5	3.0	7.5	7.5				3.0	7.0	
Total Lost Time (S)	3.0	1.5	1.5	ა.0	1.5	1.5		7.0		ა.0	1.0	

## 3: Hurontario Street & Dundas Street W/Dundas Street E

	•	-	•	•	<b>—</b>	•	<b>1</b>	<b>†</b>	~	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Recall Mode	None	None	None	None	None	None	(	C-Max		None	C-Max	
Walk Time (s)		16.0	16.0		16.0	16.0		14.0			14.0	
Flash Dont Walk (s)		22.0	22.0		22.0	22.0		20.0			20.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	79.8	63.4	63.4	78.1	62.5	62.5		50.0		15.0	68.0	
Actuated g/C Ratio	0.50	0.40	0.40	0.49	0.39	0.39		0.31		0.09	0.42	
v/c Ratio	0.95	0.62	0.24	0.51	1.46	0.30		1.06		1.33	0.88	
Control Delay	95.9	41.3	17.2	27.5	249.2	21.0		97.7		238.1	46.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	95.9	41.3	17.2	27.5	249.2	21.0		97.7		238.1	46.2	
LOS	F	D	В	С	F	С		F		F	D	
Approach Delay		46.4			197.1			97.7			73.0	
Approach LOS		D			F			F			E	
Queue Length 50th (m)	40.0	119.4	14.6	24.6	~467.5	22.2		217.8		~89.2	116.0	
Queue Length 95th (m)	#90.4	142.9	31.5	38.5	#552.1	42.0		263.2	m	#135.9	178.4	
Internal Link Dist (m)		161.1			343.5			117.9			102.5	
Turn Bay Length (m)	40.0		25.0	25.0		25.0				50.0		
Base Capacity (vph)	176	1360	576	287	705	569		1062		151	1411	
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	
Reduced v/c Ratio	0.95	0.62	0.24	0.49	1.46	0.30		1.06		1.33	0.88	

#### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 88 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.46

Intersection Signal Delay: 105.3 Intersection LOS: F
Intersection Capacity Utilization 117.0% ICU Level of Service H

Analysis Period (min) 15

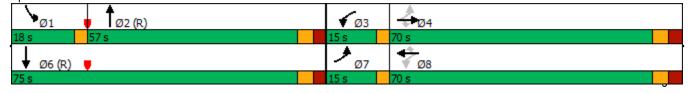
Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Hurontario Street & Dundas Street W/Dundas Street E



	۶	-	$\rightarrow$	•	<b>←</b>	•	•	<b>†</b>	/	<b>&gt;</b>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>↑</b> ↑		ሻ	<b>∱</b> }		*	<b>†</b> }		ሻ	<b>†</b> }	
Traffic Volume (vph)	60	330	90	100	280	125	110	1125	40	155	1135	130
Future Volume (vph)	60	330	90	100	280	125	110	1125	40	155	1135	130
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	45.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1617	3262	0	1617	3220	0	1617	3341	0	1617	3312	0
Flt Permitted	0.318			0.256			0.950			0.950		
Satd. Flow (perm)	541	3262	0	436	3220	0	1617	3341	0	1617	3312	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			46			3			9	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		218.5			80.6			104.7			136.8	
Travel Time (s)		19.7			7.3			7.5			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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)	65	457	0	109	440	0	120	1266	0	168	1375	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.0			3.0			3.0			3.0	
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	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase		_		_			_			_		
Minimum Initial (s)	4.5	5.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	9.0	56.0		9.0	56.0		9.0	51.5		9.5	51.5	
Total Split (s)	10.0	56.0		10.0	56.0		25.0	69.0		25.0	69.0	
Total Split (%)	6.3%	35.0%		6.3%	35.0%		15.6%	43.1%		15.6%	43.1%	
Maximum Green (s)	7.0	48.0		7.0	48.0		22.0	61.5		22.0	61.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	4.0		0.0	4.0		0.0	3.5		0.0	3.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0		3.0	8.0		3.0	7.5		3.0	7.5	

### 6: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

	•	-	•	•	•	•	1	<b>†</b>	/	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		15.0			15.0			14.0			14.0	
Flash Dont Walk (s)		33.0			33.0			30.0			30.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	39.0	27.0		39.6	29.0		17.1	82.3		22.2	87.3	
Actuated g/C Ratio	0.24	0.17		0.25	0.18		0.11	0.51		0.14	0.55	
v/c Ratio	0.37	0.80		0.69	0.71		0.69	0.74		0.75	0.76	
Control Delay	50.0	71.7		70.0	61.6		76.3	31.0		102.9	21.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	6.5		0.0	0.3	
Total Delay	50.0	71.7		70.0	61.6		76.3	37.5		102.9	21.5	
LOS	D	Е		E	Е		Е	D		F	С	
Approach Delay		69.0			63.2			40.9			30.3	
Approach LOS		Е			Е			D			С	
Queue Length 50th (m)	16.9	74.8		29.1	67.4		41.8	113.7		59.8	59.7	
Queue Length 95th (m)	29.0	91.8		44.8	84.1		m44.7	m116.8		85.9	105.3	
Internal Link Dist (m)		194.5			56.6			80.7			112.8	
Turn Bay Length (m)	30.0			45.0			50.0			50.0		
Base Capacity (vph)	179	994		159	998		225	1719		244	1811	
Starvation Cap Reductn	0	0		0	0		0	0		0	101	
Spillback Cap Reductn	0	0		0	2		0	404		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.46		0.69	0.44		0.53	0.96		0.69	0.80	

#### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 93 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 43.6 Intersection LOS: D
Intersection Capacity Utilization 79.0% ICU Level of Service D

Analysis Period (min) 15

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





# Lanes, Volumes, Timings 9: Hurontario Street & Cooksville GO Station Access/John Street

	۶	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	~	<b>/</b>	ţ	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		7	<b>∱</b> }		ሻ	<b>^</b>	7
Traffic Volume (vph)	70	5	20	25	5	325	10	1160	40	230	1370	60
Future Volume (vph)	70	5	20	25	5	325	10	1160	40	230	1370	60
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		0.0	40.0		0.0	25.0		0.0	40.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1617	1575	0	1617	1534	0	1617	3341	0	1617	3355	1321
Flt Permitted	0.148			0.740			0.950			0.950		
Satd. Flow (perm)	252	1575	0	1259	1534	0	1617	3341	0	1617	3355	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			205			3				75
Link Speed (k/h)		20			40			50			50	
Link Distance (m)		154.5			149.3			136.8			171.7	
Travel Time (s)		27.8			13.4			9.8			12.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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)	76	27	0	27	358	0	11	1304	0	250	1489	65
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)		3.0			3.0			3.0			3.0	
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	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		6.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.0	46.0		9.0	46.0		9.0	38.0		9.0	38.0	38.0
Total Split (s)	10.0	46.0		10.0	46.0		10.0	84.0		20.0	94.0	94.0
Total Split (%)	6.3%	28.8%		6.3%	28.8%		6.3%	52.5%		12.5%	58.8%	58.8%
Maximum Green (s)	7.0	38.0		7.0	38.0		7.0	77.0		17.0	87.0	87.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		0.0	4.0		0.0	3.0		0.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0		3.0	8.0		3.0	7.0		3.0	7.0	7.0

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	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
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0			12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0			26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	36.3	27.1		34.8	23.1		6.7	77.0		31.9	107.5	107.5
Actuated g/C Ratio	0.23	0.17		0.22	0.14		0.04	0.48		0.20	0.67	0.67
v/c Ratio	0.66	0.09		0.09	0.90		0.16	0.81		0.78	0.66	0.07
Control Delay	72.3	22.7		43.4	53.6		108.7	21.2		77.0	20.0	2.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	19.9		0.0	0.1	0.0
Total Delay	72.3	22.7		43.4	53.6		108.7	41.0		77.0	20.1	2.6
LOS	Е	С		D	D		F	D		Е	С	Α
Approach Delay		59.3			52.9			41.6			27.4	
Approach LOS		Е			D			D			С	
Queue Length 50th (m)	20.6	1.5		7.1	54.6		3.9	132.8		80.2	131.5	0.0
Queue Length 95th (m)	32.2	10.5		14.5	89.0		m5.7	213.7		#168.2	243.0	6.1
Internal Link Dist (m)		130.5			125.3			112.8			147.7	
Turn Bay Length (m)	100.0			40.0			25.0			40.0		25.0
Base Capacity (vph)	116	390		291	520		74	1609		322	2255	912
Starvation Cap Reductn	0	0		0	0		0	339		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	110	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.66	0.07		0.09	0.69		0.15	1.03		0.78	0.69	0.07

Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 102 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90 Intersection Signal Delay: 36.2 Intersection Capacity Utilization 90.1%

Intersection LOS: D
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: 9: Hurontario Street & Cooksville GO Station Access/John Street



	•	•	4	<b>†</b>	ļ	1
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		<b>^</b>	<b>^</b>	
Traffic Volume (veh/h)	0	45	0	1215	1270	55
Future Volume (Veh/h)	0	45	0	1215	1270	55
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)	0	49	0	1321	1380	60
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				126	313	
pX, platoon unblocked	0.84	0.69	0.69			
vC, conflicting volume	2070	720	1440			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	267	0	730			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	100			
cM capacity (veh/h)	587	745	598			
				0D.4	00.0	
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	49	660	660	920	520	
Volume Left	0	0	0	0	0	
Volume Right	49	0	0	0	60	
cSH	745	1700	1700	1700	1700	
Volume to Capacity	0.07	0.39	0.39	0.54	0.31	
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.0	
Control Delay (s)	10.2	0.0	0.0	0.0	0.0	
Lane LOS	В					
Approach Delay (s)	10.2	0.0		0.0		
Approach LOS	В					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utiliz	ation		46.9%	IC	CU Level c	of Service
Analysis Period (min)			15			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	¥	ĵ.		¥	f)			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	85	305	75	20	400	25	105	30	25	30	20	50
Future Volume (vph)	85	305	75	20	400	25	105	30	25	30	20	50
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)	92	332	82	22	435	27	114	33	27	33	22	54
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	92	414	22	462	174	109						
Volume Left (vph)	92	0	22	0	114	33						
Volume Right (vph)	0	82	0	27	27	54						
Hadj (s)	0.53	-0.08	0.53	0.03	0.08	-0.20						
Departure Headway (s)	6.8	6.2	6.9	6.3	6.9	6.9						
Degree Utilization, x	0.17	0.72	0.04	0.81	0.34	0.21						
Capacity (veh/h)	501	558	504	554	466	456						
Control Delay (s)	10.1	22.1	9.0	30.1	13.4	11.8						
Approach Delay (s)	20.0		29.2		13.4	11.8						
Approach LOS	С		D		В	В						
Intersection Summary												
Delay			21.9									
Level of Service			С									
Intersection Capacity Utilizati	on		53.0%	IC	U Level o	of Service			Α			
Analysis Period (min)			15									

	•	•	<b>†</b>	~	<b>&gt;</b>	ļ	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations		7	<b>↑</b> ↑			<b>^</b>	
Traffic Volume (veh/h)	0	40	1135	80	0	1325	
Future Volume (Veh/h)	0	40	1135	80	0	1325	
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)	0	43	1234	87	0	1440	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)			335			105	
pX, platoon unblocked	0.82	0.71			0.71		
vC, conflicting volume	1998	660			1321		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	206	0			638		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	100	94			100		
cM capacity (veh/h)	630	771			669		
	WB 1	NB 1	NB 2	CD 4	SB 2		
Direction, Lane # Volume Total	43	823	498	SB 1 720	720		
Volume Left	43		490		0		
	43	0	87	0	0		
Volume Right cSH	771	1700			1700		
		1700	1700	1700			
Volume to Capacity	0.06	0.48	0.29	0.42	0.42		
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.0		
Control Delay (s)	9.9	0.0	0.0	0.0	0.0		
Lane LOS	A	0.0		0.0			
Approach Delay (s)	9.9	0.0		0.0			
Approach LOS	Α						
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utiliz	zation		43.9%	IC	U Level	of Service	
Analysis Period (min)			15				

	-	•	•	•		/
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<b>↑</b> ↑			414	*/*	
Traffic Volume (veh/h)	455	70	15	540	60	10
Future Volume (Veh/h)	455	70	15	540	60	10
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)	495	76	16	587	65	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	80					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			571		858	286
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		575	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		83	99
cM capacity (veh/h)			1160		390	958
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	330	241	212	391	76	
Volume Left	0	0	16	0	65	
Volume Right	0	76	0	0	11	
cSH	1700	1700	1160	1700	427	
Volume to Capacity	0.19	0.14	0.01	0.23	0.18	
Queue Length 95th (m)	0.0	0.0	0.3	0.0	5.1	
Control Delay (s)	0.0	0.0	0.7	0.0	15.2	
Lane LOS	<b>V.V</b>		A	0.0	C	
Approach Delay (s)	0.0		0.3		15.2	
Approach LOS	<u> </u>		0.0		C	
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utiliz	ation		36.4%	IC	U Level o	f Service
Analysis Period (min)			15		2 23701 0	55, 1100
Analysis i Gilou (IIIIII)			10			

# Lanes, Volumes, Timings 3: Hurontario Street & Dundas Street W/Dundas Street E

Lane Configurations         †	WBL WBT WBR NBL NBT NBR SBL SBT SBR
Traffic Volume (vph) 155 775 125 130 945 155 0 905 135 185 1010 13	WIDE WIDE WIDE WIDE WIDE OUT OUT
Traffic Volume (vph) 155 775 125 130 945 155 0 905 135 185 1010 13	ካ ላኔ ላኔ ካ ላኔ
Future Volume (vph) 155 775 125 130 945 155 0 905 135 185 1010 13	
Grade (%) 0% 0% 0%	
Storage Lanes 1 1 1 0 0 1	
Taper Length (m) 7.5 7.5 7.5 7.5	7.5 7.5
Satd. Flow (prot) 1713 3433 1351 1713 3370 0 0 3376 0 1617 3306	1713 3370 0 0 3376 0 1617 3306 0
Flt Permitted 0.071 0.206 0.950	
Satd. Flow (perm) 128 3433 1351 371 3370 0 0 3376 0 1617 3306	
$\mathcal{M}$	
Satd. Flow (RTOR) 68 12 11 12	
Link Speed (k/h) 50 50 50	
Link Distance (m) 185.1 367.5 141.9 126.5	
Travel Time (s) 13.3 26.5 10.2 9.1	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
	0.92
Bus Blockages (#/hr) 0 0 0 0 0 0 0 0 0 0	
Parking (#/hr)	
Mid-Block Traffic (%) 0% 0% 0%	0% 0% 0%
Shared Lane Traffic (%)	
	141 1195 0 0 1131 0 201 1239 0
Median Width(m) 3.5 3.0 3.0 3.0	
Link Offset(m) 0.0 0.0 0.0 0.0	
Crosswalk Width(m) 4.8 4.8 4.8 4.8	4.8 4.8 4.8
Two way Left Turn Lane	
	1.04 1.01 1.22 1.04 1.01 1.22 1.12 1.04 1.26
	25 15 25 15 25 15
Turn Type pm+pt NA Perm pm+pt NA NA Prot NA	pm+pt NA NA Prot NA
Protected Phases 7 4 3 8 2 1 6	
Permitted Phases 4 4 8	8
Detector Phase 7 4 4 3 8 2 1 6	
Switch Phase	
Minimum Initial (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	5.0 5.0 5.0 5.0
Minimum Split (s) 9.0 45.5 45.5 9.0 45.5 41.0 9.0 41.0	
Total Split (s) 14.0 66.0 66.0 9.0 61.0 61.0 24.0 85.0	
Total Split (%) 8.8% 41.3% 41.3% 5.6% 38.1% 38.1% 15.0% 53.1%	
Maximum Green (s) 11.0 58.5 58.5 6.0 53.5 54.0 21.0 78.0	
Yellow Time (s) 3.0 4.0 4.0 3.0 4.0 4.0 3.0 4.0	
All-Red Time (s) 0.0 3.5 3.5 0.0 3.5 3.0 0.0 3.0	
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
Total Lost Time (s) 3.0 7.5 7.5 3.0 7.5 7.0 3.0 7.0	

## 3: Hurontario Street & Dundas Street W/Dundas Street E

	•	<b>→</b>	•	•	<b>←</b>	•	1	<b>†</b>	<b>/</b>	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	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	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Recall Mode	None	None	None	None	None			C-Max		None	C-Max	
Walk Time (s)		16.0	16.0		16.0			14.0			14.0	
Flash Dont Walk (s)		22.0	22.0		22.0			20.0			20.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	72.0	58.5	58.5	64.0	53.5			54.0		21.0	78.0	
Actuated g/C Ratio	0.45	0.37	0.37	0.40	0.33			0.34		0.13	0.49	
v/c Ratio	1.01	0.67	0.25	0.71	1.05			0.99		0.95	0.77	
Control Delay	110.9	45.9	18.8	51.9	92.0			75.1		122.3	34.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Delay	110.9	45.9	18.8	51.9	92.0			75.1		122.3	34.6	
LOS	F	D	В	D	F			Е		F	С	
Approach Delay		52.2			87.8			75.1			46.9	
Approach LOS		D			F			Е			D	
Queue Length 50th (m)	~40.5	124.6	15.2	28.0	~227.8			196.8		71.4	103.6	
Queue Length 95th (m)	#93.4	149.1	33.0	#48.5	#273.6			#247.5	m	#114.3	166.3	
Internal Link Dist (m)		161.1			343.5			117.9			102.5	
Turn Bay Length (m)	40.0		25.0	25.0						50.0		
Base Capacity (vph)	166	1255	537	198	1134			1146		212	1617	
Starvation Cap Reductn	0	0	0	0	0			0		0	0	
Spillback Cap Reductn	0	0	0	0	0			0		0	0	
Storage Cap Reductn	0	0	0	0	0			0		0	0	
Reduced v/c Ratio	1.01	0.67	0.25	0.71	1.05			0.99		0.95	0.77	

#### Intersection Summary

Area Type: Other

Cycle Length: 160 Actuated Cycle Length: 160

Offset: 88 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05 Intersection Signal Delay: 65.2 Intersection Capacity Utilization 98.4%

Intersection LOS: E ICU Level of Service F

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

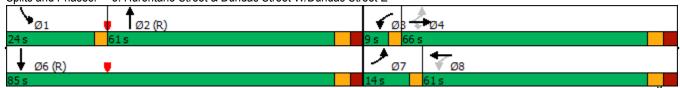
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Hurontario Street & Dundas Street W/Dundas Street E



# **Appendix H**Future Total Level of Service Calculations

# Lanes, Volumes, Timings 3: Hurontario Street & Dundas Street W/Dundas Street E

	ၨ	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	~	<b>&gt;</b>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>^</b>	7	*	<b>†</b>	7		<b>↑</b> ↑		7	<b>∱</b> }	
Traffic Volume (vph)	95	1140	120	80	465	90	0	880	70	160	985	70
Future Volume (vph)	95	1140	120	80	465	90	0	880	70	160	985	70
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	40.0		25.0	25.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1713	3433	1351	1713	1807	1351	0	3400	0	1617	3326	0
Flt Permitted	0.220			0.067						0.950		
Satd. Flow (perm)	397	3433	1351	121	1807	1351	0	3400	0	1617	3326	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			68		5			6	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		185.1			367.5			141.9			126.5	
Travel Time (s)		13.3			26.5			10.2			9.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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)	103	1239	130	87	505	98	0	1033	0	174	1147	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.0			3.0	
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	1.04	1.01	1.22	1.04	1.01	1.22	1.04	1.01	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm		NA		Prot	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	7	4	4	3	8	8		2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Minimum Split (s)	9.0	45.5	45.5	9.0	45.5	45.5		41.0		9.0	41.0	
Total Split (s)	10.0	69.0	69.0	9.0	68.0	68.0		57.0		25.0	82.0	
Total Split (%)	6.3%	43.1%	43.1%	5.6%	42.5%	42.5%		35.6%		15.6%	51.3%	
Maximum Green (s)	7.0	61.5	61.5	6.0	60.5	60.5		50.0		22.0	75.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5	3.5	0.0	3.5	3.5		3.0		0.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.5	7.5	3.0	7.5	7.5		7.0		3.0	7.0	

## 3: Hurontario Street & Dundas Street W/Dundas Street E

	۶	-	•	•	<b>←</b>	•	1	<b>†</b>	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Recall Mode	None	None	None	None	None	None		C-Max		None	C-Max	
Walk Time (s)		16.0	16.0		16.0	16.0		14.0			14.0	
Flash Dont Walk (s)		22.0	22.0		22.0	22.0		20.0			20.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	72.1	60.6	60.6	70.1	59.6	59.6		52.6		20.3	75.9	
Actuated g/C Ratio	0.45	0.38	0.38	0.44	0.37	0.37		0.33		0.13	0.47	
v/c Ratio	0.44	0.95	0.23	0.78	0.75	0.18		0.92		0.85	0.73	
Control Delay	30.7	64.2	17.0	66.8	51.8	12.7		65.2		112.4	33.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	30.7	64.2	17.0	66.8	51.8	12.7		65.2		112.4	33.2	
LOS	С	Е	В	Е	D	В		Е		F	С	
Approach Delay		57.7			48.1			65.2			43.6	
Approach LOS		Е			D			Е			D	
Queue Length 50th (m)	19.2	209.8	13.4	16.1	145.6	6.4		179.5		61.7	94.6	
Queue Length 95th (m)	31.8	#256.6	30.0	#43.4	192.4	20.2		#227.2		m#91.8	154.3	
Internal Link Dist (m)		161.1			343.5			117.9			102.5	
Turn Bay Length (m)	40.0		25.0	25.0		25.0				50.0		
Base Capacity (vph)	236	1319	561	112	683	553		1121		222	1581	
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	
Reduced v/c Ratio	0.44	0.94	0.23	0.78	0.74	0.18		0.92		0.78	0.73	

#### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 88 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95 Intersection Signal Delay: 53.8 Intersection Capacity Utilization 90.4%

Intersection LOS: D
ICU Level of Service E

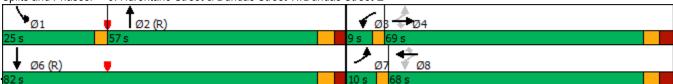
Analysis Period (min) 15

# 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: 3: Hurontario Street & Dundas Street W/Dundas Street E



	۶	-	•	•	<b>←</b>	•	•	<b>†</b>	/	<b>&gt;</b>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>†</b> Ъ		*	<b>†</b> Ъ		ሻ	<b>†</b> }		ሻ	<b>4</b> 1>	
Traffic Volume (vph)	250	280	75	120	110	65	65	1100	25	105	1005	210
Future Volume (vph)	250	280	75	120	110	65	65	1100	25	105	1005	210
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	45.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1617	3261	0	1617	3190	0	1617	3347	0	1617	3279	0
Flt Permitted	0.567			0.347			0.950			0.950		
Satd. Flow (perm)	965	3261	0	591	3190	0	1617	3347	0	1617	3279	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			71			2			17	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		218.5			80.6			104.7			136.8	
Travel Time (s)		19.7			7.3			7.5			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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)	272	386	0	130	191	0	71	1223	0	114	1320	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.0			3.0			3.0			3.0	
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	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.5	5.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	9.0	56.0		9.0	56.0		9.0	51.5		9.5	51.5	
Total Split (s)	20.0	56.0		20.0	56.0		20.0	64.0		20.0	64.0	
Total Split (%)	12.5%	35.0%		12.5%	35.0%		12.5%	40.0%		12.5%	40.0%	
Maximum Green (s)	17.0	48.0		17.0	48.0		17.0	56.5		17.0	56.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	4.0		0.0	4.0		0.0	3.5		0.0	3.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0		3.0	8.0		3.0	7.5		3.0	7.5	

## 6: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

	•	-	•	•	•	•	1	<b>†</b>		/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		15.0			15.0			14.0			14.0	
Flash Dont Walk (s)		33.0			33.0			30.0			30.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	44.7	23.5		41.1	21.3		12.4	83.6		16.6	87.9	
Actuated g/C Ratio	0.28	0.15		0.26	0.13		0.08	0.52		0.10	0.55	
v/c Ratio	0.80	0.78		0.53	0.39		0.57	0.70		0.68	0.73	
Control Delay	67.7	72.7		50.6	40.3		81.3	32.1		100.2	21.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	11.7		0.0	0.2	
Total Delay	67.7	72.7		50.6	40.3		81.3	43.8		100.2	21.6	
LOS	Е	Е		D	D		F	D		F	С	
Approach Delay		70.7			44.5			45.9			27.8	
Approach LOS		Е			D			D			С	
Queue Length 50th (m)	77.5	62.8		33.5	19.2		24.7	112.2		40.3	173.8	
Queue Length 95th (m)	102.8	79.0		49.6	30.9		m31.6	m132.9		63.2	87.8	
Internal Link Dist (m)		194.5			56.6			80.7			112.8	
Turn Bay Length (m)	30.0			45.0			50.0			50.0		
Base Capacity (vph)	338	993		269	1006		172	1749		187	1808	
Starvation Cap Reductn	0	0		0	0		0	0		0	68	
Spillback Cap Reductn	0	0		0	5		0	517		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.80	0.39		0.48	0.19		0.41	0.99		0.61	0.76	

#### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 93 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 43.2 Intersection LOS: D
Intersection Capacity Utilization 80.7% ICU Level of Service D

Analysis Period (min) 15

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





# Lanes, Volumes, Timings 9: Hurontario Street & Cooksville GO Station Access/John Street

	۶	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	~	<b>/</b>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		ሻ	<b>∱</b> }		ሻ	<b>^</b>	7
Traffic Volume (vph)	55	5	20	20	5	180	10	1295	20	165	1290	90
Future Volume (vph)	55	5	20	20	5	180	10	1295	20	165	1290	90
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		0.0	40.0		0.0	25.0		0.0	40.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1617	1575	0	1617	1537	0	1617	3350	0	1617	3355	1321
Flt Permitted	0.261			0.740			0.950			0.950		
Satd. Flow (perm)	444	1575	0	1259	1537	0	1617	3350	0	1617	3355	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			143			1				75
Link Speed (k/h)		20			40			50			50	
Link Distance (m)		154.5			149.3			136.8			171.7	
Travel Time (s)		27.8			13.4			9.8			12.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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)	60	27	0	22	201	0	11	1430	0	179	1402	98
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)		3.0			3.0			3.0			3.0	
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	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8				_				6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase								_				J
Minimum Initial (s)	5.0	10.0		6.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.0	46.0		9.0	46.0		9.0	38.0		9.0	38.0	38.0
Total Split (s)	10.0	46.0		10.0	46.0		10.0	94.0		10.0	94.0	94.0
Total Split (%)	6.3%	28.8%		6.3%	28.8%		6.3%	58.8%		6.3%	58.8%	58.8%
Maximum Green (s)	7.0	38.0		7.0	38.0		7.0	87.0		7.0	87.0	87.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		0.0	4.0		0.0	3.0		0.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0		3.0	8.0		3.0	7.0		3.0	7.0	7.0
. Star ESSE Timo (S)	5.0	0.0		5.0	0.0		0.0	7.0		5.0	7.0	7.0

### 9: Hurontario Street & Cooksville GO Station Access/John Street

	۶	<b>→</b>	$\rightarrow$	•	<b>←</b>	•	4	<b>†</b>	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	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
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0			12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0			26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	24.5	15.3		23.8	13.3		6.7	87.1		33.6	119.3	119.3
Actuated g/C Ratio	0.15	0.10		0.15	0.08		0.04	0.54		0.21	0.75	0.75
v/c Ratio	0.51	0.16		0.11	0.78		0.16	0.78		0.53	0.56	0.10
Control Delay	70.7	29.4		54.1	42.2		101.8	20.0		64.5	11.6	3.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	37.8		0.0	0.1	0.0
Total Delay	70.7	29.5		54.1	42.2		101.8	57.9		64.5	11.7	3.0
LOS	Е	С		D	D		F	Е		Е	В	Α
Approach Delay		57.9			43.4			58.2			16.8	
Approach LOS		Е			D			Е			В	
Queue Length 50th (m)	17.8	1.6		6.4	19.2		3.9	131.3		53.9	84.0	1.6
Queue Length 95th (m)	30.4	11.8		14.4	47.7		m5.6	262.4		#92.1	167.9	10.1
Internal Link Dist (m)		130.5			125.3			112.8			147.7	
Turn Bay Length (m)	100.0			40.0			25.0			40.0		25.0
Base Capacity (vph)	119	390		203	474		74	1824		339	2502	1004
Starvation Cap Reductn	0	0		0	0		0	494		0	0	0
Spillback Cap Reductn	0	52		0	0		0	0		0	130	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.50	0.08		0.11	0.42		0.15	1.08		0.53	0.59	0.10

### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 102 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78 Intersection Signal Delay: 37.0 Intersection Capacity Utilization 80.5%

Intersection LOS: D
ICU Level of Service D

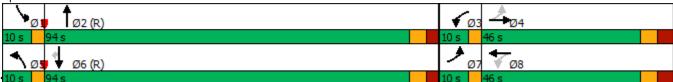
Analysis Period (min) 15

# 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: 9: Hurontario Street & Cooksville GO Station Access/John Street



	•	*	4	<b>†</b>	ļ	4
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		<b>^</b>	<b>^</b>	
Traffic Volume (veh/h)	0	55	0	1065	1150	50
Future Volume (Veh/h)	0	55	0	1065	1150	50
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)	0	60	0	1158	1250	54
Pedestrians	•					<u> </u>
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)				110110	140110	
Upstream signal (m)				126	313	
pX, platoon unblocked	0.85	0.73	0.73	120	010	
vC, conflicting volume	1856	652	1304			
vC1, stage 1 conf vol	1000	002	1004			
vC2, stage 2 conf vol						
vCu, unblocked vol	199	0	664			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	0.0	0.9	4.1			
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	100			
cM capacity (veh/h)	655	787	669			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	60	579	579	833	471	
Volume Left	0	0	0	0	0	
Volume Right	60	0	0	0	54	
cSH	787	1700	1700	1700	1700	
Volume to Capacity	0.08	0.34	0.34	0.49	0.28	
Queue Length 95th (m)	2.0	0.0	0.0	0.0	0.0	
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	
Lane LOS	Α					
Approach Delay (s)	10.0	0.0		0.0		
Approach LOS	Α					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utiliza	ation		44.0%	IC	U Level o	of Service
Analysis Period (min)			15			

	•	<b>→</b>	$\rightarrow$	•	<b>←</b>	•	•	<b>†</b>	<b>/</b>	<b>&gt;</b>	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ĵ.		¥	f)			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	345	35	10	190	15	65	20	20	70	15	25
Future Volume (vph)	20	345	35	10	190	15	65	20	20	70	15	25
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)	22	375	38	11	207	16	71	22	22	76	16	27
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	22	413	11	223	115	119						
Volume Left (vph)	22	0	11	0	71	76						
Volume Right (vph)	0	38	0	16	22	27						
Hadj (s)	0.53	0.00	0.53	0.02	0.05	0.03						
Departure Headway (s)	6.1	5.5	6.3	5.8	5.9	5.9						
Degree Utilization, x	0.04	0.63	0.02	0.36	0.19	0.20						
Capacity (veh/h)	566	626	538	592	530	537						
Control Delay (s)	8.1	16.4	8.2	10.8	10.3	10.4						
Approach Delay (s)	16.0		10.6		10.3	10.4						
Approach LOS	С		В		В	В						
Intersection Summary												
Delay			13.2									
Level of Service			В									
Intersection Capacity Utilizat	ion		34.4%	IC	U Level o	of Service			Α			
Analysis Period (min)			15									

	•	•	<b>†</b>	<i>&gt;</i>	<b>&gt;</b>	ļ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		7	<b>∱</b> 1≽			<b>†</b> †
Traffic Volume (veh/h)	0	80	1020	35	0	1200
Future Volume (Veh/h)	0	80	1020	35	0	1200
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)	0	87	1109	38	0	1304
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			335			105
pX, platoon unblocked	0.85	0.72			0.72	
vC, conflicting volume	1780	574			1147	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72	0			425	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	89			100	
cM capacity (veh/h)	783	780			814	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	87	739	408	652	652	
Volume Left	0	0	0	002	002	
Volume Right	87	0	38	0	0	
cSH	780	1700	1700	1700	1700	
Volume to Capacity	0.11	0.43	0.24	0.38	0.38	
Queue Length 95th (m)	3.0	0.43	0.24	0.0	0.0	
Control Delay (s)	10.2	0.0	0.0	0.0	0.0	
Lane LOS	В	0.0	0.0	0.0	0.0	
Approach Delay (s)	10.2	0.0		0.0		
Approach LOS	10.2 B	0.0		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utiliz	zation		41.7%	IC	U Level	of Service
Analysis Period (min)			15			

	-	$\rightarrow$	•	←	•	~
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<b>∱</b> 1>			414	W	
Traffic Volume (veh/h)	375	45	10	270	115	25
Future Volume (Veh/h)	375	45	10	270	115	25
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)	408	49	11	293	125	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	80					
pX, platoon unblocked			0.90		0.90	0.90
vC, conflicting volume			457		601	228
vC1, stage 1 conf vol			.0.		001	
vC2, stage 2 conf vol						
vCu, unblocked vol			185		345	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)			1.1		3.0	0.0
tF (s)			2.2		3.5	3.3
p0 queue free %			99		78	97
cM capacity (veh/h)			1253		561	980
	/	== 0		14/5-0		
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	272	185	109	195	152	
Volume Left	0	0	11	0	125	
Volume Right	0	49	0	0	27	
cSH	1700	1700	1253	1700	607	
Volume to Capacity	0.16	0.11	0.01	0.11	0.25	
Queue Length 95th (m)	0.0	0.0	0.2	0.0	7.9	
Control Delay (s)	0.0	0.0	0.9	0.0	12.9	
Lane LOS			Α		В	
Approach Delay (s)	0.0		0.3		12.9	
Approach LOS					В	
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utiliz	ation		29.5%	IC	U Level o	f Service
Analysis Period (min)			15			

### Lanes, Volumes, Timings 3: Hurontario Street & Dundas Street W/Dundas Street E

	۶	<b>→</b>	*	•	+	•	•	<b>†</b>	~	<b>/</b>	<b>+</b>	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	<b>†</b> †	7	ř	<b></b>	7		<b>↑</b> ↑		ň	<b>∱</b> }	
Traffic Volume (vph)	160	775	125	130	945	160	0	920	135	190	1015	135
Future Volume (vph)	160	775	125	130	945	160	0	920	135	190	1015	135
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	40.0		25.0	25.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1713	3433	1351	1713	1807	1351	0	3376	0	1617	3303	0
Flt Permitted	0.063			0.211						0.950		
Satd. Flow (perm)	114	3433	1351	380	1807	1351	0	3376	0	1617	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			68		11			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		185.1			367.5			141.9			126.5	
Travel Time (s)		13.3			26.5			10.2			9.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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 (%)		• • • • • • • • • • • • • • • • • • • •			• • • • • • • • • • • • • • • • • • • •			<b>0</b> ,0			• • • • • • • • • • • • • • • • • • • •	
Lane Group Flow (vph)	174	842	136	141	1027	174	0	1147	0	207	1250	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	2010	3.5	rugiit	2010	3.5	rugiit	20.0	3.0	, agait	20.0	3.0	rugiit
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	1.04	1.01	1.22	1.04	1.01	1.22	1.04	1.01	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm		NA		Prot	NA	
Protected Phases	7	4	1 01111	3	8	1 01111		2		1	6	
Permitted Phases	4		4	8		8				'		
Detector Phase	7	4	4	3	8	8		2		1	6	
Switch Phase	<u>'</u>		•							'		
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Minimum Split (s)	9.0	45.5	45.5	9.0	45.5	45.5		41.0		9.0	41.0	
Total Split (s)	15.0	70.0	70.0	15.0	70.0	70.0		57.0		18.0	75.0	
Total Split (%)	9.4%	43.8%	43.8%	9.4%	43.8%	43.8%		35.6%		11.3%	46.9%	
Maximum Green (s)	12.0	62.5	62.5	12.0	62.5	62.5		50.0		15.0	68.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5	3.5	0.0	3.5	3.5		3.0		0.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.5	7.5	3.0	7.5	7.5		7.0		3.0	7.0	
TOTAL FOR THILE (2)	3.0	1.5	1.5	3.0	1.3	1.5		1.0		3.0	7.0	

### 3: Hurontario Street & Dundas Street W/Dundas Street E

	•	<b>→</b>	•	•	•	•	4	<b>†</b> /*	-	<b>↓</b>	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL N	BT NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	L	ag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		es	Yes		
Vehicle Extension (s)	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	
Time Before Reduce (s)	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	
Recall Mode	None	None	None	None	None	None	C-M		None	C-Max	
Walk Time (s)		16.0	16.0		16.0	16.0		.0		14.0	
Flash Dont Walk (s)		22.0	22.0		22.0	22.0	20	0.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	0		0		0	
Act Effct Green (s)	79.8	63.4	63.4	78.1	62.5	62.5		0.0	15.0	68.0	
Actuated g/C Ratio	0.50	0.40	0.40	0.49	0.39	0.39	0.		0.09	0.42	
v/c Ratio	0.99	0.62	0.24	0.51	1.46	0.31		08	1.37	0.89	
Control Delay	104.6	41.3	17.2	27.5	249.2	21.6	102		251.3	46.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	104.6	41.3	17.2	27.5	249.2	21.6	102		251.3	46.8	
LOS	F	D	В	С	F	С		F	F	D	
Approach Delay		48.0			196.4		102	2.3		75.8	
Approach LOS		D			F			F		Е	
Queue Length 50th (m)	42.2	119.4	14.6	24.6	~467.5	23.7	~223		~94.0	119.5	
Queue Length 95th (m)	#95.3	142.9	31.5	38.5	#552.1	44.1	#269		m#140.1	181.7	
Internal Link Dist (m)		161.1			343.5		117	'.9		102.5	
Turn Bay Length (m)	40.0		25.0	25.0		25.0			50.0		
Base Capacity (vph)	176	1360	576	287	705	569	10		151	1410	
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio	0.99	0.62	0.24	0.49	1.46	0.31	1.	08	1.37	0.89	

### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 88 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.46

Intersection Signal Delay: 107.3 Intersection LOS: F
Intersection Capacity Utilization 118.0% ICU Level of Service H

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

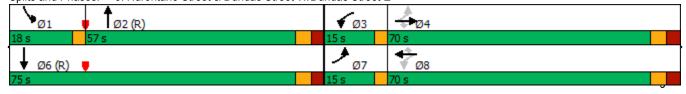
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Hurontario Street & Dundas Street W/Dundas Street E



	۶	<b>→</b>	•	•	+	•	1	†	<i>&gt;</i>	<b>/</b>	<b>+</b>	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	<b>↑</b> ↑		ř	<b>∱</b> }		¥	<b>↑</b> ↑		7	<b>∱</b> }	
Traffic Volume (vph)	60	340	90	115	285	125	110	1150	40	180	1135	130
Future Volume (vph)	60	340	90	115	285	125	110	1150	40	180	1135	130
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	45.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1617	3265	0	1617	3220	0	1617	3341	0	1617	3312	0
Flt Permitted	0.316			0.250			0.950			0.950		
Satd. Flow (perm)	538	3265	0	425	3220	0	1617	3341	0	1617	3312	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			44			2			9	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		218.5			80.6			104.7			136.8	
Travel Time (s)		19.7			7.3			7.5			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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 (%)		• • • • • • • • • • • • • • • • • • • •			• 70			• • • • • • • • • • • • • • • • • • • •			• • • • • • • • • • • • • • • • • • • •	
Lane Group Flow (vph)	65	468	0	125	446	0	120	1293	0	196	1375	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	2010	3.0	, agair	2010	3.0	. ugiit	LOIL	3.0	, agaic	20.0	3.0	rugiit
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		1.0			1.0			1.0			1.0	
Headway Factor	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25	1.01	15	25	1.01	15	25	1.01	15	25	1.01	15
Turn Type	pm+pt	NA	10	pm+pt	NA	10	Prot	NA	10	Prot	NA	10
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8						'	U	
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase	,									'	U	
Minimum Initial (s)	4.5	5.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	9.0	56.0		9.0	56.0		9.0	51.5		9.5	51.5	
Total Split (s)	10.0	56.0		10.0	56.0		25.0	69.0		25.0	69.0	
Total Split (%)	6.3%	35.0%		6.3%	35.0%		15.6%	43.1%		15.6%	43.1%	
Maximum Green (s)	7.0	48.0		7.0	48.0		22.0	61.5		22.0	61.5	
Yellow Time (s)	3.0	40.0		3.0	40.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	4.0		0.0	4.0		0.0	3.5		0.0	3.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0		3.0	8.0		3.0	7.5		3.0	7.5	

	٠	<b>→</b>	$\rightarrow$	•	<b>←</b>	•	$\blacktriangleleft$	<b>†</b>	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		15.0			15.0			14.0			14.0	
Flash Dont Walk (s)		33.0			33.0			30.0			30.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	39.5	27.6		40.2	29.6		17.1	77.9		26.0	86.8	
Actuated g/C Ratio	0.25	0.17		0.25	0.18		0.11	0.49		0.16	0.54	
v/c Ratio	0.36	0.81		0.79	0.71		0.69	0.79		0.75	0.76	
Control Delay	49.5	71.7		81.6	61.5		76.8	34.6		102.0	21.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	10.7		0.0	0.4	
Total Delay	49.5	71.7		81.6	61.5		76.8	45.3		102.0	22.1	
LOS	D	Е		F	Е		Е	D		F	С	
Approach Delay		69.0			65.9			48.0			32.0	
Approach LOS		Е			Е			D			С	
Queue Length 50th (m)	16.8	76.9		33.6	68.6		41.7	119.5		69.6	66.1	
Queue Length 95th (m)	28.8	93.5		#56.6	85.1		m44.6	m120.7		97.5	128.2	
Internal Link Dist (m)		194.5			56.6			80.7			112.8	
Turn Bay Length (m)	30.0			45.0			50.0			50.0		
Base Capacity (vph)	180	994		158	996		225	1628		269	1800	
Starvation Cap Reductn	0	0		0	0		0	0		0	117	
Spillback Cap Reductn	0	0		0	1		0	325		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.47		0.79	0.45		0.53	0.99		0.73	0.82	

### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 93 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 47.1 Intersection LOS: D
Intersection Capacity Utilization 81.6% ICU Level of Service D

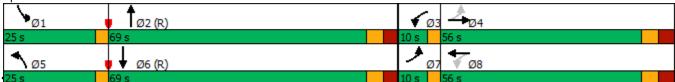
Analysis Period (min) 15

# 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: 6: Hurontario Street & Hillcrest Avenue/Kirwin Avenue



### Lanes, Volumes, Timings 9: Hurontario Street & Cooksville GO Station Access/John Street

	۶	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	<b>/</b>	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		ሻ	<b>∱</b> }		ሻ	<b>^</b>	7
Traffic Volume (vph)	70	5	20	25	5	325	10	1180	40	230	1395	60
Future Volume (vph)	70	5	20	25	5	325	10	1180	40	230	1395	60
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.3	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	100.0		0.0	40.0		0.0	25.0		0.0	40.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1617	1575	0	1617	1534	0	1617	3341	0	1617	3355	1321
Flt Permitted	0.147			0.740			0.950			0.950		
Satd. Flow (perm)	250	1575	0	1259	1534	0	1617	3341	0	1617	3355	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			203			3				75
Link Speed (k/h)		20			40			50			50	
Link Distance (m)		154.5			149.3			136.8			171.7	
Travel Time (s)		27.8			13.4			9.8			12.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)						•	•	•				J
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	27	0	27	358	0	11	1326	0	250	1516	65
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)		3.0			3.0	1 9.11		3.0			3.0	
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	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.26	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8				_		•		6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase								_				J
Minimum Initial (s)	5.0	10.0		6.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.0	46.0		9.0	46.0		9.0	38.0		9.0	38.0	38.0
Total Split (s)	10.0	46.0		10.0	46.0		10.0	84.0		20.0	94.0	94.0
Total Split (%)	6.3%	28.8%		6.3%	28.8%		6.3%	52.5%		12.5%	58.8%	58.8%
Maximum Green (s)	7.0	38.0		7.0	38.0		7.0	77.0		17.0	87.0	87.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		0.0	4.0		0.0	3.0		0.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0		3.0	8.0		3.0	7.0		3.0	7.0	7.0
. Star ESSE Timo (S)	5.0	0.0		5.0	0.0		0.0	7.0		0.0	7.0	7.0

	۶	<b>→</b>	•	•	•	•	$\blacktriangleleft$	<b>†</b>	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	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
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0			12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0			26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	36.5	27.3		35.0	23.3		6.7	77.0		31.7	107.4	107.4
Actuated g/C Ratio	0.23	0.17		0.22	0.15		0.04	0.48		0.20	0.67	0.67
v/c Ratio	0.66	0.09		0.09	0.90		0.16	0.82		0.78	0.67	0.07
Control Delay	72.4	22.6		43.2	54.1		108.7	19.8		77.6	20.5	2.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	26.3		0.0	0.1	0.0
Total Delay	72.4	22.6		43.2	54.1		108.7	46.1		77.6	20.6	2.6
LOS	Е	С		D	D		F	D		Е	С	Α
Approach Delay		59.3			53.3			46.6			27.8	
Approach LOS		Е			D			D			С	
Queue Length 50th (m)	20.5	1.5		7.1	55.3		3.9	148.8		80.3	136.6	0.0
Queue Length 95th (m)	32.2	10.4		14.4	89.5		m5.3	220.4		#168.9	250.8	6.1
Internal Link Dist (m)		130.5			125.3			112.8			147.7	
Turn Bay Length (m)	100.0			40.0			25.0			40.0		25.0
Base Capacity (vph)	116	390		293	519		73	1609		320	2252	911
Starvation Cap Reductn	0	0		0	0		0	341		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	120	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.66	0.07		0.09	0.69		0.15	1.05		0.78	0.71	0.07

Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 102 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90 Intersection Signal Delay: 38.2 Intersection Capacity Utilization 90.6%

Intersection LOS: D
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.

	٠	*	4	<b>†</b>	<b>+</b>	4
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		#		<b>†</b> †	<b>∱</b> 1≽	
Traffic Volume (veh/h)	0	45	0	1240	1285	55
Future Volume (Veh/h)	0	45	0	1240	1285	55
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)	0	49	0	1348	1397	60
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				126	313	
pX, platoon unblocked	0.84	0.68	0.68	,	3.0	
vC, conflicting volume	2101	728	1457			
vC1, stage 1 conf vol	2101	, 20	1 101			
vC2, stage 2 conf vol						
vCu, unblocked vol	291	0	745			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	0.0	0.0				
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	100			
cM capacity (veh/h)	565	742	587			
				00.4	00.0	
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	49	674	674	931	526	
Volume Left	0	0	0	0	0	
Volume Right	49	0	0	0	60	
cSH	742	1700	1700	1700	1700	
Volume to Capacity	0.07	0.40	0.40	0.55	0.31	
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.0	
Control Delay (s)	10.2	0.0	0.0	0.0	0.0	
Lane LOS	В					
Approach Delay (s)	10.2	0.0		0.0		
Approach LOS	В					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utiliza	ation		47.3%	IC	CU Level o	of Service
Analysis Period (min)			15			

	•	<b>→</b>	$\rightarrow$	•	<b>←</b>	•	•	<b>†</b>	<b>/</b>	<b>&gt;</b>	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.		¥	f)			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	85	310	75	20	410	25	105	30	25	30	20	50
Future Volume (vph)	85	310	75	20	410	25	105	30	25	30	20	50
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)	92	337	82	22	446	27	114	33	27	33	22	54
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	92	419	22	473	174	109						
Volume Left (vph)	92	0	22	0	114	33						
Volume Right (vph)	0	82	0	27	27	54						
Hadj (s)	0.53	-0.08	0.53	0.03	0.08	-0.20						
Departure Headway (s)	6.9	6.3	6.9	6.4	7.0	7.0						
Degree Utilization, x	0.18	0.73	0.04	0.84	0.34	0.21						
Capacity (veh/h)	499	556	503	553	465	455						
Control Delay (s)	10.1	23.0	9.0	32.6	13.5	11.9						
Approach Delay (s)	20.7		31.5		13.5	11.9						
Approach LOS	С		D		В	В						
Intersection Summary												
Delay			23.1									
Level of Service			С									
Intersection Capacity Utilizat	ion		53.5%	IC	U Level o	of Service			Α			
Analysis Period (min)			15									

	-	•	•	<b>←</b>	•	~
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<b>∱</b> 1>			414	*/*	
Traffic Volume (veh/h)	455	105	25	540	80	15
Future Volume (Veh/h)	455	105	25	540	80	15
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)	495	114	27	587	87	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	80					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			609		900	304
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			282		612	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					0.0	0.0
tF (s)			2.2		3.5	3.3
p0 queue free %			98		76	98
cM capacity (veh/h)			1124		365	954
	ED 4	ED 0		M/D 0		
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	330	279	223 27	391	103	
Volume Left	0	0		0	87	
Volume Right	0	114	0	0	16	
cSH	1700	1700	1124	1700	403	
Volume to Capacity	0.19	0.16	0.02	0.23	0.26	
Queue Length 95th (m)	0.0	0.0	0.6	0.0	8.0	
Control Delay (s)	0.0	0.0	1.2	0.0	17.0	
Lane LOS			Α		С	
Approach Delay (s)	0.0		0.4		17.0	
Approach LOS					С	
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utiliz	ation		45.5%	IC	U Level c	f Service
Analysis Period (min)			15			

### 3: Hurontario Street & Dundas Street W/Dundas Street E

	ၨ	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	~	<b>&gt;</b>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>^</b>	7	ሻ	<b>∱</b> }			<b>∱</b> }		7	<b>∱</b> }	
Traffic Volume (vph)	160	775	125	130	945	160	0	920	135	190	1015	135
Future Volume (vph)	160	775	125	130	945	160	0	920	135	190	1015	135
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	40.0		25.0	25.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1713	3433	1351	1713	3366	0	0	3376	0	1617	3303	0
Flt Permitted	0.072			0.210						0.950		
Satd. Flow (perm)	130	3433	1351	379	3366	0	0	3376	0	1617	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		13			11			13	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		185.1			367.5			141.9			126.5	
Travel Time (s)		13.3			26.5			10.2			9.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
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)	174	842	136	141	1201	0	0	1147	0	207	1250	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5	, i		3.5			3.0	, i		3.0	
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	1.04	1.01	1.22	1.04	1.01	1.22	1.04	1.01	1.22	1.12	1.04	1.26
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA			NA		Prot	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4		4	8								
Detector Phase	7	4	4	3	8			2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	9.0	45.5	45.5	9.0	45.5			41.0		9.0	41.0	
Total Split (s)	15.0	66.0	66.0	9.0	60.0			61.0		24.0	85.0	
Total Split (%)	9.4%	41.3%	41.3%	5.6%	37.5%			38.1%		15.0%	53.1%	
Maximum Green (s)	12.0	58.5	58.5	6.0	52.5			54.0		21.0	78.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5	3.5	0.0	3.5			3.0		0.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.5	7.5	3.0	7.5			7.0		3.0	7.0	

### 3: Hurontario Street & Dundas Street W/Dundas Street E

	•	<b>→</b>	•	•	<b>←</b>	•	<b>1</b>	<b>†</b>	<b>/</b>	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	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	
Minimum Gap (s)	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	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Recall Mode	None	None	None	None	None			C-Max		None	C-Max	
Walk Time (s)		16.0	16.0		16.0			14.0			14.0	
Flash Dont Walk (s)		22.0	22.0		22.0			20.0			20.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	72.0	58.5	58.5	63.0	52.5			54.0		21.0	78.0	
Actuated g/C Ratio	0.45	0.37	0.37	0.39	0.33			0.34		0.13	0.49	
v/c Ratio	0.98	0.67	0.25	0.71	1.08			1.00		0.98	0.77	
Control Delay	102.4	45.9	18.8	51.8	100.4			78.5		126.8	35.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Delay	102.4	45.9	18.8	51.8	100.4			78.5		126.8	35.0	
LOS	F	D	В	D	F			Е		F	С	
Approach Delay		51.2			95.3			78.5			48.0	
Approach LOS		D			F			Е			D	
Queue Length 50th (m)	41.8	124.6	15.2	28.0	~234.0			~201.3		73.8	107.1	
Queue Length 95th (m)	#94.5	149.1	33.0	#48.3	#279.4			#253.5	m	n#118.5	169.4	
Internal Link Dist (m)		161.1			343.5			117.9			102.5	
Turn Bay Length (m)	40.0		25.0	25.0						50.0		
Base Capacity (vph)	177	1255	537	199	1113			1146		212	1616	
Starvation Cap Reductn	0	0	0	0	0			0		0	0	
Spillback Cap Reductn	0	0	0	0	0			0		0	0	
Storage Cap Reductn	0	0	0	0	0			0		0	0	
Reduced v/c Ratio	0.98	0.67	0.25	0.71	1.08			1.00		0.98	0.77	

### Intersection Summary

Area Type: Other

Cycle Length: 160
Actuated Cycle Length: 160

Offset: 88 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08 Intersection Signal Delay: 68.0 Intersection Capacity Utilization 99.5%

Intersection LOS: E
ICU Level of Service F

Analysis Period (min) 15

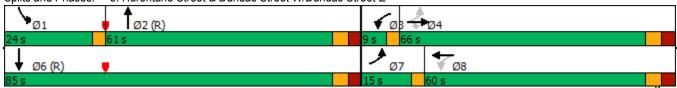
Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Hurontario Street & Dundas Street W/Dundas Street E



# **Appendix I**

Relevant City of Mississauga Zoning By-Law

Official Plan Amendment indicated that, given the growth pressures in Uptown Node, road improvements alone will not be enough to alleviate expected traffic congestion by 2041. By reducing parking rates it is anticipated that the modal split towards non-auto modes of transportation, including transit, will be encouraged.

• Refinement to Precinct 3: It is proposed to include the area west of Port Credit Community Node and areas adjacent to the 403 BRT corridor, west of the Downtown Core, in Precinct 3.

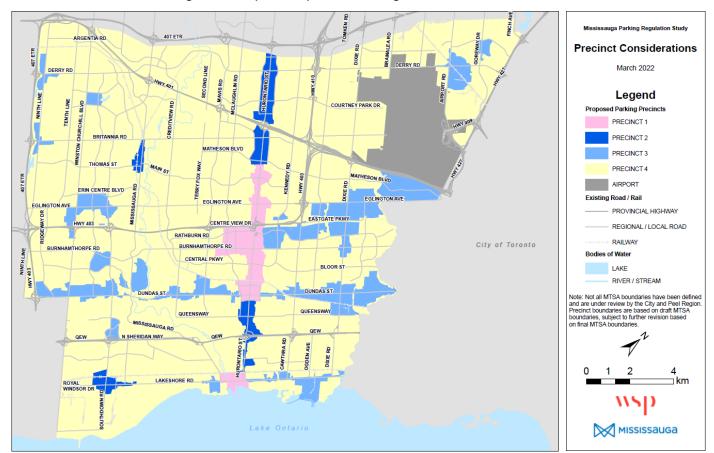


Figure 1: Map of Proposed Parking Precincts, March 2022

### b) Changes to Residential Parking Rates

The following highlights any changes since the December 6, 2021 PDC meeting:

- Maintain existing visitor parking requirements: Staff reviewed existing developments and confirmed a high number of parking complaints regarding inadequate visitor parking.
- Transitional Housing: It is proposed to lower the parking requirement for transitional or emergency housing given most of the occupants typically do not have a car.

Column	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF- STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
2.0	Condominium <b>Apartment</b> (0207-2008), (0174-2017), (0179-2018),	1.00 resident space per studio unit 1.25 resident spaces per one bedroom unit 1.40 resident spaces per two-bedroom unit 1.75 resident spaces per three bedroom unit resident spaces per three bedroom unit  0.20-visitor spaces per unit	0.8	0.9	1.0 0.20	0.20
3.0	Rental <b>Apartment</b> (0207-2008), (0174-2017), (0179-2018),	1.00 resident space per studio unit 1.18 resident spaces per one bedroom unit 1.36 resident spaces per two bedroom unit 1.50 resident spaces per three bedroom unit resident spaces per three bedroom unit resident spaces per unit 0.20 visitor spaces per unit	0.8	0.8	0.20	0.20
4.0	Public Authority Dwelling Unit in a Rental Apartment	resident spaces per	0.4	0.6	0.65	0.20
<u>5.0</u>	Apartment	1.0-resident spaces	0.20 <u>0.8</u>	0.20	0.20	0.20
4.0	(within CC1 to CC4 zones) (0207-2008), (0174-2017)	per unit 0.15-visitor spaces per unit (1)	0.15			

Column	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF- STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
		For the visitor compo- calculation of require following: the greater of 0.15 visitor spaces pe or Parking required for a the same lot as the re- centre/convention of accommodation, pla- restaurant. (1) (2) Parking for banquet establishment, overr recreational establis shared parking arrang regulations contained	r unit-(1)(2)  all non residentisidential use, exentre, entertain ce of religious a hall/conference hight accommodement and restrement and shall	al uses, located cept banquet l ment establish assembly, recretation, place caurant shall no be provided in	I in the same but hall/conference the tion centre, er of religious assort be included in accordance with accordance with the tion centre, er of religious assort be included in accordance with the tion centre with the tion centre with the tion centre with the tion accordance with the tion accordance with the tion accordance with the tion accordance with tion accord	with the  dilding or on  ht ishment and etertainment embly, the above
<u>6.0</u> 5.0	Detached Dwelling, Linked Dwelling, Semi-Detached, Street Townhouse (0297-2013), (0174-2017), (0181-2018/ LPAT Order 2019 February 15)	2.0 spaces per unit	2.0	2.0	2.0	2.0
7.0 6.0	Condominium Detached Dwelling, Condominium Semi-Detached, Condominium Townhouse, Detached Dwelling on a CEC - Road, Semi- Detached on a CEC - Road, Townhouse on a CEC - Road (0174-2017), (0181-2018/LPAT Order 2019 February 15)	2.0 resident spaces per unit 0.25 visitor spaces per unit	2.0 0.25	0.25	2.0 0.25	2.0 0.25
8.0 7.0	<b>Duplex, Triplex</b> (0174-2017)	1.25 spaces per unit	1.25	1.25	1.25	1.25
9.0 8.0	Dwelling units located above a commercial development with a maximum height of three storeys	1.25 spaces per unit	1.0	1.0	1.0	<u>1.0</u>
10.0 9.0	Group Home	2.0 spaces	2.0	2.0	2.0	2.0

Column	ı A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF- STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
11.0 10.0	Condominium Back to Back and Stacked Townhouse Without exclusive use garage and driveway (0179-2018), (0181-2018/LPAT Order 2019 February 15) (0XXX-2022)	Without exclusive use garage and driveway: 1.10 resident spaces per studio/one- bedroom unit 1.5 resident spaces per two bedroom unit 1.75 resident spaces per three bedroom unit 2.0 resident spaces	0.25	0.25	1.3 0.25	0.25
		per four bedroom unit  resident spaces per unit 0.25 visitor spaces per unit				
12.0	Back to Back and Stacked Townhouse With exclusive use garage and driveway	With exclusive use garage and driveway: 2.0 resident spaces per unit 0.25 visitor spaces	2.0 0.25	0.25	2.0 0.25	0.25
13.0 11.0	Rental Back to Back and Stacked Townhouse, Rental Townhouse (0179-2018), (0181-2018/LPAT-Order 2019 February 15)	per unit  Without exclusive usi 1.10 resident spaces p 1.25 resident spaces p 1.41 resident spaces p 1.95 resident spaces p 0.25 visitor spaces pe With exclusive use ge 2.0 resident spaces pe 0.25 visitor spaces pe 0.25 visitor spaces pe	per studio/one beer two bedroon per three bedroon per four bedroon r unit arage and drives per unit	edroom unit n unit m unit m unit n unit		
14.0 12.0	Long-Term Care Building (0174-2017)	0.33 spaces per bed	0.33	0.33	0.33	0.33
13.0	Deleted by (0111-2019)					
14.0	Retirement Building (0174-2017)	0.50 spaces per unit	0.50	0.50	0.50	0.50
<u>15.0</u>	Public Authority Dwelling Unit in a Retirement Building	spaces per unit	0.25	0.35	0.35	0.35
<u>16.0</u>	Transitional Housing	spaces per unit or sleeping rooms, whichever is greater	<u>0.1</u>	0.1	0.1	<u>0.1</u>
17.0 15.0	All other housing forms not identified above with more than two <b>dwelling units</b>	2.0 resident spaces per unit 0.25 visitor spaces per unit	2.0	2.0	2.0	2.0

NOTES: (1) See Sentence 3.1.2.1.1 of this By-law. (2) See Sentence 3.1.1.1.7 of this By-law.

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# 3.1.2.1.2 Visitor **parking spaces** shall not be required for an **apartment** legally **existing** within CC1 to CC4 zones for which a building permit has been issued on or before May 29, 2009. (0207-2008), (0174-2017)

### 3.1.2.1.3 Shared Arrangement for Residential Visitor and Non-Residential Parking Component

<u>For the purpose of Article 3.1.2.1 of this By-law</u>, a shared parking arrangement may be used for the calculation of required residential visitor/ non-residential parking in accordance with the following:

the greater of

(1) visitor spaces per unit in accordance with applicable regulations contained in Table 3.1.2.1 of this By-law

or

(2) Parking required for all non-residential uses, located in the same building or on the same lot as the residential use, except banquet hall/conference centre/convention centre, entertainment establishment, overnight accommodation, place of religious assembly, recreational establishment and restaurant over 220 m2 GFA - non-residential.

Parking for banquet hall/conference centre/convention centre, entertainment establishment, overnight accommodation, place of religious assembly, recreational establishment and restaurant over 220 m2 GFA - non-residential shall not be included in the above shared parking arrangement and shall be provided in accordance with applicable regulations contained in Table 3.1.2.2 of this By-law.

### 3.1.2.2 Required Number of Parking Spaces for Non-Residential Uses

Off-street **parking spaces** for non-residential **uses** shall be provided in accordance with Table 3.1.2.2. –Required Number of <u>Off-Street</u> Parking Spaces for Non-Residential Uses.

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 $\textbf{Table 3.1.2.2 - Required Number of } \underline{\textbf{Off-Street}} \ \textbf{Parking Spaces for Non-Residential Uses}$ 

(**note to reviewers:** only categories <u>in red underline</u> have revised parking requirements; existing parking requirement in black font will remain across all precincts)

Column	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF-STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
2.0	Active Recreational Use	4.5-spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> , except for an arena or a <b>marina</b>	4.5	4.5	4.5	4.5
3.0	Adult Entertainment Establishment	16.3-spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential	16.3	16.3	16.3	16.3
4.0	Animal Services:					
4.1	Animal Boarding Establishment	3.6 spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential	3.0	3.0	3.6	3.6
4.2	Animal Care Establishment	5.4 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	<u>3.0</u>	<u>3.0</u>	<u>4.0</u>	<u>5.0</u>
4.3	Animal Care Establishment (in a C4 zone)	4.0 spaces per 100 m <sup>2</sup> GFA - non-residential				
5.0	Arena	1.0 space per 4 seats of permanent fixed seating (1)	1.0	1.0	1.0	1.0
6.0	Art Gallery, Museum	3.6 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	<u>3.0</u>	<u>3.0</u>	3.6	3.6
7.0	Banquet Hall/Conferenc e Centre/ Convention Centre	10.8-spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential	10.8	10.8	10.8	10.8
8.0	Commercial School	5.0 spaces per 100 m <sup>2</sup> <b>GFA -</b> non-residential	5.0	5.0	5.0	5.0
9.0	Community Centre	4.5-spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> , except for an arena	4.5	4.5	4.5	4.5
10.0	Composting Facility	1.6 spaces per 100 m <sup>2</sup> GFA - non-residential up to 2 325 m <sup>2</sup> GFA - non-	1.6	1.6	1.6	1.6
		residential;	and	and	and	and
		1.1 spaces per 100 m <sup>2</sup> <b>GFA</b> -	1.1	1.1	1.1	1.1
		non-residential between 2 325 m <sup>2</sup> and 9 300 m <sup>2</sup> GFA - non-residential;	and	and	and	and
		and 0.6-spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential over 9 300 m <sup>2</sup> <b>GFA</b> - non- residential	0.6	0.6	0.6	0.6
10A.0 11.0	Contractor Service Shop (0190-2014)	1.1-spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential	1.1	1.1	1.1	1.1
10B.0 12.0	Contractor's Yard (0190-2014)	spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	0.6	0.6	0.6	0.6

Column	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF-STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
11.0 13.0	Convenience Retail and Service Kiosk (0018-2015)	5.4-spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> plus a <b>stacking lane</b> where a drive-through is provided (2)	3.0	<u>3.0</u>	<u>4.0</u>	<u>5.0</u>
12.0 14.0	Day Care	2.5 spaces per 100m <sup>2</sup> <b>GFA</b> - non-residential	2.5	2.5	2.5	2.5
13.0 15.0	Education and Training Facility	5.0 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	5.0	5.0	5.0	5.0
14.0 16.0	Entertainment Establishment	1.0 space per 5 seats of permanent fixed seating (1) or	1.0	1.0	1.0	1.0
		10.0 spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential, whichever is greater	or 10.0	or 10.0	or 10.0	or 10.0
15.0 17.0	Essential Emergency Service	1.0-space per staff on duty with a minimum of 2.0 spaces	1.0	1.0	1.0	1.0
16.0 18.0	Financial Institution (0018-2015)	5.5 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> plus a <b>stacking lane</b> where a drive-through is provided (2)	3.0	3.0	4.0	<u>5.0</u>
16A.0 19.0	Food Bank (0325-2008)	3.0 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	3.0	3.0	3.0	3.0
17.0 20.0	Funeral Establishment	7.5 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> for the area accessible to the public	7.5	7.5	7.5	7.5
18.0 21.0	Garden Centre	3.2 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> used for retail sales and display of products and/or <b>office</b> ;	2.0	<u>2.5</u>	2.8	3.0
		and spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> used for warehousing and/or wholesaling	and 1.1	and 1.1	and 1.1	and 1.1
19.0 22.0	<b>Golf Course</b>	10.0 spaces per hole	10.0	10.0	10.0	10.0
<del>20.0</del>	deleted by 0212-2015					
21.0 23.0	Hospital	2.5 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	2.5	2.5	2.5	2.5
22.0 24.0	Library	3.2 spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential	3.2	3.2	3.2	3.2

Column	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF-STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
23.0 25.0	Manufacturing Facility	1.6 spaces per 100 m <sup>2</sup> GFA - non-residential up to	1.6	1.6	1.6	1.6
	(Single- Occupancy <b>Building</b> ) (6)	2 325 m <sup>2</sup> <b>GFA - non-residential</b> ;	and	and	and	and
	(0308-2011)		1.1	1.1	1.1	1.1
	1.1 spaces per 100 m <sup>2</sup> GFA - non-residential between 2 325 m <sup>2</sup> and 9 300 m <sup>2</sup> GFA - non-residential;	and	and	and	and	
		and 0.6-spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential over 9 300 m <sup>2</sup> <b>GFA</b> - non- residential	0.6	0.6	0.6	0.6
24.0 26.0	Manufacturing Facility (Multiple- Occupancy Mixed Use Building) (4)	1.6-spaces per 100 m² GFA - non-residential Parking for restaurant, convenience restaurant, banquet hall/conference centre/convention centre, night club, and adult entertainment establishment will be provided in accordance with the applicable regulations contained in Table 3.1.2.2 of this By-law.  Parking for individual manufacturing occupancies which exceed a GFA - non- residential of 2 325 m² shall be calculated in accordance with the provisions applicable to manufacturing facility (Single-Occupancy Building).  Parking for individual warehouse/distribution occupancies which exceed a GFA - non-residential of 6 975 m² shall be calculated in accordance with the regulations applicable to warehouse/distribution facilities, wholesaling facilities (Single-Occupancy	1.6	1.6	1.6	1.6
25.0	Marina	Building).  0.6-spaces per slip or berth	0.6	0.6	0.6	0.6
<u>27.0</u>						

Column	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF-STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
25A.0 28.0	Medicinal Product Manufacturing	1.6-spaces per 100 m <sup>2</sup> GFA - non-residential up to 2 325 m <sup>2</sup> GFA - non-	1.6	1.6	1.6	1.6
	Facility (0055-2015)	residential; and 1.1-spaces per 100 m <sup>2</sup> GFA -	and	and	and	and
	Medicinal Product Manufacturing Facility -	non-residential between 2 325 m <sup>2</sup> and 9 300 m <sup>2</sup> GFA - non-residential; and	1.1 and	1.1 and	1.1 and	1.1 and
	<b>Restricted</b> (0055-2015)	0.6 spaces per 100 m <sup>2</sup> GFA - non-residential over 9 300 m <sup>2</sup> GFA - non-residential	0.6	0.6	0.6	0.6
25B.0	Medicinal Product Manufacturing	1.6 spaces per 100 m <sup>2</sup> GFA - non-residential up to 2 325 m <sup>2</sup> GFA - non-	1.6	1.6	1.6	1.6
	Facility - Restricted (0055-2015)	residential;	and	and	and	and
		1.1 spaces per 100 m <sup>2</sup> -GFA - non-residential between 2 325 m <sup>2</sup> -and 9 300 m <sup>2</sup> -GFA - non-residential;	<del>1.1</del> and	<del>1.1</del> and	<del>1.1</del> and	1.1 and
		-	<del>0.6</del>	<del>0.6</del>	<del>0.6</del>	0.6
26.0 29.0	Motor Vehicle Body Repair Facility, Motor Vehicle Repair Facility - Commercial Motor Vehicle, Motor Vehicle Repair Facility - Restricted (0379-2009)	4.3 spaces per 100 m <sup>2</sup> GFA - non-residential, of which 50% of the required spaces may be tandem parking spaces	4.3	4.3	4.3	4.3
27.0 30.0	Motor Vehicle Sales, Leasing and/or Rental Facility - Commercial Motor Vehicles; Motor Vehicle Sales, Leasing and/or Rental Facility - Restricted	4.3 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> (exclusive of display and storage parking)	4.3	4.3	4.3	4.3
28.0 31.0	Motor Vehicle Service Station	5.4 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	3.0	3.0	4.0	5.0
29.0 32.0	Motor Vehicle Wash Facility - Commercial Motor Vehicle, Motor Vehicle Wash Facility - Restricted (0379-2009)	4.0 spaces per wash bay, of which 2.0 spaces can be located at vacuum stations, plus a stacking lane (2)	4.0	4.0	4.0	4.0

Column	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line	TYPE OF USE	MINIMUM OFF-STREET		PRECINCT 2		
1.0		PARKING REGULATION UNIT OF MEASUREMENT				
<u>33.0</u>	Night Club					
30.1 33.1	Night Club	25.2 spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential	25.2	25.2	25.2	25.2
30.2 33.2	Night Club (in CC1, CC2, CCO zones)	9.0 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	9.0			
31.0 34.0	Office:					
31.1 34.1	Office <sup>(6)</sup> (0308-2011) (0111-2019)	3.2 spaces per 100 m <sup>2</sup> GFA - non-residential  Where the non-office uses, including medical office, in an office building, are greater than 10% of the total GFA - non-residential of the office building, separate parking will be required for all of such uses in accordance with the regulations contained in Table 3.1.2.2 of this By-law	2.0	2.5	2.8	3.0
31.2 34.2	Medical Office,  Medical Office - Restricted	6.5 spaces per 100 m <sup>2</sup> GFA - non-residential	3.8	4.0	<u>4.5</u>	<u>5.5</u>
31.3	Medical Office - Restricted	6.5 spaces per 100 m <sup>2</sup> GFA - non-residential				
31.4	deleted by 0111-2019					
32.0 35.0	Overnight Accommodatio n (0379-2009)	0.8 space per guest room; plus 10.0 spaces per 100 m² GFA - non-residential used for public use areas including meeting rooms, conference rooms, recreational facilities, dining and lounge areas and other commercial facilities, but excluding bedrooms, kitchens, laundry rooms, washrooms, lobbies, hallways, elevators, stairways and recreational facilities directly related to the function of the overnight accommodation	0.8 plus 10.0	0.8 plus 10.0	0.8 plus 10.0	0.8 plus 10.0
34.0 36.0	Pilot Plant, Prototype Production	1.6 spaces per 100 m <sup>2</sup> GFA - non-residential up to 2 325 m <sup>2</sup> GFA - non-residential; and	1.6	1.6	1.6	1.6
	Facility (0325-2008)	1.1 spaces per 100 m <sup>2</sup> GFA - non-residential between 2 325 m <sup>2</sup> and 9 300 m <sup>2</sup> GFA - non-residential; and 0.6 spaces per 100 m <sup>2</sup> GFA - non-residential over 9 300 m <sup>2</sup> GFA - non-residential	1.1 and 0.6	1.1 and 0.6	1.1 and 0.6	1.1 and 0.6

Column	ı A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF-STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
35.0 37.0	Place of Religious Assembly	1.0 space per 4.5 seats for permanent fixed seating (1); plus	1.0 plus	1.0 plus	1.0 plus	1.0 plus
		27.1 spaces for any non-fixed	27.1	27.1	27.1	27.1
		or 27.1 spaces for all non-fixed moveable seating per 100 m <sup>2</sup>	or	or	or	or
		GFA - non-residential, in the worship area	27.1	27.1	27.1	27.1
		or	or	or	or	or
		10.0-spaces per 100 m <sup>2</sup> <b>GFA</b> - non-residential, whichever is greater	10.0	10.0	10.0	10.0
		Where the worship area of a place of religious assembly includes permanent fixed seating or non-fixed moveable seating for clergy, leaders, choirs, or musicians, such seating or area shall be included in the calculation of seating for the purpose of calculating required parking.				
		Where a community/multi use hall is equal to or less than the <b>gross floor area</b> of the <b>worship area</b> , no additional parking shall be required for that <b>use</b> .				
36.0 38.0	Power Generating Facility	1.0 space per staff on duty with a minimum of 2.0 spaces	1.0	1.0	1.0	1.0
37.0 39.0	Private Club	4.5 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	4.5	4.5	4.5	4.5
38.0 40.0	Recreational Establishment	4.5 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> , except for an arena	4.5	4.5	4.5	4.5
39.0 41.0	Repair Establishment:	spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	<u>3.0</u>	<u>3.0</u>	<u>4.0</u>	<u>5.0</u>
<del>39.1</del>	Repair Establishment	5.4 spaces per 100 m <sup>2</sup> GFA - non-residential				
<del>39.2</del>	Repair Establishment (in a C4 zone)	4.0 spaces per 100 m <sup>2</sup> GFA - non-residential				
40.0	Retail Centre:					
<u>42.0</u>						

Colum	n A	В	<u>C</u>	<u>D</u>	E	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF-STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
40.1	Retail Centre (Less than or equal to 2 000 m <sup>2</sup> <b>GFA -</b> <b>non-residential</b> ) (0325-2008), (0379-2009)	4.3 spaces per 100 m <sup>2</sup> GFA - non-residential Parking for restaurant and convenience restaurant over 220 m <sup>2</sup> GFA - non-residential, place of religious assembly, funeral establishment, overnight accommodation, banquet hall/conference centre/convention centre and entertainment establishment uses will be provided in accordance with the applicable regulations contained in Table 3.1.2.2 of this By-law	3.0	<u>3.0</u>	<u>3.5</u>	4.3
40.2 42.2	Retail Centre (Greater than 2 000 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> ) (0379-2009)	5.4 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	<u>3.8</u>	<u>3.8</u>	<u>4.5</u>	5.4
40.3	CC1 Retail Core Commercial (lands bounded by City Centre Drive, Duke of York Boulevard and Rathburn Road West)	4.57 spaces per 100 m <sup>2</sup> GFA - non-residential				
41.0 43.0	Retail <u>Store</u> :	spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	<u>3.0</u>	<u>3.0</u>	<u>4.0</u>	<u>5.0</u>
41.1	Retail Store	5.4 spaces per 100 m <sup>2</sup> GFA - non-residential				
41.2	Retail Store (in a C4 zone)	4.0 spaces per 100 m² GFA - non-residential				
41.3	Retail Store (in a CC2 to CC4 zones) (0207-2008)	4.3 spaces per 100 m <sup>2</sup> GFA - non-residential				
42.0 44.0	Restaurants:					
42.1 44.1	Convenience Restaurant (0212-2015)	16.0 spaces per 100 m <sup>2</sup> GFA - non-residential Up to 220 m <sup>2</sup> GFA - non- residential Over 220 m <sup>2</sup> GFA - non- residential plus a stacking lane (2)	3.0 6.0	3.0 6.0	<u>4.0</u> <u>9.0</u>	<u>5.0</u> <u>9.0</u>
42.2 44.2	<b>Restaurant</b> (0212-2015)	16.0 spaces per 100 m <sup>2</sup> GFA - non-residential Up to 220 m <sup>2</sup> GFA - non-	3.0	3.0	4.0	5.0
		residential Over 220 m² GFA - non- residential	<u>6.0</u>	<u>6.0</u>	9.0	<u>9.0</u>

Colum	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF-STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
42.3 <u>44.3</u>	Take-out Restaurant (0212-2015)	6.0 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	3.0	<u>3.0</u>	<u>4.0</u>	<u>5.0</u>
42.4	Restaurant (in a C4 zone) (0308-2011), (0212-2015)	9.0 spaces per 100 m <sup>2</sup> GFA - non-residential				
43.0	Schools:					
<u>45.0</u>						
43.1 45.1	College, University	1.1 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> used for academic purposes;	1.1	1.1	1.1	1.1
		plus	plus	plus	plus	plus
		0.15 spaces per resident student and/or staff	0.15	0.15	0.15	0.15
43.2 45.2	Public/Private School (up to and	1.0 space per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> (excluding portables)	1.0	1.0	1.0	1.0
	including Grade	plus	plus	plus	plus	plus
	8)	1.0 spaces per portable classroom (3)	1.0	1.0	1.0	1.0
43.3 45.3	Public/Private School (Grade 9 and	1.5 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> (excluding portables)	1.5	1.5	1.5	1.5
	above)	plus	plus	plus	plus	plus
		1.0 spaces per portable classroom (3)	1.0	1.0	1.0	1.0
43A.0 46.0	Science and Technology Facility (0325-2008)	3.2 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non residential</b>	<u>2.0</u>	<u>2.5</u>	<u>2.8</u>	<u>3.0</u>
43B.0 47.0	Self Storage Facility (0308-2011)	0.6 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> (exclusive of storage parking)	0.25	0.25	0.25	0.25
33.0	Personal	spaces per 100 m <sup>2</sup> <b>GFA</b> -	<u>3.0</u>	<u>3.0</u>	<u>4.0</u>	<u>5.0</u>
<u>48.0</u>	Service Establishment:	non-residential				
33.1	Personal Service Establishment deleted by (0XXX-2022)	5.4 spaces per 100 m <sup>2</sup> GFA - non-residential				
33.2	Personal Service Establishment (in C4 zone)	4.0 spaces per 100 m <sup>2</sup> GFA - non-residential				
33.3	Personal Service Establishment (in CC2 to CC4 zones) (0207-2008)	4.3 spaces per 100 m <sup>2</sup> GFA - non-residential				

Colum	n A	В	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Line	TYPE OF USE	MINIMUM OFF-STREET	PRECINCT 1		PRECINCT 3	
1.0	777 07 002	PARKING REGULATION UNIT OF MEASUREMENT				
44.0 49.0	Transit Terminal	1.0 space per staff on duty with a minimum of 2.0 spaces	1.0	1.0	1.0	1.0
45.0 50.0	Truck Terminal	3.2 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> used for <b>office</b> purposes,	<u>2.0</u>	<u>2.5</u>	<u>2.8</u>	<u>3.0</u>
		and/or	and/or	and/or	and/or	and/or
		1.1-spaces per 100 m <sup>2</sup> GFA - non-residential used for warehouse/distribution facility	1.1	1.1	1.1	1.1
4 <del>6.0</del> 51.0	Utility:					
46.1 51.1	<b>Utility Building</b>	1.0 space per staff on duty with a minimum of 2.0 spaces	1.0	1.0	1.0	1.0
4 <del>6.2</del> <u>51.2</u>	Water Treatment Facility	1.0 space per staff on duty with a minimum of 2.0 spaces	1.0	1.0	1.0	1.0
4 <del>6.3</del> 51.3	Sewage Treatment Plant	1.0 space per staff on duty with a minimum of 2.0 spaces	1.0	1.0	1.0	1.0
46.4 <u>51.4</u>	Electric Transformer and Distribution Facility	1.0 space per staff on duty with a minimum of 2.0 spaces	1.0	1.0	1.0	1.0
46A.0 <u>52.0</u>	Vehicle Pound Facility (0358-2007)	3.2 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b> used for <b>office</b> , with a minimum of 4 spaces	<u>2.0</u>	<u>2.5</u>	<u>2.8</u>	3.0
47.0 53.0	Veterinary Clinic	3.6 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	3.0	3.0	3.6	3.6
48.0 54.0	ribution	non-residential up to	1.1	1.1	1.1	1.1
	Facility, Wholesaling	6 975 m <sup>2</sup> <b>GFA - non- residential</b> ;	and	and	and	and
	Facility (Single- Occupancy Building) <sup>(6)</sup> (0308-2011)	and 0.6 spaces per 100 m <sup>2</sup> GFA - non-residential over 6 975 m <sup>2</sup> GFA - non- residential	0.6	0.6	0.6	0.6
49.0 55.0	Warehouse/Dist ribution Facility, Wholesaling Facility (Multiple- Occupancy Building) (5)	11 spaces per 100 m <sup>2</sup> GFA - non-residential  Parking for individual warehouse/distribution occupancies and wholesaling occupancies which exceed a GFA - non-residential of 6 975 m <sup>2</sup> shall be calculated in accordance with the regulations applicable to warehouse/distribution facilities, wholesaling facilities (Single-Occupancy Building).	1.1	1.1	1.1	1.1

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Column	ı A	В	<u>C</u>	<u>D</u>	E	<u>F</u>
Line 1.0	TYPE OF USE	MINIMUM OFF-STREET PARKING REGULATION UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
<del>50.0</del> <u>56.0</u>	Waste Processing Station	1.6-spaces per 100 m <sup>2</sup> GFA - non-residential up to 2 325 m <sup>2</sup> GFA - non-residential; and 1.1 spaces per 100 m <sup>2</sup> GFA - non-residential between 2 325 m <sup>2</sup> and 9 300 m <sup>2</sup> GFA - non-residential; and 0.6 spaces per 100 m <sup>2</sup> GFA - non-residential over 9 300 m <sup>2</sup> GFA - non-residential	1.6 and 1.1 and	1.6 and 1.1 and	1.6 and 1.1 and	1.6 and 1.1 and
51.0 57.0	Waste Transfer Station	1.1 spaces per 100 m <sup>2</sup> GFA - non-residential up to 6 975 m <sup>2</sup> GFA - non-residential; and 0.6 spaces per 100 m <sup>2</sup> GFA - non-residential over 6 975 m <sup>2</sup> GFA - non-residential	1.1 and 0.6	1.1 and 0.6	1.1 and 0.6	1.1 and 0.6
52.0 58.0	Other Non- Residential <b>Uses</b> Not Specified Above	5.4 spaces per 100 m <sup>2</sup> <b>GFA</b> - <b>non-residential</b>	5.4	5.4	5.4	5.4

**NOTES:** (1) See Sentence 3.1.2.2.1 of this By-law. (0018-2021)

- (2) See also Subsection 3.1.5 of this By-law.
- (3) See also Article 3.1.1.11 of this By-law.
- (4) See Sentence 3.1.2.2.2 of this By-law. (0018-2021)
- (5) See Sentence 3.1.2.2.3 of this By-law. (0018-2021)
- See Sentence 3.1.2.2.4 of this By-law. (0018-2021)

#### 3.1.2.3 C4 Zone Parking Requirement

For the purpose of Article 3.1.2.2, off-street parking spaces for non-residential uses in C4 zones shall be provided in accordance with Precinct 1 requirements in Table 3.1.2.2.

### 3.1.2.34 Mixed Use Development Shared Parking

A shared parking formula may be used for the calculation of required parking for a mixed use development. A mixed use development means the following:

- (1) Non-office uses in an office or medical office building or group of buildings on the
- (2) Office or medical office space in a building or group of buildings on the same lot primarily occupied by retail uses;
- A building or group of buildings on the same lot containing a mix of office or medical (3) office, commercial uses and dwelling units;
- (4) Non-residential **uses** in an **apartment** (0174-2017)

Shared parking is to be calculated in compliance with Table 3.1.2.4 3 - Mixed Use Development Shared Parking Formula. (0018-2021)

The initial step in determining required parking for a mixed use development is to calculate the parking requirement for each use in the development as if these uses were free-standing buildings. The parking requirement for each use is then multiplied by the percent of the peak period for each time period (i.e. noon), contained in Table 3.1.2.43 -Mixed Use Development Shared Parking Formula. Each column is totalled for weekday and weekend. The highest figure obtained from all time periods shall become the required parking for the mixed use development.

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### 3.1.3 Accessible Parking Spaces

### 3.1.3.3 C4 Zone Exception

Accessible parking spaces shall not be required in C4 zones where the required number of on-site parking spaces is 15 or less.

### **Part 4: Residential Zones**

- 4.1 General Provisions for Residential Zones
- 4.1.20.9 In addition to the required number of parking spaces for the dwelling, one parking space shall be required for a second unit; Additional parking spaces shall not be required for a second unit.



### THE CORPORATION OF THE CITY OF BRAMPTON

## **BY-LAW**

Number <u>45</u>-2021

То	amend	By-law	270-2004,	as	amend	led

The Council of The Corporation of the City of Brampton, in accordance with the provisions of the *Planning Act*, R.S.O. 1990, c.P. 13, hereby ENACTS as follows:

- 1. By-law 270-2004, as amended, is hereby further amended:
- (1) By deleting Schedule B-7 Central Area Queen Street Corridor: Special Parking Provisions in its entirety and replacing it with Schedule B-7 Downtown, Central Area and Hurontario/Main Corridor Special Parking Provisions.
- (2) By deleting Sections 20.3.2, 20.3.3 and 20.3.4 in their entirety and replacing them with the following:
  - "20.3.2 Downtown, Central Area and Hurontario/Main Corridor Parking Requirements
    - (a) Notwithstanding any minimum parking requirement prescribed in Sections 10.9.2(a), 10.9.3, 20.3.1, 30.5 or in any Special Section of this By-law, and except for the requirements set out in Section 20.3.2 (b) through (f), there shall be no minimum required parking for any use within the boundaries of Schedule B-7.
    - (b) Visitor parking for an apartment dwelling, a multiple residential dwelling and a townhouse dwelling having no private garage or driveway, shall be provided at a rate of 0.20 visitor parking spaces per dwelling unit.
    - (c) Parking for a single detached, semi-detached, duplex, triplex, double duplex, street townhouse dwelling or two-unit dwelling shall be provided in accordance with Section 10.9.1 A.
    - (d) Parking for a lodging house shall be provided in accordance with Section 10.9.1 I.
    - (e) Parking for a senior citizen residence shall be provided in accordance with Section 10.9.2 (b).
    - (f) Accessible parking spaces shall be provided in accordance with the Traffic By-law 93-93, as amended.
- (3) By renumbering Sections 20.3.5 and 20.3.6 to Sections 20.3.3 and 20.3.4 respectively.

### ENACTED and PASSED this 24th day of March, 2021.

Approved as to form.
2021/03/03

CD

Approved as to content. 2021/03/03

RJB

