nextrans
CONSULTING ENGINEERS

nextrans.ca

Transportation Impact Study Update

PROPOSED MIXED-USE DEVELOPMENT

3115 Hurontario Street,
MISSISSAUGA, ONTARIO

July 2024
Project No: NT-21-262

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

Phone: 905-503-2563
www.nextrans.ca

nexTrans CONSULTING ENGINEERS
NextEng Consulting Group Inc.

July 16, 2024

Attention: Aiden Sweeny, President

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

Re: Transportation Impact Study Update
Proposed Mixed-use Development (Residential, Retail and Charity Centre)
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 Update for the above noted site in support Official Plan Amendment and Zoning By-law Amendment Applications for a proposed mixed-use development that includes residential, charity centre and retail uses. The subject site is located at 3115 Hurontario Street, southeast quadrant of Hurontario Street and Kirwin Avenue, in the City of Mississauga. NexTrans has prepared a Transportation Impact Study dated September 2022 in support of the previous development proposal.

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. With 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 Update 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.

Prepared by:

Sam Nguyen, Dipl.
Transportation Analyst

LICENSED PROFESSIONAL ENGINEER
P. P. ILIAS
100147328
16/07/2024
PROVINCE OF ONTARIO

Reviewed by:

Peter Ilias, P.Eng.
Senior Engineer

Reviewed and Approved by:

Richard Pernicky, MITE
Principal

Report Submission Record

Identification	Date	Description of issued and/or revision
Final Report	July 16, 2024	For Final Submission

COMMENTS RECEIVED FROM THE CITY OF MISSISSAUGA

The following comments were received from the City of Mississauga. Appropriate responses are provided with the additional analysis to support these responses are provided in this Study Update. It should be noted that as the current proposed development is a new proposal, therefore, some of the previous comments may not apply.

1. TRAFFIC IMPACT STUDY – A Transportation Impact Study prepared by NexTrans Consulting Engineers dated September 2022 was submitted in support of the proposed development. Based on the information provided to date, staff provide the following comments:

   GENERAL

   i. P.Eng. Seal - The report must be stamped, dated, and signed by a Licensed Professional Engineer in the Province of Ontario (P.Eng.).

      Response: Noted and has been provided in this TIS Update.

   ii. Existing Area Mode Share - Section 3.2 incorrectly notes that the existing mode share in the area is approximately 40% and 36% in the AM and PM peak hours, respectively. Auto Passenger trips are still considered Auto Trips. Only non-auto trips (e.g. transit, walking, cycling) should apply to the modal split reduction. Thus, the existing modal split is approximately 30% and 29%, respectively.

      Response: Noted and has been revised in this TIS Update. However, it should be noted that the modal splits have not been utilized or applied to the trip generation. Therefore, this comment has no implications on the analysis, findings or recommendations of this Study.

   iii. Development Statistics – The site statistics indicated in the report do not match what is noted on the plans and Planning Justification Report (PJR). Please revise the report accordingly based on the correct site statistics.

      Response: Noted and has been addressed in this TIS Update.

   iv. Figure 5 – Please update the Proposed Site Plan figure with the most recent/submitted version.

      Response: Noted and has been included in this TIS Update.

   v. Existing Land Use Generation – It appears that the hours of operation for the existing use generally fall outside of the AM and PM peak hours. This is important information to note in the report.

      Response: Noted. This note has been added in this TIS Update.

   SITE TRAFFIC

   i. Trip Generation LUC 222 – Given the low sample size of the close to rail transit subcategory of LUC 222, and as a conservative approach, use the not close to rail transit subcategory instead. Further the location/setting selected for LUC 222 should be General Urban/Suburban and this should be noted in the report.

      Response: Noted. This comment has been addressed in this TIS Update.

   ii. Trip Gen Missing Uses – The trip generation must account for all proposed land uses. The proposed charity land use is missing and must be considered.

Response: It should be noted that the potential site trip generated for the charity component of the proposed development may not coincide with the peak hour of adjacent street traffic. Therefore, this proposed charity land use may not have any impacts on the surrounding roadway intersections. With the future Hurontario LRT next to the site, it is anticipated that the users of this proposed charity facility will use public transit instead of driving private vehicles.

It should also be noted that the ITE Trip Generation Manual 11th Edition does not include a stand-alone land use category for charity land use as this is not a typical use or is expected to have a significant impact on the adjacent transportation network.

For these reasons, the trip generation for the proposed charity use is expected to be negligible and therefore was not included in the analysis.

iii. Trip Gen Incorrect site statistics – The site statistics used to calculate the trip generation are incorrect and do not reflect the submitted plans and PJR. Revise accordingly.

Response: Noted and has been included in this TIS Update.

iv. Trip Gen Rounding Please do not round to the nearest 5 trips. Trip Gen calculations should be rounded up to the nearest whole number.

Response: Noted and has been addressed in this TIS Update.

v. Trip Distribution and Assignment – The trip distribution/assignment should be further broken down by AM and PM Peak hours and Inbound and Outbound.

Response: Noted and has been included in this TIS Update.

EXISTING CONDITIONS

i. Figure 7 The lane configuration for the west leg of the intersection of Hurontario St & Cooksville GO/John St is missing from the Figure and must be included. Further, the figure is missing the northbound left, southbound right, and shared westbound through/right lanes at the intersection.

Response: Noted and has been included in this TIS Update.

FUTURE BACKGROUND CONDITIONS

i. Volume Balancing Provide rationale on the volume balancing, particularly given that there are driveways between the study area intersections.

Response: Noted and no volume balancing has been included in this TIS Update.

ii. Volume Rounding In order to ensure as accurate as possible results, volumes should not be rounded to the nearest 5 trips.

Response: Noted and has been addressed in this TIS Update.

iii. Capacity Analysis 1 – Signal timings should be optimized for future background conditions and this should be noted in the report

Response: Noted and has been included in this TIS Update.

iv. Background Developments 45 Agnes Street (OZ 13-17) and 3016, 3020, 3026 & 3032 Kirwin Avenue & 3031 Little John Lane (OZ/OPA 21-5) must be considered as background developments.

Response: Noted and has been included in this TIS Update.

v. Capacity Analysis 2 – It is not feasible to have two shared WB through/right lanes at the intersection of Hurontario & Dundas as this would result in conflicting movements.

Response: Noted and has been addressed in this TIS Update.

vi. Future Background Volumes – As revisions are required to the OZ 21-11 W7 3085 Hurontario St TIS, please update this report with the most recent information/volumes. [NOTE: Refer to Traffic Comment #68 for further TIS comments]

Response: Noted and has been included in this TIS Update.

FUTURE TOTAL CONDITIONS

i. Capacity Analysis 1 – Signal timings should be optimized for future total conditions and this should be noted in the report

Response: Noted and has been included in this TIS Update.

ii. Capacity Analysis 2 – It is not feasible to have two shared WB through/right lanes at the intersection of Hurontario & Dundas as this would result in conflicting movements.

Response: Noted and has been addressed in this TIS Update.

iii. Please provide further technical justification as to why it would or wouldn't be appropriate for the proposed development to proceed. Given that some capacity constraints.

Response: The analysis indicates that the proposed development has negligible impacts on the boundary roadway intersections. At most, the proposed development is only expected to add 2-3 seconds delay to the critical movements.

Given that the proposed development is located adjacent to the future Hurontario LRT, it is anticipated that the majority of the residents will be using public transit instead of driving private vehicles.

2. [INTERNAL SITE CIRCULATION] (a) Additional turning movement diagrams will be required to depict the internal site circulation. See TIS comments. (b) Additional provisions to aid in the safety and operation of these features may be required. (c) Detailed turning movements are to be provided for ingress and egress through the access point(s) for the site. (d) Confirmation from Fire and Emergency Services that the internal road is acceptable from an emergency response perspective. (e) Confirmation from the Region of Peel that the internal road is acceptable from a waste collection perspective. (f) A turn around facility may be required as a result of the above.

Response: Noted and have been provided in this Study Update. Further details will be provided at the subsequent stage of the proposed development, where appropriate.

3. [ACCESS INTERCONNECTION] - The applicant will be required to provide the appropriate legal documentation, to the satisfaction of Legal Services and the Transportation and Works confirming mutual right of way/servicing easements and maintenance agreements between these lands and the lands located [North/East/West/South]. The City will require that acceptable easements over these "mutual use" areas be maintained on title in perpetuity.

Response: Noted and have been provided in this Study Update. Further details will be provided at the subsequent stage of the proposed development, where appropriate.

4. [TRAFFIC NOTES] (i) All damaged or disturbed areas within the municipal right-of-way are to be reinstated at the Owner's expense. (ii) All landscaping and grading within close proximity to the proposed access points is to be designed to ensure that adequate sight distances are available for all approaching and exiting motorists and pedestrians. (iii) The portion of the driveway within the municipal boulevard is to be paved by the Owner. (iv) Driveway accesses shall maintain a 1.5m setback from above-ground features such as utilities and trees. (v) Any above ground utilities located within 1.5m of a proposed access are to be relocated at the Owner's expense. (vi) The cost for any/all road improvements required in support of this development application will be borne by the Owner. (vii) The Owner shall make satisfactory arrangements with the Transportation and Works Department for the design, construction and payment of all costs associated with works necessary to support access to this site. (viii) Any access to internal servicing shall be provided internally through the site.

   Response: Noted and have been provided in this Study Update. Further details will be provided at the subsequent stage of the proposed development, where appropriate.

5. [SITE ACCESS] (a) The subject site will be required to share mutual accesses with the adjacent property to the south/east (3085 Hurontario Street), including one proposed right-in/right-out access to Hurontario Street and one proposed full moves access to Kirwin Avenue.

   Response: Noted and have been provided in this Study Update.

6. [CYCLING FACILITIES] The Owner will be required to provide accessible and secure short term (outdoor) and long term (indoor) bicycle storage facilities on site. The Site Plan shall be revised to identify the cycling facility locations and to specify the facility detail(s), including quantity of spaces proposed for each. The following rates are to be used: (a) Apartment Mississauga - A minimum of 0.60 long term spaces and 0.05 (6 spaces min.) short term spaces per residential unit. (b) Retail (Per 100 sq.m. GFA of retail area) Mississauga - A minimum of 0.10 long term spaces and 0.20 short term spaces. (c) Employment (Per 100 sq.m. GFA employment area) Mississauga - A minimum of 0.10 long term spaces and a minimum of 2 spaces for short term.

   Response: Noted and have been provided in this Study Update. Further details will be provided at the subsequent stage of the proposed development, where appropriate.

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 that includes residential, retail and charity centre. The subject site is located at 3115 Hurontario Street, southeast quadrant of Hurontario Street and Kirwin Avenue, in the City of Mississauga.

NexTrans has prepared a Transportation Impact Study dated September 2022 in support of the previous development proposal. It should be noted that this Transportation Impact Study Update is consistent with the previous Study and has been prepared based on the City of Mississauga and Peel Region Traffic Impact Study Guidelines.

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.

Therefore, 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.

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 42-storey mixed-use building with the following breakdown:

- Total of 520 residential dwelling units
    - 39 bachelor units
    - 321 one-bedroom units;
    - 122 two-bedroom units; and
    - 38 three-bedroom units
- 218.53 m^2 ground related retail gross floor area
- 940.94 m^2 of charity centre
- Total of 200 parking spaces
- Total of 338 bicycle parking spaces
    - 312 Type B
    - 26 Type A

Development Access Arrangement

A full moves access will be provided onto Kirwin Avenue to service the proposed development. It should be noted that this access will be shared with the adjacent development, 3085 Hurontario Street.

The analysis indicates that the proposed access is 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: one inbound and one outbound lane (3.5 m width per lane), eastbound shared through/right and westbound shared through/left on Kirwin Avenue.

Site Trip Generation

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

- 238 total two-way trips (101 inbound and 137 outbound) and 227 total two-way trips (126 inbound and 101 outbound) during the morning and afternoon peak hours, respectively;
- 160 total two-way auto trips (59 inbound and 101 outbound) and 191 total two-way auto trips (105 inbound and 86 outbound) during the morning and afternoon peak hours, respectively; and
- 78 total two-way transit trips (42 inbound and 36 outbound) and 36 total two-way transit trips (21 inbound and 15 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. As 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. The assessment indicated that this proposed lane configuration will improve the intersection levels of service.

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.

Walking Mode Assessment

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.

Therefore, the proposed development and the area will maintain at least level of service B for the existing and future sidewalk network.

Cycling Mode Assessment

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 our understanding that cycling network will be improved in the City and in this general area through 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.

The proposed development will provide a total of 338 bicycle parking spaces on-site to encourage residents to use active modes of transportation and to support vehicle parking rate reduction.

Transit Mode Assessment

The proposed development is expected to generate 78 total two-way transit trips (41 inbound and 37 outbound) and 36 total two-way transit trips (21 inbound and 15 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 riders will have many ways to access transit and these trips will be spread out to different transit routes. Therefore, the proposed development site generated transit trips can be accommodated by the proposed transit improvements in this area. No additional improvements are required beyond the proposed transit improvements to accommodate the proposed development.

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. 0225-2007with the blended rates of 0.5 space/unit for resident and 0.15 spaces/unit for visitor/ground related retail use, for the proposed condominium apartment land use category. On this basis the proposed development is required to provide a total of 338 vehicle parking spaces.

Based on the parking justification provided in this Study for the recommended vehicle parking rates, the proposed development will provide a total of 200 vehicle parking spaces for both resident, visitor and retail components. This is about 41% parking reduction from the applicable Zoning By-law.

Bicycle Parking Review

Based on the applicable Zoning By-law, a total of 338 bicycle parking spaces, with 26 spaces for Class A and 312 spaces for Class B are required for the proposed development. The proposed development will provide a total of 338 bicycle parking spaces, which meets these requirements. Therefore, this provision 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.

It is recommended that the proposed development provides one bicycle repair station at a convenient location. The final location will be determined through the appropriate application stage.

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.

AutoTURN software was used to generate vehicular turning templates to confirm and demonstrate the accessibility for the Type "G" loading space. The vehicle turning templates are provided in **Figures 23** and **24** of this Study.

Study Conclusions and Recommendations

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

- Reduce parking rates (0.23 spaces/unit for residential and 0.15 spaces/unit for visitor/retail components) for the proposed developments to encourage alternative modes of transportation such as walking, cycling and public transit;
- The proposed development provides 338 bicycle parking spaces to encourage active modes of transportation and support vehicle parking reduction;
- The proposed development provides at least one bicycle repair station on-site at a convenient location;
- The proposed development provides direct sidewalk connection onto Hurontario Street and Kirwin Avenue; and
- Proposed development provides TDM measures and incentives to encourage alternative mode of transportation in the area

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

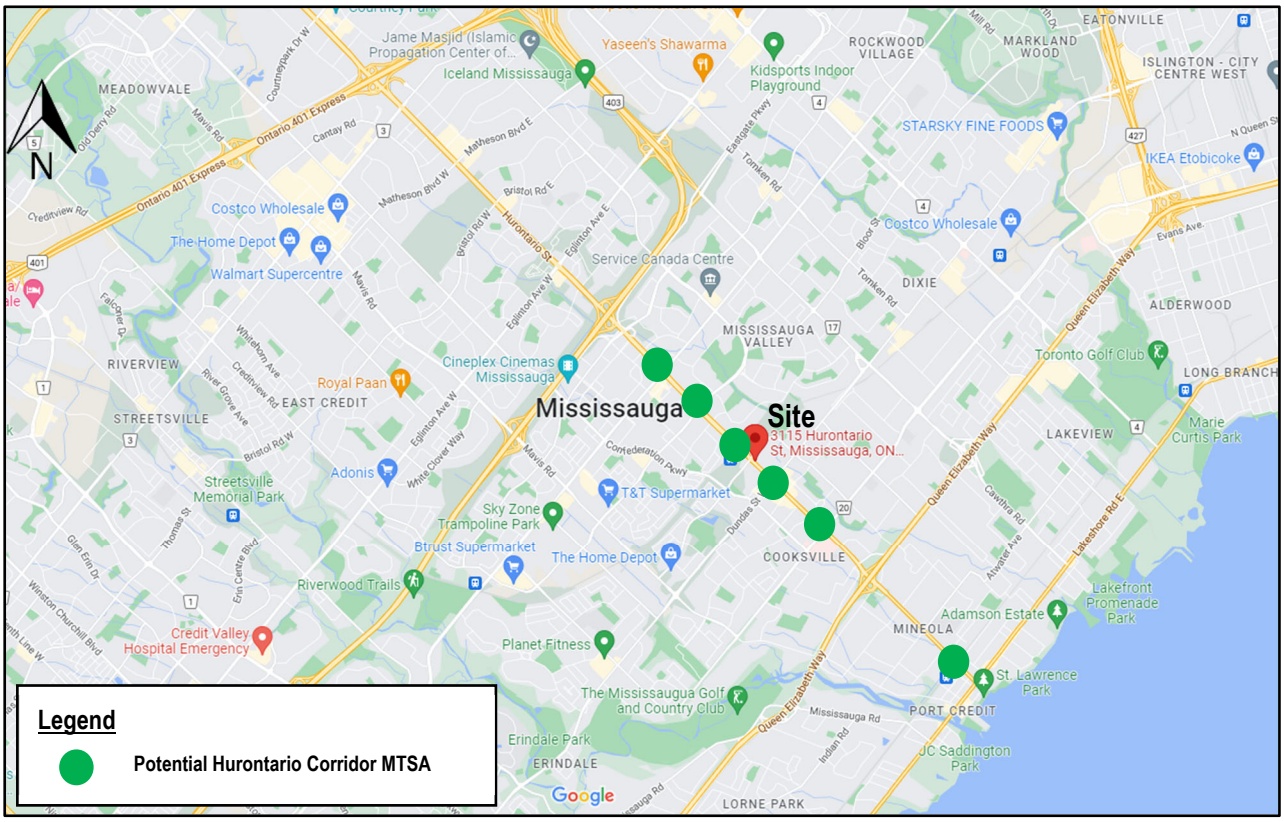
1.0 INTRODUCTION

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 that includes residential, retail and charity centre.

NexTrans has prepared a Transportation Impact Study dated September 2022 in support of the previous development proposal. It should be noted that this Transportation Impact Study Update is consistent with the previous Study and has been prepared based on the City of Mississauga and Peel Region Traffic Impact Study Guidelines.

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.

2.0 STUDY AREA OVERVIEW AND CONTEXT

2.1. Site Walk Score

NexTrans has reviewed the walk score for the subject site using the information in www.walkscore.com website. **Table 1** below summarizes the walk score for the subject site.

Table 1 – Walk Score for 3115 Hurontario Street

Mode	Score	Description
Walking	94	Walker's Paradise – Daily errands do not require a car
Public Transit	65	Good Transit – Many nearby public transportation options
Cycling	64	Bikeable – Some bike infrastructure

As indicated in the table above, the subject site has excellent access to sidewalk network, good transit and active transportation network (mostly sidewalk) options. The cycling facilities still needs improvements, however, the new cycling facilities along Hurontario Street corridor will significantly improve cycling activities in the area.

2.2. 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 (http://www.metrolinx.com/en/greaterregion/projects/hurontario-lrt.aspx) 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. Therefore, this project will further encourage future residents to take more convenient and sustainable mode of transportation in transit, instead of driving single-occupant-vehicles.

2.3. Future Dundas BRT

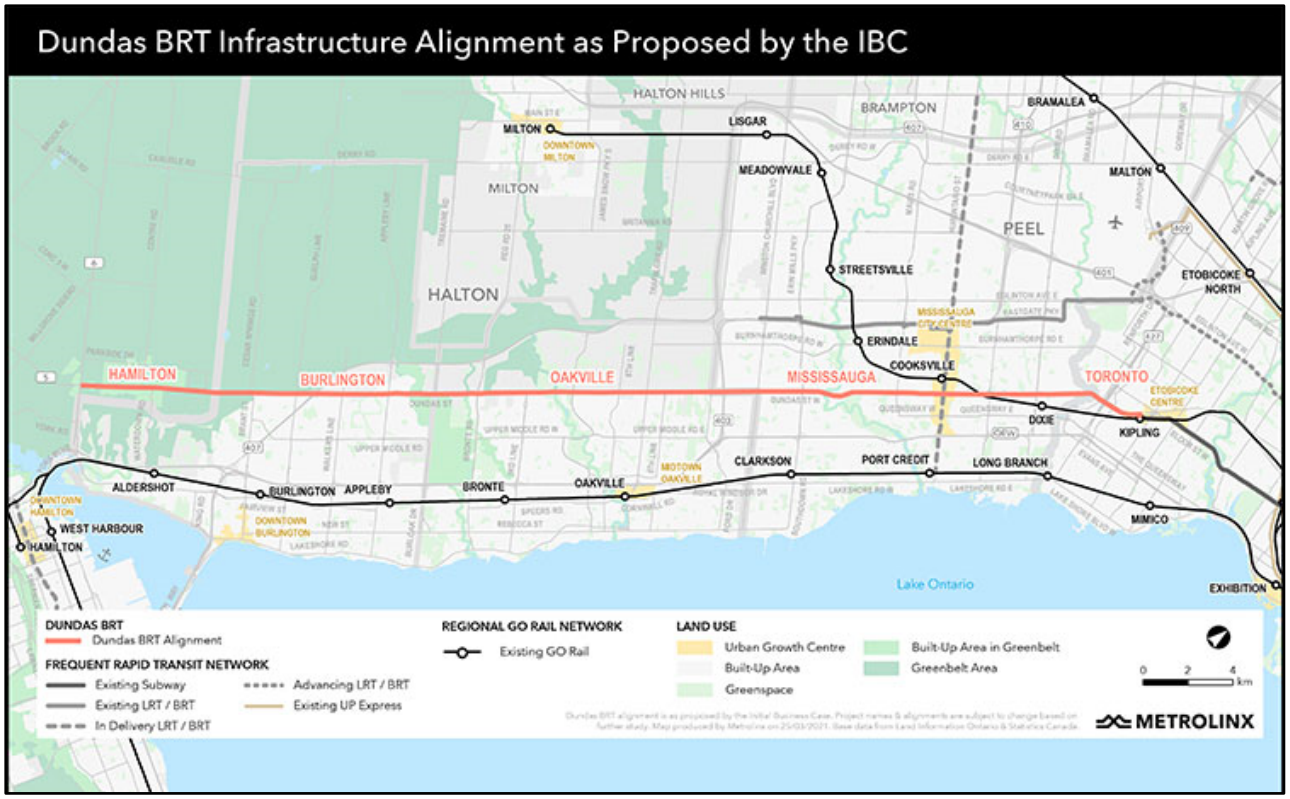
The Minster of Environment has given the notice to proceed with Dundas Bus Rapid Transit Mississauga East on April 27th, 2022. Based on the information provided in the project website, Metrolinx has initiated the Dundas Bus-Rapid-Transit (BRT) Project (**Figure 3**). The purpose of this project is to 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. 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 2 – Hurontario LRT

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

Figure 3 – Dundas BRT Alignment



Source: Metrolinx Website

2.4. 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.

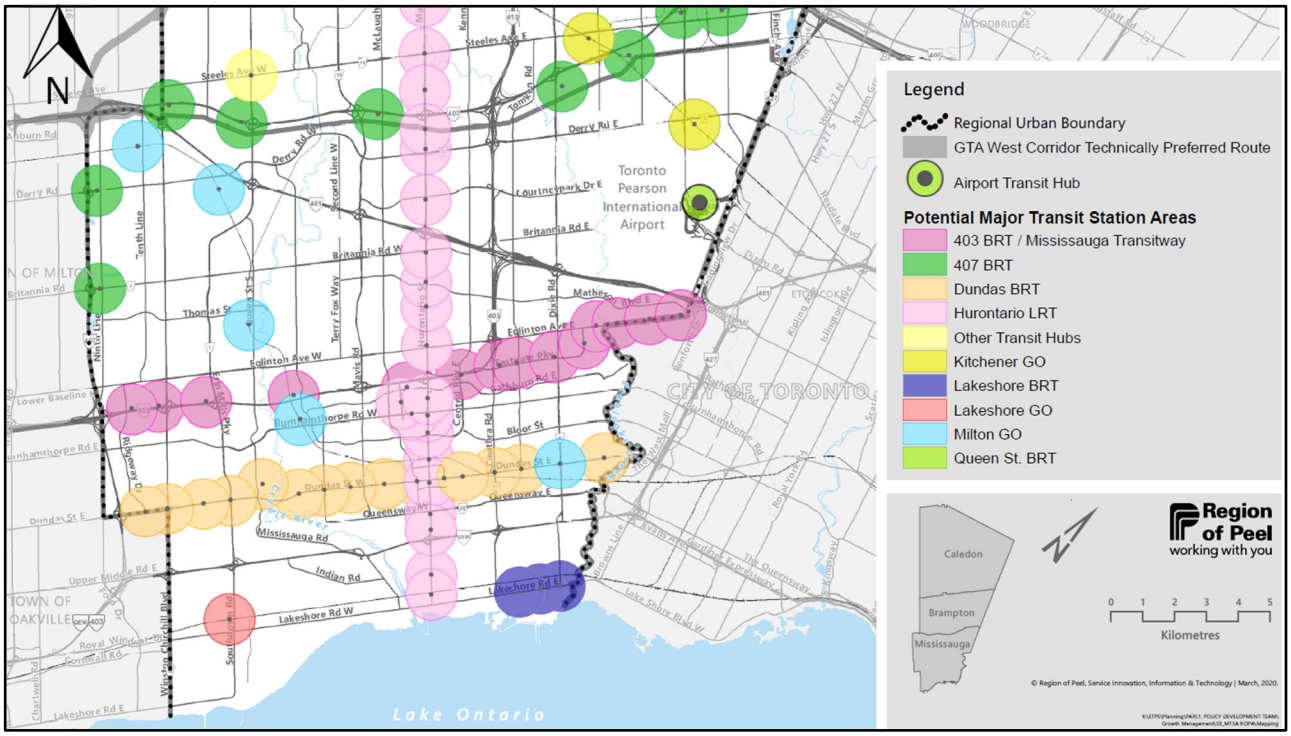
As part of the Peel 2051 Official Plan and Municipal Comprehensive Review, the Region developed a strategy and policies to guide how growth is accommodated within Major Transit Station Areas across the Region. This work was undertaken in collaboration with Brampton, Caledon, and Mississauga.

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 bring additional housing supply to the area and the City of Mississauga. In addition to the inclusion of some charity components, 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 2 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 2 – 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%

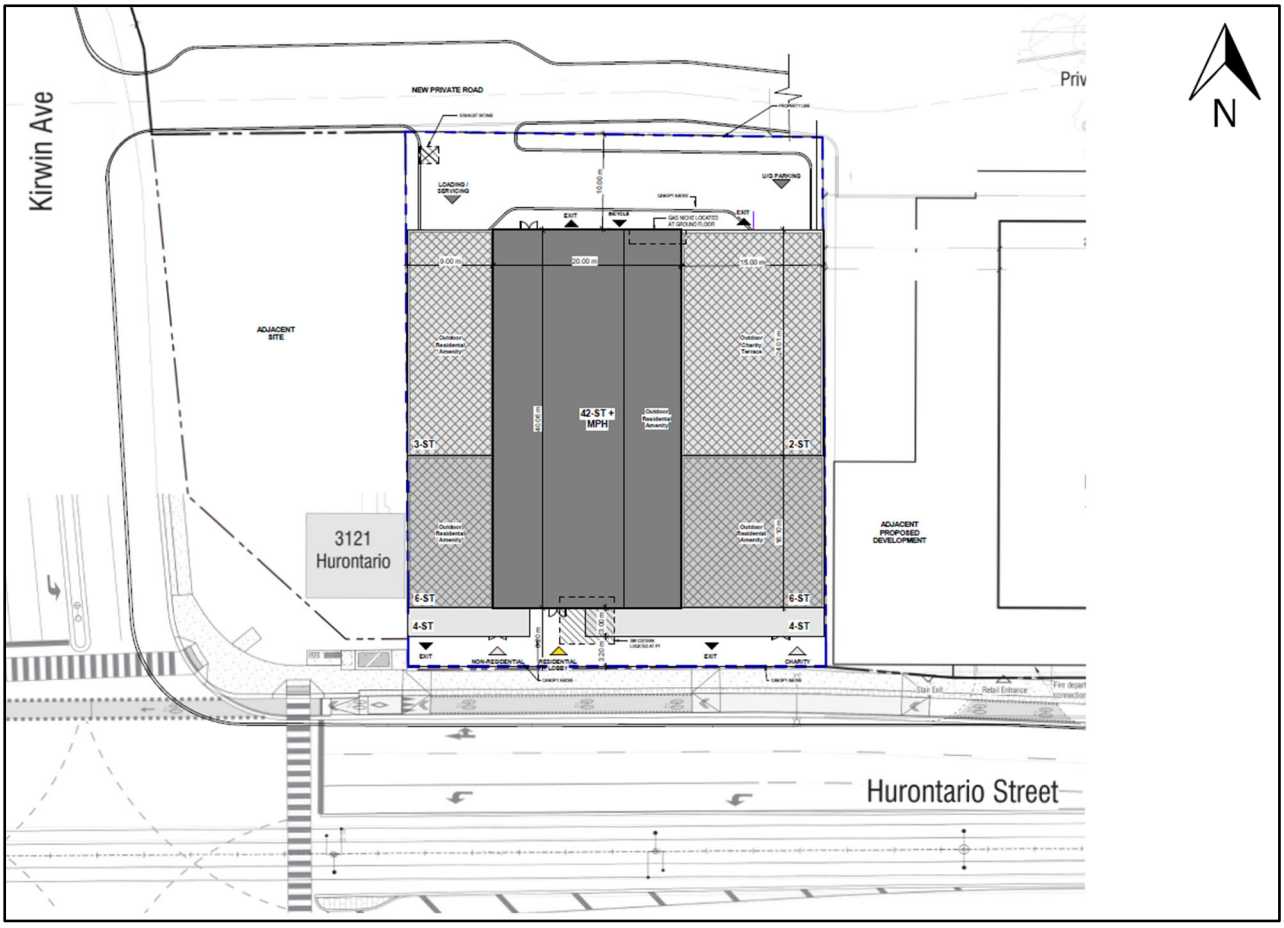
Based on the information outlined in the table above, the existing non-auto modal split in the area is approximately 30% and 29% during the morning and afternoon peak periods, respectively. This assessment suggests that there are viable alternative modes of transportation other than driving private automobiles. It is anticipated that with the future Hurontario LRT, the modal split along this corridor and this area will be much higher (i.e. could be up to 50% for all modal split).

3.3. Proposed Development Statistics

The proposed redevelopment of the site consists of a 42-storey mixed-use building with the following breakdown. A full moves access will be provided onto Kirwin Avenue to service the proposed development. It should be noted that this access will be shared with the adjacent development, 3085 Hurontario Street. **Figure 5** illustrates the proposed development site plan.

- Total of 520 residential dwelling units
  - 39 bachelor units
  - 321 one-bedroom units;
  - 122 two-bedroom units; and
  - 38 three-bedroom units
- 218.53 m^2 (2,352 ft^2) ground related retail gross floor area
- 940.94 m^2 (10,128 ft^2) of charity centre gross floor area
- Total of 200 parking spaces
- Total of 338 bicycle parking spaces
  - 312 Type B
  - 26 Type A

Figure 5 – Proposed Site Plan



3.4. Site Trip Generation

For the purposes of this assessment and to be consistent with the previous assessment, trip generation forecasts for the proposed development is estimated using the information outlined in the Trip Generation Manual, 11th Edition, published by the Institute of Transportation Engineers (ITE). To address the City's comments, the ITE Land Use Code (LUC) 222 "Multifamily Housing (High-Rise) Not Close to Rail Transit" and LUC 820 "Shopping Centre" average rates have been utilized for the proposed development.

The City has requested the proposed charity component of the proposed development to be included in the analysis. However, it should be noted that the potential site trip generated for the charity component of the proposed development may not coincide with the peak hour of adjacent street traffic. Therefore, this proposed charity land use may not have any impacts on the surrounding roadway intersections.

With the future Hurontario LRT next to the site, it is anticipated that the users of this proposed charity facility will use public transit instead of driving private vehicles. The ITE Trip Generation Manual 11th Edition does not include a stand-alone land use category for charity land use as this is not a typical use or is expected to have a significant impact on the adjacent transportation network. For these reasons, the trip generation for the proposed charity use is expected to be negligible and therefore was not included in the previous analysis.

In order to address the City's comment, given that the ITE Trip Generation Manual 11th Edition does not include a charity land use and the charity land use trip generation may not necessarily coincide with the adjacent roadway peak hour traffic, it is assumed that the charity trip generation will be equal to 50% of the amount of the visitor parking spaces provided on site.

A comparison indicates that the assumed charity land use trip rates utilized in this Study is significantly higher than the average rates of a Recreational Community Centre (ITE Land Use Code 495) during the morning peak hour and similar during the afternoon peak hour (1.91 trips/1000 ft^2 and 2.50 trips/1000 ft^2 of GFA, for an average of 2.20 trips/1000 ft^2 of GFA). The estimated trip generation calculations are provided in **Table 3**.

Table 3 – Site Trip Generation

ITE Land Use	Magnitude (units/GFA)	Parameters		Morning Peak Hour			Afternoon Peak Hour		
				In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) LUC 222 Not Close to Rail Transit	520 units	Vehicle Trips	Trip Rates AM Peak T = 0.22*(X) + 18.85 PM Peak T = 0.26*(X) + 23.12	0.09	0.17	0.26	0.17	0.13	0.30
			Sub Total Trips	**45**	**88**	**133**	**88**	**70**	**158**
		Transit Trips	Trip Rates (use average as no equations were given)	0.08	0.07	0.15	0.04	0.03	0.07
			Total Trips	**42**	**36**	**78**	**21**	**15**	**36**
Shopping Centre LUC (820)	2,352 ft^2	Vehicle Trips	Trip Rates (use average rates due to small GFA)	0.52	0.32	0.84	1.63	1.77	3.40
			Sub Total Trips	**1**	**1**	**2**	**4**	**4**	**8**
Charity Centre Land Use	10,128 ft^2	Vehicle Trips	Use available visitor parking as trip generation	1.24	1.23	2.47	1.24	1.23	2.47
			Sub Total Trips	**13**	**12**	**25**	**13**	**12**	**25**
Total New Trips				***101***	***137***	***238***	***126***	***101***	***227***
New Transit Trips				*42*	*36*	*78*	*21*	*15*	*36*
New Auto Trips				*59*	*101*	*160*	*105*	*86*	*191*

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

- 238 total two-way trips (101 inbound and 137 outbound) and 227 total two-way trips (126 inbound and 101 outbound) during the morning and afternoon peak hours, respectively;

- 160 total two-way auto trips (59 inbound and 101 outbound) and 191 total two-way auto trips (105 inbound and 86 outbound) during the morning and afternoon peak hours, respectively; and
- 78 total two-way transit trips (42 inbound and 36 outbound) and 36 total two-way transit trips (21 inbound and 15 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. However, it should be noted that the potential site trip generated for the charity component of the proposed development may not coincide with the peak hour of adjacent street traffic. Therefore, this proposed charity land use may not have any impacts on the surrounding roadway intersections. 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 **Tables 5**, **6** and **7** summarizing the site trip assignment based on the 2016 TTS data detailed and existing transportation network in the area.

Table 4 – Site General Trip Distribution

Mode of Travel		Mississauga	Brampton	Toronto	York Region	Halton Region	Total
Auto	Outbound	71%	4%	14%	3%	8%	100%
	Inbound	76%	4%	18%	1%	1%	100%
Transit	Outbound	65%	0%	32%	1%	2%	100%
	Inbound	81%	0%	13%	0%	5%	100%
Non-Residential Auto	Outbound	46%	12%	36%	2%	3%	100%
	Inbound	46%	12%	36%	2%	3%	100%

Table 5 – Site Trip Assignment for Auto Mode (Residential)

General Direction	AM		PM	
	In	Out	In	Out
North (Hurontario St, Cawthra Rd, Confederation Pkwy, Mavis Rd)	18%	28%	28%	28%
South (Hurontario St, Cawthra Rd, Confederation Pkwy, Mavis Rd)	23%	21%	21%	23%
East (Dundas St, The Queensway, Central Pkwy, Burnhamthorpe Rd, Hwy 403)	44%	27%	27%	44%
West (Dundas Street, The Queensway, Central Pkwy, Burnhamthorpe Road, Hwy 403)	15%	24%	24%	15%

Table 6 – Site Trip Assignment for Transit Mode (Residential)

Transit Routes	AM		PM	
	In	Out	In	Out
North (Hurontario)	18%	24%	24%	18%
South (Hurontario)	25%	15%	15%	25%
East (Dundas, Burnhamthorpe, Milton GO Line)	32%	42%	42%	32%
East (Dundas, Burnhamthorpe, Milton GO Line)	25%	19%	19%	25%

Table 7 – Site Trip Assignment for Auto Mode (Non-Residential)

General Direction	AM		PM	
	In	Out	In	Out
North (Hurontario St, Cawthra Rd, Confederation Pkwy, Mavis Rd)	25%	25%	25%	25%
South (Hurontario St, Cawthra Rd, Confederation Pkwy, Mavis Rd)	12%	12%	12%	12%
East (Dundas St, The Queensway, Central Pkwy, Burnhamthorpe Rd, Hwy 403)	48%	48%	48%	48%
West (Dundas Street, The Queensway, Central Pkwy, Burnhamthorpe Road, Hwy 403)	15%	15%	15%	15%

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 area routing options. The proposed development site traffic volumes are illustrated in the following figures:

- **Figure 6** – site traffic volumes for residential component
- **Figure 7** – site traffic volumes for non-residential component

4.0 EXISTING CONDITION ASSESSMENT

4.1. Establishing Multimodal Level of Service

Level of service definitions are specific to each area due to existing physical conditions, constraints and context. There are many desirable and inspirational requirements for each type of facility. However, the expectations must be realistic and suitable for the context of the area, especially in the City of Mississauga Hurontario Street Corridor where there are many physical constraints and competing interests. For these reasons, the established level of service descriptions is and requirements are summarized in **Table 8** based on NexTrans' extensive research and review of the industry best practices.

Table 8 – Level of Service Definition

Level of Service	Walking	Cycling	Transit	Auto
A	• Complete network with no gaps or missing links • Minimum 1.5 m width • Buffered with streetscaping • Excellent illumination • No steep slopes	• Complete network with no gaps or missing links • Minimum 1.5 m width bike lane or cycle track • Buffered with streetscaping/cycle track • Excellent illumination • No steep slopes	• High Order Transit • 10 minutes or better frequency • East-west/north-south routes • Within 300 m walking distance • Existing sidewalks • Existing shelters	<=10 s
B	• Mostly complete network with no significant gaps or missing links • Minimum 1.5 m width • Curb-faced sidewalk • Sufficient illumination • Not too steep slopes	• Mostly complete network with no significant gaps or missing links • Minimum 1.5 m width • No significant buffer • Sufficient illumination • Not too steep slopes	• High Order Transit • More than 15-minute frequency • East-west/north-south routes • Within 500 m walking distance • Existing sidewalks • Existing shelters	>10-15s
C	• Some gaps or missing links • Minimum 1.5 m width • Curb-faced sidewalk • Adequate illumination • Some slopes	• Some gaps or missing links • Minimum 1.5 m width • No buffer • Adequate illumination • Some slopes	• No High Order Transit • More than 15-minute frequency • East-west/north-south routes • Within 800 m walking distance • Existing sidewalks • Existing shelters	>15-25s
D	• Some gaps or missing links but not too significant • Minimum 1.5 m width • Curb-faced sidewalk • Adequate or no illumination • Some slopes	• Some gaps or missing links but not too significant • Sharrows or signed route • No buffer • Adequate or no illumination • Some slopes	• No High Order Transit • More than 15-minute frequency • East-west/north-south routes • More than 800 m walking distance • Some sidewalks • Some or no shelters	>25-35s
E	• Major gaps or missing links • Minimum 1.5 m width • Curb-faced sidewalk • Adequate or no illumination • Steep slopes	• Major gaps or missing links • No cycling lanes • No buffer • Adequate or no illumination • Steep slopes	• No High Order Transit • More than 30-minute frequency • No East-west/north-south routes • More than 1000 m walking distance • No sidewalks • No shelters	>35-50s
F	• No sidewalk • No illumination • Very steep slopes	• No cycling facilities • No illumination • Very steep slopes	• No Transit	>50s

4.2. Existing Road Network Assessment

The existing road network, lane configuration and existing traffic control for the study area are shown in **Figure 8** (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.

4.2.1. Walking Mode Assessment

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.

Based on this assessment, a minimum of level of service B is reasonable for the area given that some of the existing sidewalks do not have buffered such as streetscaping or planters.

4.2.2. Cycling Mode Assessment

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. **Figure 9** illustrates the existing active transportation network in the study area.

Based on our review and assessment, 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.

Based on this assessment, a minimum of level of service C is reasonable for the area given that there is no major north-south spine in the area. With the future improvements along Hurontario Street corridor, levels of service B or A is possible and justified.

Figure 6 – Site Traffic Volumes for Residential Component

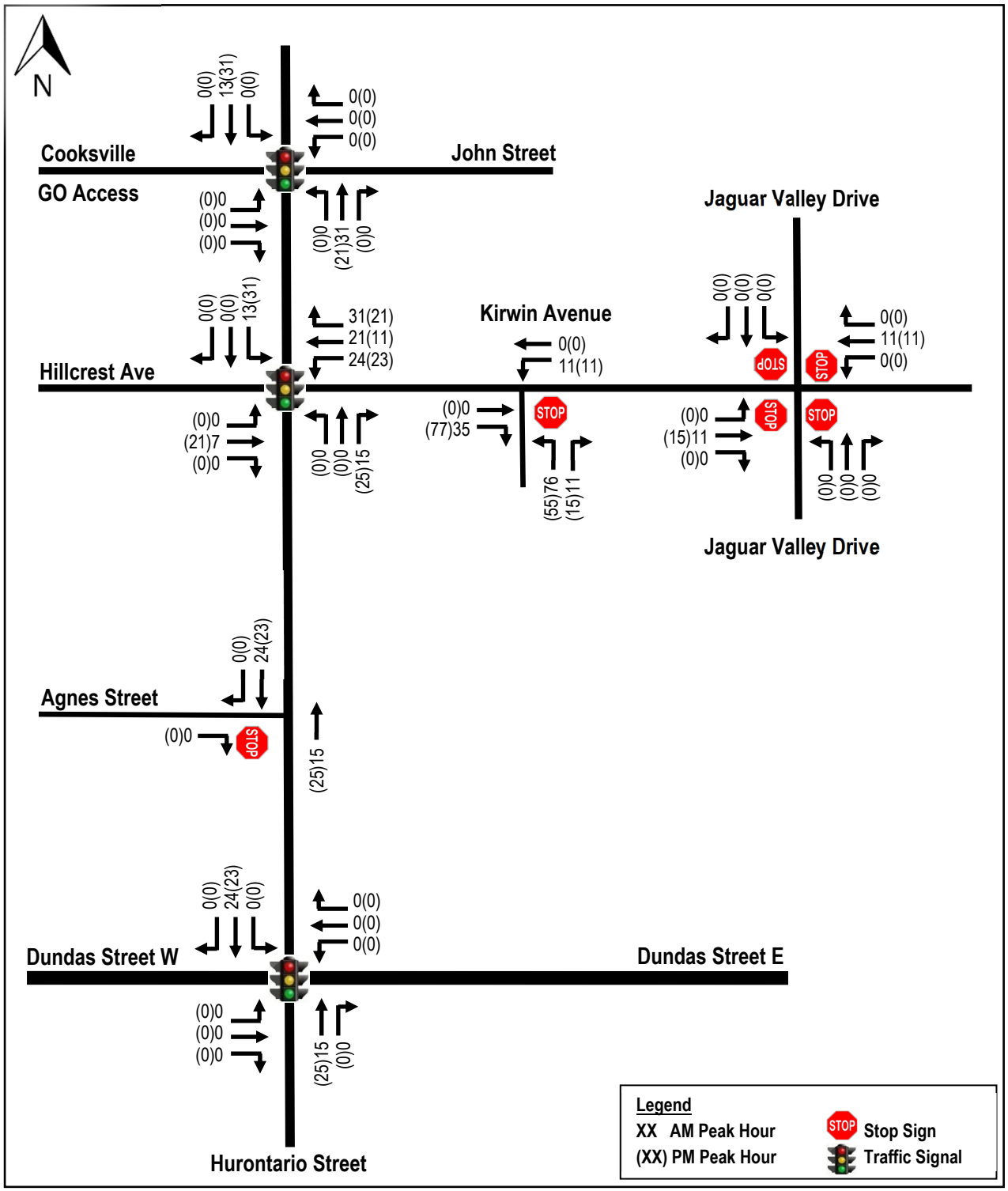
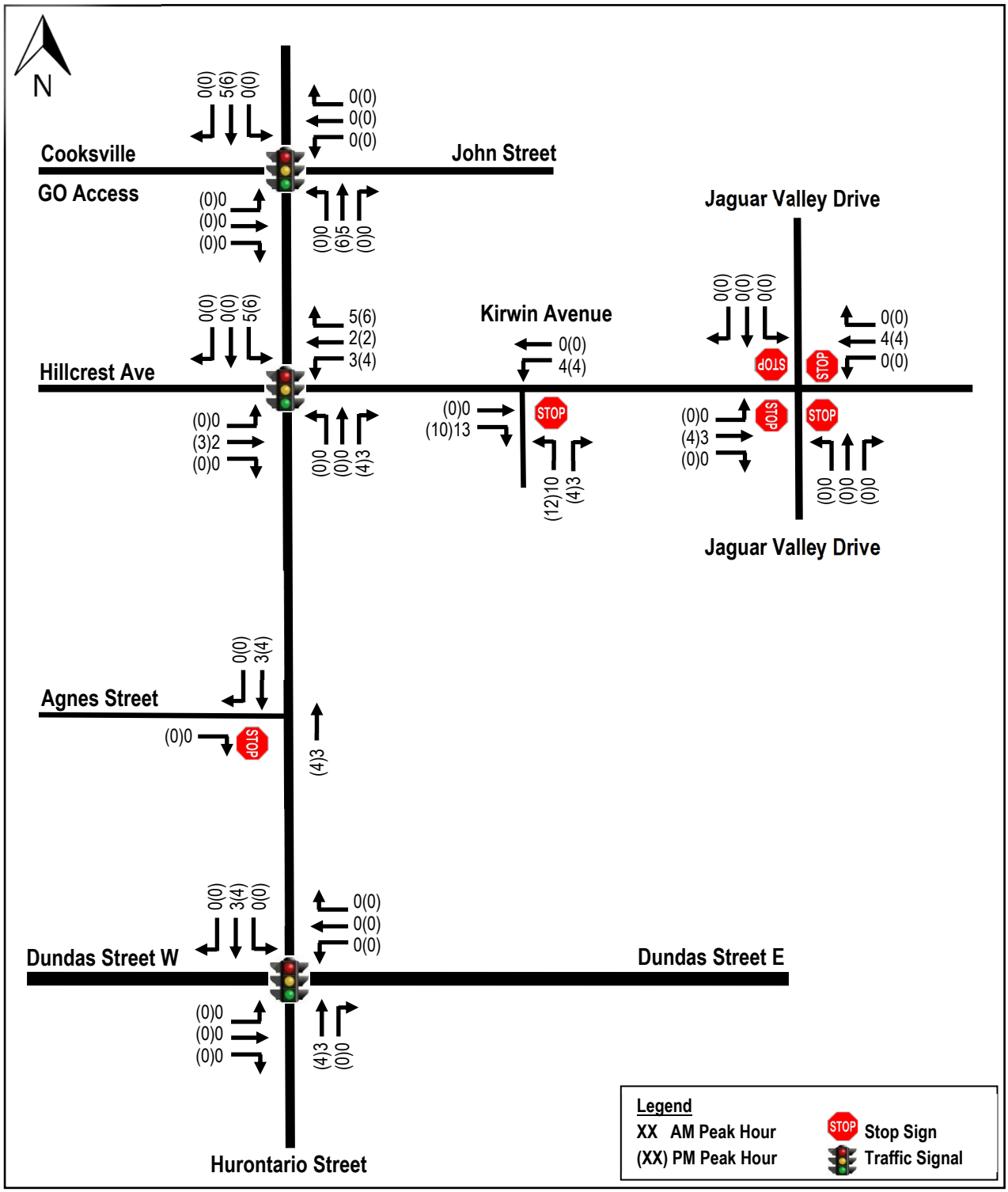


Figure 7 – Site Traffic Volumes for Non-Residential Component



4.3. Transit Mode 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 10**.

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.

The assessment indicates that a minimum of level of service B is reasonable for the area. With the completion of the Hurontario LRT service, levels of service B or A is possible and justified.

Figure 8 – Existing Lane Configuration and Traffic Control (Pre-LRT Construction)

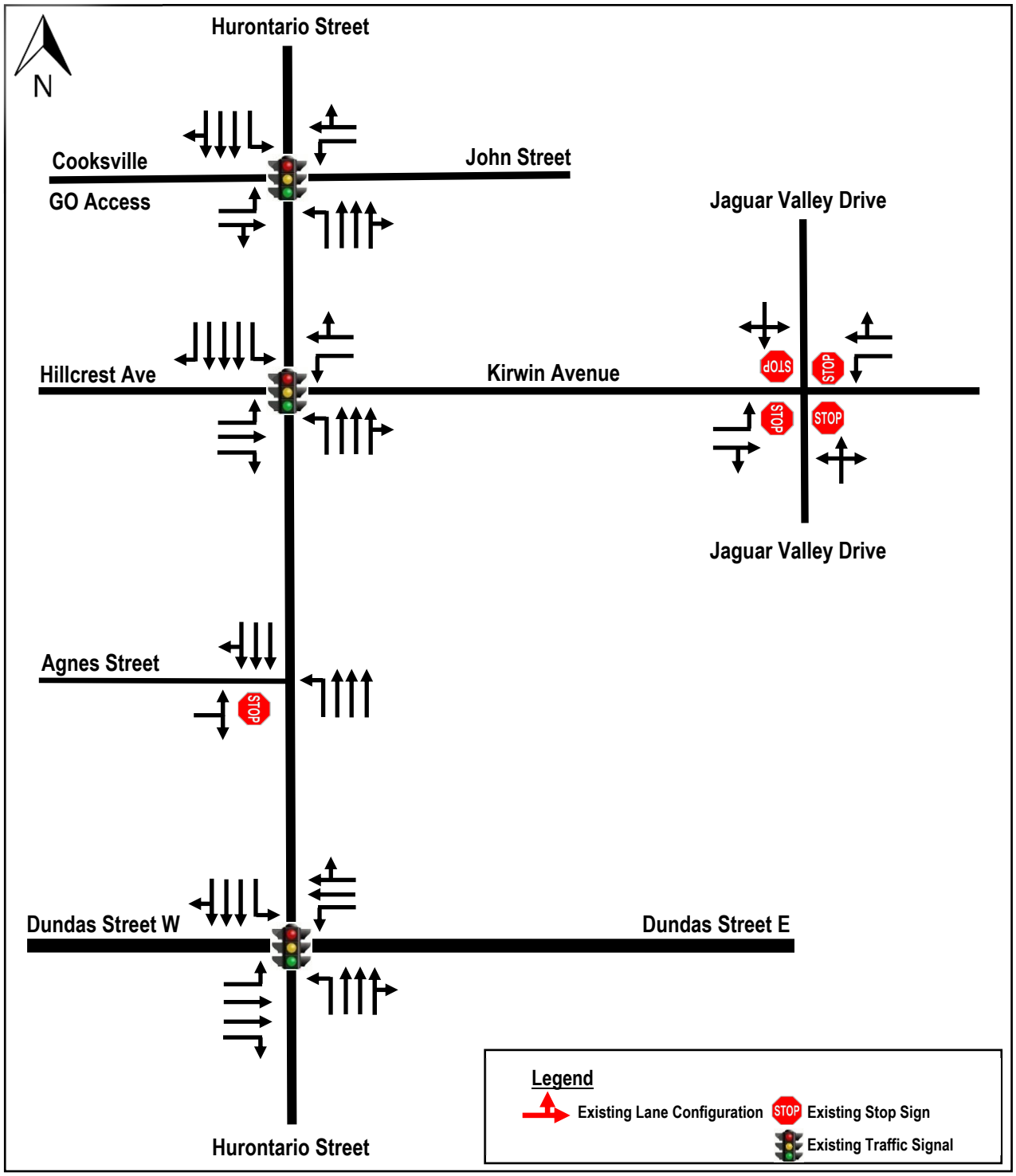
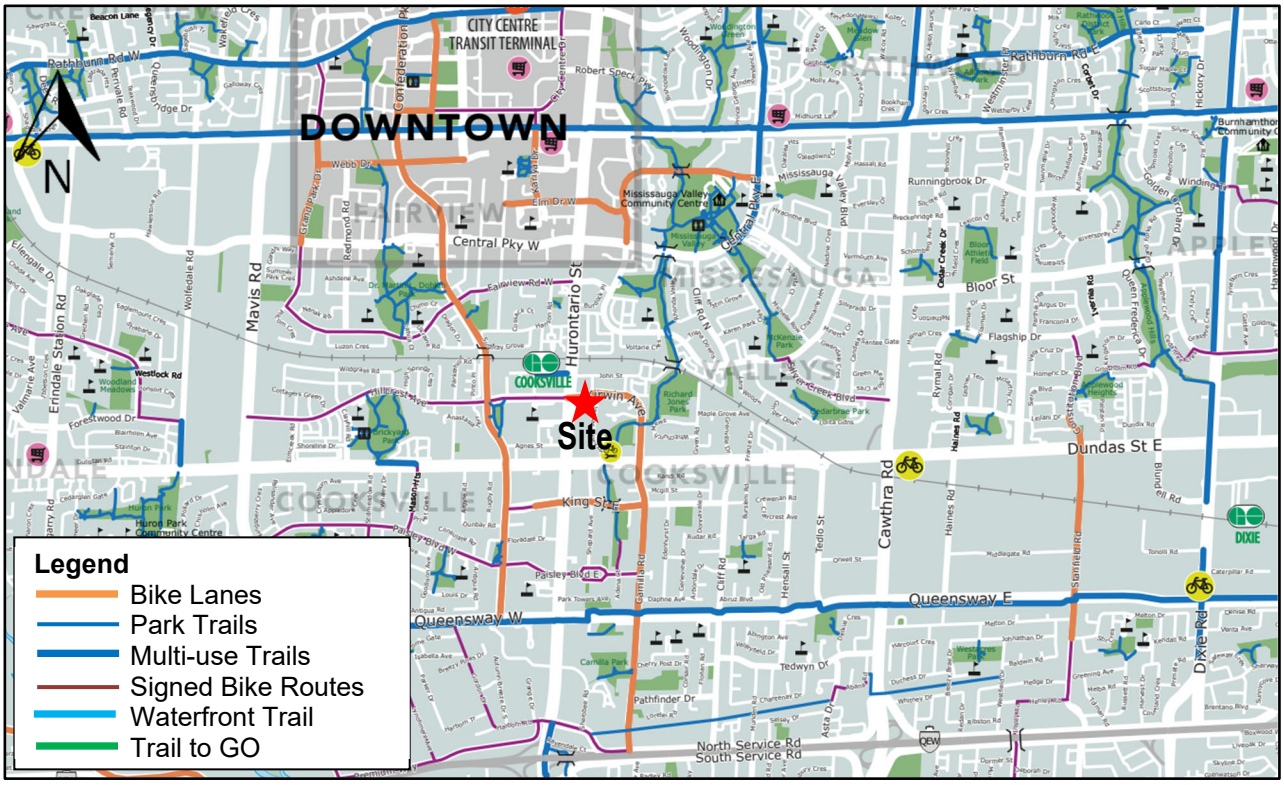
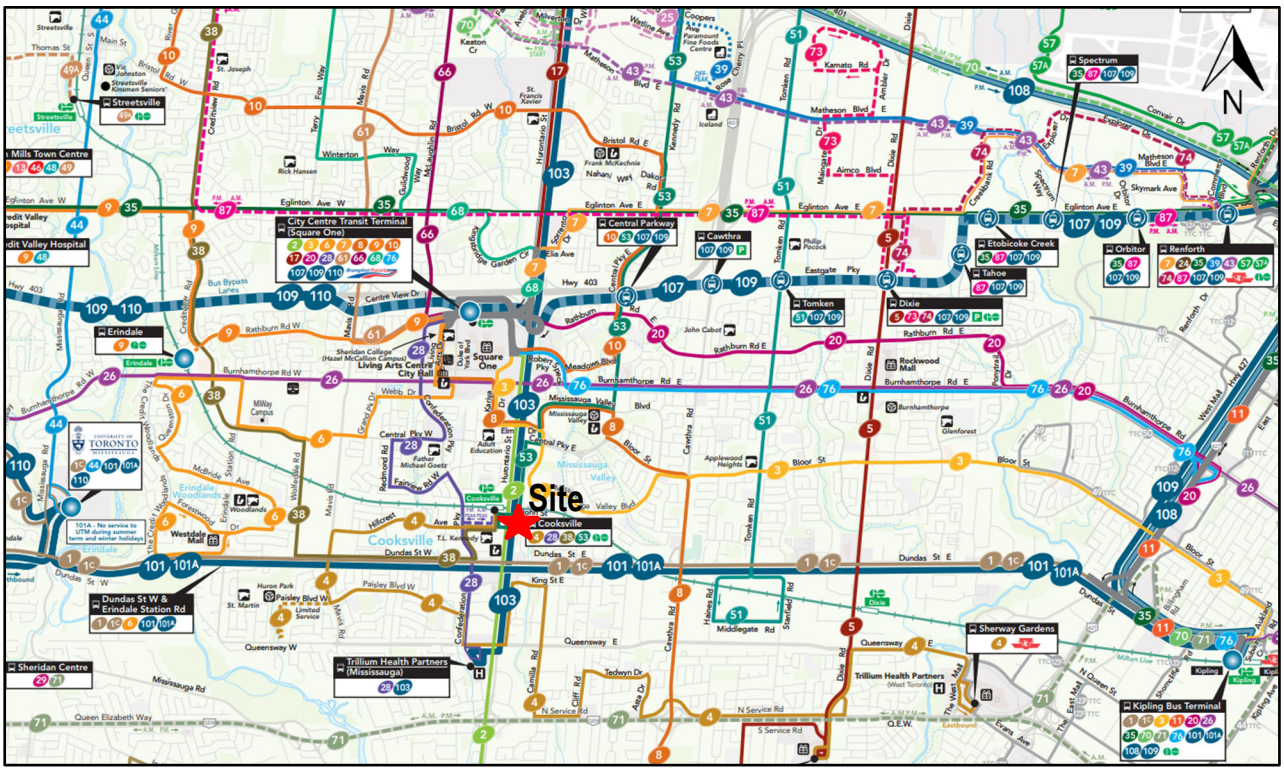


Figure 9 – Existing Cycling Network in the Study Area



Source: City of Mississauga Cycling Map (https://www.mississauga.ca/wp-content/uploads/2023/11/mississauga-cycling-map-nov-2023-web.pdf)

Figure 10 – Existing Transit Network in the Study Area



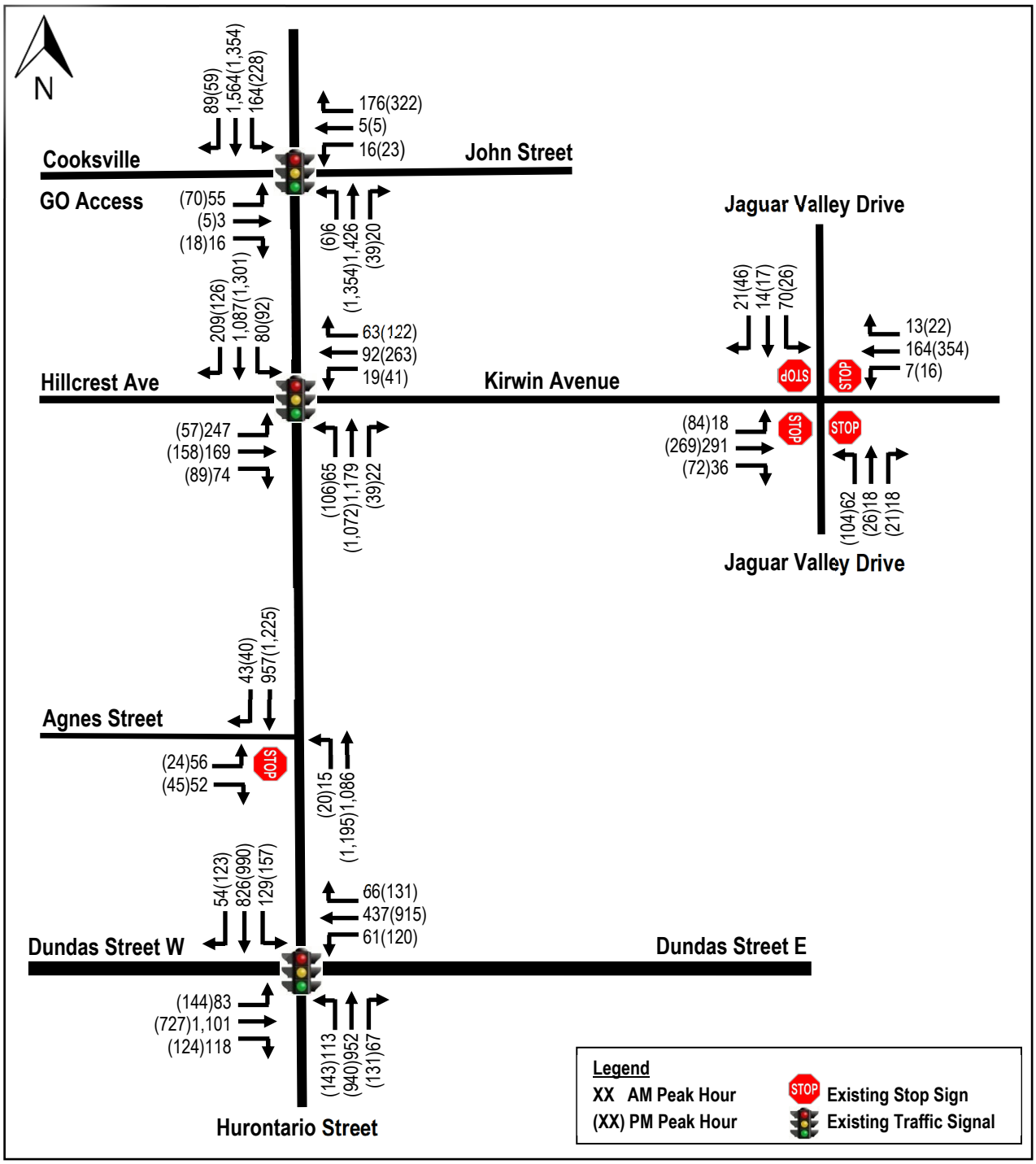
Source: City of Mississauga Transit Service Map (June, 2024)

4.3. Auto Mode Assessment

4.3.1. Existing Traffic Volumes

Given the on-going construction of the Hurontario LRT in the vicinity of the proposed development, the existing traffic volumes used in the previous assessment dated September 2022 were utilized in this Study. The existing traffic volumes are illustrated in **Figure 11**.

Figure 11 – Existing Traffic Volumes (Based on Previous Assessment)



4.3.2. Intersection Capacity Analysis

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. The analysis indicated that with the on-going construction, there are some expected delays and 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 an 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 (2029) 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.

5.1.1. Walking Mode Assessment

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.

Based on this assessment, a minimum of level of service B is reasonable for the area given that some of the existing sidewalks do not have buffered such as streetscaping or planters.

5.1.2. Cycling Mode Assessment

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. **Figure 9** illustrates the existing active transportation network in the study area.

Based on our review and assessment, 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.

Based on this assessment, a minimum of level of service C is reasonable for the area given that there is no major north-south spine in the area. With the future improvements along Hurontario Street corridor, levels of service B or A is possible and justified.

5.2. Transit Mode 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 10**. 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.

The assessment indicates that a minimum of level of service B is reasonable for the area as it has good accessibility to the existing transit routes and transit frequency is adequate. With the completion of the Hurontario LRT service, levels of service B or A is possible and justified.

5.3. Auto Mode Assessment

5.4. Future Background Corridor Through Traffic 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 9** summarizes the recommended growth rates provided by the City of Mississauga.

Table 9 – Recommended Growth Rates for the Study Area Corridors

Corridor	Direction	Existing to 2026		2026 - 2029	
		AM Peak	PM Peak	AM Peak	PM Peak
Hurontario Street	NB	-20.0%	-20.5%	1.0%	0.5%
	SB	-23.5%	-18.5%	0.5%	0.5%
Dundas Street	EB	0.0%	0.5%	0.0%	0.0%
	WB	1.0%	0.0%	0.0%	0.0%
Kirwin Avenue/ Hillcrest Avenue	EB	0.5%	0.5%	0.0%	0.5%
	WB	0.5%	0.5%	0.5%	0.0%

On this basis, NexTrans has estimated the future background traffic volumes as follows:

- The existing traffic volumes illustrated in **Figure 11** of this Study;
- Using the growth above to estimate the existing to 2026 traffic volumes (**Appendix D**);
- Using the growth above to estimate the 2026-2029 traffic volumes (**Appendix D**);

Figure 12 illustrates the 2029 corridor background through traffic growth based on the methodology and steps noted above, for the morning and afternoon peak hours, respectively.

5.5. 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 10** 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. The background development traffic volumes are obtained from the respective traffic studies and summarized in **Figure 13** (**Appendix E**). **Figure 14** illustrates the 2029 future background traffic volumes, which were derived from the 2029 background corridor growth estimates adding the background development traffic volumes.

5.6. 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 15** (**Appendix F**).

Table 10 – Background Development Information in the Study Area

Address	Description	TIS Information
3016-3032 Kirwin Avenue	148 residential units	LEA Consulting TIS, 2022
65 & 71 Agnes Street	379 residential units and 6 townhouse units	Urbantrans TIS, 2022
3085 Hurontario Street	1,081 residential units and 11,044 ft^2 of retail	CGH TIS, 2021
3420-3442 Hurontario Street	680 residential units and 2,000 m^2 of retail	Crozier TIS, 2020
1 Fairview East	485 residential units and 270 m^2 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^2 of retail	GHD TIS, 2019
86-95 Dundas Street W	405 residential units and 5,490 m^2 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

Figure 12 – 2029 Estimated Background Growth

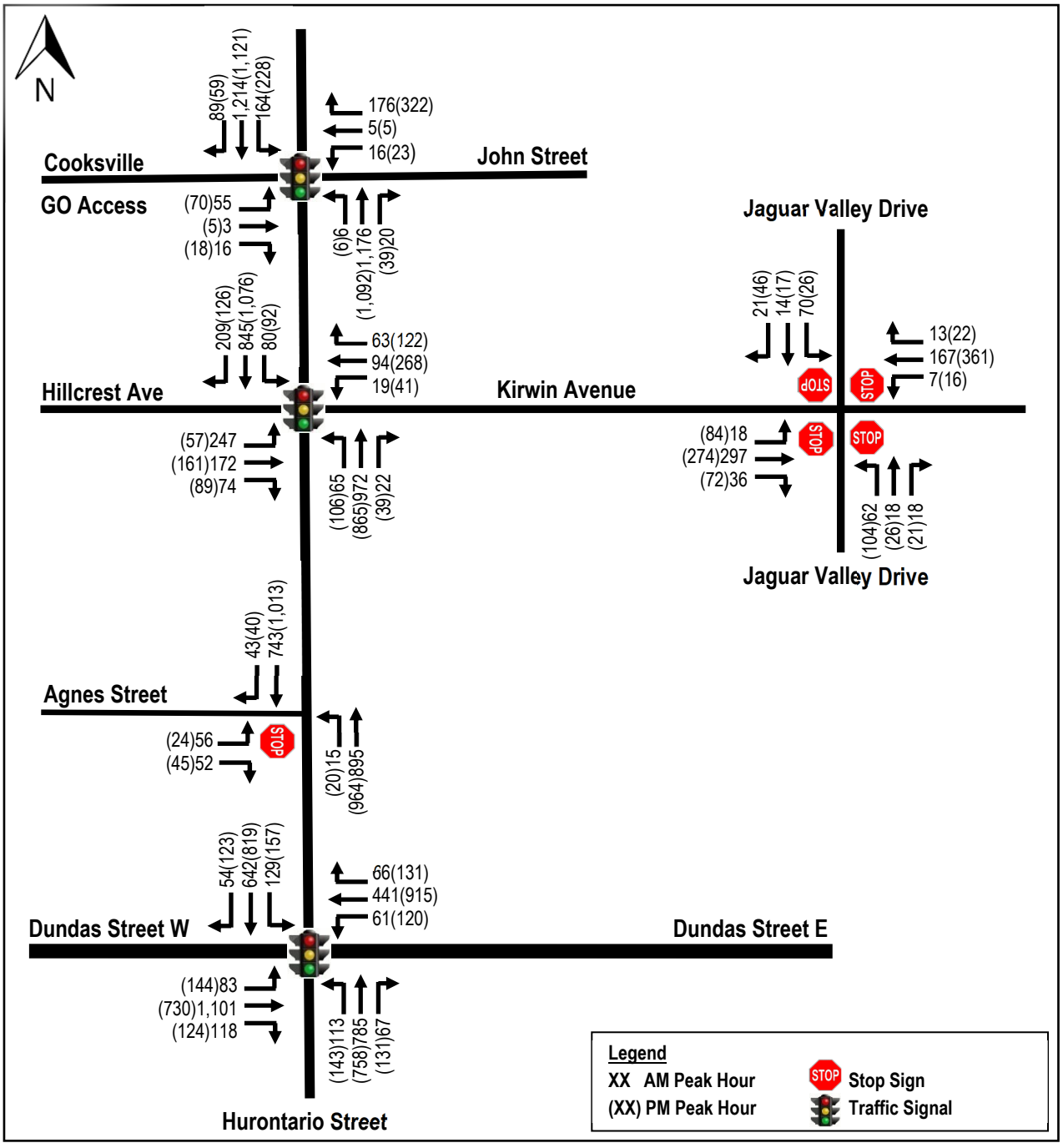


Figure 13 – Background Development Traffic Volumes

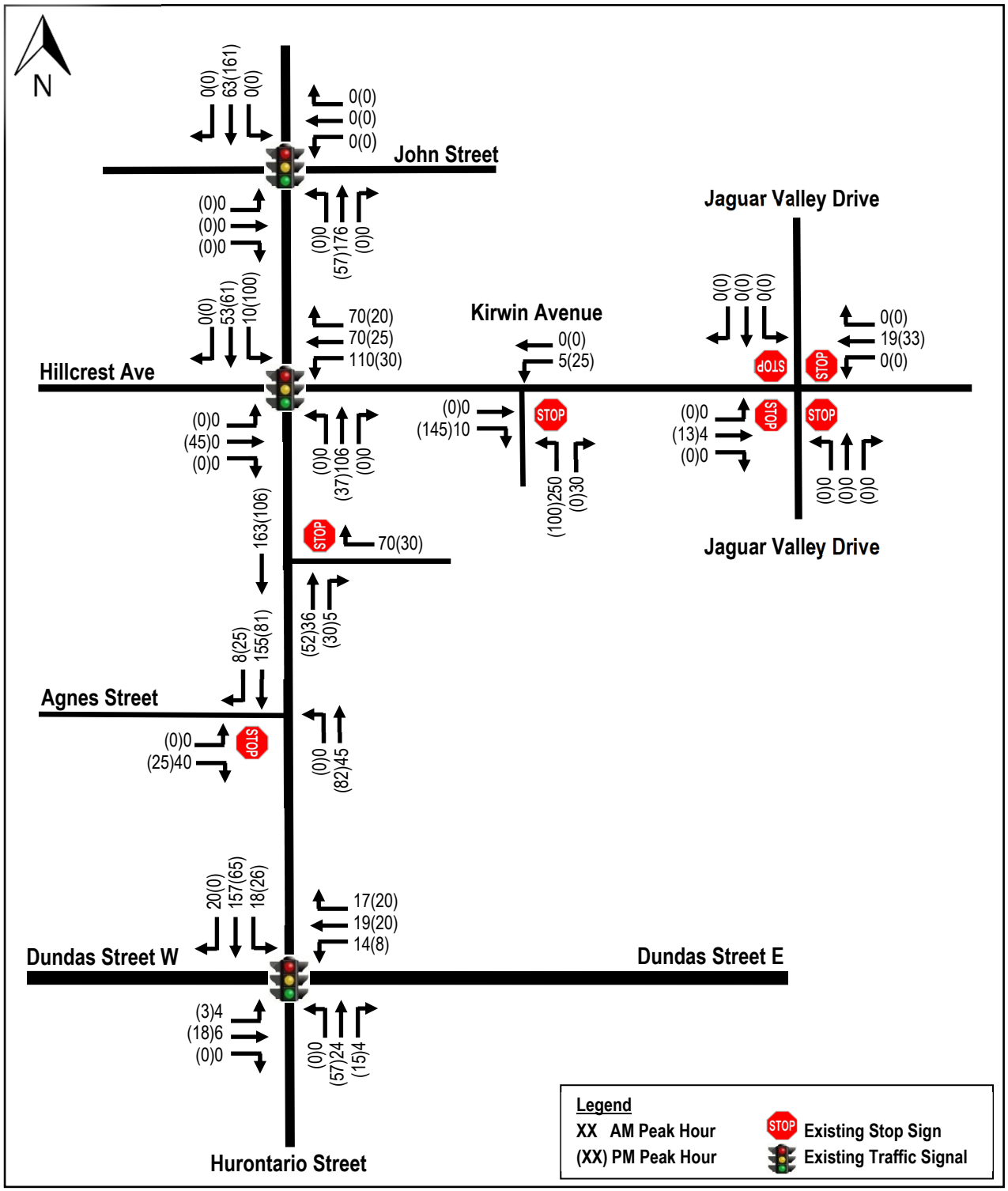


Figure 14 – 2029 Future Background Traffic Volumes

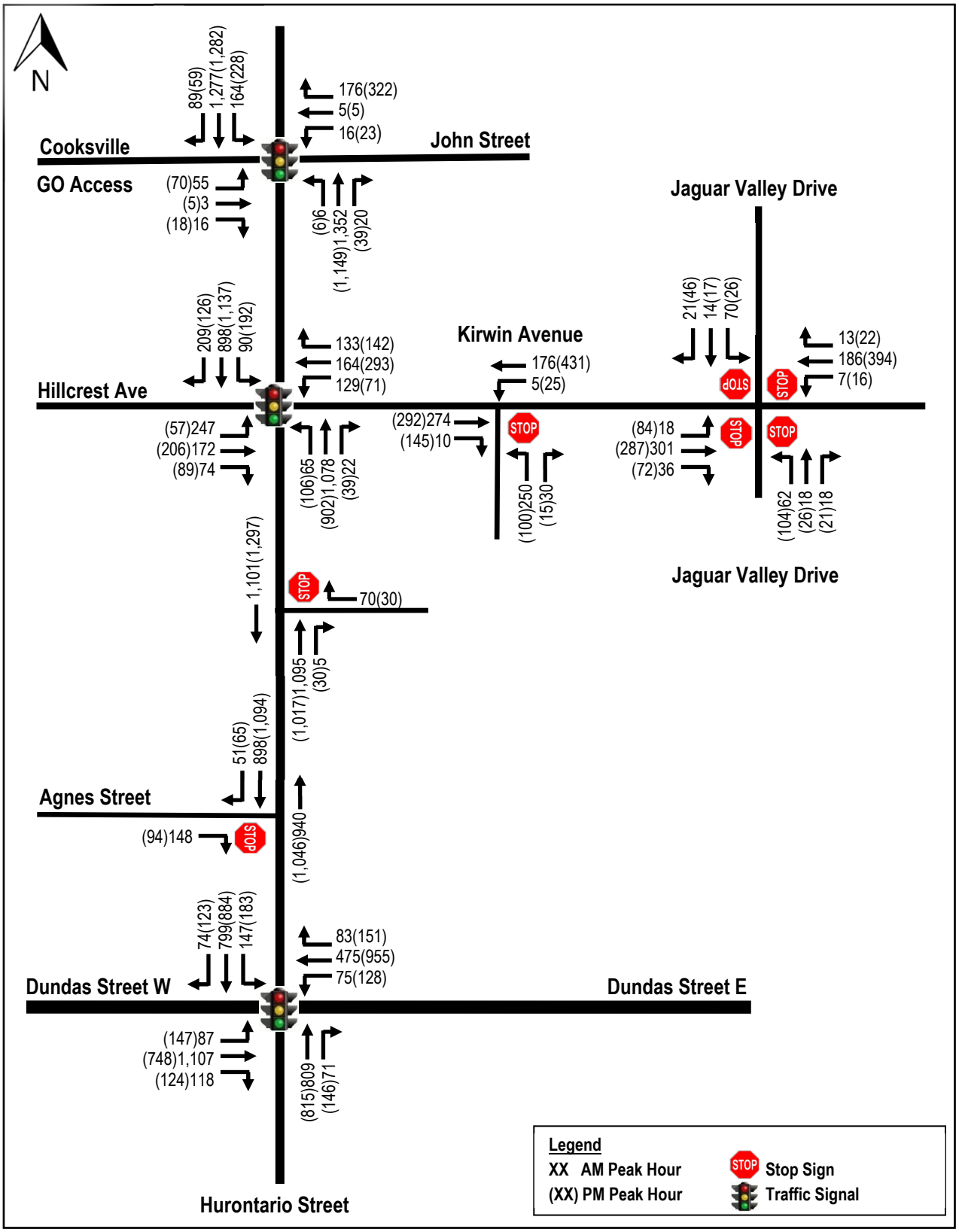
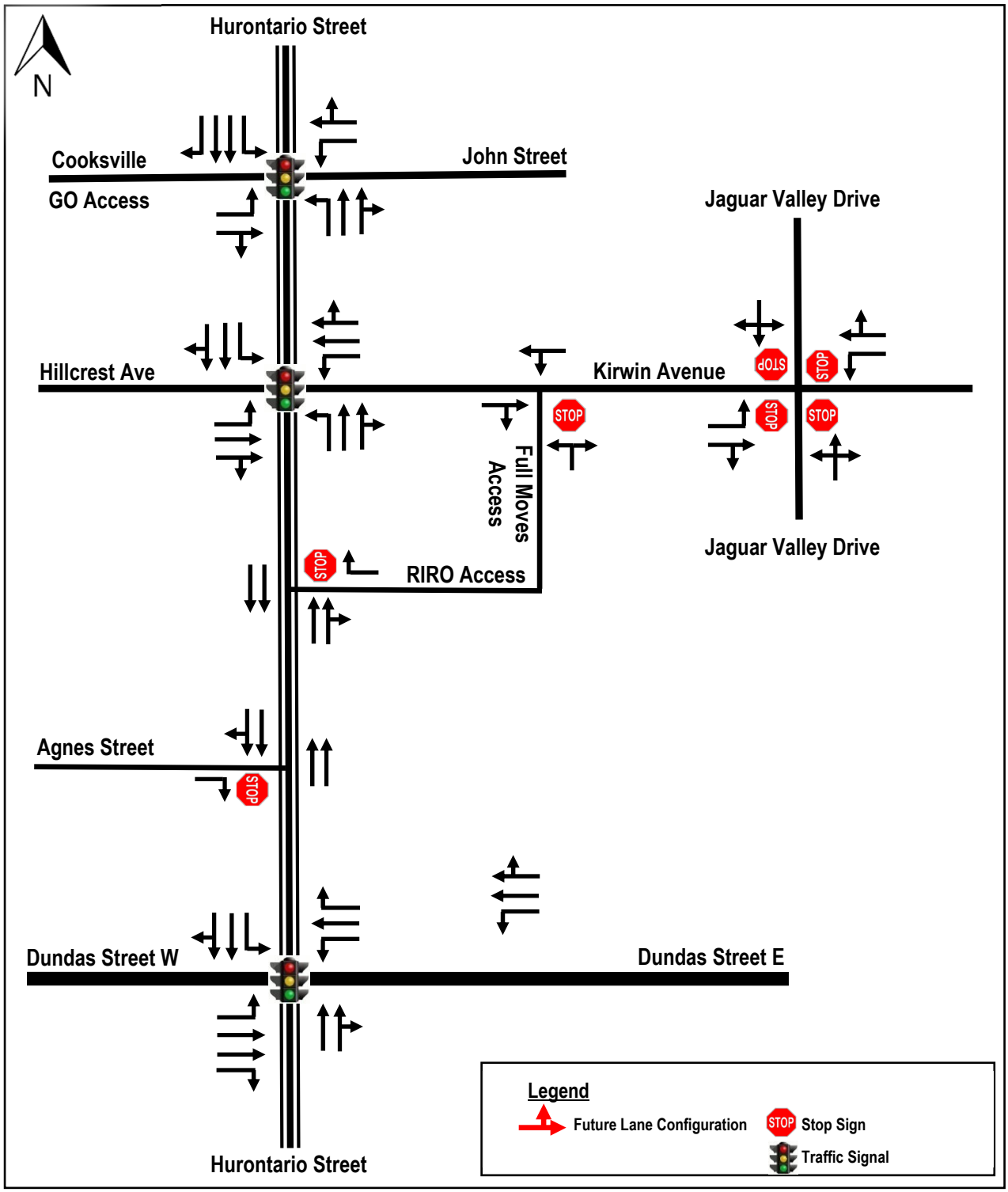


Figure 15 – Future Lane Configuration and Traffic Control with Hurontario LRT



5.7. 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 16** and **17** 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 16 – Hurontario LRT Typical Cross-Section at Cooksville Station

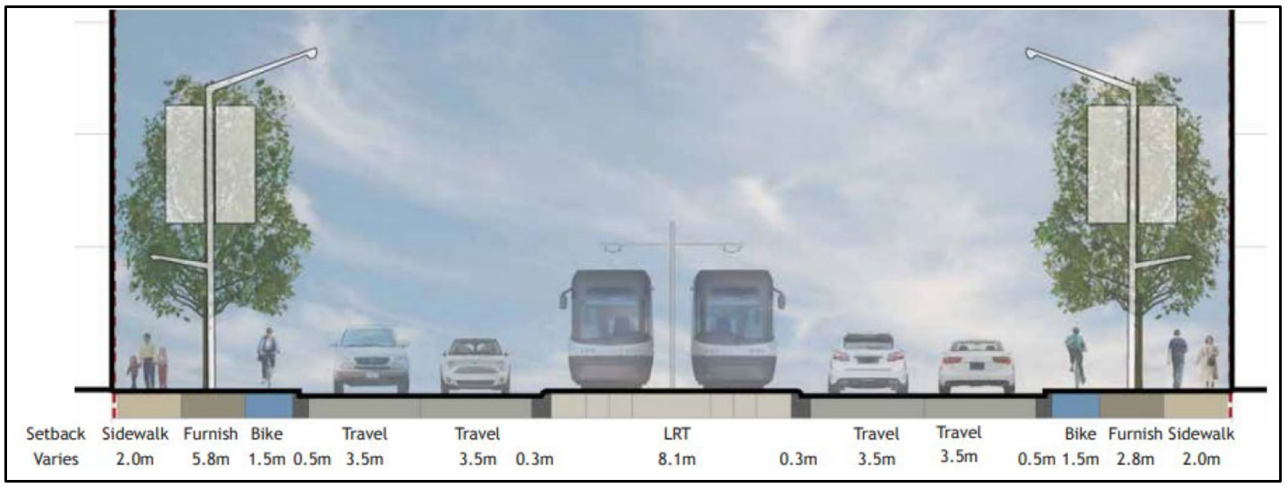
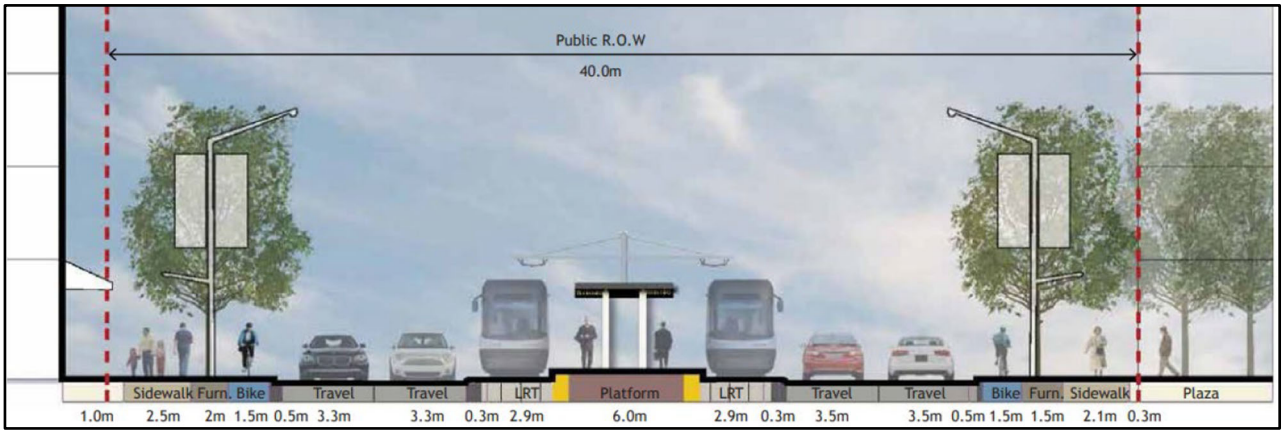


Figure 17 – Hurontario LRT Typical Cross-Section at Cooksville Station



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.

5.8. Auto Mode Assessment

The estimated 2029 future background traffic volumes are illustrated in **Figure 14** (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 11.**

Table 11 – 2029 Future Background Levels of Service

Intersection	Key Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available/ Assumed Storage (m)
		LOS (v/c)	Delay (s)	95th Queue (m)	LOS (v/c)	Delay (s)	95th Queue (m)	
Hurontario Street/ Dundas Street (Signalized)	**Overall**	**D (0.94)**	**51**		**F (1.57)**	**109**		
	EB – L	C (0.43)	31	30	F (0.96)	99	87	~40
	EB – T	E (0.94)	62	236	D (0.64)	45	143	~180
	EB – R	B (0.23)	17	29	B (0.25)	19	33	~25
	WB – L	E (0.73)	60	39	C (0.54)	32	41	~25
	WB – T	D (0.78)	54	198	F (1.57)	299	575	~440
	WB – R	B (0.17)	11	18	C (0.31)	22	43	~25
	NB – TR	E (0.83)	56	194	E (0.99)	78	231	~150
	SB – L	F (0.81)	114	86	F (0.99)	135	121	~50
	SB – TR	C (0.60)	27	119	D (0.72)	37	156	~130
Hurontario Street/ Dundas Street with Potential two shared WB through/right (Signalized)	**Overall**	**D (0.94)**	**49**		**E (0.99)**	**61**		
	EB – L	C (0.31)	27	30	F (0.96)	99	87	~40
	EB – T	E (0.94)	62	236	D (0.65)	45	143	~180
	EB – R	B (0.23)	17	29	B (0.25)	19	33	~25
	WB – L	E (0.73)	60	39	C (0.54)	32	41	~25
	WB – TR	D (0.49)	39	98	E (0.97)	69	257	~350
	NB – TR	E (0.83)	56	194	E (0.99)	78	231	~25
	SB – L	F (0.81)	114	86	F (0.97)	132	121	~150
	SB – TR	C (0.60)	27	119	D (0.72)	37	156	~130
Hurontario Street/ Hillcrest Avenue/Kirwin Avenue (signalized)	**Overall**	**D (0.95)**	**55**		**D (0.79)**	**41**		
	EB – L	F (0.95)	91	114	D (0.40)	52	28	~30
	EB – TR	D (0.48)	53	50	E (0.58)	57	60	~215
	WB – L	E (0.57)	55	55	D (0.37)	51	33	~45
	WB – TR	D (0.76)	52	50	E (0.79)	66	90	~80
	NB – L	E (0.57)	80	34	E (0.68)	75	44	~50
	NB – TR	E (0.66)	77	151	C (0.63)	32	97	~300
	SB – L	F (0.65)	95	56	F (0.73)	102	102	~50
	SB – TR	C (0.66)	21	90	C (0.74)	21	98	~135
Hurontario Street/ John Street/Cooksville GO Train Station Access (signalized)	**Overall**	**D (0.82)**	**44**		**C (0.90)**	**30**		
	EB – L	E (0.52)	72	31	E (0.66)	73	32	~100
	EB – TR	C (0.11)	29	10	C (0.09)	23	10	~150
	WB – L	D (0.09)	54	12	D (0.09)	44	14	~40
	WB – TR	D (0.78)	44	48	D (0.90)	53	88	~150
	NB – L	F (0.11)	103	4	F (0.11)	101	5	~25
	NB – TR	E (0.82)	74	257	C (0.79)	27	196	~140
	SB – L	E (0.52)	64	90	E (0.76)	76	165	~40
	SB – T	B (0.54)	10	162	B (0.60)	17	213	~170
	SB – R	A (0.09)	3	10	A (0.07)	2	6	~25
Hurontario Street/ Agnes Street (unsignalized)	EB – R	A (0.18)	10	5	B (0.13)	10	4	~185
	NB – T	A (0.30)	0	0	A (0.33)	0	0	~130
	SB – TR	A (0.38)	0	0	A (0.47)	0	0	~200
Kirwin Avenue/ Jaguar Valley Drive (unsignalized)	EB – L	B (0.03)	8	-	C (0.17)	10	-	~20
	EB – TR	A (0.55)	14	-	A (0.65)	19	-	~80
	WB – L	B (0.01)	8	-	D (0.03)	9	-	`15
	WB – TR	A (0.34)	10	-	A (0.77)	26	-	~180
	NB – LTR	A (0.17)	10	-	B (0.31)	13	-	~115
	SB – LTR	B (0.18)	10	-	B (0.18)	11	-	~75
Hurontario Street/ 3085 Hurontario RIRO Access (unsignalized)	WB – R	A (0.09)	10	2	A (0.04)	10	1	~80
	NB – TR	A (0.47)	0	0	A (0.43)	0	0	~200
	SB – T	A (0.35)	0	0	A (0.41)	0	0	~100
Kirwin Avenue/ Proposed Shared Full Moves Access (unsignalized)	EB – TR	A (0.18)	0	0	A (0.28)	0	0	~80
	WB – TL	A (0.00)	0	0	A (0.03)	1	1	~80
	NB – LR	A (0.54)	19	26	C (0.40)	24	15	~100

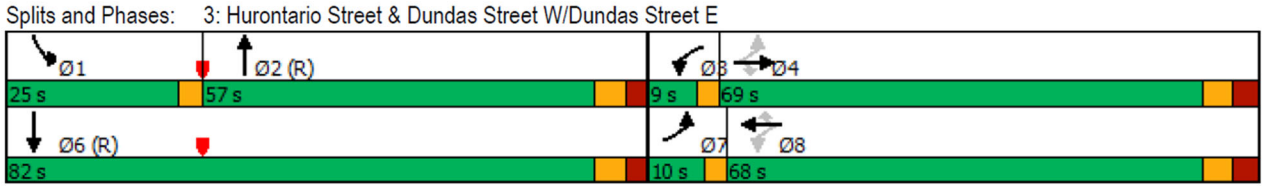
The analysis indicates that under the future background conditions, all intersections are expected to operate at acceptable levels of service during the morning peak hour and afternoon peak hour, with the exception of the Hurontario Street/Dundas Street W intersection during the afternoon peak hour. With the recommended lane configurations for the Dundas Street westbound, the intersection is expected to have higher delay. Given that 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.

5.9. Signal Timing Optimization

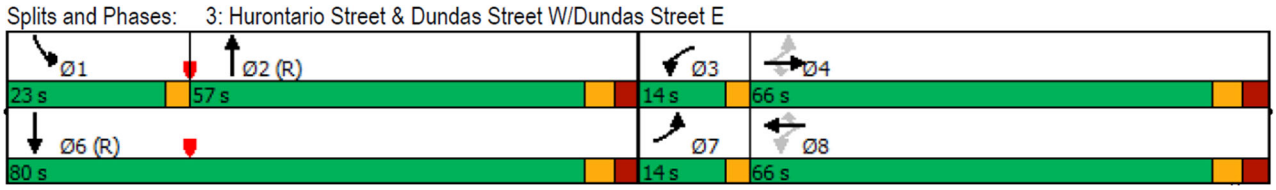
The following are the potential signal timing for the signalized intersections considered in the analysis:

Hurontario Street and Dundas Street

AM Peak Hour

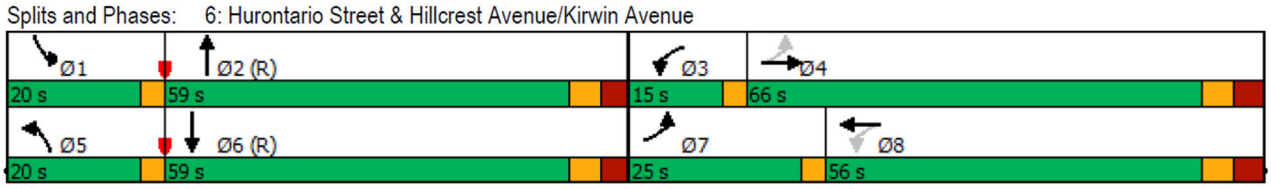


PM Peak Hour

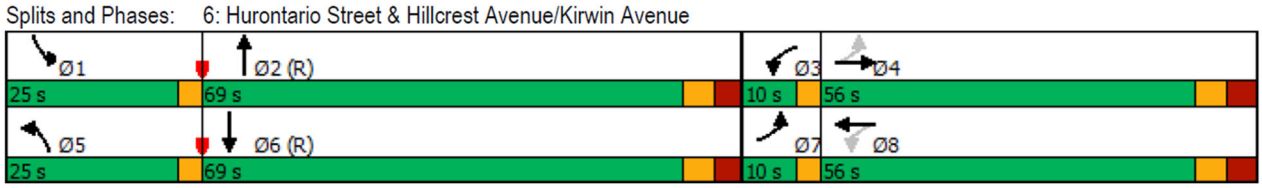


Hurontario Street and Kirwin Avenue/Hillcrest Avenue

AM Peak Hour

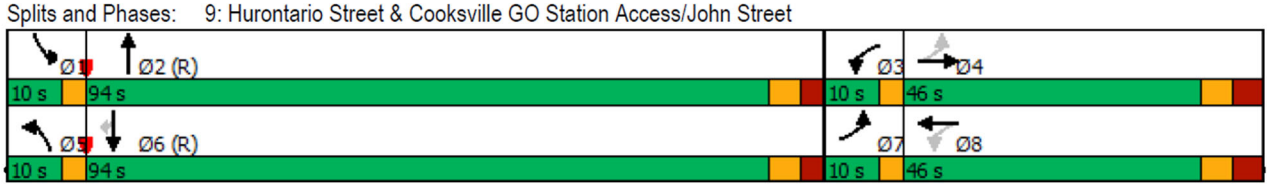


PM Peak Hour

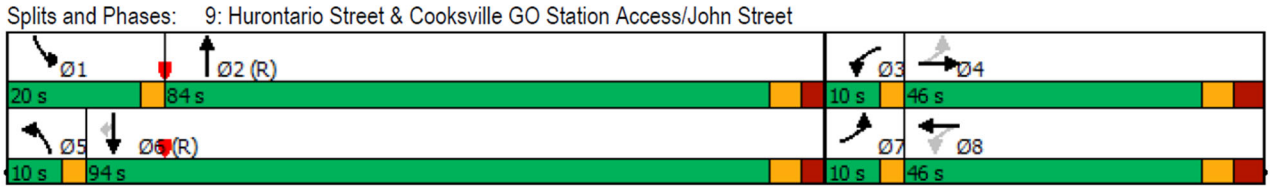


Hurontario Street and GO Station/John Street

AM Peak Hour



PM Peak Hour



6.0 FUTURE TOTAL CONDITION ASSESSMENT

6.1. Walking Mode Assessment

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.

Therefore, the proposed development and the area will maintain at least level of service B for the existing and future sidewalk network as some of the existing sidewalks will remain curb-face with no significant buffers.

6.2. Cycling Mode Assessment

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 our understanding that cycling network will be improved in the City and in this general area through 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.

The proposed development will provide a total of 338 bicycle parking spaces on-site to encourage residents to use active modes of transportation and to support vehicle parking rate reduction.

6.3. Transit Mode Assessment

As indicated, the proposed development is expected to generate 78 total two-way transit trips (42 inbound and 36 outbound) and 36 total two-way transit trips (21 inbound and 15 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 riders will have many ways to access transit and these trips will be spread out to different transit routes. Therefore, the proposed development site generated transit trips can be accommodated by the proposed transit improvements in this area. No additional improvements are required beyond the proposed transit improvements to accommodate the proposed development.

6.4. Auto Mode Assessment

The estimated 2029 future total traffic volumes are illustrated in **Figure 18** (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 12**.

Figure 18 – 2029 Future Total Traffic Volumes

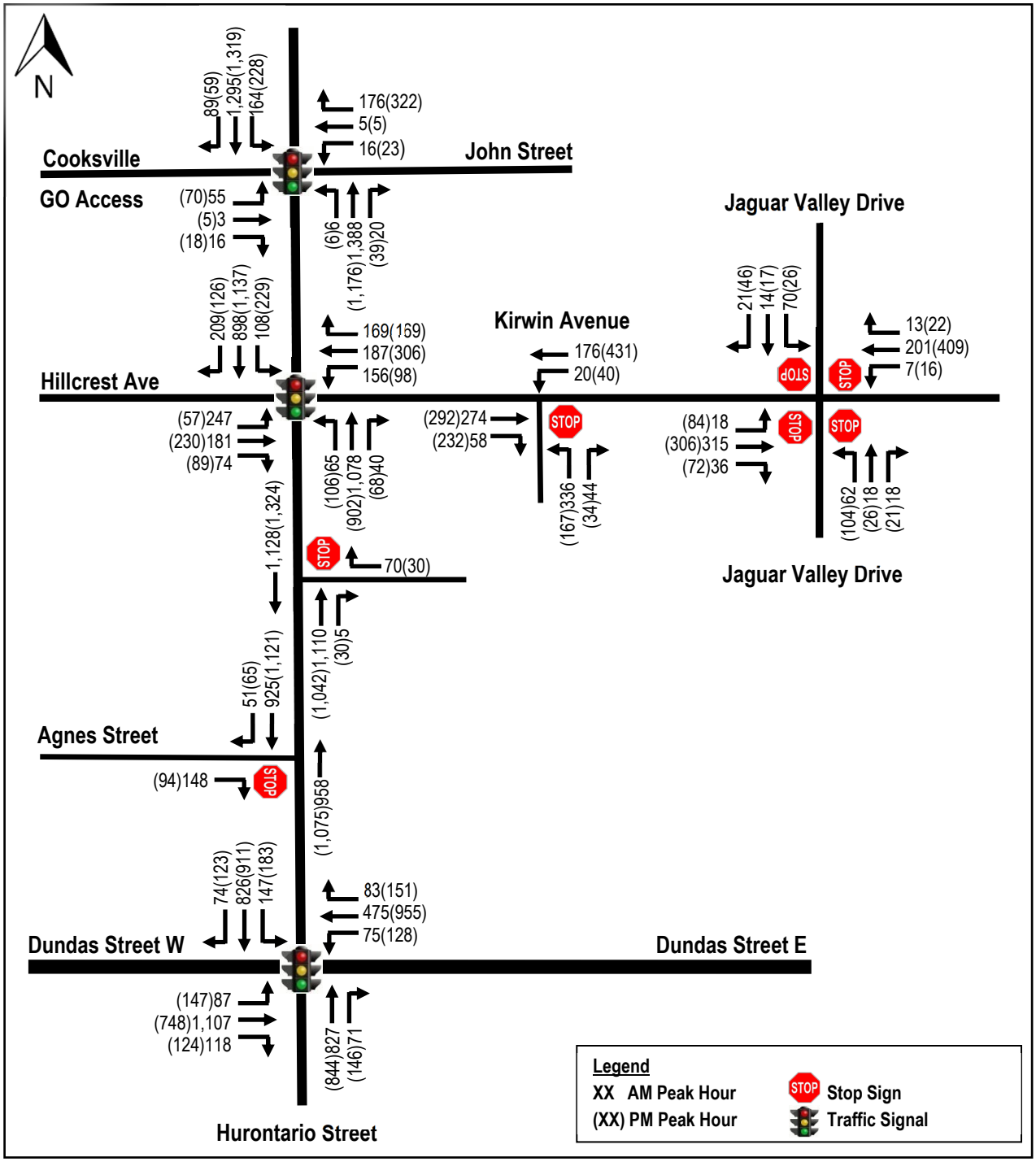


Table 12 – 2029 Future Total Levels of Service

Intersection	Key Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available/ Assumed Storage (m)
		LOS (v/c)	Delay (s)	95th Queue (m)	LOS (v/c)	Delay (s)	95th Queue (m)	
Hurontario Street/ Dundas Street (Signalized)	**Overall**	**D (0.94)**	**51**		**F (1.57)**	**110**		
	EB – L	C (0.43)	31	30	F (0.96)	99	87	~40
	EB – T	E (0.94)	62	236	D (0.64)	45	143	~180
	EB – R	B (0.23)	17	29	B (0.25)	19	33	~25
	WB – L	E (0.73)	60	39	C (0.54)	32	41	~25
	WB – T	D (0.78)	54	198	F (1.57)	299	575	~440
	WB – R	B (0.17)	11	18	C (0.31)	22	43	~25
	NB – TR	E (0.85)	58	206	F (1.01)	84	243	~150
	SB – L	F (0.81)	111	86	F (0.99)	133	117	~50
	SB – TR	C (0.61)	28	123	D (0.74)	39	166	~130
Hurontario Street/ Dundas Street with Potential shared WB through/right (Signalized)	**Overall**	**D (0.94)**	**49**		**E (0.99)**	**62**		
	EB – L	C (0.31)	27	30	F (0.97)	100	88	~40
	EB – T	E (0.94)	62	236	D (0.65)	46	144	~180
	EB – R	B (0.23)	17	29	B (0.25)	19	33	~25
	WB – L	E (0.73)	60	39	C (0.55)	33	41	~25
	WB – TR	D (0.49)	39	98	E (0.99)	72	260	~350
	NB – TR	E (0.85)	58	206	E (0.99)	79	239	~25
	SB – L	F (0.81)	111	86	F (0.99)	133	117	~150
	SB – TR	C (0.61)	28	123	D (0.73)	38	164	~130
Hurontario Street/ Hillcrest Avenue/Kirwin Avenue (signalized)	**Overall**	**D (0.98)**	**59**		**D (0.80)**	**44**		
	EB – L	F (0.98)	96	122	D (0.41)	51	27	~30
	EB – TR	D (0.46)	52	50	E (0.59)	58	65	~215
	WB – L	E (0.64)	58	64	D (0.51)	55	43	~45
	WB – TR	D (0.79)	54	59	E (0.80)	64	95	~80
	NB – L	F (0.57)	81	34	E (0.68)	76	44	~50
	NB – TR	F (0.71)	75	155	D (0.75)	42	97	~300
	SB – L	F (0.68)	98	64	F (0.68)	87	119	~50
	SB – TR	C (0.68)	23	93	C (0.76)	23	149	~135
Hurontario Street/ John Street/Cooksville GO Train Station Access (signalized)	**Overall**	**D (0.84)**	**44**		**C (0.90)**	**32**		
	EB – L	E (0.53)	72	30	E (0.66)	72	32	~100
	EB – TR	C (0.11)	29	10	C (0.09)	23	10	~150
	WB – L	D (0.08)	54	12	D (0.09)	43	14	~40
	WB – TR	D (0.78)	45	48	D (0.90)	53	88	~150
	NB – L	F (0.11)	103	4	F (0.11)	96	4	~25
	NB – TR	E (0.84)	74	266	C (0.82)	32	232	~140
	SB – L	E (0.53)	65	91	E (0.77)	76	166	~40
	SB – T	B (0.55)	10	166	B (0.62)	18	224	~170
	SB – R	A (0.10)	3	10	A (0.07)	2	6	~25
Hurontario Street/ Agnes Street (unsignalized)	EB – R	B (0.18)	10	5	B (0.13)	10	4	~185
	NB – T	A (0.31)	0	0	A (0.34)	0	0	~130
	SB – TR	A (0.39)	0	0	A (0.48)	0	0	~200
Kirwin Avenue/ Jaguar Valley Drive (unsignalized)	EB – L	B (0.03)	8	-	C (0.17)	10	-	~20
	EB – TR	A (0.58)	15	-	A (0.70)	21	-	~80
	WB – L	B (0.01)	8	-	D (0.03)	9	-	~15
	WB – TR	A (0.37)	11	-	A (0.81)	29	-	~180
	NB – LTR	A (0.17)	10	-	B (0.31)	13	-	~115
	SB – LTR	B (0.18)	10	-	B (0.18)	11	-	~75
Hurontario Street/ 3085 Hurontario RIRO Access (unsignalized)	WB – R	A (0.09)	10	3	A (0.04)	10	1	~80
	NB – TR	A (0.47)	0	0	A (0.44)	0	0	~200
	SB – T	A (0.36)	0	0	A (0.42)	0	0	~100
Kirwin Avenue/ Proposed Shared Full Moves Access (unsignalized)	EB – TR	A (0.21)	0	0	A (0.31)	0	0	~80
	WB – TL	A (0.02)	1	0	A (0.04)	1	1	~80
	NB – LR	E (0.81)	35	62	E (0.67)	38	36	~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. 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. The sensitivity analysis indicates that with this proposed lane configuration, the intersection is expected to operate at acceptable levels of service.

6.5. Potential Mitigation Measure to Improve Intersection Operation

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:

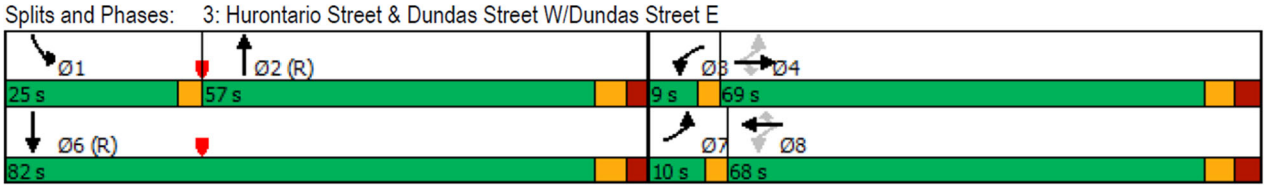
- The City and the Region to review the existing signal timing plans for the area and optimize them as appropriate to optimize the intersection operations;
- Reduce parking rates for all proposed developments to encourage alternative modes of transportation such as walking, cycling and public transit;
- 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

6.6. Signal Timing Optimization

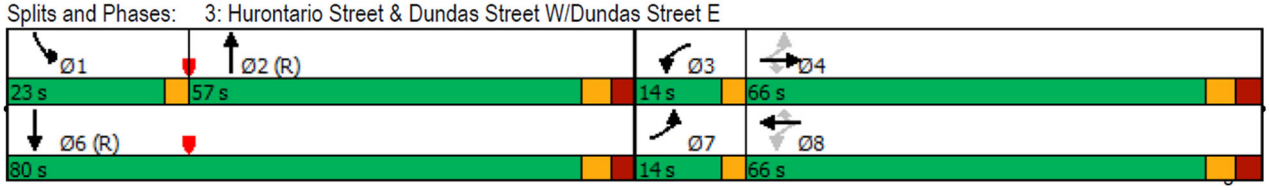
The following are the potential signal timing for the signalized intersections considered in the analysis:

Hurontario Street and Dundas Street

AM Peak Hour

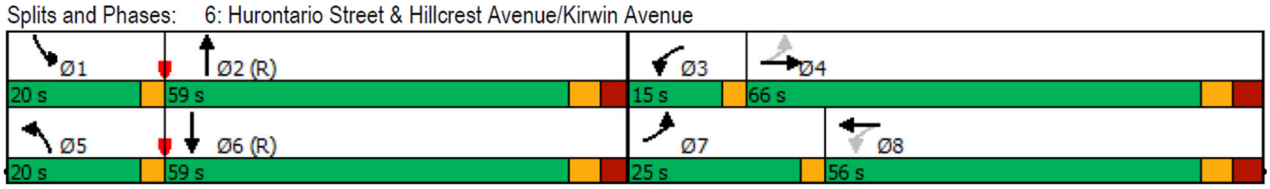


PM Peak Hour

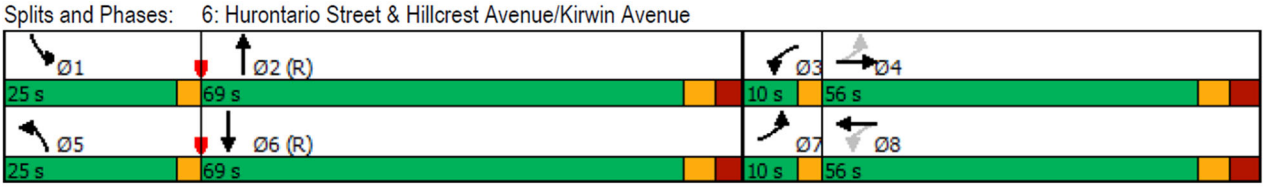


Hurontario Street and Kirwin Avenue/Hillcrest Avenue

AM Peak Hour

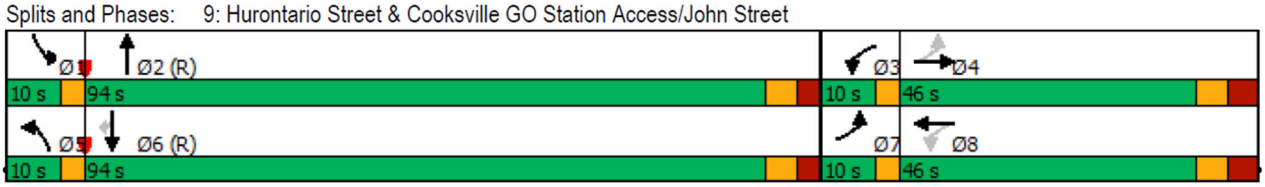


PM Peak Hour

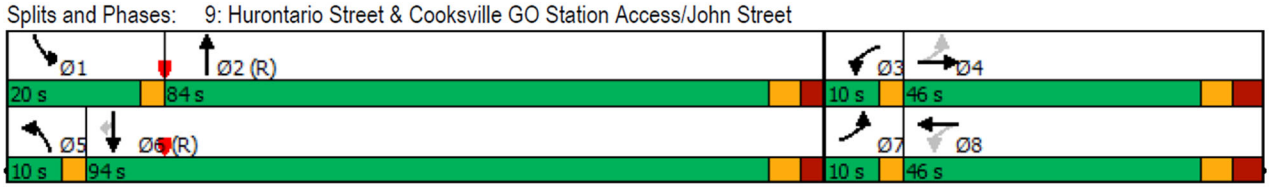


Hurontario Street and GO Station/John Street

AM Peak Hour



PM Peak Hour

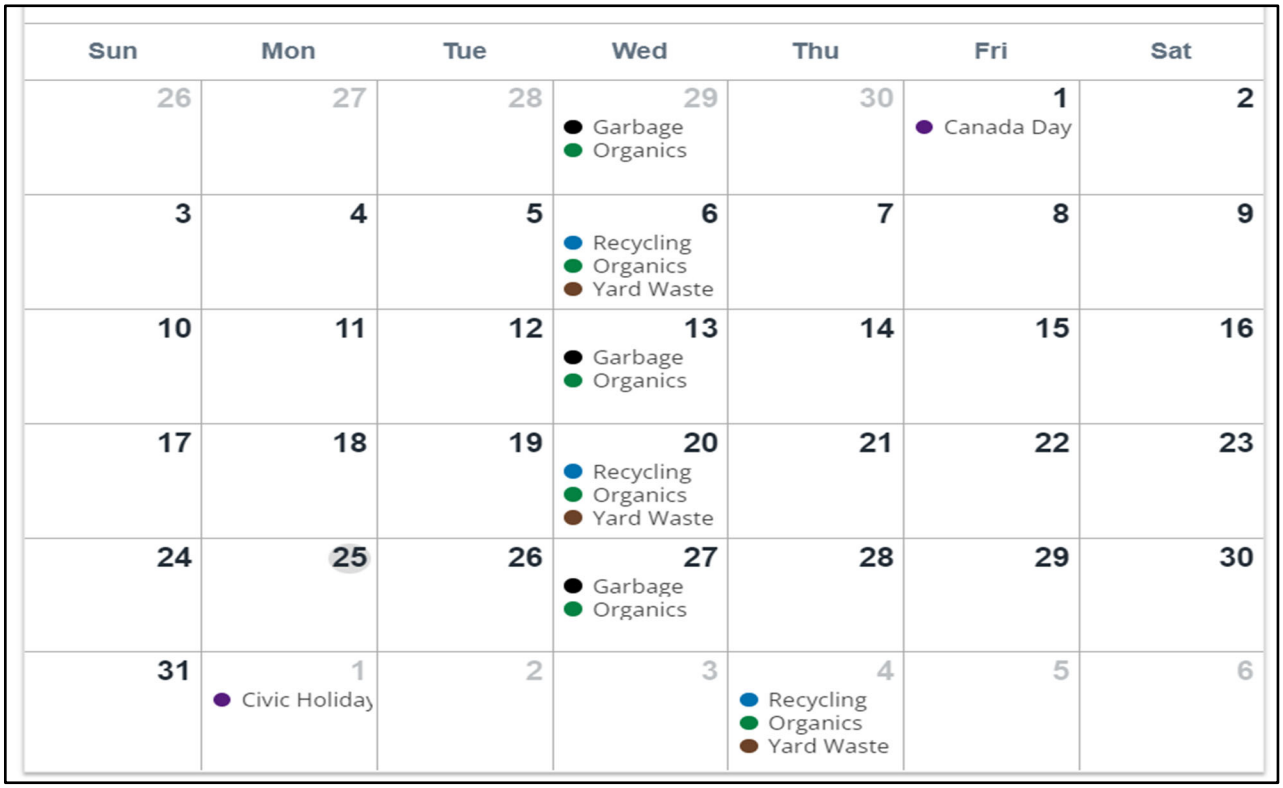


7.0 SITE PLAN REVIEW

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 (https://www.peelregion.ca/waste/calendar/). **Figure 19** 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.

Figure 19 – 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 13 – City of Mississauga Zoning By-law Loading Requirements

Land Use	Magnitude	Loading Rates	Spaces Required
Residential	520 units	Minimum of 30 dwelling units	1 space
Retail	218.53 m^2	Less than 250 m^2	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.

AutoTURN software was used to generate vehicular turning templates to confirm and demonstrate the accessibility for the Type "G" loading space. The vehicle turning templates are provided in **Figures 23** and **24** of this Study.

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 full moves access will be provided onto Kirwin Avenue to service the proposed development. It should be noted that this access will be shared with the adjacent development, 3085 Hurontario Street.

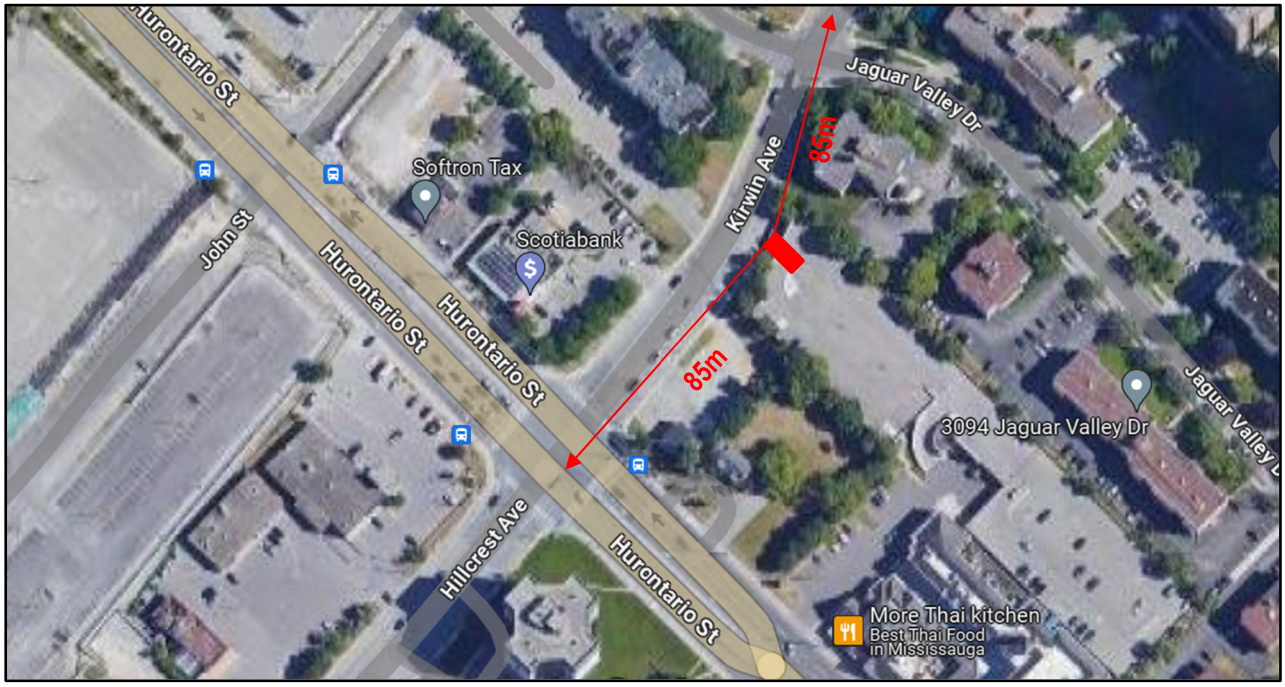
The analysis indicates that the proposed access is expected to operate at acceptable levels of service with minimum queue or delay. Therefore, it is concluded that the proposed site access arrangement is appropriate. The lane configurations for the proposed development include: one inbound and one outbound lane (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 horizon curves or vertical curves in the vicinity of the proposed site accesses. The proposed access conditions are relatively similar to the existing conditions. Based on Table 9.9.4 of the 2017 Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads, a stopping sight distance of 85-105m is required for a 60-70km design speed, respectively. This is the design speed for Kirwin Avenue (posted plus 10-20km/h). Our analysis indicates that the proposed accesses onto Kirwin Avenue can achieve or exceed the required stopping sight distance of 85-105m, as illustrated in **Figure 20** below.

Figure 20 – Proposed Access Sightlines



Source: Google Map

7.5.2. Weaving

As indicated, the proposed development will have 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 full moves access onto Kirwin Avenue.

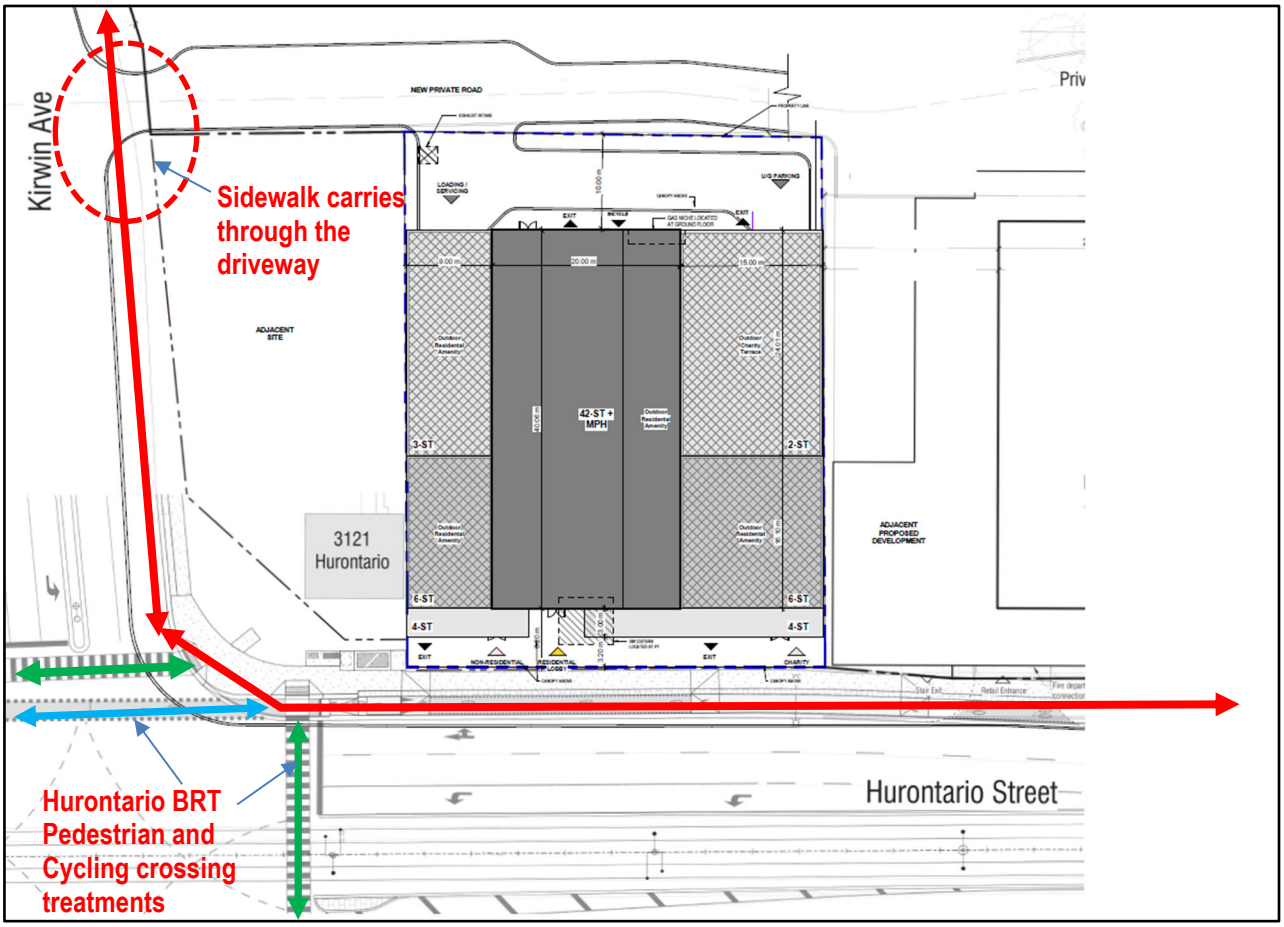
7.5.3. Pedestrian and Cycling Safety

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, that the pedestrian and cycling safety will be improved along this corridor.

The existing sidewalk on the south side of Kirwin Avenue along the frontage of the site will be maintained and enhanced through both proposed site accesses to ensure pedestrian safety. In addition, internal sidewalks will be proposed as illustrated in **Figure 21** below.

A potential ladder crossing treatment along the frontage of the proposed site full moves access onto Kirwin Avenue. This potential crossing is illustrated in **Figure 21** below.

Figure 21 – Pedestrian Facilities



7.6. Corner Clearance

In accordance with Section 8.8.1 and Figure 8.8.2 of the TAC 2017 (as illustrated in **Figure 18** below), the minimum corner clearance at an intersection is 15m. The Corner Clearance between the proposed access to Hurontario Street is approximately 78m and 56 m to Jaguar Valley Drive. Therefore, the proposed site access corner clearances exceed the minimum TAC 2017 *suggested* corner clearance guideline of 15m.

7.6.1. Clear Throat Length

As the proposed development access will be provided onto a future shared private access, therefore, the clear throat length is not applicable as the private access will have very low speed limit.

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 along the Hazel McCallion Line, with the blended rates of 0.5 space/unit for resident and 0.15 spaces/unit for visitor/ground related retail use, for the proposed condominium apartment land use category. **Table 14** below summarizes the vehicle parking requirements for the newly approved City of Mississauga Zoning By-law amendment.

Table 14 – City of Mississauga Zoning By-law No. 0225-2007 Vehicle Parking Requirements

Unit Type	No. of Unit	Parking Rates	Parking Requirement
Residential	520 units	0.50 spaces/unit	260
Visitor	520 units	0.15 spaces/unit for visitor	78
Retail	218.53 m^2	To be shared with visitor	0
Total			***338 spaces***

Based on the assessment noted above, the proposed development will require to provide approximately 338 vehicle parking spaces, inclusive of residential, visitor and retail uses. Although this is a great start, however, these rates are still excessive and do not support the Hurontario LRT investment by Metrolinx and the City of Mississauga. The parking rates should be further reduced as parking management is the best Transportation Demand Management measure.

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

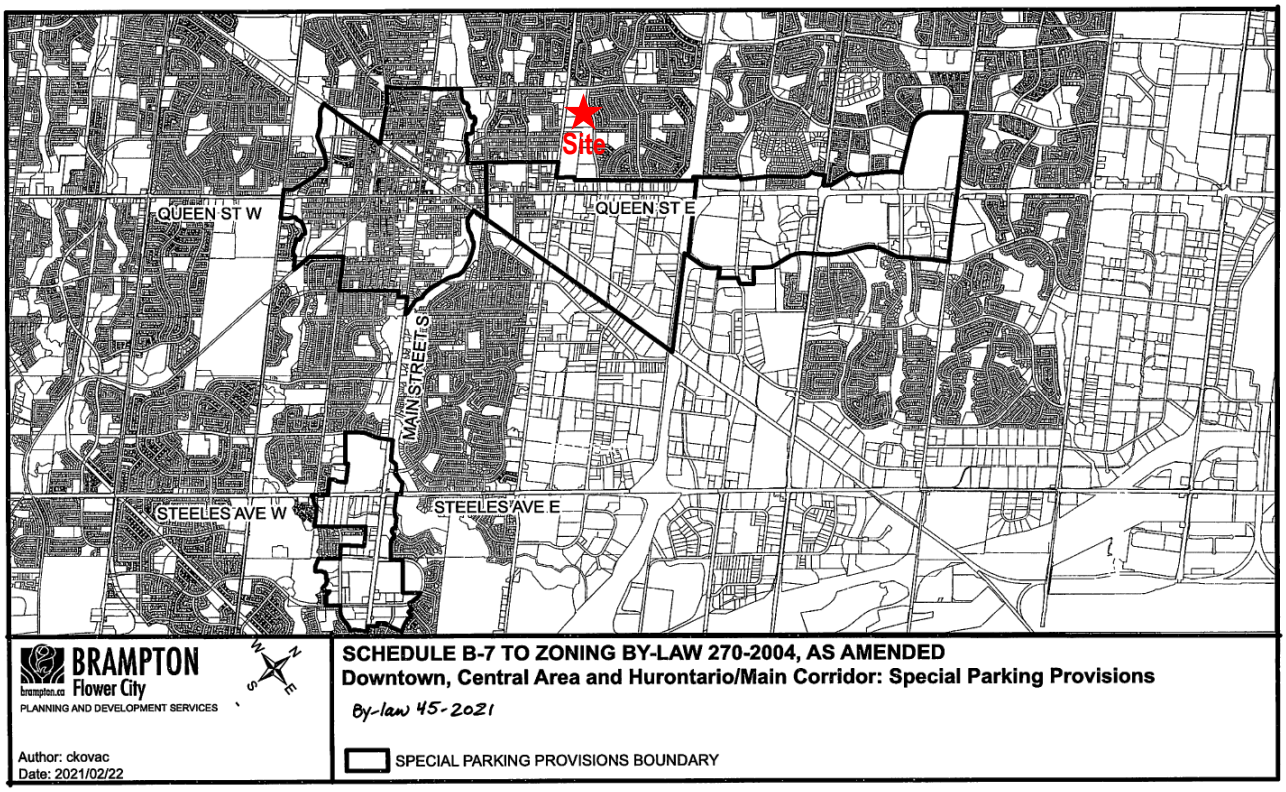
The City of Toronto recognized that the requirement of excessive parking is a barrier to achieving the City's housing needs and objectives, auto-independence and promoting other modes of transportation such as public transit, walking and cycling. It is NexTrans' understanding that the parking policy amendment to the current Zoning By-law No. 569-2013 (Zoning By-law No. 89-2022) has been Enacted and passed on February 3rd, 2022, which has removed the minimum parking rate requirement for residential development across the City. This is an excellent news to address housing affordability and housing crisis in the City of Toronto.

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 22**).

This is a very encouraging provision to support and address housing supply 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.

Figure 22 – 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.

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 15**) 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 200 vehicle parking spaces for both resident, visitor and retail components. This is about 41% parking reduction from the applicable Zoning By-law.

Table 15 – Recommended Vehicle Parking Rates for the Proposed Development

Unit Type	No. of Unit	Parking Rates	Parking Requirement
Residential	520 units	0.23 spaces/unit	122
Visitor	520 units	0.15 spaces/unit for visitor	78
Retail	218.53 m^2	To be shared with visitor	0
Total			***200 spaces***

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 should be noted that the proposed development is expected to generate only 160 total two-way auto trips (59 inbound and 101 outbound) and 191 total two-way auto trips (105 inbound and 86 outbound) during the morning and afternoon peak hours, respectively. The maximum numbers of vehicle trips to be generated by the proposed development are only 191 two-way trips, and maximum of 105 inbound trips. Both the total two-way trips and maximum inbound or outbound trips are less than the total of 200 vehicle parking spaces provided on-site.

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. Provide Housing Supply

The Greater Toronto Area, including the City of Mississauga, is currently facing a housing supply shortage. One component that increases the cost of new units in multi-storey buildings, is the requirement to provide a minimum rate of parking; even in areas well serviced by transit with historically low vehicle ownership 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. 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 16 – 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 30% and 29% 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, parking reduction is justified and must be implemented in order to achieve the sustainable policies and requirements.

8.3.4. 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.

8.3.5. 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.

Based on various planning studies conducted in the past few years, 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.

8.3.6. 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". Therefore, 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.

8.3.7. 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, therefore, 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.

8.3.8. Other Jurisdiction Parking Strategy

The City of Toronto 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. It is NexTrans' understanding that the parking policy amendment to the current Zoning By-law No. 569-2013 (Zoning By-law No. 89-2022) has been Enacted and passed on February 3rd, 2022, which has removed the minimum parking rate requirement for residential development across the City. This is an excellent news to address housing affordability and housing crisis in the City of Toronto.

9.0 BICYCLE PARKING ASSESSMENT

Table 17 summarizes the City of Mississauga Zoning By-law bicycle parking requirement for the proposed development to support TDM and active transportation.

Table 17 – Bicycle Parking Space Requirements

Land Use	No. of Unit / GFA	Short Term – Class A		Long Term – Class B		Total
		Rates	Spaces	Rates	Spaces	
Residential	520 units	0.05 spaces/unit	26	0.60 spaces/unit	312	338

Based on the assessment indicated above, a total of 338 bicycle parking spaces, with 26 spaces for Class A and 312 spaces for Class B are required for the proposed development. The proposed development will provide a total of 338 bicycle parking spaces, which meets these requirements. Therefore, this provision 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;

- Provide 338 bicycle parking spaces on-site;
- Provide on bicycle repair station at a convenient location; and
- 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 an email or an electronic letter

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:
    - 238 total two-way trips (101 inbound and 137 outbound) and 227 total two-way trips (126 inbound and 101 outbound) during the morning and afternoon peak hours, respectively;
    - 160 total two-way auto trips (59 inbound and 101 outbound) and 191 total two-way auto trips (105 inbound and 86 outbound) during the morning and afternoon peak hours, respectively; and
    - 78 total two-way transit trips (42 inbound and 36 outbound) and 36 total two-way transit trips (21 inbound and 15 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. As 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. The assessment indicated that this proposed lane configuration will improve the intersection levels of service.

- 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. 0225-2007with the blended rates of 0.5 space/unit for resident and 0.15 spaces/unit for visitor/ground related retail use, for the proposed condominium apartment land use category. On this basis the proposed development is required to provide a total of 338 vehicle parking spaces.

  Based on the parking justification provided in this Study for the recommended vehicle parking rates, the proposed development will provide a total of 200 vehicle parking spaces for both resident, visitor and retail components. This is about 41% parking reduction from the applicable Zoning By-law.

- Based on the applicable Zoning By-law, a total of 338 bicycle parking spaces, with 26 spaces for Class A and 312 spaces for Class B are required for the proposed development. The proposed development will provide a total of 338 bicycle parking spaces, which meets these requirements. Therefore, this provision 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.

  AutoTURN software was used to generate vehicular turning templates to confirm and demonstrate the accessibility for the Type "G" loading space. The vehicle turning templates are provided in **Figures 23** and **24** of this Study.

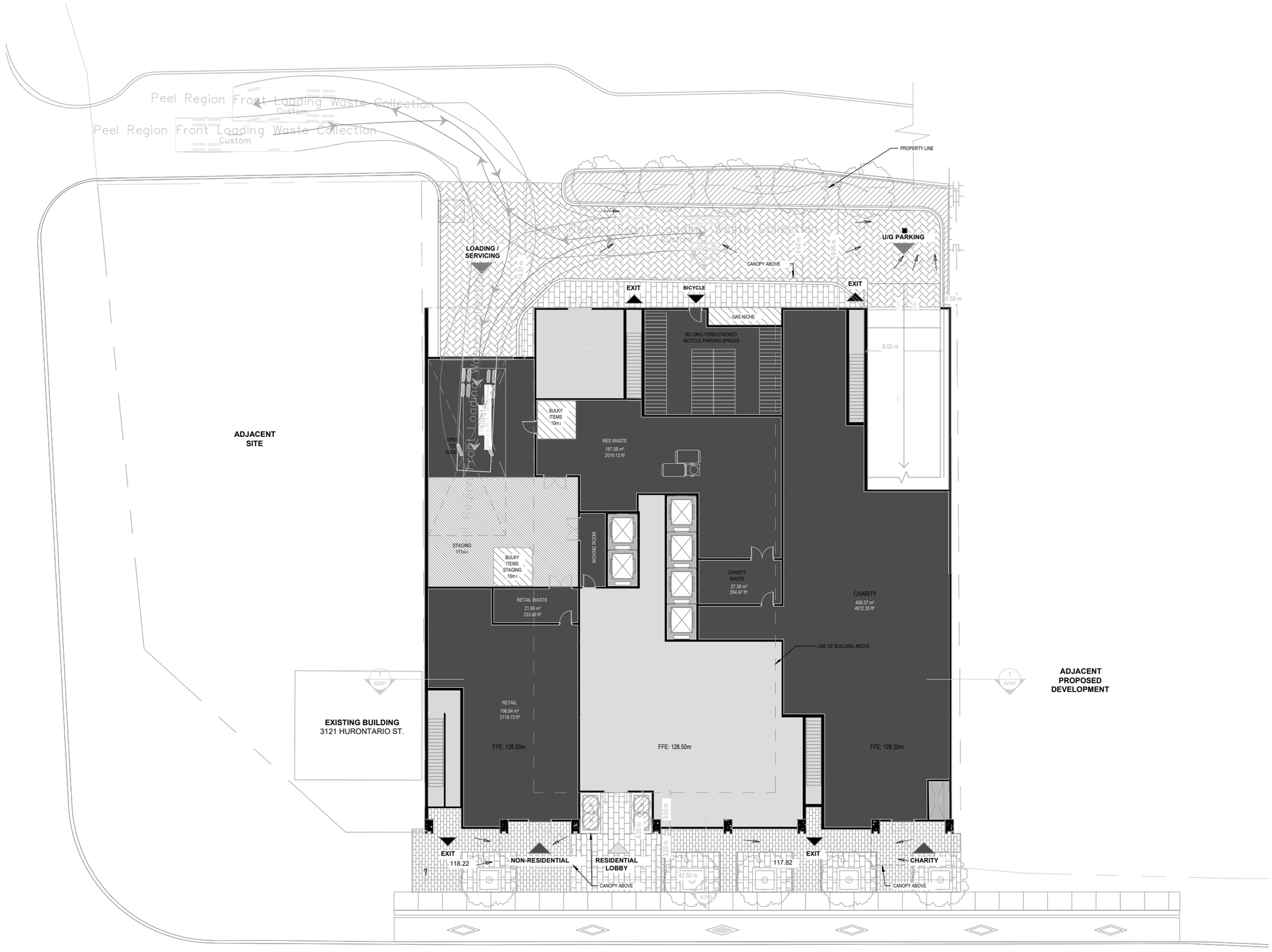
- A full moves access will be provided onto Kirwin Avenue to service the proposed development. It should be noted that this access will be shared with the adjacent development, 3085 Hurontario Street.

  The analysis indicates that the proposed access is 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: one inbound and one outbound lane (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 and findings, the following recommendations are provided:

- Reduce parking rates (0.23 spaces/unit for residential and 0.15 spaces/unit for visitor/retail components) for the proposed developments to encourage alternative modes of transportation such as walking, cycling and public transit;
- The proposed development provides 338 bicycle parking spaces to encourage active modes of transportation and support vehicle parking reduction;
- The proposed development provides at least one bicycle repair station on-site at a convenient location;
- The proposed development provides direct sidewalk connection onto Hurontario Street and Kirwin Avenue; and
- Proposed development provides TDM measures and incentives to encourage alternative mode of transportation in the area



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

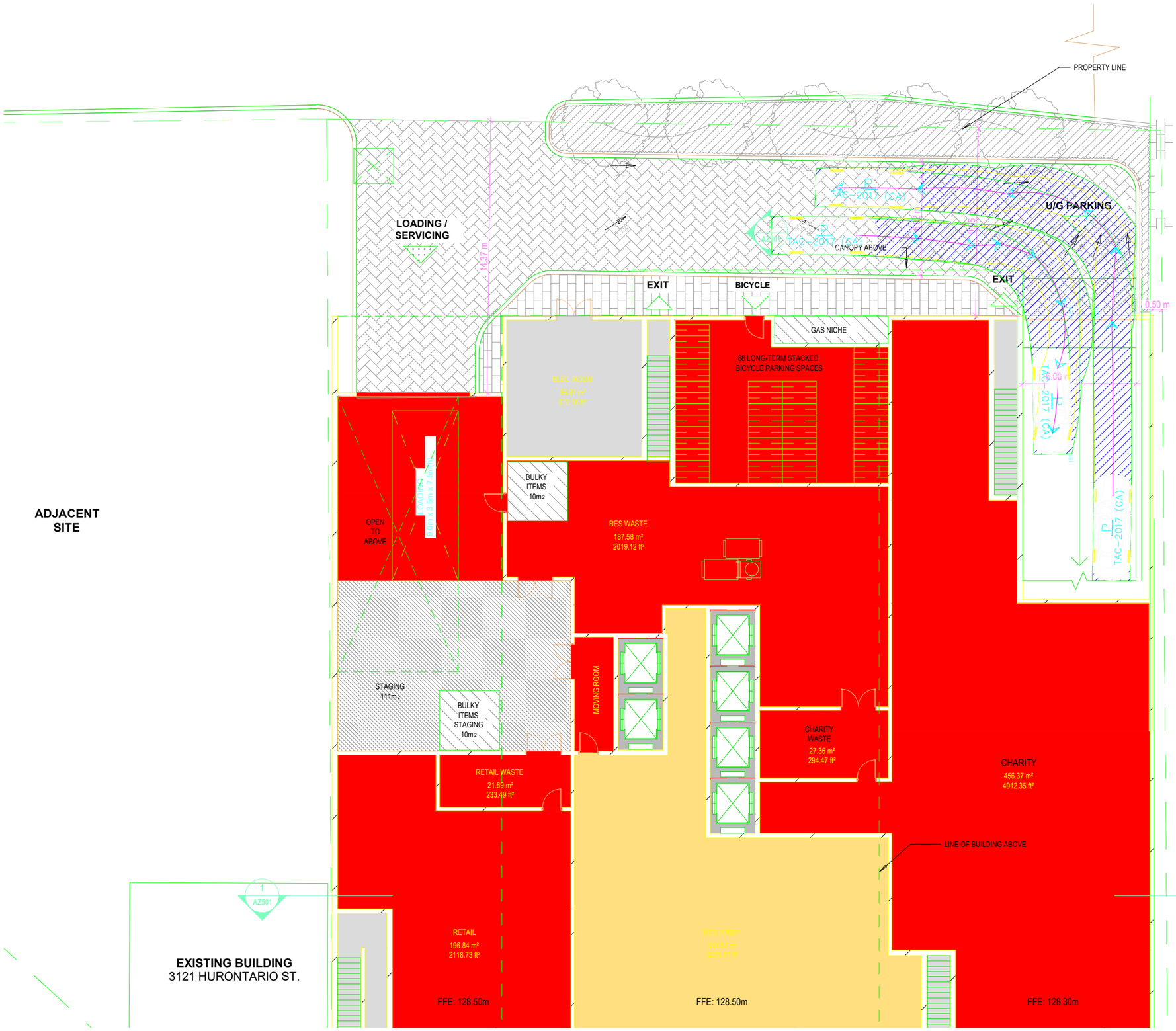
STAMP

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

PROJECT NAME:
Residential Development
3005 Hurontario Street
City of Mississauga

DRAWING TITLE:
AutoTURN Analysis
Garbage Truck

DESIGN BY: S.N.	DATE: July 16, 2024
CHECKED BY: R.P.	PROJECT NO. NT-21-262
DRAWN BY: S.N.	
SCALE: NTS	DRAWING NO. Figure 23



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

STAMP

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

PROJECT NAME:
Residential Development
3005 Hurontario Street
City of Mississauga

DRAWING TITLE:
AutoTURN Analysis
P TAC 2017

DESIGN BY: S.N.	DATE: July 16, 2024
CHECKED BY: R.P.	PROJECT NO. NT-21-262
DRAWN BY: S.N.	
SCALE: NTS	DRAWING NO. Figure 24

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

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 <sam@nextrans.ca>
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 (tyler.xuereb@mississauga.ca, 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: http://www.mississauga.ca/portal/residents/developmentinformation
4. Trip Generation
   a. ITE Trip Generation Manual ~~10th~~ 11th 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 (ParkingStudy.Review@mississauga.ca) 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: https://www.mississauga.ca/projects-and-strategies/city-projects/hurontario-light-rail-transit/
- 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: https://www.mississauga.ca/projects-and-strategies/city-projects/dundas-connects/

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

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 In B C D G J M P T U 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 C D G J M P T U 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 T U
and
2006 GTA zone of origin - gta06_orig 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:

	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%

Transit Distribution

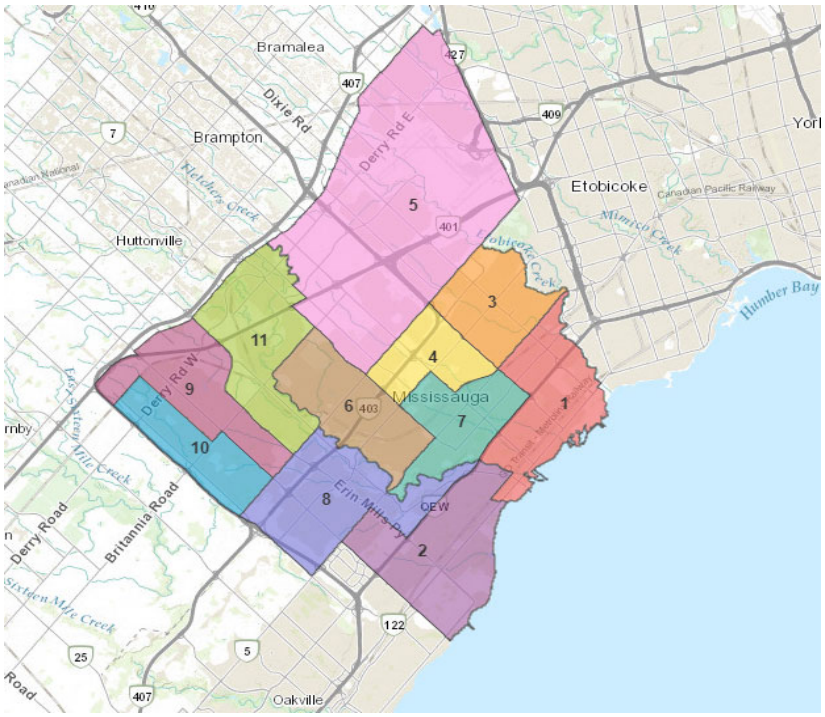
Cross Tabulation Query Form - Trip - 2016 v1.1

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 U
and
2006 GTA zone of origin - gta06_orig In 3632 3653 3657 3659
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 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
	14%	8%	3%	6%	12%	4%	32%	10%	5%	5%	100%



		% of toal 71%
North	29%	21%
South	30%	21%
East	18%	13%
West	23%	16%
	100%	71%

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 C G J W
and
2006 GTA zone of origin - gta06_orig 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:

	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 11 of Toronto	Richmond Hill	Mississauga	Oakville	
3632	0	0	0	0	0	0	0	0	14	0	
3653	69	85	32	0	40	0	20	15	537	11	
3657	218	0	0	31	75	155	0	0	735	40	
3659	0	0	0	0	0	0	0	0	203	0	
	287	85	32	31	115	155	20	15	1489	51	2280
	13%	4%	1%	1%	5%	7%	1%	1%	65%	2%	100%

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

Auto Distribution

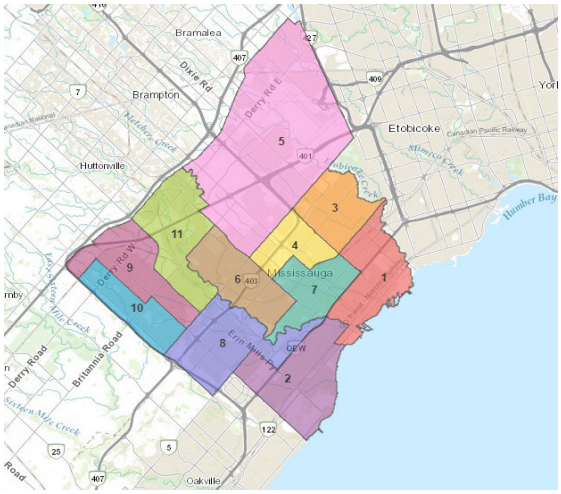
Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of origin - gta06_orig In 3632 3653 3657 3659
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	0	
3653	72	0	98	25	240	102	0	
3657	68	46	153	19	326	92	31	
3659	37	0	32	0	114	19	0	
	177	60	283	44	680	213	31	1488
	12%	4%	19%	3%	46%	14%	2%	100%



		% of total 65%
North	35%	23%
South	23%	15%
East	15%	10%
West	26%	17%
	100%	65%

Auto Distribution External - Outbound

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest
Column: Planning district of origin - pd_orig

Filters:
Primary travel mode of trip - mode_prime In D M P T U
and
2006 GTA zone of destination - gta06_dest 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:

	PD 1 of Toronto	PD 2 of Toronto	PD 4 of Toronto	PD 5 of Toronto	PD 7 of Toronto	PD 8 of Toronto	Newmarket	Brampton	Mississauga	Burlington	
3632	0	0	0	24	13	66	0	104	413	0	
3653	0	31	0	0	0	194	0	0	905	27	
3657	0	0	30	0	36	0	0	0	355	0	
3659	18	0	15	0	27	20	19	0	274	0	
	18	31	45	24	76	280	19	104	1947	27	2571
	1%	1%	2%	1%	3%	11%	1%	4%	76%	1%	100%

Mississauga	76%
Toronto	18%
York Region	1%
Brampton	4%
Halton	1%
Durham	0%
	100%

Auto Distribution Outbound/Inbound - Non-Residen

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest
Column: Planning district of origin - pd_orig

Filters:

Primary trav	M	P	T	U
and				
2006 GTA z	3653	3657	3659	
and				
Start time of trip - start_time In 600-900				
and				
Type of dwelling unit - dwell_type In 2				
and				
Trip purpose	W	M		

Trip 2016
Table:

	PD 1 of Toronto	PD 2 of Toronto	PD 4 of Toronto	PD 7 of Toronto	PD 8 of Toronto
3632	0	0	0	0	66
3653	0	31	0	0	119
3657	0	0	30	0	0
3659	18	0	0	27	20
	18	31	30	27	205
	2%	4%	4%	3%	24%

Toronto	36%
Mississauga	46%
Brampton	12%
York Region	2%
Halton	3%
	100%

tial

Newmarket	Brampton	Mississauga	Burlington	
0	104	176	0	
0	0	110	27	
0	0	43	0	
19	0	64	0	
19	104	393	27	854
2%	12%	46%	3%	100%

Auto Internal Mississauga Distribution - Outbound

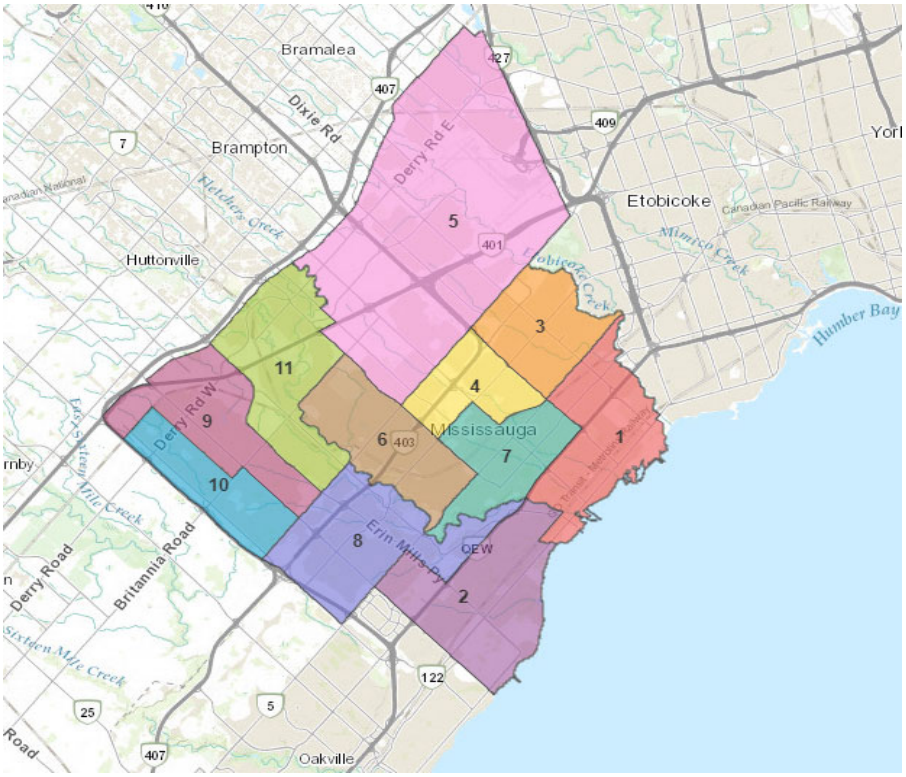
Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
Primary travel mode of trip - mode_prime In D M P T U
and
2006 GTA zone of origin - gta06_orig In 3632 3653 3657 3659
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 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
	14%	8%	3%	6%	12%	4%	32%	10%	5%	5%	100%



		% of toal 71%
North	29%	21%
South	30%	21%
East	18%	13%
West	23%	16%
	100%	71%

Auto Internal Mississauga Distribution - Inbound

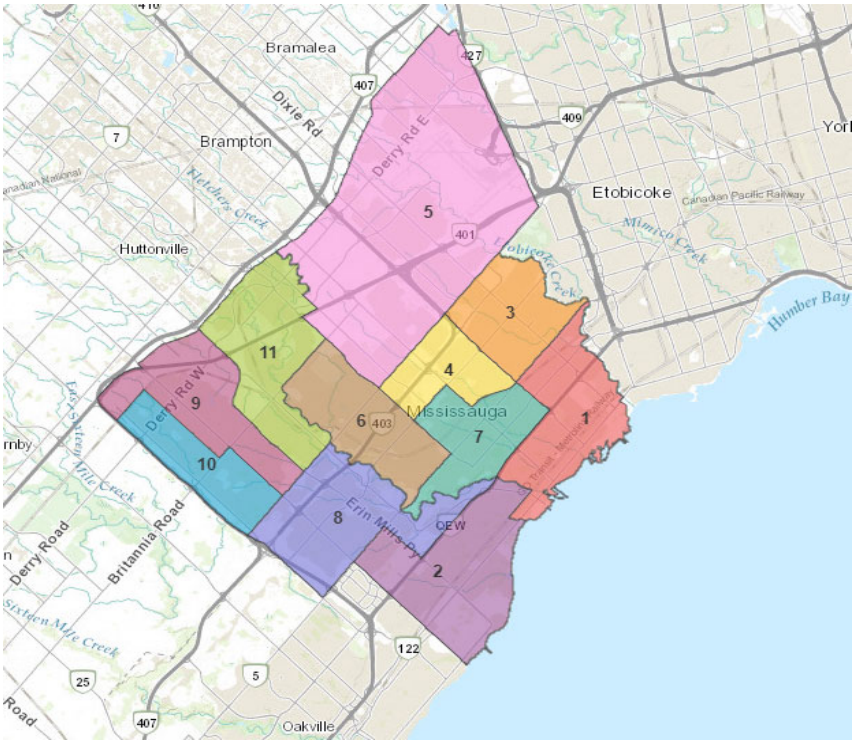
Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest
Column: Ward number of origin - ward_orig

Filters:
Primary travel mode of trip - mode_prime In D M P T U
and
2006 GTA zone of destination - gta06_dest In 3632 3653 3657 3659
and
Start time of trip - start_time In 600-900
and
Type of dwelling unit - dwell_type In 2
and
Ward number of origin - ward_orig In 136-146

Trip 2016
Table:

	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 7	Ward 8	Ward 9	Ward 11	
	136	137	138	139	140	142	143	144	146	
3632	19	0	0	200	18	176	0	0	0	
3653	123	46	69	56	0	578	0	33	0	
3657	70	10	0	9	0	254	12	0	0	
3659	0	0	0	28	0	234	0	0	11	
	212	56	69	293	18	1242	12	33	11	1946
	11%	3%	4%	15%	1%	64%	1%	2%	1%	100%



		% of toal 76%
North	17%	13%
South	30%	23%
East	35%	26%
West	18%	14%
	100%	76%

Transit Distribution External - Outbound

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of origin - gta06_orig In 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:

	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 11 of Toronto	Richmond Hill	Mississauga	Oakville	
3632	0	0	0	0	0	0	0	0	14	0	
3653	69	85	32	0	40	0	20	15	537	11	
3657	218	0	0	31	75	155	0	0	735	40	
3659	0	0	0	0	0	0	0	0	203	0	
	287	85	32	31	115	155	20	15	1489	51	2280
	13%	4%	1%	1%	5%	7%	1%	1%	65%	2%	100%

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

Transit Distribution External - Inbound

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest
Column: Planning district of origin - pd_orig

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of destination - gta06_dest 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:

	PD 1 of Toronto	PD 7 of Toronto	PD 8 of Toronto	PD 10 of Toronto	Mississauga	Hamilton	
3632	20	28	0	0	87	30	
3653	0	0	0	0	109	0	
3657	0	0	0	0	201	0	
3659	0	0	13	11	47	0	
	20	28	13	11	444	30	546
	4%	5%	2%	2%	81%	5%	100%

Mississauga	81%
Toronto	13%
York Region	0%
Hamilton	5%
	100%

Transit Distribution Internal Mississauga - Outbound

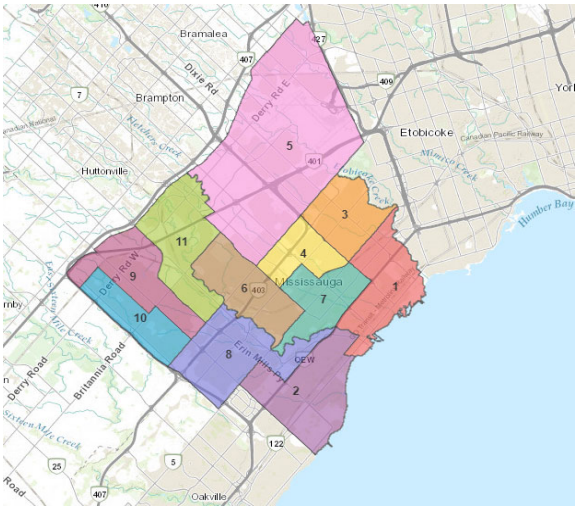
Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of origin - gta06_orig In 3632 3653 3657 3659
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	0	
3653	72	0	98	25	240	102	0	
3657	68	46	153	19	326	92	31	
3659	37	0	32	0	114	19	0	
	177	60	283	44	680	213	31	1488
	12%	4%	19%	3%	46%	14%	2%	100%



		% of total 65%
North	35%	23%
South	23%	15%
East	15%	10%
West	26%	17%
	100%	65%

Transit Distribution Internal Mississauga - Inbound

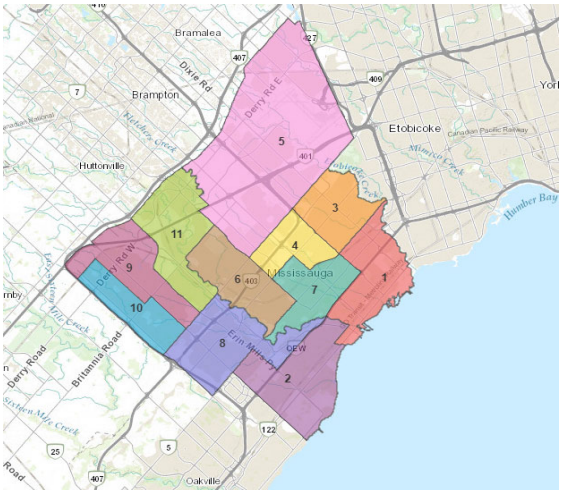
Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest
Column: Ward number of origin - ward_orig

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of destination - gta06_dest In 3632 3653 3657 3659
and
Start time of trip - start_time In 600-900
and
Type of dwelling unit - dwell_type In 2
and
Ward number of origin - ward_orig In 136-146

Trip 2016
Table:

	Ward 1	Ward 5	Ward 7	Ward 11	
	136	140	142	146	
3632	30	5	52	0	
3653	14	0	82	14	
3657	0	0	201	0	
3659	0	0	47	0	
	44	5	382	14	445
	10%	1%	86%	3%	100%



		% of total 65%
North	21%	17%
South	31%	25%
East	23%	18%
West	25%	20%
	100%	82%

Appendix C
Traffic Data

Signal Timing Report

Runtime: 2021-04-04 9:05

Device: 1401

Region: Mississauga **Signal ID:** 1401 **Location:** HURONTARIO STREET N at Dundas 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	Sec	10	15	10	40	10	15	10	40
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	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	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	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	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	14	66	14	66	14	66	14	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	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	J----------	-F----------	---A-------
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	-2---------- ----	----------0----- ----	-2---------- ------	----------0------ ----	----------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	----M-------	------J-----	-------A----	--------S---	---------O--	----------D	----------D	----------D
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	----------2---- ----	--3---------- ----	------7---------- ----	---4---------- ----	--------9---------- ----	---------- 5------	----------6 ----	---------- 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	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	3	0	0	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	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

District: Mississauga **ID:** 2115 **Location:** HURONTARIO STREET N @ Hillcrest Avenue / Kirwin 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	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.5	0.0	4.0	0.0	3.5	0.0	4.0
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	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	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)	()	(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	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	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	Enum	none	none	none	pedRecall	none	none	none	pedRecall
Split 4 - Time	Sec	13	62	21	64	13	62	0	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	12345678901234567890 1	12345678901234567890 1	12345678901234567890 1	1---------- ----	----------5---------- ----	-2---------- ------	----------4-- ----	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	--------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	-2---------- ----	-----6---------- ----	----------1---------- ----	---------- 7----	---------- 8---	----------4 ------	0	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	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	0	0	0	0	7	0
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

Device: 2117

Region: Mississauga **Signal ID:** 2117 **Location:** HURONTARIO STREET N at John Street

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	Sec	5	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	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	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	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)	()	(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	107	102	115	107	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	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	20	79	15	46	20	79	0	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	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	20	74	20	46	20	74	0	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	Enum	false	true	false	false	false	true	false	false
Split 5 - Mode	Enum	none	none	none	pedRecall	none	none	none	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

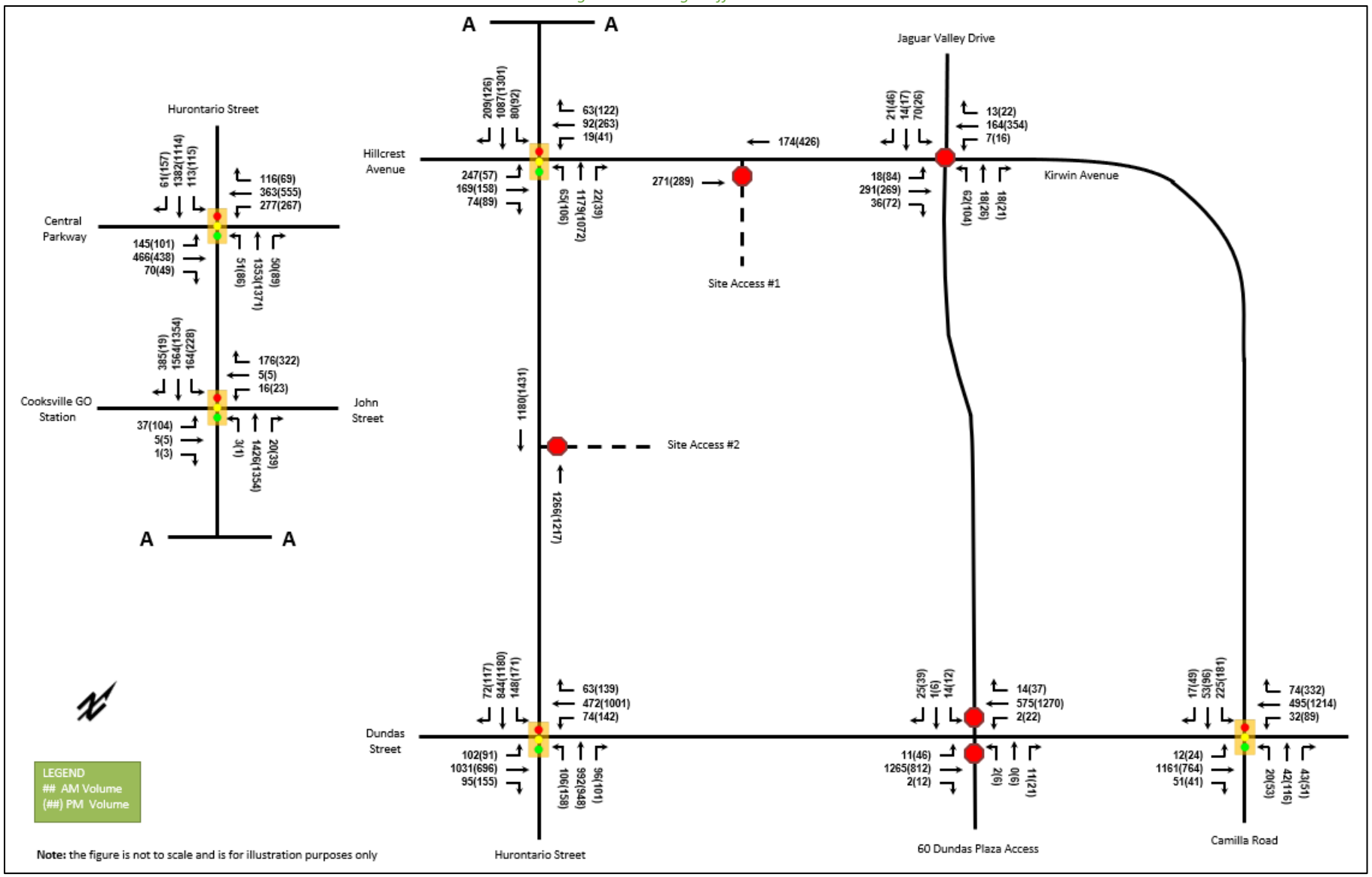
TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	1----------	----------5----------	-2----------	----------4--	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	-------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	-2----------	-----6----------	----------1----------	----------	----------	----------	0	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	Number	8	1	4	1	2	3	5	3
Plan 2 Hour	Hour	0	7	0	0	0	0	0	0
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	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	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

Figure 4: Existing Traffic Volumes



Spectrum

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

Turning Movement Count (2 . DUNDAS ST & HURONTARIO ST)

Start Time	N Approach HURONTARIO ST						E Approach DUNDAS ST						S Approach HURONTARIO ST						W Approach DUNDAS ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	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	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

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

Start Time	N Approach HURONTARIO ST						E Approach DUNDAS ST						S Approach HURONTARIO ST						W Approach DUNDAS 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%	**-**
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	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0.7%		-	-	-	-	0%		-	-	-	-	0.3%		-	-	-	-	0%		**-**

Spectrum

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 PM - 05:45 PM Weather: Overcast Clouds (4.61 °C)

Start Time	N Approach HURONTARIO ST						E Approach DUNDAS ST						S Approach HURONTARIO ST						W Approach DUNDAS 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	
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	0	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%		**-**

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: 04:45 PM - 05:45 PM **Weather: Overcast Clouds (4.61 °C)**

Spectrum

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

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

Turning Movement Count (3 . HUONTARIO ST & JOHN ST)

Start Time	N Approach HURONTARIO ST						E Approach JOHN ST						S Approach HURONTARIO ST						W Approach JOHN ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	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 %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

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

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

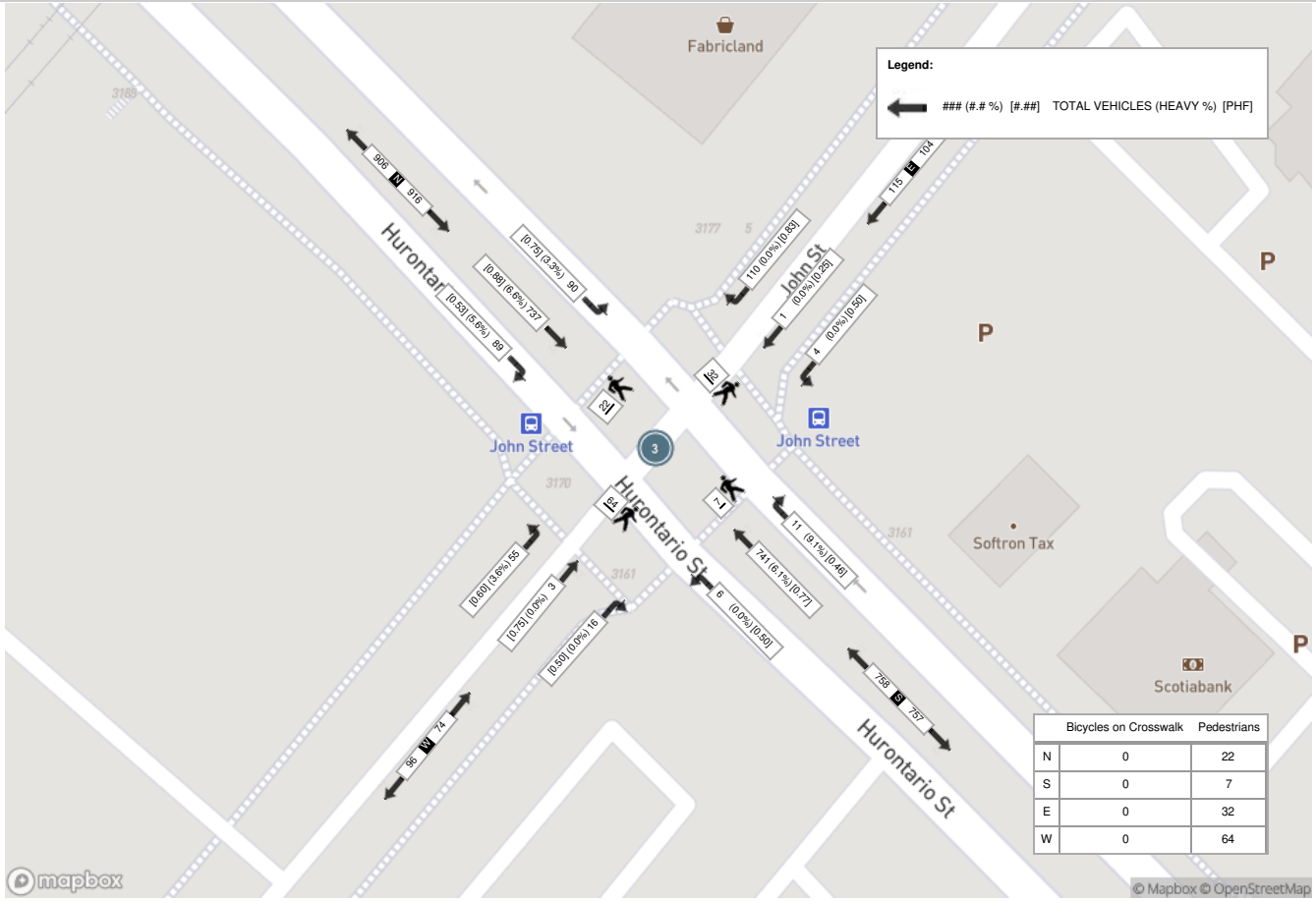
Peak Hour: 07:45 AM - 08:45 AM Weather: Broken Clouds (-1.15 °C)

Start Time	N Approach HURONTARIO ST						E Approach JOHN ST						S Approach HURONTARIO ST						W Approach JOHN 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	
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
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
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
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
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	**1865**
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%		**-**

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

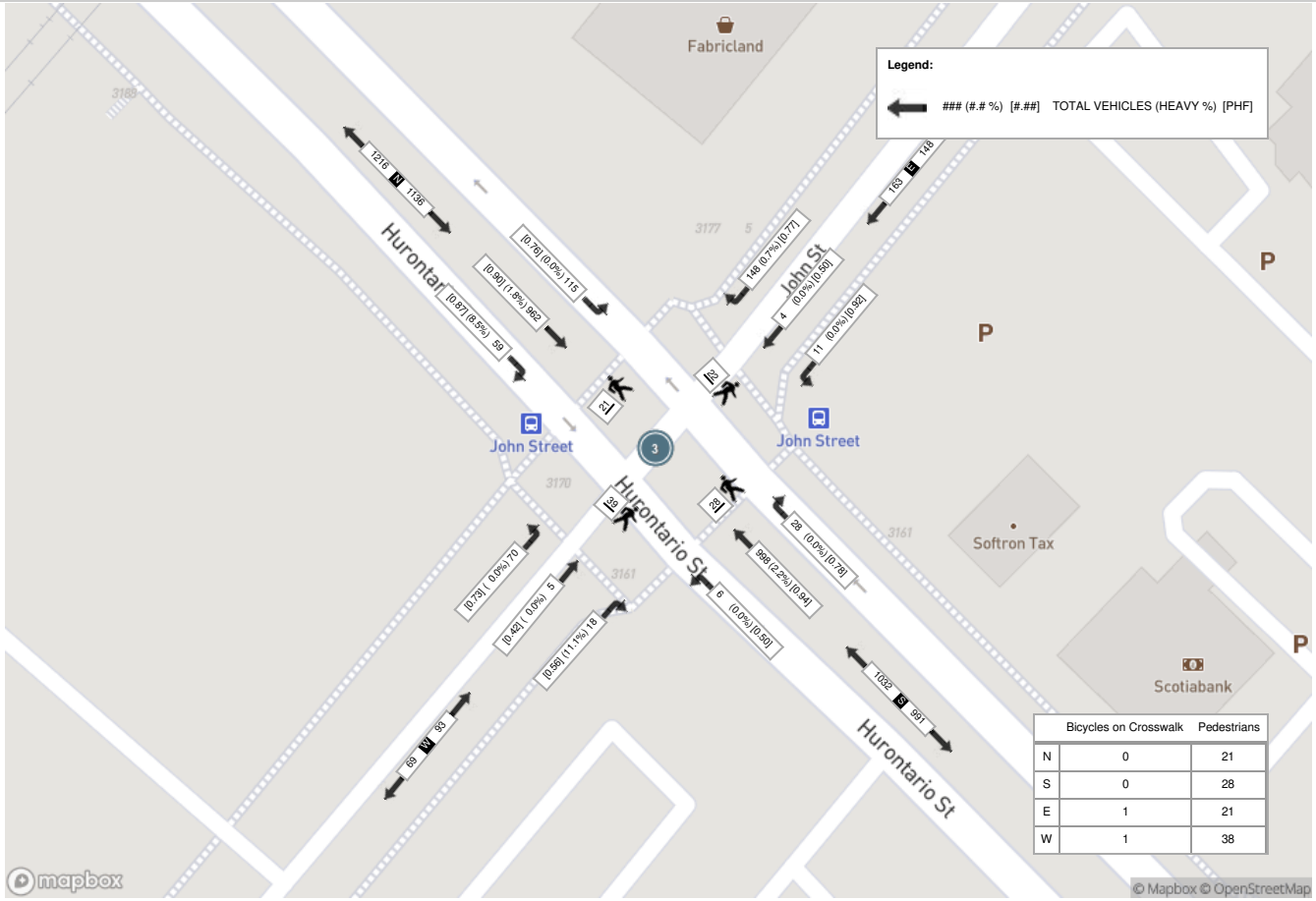
Start Time	N Approach HURONTARIO ST						E Approach JOHN ST						S Approach HURONTARIO ST						W Approach JOHN ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
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	0	0	0		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	0		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%		**-**

Peak Hour: 07:45 AM - 08:45 AM **Weather: Broken Clouds (-1.15 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	22
S	0	7
E	0	32
W	0	64

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



	Bicycles on Crosswalk	Pedestrians
N	0	21
S	0	28
E	1	21
W	1	38

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

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

Start Time	N Approach HURONTARIO ST					S Approach HURONTARIO ST					W Approach AGNES ST					Int. Total (15 min)	Int. Total (1 hr)
	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 %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

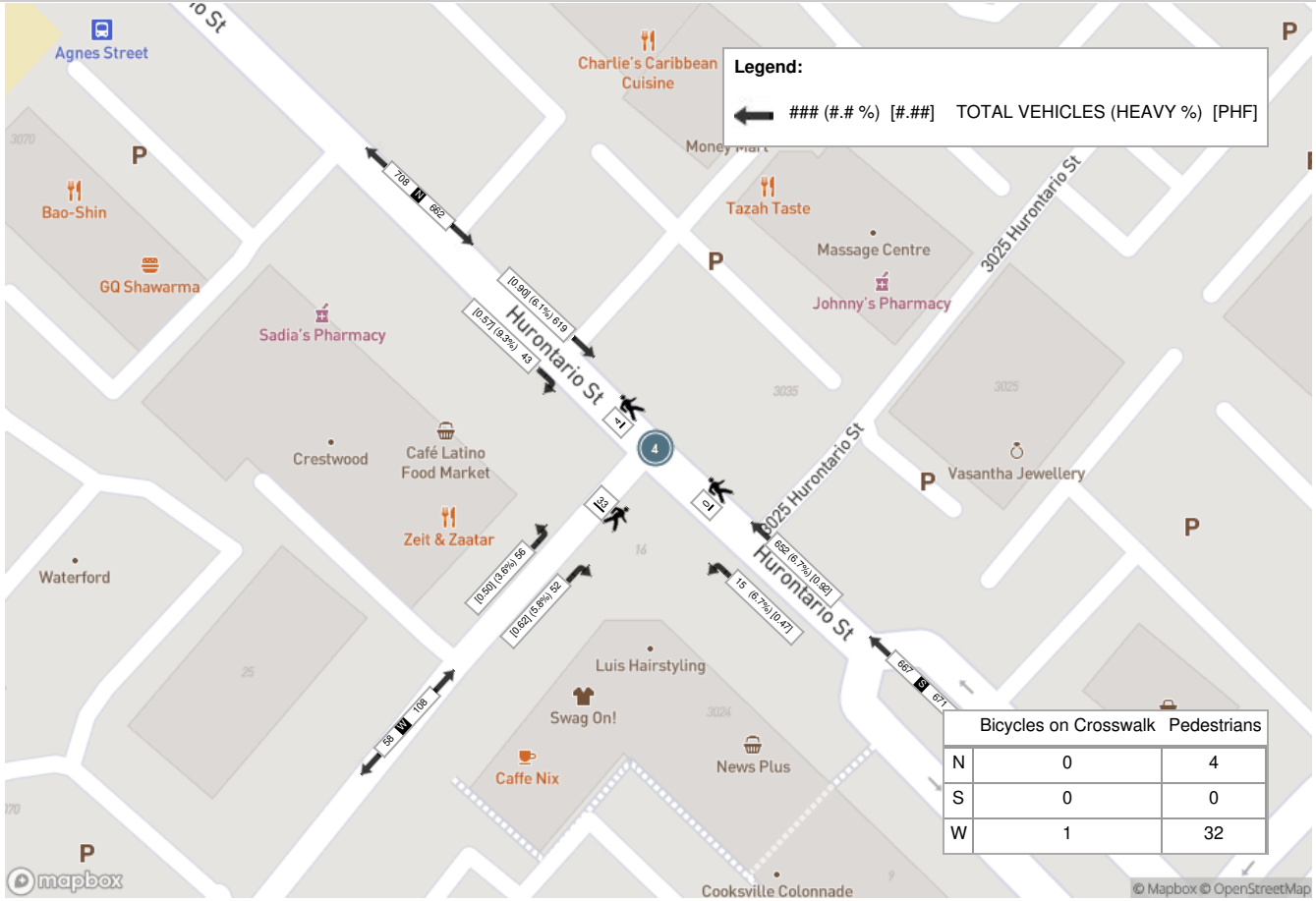
Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-1.15 °C)

Start Time	N Approach HURONTARIO ST					S Approach HURONTARIO ST					W Approach AGNES ST					Int. Total (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	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	2.7%		**-**

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

Start Time	N Approach HURONTARIO ST					S Approach HURONTARIO ST					W Approach AGNES 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	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

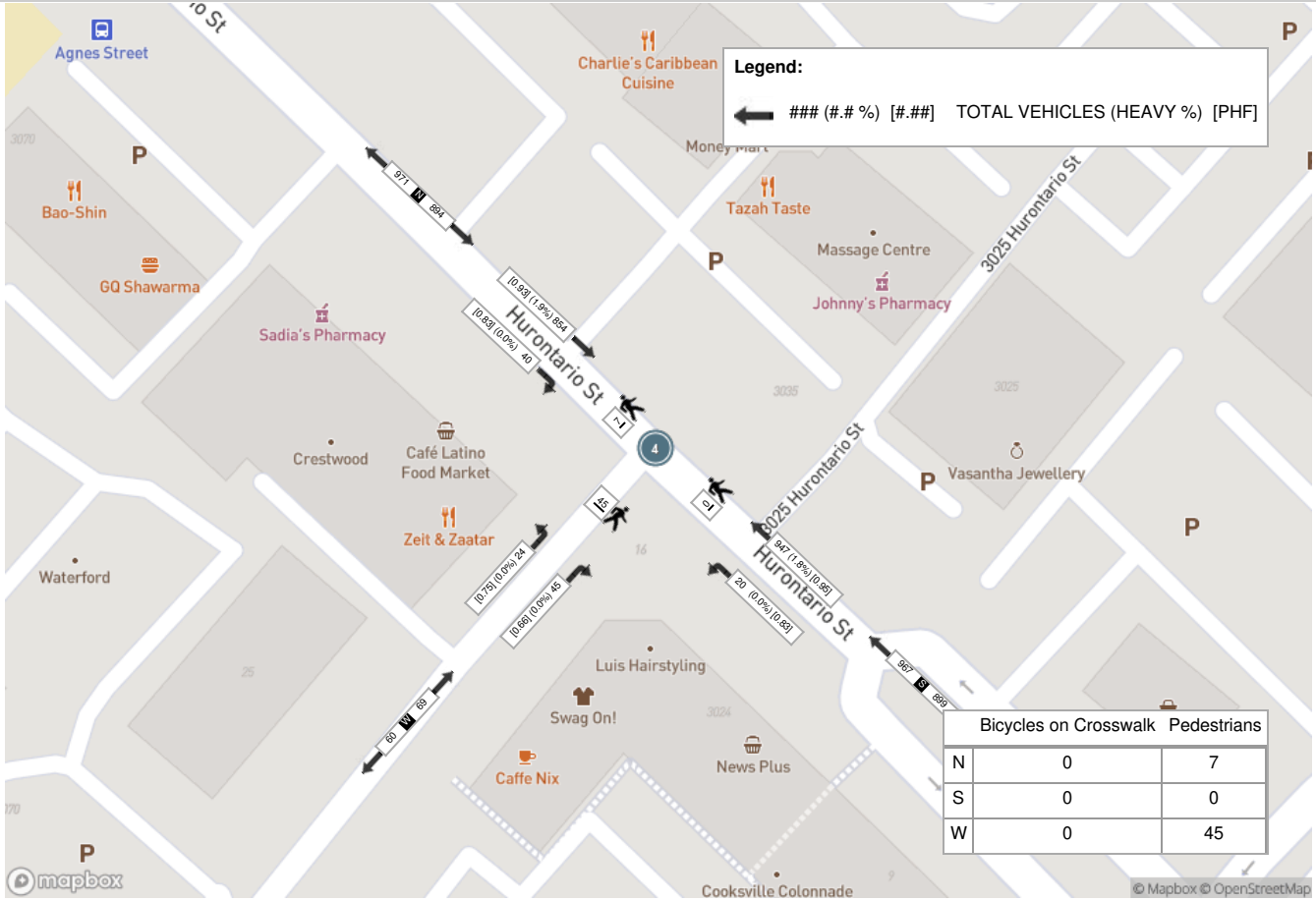
Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-1.15 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	4
S	0	0
W	1	32

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)



	Bicycles on Crosswalk	Pedestrians
N	0	7
S	0	0
W	0	45

Spectrum

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

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

Turning Movement Count (1 . HURONTARIO ST & DUNDAS ST)

Start Time	N Approach HURONTARIO ST						E Approach DUNDAS ST						S Approach HURONTARIO ST						W Approach DUNDAS ST						Int. Total (15 min)	Int. Total (1 hr)
	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 %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

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

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

Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (13.17 °C)

Start Time	N Approach HURONTARIO ST						E Approach DUNDAS ST						S Approach HURONTARIO ST						W Approach DUNDAS 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%		**-**

Spectrum

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

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

Peak Hour: 05:15 PM - 06:15 PM Weather: Broken Clouds (22.74 °C)

Start Time	N Approach HURONTARIO ST						E Approach DUNDAS ST						S Approach HURONTARIO ST						W Approach DUNDAS 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	
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%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Few Clouds (13.17 °C)**

	Bicycles on Crosswalk	Pedestrians
N	1	75
S	0	69
E	0	97
W	1	138

Peak Hour: 05:15 PM - 06:15 PM **Weather: Broken Clouds (22.74 °C)**

Spectrum

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

Turning Movement Count (1 . KIRWIN AVE & HURONTARIO ST)

Start Time	N Approach HURONTARIO ST						E Approach KIRWIN AVE						S Approach HURONTARIO ST						W Approach HILLCREST AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
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 %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

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

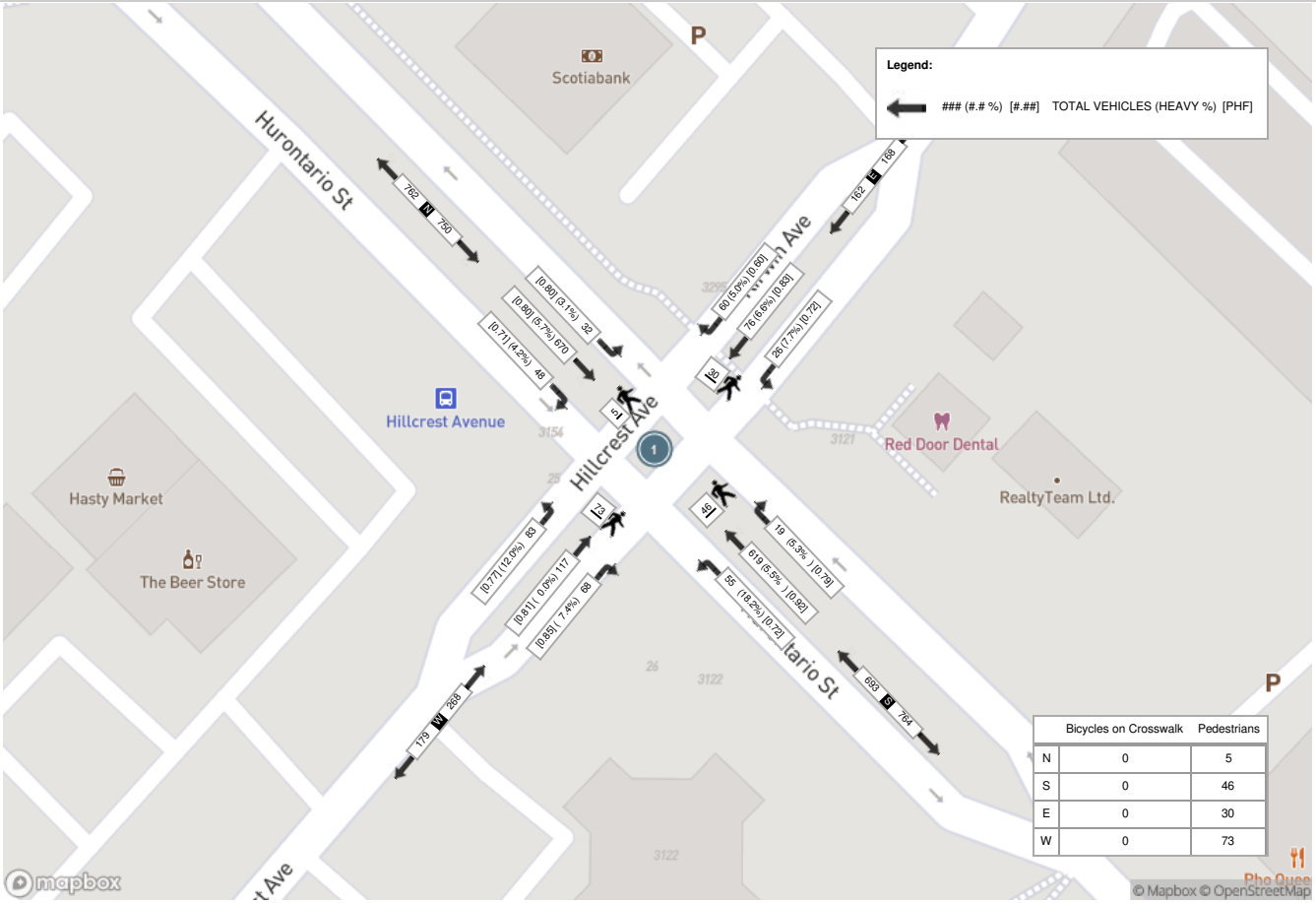
Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-1.15 °C)

Start Time	N Approach HURONTARIO ST						E Approach KIRWIN AVE						S Approach HURONTARIO ST						W Approach HILLCREST 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%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

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

Start Time	N Approach HURONTARIO ST						E Approach KIRWIN AVE						S Approach HURONTARIO ST						W Approach HILLCREST 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	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0.7%		-	-	-	-	1.4%		-	-	-	-	0%		-	-	-	-	0%		**-**

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



	Bicycles on Crosswalk	Pedestrians
N	0	5
S	0	46
E	0	30
W	0	73

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)**

Spectrum

Turning Movement Count
Location Name: KIRWIN AVE & JAGUAR VALLEY DR
Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

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

Turning Movement Count (5 . KIRWIN AVE & JAGUAR VALLEY DR)

Start Time	N Approach JAGUAR VALLEY DR						E Approach KIRWIN AVE						S Approach JAGUAR VALLEY DR						W Approach KIRWIN AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
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																										
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 %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

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

Start Time	N Approach JAGUAR VALLEY DR						E Approach KIRWIN AVE						S Approach JAGUAR VALLEY DR						W Approach KIRWIN 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	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
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
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
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
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	**395**
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%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: KIRWIN AVE & JAGUAR VALLEY DR
Date: Tue, Mar 22, 2022 Deployment Lead: Tasos Issaaakidis

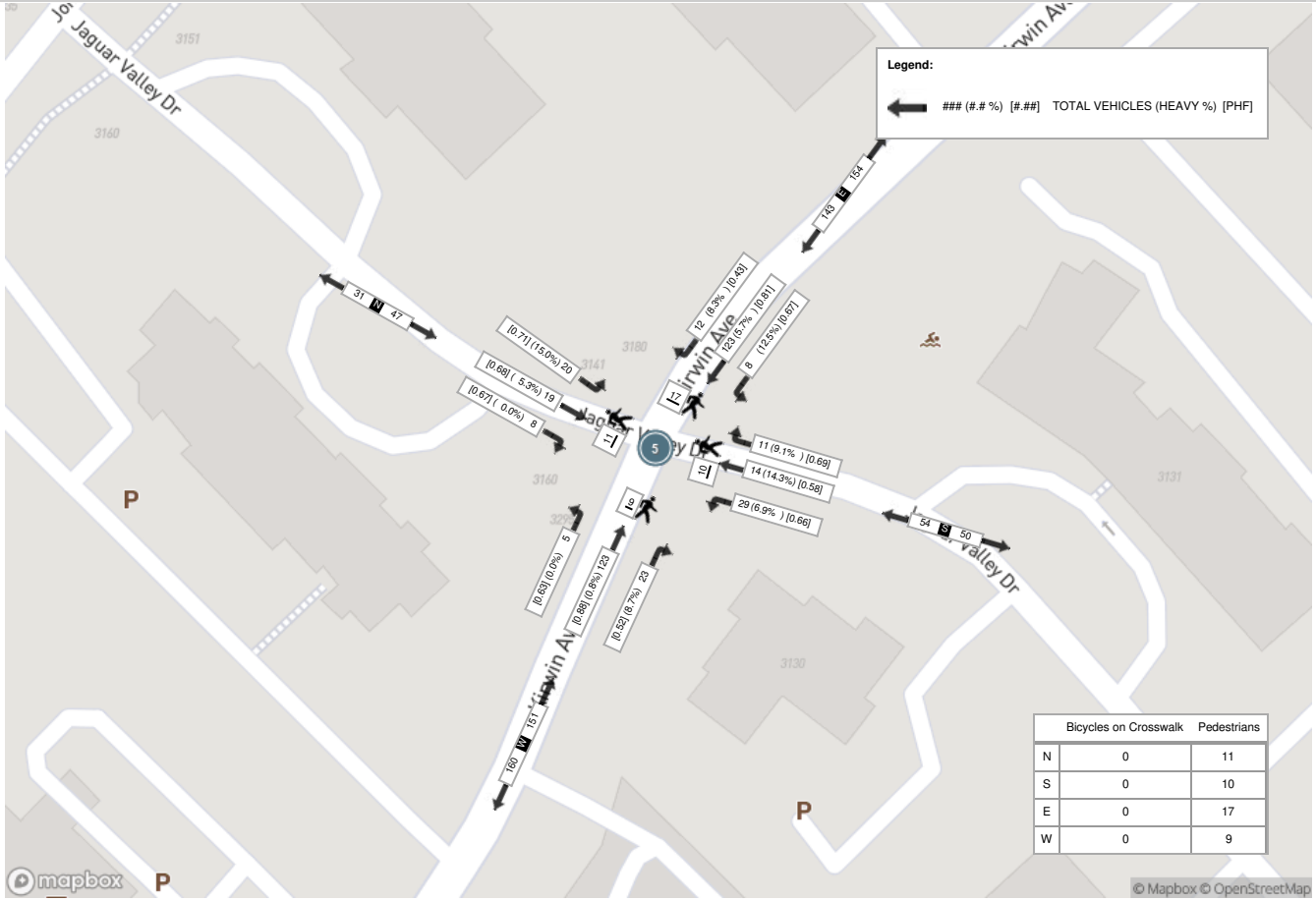
NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 05:15 PM - 06:15 PM Weather: Overcast Clouds (4.61 °C)

Start Time	N Approach JAGUAR VALLEY DR						E Approach KIRWIN AVE						S Approach JAGUAR VALLEY DR						W Approach KIRWIN 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	
17:15:00	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	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%		**-**

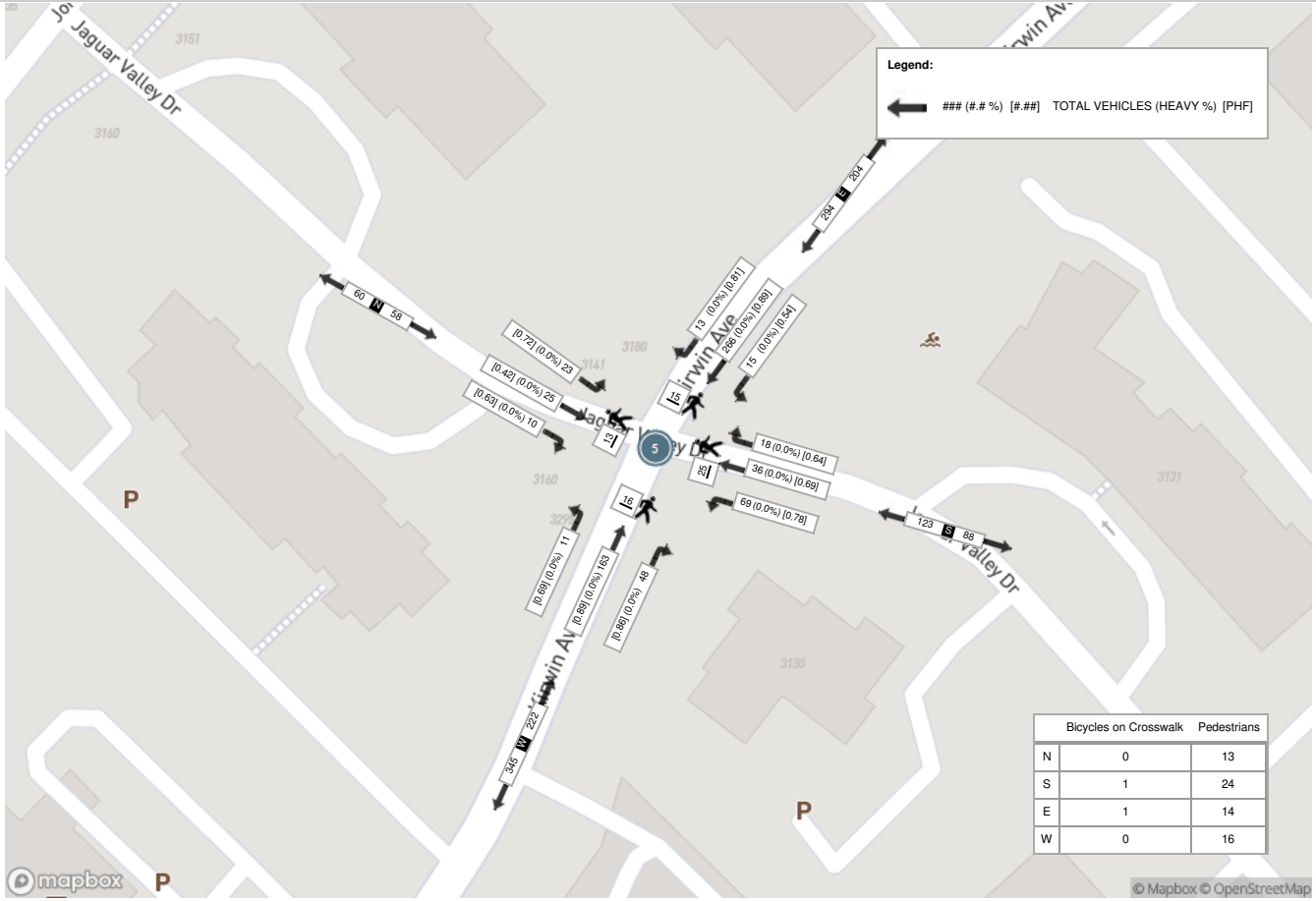
NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

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: 05:15 PM - 06:15 PM **Weather: Overcast Clouds (4.61 °C)**



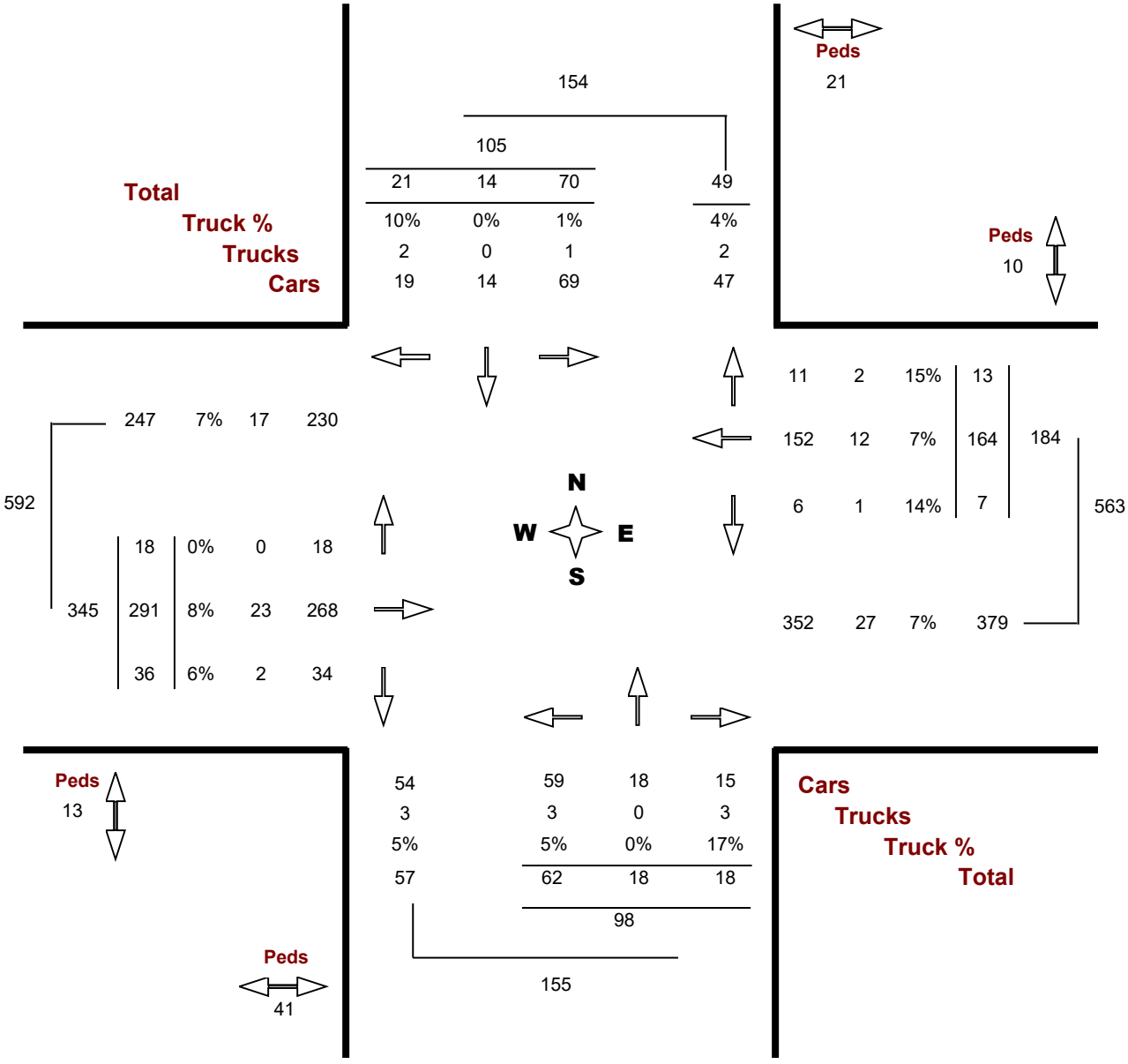
Turning Movements Report - AM Period

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

Municipality..... Mississauga **GeoID.....** 349562

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

Road 1 JAGUAR VALLEY DR **Road 2** KIRWIN AVE



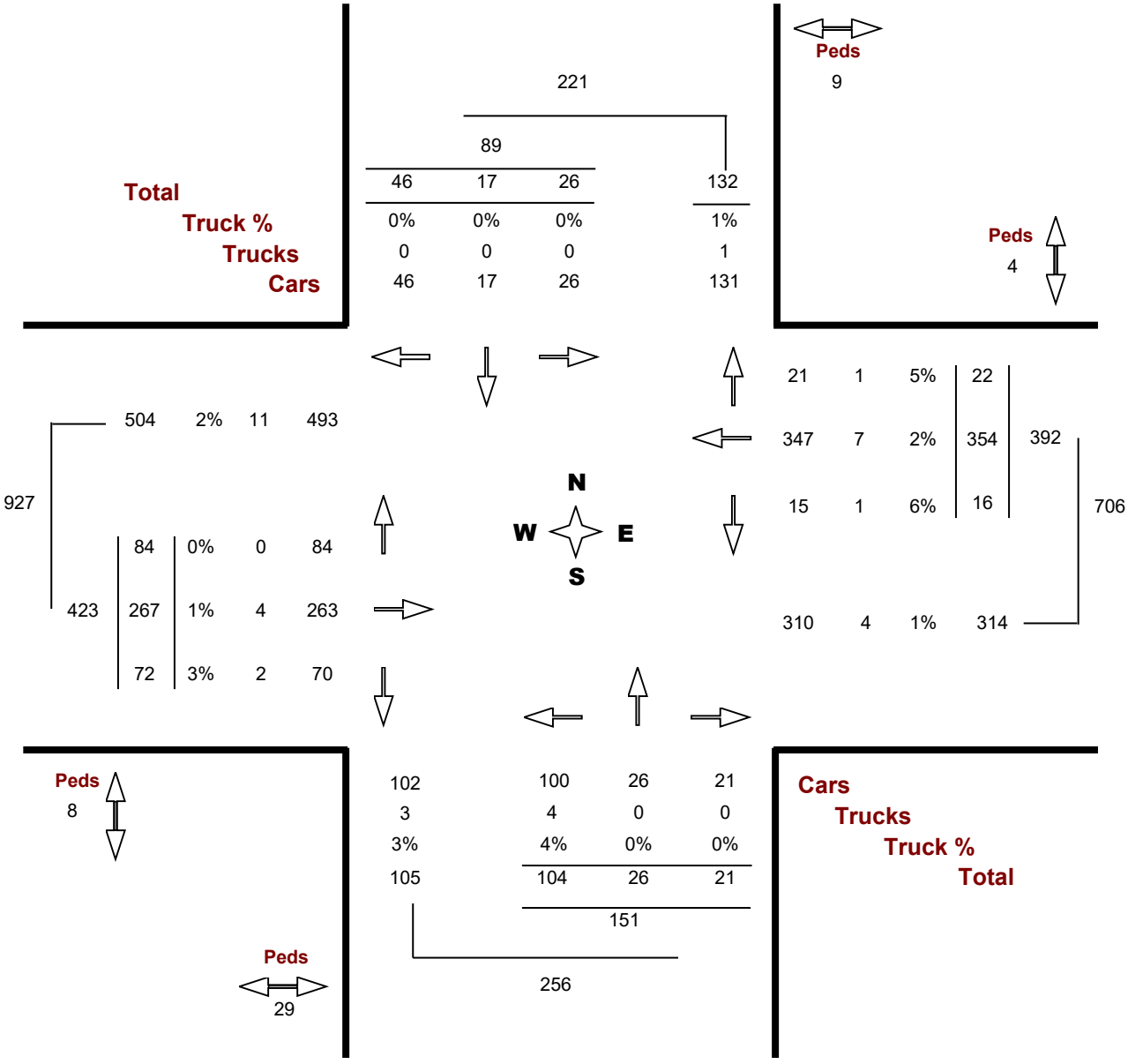
Turning Movements Report - PM Period

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

Municipality..... Mississauga **GeoID.....** 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 <sam@nextrans.ca>
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.

	Growth 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

City of Mississauga | Transportation and Works Department,
Infrastructure Planning and Engineering Services Division

From: Sam Nguyen <sam@nextrans.ca>
Sent: Monday, February 7, 2022 10:21 AM
To: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Subject: FW: Term of Reference for 3115 Hurontario Street

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

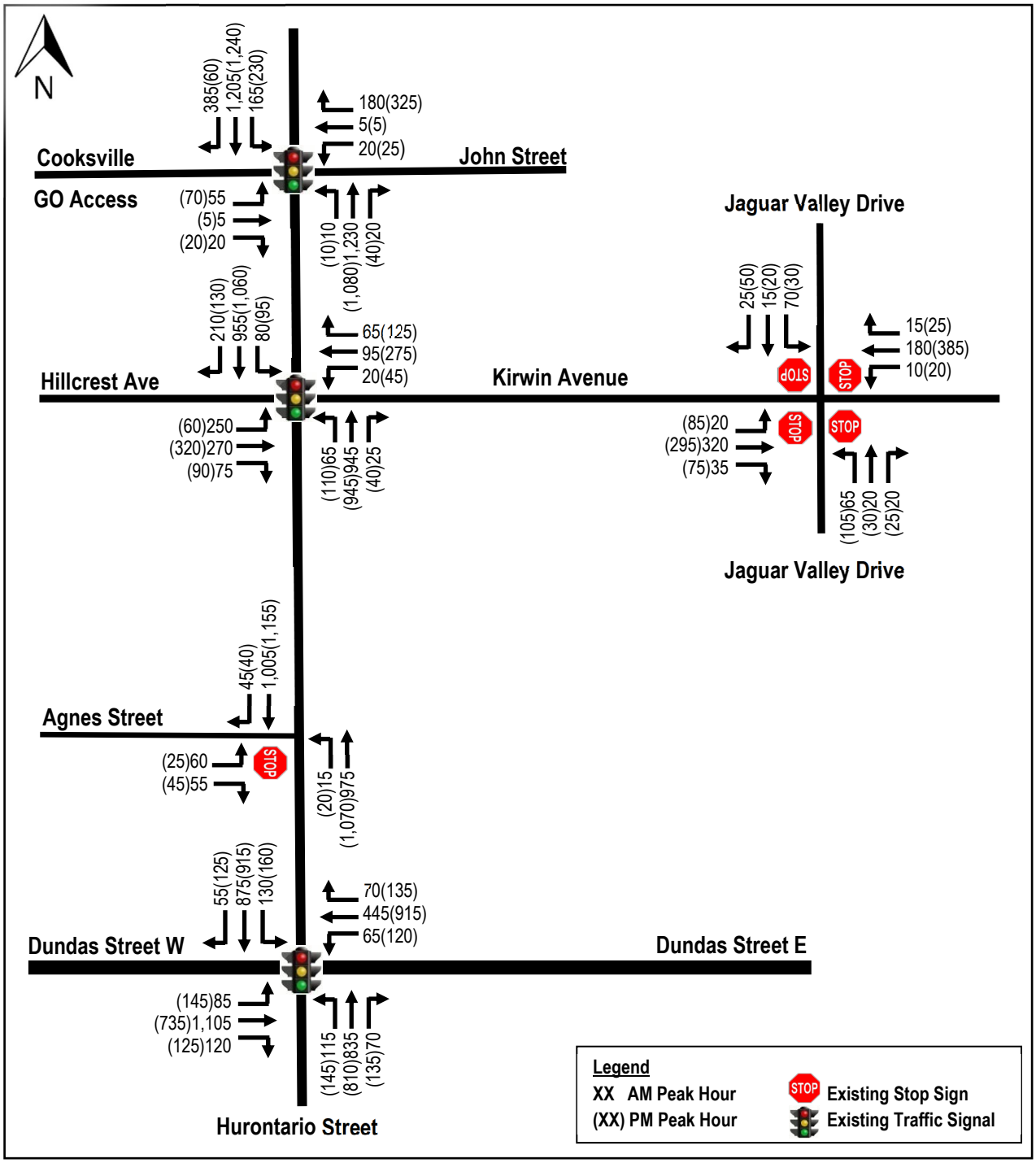


Figure 2 – Background Growth from 2026 to 2027 (Based on City Recommended Growth Rates)

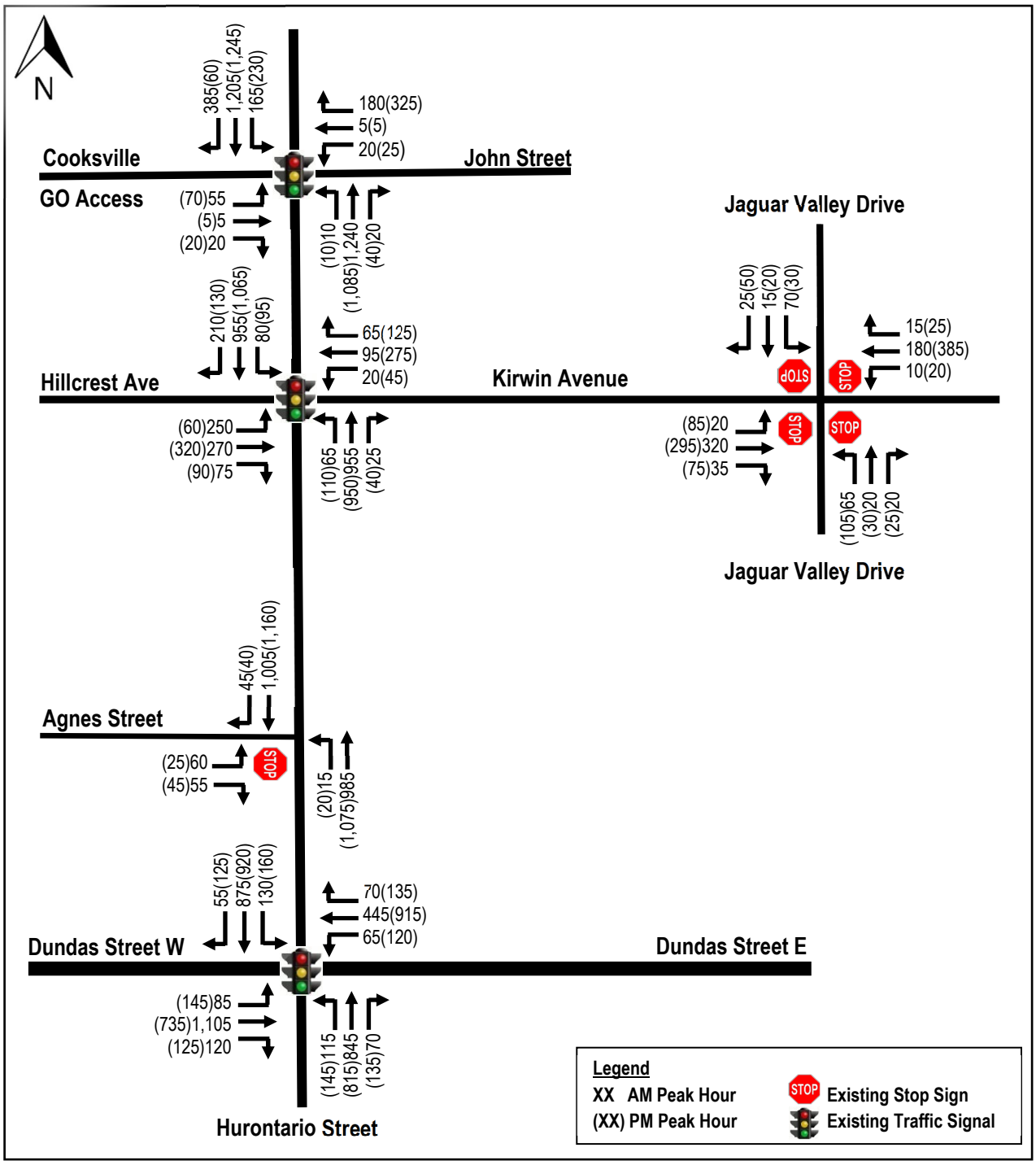
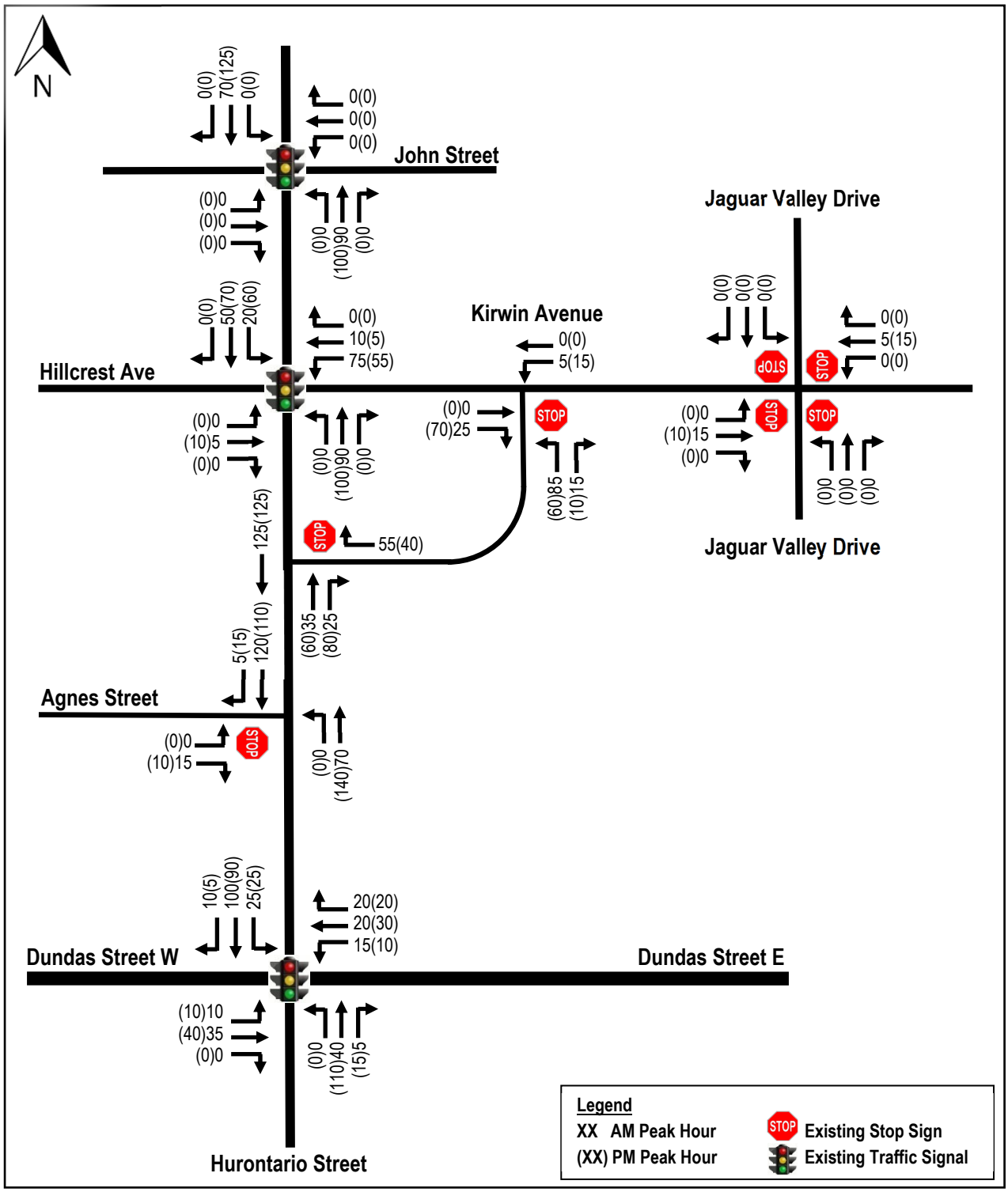
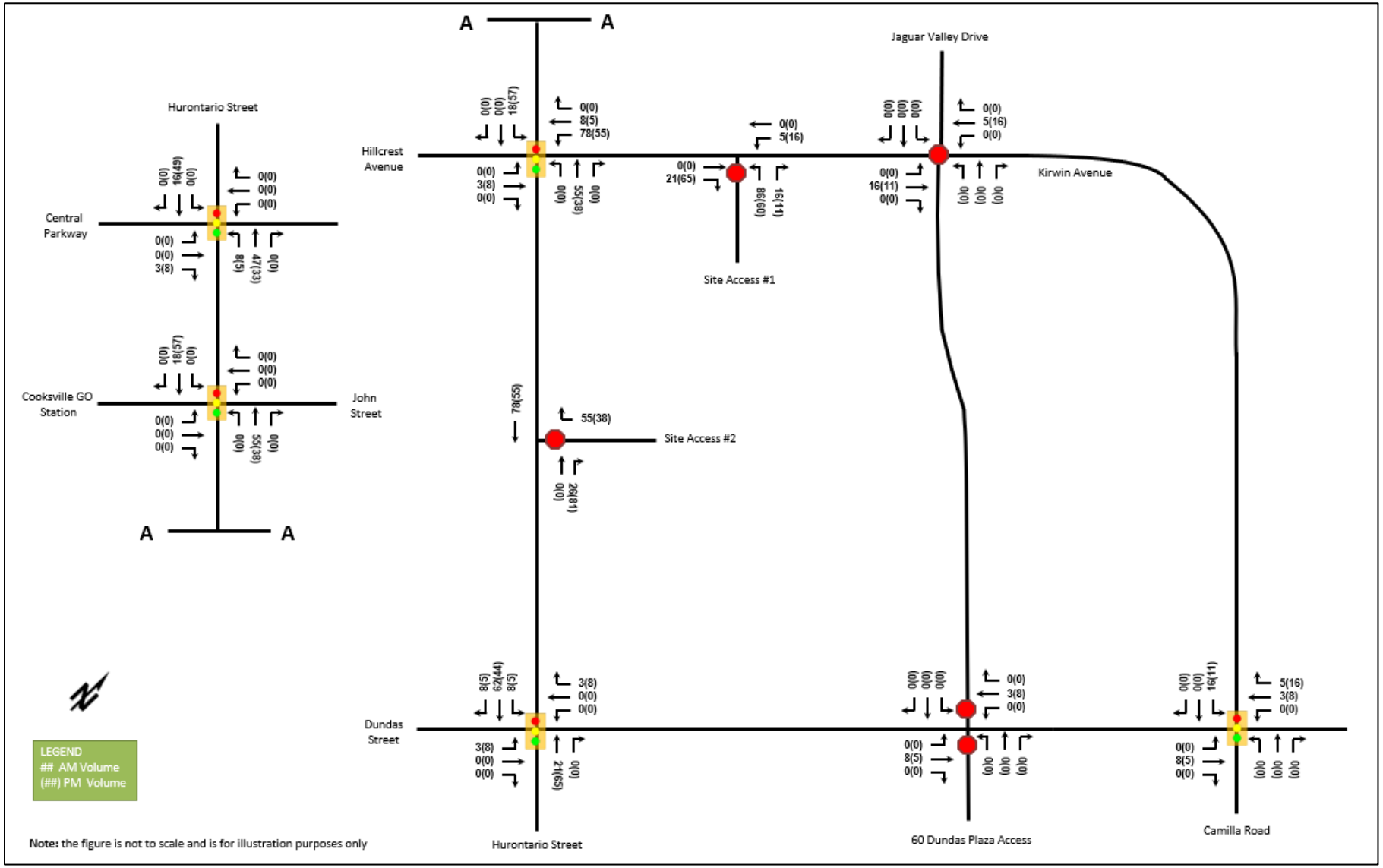


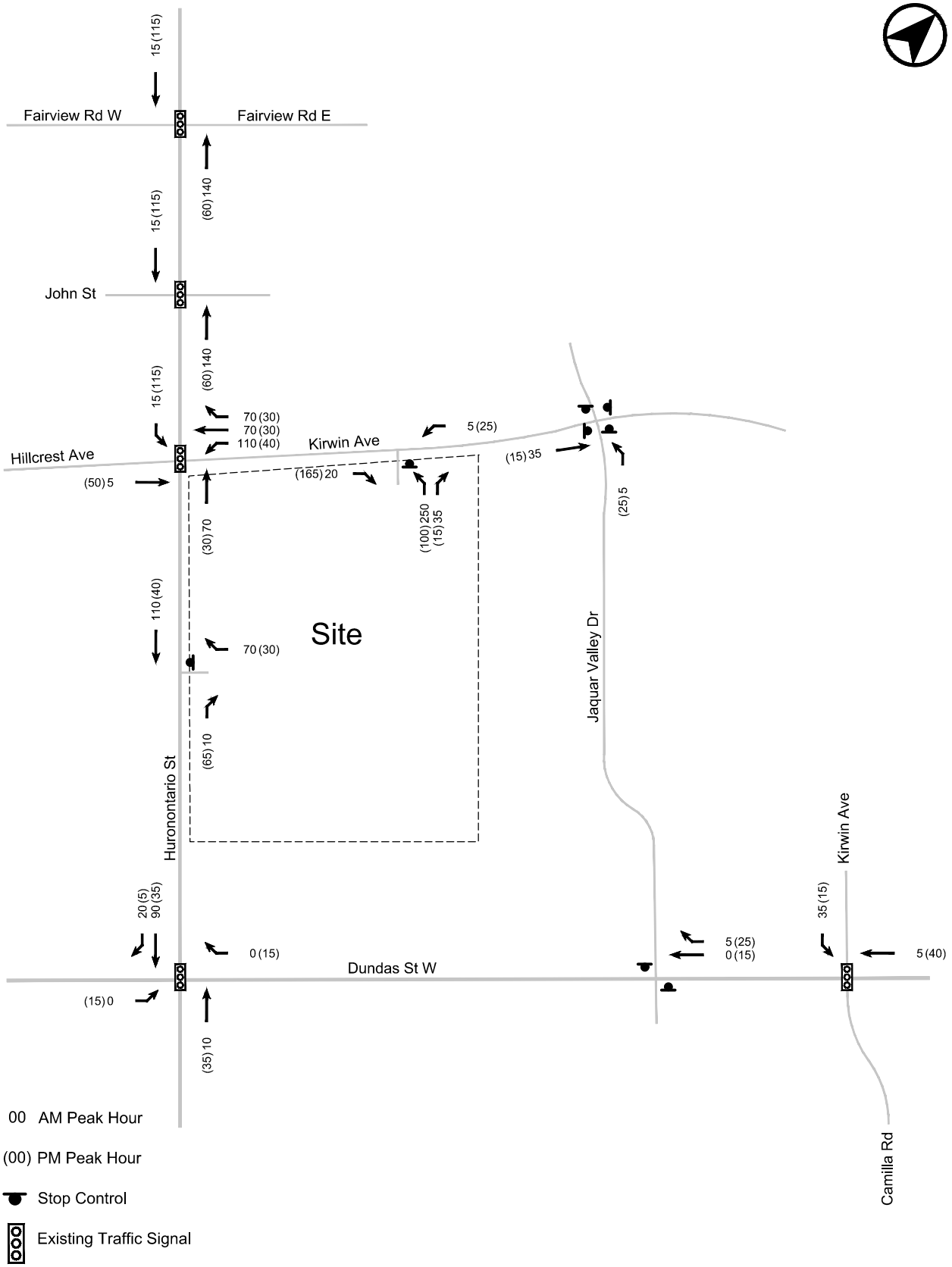
Figure 3 – Background Developments



Appendix E
Background Developments

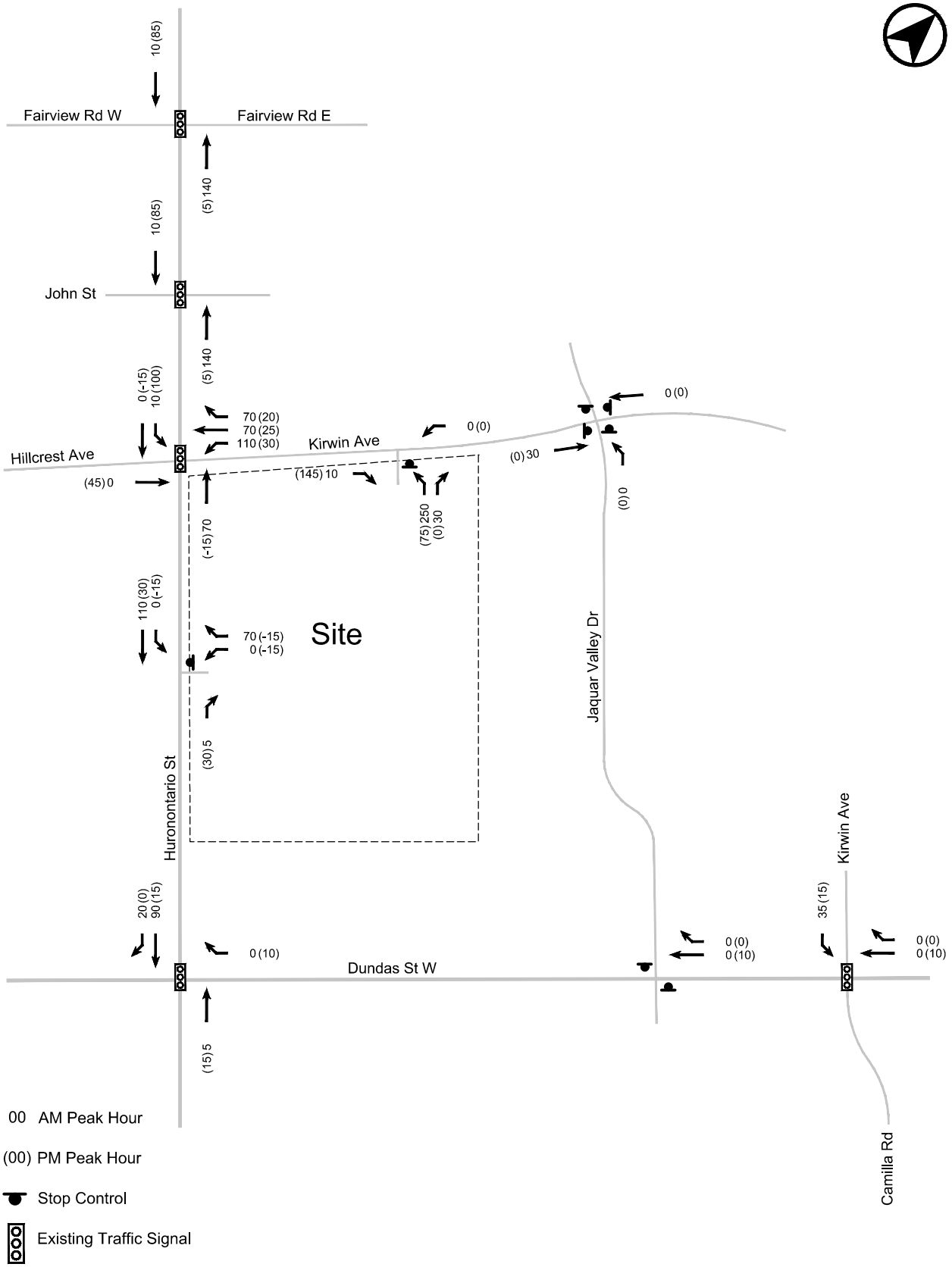
Figure 12: New Site Generated Auto Volumes





Date Plotted: September 1, 2023 Filename: P:\63\74\69\Graphics\CAD\Fig13-00-Res_ST.dwg

FIGURE 13 RESIDENTIAL SITE TRAFFIC VOLUMES



Date Plotted: September 1, 2023 Filename: P:\6374\69\Graphics\CAD\Fig14-00-NN.dwg

FIGURE 14 NET NEW SITE TRAFFIC VOLUMES

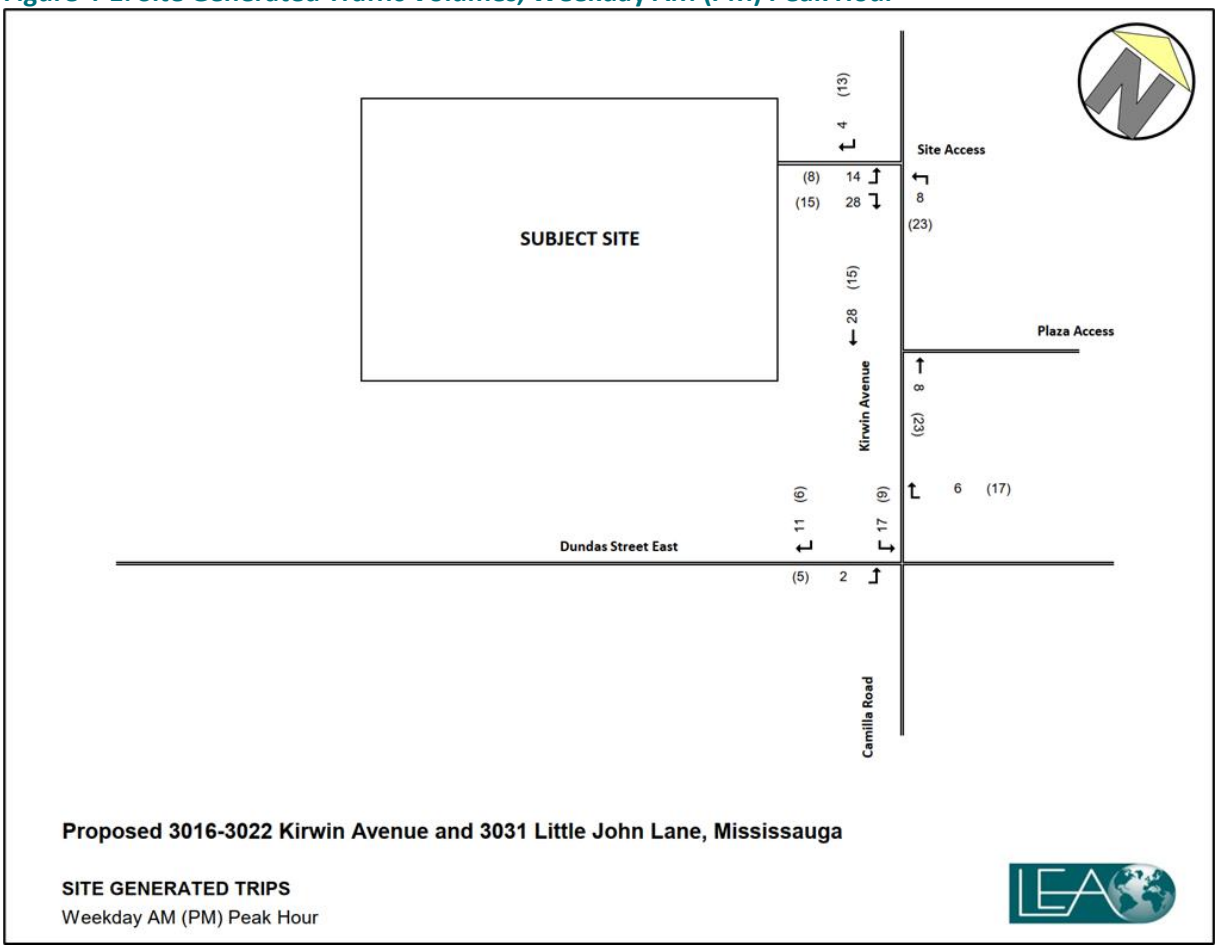
site. Therefore, the trip distribution for the residential trips was calculated based on TTS data for home-based work trips.

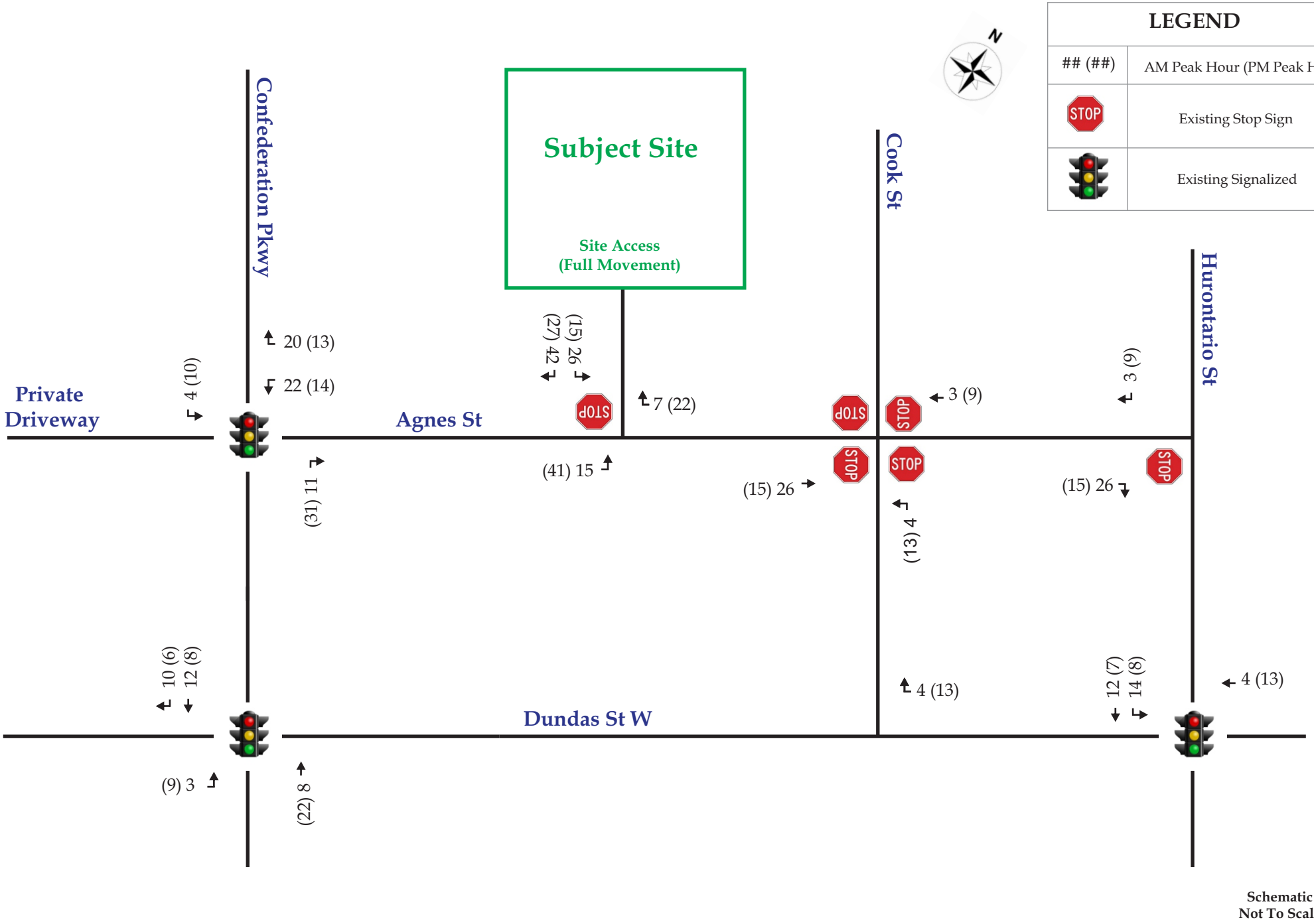
Results of the TTS data extraction indicate that the general distribution of residential site traffic will be similar for the weekday AM and PM peak hours. **Table 4-2** below summarizes the general directional distribution of the site traffic with traffic shown in **Figure 4-1**.

Table 4-2: Site Trip Generation

To/From	Inbound Distribution	Outbound Distribution
North	68%	57%
South	4%	5%
East	14%	12%
West	14%	26%
Total	**100%**	**100%**

Figure 4-1: Site Generated Traffic Volumes, Weekday AM (PM) Peak Hour





URBANTRANS Engineering Solutions Inc.

65-79 Agnes Street, City of Mississauga ON
Project No. UT-21-032
April 2022

Figure 8 - Site Generated Traffic 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 No.	Locations	AM Peak Hour		PM Peak Hour	
		In	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	Fairview Rd W	1%	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

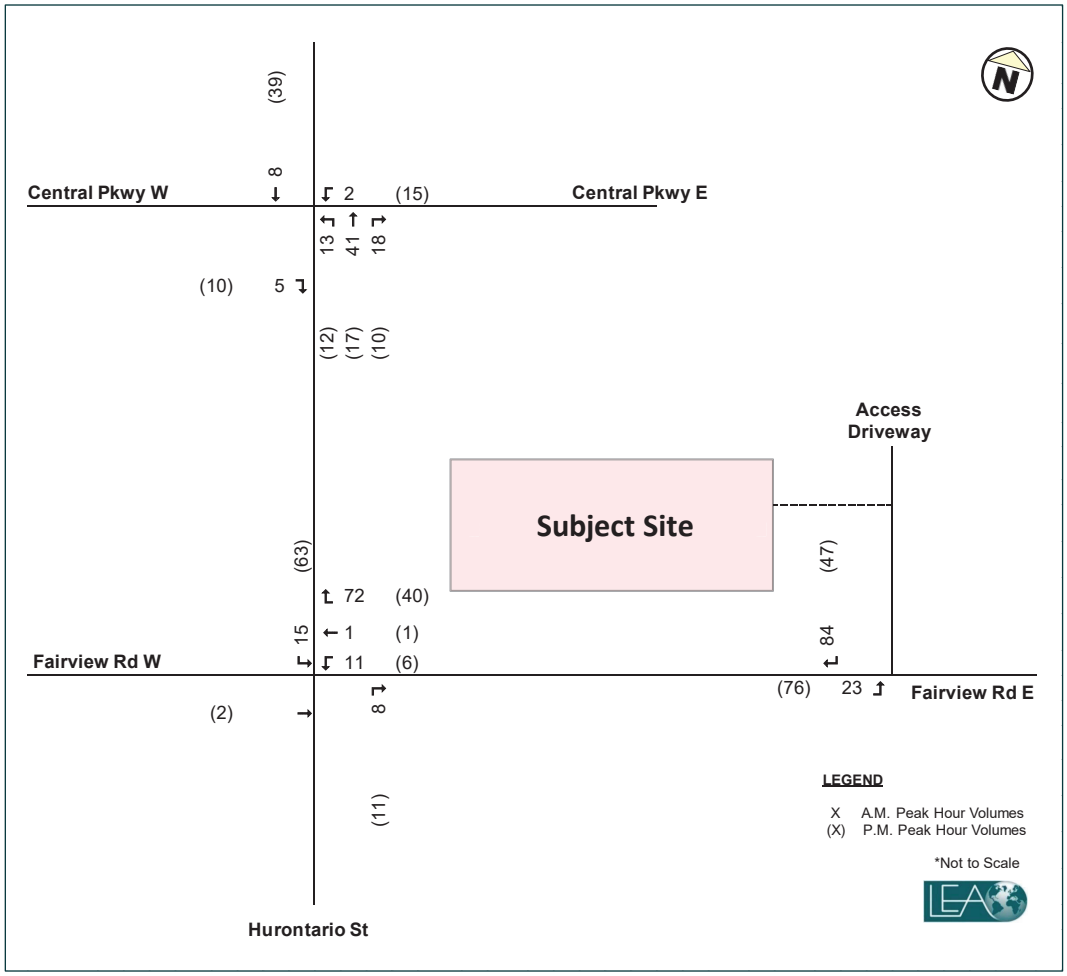
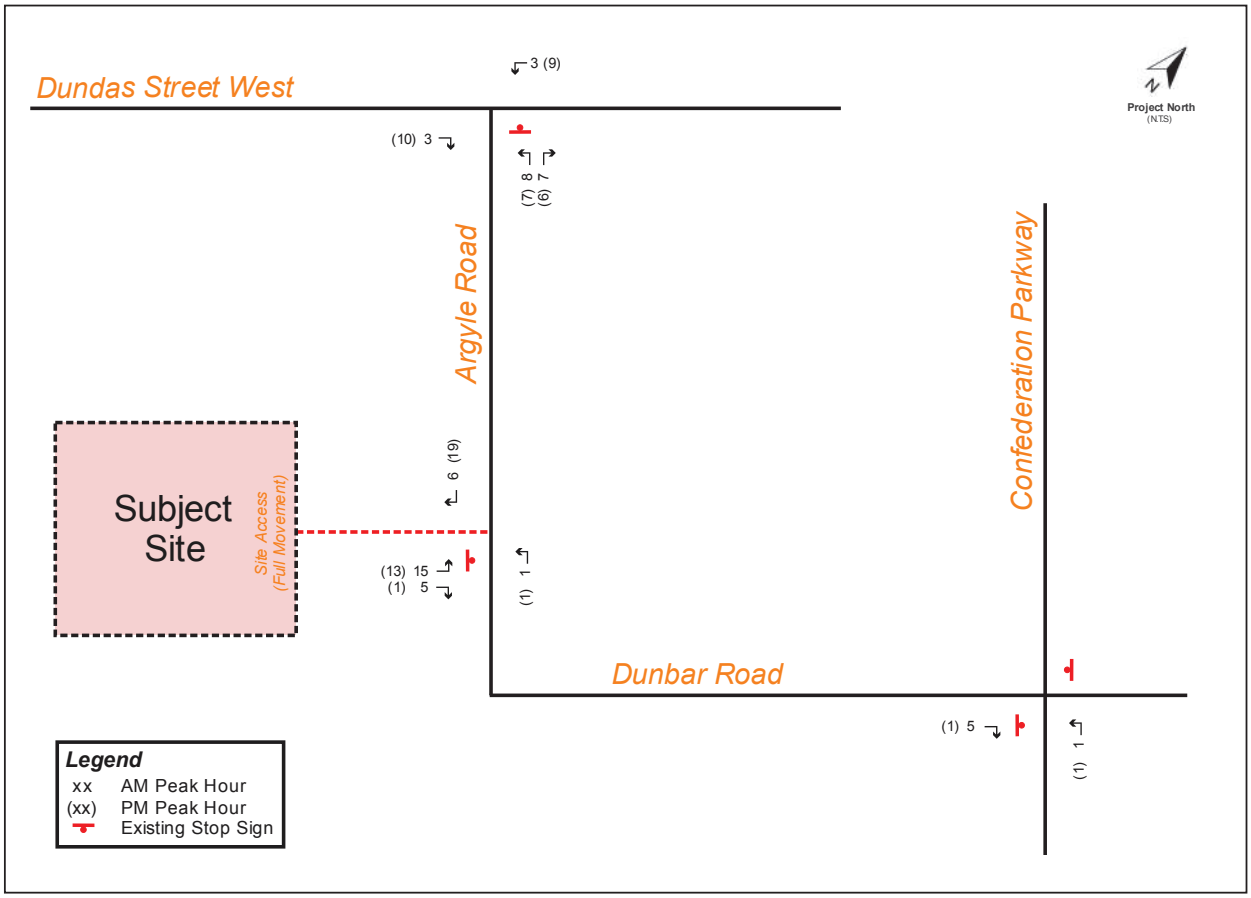


Table 4.2 – Site Traffic Trip Distribution

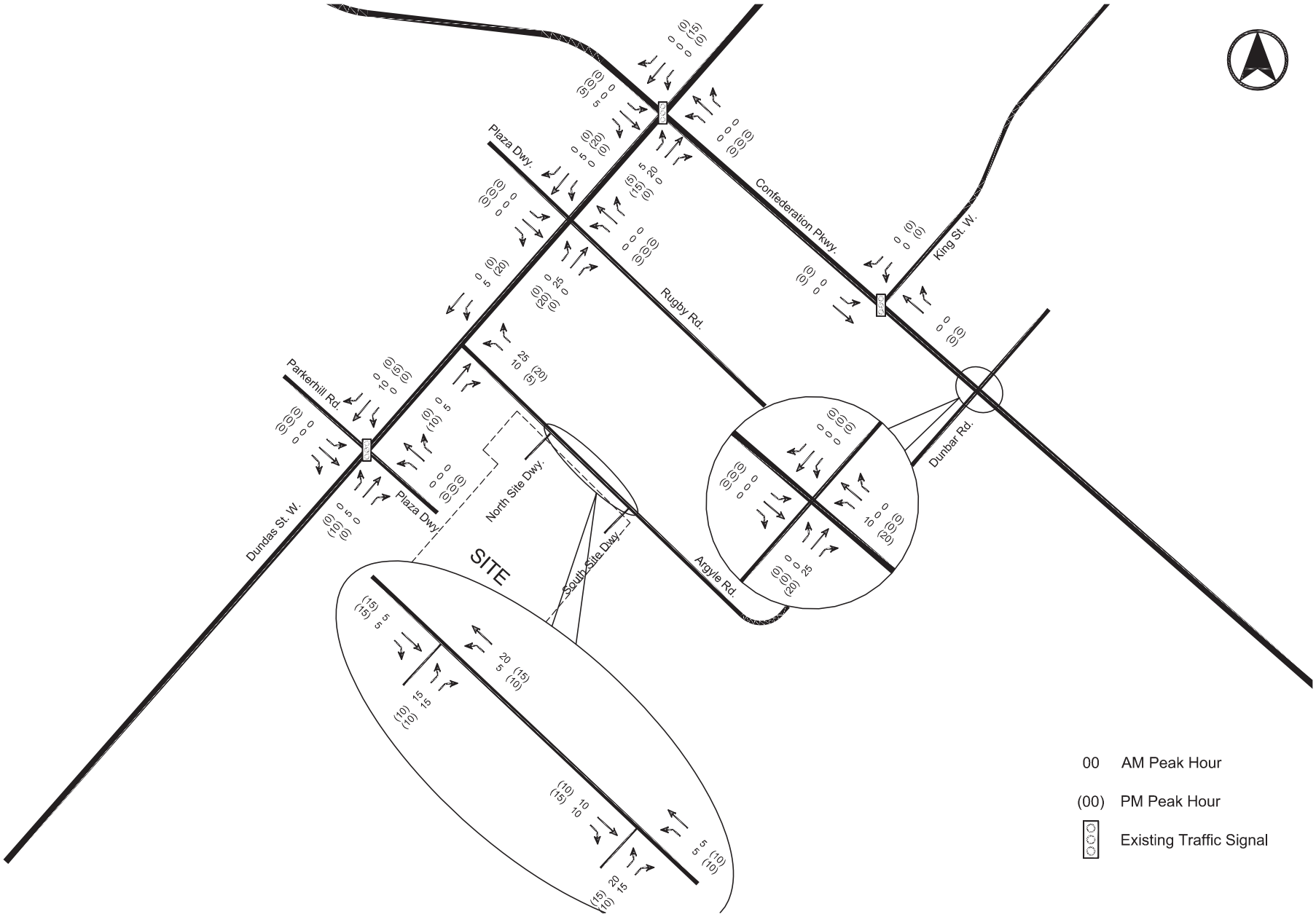
Direction	Via	AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
South	Confederation Parkway	24%	24%	4%	4%
East	Dundas Street West	37%	37%	47%	47%
West	Dundas Street West	39%	39%	49%	49%
Total		**100%**	**100%**	**100%**	**100%**

Figure 4-1 – Site Generated Traffic Volumes



5.0 FUTURE TOTAL TRAFFIC CONDITIONS

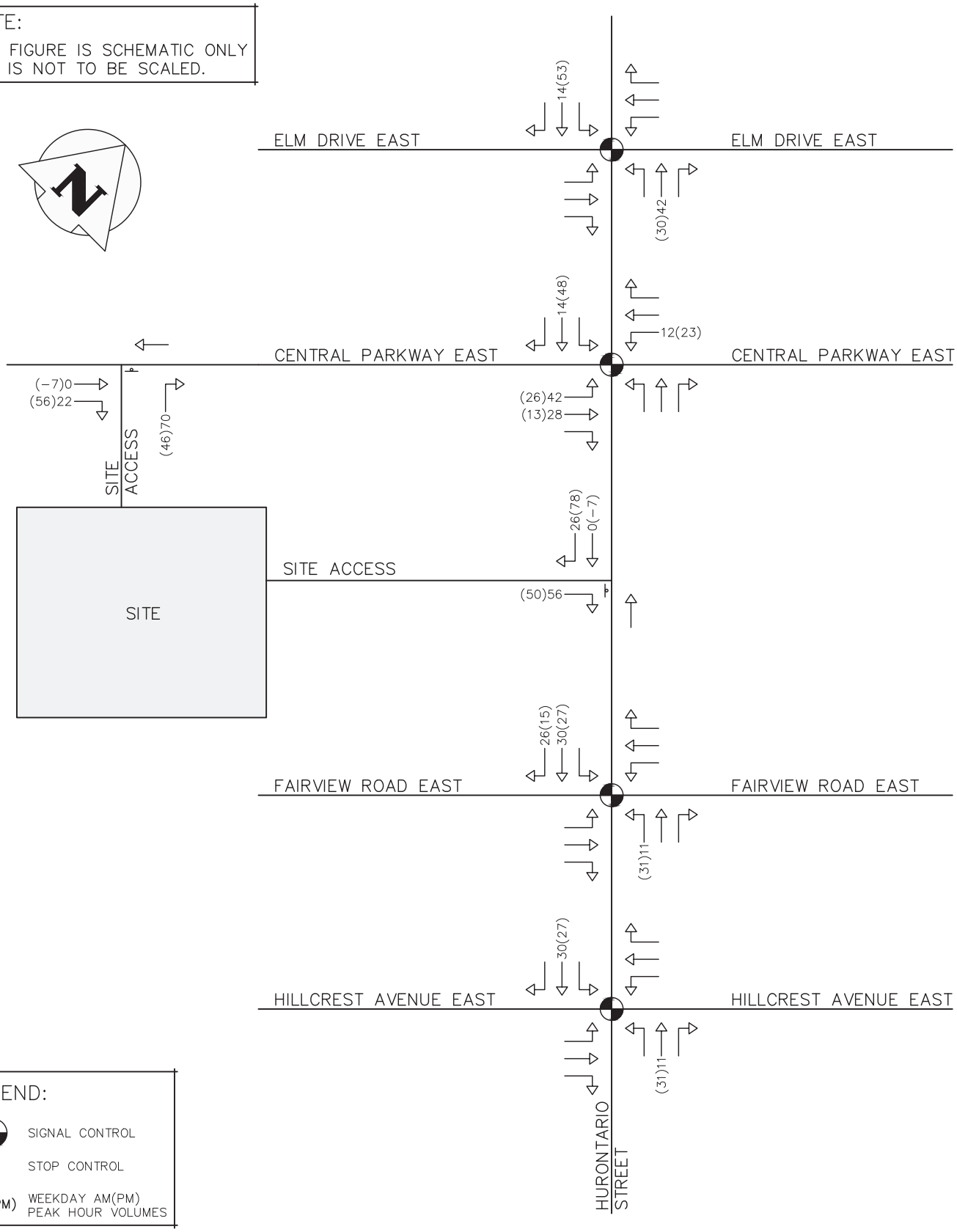
The forecasted 2023 future total traffic volumes (future background traffic volumes plus site generated traffic volumes) are illustrated in **Figure 5-1** and were analyzed using Synchro 10 software SimTraffic simulations for queue analysis. The detailed calculations are provided in **Appendix H** and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



Date Plotted: September 1, 2020 Filename: P:\80\15\02\Graphics\CAD\Fig08-02-NST.dwg

FIGURE 8 NEW SITE TRAFFIC VOLUMES

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- AM(PM) WEEKDAY AM(PM) PEAK HOUR VOLUMES

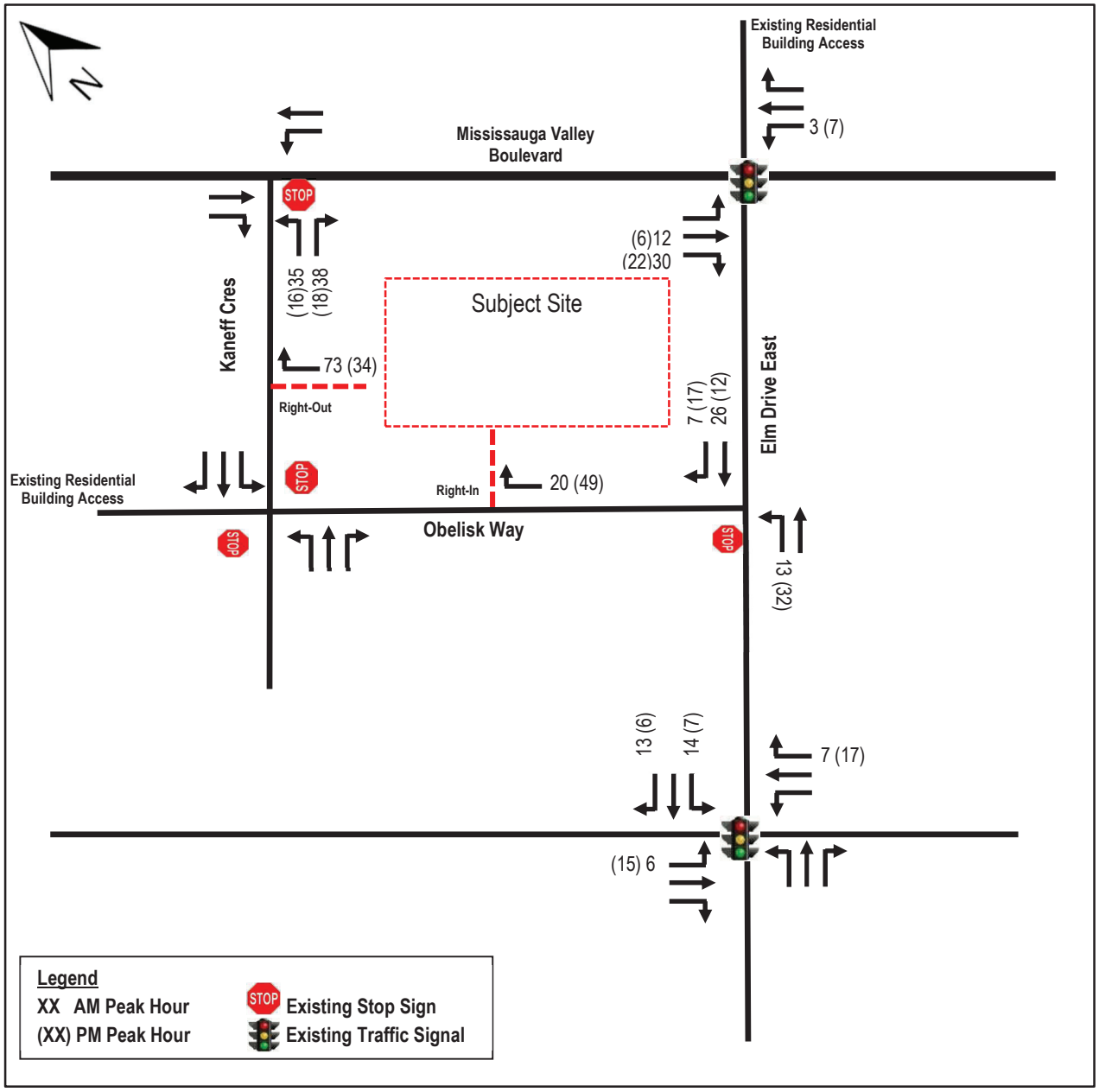
3420 & 3442 HURONTARIO STREET
CITY OF MISSISSAUGA

SITE TRAFFIC–ASSIGNMENT

CROZIER CONSULTING ENGINEERS
2800 High Point Drive
Suite 100
Milton, ON L9T 6P4
905-875-0026 T
905-875-4915 F
www.cfcrozier.ca

Drawn	Design	Project No.	
T.D.S.	K.S.		1932–5666
Check	Check	Scale	Dwg.
T.D.S.	K.S.	N.T.S	FIG. 05

Figure 9 – Site Generated Traffic Volumes

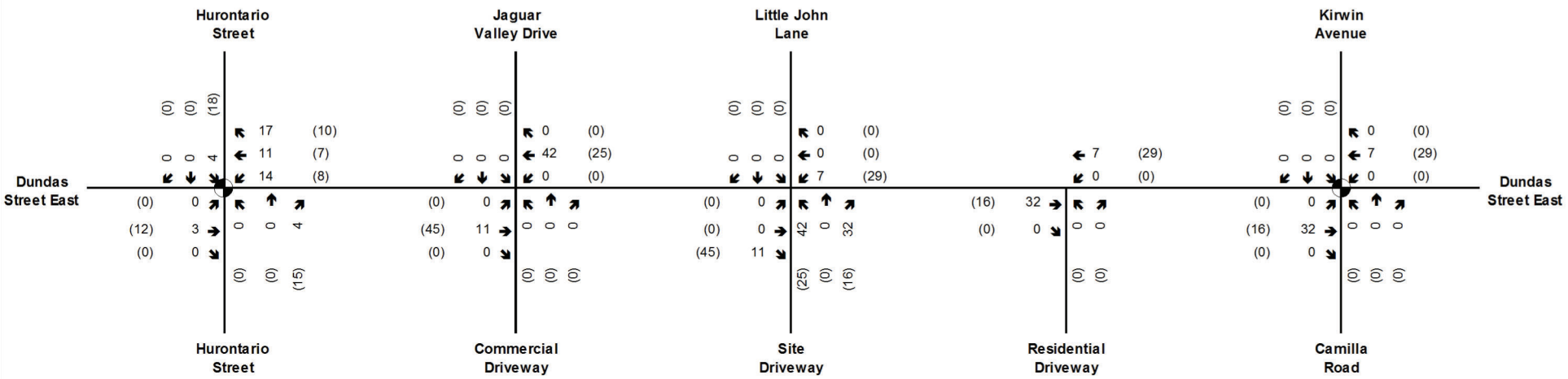


6.0 FUTURE TOTAL TRAFFIC CONDITIONS

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

The Sernas Group Inc. (A GHD Company)

Higher Living Inc.
Proposed Residential Condominium
86-90 Dundas Street East

Combined Site Trips

Job Number 12431
Revision A
Date Sept 2018

Figure 9

6705 Millcreek Drive, Unit 1, Mississauga Ontario L5N 5M4 **T** 1 416 213 7121 **F** 1 416 890 8499 **E** info@ghdcanada.com **W** www.ghd.com

Plot Date: 17 September 2018 - 10:06 AM Plotted by: Adam Mildenberger
Cad File No: G:\Legacy\SernasTransTech\Projects\2017\86-90 Dundas Street TIS Update\Nov 2017 Update\Report\Figures\Updated Figures_17Sept2018.dwg

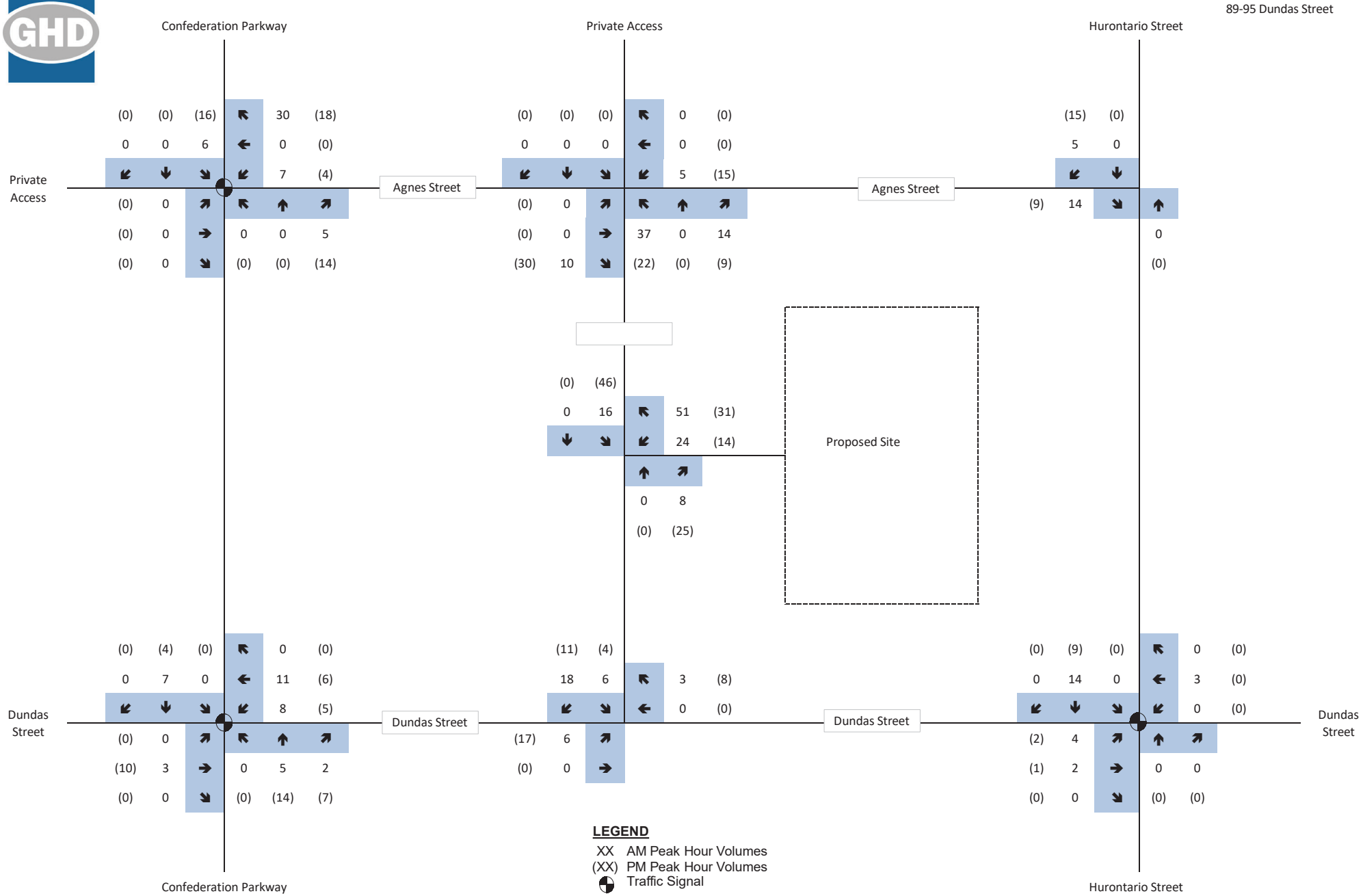


Figure 9 Estimated Residential Site Trips

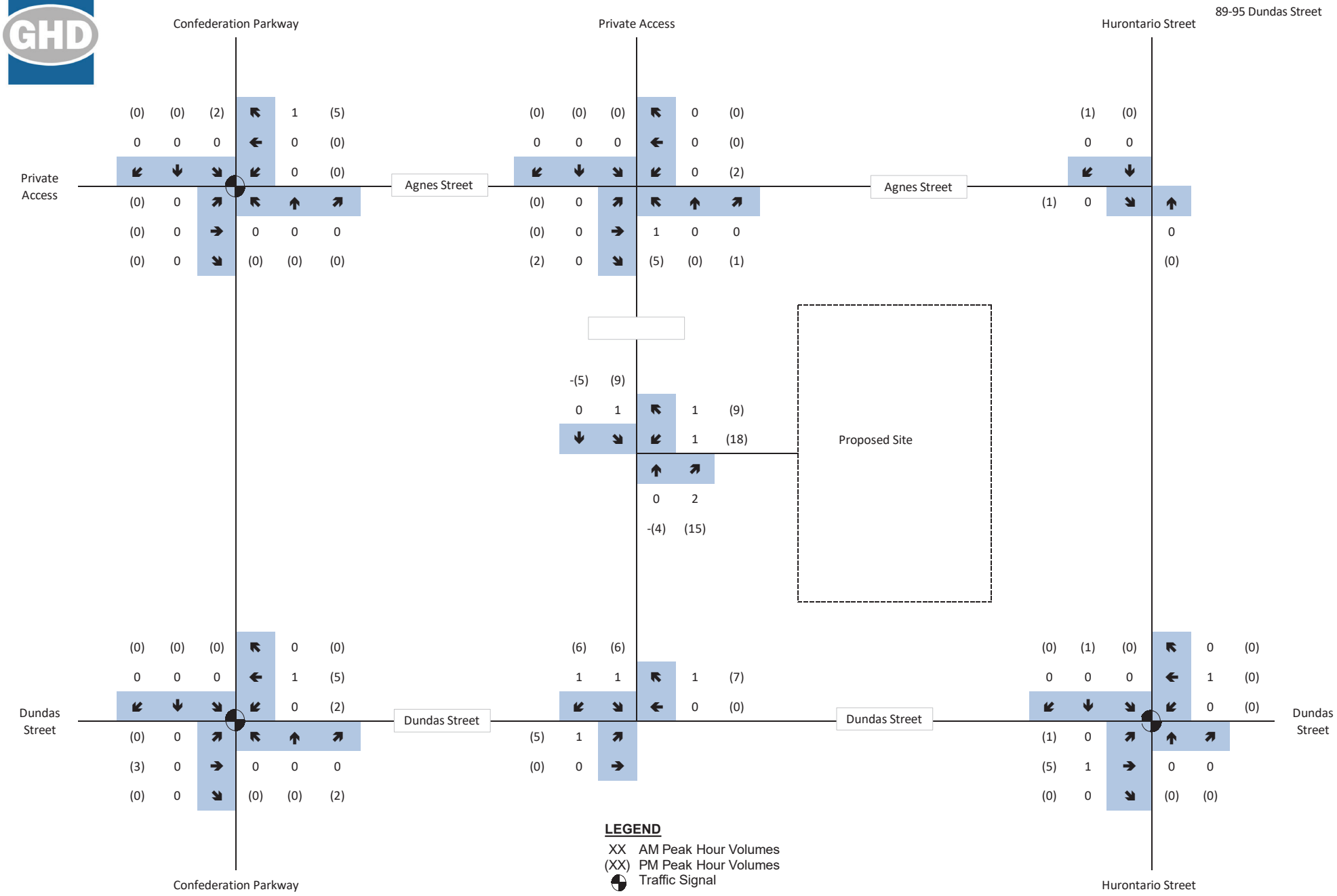


Figure 10 Estimated Commercial Trips

Appendix F
Hurontario LRT Environmental Project Report

FILE No.	CONTRACT No.	SHEET No.
	508956	LRT-RD-NC016

DIMENSIONS SHOWN ON THIS PLAN ARE IN METRES UNLESS OTHERWISE NOTED

Notes:

HURONTARIO STREET

HURONTARIO STREET

MATCHLINE STA N14+300

MATCHLINE STA N14+600

PI#S022
N=4826068.364
E=611823.584
T=21.405
R=1200.00
Ls=10.00
Ea=0.000

PI#S023
N=4826175.840
E=611708.515
T=16.011
R=245.00
Ls=11.00
Ea=0.000

PI#S024
N=4826216.906
E=611671.486
T=15.180
R=255.00
Ls=10.00
Ea=0.000

PI#N022
N=4826071.862
E=611832.731
T=25.709
R=1100.00
Ls=19.00
Ea=0.000

PI#N030
N=4826237.600
E=611655.284
T=21.054
R=5400.00
Ls=10.00
Ea=0.000

PROJECT LIMIT

DUNDAS STREET

DUNDAS STOP

SIGNALIZED INTERSECTION

SIGNALIZED CROSSING

℄ PROPOSED SB TRACK

℄ PROPOSED NB TRACK

SIDEWALK
BOULEVARD
BIKE LANE
CURB & GUTTER

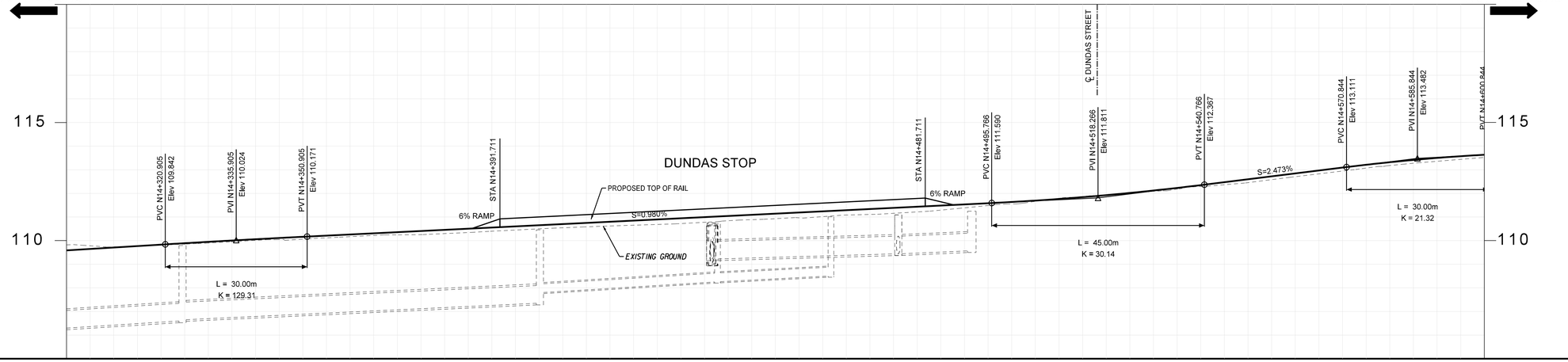
MEDIAN

WB-20

TPSS

SOUTHBOUND

NORTHBOUND



NOT FOR CONSTRUCTION

I09821 109.588	*I09853* 109.891	*II0063* 110.162	*II0256* 110.407	*II0498* 110.652	*II0684* 110.897	*II0928* 111.142	*III56* 111.387	*III552* 111.635	*II2011* 112.019	*II2453* 112.596	*II3068* 113.210	*II3518* 113.633
N14+300	N14+325	N14+350	N14+375	N14+400	N14+425	N14+450	N14+475	N14+500	N14+525	N14+550	N14+575	N14+600

EXISTING GROUND ELEVATION /
PROPOSED TOP OF RAIL PROFILE

DESIGN ℄ CHAINAGE

HURONTARIO STREET/ MAIN STREET

No.	REVISIONS	INITIAL	DATE

REFERENCE MATERIAL:
Surveyed Plans : HMLRT-CombinedSurvey.dgn, CityCentre.dgn, HMLRT-HWY401.dgn, Topo-LRT@QEW.dgn, LRT.dtm, CityCentre.dtm, LRT@QEW.dtm
Design Plans : HMLRT - Alignment.dgn, HMLRT - Roadway.dgn, HMLRT - Profile.dgn
Sewer Plans :
Water Plans :

Geodetic Bench Mark Index Elevation=
Borehole Report -

SCALES

HORIZONTAL 1:500 (0, 5m, 10m, 20m)

VERTICAL 1:100 (0, 1m, 2m, 4m)

SNC·LAVALIN | steer davies gleave | LEA | DIALOG

DESIGNED	B.KIM/ E.WONG
CHECKED	A.DELCHEV
APPROVED	
DATE	2014/06/04

MISSISSAUGA Leading today for tomorrow

BRAMPTON Flower City brampton.ca

HURONTARIO-MAIN LRT PROJECT PRELIMINARY DESIGN/TPAP

PLAN AND PROFILE

STA N14+300 TO STA N14+600

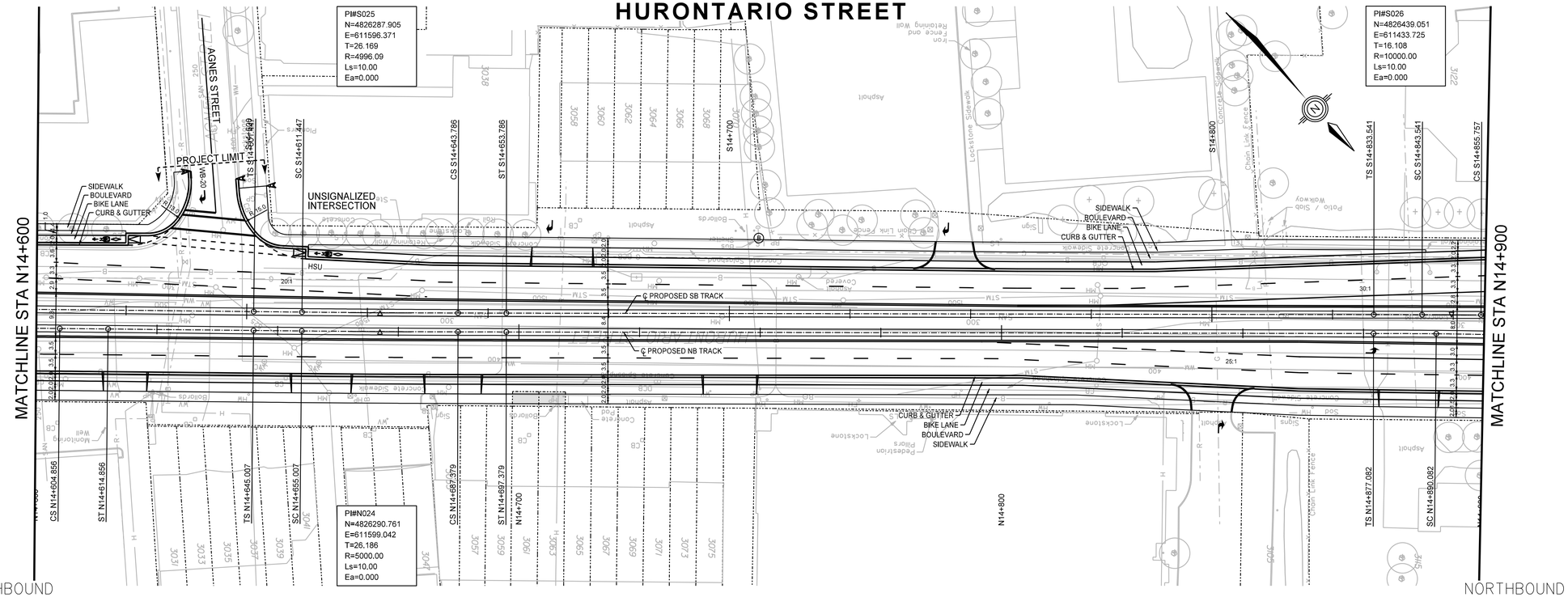
HURONTARIO STREET

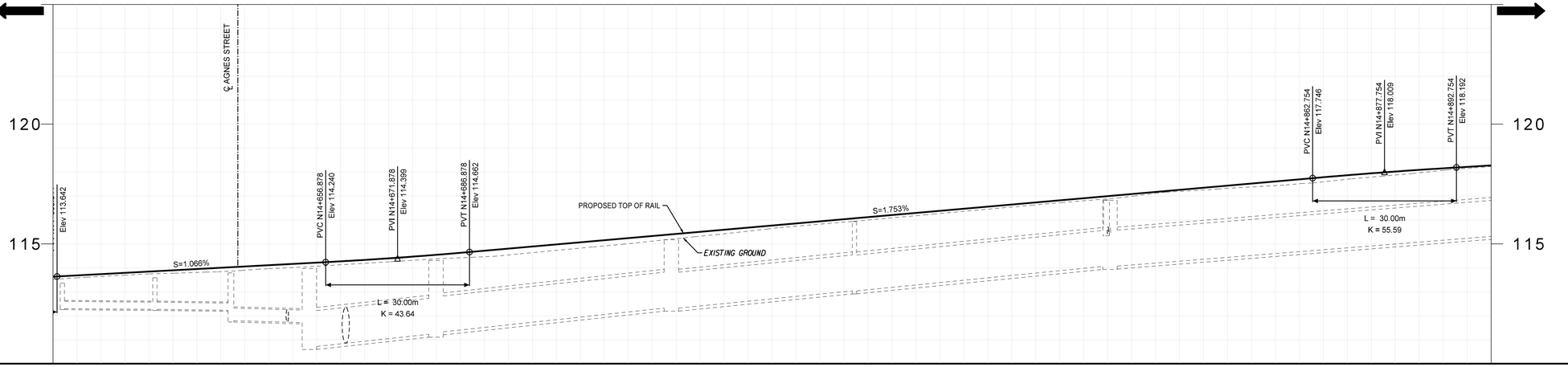
HURONTARIO STREET

FILE No.	CONTRACT No.	SHEET No.
	508956	LRT-RD-NC017

DIMENSIONS SHOWN ON THIS PLAN ARE IN METRES UNLESS OTHERWISE NOTED

Notes:

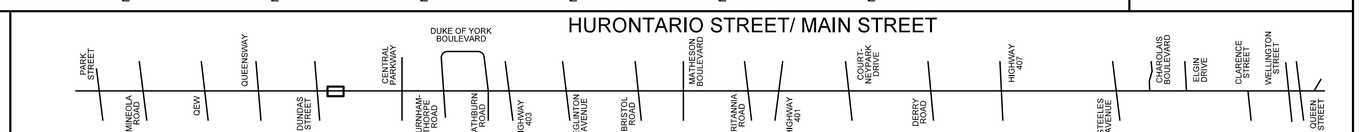




NOT FOR CONSTRUCTION

I135/8 113.633	*I137/5* 113.900	*I140/3* 114.166	*I143/7* 114.470	*I146/36* 114.893	*I150/6* 115.331	*I155/46* 115.769	*I160/89* 116.208	*I165/41* 116.646	*I169/95* 117.084	*I173/76* 117.523	*I177/91* 117.948	*I182/34* 118.280	*EXISTING GROUND ELEVATION / PROPOSED TOP OF RAIL PROFILE*
N14+600	N14+625	N14+650	N14+675	N14+700	N14+725	N14+750	N14+775	N14+800	N14+825	N14+850	N14+875	N14+900	DESIGN ℄ CHAINAGE

HURONTARIO STREET/ MAIN STREET



No.	REVISIONS	INITIAL	DATE

REFERENCE MATERIAL:
Surveyed Plans : HMLRT-CombinedSurvey.dgn, CityCentre.dgn, HMLRT-HWY401.dgn, Topo-LRT@QEW.dgn, LRT.dtm, CityCentre.dtm, LRT@QEW.dtm
Design Plans : HMLRT - Alignment.dgn, HMLRT - Roadway.dgn, HMLRT - Profile.dgn
Sewer Plans :
Water Plans :
Geodetic Bench Mark Index Elevation=
Borehole Report -

SCALES
HORIZONTAL 1:500 (0, 5m, 10m, 20m)
VERTICAL 1:100 (0, 1m, 2m, 4m)

SNC·LAVALIN | steer davies gleave | LEA | DIALOG

DESIGNED B.KIM/ E.WONG
CHECKED A.DELCHEV
APPROVED
DATE 2014/06/04

MISSISSAUGA Leading today for tomorrow
BRAMPTON Flower City brampton.ca

HURONTARIO-MAIN LRT PROJECT
PRELIMINARY DESIGN/TPAP
PLAN AND PROFILE
STA N14+600 TO STA N14+900

FILE No.	CONTRACT No.	SHEET No.
	508956	LRT-RD-NC018

DIMENSIONS SHOWN ON THIS PLAN ARE IN METRES UNLESS OTHERWISE NOTED

Notes:

HURONTARIO STREET

MATCHLINE STA N14+900

MATCHLINE STA N15+200

PI#S027
N=4826513.673
E=611353.782
T=16.014
R=700.00
Ls=10.00
Ea=0.000

PI#S028
N=4826650.651
E=611215.995
T=16.675
R=550.00
Ls=11.00
Ea=0.000

PI#N025
N=4826452.777
E=611424.698
T=32.114
R=900.00
Ls=13.00
Ea=0.000

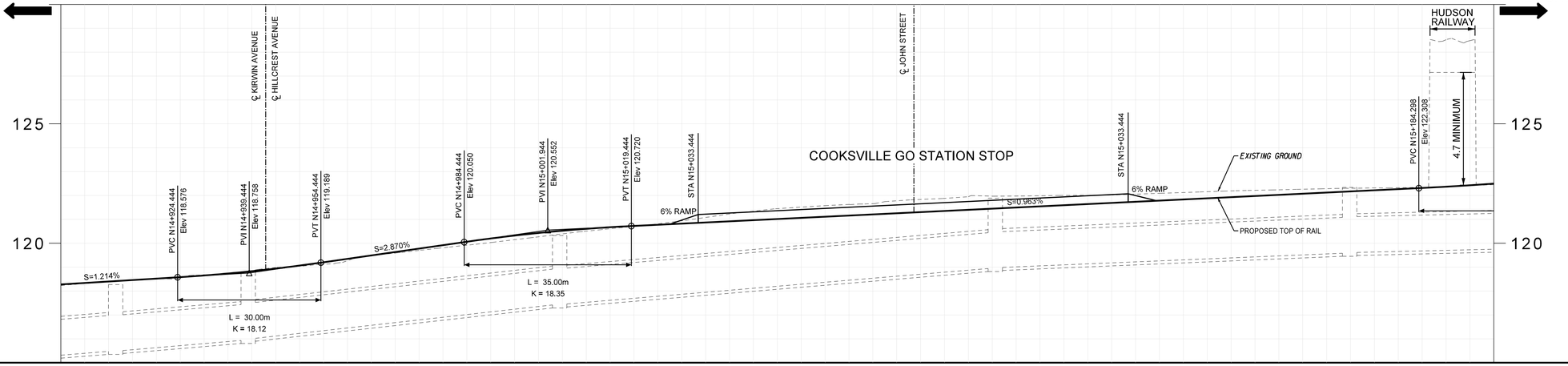
PI#N026
N=4826514.585
E=611365.347
T=23.574
R=1600.00
Ls=10.00
Ea=0.000

PI#N027
N=4826626.495
E=611252.774
T=15.159
R=500.00
Ls=10.00
Ea=0.000

PROJECT LIMIT
HILLCREST AVENUE
SIGNALIZED INTERSECTION
RETAINING WALL
ALLOWANCE FOR FUTURE PEDESTRIAN BRIDGE
SIDEWALK
BOULEVARD
BIKE LANE
CURB & GUTTER
MUT
FUTURE PEDESTRIAN BRIDGE
MEDIAN
℄ PROPOSED SB TRACK
℄ PROPOSED NB TRACK
COOKSVILLE GO STATION STOP
KIRWIN AVENUE
UNSIGNALIZED INTERSECTION
JOHN STREET
HUDSON RAILWAY
CP RAIL
WB-20
ST S14+865.757
TS S14+942.994
SC S14+952.994
CS S14+965.020
ST S14+975.020
S15+000
S15+100
TS S15+136.621
SC S15+147.621
ST N14+928.295
ST N14+941.295
TS N14+971.297
SC N14+981.297
N15+000
CS N15+008.443
ST N15+018.443
TS N15+138.444
SC N15+148.444
TS N15+168.759
ST N15+168.759

SOUTHBOUND

NORTHBOUND



NOT FOR CONSTRUCTION

I18.234 118.280	I18.551 118.583	I19.037 119.067	I19.703 119.779	I20.270 120.430	I20.814 120.774	I21.452 121.015	I21.780 121.255	I21.978 121.496	I22.056 121.737	I22.217 121.977	I22.314 122.218	I22.451 122.499
N14+900	N14+925	N14+950	N14+975	N15+000	N15+025	N15+050	N15+075	N15+100	N15+125	N15+150	N15+175	N15+200

EXISTING GROUND ELEVATION / PROPOSED TOP OF RAIL PROFILE

DESIGN ℄ CHAINAGE

HURONTARIO STREET/ MAIN STREET

No.	REVISIONS	INITIAL	DATE

REFERENCE MATERIAL:
Surveyed Plans : HMLRT-CombinedSurvey.dgn, CityCentre.dgn, HMLRT-HWY401.dgn, Topo-LRT@QEW.dgn, LRT.dtm, CityCentre.dtm, LRT@QEW.dtm
Design Plans : HMLRT - Alignment.dgn, HMLRT - Roadway.dgn, HMLRT - Profile.dgn
Sewer Plans :
Water Plans :
Geodetic Bench Mark Index Elevation=
Borehole Report -

SCALES
HORIZONTAL 1:500 (0, 5m, 10m, 20m)
VERTICAL 1:100 (0, 1m, 2m, 4m)

SNC·LAVALIN | steer davies gleave | LEA | DIALOG

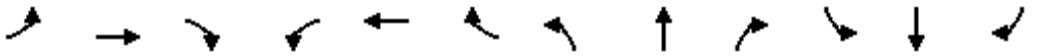
DESIGNED	B.KIM/ E.WONG
CHECKED	A.DELCHEV
APPROVED	
DATE	2014/06/04

MISSISSAUGA Leading today for tomorrow
BRAMPTON Flower City brampton.ca

HURONTARIO-MAIN LRT PROJECT PRELIMINARY DESIGN/TPAP

PLAN AND PROFILE
STA N14+900 TO STA N15+200

Appendix G
Future Background Traffic Level of Service Calculations



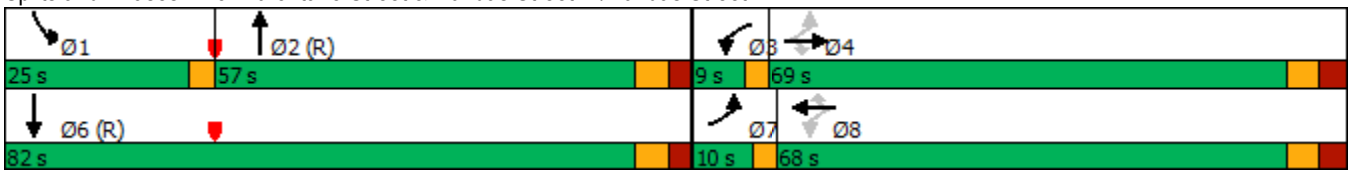
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	1107	118	75	475	83	0	809	71	147	799	74
Future Volume (vph)	87	1107	118	75	475	83	0	809	71	147	799	74
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (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	3397	0	1617	3317	0
Flt Permitted	0.204			0.068						0.950		
Satd. Flow (perm)	368	3433	1351	123	1807	1351	0	3397	0	1617	3317	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			68		6			8	
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)	95	1203	128	82	516	90	0	956	0	160	948	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	

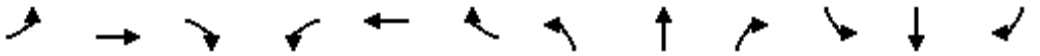
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Time Before Reduce (s)	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)	71.4	59.9	59.9	69.4	58.9	58.9		54.1		19.5	76.6	
Actuated g/C Ratio	0.45	0.37	0.37	0.43	0.37	0.37		0.34		0.12	0.48	
v/c Ratio	0.43	0.94	0.23	0.73	0.78	0.17		0.83		0.81	0.60	
Control Delay	30.7	62.1	16.8	60.2	53.8	11.3		56.4		114.0	26.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	30.7	62.1	16.8	60.2	53.8	11.3		56.4		114.0	26.8	
LOS	C	E	B	E	D	B		E		F	C	
Approach Delay		55.9			49.0			56.4			39.4	
Approach LOS		E			D			E			D	
Queue Length 50th (m)	17.7	200.4	12.9	15.1	150.1	4.6		159.8		56.5	71.8	
Queue Length 95th (m)	29.7	#236.3	29.2	#38.6	198.1	17.7		#193.8		#85.9	118.5	
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)	222	1319	561	113	683	553		1152		222	1593	
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	0.43	0.91	0.23	0.73	0.76	0.16		0.83		0.72	0.60	

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: 0.94
Intersection Signal Delay: 50.5 Intersection LOS: D
Intersection Capacity Utilization 86.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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





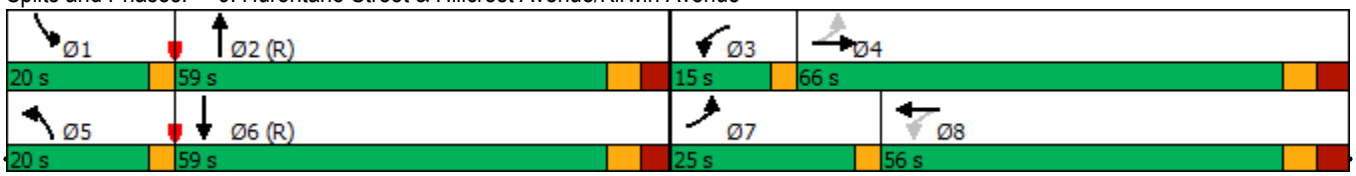
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	172	74	129	164	133	65	1078	22	90	898	209
Future Volume (vph)	247	172	74	129	164	133	65	1078	22	90	898	209
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
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	3223	0	1617	3158	0	1617	3347	0	1617	3273	0
Flt Permitted	0.255			0.587			0.950			0.950		
Satd. Flow (perm)	434	3223	0	999	3158	0	1617	3347	0	1617	3273	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			133			1			19	
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)	268	267	0	140	323	0	71	1196	0	98	1203	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)	25.0	66.0		15.0	56.0		20.0	59.0		20.0	59.0	
Total Split (%)	15.6%	41.3%		9.4%	35.0%		12.5%	36.9%		12.5%	36.9%	
Maximum Green (s)	22.0	58.0		12.0	48.0		17.0	51.5		17.0	51.5	
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	

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)	45.3	25.5		32.4	15.6		12.4	86.3		15.0	88.9	
Actuated g/C Ratio	0.28	0.16		0.20	0.10		0.08	0.54		0.09	0.56	
v/c Ratio	0.95	0.48		0.57	0.76		0.57	0.66		0.65	0.66	
Control Delay	91.1	52.8		55.3	52.3		79.5	32.4		94.5	20.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	44.1		0.0	0.2	
Total Delay	91.1	52.8		55.3	52.3		79.5	76.5		94.5	20.9	
LOS	F	D		E	D		E	E		F	C	
Approach Delay		72.0			53.2			76.6			26.4	
Approach LOS		E			D			E			C	
Queue Length 50th (m)	77.5	35.8		37.0	33.2		24.7	116.9		0.0	77.3	
Queue Length 95th (m)	#114.1	49.6		54.8	49.7		m33.7	151.0		55.9	90.3	
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)	285	1197		249	1040		172	1804		180	1826	
Starvation Cap Reductn	0	0		0	0		0	0		0	145	
Spillback Cap Reductn	0	0		0	13		0	704		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.94	0.22		0.56	0.31		0.41	1.09		0.54	0.72	

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: 0.95
Intersection Signal Delay: 54.6 Intersection LOS: D
Intersection Capacity Utilization 78.0% 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



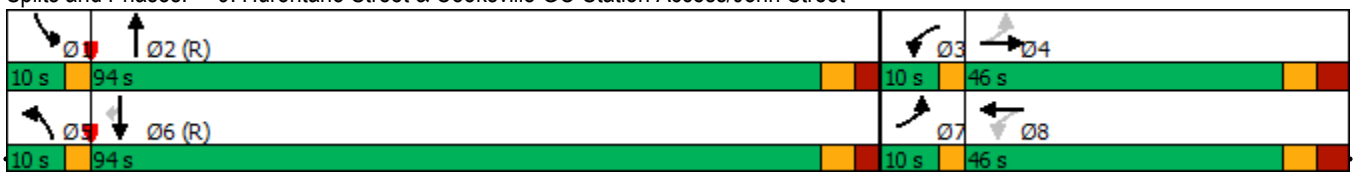
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3	16	16	5	176	6	1352	20	164	1277	89
Future Volume (vph)	55	3	16	16	5	176	6	1352	20	164	1277	89
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	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	1566	0	1617	1537	0	1617	3350	0	1617	3355	1321
Flt Permitted	0.233			0.744			0.950			0.950		
Satd. Flow (perm)	397	1566	0	1266	1537	0	1617	3350	0	1617	3355	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			137			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	20	0	17	196	0	7	1492	0	178	1388	97
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	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

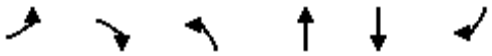
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (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)	25.0	17.2		23.6	13.2		6.3	87.2		33.7	121.7	121.7
Actuated g/C Ratio	0.16	0.11		0.15	0.08		0.04	0.54		0.21	0.76	0.76
v/c Ratio	0.52	0.11		0.09	0.78		0.11	0.82		0.52	0.54	0.09
Control Delay	72.3	29.0		53.7	43.6		102.7	25.9		64.4	10.2	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	47.9		0.0	0.0	0.0
Total Delay	72.3	29.0		53.7	43.6		102.7	73.8		64.4	10.2	2.7
LOS	E	C		D	D		F	E		E	B	A
Approach Delay		61.5			44.4			73.9			15.5	
Approach LOS		E			D			E			B	
Queue Length 50th (m)	17.8	0.9		4.9	19.6		2.3	231.9		53.6	82.2	1.5
Queue Length 95th (m)	30.5	10.0		11.9	47.6		m3.7	m257.1		#90.3	161.6	9.8
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)	115	384		203	469		71	1825		340	2551	1022
Starvation Cap Reductn	0	0		0	0		0	519		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	0.52	0.05		0.08	0.42		0.10	1.14		0.52	0.54	0.09

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: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 43.7 Intersection LOS: D
Intersection Capacity Utilization 81.8% 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

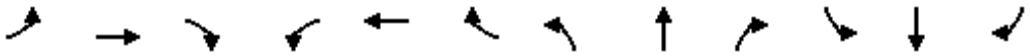




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	148	0	940	898	51
Future Volume (Veh/h)	0	148	0	940	898	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	161	0	1022	976	55
Pedestrians						
Lane 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	0.81	0.81			
vC, conflicting volume	1514	516	1031			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	245	0	583			
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	82	100			
cM capacity (veh/h)	608	883	804			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	161	511	511	651	380
Volume Left	0	0	0	0	0
Volume Right	161	0	0	0	55
cSH	883	1700	1700	1700	1700
Volume to Capacity	0.18	0.30	0.30	0.38	0.22
Queue Length 95th (m)	5.3	0.0	0.0	0.0	0.0
Control Delay (s)	10.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	10.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	18	301	36	7	186	13	62	18	18	70	14	21
Future Volume (vph)	18	301	36	7	186	13	62	18	18	70	14	21
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)	20	327	39	8	202	14	67	20	20	76	15	23

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	20	366	8	216	107	114
Volume Left (vph)	20	0	8	0	67	76
Volume Right (vph)	0	39	0	14	20	23
Hadj (s)	0.53	-0.01	0.53	0.02	0.05	0.05
Departure Headway (s)	6.0	5.4	6.2	5.6	5.8	5.7
Degree Utilization, x	0.03	0.55	0.01	0.34	0.17	0.18
Capacity (veh/h)	573	644	553	608	552	558
Control Delay (s)	8.0	13.7	8.0	10.3	9.9	10.0
Approach Delay (s)	13.4		10.2		9.9	10.0
Approach LOS	B		B		A	B

Intersection Summary				
Delay	11.6			
Level of Service	B			
Intersection Capacity Utilization	31.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	70	1095	5	0	1101
Future Volume (Veh/h)	0	70	1095	5	0	1101
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	76	1190	5	0	1197
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	0.87	0.76			0.76	
vC, conflicting volume	1791	598			1195	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	387	0			628	
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	91			100	
cM capacity (veh/h)	515	825			723	

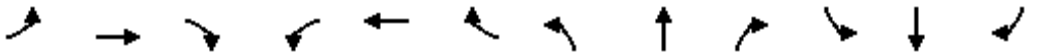
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	76	793	402	598	598
Volume Left	0	0	0	0	0
Volume Right	76	0	5	0	0
cSH	825	1700	1700	1700	1700
Volume to Capacity	0.09	0.47	0.24	0.35	0.35
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.0
Control Delay (s)	9.8	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.8	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	274	10	5	176	250	30
Future Volume (Veh/h)	274	10	5	176	250	30
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)	298	11	5	191	272	33
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			0.92		0.92	0.92
vC, conflicting volume			309		504	304
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			204		416	198
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		50	96
cM capacity (veh/h)			1257		542	775

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	309	196	305
Volume Left	0	5	272
Volume Right	11	0	33
cSH	1700	1257	561
Volume to Capacity	0.18	0.00	0.54
Queue Length 95th (m)	0.0	0.1	26.0
Control Delay (s)	0.0	0.2	18.8
Lane LOS		A	C
Approach Delay (s)	0.0	0.2	18.8
Approach LOS			C

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		



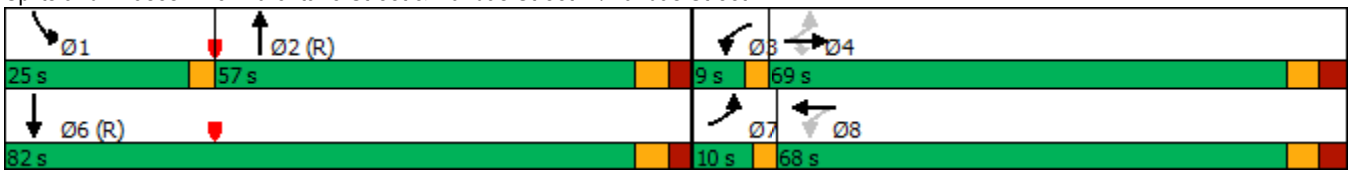
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	1107	118	75	475	83	0	809	71	147	799	74
Future Volume (vph)	87	1107	118	75	475	83	0	809	71	147	799	74
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (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	3367	0	0	3397	0	1617	3317	0
Flt Permitted	0.315			0.068						0.950		
Satd. Flow (perm)	568	3433	1351	123	3367	0	0	3397	0	1617	3317	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		14			6			8	
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)	95	1203	128	82	606	0	0	956	0	160	948	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			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)	10.0	69.0	69.0	9.0	68.0			57.0		25.0	82.0	
Total Split (%)	6.3%	43.1%	43.1%	5.6%	42.5%			35.6%		15.6%	51.3%	
Maximum Green (s)	7.0	61.5	61.5	6.0	60.5			50.0		22.0	75.0	
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	

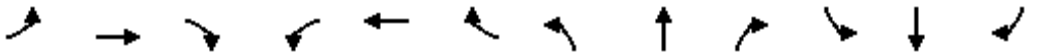
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	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)	71.4	59.9	59.9	69.4	58.9			54.1		19.5	76.6	
Actuated g/C Ratio	0.45	0.37	0.37	0.43	0.37			0.34		0.12	0.48	
v/c Ratio	0.31	0.94	0.23	0.73	0.49			0.83		0.81	0.60	
Control Delay	27.4	62.1	16.8	60.2	39.2			56.4		114.0	26.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Delay	27.4	62.1	16.8	60.2	39.2			56.4		114.0	26.8	
LOS	C	E	B	E	D			E		F	C	
Approach Delay		55.7			41.7			56.4			39.4	
Approach LOS		E			D			E			D	
Queue Length 50th (m)	17.7	200.4	12.9	15.1	78.8			159.8		56.5	71.8	
Queue Length 95th (m)	29.7	#236.3	29.2	#38.6	97.7			#193.8		#85.9	118.5	
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)	303	1319	561	113	1281			1152		222	1593	
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	0.31	0.91	0.23	0.73	0.47			0.83		0.72	0.60	

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: 0.94
Intersection Signal Delay: 49.2 Intersection LOS: D
Intersection Capacity Utilization 86.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	748	124	128	955	151	0	815	146	183	884	123
Future Volume (vph)	147	748	124	128	955	151	0	815	146	183	884	123
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	3363	0	1617	3303	0
Flt Permitted	0.068			0.206						0.950		
Satd. Flow (perm)	123	3433	1351	371	1807	1351	0	3363	0	1617	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			68		13			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)	160	813	135	139	1038	164	0	1045	0	199	1095	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)	14.0	66.0	66.0	14.0	66.0	66.0		57.0		23.0	80.0	
Total Split (%)	8.8%	41.3%	41.3%	8.8%	41.3%	41.3%		35.6%		14.4%	50.0%	
Maximum Green (s)	11.0	58.5	58.5	11.0	58.5	58.5		50.0		20.0	73.0	
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	

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)	74.4	58.9	58.9	73.6	58.5	58.5		50.0		20.0	73.0	
Actuated g/C Ratio	0.46	0.37	0.37	0.46	0.37	0.37		0.31		0.12	0.46	
v/c Ratio	0.96	0.64	0.25	0.54	1.57	0.31		0.99		0.99	0.72	
Control Delay	98.7	44.8	18.7	31.7	299.4	22.4		78.0		135.3	37.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	98.7	44.8	18.7	31.7	299.4	22.4		78.0		135.3	37.2	
LOS	F	D	B	C	F	C		E		F	D	
Approach Delay		49.4			237.8			78.0			52.3	
Approach LOS		D			F			E			D	
Queue Length 50th (m)	37.1	119.0	15.0	25.9	~490.8	22.2		182.0		70.5	98.3	
Queue Length 95th (m)	#87.3	142.9	32.7	40.5	#575.4	42.7		#231.3		m#120.9	156.1	
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)	166	1264	540	263	660	537		1059		202	1514	
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	0.96	0.64	0.25	0.53	1.57	0.31		0.99		0.99	0.72	

Intersection Summary

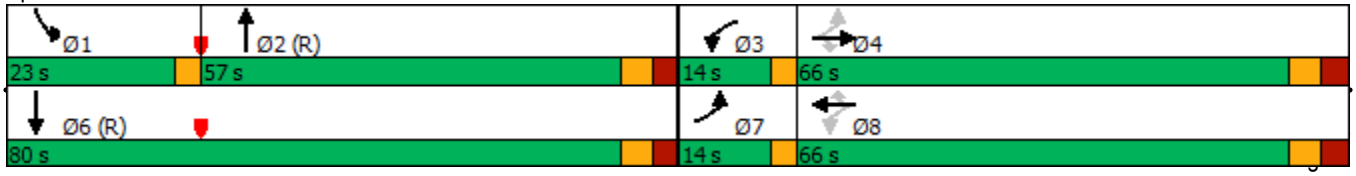
Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 88 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.57
Intersection Signal Delay: 109.2 Intersection LOS: F
Intersection Capacity Utilization 114.9% ICU Level of Service H
Analysis Period (min) 15

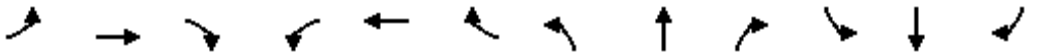
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

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





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	206	89	71	293	142	106	902	39	192	1137	126
Future Volume (vph)	57	206	89	71	293	142	106	902	39	192	1137	126
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	3223	0	1617	3211	0	1617	3338	0	1617	3311	0
Flt Permitted	0.265			0.411			0.950			0.950		
Satd. Flow (perm)	451	3223	0	700	3211	0	1617	3338	0	1617	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			53			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)	62	321	0	77	472	0	115	1022	0	209	1373	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	

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)	37.5	25.6		38.2	27.6		16.6	77.7		28.2	89.3	
Actuated g/C Ratio	0.23	0.16		0.24	0.17		0.10	0.49		0.18	0.56	
v/c Ratio	0.40	0.58		0.37	0.79		0.68	0.63		0.73	0.74	
Control Delay	52.0	57.1		50.5	66.2		74.6	30.5		101.9	21.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.7		0.0	0.2	
Total Delay	52.0	57.1		50.5	66.2		74.6	32.2		101.9	21.3	
LOS	D	E		D	E		E	C		F	C	
Approach Delay		56.3			64.0			36.4			31.9	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	16.1	45.5		20.2	72.6		39.8	89.5		73.5	120.0	
Queue Length 95th (m)	28.0	59.8		33.4	89.7		m44.0	m96.5		102.1	97.7	
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)	157	997		207	1000		224	1623		286	1851	
Starvation Cap Reductn	0	0		0	0		0	0		0	88	
Spillback Cap Reductn	0	0		0	2		0	403		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.32		0.37	0.47		0.51	0.84		0.73	0.78	

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: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 40.7		Intersection LOS: D	
Intersection Capacity Utilization 77.4%		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

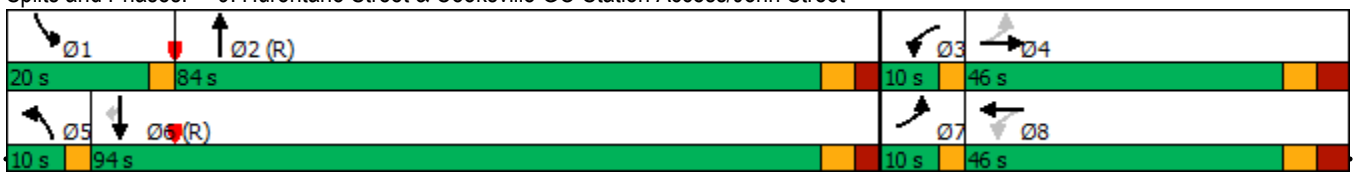
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	5	18	23	5	322	6	1149	20	228	1282	59
Future Volume (vph)	70	5	18	23	5	322	6	1149	20	228	1282	59
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	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	1578	0	1617	1534	0	1617	3346	0	1617	3355	1321
Flt Permitted	0.149			0.741			0.950			0.950		
Satd. Flow (perm)	254	1578	0	1261	1534	0	1617	3346	0	1617	3355	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			206			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)	76	25	0	25	355	0	7	1271	0	248	1393	64
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

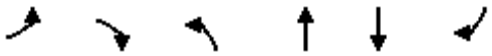
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (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)	36.0	26.8		34.5	22.8		6.3	77.0		32.2	110.1	110.1
Actuated g/C Ratio	0.22	0.17		0.22	0.14		0.04	0.48		0.20	0.69	0.69
v/c Ratio	0.66	0.09		0.09	0.90		0.11	0.79		0.76	0.60	0.07
Control Delay	72.7	23.3		43.6	52.8		101.2	22.6		75.6	16.9	2.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	4.4		0.0	0.1	0.0
Total Delay	72.7	23.3		43.6	52.8		101.2	27.0		75.6	17.0	2.4
LOS	E	C		D	D		F	C		E	B	A
Approach Delay		60.5			52.2			27.4			24.9	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	20.6	1.5		6.6	53.0		2.3	128.6		79.2	115.9	0.0
Queue Length 95th (m)	32.4	10.2		13.8	87.5		m5.0	195.7		#165.4	212.8	5.7
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		289	521		71	1610		325	2308	932
Starvation Cap Reductn	0	0		0	0		0	266		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	0.06		0.09	0.68		0.10	0.95		0.76	0.64	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: 29.9 Intersection LOS: C
Intersection Capacity Utilization 88.8% 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: 9: Hurontario Street & Cooksville GO Station Access/John Street

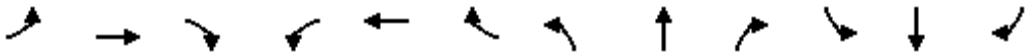




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	94	0	1046	1094	65
Future Volume (Veh/h)	0	94	0	1046	1094	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	102	0	1137	1189	71
Pedestrians						
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	0.72	0.72			
vC, conflicting volume	1793	630	1260			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	82	0	574			
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	87	100			
cM capacity (veh/h)	774	778	714			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	102	568	568	793	467
Volume Left	0	0	0	0	0
Volume Right	102	0	0	0	71
cSH	778	1700	1700	1700	1700
Volume to Capacity	0.13	0.33	0.33	0.47	0.27
Queue Length 95th (m)	3.6	0.0	0.0	0.0	0.0
Control Delay (s)	10.3	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.3	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	84	287	72	16	394	22	104	26	21	26	17	46
Future Volume (vph)	84	287	72	16	394	22	104	26	21	26	17	46
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)	91	312	78	17	428	24	113	28	23	28	18	50

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	91	390	17	452	164	96
Volume Left (vph)	91	0	17	0	113	28
Volume Right (vph)	0	78	0	24	23	50
Hadj (s)	0.53	-0.08	0.53	0.03	0.09	-0.21
Departure Headway (s)	6.7	6.0	6.7	6.2	6.7	6.7
Degree Utilization, x	0.17	0.65	0.03	0.77	0.31	0.18
Capacity (veh/h)	514	572	519	569	480	466
Control Delay (s)	9.8	18.5	8.7	25.7	12.7	11.1
Approach Delay (s)	16.9		25.1		12.7	11.1
Approach LOS	C		D		B	B

Intersection Summary				
Delay	19.1			
Level of Service	C			
Intersection Capacity Utilization	51.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	30	1017	30	0	1297
Future Volume (Veh/h)	0	30	1017	30	0	1297
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	33	1105	33	0	1410
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	0.73			0.73	
vC, conflicting volume	1826	569			1138	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117	0			466	
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	96			100	
cM capacity (veh/h)	711	797			802	

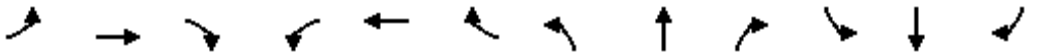
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	33	737	401	705	705
Volume Left	0	0	0	0	0
Volume Right	33	0	33	0	0
cSH	797	1700	1700	1700	1700
Volume to Capacity	0.04	0.43	0.24	0.41	0.41
Queue Length 95th (m)	1.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.7	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	292	145	25	431	100	15
Future Volume (Veh/h)	292	145	25	431	100	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)	317	158	27	468	109	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			0.90		0.90	0.90
vC, conflicting volume			475		918	396
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			363		855	276
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		62	98
cM capacity (veh/h)			1078		289	688

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	475	495	125
Volume Left	0	27	109
Volume Right	158	0	16
cSH	1700	1078	312
Volume to Capacity	0.28	0.03	0.40
Queue Length 95th (m)	0.0	0.6	14.8
Control Delay (s)	0.0	0.7	24.0
Lane LOS		A	C
Approach Delay (s)	0.0	0.7	24.0
Approach LOS			C

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		



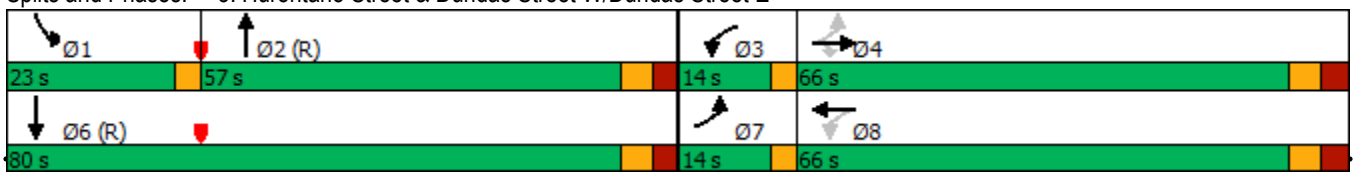
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	748	124	128	955	151	0	815	146	183	884	123
Future Volume (vph)	147	748	124	128	955	151	0	815	146	183	884	123
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
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	3373	0	0	3363	0	1617	3303	0
Flt Permitted	0.068			0.205						0.950		
Satd. Flow (perm)	123	3433	1351	370	3373	0	0	3363	0	1617	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		12			13			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)	160	813	135	139	1202	0	0	1045	0	199	1095	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			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)	14.0	66.0	66.0	14.0	66.0			57.0		23.0	80.0	
Total Split (%)	8.8%	41.3%	41.3%	8.8%	41.3%			35.6%		14.4%	50.0%	
Maximum Green (s)	11.0	58.5	58.5	11.0	58.5			50.0		20.0	73.0	
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	

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)	74.2	58.7	58.7	73.3	58.2			50.0		20.3	73.3	
Actuated g/C Ratio	0.46	0.37	0.37	0.46	0.36			0.31		0.13	0.46	
v/c Ratio	0.96	0.65	0.25	0.54	0.97			0.99		0.97	0.72	
Control Delay	99.1	45.0	18.7	31.8	69.2			78.0		131.9	37.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Delay	99.1	45.0	18.7	31.8	69.2			78.0		131.9	37.1	
LOS	F	D	B	C	E			E		F	D	
Approach Delay		49.6			65.3			78.0			51.7	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	37.1	119.0	15.0	25.9	206.4			182.0		70.5	98.3	
Queue Length 95th (m)	#87.3	142.9	32.7	40.5	#256.5			#231.3		m#120.9	156.1	
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	1258	538	262	1240			1059		205	1519	
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	0.96	0.65	0.25	0.53	0.97			0.99		0.97	0.72	

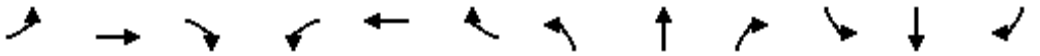
Intersection Summary

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: 0.99
Intersection Signal Delay: 60.8 Intersection LOS: E
Intersection Capacity Utilization 95.8% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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



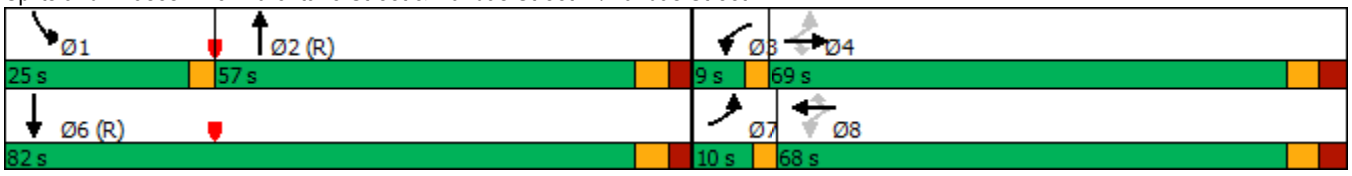
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	1107	118	75	475	83	0	827	71	147	826	74
Future Volume (vph)	87	1107	118	75	475	83	0	827	71	147	826	74
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (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	3397	0	1617	3320	0
Flt Permitted	0.204			0.068						0.950		
Satd. Flow (perm)	368	3433	1351	123	1807	1351	0	3397	0	1617	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			68		6			8	
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)	95	1203	128	82	516	90	0	976	0	160	978	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	

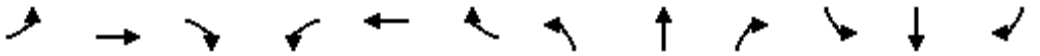
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Time Before Reduce (s)	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)	71.4	59.9	59.9	69.4	58.9	58.9		54.1		19.5	76.6	
Actuated g/C Ratio	0.45	0.37	0.37	0.43	0.37	0.37		0.34		0.12	0.48	
v/c Ratio	0.43	0.94	0.23	0.73	0.78	0.17		0.85		0.81	0.61	
Control Delay	30.7	62.1	16.8	60.2	53.8	11.3		57.5		111.0	27.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	30.7	62.1	16.8	60.2	53.8	11.3		57.5		111.0	27.6	
LOS	C	E	B	E	D	B		E		F	C	
Approach Delay		55.9			49.0			57.5			39.4	
Approach LOS		E			D			E			D	
Queue Length 50th (m)	17.7	200.4	12.9	15.1	150.1	4.6		164.5		56.1	76.8	
Queue Length 95th (m)	29.7	#236.3	29.2	#38.6	198.1	17.7		#205.6		#86.0	123.1	
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)	222	1319	561	113	683	553		1152		222	1594	
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	0.43	0.91	0.23	0.73	0.76	0.16		0.85		0.72	0.61	

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: 0.94
Intersection Signal Delay: 50.7 Intersection LOS: D
Intersection Capacity Utilization 87.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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





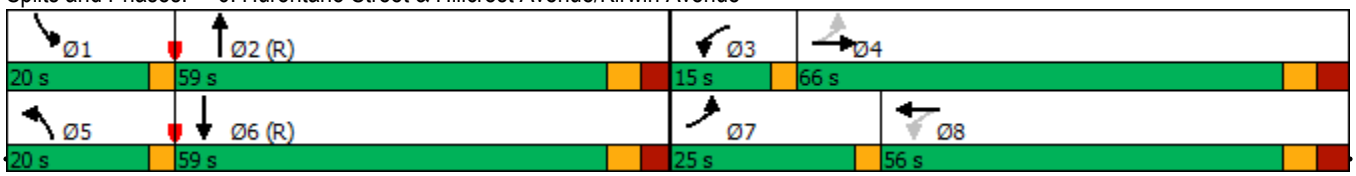
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	181	74	156	187	169	65	1078	40	108	898	209
Future Volume (vph)	247	181	74	156	187	169	65	1078	40	108	898	209
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
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	3229	0	1617	3146	0	1617	3341	0	1617	3273	0
Flt Permitted	0.200			0.581			0.950			0.950		
Satd. Flow (perm)	340	3229	0	989	3146	0	1617	3341	0	1617	3273	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			148			2			19	
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)	268	277	0	170	387	0	71	1215	0	117	1203	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)	25.0	66.0		15.0	56.0		20.0	59.0		20.0	59.0	
Total Split (%)	15.6%	41.3%		9.4%	35.0%		12.5%	36.9%		12.5%	36.9%	
Maximum Green (s)	22.0	58.0		12.0	48.0		17.0	51.5		17.0	51.5	
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	

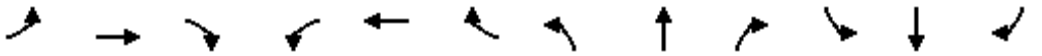
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		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)	47.9	27.9		35.2	18.2		12.4	81.6		17.0	86.3	
Actuated g/C Ratio	0.30	0.17		0.22	0.11		0.08	0.51		0.11	0.54	
v/c Ratio	0.98	0.46		0.64	0.79		0.57	0.71		0.68	0.68	
Control Delay	96.1	51.6		57.7	54.1		80.8	36.0		97.9	22.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	49.2		0.0	0.3	
Total Delay	96.1	51.6		57.7	54.1		80.8	85.2		97.9	22.7	
LOS	F	D		E	D		F	F		F	C	
Approach Delay		73.5			55.2			84.9			29.4	
Approach LOS		E			E			F			C	
Queue Length 50th (m)	75.6	37.3		44.7	42.1		24.7	123.2		41.4	77.2	
Queue Length 95th (m)	#121.6	50.4		63.7	59.4		m33.6	155.0		64.4	92.9	
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)	277	1197		264	1047		172	1705		189	1773	
Starvation Cap Reductn	0	0		0	0		0	0		0	149	
Spillback Cap Reductn	0	0		0	13		0	629		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.97	0.23		0.64	0.37		0.41	1.13		0.62	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: 0.98
Intersection Signal Delay: 59.0 Intersection LOS: E
Intersection Capacity Utilization 81.3% 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





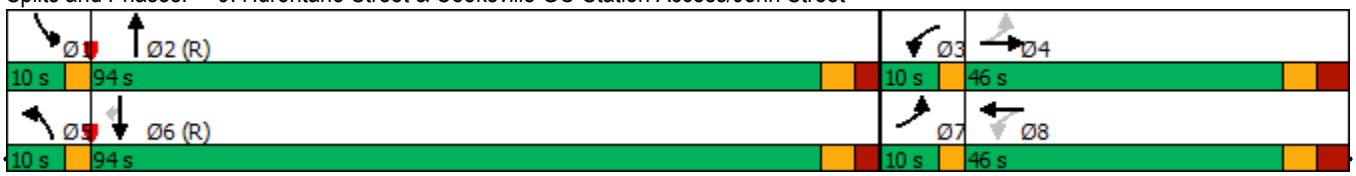
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3	16	16	5	176	6	1388	20	164	1295	89
Future Volume (vph)	55	3	16	16	5	176	6	1388	20	164	1295	89
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	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	1566	0	1617	1537	0	1617	3350	0	1617	3355	1321
Flt Permitted	0.231			0.744			0.950			0.950		
Satd. Flow (perm)	393	1566	0	1266	1537	0	1617	3350	0	1617	3355	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			135			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	20	0	17	196	0	7	1531	0	178	1408	97
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	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

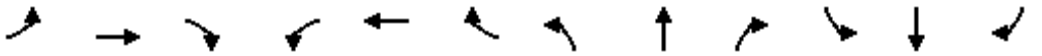
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (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)	25.1	17.3		23.7	13.3		6.3	87.1		33.6	121.6	121.6
Actuated g/C Ratio	0.16	0.11		0.15	0.08		0.04	0.54		0.21	0.76	0.76
v/c Ratio	0.53	0.11		0.08	0.78		0.11	0.84		0.53	0.55	0.10
Control Delay	72.3	28.9		53.6	44.5		102.8	26.4		64.5	10.4	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	47.7		0.0	0.0	0.0
Total Delay	72.3	28.9		53.6	44.5		102.8	74.0		64.5	10.4	2.7
LOS	E	C		D	D		F	E		E	B	A
Approach Delay		61.4			45.2			74.2			15.6	
Approach LOS		E			D			E			B	
Queue Length 50th (m)	17.8	0.9		4.9	20.2		2.4	239.4		53.6	84.8	1.5
Queue Length 95th (m)	30.4	10.0		11.9	48.3		m3.5	m265.5		#91.0	166.1	9.8
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)	115	384		204	467		71	1824		339	2549	1021
Starvation Cap Reductn	0	0		0	0		0	523		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	0.52	0.05		0.08	0.42		0.10	1.18		0.53	0.55	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: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 44.1 Intersection LOS: D
Intersection Capacity Utilization 82.8% 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: 9: Hurontario Street & Cooksville GO Station Access/John Street





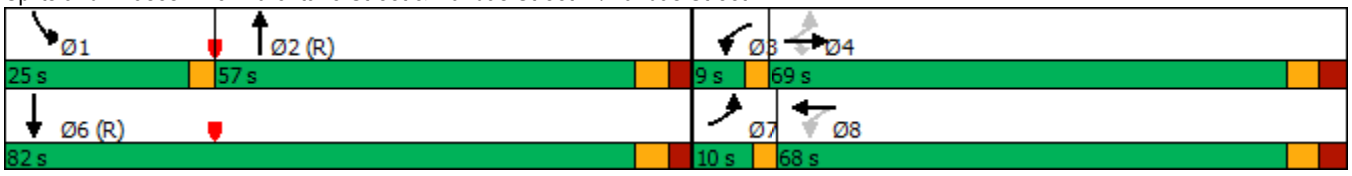
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	1107	118	75	475	83	0	827	71	147	826	74
Future Volume (vph)	87	1107	118	75	475	83	0	827	71	147	826	74
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (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	3367	0	0	3397	0	1617	3320	0
Flt Permitted	0.315			0.068						0.950		
Satd. Flow (perm)	568	3433	1351	123	3367	0	0	3397	0	1617	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		14			6			8	
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)	95	1203	128	82	606	0	0	976	0	160	978	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			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)	10.0	69.0	69.0	9.0	68.0			57.0		25.0	82.0	
Total Split (%)	6.3%	43.1%	43.1%	5.6%	42.5%			35.6%		15.6%	51.3%	
Maximum Green (s)	7.0	61.5	61.5	6.0	60.5			50.0		22.0	75.0	
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	

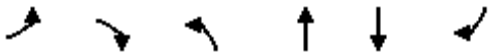
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	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)	71.4	59.9	59.9	69.4	58.9			54.1		19.5	76.6	
Actuated g/C Ratio	0.45	0.37	0.37	0.43	0.37			0.34		0.12	0.48	
v/c Ratio	0.31	0.94	0.23	0.73	0.49			0.85		0.81	0.61	
Control Delay	27.4	62.1	16.8	60.2	39.2			57.5		111.0	27.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Delay	27.4	62.1	16.8	60.2	39.2			57.5		111.0	27.6	
LOS	C	E	B	E	D			E		F	C	
Approach Delay		55.7			41.7			57.5			39.4	
Approach LOS		E			D			E			D	
Queue Length 50th (m)	17.7	200.4	12.9	15.1	78.8			164.5		56.1	76.8	
Queue Length 95th (m)	29.7	#236.3	29.2	#38.6	97.7			#205.6		#86.0	123.1	
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)	303	1319	561	113	1281			1152		222	1594	
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	0.31	0.91	0.23	0.73	0.47			0.85		0.72	0.61	

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: 0.94
Intersection Signal Delay: 49.4 Intersection LOS: D
Intersection Capacity Utilization 87.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

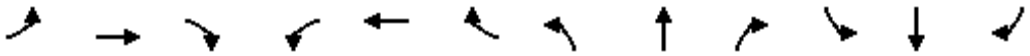




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	148	0	958	925	51
Future Volume (Veh/h)	0	148	0	958	925	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	161	0	1041	1005	55
Pedestrians						
Lane 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	0.80	0.80			
vC, conflicting volume	1553	530	1060			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225	0	587			
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	82	100			
cM capacity (veh/h)	624	872	791			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	161	520	520	670	390
Volume Left	0	0	0	0	0
Volume Right	161	0	0	0	55
cSH	872	1700	1700	1700	1700
Volume to Capacity	0.18	0.31	0.31	0.39	0.23
Queue Length 95th (m)	5.4	0.0	0.0	0.0	0.0
Control Delay (s)	10.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.1	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	18	315	36	7	201	13	62	18	18	70	14	21
Future Volume (vph)	18	315	36	7	201	13	62	18	18	70	14	21
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)	20	342	39	8	218	14	67	20	20	76	15	23

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	20	381	8	232	107	114
Volume Left (vph)	20	0	8	0	67	76
Volume Right (vph)	0	39	0	14	20	23
Hadj (s)	0.53	-0.01	0.53	0.02	0.05	0.05
Departure Headway (s)	6.0	5.5	6.2	5.7	5.8	5.8
Degree Utilization, x	0.03	0.58	0.01	0.37	0.17	0.18
Capacity (veh/h)	570	641	551	605	539	547
Control Delay (s)	8.0	14.5	8.1	10.7	10.1	10.1
Approach Delay (s)	14.2		10.6		10.1	10.1
Approach LOS	B		B		B	B

Intersection Summary				
Delay	12.1			
Level of Service	B			
Intersection Capacity Utilization	32.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	70	1110	5	0	1128
Future Volume (Veh/h)	0	70	1110	5	0	1128
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	76	1207	5	0	1226
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	0.87	0.75			0.75	
vC, conflicting volume	1822	606			1212	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	365	0			625	
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	91			100	
cM capacity (veh/h)	528	816			717	

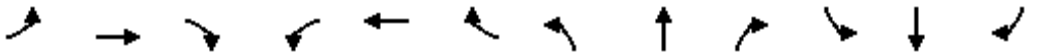
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	76	805	407	613	613
Volume Left	0	0	0	0	0
Volume Right	76	0	5	0	0
cSH	816	1700	1700	1700	1700
Volume to Capacity	0.09	0.47	0.24	0.36	0.36
Queue Length 95th (m)	2.5	0.0	0.0	0.0	0.0
Control Delay (s)	9.9	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.9	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	274	58	20	176	336	44
Future Volume (Veh/h)	274	58	20	176	336	44
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)	298	63	22	191	365	48
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			0.92		0.92	0.92
vC, conflicting volume			361		564	330
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			257		479	223
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		26	94
cM capacity (veh/h)			1198		491	748

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	361	213	413
Volume Left	0	22	365
Volume Right	63	0	48
cSH	1700	1198	511
Volume to Capacity	0.21	0.02	0.81
Queue Length 95th (m)	0.0	0.4	62.0
Control Delay (s)	0.0	1.0	35.4
Lane LOS		A	E
Approach Delay (s)	0.0	1.0	35.4
Approach LOS			E

Intersection Summary			
Average Delay	15.0		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	748	124	128	955	151	0	844	146	183	911	123
Future Volume (vph)	147	748	124	128	955	151	0	844	146	183	911	123
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	3367	0	1617	3303	0
Flt Permitted	0.068			0.206						0.950		
Satd. Flow (perm)	123	3433	1351	371	1807	1351	0	3367	0	1617	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			68		13			12	
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)	160	813	135	139	1038	164	0	1076	0	199	1124	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)	14.0	66.0	66.0	14.0	66.0	66.0		57.0		23.0	80.0	
Total Split (%)	8.8%	41.3%	41.3%	8.8%	41.3%	41.3%		35.6%		14.4%	50.0%	
Maximum Green (s)	11.0	58.5	58.5	11.0	58.5	58.5		50.0		20.0	73.0	
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	

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)	74.4	58.9	58.9	73.6	58.5	58.5		50.0		20.0	73.0	
Actuated g/C Ratio	0.46	0.37	0.37	0.46	0.37	0.37		0.31		0.12	0.46	
v/c Ratio	0.96	0.64	0.25	0.54	1.57	0.31		1.01		0.99	0.74	
Control Delay	98.7	44.8	18.7	31.7	299.4	22.4		84.1		132.8	39.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	98.7	44.8	18.7	31.7	299.4	22.4		84.1		132.8	39.0	
LOS	F	D	B	C	F	C		F		F	D	
Approach Delay		49.4			237.8			84.1			53.1	
Approach LOS		D			F			F			D	
Queue Length 50th (m)	37.1	119.0	15.0	25.9	~490.8	22.2		~197.4		70.6	108.0	
Queue Length 95th (m)	#87.3	142.9	32.7	40.5	#575.4	42.7		#242.9		m#116.9	166.3	
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)	166	1264	540	263	660	537		1061		202	1513	
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	0.96	0.64	0.25	0.53	1.57	0.31		1.01		0.99	0.74	

Intersection Summary

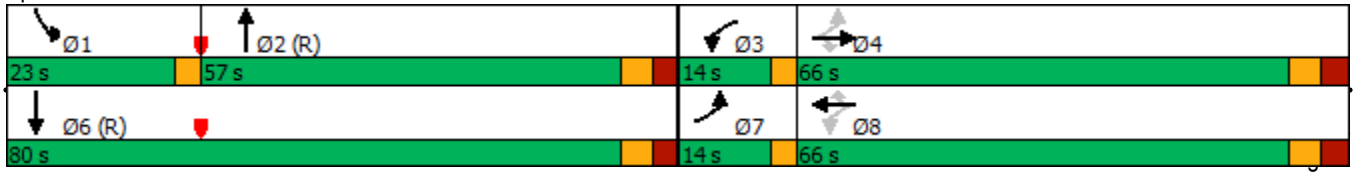
Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 88 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.57
Intersection Signal Delay: 110.2 Intersection LOS: F
Intersection Capacity Utilization 115.7% ICU Level of Service H
Analysis Period (min) 15

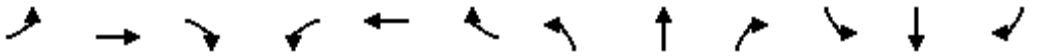
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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





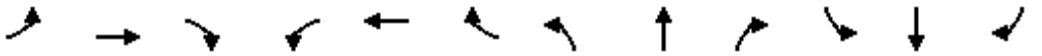
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	230	89	98	306	169	106	902	68	229	1137	126
Future Volume (vph)	57	230	89	98	306	169	106	902	68	229	1137	126
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
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	3232	0	1617	3200	0	1617	3323	0	1617	3311	0
Flt Permitted	0.234			0.391			0.950			0.950		
Satd. Flow (perm)	398	3232	0	665	3200	0	1617	3323	0	1617	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			67			6			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)	62	347	0	107	517	0	115	1054	0	249	1373	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	

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)	39.4	27.5		40.1	29.5		16.6	67.8		36.3	87.4	
Actuated g/C Ratio	0.25	0.17		0.25	0.18		0.10	0.42		0.23	0.55	
v/c Ratio	0.41	0.59		0.51	0.80		0.68	0.75		0.68	0.76	
Control Delay	51.0	57.9		54.9	64.0		75.5	35.6		87.4	22.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	6.0		0.0	0.4	
Total Delay	51.0	57.9		54.9	64.0		75.5	41.7		87.4	23.3	
LOS	D	E		D	E		E	D		F	C	
Approach Delay		56.8			62.5			45.0			33.2	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	15.8	50.8		28.1	78.2		40.3	93.5		79.0	158.3	
Queue Length 95th (m)	27.2	64.6		43.0	94.7		m43.5	m96.5		119.0	148.6	
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)	151	994		208	1006		224	1410		366	1812	
Starvation Cap Reductn	0	0		0	0		0	0		0	108	
Spillback Cap Reductn	0	0		0	2		0	302		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.35		0.51	0.51		0.51	0.95		0.68	0.81	

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: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 44.1 Intersection LOS: D
Intersection Capacity Utilization 78.6% 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



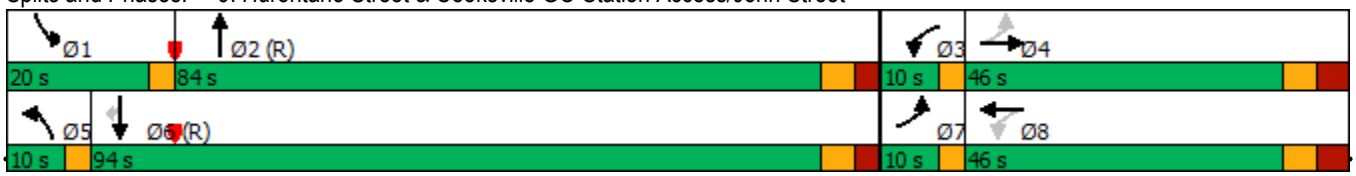
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	5	18	23	5	322	6	1176	39	228	1319	59
Future Volume (vph)	70	5	18	23	5	322	6	1176	39	228	1319	59
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Lane Width (m)	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	1578	0	1617	1534	0	1617	3341	0	1617	3355	1321
Flt Permitted	0.149			0.741			0.950			0.950		
Satd. Flow (perm)	254	1578	0	1261	1534	0	1617	3341	0	1617	3355	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			204			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	25	0	25	355	0	7	1320	0	248	1434	64
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

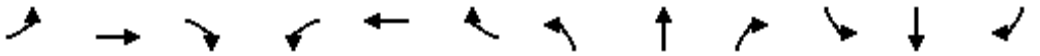
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (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)	36.1	26.9		34.6	22.9		6.3	77.0		32.1	109.9	109.9
Actuated g/C Ratio	0.23	0.17		0.22	0.14		0.04	0.48		0.20	0.69	0.69
v/c Ratio	0.66	0.09		0.09	0.90		0.11	0.82		0.77	0.62	0.07
Control Delay	72.4	23.2		43.4	53.3		96.2	22.3		76.1	17.4	2.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	9.9		0.0	0.1	0.0
Total Delay	72.4	23.2		43.4	53.3		96.2	32.2		76.1	17.6	2.4
LOS	E	C		D	D		F	C		E	B	A
Approach Delay		60.2			52.7			32.6			25.3	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	20.6	1.5		6.6	53.7		2.5	153.8		79.3	122.5	0.0
Queue Length 95th (m)	32.3	10.2		13.7	88.1		m4.3	232.0		#166.1	224.1	5.7
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		290	519		71	1609		324	2305	931
Starvation Cap Reductn	0	0		0	0		0	276		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	165	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.66	0.06		0.09	0.68		0.10	0.99		0.77	0.67	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: 31.9 Intersection LOS: C
Intersection Capacity Utilization 90.2% 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





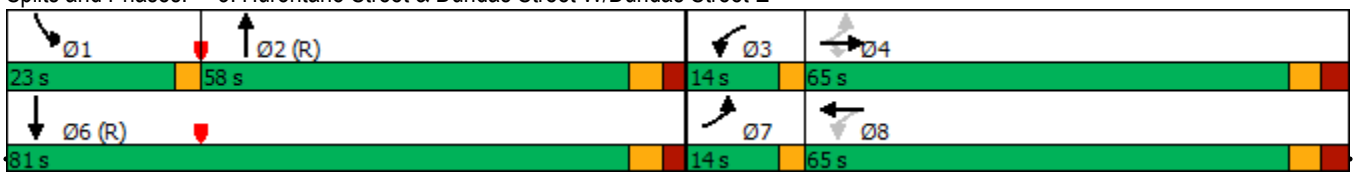
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	748	124	128	955	151	0	844	146	183	911	123
Future Volume (vph)	147	748	124	128	955	151	0	844	146	183	911	123
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
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	3373	0	0	3367	0	1617	3303	0
Flt Permitted	0.069			0.201						0.950		
Satd. Flow (perm)	124	3433	1351	362	3373	0	0	3367	0	1617	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		12			13			12	
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)	160	813	135	139	1202	0	0	1076	0	199	1124	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			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)	14.0	65.0	65.0	14.0	65.0			58.0		23.0	81.0	
Total Split (%)	8.8%	40.6%	40.6%	8.8%	40.6%			36.3%		14.4%	50.6%	
Maximum Green (s)	11.0	57.5	57.5	11.0	57.5			51.0		20.0	74.0	
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	

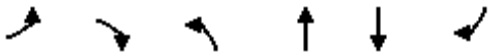
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	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)	73.4	57.9	57.9	72.6	57.5			51.0		20.0	74.0	
Actuated g/C Ratio	0.46	0.36	0.36	0.45	0.36			0.32		0.12	0.46	
v/c Ratio	0.97	0.65	0.25	0.55	0.99			0.99		0.99	0.73	
Control Delay	100.1	45.8	19.0	32.7	72.4			79.0		132.8	37.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Delay	100.1	45.8	19.0	32.7	72.4			79.0		132.8	37.7	
LOS	F	D	B	C	E			E		F	D	
Approach Delay		50.4			68.3			79.0			52.0	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	37.3	120.3	15.1	26.3	208.5			188.0		70.6	105.3	
Queue Length 95th (m)	#87.6	144.3	33.0	41.1	#260.4			#239.0		m#116.9	163.5	
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)	165	1242	532	258	1219			1082		202	1534	
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	0.97	0.65	0.25	0.54	0.99			0.99		0.99	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: 0.99
Intersection Signal Delay: 62.1 Intersection LOS: E
Intersection Capacity Utilization 96.6% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

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

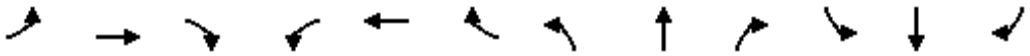




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	94	0	1075	1121	65
Future Volume (Veh/h)	0	94	0	1075	1121	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	102	0	1168	1218	71
Pedestrians						
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	0.71	0.71			
vC, conflicting volume	1838	644	1289			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	90	0	585			
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	87	100			
cM capacity (veh/h)	765	768	698			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	102	584	584	812	477
Volume Left	0	0	0	0	0
Volume Right	102	0	0	0	71
cSH	768	1700	1700	1700	1700
Volume to Capacity	0.13	0.34	0.34	0.48	0.28
Queue Length 95th (m)	3.7	0.0	0.0	0.0	0.0
Control Delay (s)	10.4	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.4	0.0		0.0	
Approach LOS	B				

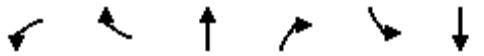
Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	46.5%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	84	306	72	16	409	22	104	26	21	26	17	46
Future Volume (vph)	84	306	72	16	409	22	104	26	21	26	17	46
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)	91	333	78	17	445	24	113	28	23	28	18	50

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	91	411	17	469	164	96
Volume Left (vph)	91	0	17	0	113	28
Volume Right (vph)	0	78	0	24	23	50
Hadj (s)	0.53	-0.07	0.53	0.03	0.09	-0.21
Departure Headway (s)	6.7	6.1	6.7	6.2	6.9	6.8
Degree Utilization, x	0.17	0.70	0.03	0.81	0.31	0.18
Capacity (veh/h)	511	569	514	566	471	462
Control Delay (s)	9.9	20.7	8.7	29.1	13.0	11.3
Approach Delay (s)	18.7		28.4		13.0	11.3
Approach LOS	C		D		B	B

Intersection Summary				
Delay	21.2			
Level of Service	C			
Intersection Capacity Utilization	52.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	30	1042	30	0	1324
Future Volume (Veh/h)	0	30	1042	30	0	1324
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	33	1133	33	0	1439
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	0.73			0.73	
vC, conflicting volume	1869	583			1166	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116	0			482	
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	96			100	
cM capacity (veh/h)	708	790			784	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	33	755	411	720	720
Volume Left	0	0	0	0	0
Volume Right	33	0	33	0	0
cSH	790	1700	1700	1700	1700
Volume to Capacity	0.04	0.44	0.24	0.42	0.42
Queue Length 95th (m)	1.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.8	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.8	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	292	232	40	431	167	34
Future Volume (Veh/h)	292	232	40	431	167	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	298	237	41	440	170	35
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			535		938	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			423		873	291
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		38	95
cM capacity (veh/h)			1018		276	671

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	535	481	205
Volume Left	0	41	170
Volume Right	237	0	35
cSH	1700	1018	306
Volume to Capacity	0.31	0.04	0.67
Queue Length 95th (m)	0.0	1.0	35.8
Control Delay (s)	0.0	1.2	37.6
Lane LOS		A	E
Approach Delay (s)	0.0	1.2	37.6
Approach LOS			E

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		