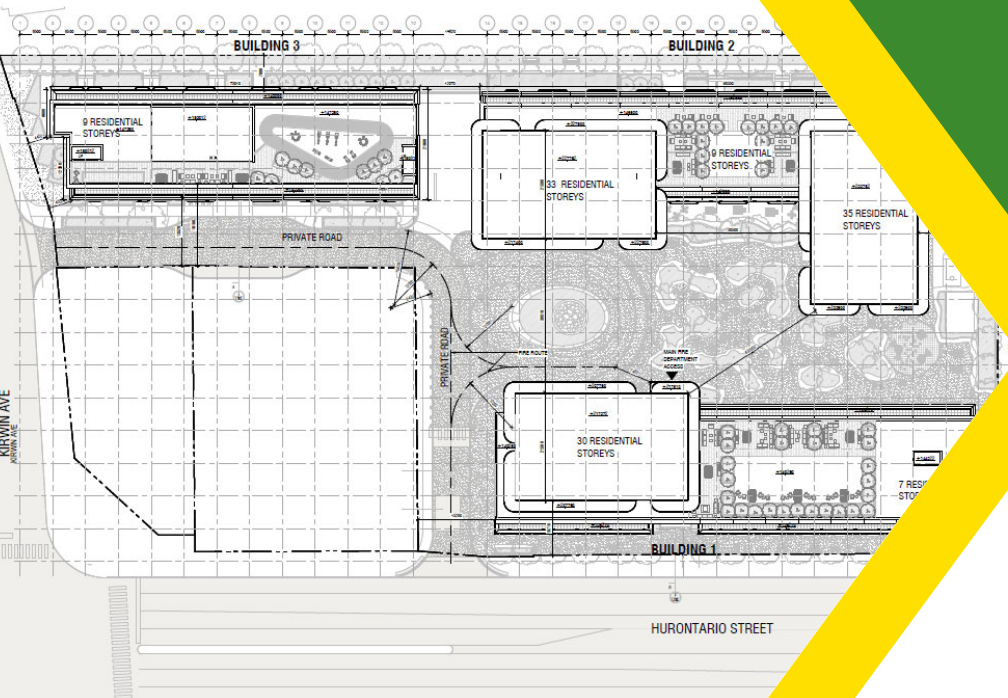


Doracin Terra Strategies Ltd.

3085 Hurontario Street

Transportation Impact Study



3085 Hurontario Street Transportation Impact Study

Prepared for:

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July 2021

PN: 2020-72

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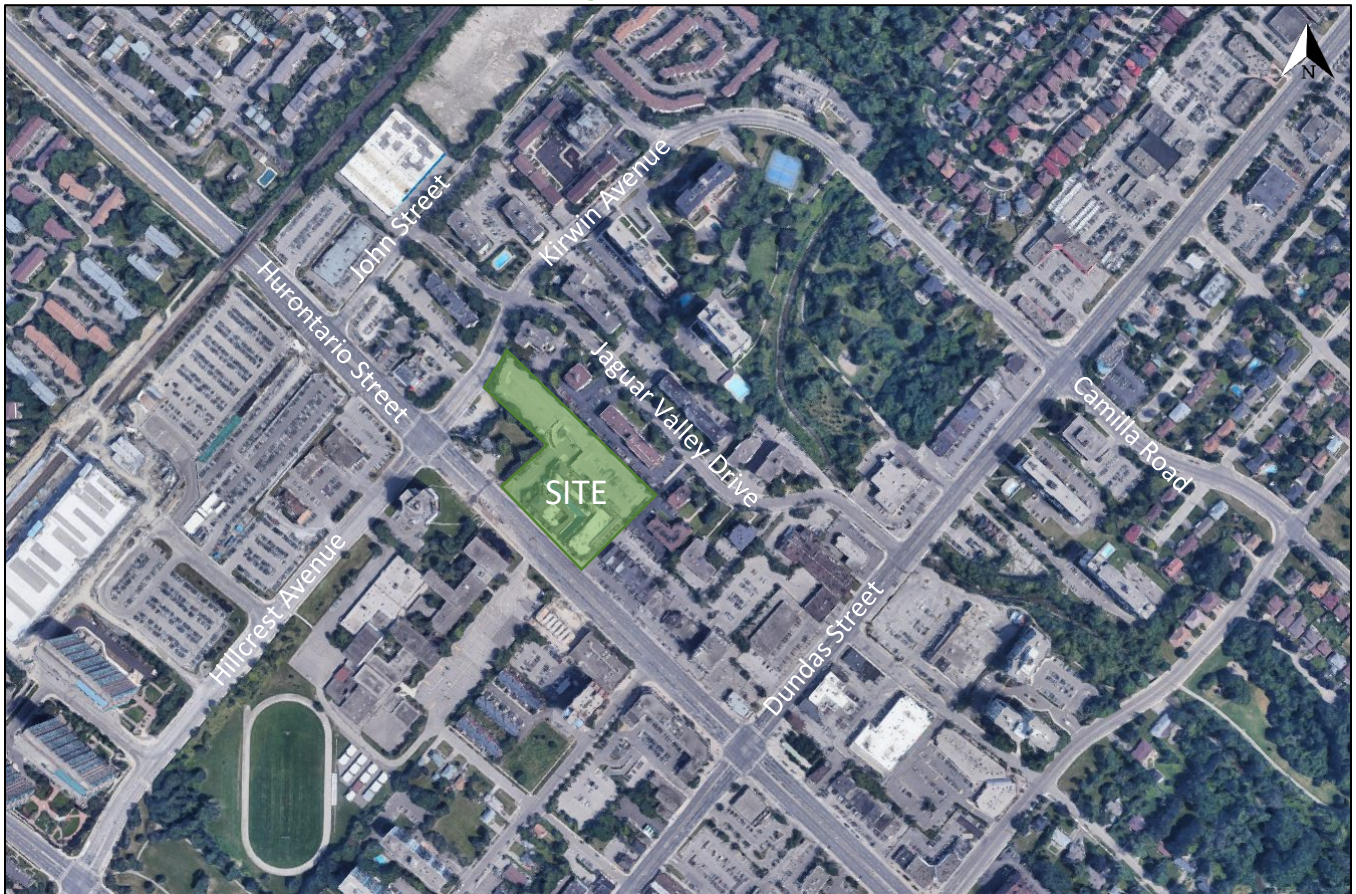
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1 Introduction

This Transportation Impact Study (TIS) has been prepared to support the proposed development at 3085 Hurontario Street in the City of Mississauga. The scope of this TIS has been confirmed with the City of Mississauga transportation staff. E-mail correspondence discussing the scope is included in Appendix A.

The subject property is zoned as a Commercial Zone 4 and currently contains a two-storey retail building and an adjacent two-storey retail parking lot. The property is currently being rezoned to allow Residential High-Density use (RA5 exception zone) and the existing building and structures will be removed as part of this development. The proposed development includes three residential buildings with approximately 1,081 units in total, and 11,044 square feet of mixed-use space. A total of 1,038 underground parking spaces are proposed, of which 108 will be dedicated to visitor parking. Access to the site will be accommodated via Kirwin Avenue (Site Access #1) and Hurontario Street (Site Access #2). As Hurontario Street is a future LRT corridor, the Site Access #2 will be restricted to right-in / right-out only. For the purposes of this TIS, the projected full build-out and occupancy horizon is 2028, and the full build-out plus five years horizon is 2033. Figure 1 illustrates the site context. Figure 2 illustrates the proposed site plan.

Figure 1: Site Context



JAGUAR VALLEY DR

JAGUAR VALLEY DR

HURONTARIO STREET

HURONTARIO STREET

HILLCREST AVE

KIRWIN AVE
KIRWIN AVE

BUILDING 3

BUILDING 2

BUILDING 1

9 RESIDENTIAL
STOREYS

33 RESIDENTIAL
STOREYS

9 RESIDENTIAL
STOREYS

35 RESIDENTIAL
STOREYS

30 RESIDENTIAL
STOREYS

7 RESIDENTIAL
STOREYS

PRIVATE ROAD

PRIVATE ROAD

FIRE ROUTE

MAIN FIRE
DEPARTMENT
ACCESS

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**diamond
schmitt**

3085 HURONTARIO ST

3085 HURONTARIO STREET
MISSISSAUGA, ONTARIO

SITE PLAN

Scale: 1" = 300'
Project No: 2010116
Date: Double-click here to enter Project Start Date

A011

2 Existing Conditions

2.1 Area Road Network

Hurontario Street

Hurontario Street is a City of Mississauga arterial road with a six-lane urban cross-section. The City of Mississauga Official Plan protects a 35-metre right-of-way for this road. Sidewalks are provided on both sides of the road and left turn lanes are included at major intersections. A 50 km/h posted speed limit applies south of Hanson Road YMCA Child Care Centre. North of this location, the posted speed limit is 60 km/h. Hurontario Street is a future LRT corridor, with trackworks and guideway construction anticipated to start in 2021 and the substantial completion anticipated in 2024. The future cross-section of Hurontario Street is discussed in detail in Section 3.

Central Parkway

Central Parkway is a City of Mississauga major collector road with a four-lane urban cross-section. The City of Mississauga Official Plan protects a 35-metre right-of-way for this road. Boulevard-separated sidewalks are provided on both sides of the road and left turn lanes are included at major intersections. A 50 km/h posted speed limit applies.

Dundas Street

Dundas Street is a City of Mississauga arterial road with a two-lane urban cross-section. The City of Mississauga Official Plan protects a 35-metre right-of-way for this road. Sidewalks are provided on both sides of the road and left turn lanes are included at major intersections. A 50 km/h posted speed limit applies. Dundas Street is a future BRT corridor, with proposed median bus lanes in the vicinity of the subject development. The future cross-section of Dundas Street is discussed in detail in Section 3.

Kirwin Avenue

Kirwin Avenue is a City of Mississauga major collector road with a two-lane urban cross-section. The City of Mississauga Official Plan protects a 26-metre right-of-way for this road. Sidewalks and curbside bike lanes are provided on both sides of the road and left turn lanes are included at major intersections. A 50 km/h posted speed limit applies.

Hillcrest Avenue

Hillcrest Avenue is a City of Mississauga major collector road with a four-lane urban cross-section. One of the Cooksville GO Station accesses is located on Hillcrest Avenue. The City of Mississauga Official Plan protects a 26-metre right-of-way for this road. Sidewalks are provided on both sides of the road and left turn lanes are included at major intersections. A 50 km/h posted speed limit applies.

John Street

John Street is a City of Mississauga local road with a two-lane urban cross-section and auxiliary left turn lanes at Hurontario Street intersection. This road was extended east of Hurontario Street in 2020 and connects to the Cooksville Mobility Hub, with boulevard separated sidewalks on south side, and a boulevard-separated multi-use trail on the north side. East of Hurontario Street John Street includes sidewalks on both sides with a boulevard on the north side. The right-of-way of this road is measured to be 17.5 metres, east of Hurontario Street, and 30 metres, west of Hurontario Street. The unposted speed limit is assumed to be 50 km/h.

Jaguar Valley Drive

Jaguar Valley Drive is a City of Mississauga local road with a two-lane urban cross-section. The right-of-way of this road is measured to be 17.5 metres. Boulevard-separated sidewalks are provided on both sides of the road and on-street parking is allowed along the east side. A 50 km/h posted speed limit applies.

2.2 Existing Intersections

A description and accompanying aerial photographs of the existing Study Area intersections can be found below.

Hurontario Street at Central Parkway

Hurontario Street at Central Parkway is a signalized intersection with auxiliary left-turn lanes on all approaches and right-turn lanes on eastbound and westbound approach. Crosswalks and pedestrian signal heads are present on all legs with pedestrian call buttons on north and south legs. No turn restrictions were noted.



Hurontario Street at Hillcrest Avenue / Kirwin Avenue

Hurontario Street at Hillcrest Avenue / Kirwin Avenue is a signalized intersection with auxiliary left-turn lanes on all approaches and right-turn lanes on eastbound and southbound approaches. Crosswalks and pedestrian signal heads are present on all legs with pedestrian call buttons on north and south legs. No turn restrictions were noted.



Hurontario Street at Dundas Street

Hurontario Street at Dundas Street is a signalized intersection with auxiliary left-turn lanes on all approaches and a right-turn lane on eastbound approach. Crosswalks, pedestrian signal heads, and pedestrian call buttons are present on all legs. No turn restrictions were noted.



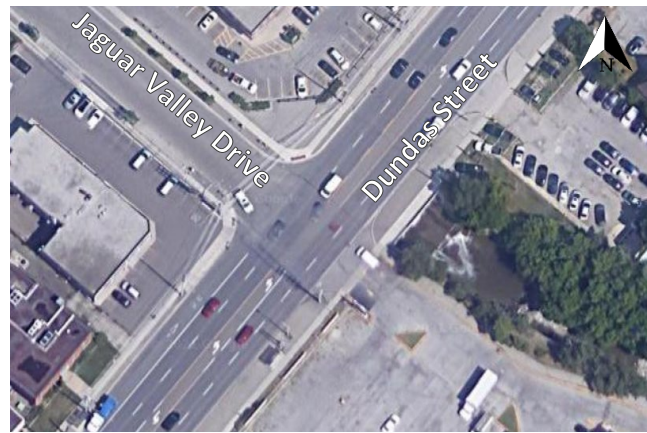
Kirwin Avenue at Jaguar Valley Drive

The intersection of Kirwin Avenue at Jaguar Valley Drive is an all-way stop-controlled intersection with shared movement lanes on northbound and southbound approach and auxiliary left-turn lanes at eastbound and westbound approaches. No turn restrictions were noted.



Dundas Street at Jaguar Valley Drive

Dundas Street at Jaguar Valley Drive is an unsignalized intersection with a stop control on the north leg. The south leg of this intersection is an access to 60 Dundas Commercial Plaza. Westbound and eastbound left-turn lanes are provided at this intersection. No turn restrictions were noted.

*Dundas Street at Kirwin Avenue / Camilla Road*

Dundas Street at Kirwin Avenue / Camilla Road is a signalized intersection with auxiliary left-turn lanes on all approaches and a right-turn lane on eastbound and westbound approach. Crosswalks, pedestrian signal heads, and pedestrian call buttons are present on all legs. No turn restrictions were noted.

*Hurontario Street at John Street*

Hurontario Street at John Street is a signalized intersection with auxiliary left-turn lanes on all approaches and a right-turn lane on southbound approach. Crosswalks and pedestrian signal heads are present on all legs with pedestrian call buttons on north and south legs. Southbound U-turns are prohibited at this intersection. Up-to-date aerial imagery of Hurontario Street at John Street is not yet available as this intersection was upgraded in 2020 to connect to Cooksville GO station via the west leg.

2.2.1 Existing Driveways

As the proposed development is located in a Mainstreet Commercial Zone, multiple driveways are located in the vicinity of the subject site. The closest driveway to the north of 3085 Hurontario Street is located approximately 45 metres south of Hurontario Street at Hillcrest Avenue / Kirwin Avenue. Immediately south of the subject site, there is also a driveway to a neighboring property.

2.3 Cycling and Pedestrian Facilities

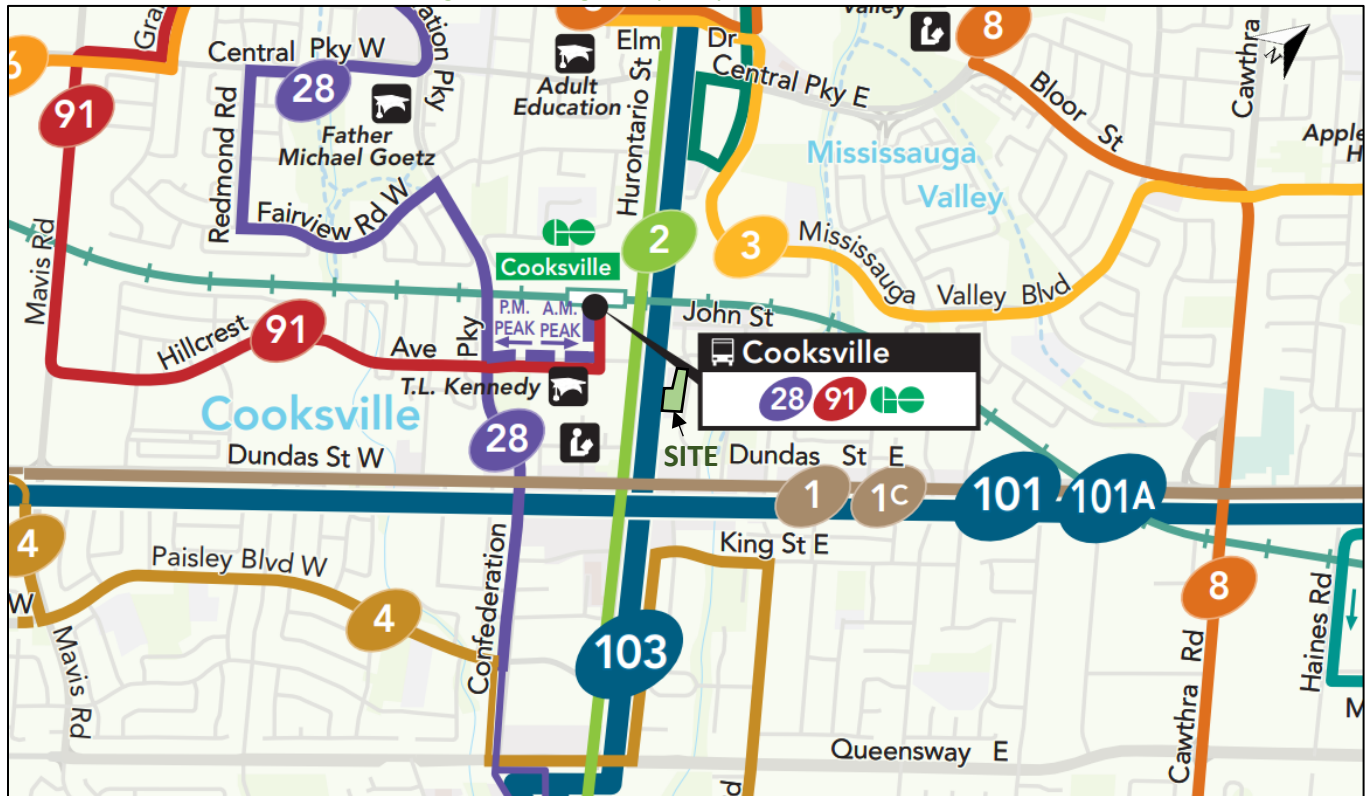
Sidewalks are located along both sides of all roads in the Study Area, with boulevards present along Jaguar Valley Drive and Central Parkway. Curbside bike lanes are provided along Kirwin Avenue. Additionally, raised segregated bike lanes on both sides of the road have been identified in the proposed Hurontario LRT and Dundas BRT cross-sections in the vicinity of the subject development.

2.4 Transit

As of January of 2021, MiWay routes within the Study Area include Route #2, and Express Route #103 along Hurontario Street, and Route #1, Route #1C, Express Route #101, and Express Route #101A along Dundas Street. Transit destinations along Hurontario Street include Port Credit GO Station, Trillium Hospital, City Centre, Highway 407 Park and Ride, and Brampton Gateway Terminal. Kipling Subway and GO Station, Erindale Station, University

of Toronto Mississauga, and South Common Centre are some of the MiWay stops along Dundas Street. The existing Study Area MiWay service is presented in Figure 3.

Figure 3: Existing MiWay Study Area Transit Service



Source: <https://web.mississauga.ca/> Accessed: January 19, 2020

Further, the proposed development is located within 400 metre radius from Cookville GO Station, which provides access to Milton Rail Line (Milton to Union), and multiple inter-regional Bus Routes.

2.5 Existing Peak Hour Travel Demand

To understand the existing AM and PM peak hour traffic volumes, turning movement counts (TMC) for the Study Area intersections have been acquired from the City of Mississauga for both the AM and PM peak hours. As the TMCs collected by the City were mostly three to seven years old, and the existing counts could not be collected due to abnormal traffic conditions during the COVID-19 pandemic, the available data was supplemented by TMCs from Traffic Impact Studies of nearby developments. Counts from 2019 were available at Hurontario Street and Central Parkway, as well as Hurontario Street and Dundas Street in the TIS for the 89-95 and 89-60 Dundas Street West development prepared by GHD in 2020, and in the TIS for 1 Fairview Road East development prepared by LEA Consulting in 2020. To account for changes in traffic between TMCs collected by the City of Mississauga, and the TMCs available from 2019, traffic volumes at Hurontario Street and Kirwin Avenue, Hurontario Street at John Street, and Dundas Street at Jaguar Valley Drive were balanced to align with the 2019 counts at Hurontario Street at Central Parkway, and Hurontario Street at Dundas Street. Table 1 summarizes the date and data source of the turning movement counts used as part of this study. Turning movement count data is included in Appendix B.

Table 1: Turning Movement Count Data Dates and Data Source

Intersection	Count Date	Data Source
Hurontario Street at Central Parkway	November 19, 2019	89-95 Dundas Street TIS
Hurontario Street at Hillcrest Avenue / Kirwin Avenue	November 22, 2016	City of Mississauga
Hurontario Street at Dundas Street	December 18, 2019	1 Fairview Road TIS
Kirwin Avenue at Jaguar Valley Drive	June 6, 2005	City of Mississauga
Dundas Street at Jaguar Valley Drive	June 19, 2018	City of Mississauga
Hurontario Street at John Street	May 5, 2015	City of Mississauga
Dundas Street at Kirwin Avenue / Camilla Road	April 12, 2016	86-90 Dundas Street TIS

Further, as John Street access to Cooksville GO was opened in 2020, the west leg of this intersection was not captured within the available turning movement counts. Therefore, trips in and out of Cooksville GO via John Street were estimated using existing turning movements at Hurontario Street and Hillcrest Avenue intersection. The effect of the recent increase in parking stalls at Cooksville GO on the number of trips in and out of the mobility hub was also accounted for through this exercise. These estimated volumes were applied to the Study Area network starting in the existing horizon to ensure a consistently conservative approach throughout all analysis scenarios. Figure 4 shows the balanced existing traffic volumes, including the estimated trips in and out of the Cooksville GO via John Street.

Additionally, the collected intersection counts also provided existing pedestrian demands at the six Study Area intersections for both AM and PM peak periods. Figure 5 illustrates the existing pedestrian volumes. The cyclist volumes in the Study Area were only available at the Hurontario Street and Central Parkway intersection. At all other intersections, five peak hour cyclist trips in each direction were assumed. Figure 6 illustrates the cyclist volumes carried forward in the operational analysis.

Figure 4: Existing Traffic Volumes

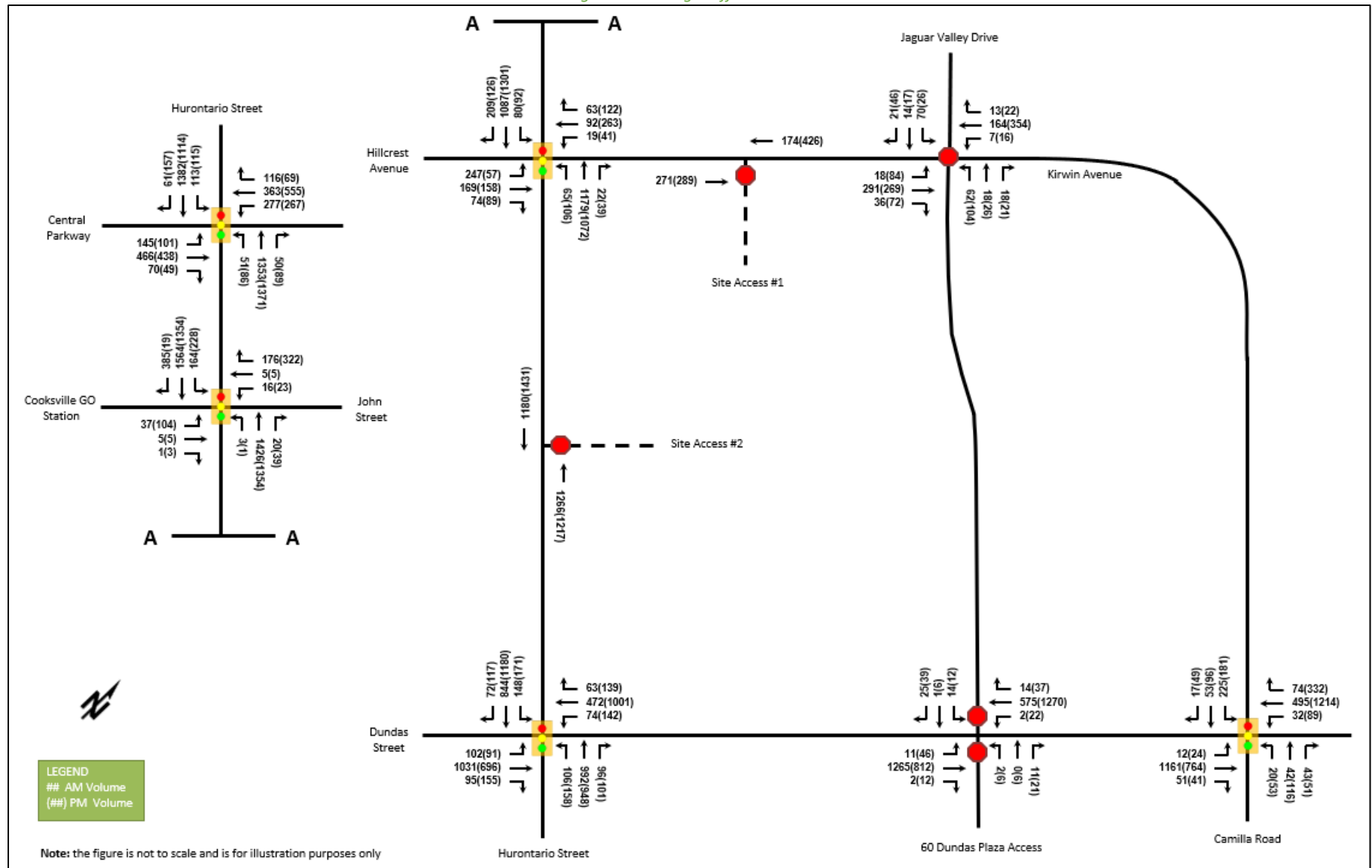


Figure 5: Existing Pedestrian Volumes

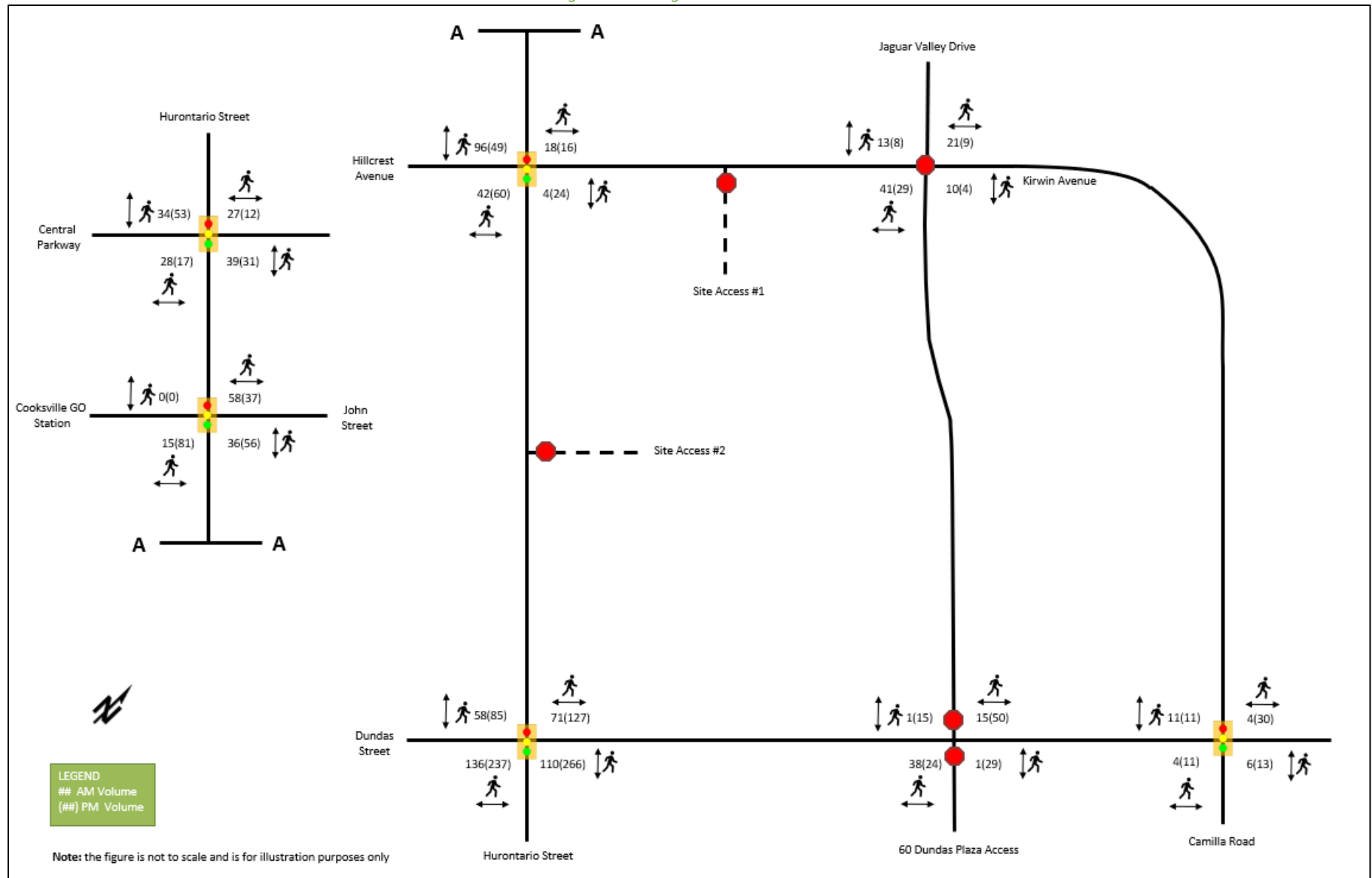
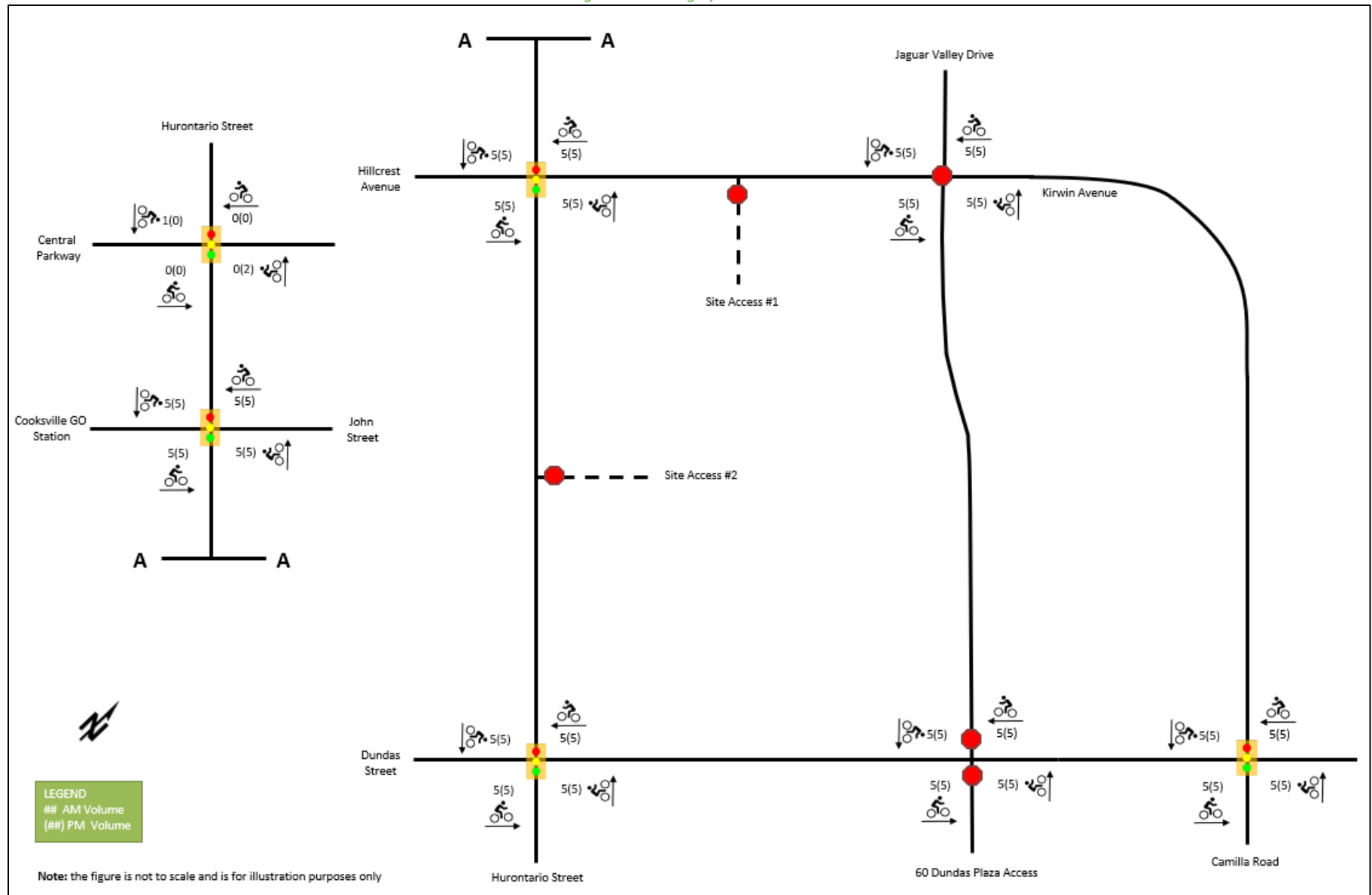


Figure 6: Existing Cyclist Volumes



3 Future Background Conditions

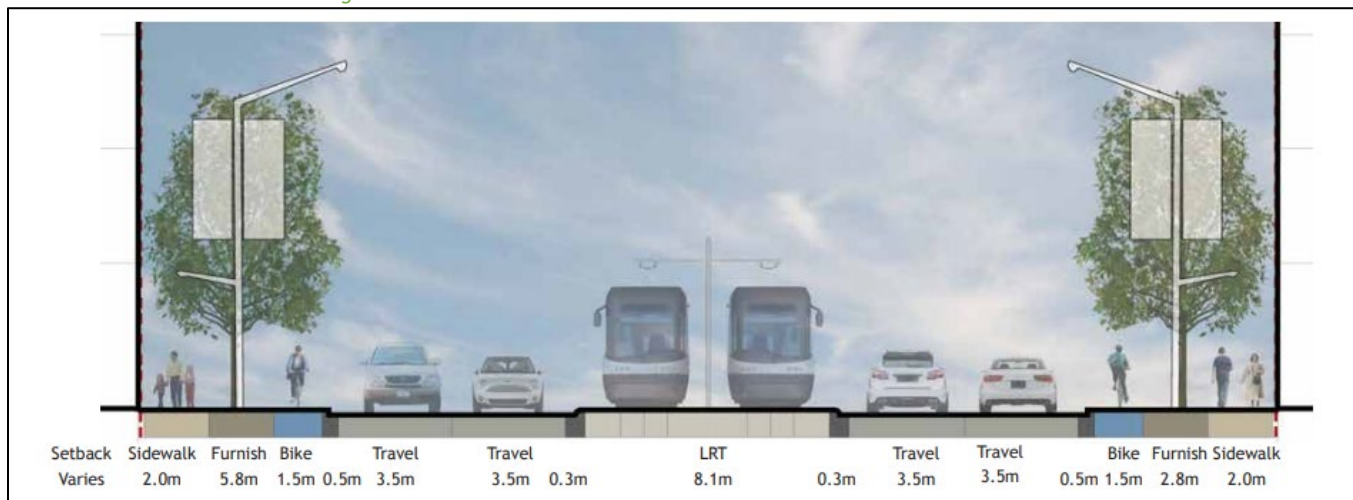
3.1 Planned Conditions

3.1.1 Hurontario Street LRT

The subject development fronts the future Hurontario LRT Corridor, which will enhance mobility and transit experience along Hurontario Street. The completion of the LRT is expected in fall of 2024. The closest LRT stop to the proposed development will be located in Downtown Cooksville to the north and at Dundas Street to the south. Figure 7 and Figure 8 show the proposed Hurontario Street cross-sections at Downtown Cooksville and at Dundas Street and are excerpt from Hurontario LRT Preliminary Design Environmental Project Report. The Hurontario Street at Downtown Cooksville cross-section includes the following elements, from left(west) to right(east):

- 2 metre sidewalk
- 5.8 metre planting strip and furnishings
- 1.5 metre segregated bike lane
- 0.5 metre buffer
- Two 3.5 metre drive lanes
- 0.3 metre buffer
- 3.0 metre median (left turn lane at intersections)
- 8.1 metre LRT tracks and platform
- 3.0 metre median (left turn lane at intersections)
- 0.3 metre buffer
- Two 3.5 metre drive lanes
- 0.5 metre buffer
- 1.5 metre segregated bike lane
- 2.8 metre planting strip and furnishings
- 2.0 metre sidewalk

Figure 7: Future Hurontario Street Cross-Section at Downtown Cooksville



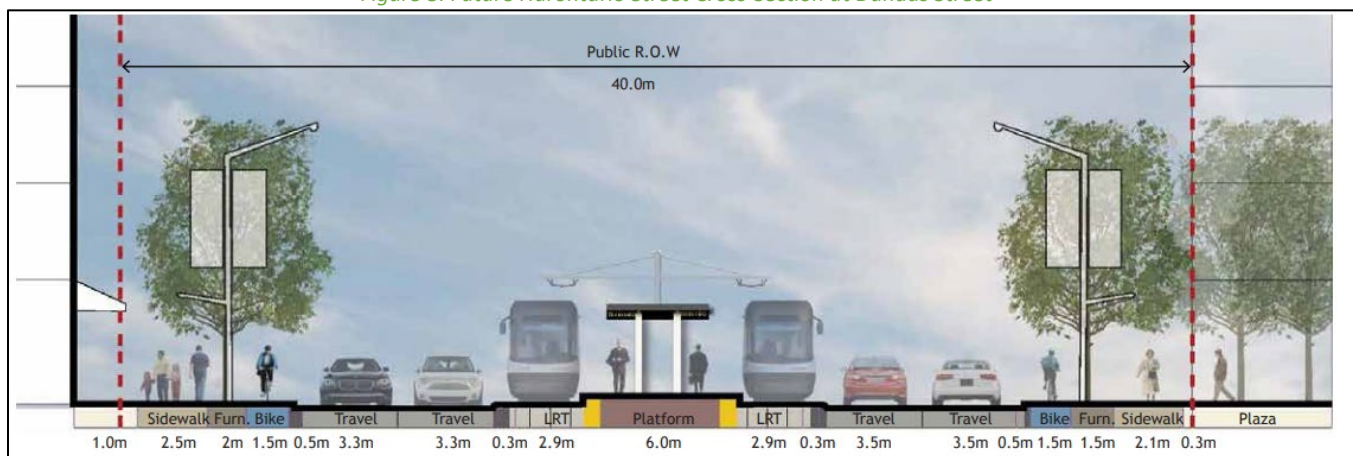
Source: Hurontario-Main Project Preliminary Design/TPAP Environmental Project Report (June 2014)

It should be noted that the plan drawings in the 2014 Environmental Report also show an auxiliary northbound left-turn lane, and southbound right-turn lane, which will facilitate vehicular movement to the Cooksville GO Station. Intersection of Hurontario Street at Hillcrest Avenue / Kirwin Avenue and the adjacent road segment to the north is identified as a pedestrian priority area. The plan drawings of future Hurontario Street in vicinity of the proposed development can be seen in Appendix C.

The Hurontario Street segment between Dundas Street and King Street is also identified as a pedestrian priority zone. The Hurontario Street at Dundas Street cross-section includes the following elements, from left(west) to right(east):

- 1 metre buffer
- 2.5 metre sidewalk
- 2 metre planting strip and furnishings
- 1.5 metre segregated bike lane
- 0.5 metre buffer
- Two 3.5 metre drive lanes
- 0.3 metre buffer
- 3.0 metre median (left turn lane at intersections)
- 11.8 metre LRT tracks and platform
- 3.0 metre median (left turn lane at intersections)
- 0.3 metre buffer
- Two 3.5 metre drive lanes
- 0.5 metre buffer
- 1.5 metre segregated bike lane
- 1.5 metre planting strip and furnishings
- 2.1 metre sidewalk
- 0.3 metre buffer

Figure 8: Future Hurontario Street Cross-Section at Dundas Street



Source: Hurontario-Main Project Preliminary Design/TPAP Environmental Project Report (June 2014)

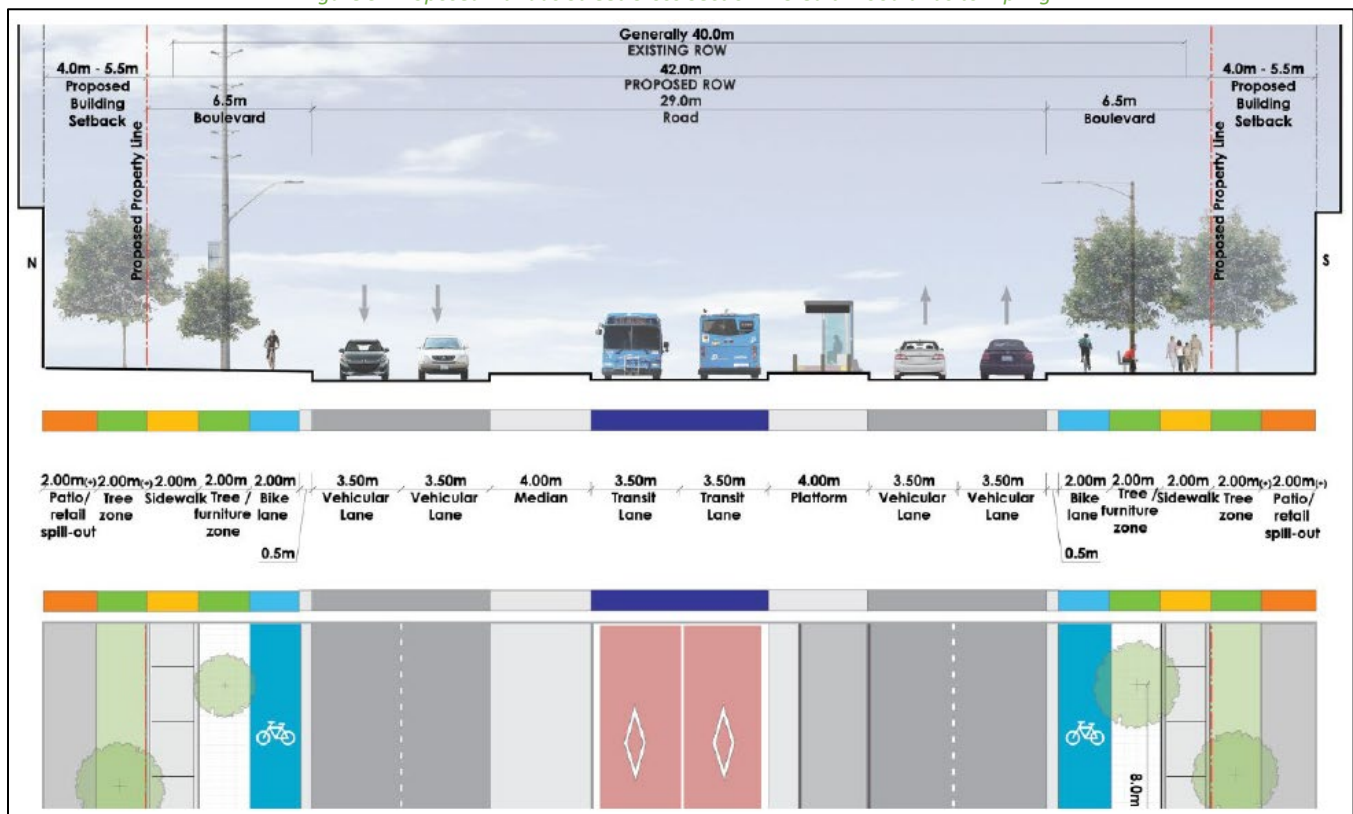
At Hurontario Street at Dundas Street intersection, and auxiliary southbound left-turn lane is shown on the plan drawings in the 2014 Environmental Report. The plan drawings of future Hurontario Street in vicinity of the proposed development can be seen in Appendix C.

3.1.2 Dundas Street BRT

Dundas Street is envisioned as an interregional BRT corridor, and will run between Kipling TTC station to the east, and Hamilton Waterdown terminal to the west. The BRT operations are expected to begin in 2025. The intersection of Dundas Street and Hurontario Street is outlined as one of the 6 key transfer nodes along the proposed BRT corridor within the Metrolinx Dundas BRT Initial Business Case (2020). Figure 9 shows the proposed Dundas Street cross-section. Within the Study Area, a median BRT configuration is proposed and includes the following elements, from left(west) to right(east):

- 2 metre sidewalk
- 2 metre tree/furniture zone
- 2 metre bike lane
- 0.5 metre buffer
- Two 3.5 metre drive lanes
- 4.0 metre median
- Two 3.5 metre BRT lanes
- 4.0 metre platform
- Two 3.5 metre drive lanes
- 0.5 metre buffer
- 2.0 metre bike lane
- 2.0 metre tree/furniture zone
- 2.0 metre sidewalk

Figure 9: Proposed Dundas Street Cross Section – Credit Woodlands to Kipling



Source: Halton Region Transportation Master Plan (2011)

It should be noted that along some Dundas Street segments in Mississauga, the proposed cross section will be altered because of a limited ROW. One such segment may be in the vicinity of the subject development as the existing ROW indicated as part of Metrolinx Dundas BRT Initial Business case is 5 metres larger than what the City of Mississauga Official Plan protects for.

3.1.3 Improved Cooksville GO

As part of the preliminary MTSA Report published by Region of Peel in 2020 the proposed development lies within the Dundas MTSA boundary, and is adjacent to the Cooksville GO MTSA boundary. The walking distances from 3085 Hurontario Street to the future Hurontario LRT stops, Dundas BRT stops, and the existing Cooksville Mobility Hub are all under 400 metres. The Cooksville GO station has been upgraded in 2020 in anticipation of increased

transit ridership as a result of Cooksville GO becoming a major transfer point between GO rail, the proposed Hurontario LRT, and the proposed Dundas BRT. The station upgrades include 6 additional bus bays, 750 new parking stalls, a more convenient access from the parking garage to the train platforms, public plaza, new passenger pick-up and drop-off area, new indoor waiting area, and an additional connection to Hurontario Street via the west leg of John Street. Additionally, new connections will be constructed in future to accommodate convenient transfers between Cooksville GO and Hurontario LRT line. The anticipated increase in auto trips to and from Cooksville GO has been accounted for in the analysis herein by increasing historic auto trips generated by the transit station by 43%. This number was derived by calculating the percent equivalent of additional 750 parking stalls provided at Cooksville GO in 2020. A more detailed description of traffic volume assumptions at John Street and Hurontario Street intersection as well as Hillcrest Avenue at Hurontario Street intersection is provided in Section 2.5.

3.2 Other Study Area Developments

Several development applications were available for the adjacent properties as listed on the City's Development Application webpage. The anticipated trip generation figures for these developments can be seen in Appendix D.

1 Fairview Road East

The proposed development at 1 Fairview Road East includes a 34-storey building with 485 residential units and 270 square metres of retail space. The tower is anticipated to be built-out in 2024 and will generate 107 AM, and 123 PM two-way peak hour auto trips. A total of 531 auto parking spaces, and 381 bicycle parking spaces will be provided as part of this development (LEA, 2020).

3575 Kaneff Crescent

The proposed development at 3575 Kaneff Crescent includes a 29-storey building with 282 residential units with an anticipated build-out in 2023. The development will generate 95 AM, and 83 PM two-way peak hour auto trips, and a total of 173 auto parking spaces, and 56 bicycle parking spaces will be provided (NexTrans, 2020).

86-90 Dundas Street East

The proposed development at 86-90 Dundas Street West includes a 334-unit condominium with 324 square metres of ground-floor retail space. The anticipated build-out year is 2021. The proposed land uses will generate 76 AM, and 124 PM two-way peak hour auto trips. A total of 349 auto parking spaces, and 228 bicycle parking spaces will be provided as part of this development (GHD, 2019).

89-95 Dundas Street West

The proposed development at 89-95 Dundas Street West includes a 405-unit condominium with 5,490 square metres of ground-floor retail space. The anticipated build-out year is 2021. The proposed land uses will generate 98 AM, and 160 PM two-way peak hour auto trips. A total of 432 auto parking spaces, and 347 bicycle parking spaces will be provided as part of this development (GHD, 2020).

2512, 2522, 2532 Argyle Road

The proposed development at 2512 Argyle Road includes four blocks of stacked townhouses, with a total of 101 residential units. The anticipated build-out year is 2023. The proposed land uses will generate 27 AM, and 34 PM two-way peak hour auto trips. A total of 153 auto parking spaces, and 62 bicycle spaces will be provided as part of this development (NexTrans, 2019).

2570-2590 Argyle Road

The proposed development at 2570-2590 Argyle Road includes two apartment buildings with a total of 253 residential units. The proposed land uses will generate 180 AM, and 190 PM two-way peak hour auto trips. A total of 322 auto parking spaces, and 216 bicycle parking spaces will be provided as part of this development (BA Group,

2020). As the anticipated build-out year of this development is not specified as part of the Urban Considerations Report prepared by BA Group, it is assumed that the development will be complete before 2028.

3420 & 3442 Hurontario Street

The proposed development at 3420 and 3443 Hurontario Street includes 680 residential units and 2,000 square metres of retail space. The anticipated build-out year is 2025. The proposed land uses will generate 174 AM, and 201 PM two-way peak hour auto trips. A total of 761 auto parking spaces will be provided as part of this development (Crozier, 2020).

3.3 Background Growth

The growth rates used in this study were obtained from the City of Mississauga Transportation Planning Section and are specific to the studied road segments, peak periods, and horizon years. The growth rates between 2021 and 2031 account for the expected reduction in traffic as a result of Hurontario LRT implementation, and the reduction from three to two lanes in each direction along Hurontario Street. Table 2 summarizes the projected growth rates for the Study Area.

Table 2: Compounded Annual Growth Rates

Roadway	Peak Period	CAGR from Existing to 2031		CAGR from 2031 to 2033	
		NB/EB	SB/WB	NB/EB	SB/WB
Hurontario Street	AM	-2.0%	-1.0%	1.0%	0.5%
	PM	-1.0%	-1.5%	1.0%	0.5%
Dundas Street	AM	0.5%	1.0%	0.0%	1.0%
	PM	1.0%	0.5%	1.0%	0.5%

3.3.1 Future Background Traffic Volumes

Using the background growth rates above, the turning movement volumes were grown to reflect the 2028, and 2033 Future Background traffic volumes. Figure 10 illustrates the 2028 Future Background traffic volumes. Figure 11 illustrates the 2033 Future Background traffic volumes.

Figure 10: 2028 Future Background Traffic Volumes

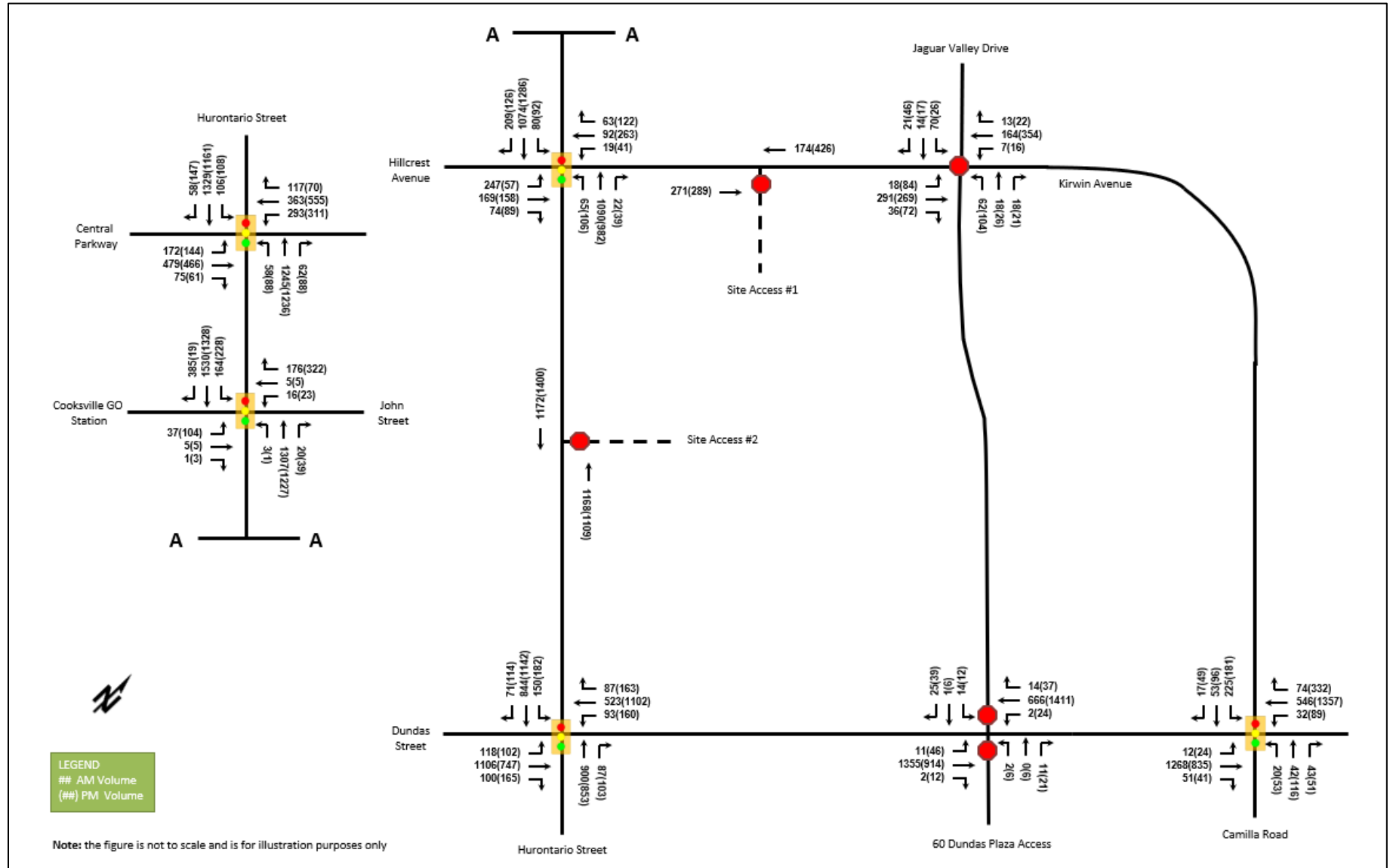
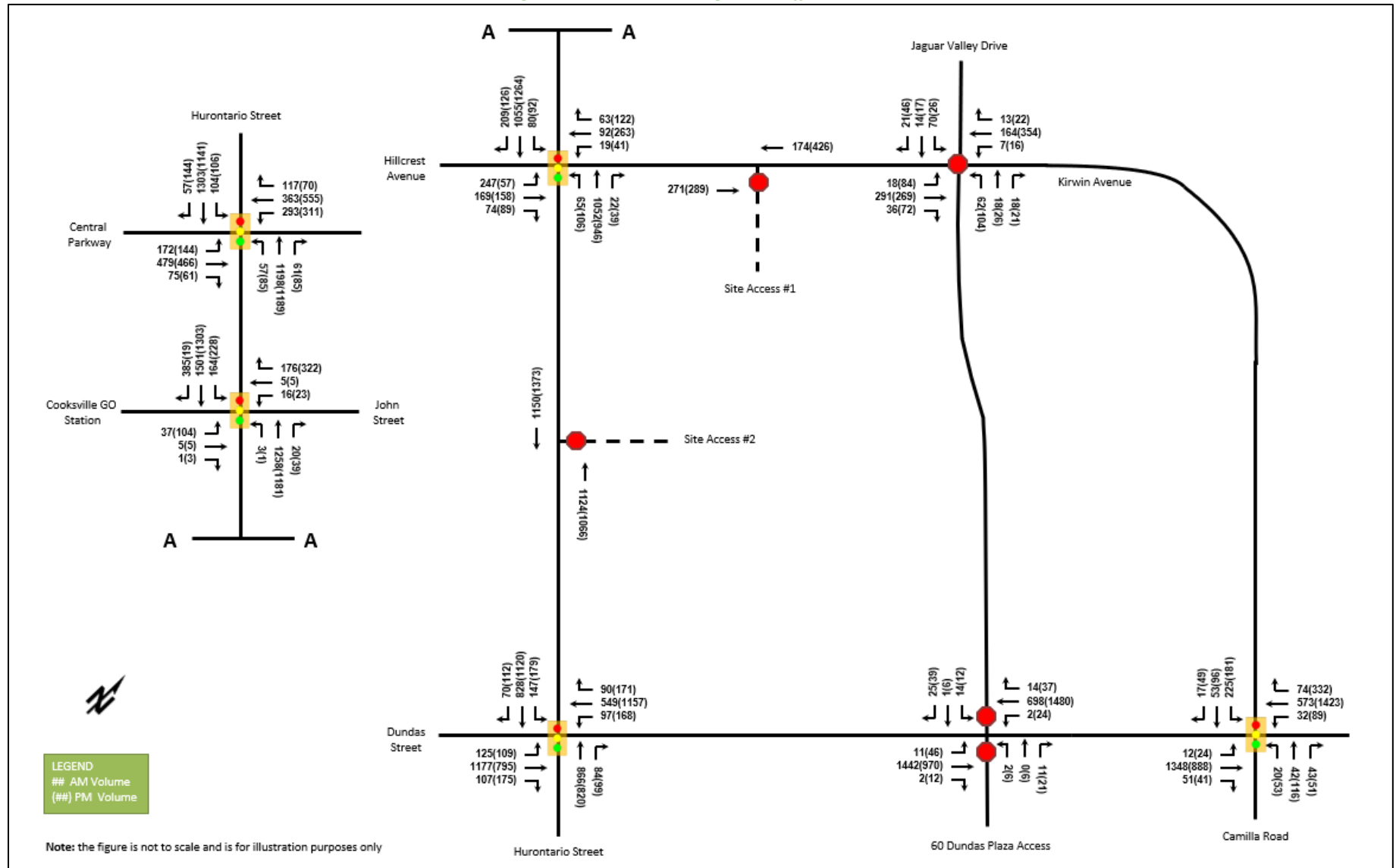


Figure 11: 2033 Future Background Traffic Volumes



4 Forecasting

4.1 Trip Generation and Mode Shares

This TIA has been prepared using the fitted curve vehicle trip rates from the ITE Trip Generation Manual (10th Edition) for the residential components, and the average vehicle trip rates for the mixed-use component of the proposed development. To ensure a conservative analysis, a Shopping Centre (LUC 820) category was used to estimate the mixed-use trip generation. The person trip generation was determined by applying a factor of 1.28 to the ITE rates. Table 3 summarizes the person trip rates for the proposed land uses.

Table 3: Trip Generation Person Trip Rates

Dwelling Type	Land Use Code	Peak Hour	Vehicle Trip Rate	Person Trip Rates	Estimation Method
Multifamily Housing (High-Rise)	222	AM	0.29	0.37	Fitted Curve
		PM	0.35	0.45	Fitted Curve
Shopping Centre	820	AM	0.94	1.20	Average
		PM	3.81	4.88	Average

Using the above Person Trip rates, the total person trip generation has been estimated. Table 4 below illustrates the total person trip generation by land use.

Table 4: Total Person Trip Generation

Land Use	Units / GFA (sq. ft.)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise)	1,081	96	305	401	298	190	488
Shopping Centre	11,044	8	5	13	26	28	54
Total Person Trips		104	310	414	324	218	542

The existing mode shares in the Study Area were obtained from the 2016 Transportation Tomorrow Survey (TTS) Summary by Ward for Regional Municipality of Peel. The existing mode shares were adjusted to reflect future travel behaviour in Ward 7 as transit accessibility and level of service will improve drastically between 2016 and the expected build-out horizon of the proposed development, including improvements to Cooksville GO, as well as Hurontario LRT, and Dundas BRT implementation. The adjustment was made using the Region of Peel 50-50 mode share target, in combination with the Study Area transit characteristics and engineering judgment. The Region of Peel Long Range Transportation plan sets out a sustainable mode share target of 50% for 2041 horizon. This is an average mode share target, which encompasses higher auto dependency in some areas, and good transit service and accessibility in others. MTSA areas, such as Cooksville, are planned to have a sustainable mode share above 50% to offset higher auto dependency in rural areas of the Region. Further, although the Region of Peel mode share target is set out for 2041, it is reasonable to assume that the mode share shift will happen more rapidly in Cooksville, as the surrounding transit network is expected to be built to its ultimate configuration by 2025. Thus, the sustainable mode share in Ward 7 is likely to be above 50% at the time of 3085 Hurontario build-out in 2028. However, to remain conservative, a 50% sustainable mode share will be used in the analysis herein, including 10% auto passengers, 25% transit users, and 15% non-auto trip makers. Table 5 summarizes the 2016 TTS and the estimated 2028 mode shares for Ward 7 in City of Mississauga. Table 6 summarizes the site trip generation by mode.

Table 5: Mode Shares

Travel Mode	2016 Mode Shares (TTS)	2028 Mode Shares
Auto Driver	65%	50%
Auto Passenger	10%	10%
Transit	15%	25%
Non-Auto	10%	15%
Total	100%	100%

Table 6: Trip Generation by Mode

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto Driver	50%	52	156	208	162	109	271
Auto Passenger	10%	11	32	41	33	22	54
Transit	25%	26	77	103	82	55	136
Non-Auto Modes	15%	15	47	62	49	33	81
Total	100%	104	310	414	324	218	542

As shown above, 414 AM and 542 PM new peak hour two-way person trips are projected as a result of the proposed development, out of which 208 AM and 271 PM trips are net new peak hour two-way vehicle trips.

4.2 Trip Distribution

Using the 2016 TTS, the travel patterns in the traffic analysis zone 3862 have been determined. Table 7 below summarizes the trip distribution in the vicinity of 3085 Hurontario Street.

Table 7: 2016 TTS Trip Distribution

To/From	Percent of Trips
North	20%
South	20%
East	35%
West	25%
Total	100%

4.3 Trip Assignment and Future Total Travel Demands

Using the distribution outlined above, existing turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the Study Area road network.

Figure 12 illustrates the new site generated volumes. The site generated traffic has been combined with the 2028 and 2033 Future Background traffic volumes to estimate the Future Total traffic volumes. The 2028 and 2033 Total Future traffic volumes are illustrated in Figure 13 and Figure 14, respectively.

Figure 12: New Site Generated Auto Volumes

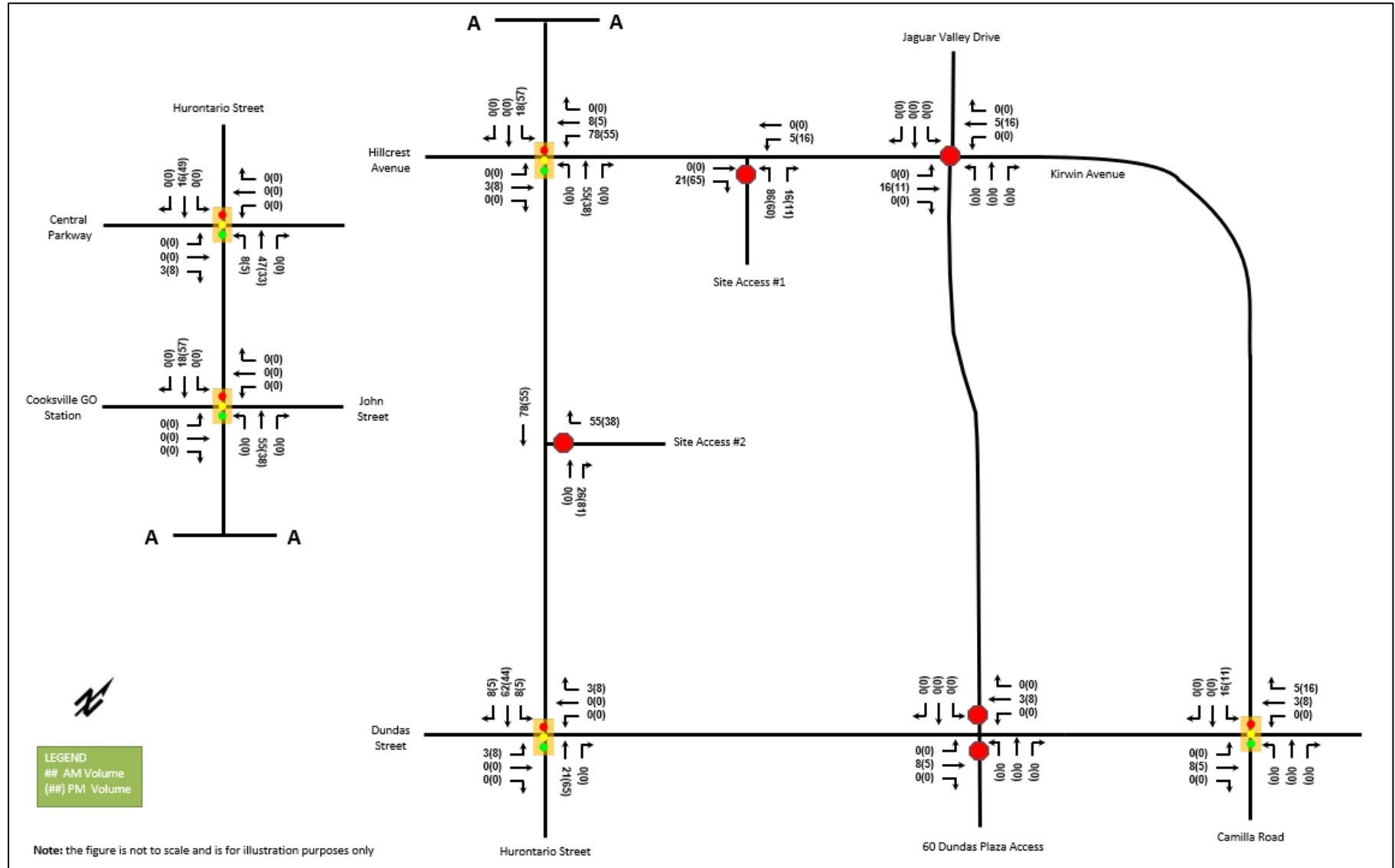


Figure 13: 2028 Future Total Traffic Volumes

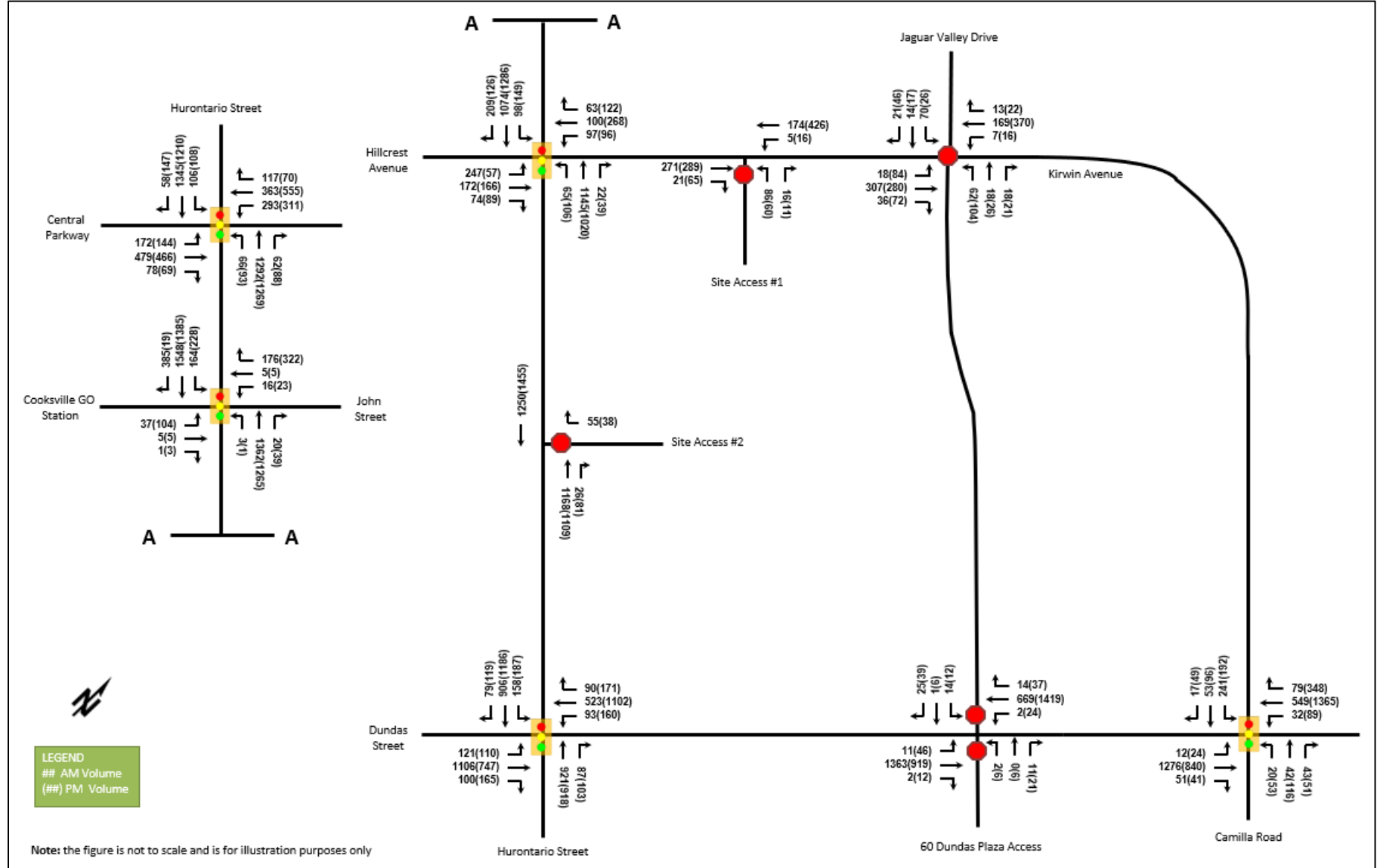
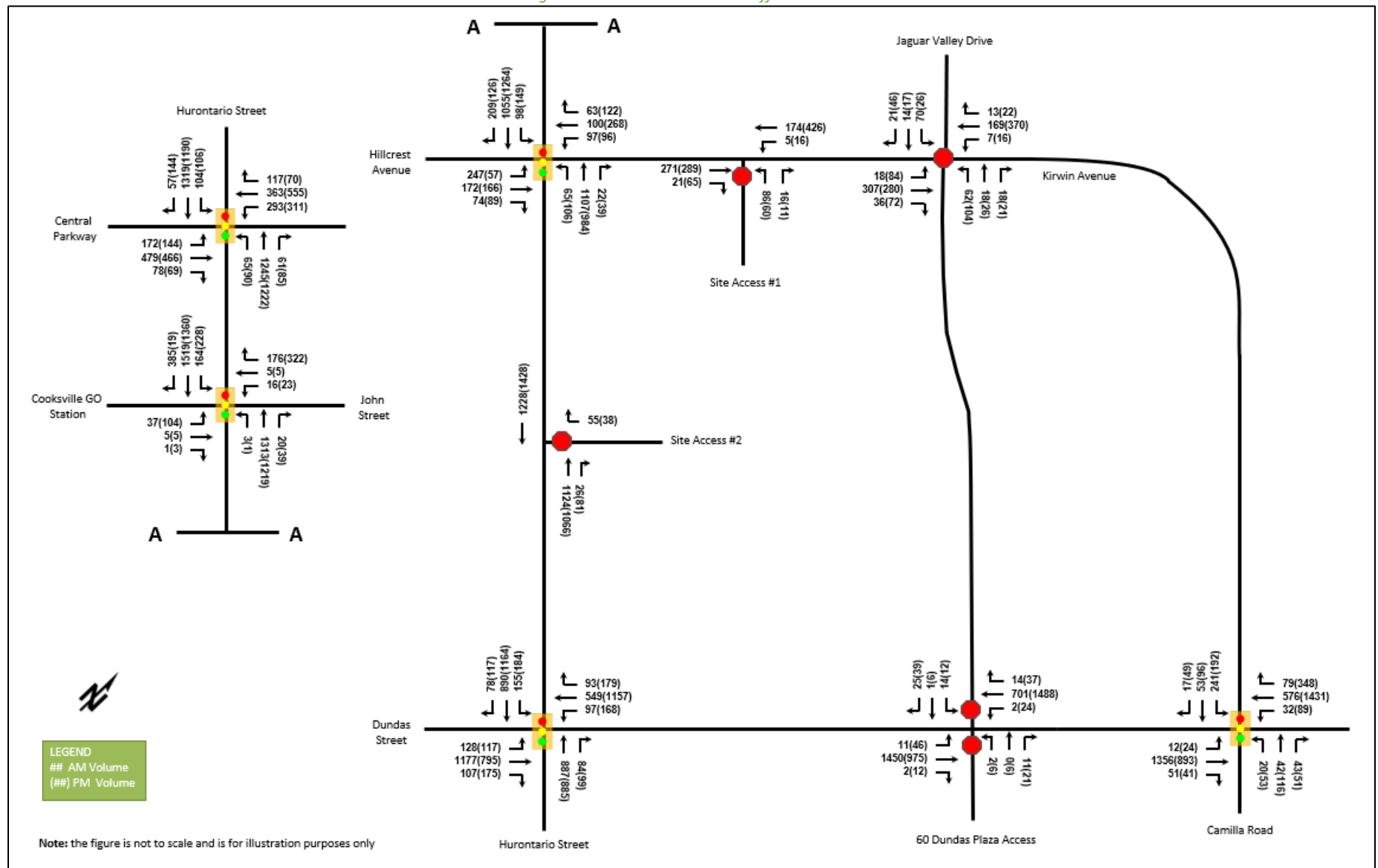


Figure 14: 2033 Future Total Traffic Volumes



5 Development Design

5.1 Development Access

The site is proposed to have two accesses – one full movement access at Kirwin Avenue (Site Access #1) and one right-in / right-out access at Hurontario Street (Site Access #2).

There are several reasons for providing two accesses to 3085 Hurontario Street. Firstly, providing a single access along Kirwin Avenue would result in a dead end at the urban square. As a result, more vehicle traffic will turn around at the urban square, creating a less attractive environment for active mode users. Also, large emergency vehicles such as ladder fire trucks, will not be able to turn around within the urban square circle and will need to back up all the way through the condominium road to get back onto Kirwin Avenue, which has pedestrian and cyclist safety implications.

Access redundancy to a development of this size is also desired in case of any breakdown or blockage. Further, it is anticipated that the condominium road between Kirwin Avenue and Hurontario Street will be shared with the corner lot at Kirwin Avenue and Hurontario Street, when it is redeveloped at some point in the future. As the future traffic generation of the corner lot is unknown, it is not unreasonable to provide some residual capacity at site accesses at this stage of the development.

Lastly, although the Kirwin Avenue access is generally preferred over Hurontario Street access based on MUDAP comments from City staff, the site traffic impact on Kirwin Avenue should also be considered when determining the number of required accesses. Currently the segment of Kirwin Avenue between Hurontario Street and Jaguar Valley Drive includes two accesses and two auxiliary left turn lanes, one onto Jaguar Valley Drive and another onto Hurontario Street. As the length of Kirwin Avenue is limited, left-turn lane taper of the westbound left turn lane at Hurontario Street transitions into the eastbound left turn lane taper at Jaguar Valley Drive. Considering the number of potential movement types, as well as limited opportunities to extend the storage length of the left turn lanes along Kirwin Avenue, implementation of a secondary access along Hurontario Street is favourable to reduce traffic along Kirwin Avenue.

Using OTM Book 12 Justification 7, and the volume projections herein the traffic control signal warrant at Access #1 and Access #2 have been examined using 2028 and 2033 Future Total horizon volumes. It has been found that signals are not warranted using Justification 7, and thus the site accesses will have a stop control on the minor approach. The signalization warrants for Access #1 and Access #2 can be found in Appendix E. Left-turn lane warrants for unsignalized intersections were examined at Site Access #1 for both 2028 and 2033 Total Future horizons. To determine if a left-turn lane is warranted, the MTO Geometric Design Standards for Ontario Highways, Section E, left-turn lane warrant nomographs were examined. It was found that left turn lanes are not warranted at this access at either of the future horizon. Left-turn lane warrants have been provided in Appendix F.

According to Transportation Association of Canada's Geometric Design Guide for Canadian Roads (TAC), Table 8.9.3, the suggested minimum clear throat length for major driveways, for a development of this size, would require a throat length based on each land use and is summarized in Table 8 below.

Table 8: Throat Length by Land Use

Land Use*	Development Size Units / GFA (s.m.)	Required Clear Throat Length (m)
Apartments	1,085	40
Shopping Centre	1,026	15

The throat length of Site Access #1 is 75 metres according to the TAC manual definition and 79 metres with additional space provided by the curb radii. The throat length of Site Access #2 is 30 metres according to TAC manual definition and 39 metres with additional space provided by the curb radii. Although the throat length at Site Access #2, including the storage space within the access curb radius, is slightly below the TAC recommendations, it is expected to be sufficient for the subject development. This is because the majority of traffic along the east-west section of the condominium road is expected to travel to or from the underground parking, with turns into the centre circle, which were identified as the first point of conflict when measuring the throat length, occurring less frequently.

5.2 Turning Template Analysis

The proposed site plan and access configuration has been reviewed using three design vehicles, including an LSU truck (typical moving truck for a 2-bedroom home), an HSU truck (standard delivery truck), and the Region of Peel Garbage Truck. LSU trucks will utilize the loading areas provided within the first level of the underground parking for resident move-ins. In an unlikely scenario where moving truck larger than an LSU is used for moving to or from the subject development, such truck could utilize the ground floor retail loading area. The retail loading area was designed to accommodate an HSU vehicle and includes an elevator to the P1 level, from where goods and personal belongings can be transported to the appropriate building elevator. The garbage room is also located on the ground floor, directly across from the retail loading area. The Region of Peel Garbage Truck requires space within the retail loading area to maneuver in and out of the garbage room and vice versa. Through the retail loading area design it has been ensured that the garbage truck can access the garbage room at all times, including when an HSU truck is parked in the retail loading area. In an opposite scenario where a garbage truck is parked in the garbage room, an HSU truck accessing the retail loading area will need to wait for the garbage truck to complete the loading and exit the area. However, as garbage pickup is infrequent and requires less time when compared to commercial loading or resident move-ins, an overlap between an HSU truck trying to access the retail loading area and the garbage pick up is unlikely. Appendix G includes drawings illustrating the turning paths for all design vehicles. All turning paths are accommodated by the proposed curbs and driveways.

5.3 Loading

According to the City of Mississauga Loading Space Regulations, one loading space is required for the mixed-use component of the proposed development, including the work component of the Live-Work units. The residential component of the proposed development requires a total of three loading spaces. The dimensions of a loading space outlined in the City of Mississauga Zoning By-Law are 3.5 metres in width, and 9 metres in length. The dimensions of the three residential loading spaces are in line with this requirement, and the retail loading space exceeds this requirement, with 3.5 metres in width and 11.5 metres length. Thus, the City of Mississauga Loading Space requirements are met.

5.4 Design for Sustainable Modes

Pedestrian facilities have been proposed throughout the development site plan and will provide pedestrians with direct, and convenient connections to municipal sidewalk infrastructure, including one connection to Kirwin Avenue, and two connections to Hurontario Street. Additionally, the condominium road and the turning circle

within the centre point of the proposed development will be raised to the height of the sidewalk. This traffic calming measure will prioritise pedestrian movement over vehicles, making drivers more alert, and reducing vehicular speeds within the urban square limits. Outside of 3085 Hurontario Street property boundary, the municipal pedestrian network provides with direct walking connections to Cooksville GO, as well as future Hurontario LRT and Dundas BRT stops.

A dedicated cyclist elevator will be implemented in Building 1 (the building fronting Hurontario Street) to provide residents with direct connections between the secure underground bike parking and future segregated bike lanes along Hurontario Street. Further, the condominium road within the site will be designed to accommodate a maximum speed of 30 km/h, allowing cyclists to safely travel within the site to access the bike lanes along Kirwin Avenue.

Additional geometric and urban design measures supportive of sustainable modes proposed at 3085 Hurontario Street include:

- Locating building doors and windows to ensure visibility of pedestrians from the building for their security and comfort
- Providing wayfinding signage for site egress, including directions to reach the nearby transit stops/stations
- Providing short-term bicycle parking in highly visible and lighted areas, sheltered from the weather
- Providing resident bike parking spaces within a secure underground area, with a dedicated elevator to ground level
- Providing a permanent bike repair station, with commonly used tools and an air pump adjacent to the main bicycle parking area
- Providing less vehicle parking spaces than what is required by zoning
- Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly

The vehicular and bike parking space provisions are discussed in further detail in subsection 5.1.5 and subsection 5.1.6.

5.5 Transportation Demand Management

Outlined below are the measures that will be provided at 3085 Hurontario Street site to ensure that the mode shares at the proposed development contribute to the Study Area traffic superzone meeting the Regional mode share targets:

- Unbundle parking costs from purchase price
- Provide a multimodal travel option information package to new residents
- Assist in resident school travel planning

Additionally, it is recommended that the following TDM measures are considered in later stages during the Site Plan Application process:

- Offer PRESTO cards preloaded with one monthly transit pass on initial residence purchase/move-in, to encourage residents to use transit
- Contract with provider to install on-site bikeshare station (subject to bikeshare provider agreement/willingness)
- Provide residents with bikeshare memberships, either free or subsidized

- Contract with a provider to install on-site carshare vehicles and promote their use by residents (subject to carshare provider agreement/willingness)
- Provide residents with carshare memberships, either free or subsidized

5.6 Parking

5.6.1 Vehicular Parking

The City of Mississauga Zoning By-Law requirements and provisions for the proposed land uses at 3085 Hurontario Street are summarized in Table 9.

Table 9: Vehicle Parking Requirements – Zoning By-Law Approach

Type	GFA (s.m.)/ Units	Parking Rate	Parking Spaces Required	Parking Spaces Provided
Studio Units	21	1.0 sp/unit	21	1,038
1 Bedroom Units	497	1.25 sp/unit	621	
2 Bedroom Units	563	1.40 sp/unit	788	
Visitor Spaces	1,081	0.20 sp / unit	216	
Mixed-Use	1,026	(4.0 spaces per 100 m ²) x 0.9*	37	
Total			1,683	1,038

* Mixed Use Share Parking Reduction based on Table 3.1.2.3

As noted above, the parking space requirement for the proposed land uses at 3085 Hurontario Street is 1,683 stalls, whereas 1,038 parking spaces are provided. To support the proposed parking variance, the City of Mississauga Parking Masterplan and Implementation Strategy will be reviewed along with approved parking reductions at a comparable proxy site.

The City of Mississauga Parking Masterplan and Implementation Strategy includes guiding principles and recommendations for future policy changes around parking in the City of Mississauga, with a focus on improving efficiency and using parking as a proactive planning tool. The 3085 Hurontario Street belongs to Precinct One of the Parking Implementation Strategy, where Downtown Core, Downtown Cooksville, and Port Credit Community Node are grouped into one category for future parking By-Law implementation. Within the strategy it is mentioned that areas that belong to Precinct One are the highest-density, and lowest vehicle-ownership areas in the City, resulting in lowest parking demand. The policy objectives for these areas include reduced parking requirement rates, increased number and variety of parking management measures, and establishment of parking maximums. The minimum parking requirements for a residential land use within Precinct One proposed as part of the City of Mississauga Parking Regulations Study can be seen in Table 10.

Table 10: Vehicle Parking Requirements – City of Mississauga Parking Regulations Study Approach

Type	GFA (s.m.)/ Units	Parking Rate	Parking Spaces Required	Parking Spaces Provided
Residential Units	1,081	0.8 sp/unit	865	1,038
Visitor Spaces	1,081	0.15 sp / unit	162	
Mixed-Use	1,026	Shared with visitor parking	0	
Total			1,027	1,038

The proposed development meets the minimum parking requirements rates for Precinct One proposed as part of the Mississauga Parking Regulations Study, and therefore a provision of 1,038 parking stalls at 3085 Hurontario Street is appropriate.

Additionally, through the review of Zoning By-Law Exceptions, it was determined that a parking rate reduction to 0.75 spaces per one-bedroom unit, 0.90 spaces per two-bedroom unit, and 0.10 visitor spaces per unit was approved at a proposed condominium building located at 78 Park Street, directly across from Port Credit GO. As previously discussed, the Port Credit Community Node and the Downtown Cooksville Area belong to the same parking strategy Precinct and thus the developments within these areas can be treated as appropriate proxy sites. At Port Credit GO station, residents of the proposed condominium have an easy access to both the high-speed GO rail transit, as well as the Hurontario LRT, with the nearest stop located within a 250 metre-radius. The Study Area transit context at 3085 Hurontario Street is very similar, with the proposed Hurontario LRT running along the site frontage, proposed Dundas BRT within a 300-metre radius, and Cooksville GO station located within a 400-metre radius. These routes will provide intra- and inter-regional transit connections in all direction, making the Study Area one of the best-served neighbourhoods in Mississauga and reducing auto-mode reliance. Thus, the development at 78 Park Street was deemed as an appropriate proxy site for comparison, and parking rates approved at 78 Park Street were used to determine the parking space supply requirement at 3085 Hurontario Street outlined in Table 3. It should be noted that the one-bedroom rate of 0.75 spaces per unit used at 78 Park Street was also applied to studio units at the subject site.

Table 11: Vehicle Parking Requirements – 78 Park Street Parking Rates Approach (Zoning By-Law 0225-2007, Exception RA5-53)

Type	GFA (s.m.)/ Units	Parking Rate	Parking Spaces Required	Parking Spaces Provided
Studio Units	21	0.75 sp/unit	16	1,038
1 Bedroom Units	497	0.75 sp/unit	373	
2 Bedroom Units	563	0.90 sp/unit	507	
Visitor Spaces	1,081	0.10 sp / unit	108	
Mixed-Use	1,026	Shared with visitor parking	0	
Total			1,004	1,038

Based on the proxy site parking provision rates and surrounding area context, a provision of 1,038 parking stalls is expected to meet the parking demand at 3085 Hurontario Street.

5.6.2 Bike Parking

Currently, the City of Mississauga Zoning By-Law does not include bicycle parking requirements. As such, the bicycle parking provisions at 3085 Hurontario Street will be in accordance with the residential rates provided by the City of Mississauga staff through the Project Status Report Review on December 9th, 2020, and retail bicycle parking rates outlined within the City of Mississauga's TDM Strategy and Implementation Plan (2017). Bicycle parking provisions are summarized in Table 12.

Table 12: 3085 Hurontario Street Bike Parking Provisions

Land Use / Unit Type	GFA (s.m.) / Units	Parking Rate (Required)	Long-Term Parking Required	Long-Term Parking Provided	Short-Term Parking Required	Short-Term Parking Provided
Residential Units	1,081	0.6/unit long term and 0.05/unit short term	649	714	54	54
Mixed-Use	1,026	0.5/1000 s.m. long term and 1/500 s.m. short term	1		2	29
Total			650	714	56	83

As shown above, both the long-term and the short-term bicycle parking recommendations will be met in excess at the proposed development. Above grade, 29 short-term bicycle parking spaces will be located and will serve

the patrons of mixed-use units. The short-term bicycle parking spaces for the residential component of the proposed development will be located in the secure bicycle parking area within P1 level, as residential visitors are expected to stay on site for longer periods of time. However, as short-term bicycle parking spaces for mixed-uses are provided in excess of 27 spaces, it is likely that some above-ground bicycle parking will be available for residential visitors at all times if this option is preferred. Additionally, as previously mentioned in Section 5.4, a dedicated cyclist elevator will be provided in Building 1 to facilitate convenient access to and from the secure underground bicycle parking area.

6 Operational Analysis

To understand the operational characteristics of the Study Area intersections, a Synchro model has been created using Trafficware's Synchro (Version 11). The Synchro model has been coded using the existing traffic signal timing, provided by City of Mississauga. Peak Hour Factors (PHF) have been calculated based on the existing turning movement counts. Where peak hour 15-minute increments were not available, or at new intersections, a default PHF of 0.92 was used. The Heavy Vehicle percentage (HV %) was obtained from the TMC data for each turning movement. All Heavy Vehicle percentages below 2% were entered into the Synchro model as 2% in order to produce a conservative analysis. All other parameters have been coded using accepted best practices and default parameters where applicable.

6.1 2021 Existing Conditions

The existing intersection volumes have been analyzed to establish a baseline condition and determine the impact of the subject development, surrounding background developments, growth, and changes to the transportation network on the Study Area. Table 13 summarizes the operational analysis of the 2021 existing conditions. Appendix H contains the 2021 Existing Conditions Synchro Sheets.

Table 13: 2021 Existing Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at Central Parkway (Signalized)	EBL	D	0.50	38	48	D	0.45	40	34
	EBT	E	0.78	71	102	E	0.73	68	91
	EBR	A	0.20	5	7	A	0.13	3	4
	WBL	E	0.85	57	99	D	0.79	52	86
	WBT	D	0.44	50	69	D	0.63	54	101
	WBR	B	0.25	13	23	A	0.14	7	11
	NBL	D	0.39	36	18	C	0.43	23	18
	NBT/R	B	0.71	13	37	B	0.67	14	61
	SBL	D	0.67	41	41	C	0.62	34	36
	SBT/R	D	0.71	39	184	C	0.59	34	145
	Overall	C	-	35	-	C	-	33	-
Hurontario Street at John Street (Signalized)	EBL	D	0.17	40	18	D	0.50	43	40
	EBT/R	D	0.01	37	5	C	0.01	29	5
	WBL	D	0.08	51	11	D	0.08	49	15
	WBT/R	B	0.48	11	23	C	0.67	25	73
	NBL	A	0.02	6	<1	A	0.01	6	<1
	NBT/R	B	0.55	10	77	B	0.66	16	81
	SBL	C	0.70	23	41	E	0.93	59	#105
	SBT	C	0.55	22	200	C	0.54	28	165
	SBR	B	0.38	12	118	A	0.02	2	<1
	Overall	B	-	16	-	C	-	25	-

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at Hillcrest Avenue / Kirwin Avenue (Signalized)	EBL	D	0.60	40	76	C	0.33	35	20
	EBT	D	0.28	36	55	D	0.28	38	52
	EBR	A	0.16	6	10	A	0.20	6	12
	WBL	D	0.09	43	12	D	0.15	43	20
	WBT/R	D	0.43	46	57	E	0.88	73	152
	NBL	C	0.19	22	17	D	0.29	53	41
	NBT/R	C	0.79	29	80	C	0.73	23	58
	SBL	D	0.23	38	30	D	0.24	35	30
	SBT	C	0.70	24	47	C	0.83	22	39
	SBR	A	0.34	4	0	A	0.24	1	0
	Overall	C	-	27	-	C	-	29	-
Hurontario Street at Dundas Street (Signalized)	EBL	C	0.36	29	30	E	0.71	56	#34
	EBT	E	0.91	62	191	D	0.62	46	122
	EBR	B	0.27	15	21	C	0.43	26	44
	WBL	D	0.55	54	34	D	0.55	45	60
	WBT/R	E	0.52	61	110	F	1.01	91	#260
	NBL	C	0.42	27	31	F	0.98	97	#81
	NBT/R	D	0.60	40	123	D	0.66	46	122
	SBL	E	0.66	78	69	F	0.84	93	#69
	SBT/R	F	0.49	84	127	F	0.81	99	179
	Overall	E	-	59	-	E	-	73	-
Dundas Street at Jaguar Valley Drive / 60 Dundas Plaza Access (Unsignalized)	EBL	A	0.01	9	0	A	0.01	9	0
	EBT/R	-	-	-	-	-	-	-	-
	WBL	B	0.01	13	0	B	0.04	11	1
	WBT/R	-	-	-	-	-	-	-	-
	NBL/T/R	D	0.08	28	2	F	0.63	142	20
	SBL/T/R	D	0.23	29	6	F	1.24	338	42
Dundas Street at Kirwin Avenue / Camilla Road (Signalized)	EBL	A	0.03	5	<1	A	0.16	10	5
	EBT	B	0.59	10	220	A	0.38	8	122
	EBR	A	0.07	1	1	A	0.05	1	1
	WBL	B	0.21	20	14	B	0.29	19	30
	WBT	B	0.26	15	58	C	0.60	20	175
	WBR	A	0.10	3	8	A	0.42	6	39
	NBL	F	0.29	82	17	F	0.51	87	33
	NBT/R	C	0.20	26	27	D	0.38	43	60
	SBL	F	0.87	87	#116	F	0.87	95	#94
	SBT/R	D	0.19	42	31	D	0.44	53	61
	Overall	C	-	21	-	C	-	24	-
Kirwin Avenue at Jaguar Valley Drive (Unsignalized)	EBL	A	0.03	9	1	B	0.17	11	5
	EBT/R	B	0.54	15	25	C	0.61	17	30
	WBL	A	0.01	9	0	A	0.03	10	1
	WBT/R	B	0.30	11	10	C	0.68	21	40
	NBL/T/R	A	0.17	10	5	B	0.30	13	10
	SBL/T/R	A	0.18	10	5	B	0.18	11	5
Notes:	# - 95% percentile exceeds capacity								

The volume for the 95th percentile cycle exceeds capacity at some movements in the Study Area, and predominantly during the PM peak hour period. However, where a V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

Overall, the Study Area intersections along Hurontario Street operate well. The V/C ratios are generally higher at turning movements. This is expected as majority of the green time is allocated to heavier northbound through and southbound through movements. Similarly, minor approaches along Dundas Street experience higher delays,

as majority of the 160 second cycle length is dedicated to westbound and eastbound approaches carrying most of the traffic. In example, the level of service at northbound left turn movement of Dundas Street and Kirwin Avenue intersection is F during the AM peak period, while the V/C ratio is 0.29. This indicates that sufficient capacity is available to move vehicles from the northbound approach and onto the arterial road, however, it takes the side street vehicles 80 seconds on average to make the intended movement. This is considered acceptable given that this trade-off allows for a more efficient movement of vehicles along Dundas Street.

The unsignalized intersection of Dundas Street at Jaguar Valley Drive operates similarly, with LOS F at northbound and southbound approaches during the PM peak period. In case of an unsignalized intersection, the high delays are caused by limited gap opportunities to access the arterial road. This conclusion was confirmed during the Study Area visit, where a continuous flow of vehicles was observed along Dundas Street between Hurontario Street and Kirwin Avenue during the PM peak period. At the southbound approach, the analysis indicates that the V/C ratio is 1.24, which means that more southbound vehicles approach the intersection than what can theoretically be cleared. However, the site observations show that while there are limited gaps for southbound vehicles to enter Dundas Street, the westbound drivers provide opportunities for southbound vehicles to proceed onto the arterial road (commonly referred to as courtesy gaps).

At Hurontario Street and Dundas Street intersection, several approaches experience LOS F. This includes southbound through movements in the AM peak period, and westbound through, northbound left, southbound left, and southbound through movements during the PM peak period. At an intersection of two major arterial roads with 160 second cycle length higher delays are expected, as both east-west and north-south movements carry large volumes of traffic and require long green phase to clear the accumulated traffic. The V/C ratios at this intersection mostly indicate sufficient residual capacity. The highest V/C values of 1.01 and 0.98 are observed at westbound through / right turn movement, and northbound left turn movement, respectively, during the PM peak period. Considering that these are the peak direction movements at an intersection of two major arterial roads, such operational parameters are considered acceptable.

6.2 2028 Future Background Conditions

The 2028 Future Background conditions have been examined to determine the future traffic conditions without the addition of the proposed development. This will isolate the impact of the subject development on the traffic network. Table 14 summarizes the operational analysis of 2028 Future Background conditions. Due to the large change in north-south volumes as a result of Hurontario LRT implementation, as well as the proposed roadway modifications to accommodate Hurontario LRT and Dundas BRT, the signal timing splits, and phasing have been adjusted throughout the Study Area. Along Hurontario Street the intersection geometry was coded in Synchro according to the Hurontario-Main LRT Project Streetscape and Urban Design Strategy (Metrolinx, 2014), and the Dundas BRT Initial Business Case (Metrolinx, 2020) was reviewed to determine the future geometry of Dundas Street intersections. Excerpts of these documents showcasing the preliminary design of Hurontario Street and Dundas Street have been included in Appendix C and Appendix I, respectively. The 2028 Future Background Synchro worksheets are included as Appendix J.

Table 14: 2028 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at Central Parkway (Signalized)	EBL	D	0.58	43	62	D	0.60	44	49
	EBT	E	0.80	71	105	E	0.76	69	97
	EBR	B	0.23	11	15	A	0.16	6	8
	WBL	F	1.02	95	#142	E	0.94	74	#129
	WBT	E	0.51	56	75	E	0.69	59	109
	WBR	B	0.29	19	29	A	0.15	8	12
	NBL	E	0.60	60	18	E	0.64	57	24
	NBT/R	B	0.87	18	137	C	0.85	21	179
	SBL	E	0.81	68	#57	E	0.75	56	#48
	SBT/R	D	0.92	48	#296	D	0.86	45	#256
	Overall	D	-	44	-	D	-	43	-
Hurontario Street at John Street (Signalized)	EBL	D	0.18	42	18	D	0.59	52	42
	EBT/R	D	0.01	38	5	C	0.02	31	5
	WBL	D	0.08	51	11	D	0.08	49	15
	WBT/R	B	0.48	11	23	C	0.65	21	63
	NBL	A	0.02	8	<1	A	0.01	5	<1
	NBT/R	B	0.72	19	235	C	0.87	23	255
	SBL	C	0.71	29	29	E	0.90	59	70
	SBT	C	0.77	24	307	C	0.74	23	249
	SBR	A	0.38	7	70	A	0.02	0	0
	Overall	B	-	20	-	C	-	27	-
Hurontario Street at Hillcrest Avenue / Kirwin Avenue (Signalized)	EBL	D	0.68	48	82	D	0.39	40	23
	EBT	D	0.31	39	59	D	0.29	41	58
	EBR	A	0.17	7	11	A	0.21	7	13
	WBL	D	0.09	42	12	D	0.15	45	21
	WBT/R	D	0.42	45	58	E	0.90	78	162
	NBL	B	0.26	18	6	E	0.49	62	25
	NBT/R	C	0.83	25	143	B	0.71	17	44
	SBL	C	0.31	26	14	B	0.33	12	5
	SBT	C	0.78	33	114	C	0.88	25	128
	SBR	A	0.33	2	0	A	0.20	1	0
	Overall	C	-	29	-	C	-	29	-
Hurontario Street at Dundas Street (Signalized)	EBL	C	0.41	28	34	F	0.95	106	#59
	EBT/R	E	0.97	66	#247	E	0.85	55	174
	WBL	F	0.84	92	#50	D	0.75	39	40
	WBT/R	E	0.54	58	123	E	1.03	79	#280
	NBT/R	E	0.87	57	188	F	1.00	82	#212
	SBL	F	0.81	84	#66	F	0.95	96	#79
	SBT/R	E	0.64	77	185	F	0.94	86	#258
	Overall	E	-	65	-	E	-	77	-
Dundas Street at Jaguar Valley Drive / 60 Dundas Plaza Access (Unsignalized)	EBL	A	0.02	10	0	C	0.13	16	4
	EBT/R	-	-	-	-	-	-	-	-
	WBL	B	0.01	14	0	B	0.04	11	1
	WBT/R	-	-	-	-	-	-	-	-
	NBL/T/R	D	0.10	33	2	F	1.03	331	28
	SBL/T/R	E	0.28	37	8	F	2.21	856	56

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Dundas Street at Kirwin Avenue / Camilla Road (Signalized)	EBL	A	0.03	6	2	C	0.45	32	7
	EBT/R	B	0.67	13	252	A	0.43	8	95
	WBL	C	0.27	24	16	B	0.33	19	29
	WBT/R	B	0.33	15	75	C	0.85	28	300
	NBL	F	0.35	90	17	F	0.56	93	34
	NBT/R	C	0.20	26	26	D	0.39	46	64
	SBL	F	0.87	87	105	F	0.90	101	#101
	SBT/R	D	0.19	42	30	D	0.46	55	62
Kirwin Avenue at Jaguar Valley Drive (Unsignalized)	Overall	C	-	22	-	C	-	30	-
	EBL	A	0.03	9	1	B	0.17	11	5
	EBT/R	B	0.54	15	25	C	0.61	17	30
	WBL	A	0.01	9	0	A	0.03	10	1
	WBT/R	B	0.30	11	10	C	0.68	21	40
	NBL/T/R	A	0.17	10	5	B	0.30	13	10
	SBL/T/R	A	0.18	10	5	B	0.18	11	5
Notes:	# - 95% percentile exceeds capacity								

The volume for the 95th percentile cycle exceeds capacity at some movements in the Study Area, and predominantly during the PM peak hour period. However, where a V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

With the addition of background development traffic, growth in through traffic (negative along Hurontario Street and positive along Dundas Street), and changes to the roadway configurations in the vicinity of the subject development, the Study Area intersections perform at a lower level of service when compared to the existing horizon. However, where the operational performance decreases, the V/C ratios are projected to be 1.03 or lower with the exception of one movement at Dundas Street and Jaguar Valley Drive intersection. This movement will be discussed in detail later in this section.

Along Hurontario Street, although a negative growth rate provided by the City was applied, the removal of one through lane in each direction leads to a sizeable reduction in available capacity. Further, as existing cycle lengths are 160 seconds at all Study Area intersections, there are no opportunities to create additional capacity by extending cycle lengths in the future. As a result, the turning movements that currently operate with V/C ratios of 0.7 or above, as well as northbound and southbound approaches along Hurontario Street will likely be constrained and operate at or near theoretical capacity in 2028 Future Total horizon. In example, the V/C ratio on the westbound left turn movement at Hurontario Street and Central Parkway intersection increases from 0.85 to 1.02 during the AM peak period. The 95th percentile queues at the southbound through approach of this intersection increase from 184 and 145 metres to 296 and 256 metres during the AM and PM peak periods, respectively. Similarly, a sizeable increase in 95th percentile queues can be observed at northbound approaches of Hurontario Street at John Street intersection, as well as Hurontario Street at Kirwin Avenue intersection during both peak hour periods. At Hurontario Street and John Street intersection, the queues extend beyond Hurontario Street and Kirwin Avenue to the south.

The highest V/C ratios, delays, and queues are observed at the intersection of Dundas Street at Hurontario Street. This is expected based on the existing conditions operational analysis, the growth in background developments, and the reduced capacity along both Hurontario Street and Dundas Street. However, as previously mentioned in the existing conditions operational assessment, higher congestion at the intersection of two major arterial roads

is common and acceptable in light of high traffic volumes and limited ability to make trade-offs between two roads of a regional significance.

At the intersection of Dundas Street and Jaguar Valley Drive, the growth along Dundas Street results in delays and queues beyond capacity at the southbound approach. Using the OTM Book 12 Justification 7, the signal warrant has been reviewed at this intersection. It was found that the traffic signals are not warranted, using 2028 Future Background volumes. The signalization warrant for this intersection can be found in Appendix E. As this approach serves predominantly local traffic based on surrounding area characteristics, it is expected that over time southbound drivers will naturally reroute to adjacent signalized intersections with residual southbound capacity, such as Dundas Street at Kirwin Avenue.

6.3 2028 Future Total Conditions

The 2028 trip generation of the proposed development has been added to the 2028 Future Background traffic volumes to project the impact of new traffic on the future road network. Table 15 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix K.

Table 15: 2028 Total Future Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at Central Parkway (Signalized)	EBL	D	0.59	44	62	D	0.60	45	50
	EBT	E	0.80	71	105	E	0.76	69	97
	EBR	B	0.24	12	16	A	0.19	8	11
	WBL	F	1.06	105	#145	E	0.96	79	#132
	WBT	E	0.53	58	76	E	0.70	61	110
	WBR	C	0.30	20	31	A	0.16	9	12
	NBL	E	0.64	65	20	E	0.73	69	27
	NBT/R	B	0.89	17	#112	B	0.86	20	174
	SBL	E	0.86	78	#63	E	0.79	64	#53
	SBT/R	D	0.92	48	#301	D	0.88	46	#275
	Overall	D	-	45	-	D	-	44	-
Hurontario Street at John Street (Signalized)	EBL	D	0.18	42	18	D	0.60	54	42
	EBT/R	D	0.01	38	5	C	0.02	32	6
	WBL	D	0.08	51	11	D	0.08	49	15
	WBT/R	B	0.48	11	23	C	0.66	23	68
	NBL	A	0.02	7	<1	A	0.01	5	<1
	NBT/R	B	0.76	19	280	C	0.89	23	254
	SBL	D	0.74	37	33	E	0.91	62	69
	SBT	C	0.78	23	309	C	0.76	24	265
	SBR	A	0.38	6	64	A	0.02	0	0
	Overall	C	-	20	-	C	-	27	-
Hurontario Street at Hillcrest Avenue / Kirwin Avenue (Signalized)	EBL	D	0.69	48	82	D	0.39	40	23
	EBT	D	0.31	39	60	D	0.30	41	61
	EBR	A	0.17	7	11	A	0.21	7	13
	WBL	D	0.43	54	45	D	0.36	50	44
	WBT/R	D	0.44	47	61	E	0.91	78	164
	NBL	B	0.26	18	6	E	0.50	57	25
	NBT/R	D	0.88	35	215	C	0.78	22	83
	SBL	D	0.39	49	29	D	0.53	46	42
	SBT	C	0.78	34	112	C	0.88	28	150
	SBR	A	0.33	2	<1	A	0.20	1	0
	Overall	C	-	34	-	C	-	33	-

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at Dundas Street (Signalized)	EBL	C	0.42	28	35	F	1.03	124	#64
	EBT/R	E	0.97	66	#247	E	0.88	58	175
	WBL	F	0.84	92	#49	D	0.79	45	41
	WBT/R	E	0.54	59	123	F	1.08	93	#291
	NBT/R	E	0.90	59	#202	F	1.00	81	#225
	SBL	F	0.87	89	#72	F	1.05	121	#73
	SBT/R	E	0.69	76	198	F	0.95	89	#269
	Overall	E	-	66	-	F	-	83	-
Dundas Street at Jaguar Valley Drive / 60 Dundas Plaza Access (Unsignalized)	EBL	A	0.02	10	0	C	0.13	16	4
	EBT/R	-	-	-	-	-	-	-	-
	WBL	B	0.01	14	0	B	0.04	11	1
	WBT/R	-	-	-	-	-	-	-	-
	NBL/T/R	D	0.10	34	2	F	1.03	331	28
	SBL/T/R	E	0.29	38	8	F	2.21	856	56
Dundas Street at Kirwin Avenue / Camilla Road (Signalized)	EBL	A	0.03	6	2	C	0.47	33	6
	EBT/R	B	0.69	14	256	A	0.43	8	82
	WBL	C	0.30	27	17	B	0.33	18	28
	WBT/R	B	0.34	16	79	C	0.86	29	299
	NBL	F	0.31	85	17	F	0.64	105	#38
	NBT/R	C	0.19	26	27	D	0.39	46	65
	SBL	F	0.89	88	112	F	0.92	103	#110
	SBT/R	D	0.18	40	29	D	0.44	54	62
	Overall	C	-	24	-	C	-	30	-
Kirwin Avenue at Jaguar Valley Drive (Unsignalized)	EBL	A	0.03	9	1	B	0.17	11	5
	EBT/R	C	0.57	15	27	C	0.63	18	33
	WBL	A	0.01	9	0	A	0.03	10	1
	WBT/R	B	0.31	11	10	C	0.71	23	44
	NBL/T/R	B	0.17	10	5	B	0.31	13	10
	SBL/T/R	B	0.18	10	5	B	0.18	11	5
Kirwin Avenue at Site Access #1 (Unsignalized)	EBT/R	-	-	-	-	-	-	-	-
	WBT/L	A	0.01	9	0	A	0.02	9	1
	NBL/R	C	0.25	16	8	C	0.29	24	8
Hurontario Street at Site Access #2 (Unsignalized)	WBR	C	0.22	22	6	D	0.21	28	6
	NBT/R	-	-	-	-	-	-	-	-
	SBT	-	-	-	-	-	-	-	-
Notes:	# - 95% percentile exceeds capacity								

It has been noted that the 95th percentile cycle exceeds capacity at several approaches and time periods in the Study Area. However, where the V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

Overall, the addition of the site generated trips to the 2028 Future Background does not significantly impact the Study Area intersections. The level of service remains the same at majority of intersections, with the exception of AM peak period at Hurontario Street and John Street intersection, and PM peak period at Hurontario Street and Dundas Street intersection.

At constrained movements which were impacted by the site-generated trips, the increase in V/C ratio ranged between four and 10 percent. This includes the westbound left turn movement at Hurontario Street and Central Parkway, as well as the eastbound left turn movement, westbound through/right turn movement, and southbound left turn movement at Hurontario Street and Dundas Street intersection during the PM peak period.

At the intersection of Hurontario Street and Central Parkway, residual capacity is available at all other movements, and thus the green time for the westbound left turn could be increased to reduce the V/C ratio below 1.0. However, given the higher demand at other, conflicting movements, lower green time for westbound left turn movement was preserved in favour of the overall intersection operations.

At the intersection of Hurontario Street at Dundas Street, signal splits were also optimized to favour the heavier movements. It is important to note that the proposed development only contributes three percent of vehicular volume at this intersection during the PM peak hour, and higher congestion at Hurontario Street and Dundas Street is predominantly driven by the background volumes and the road classification. As the roadway and intersection capacity are finite, it is expected that with addition of Hurontario LRT, Dundas BRT, and new developments in the area, the through trips along Dundas Street will be rerouted to other more attractive east-west corridors, creating additional capacity for the local residents, employees, and Cooksville GO users. It is also anticipated that the Study Area (Cooksville MTSA and Dundas MTSA) as well as the City of Mississauga as a whole will experience a shift from single occupant vehicles to other modes of travel, in particular transit. While this impact has been explicitly accounted for in the trip generation for the subject development, the impact of this effect on background traffic is hard to predict and quantify. This shift will reduce the number of single occupant vehicles in the Study Area network and improve vehicular level of service.

At Site Access #1 and Site Access #2, all approaches operate well with LOS ranging between A and D. Vehicles making a westbound left turn into the site at Access #1 will experience minimal average delay of 9 seconds. Further, the 95th percentile queues out of the site can be accommodated by the throat lengths at both site accesses.

6.4 2033 Future Background Traffic Conditions

The 2033 Future Background conditions have been examined to determine the future traffic conditions without the addition of the proposed development. This will isolate the impact of the subject development on the traffic network. Table 16 summarizes the operational analysis of 2033 Future Background conditions. All mitigation measures previously discussed have been carried forward for the analysis of Future Background conditions. Synchro worksheets are included in Appendix L.

Table 16: 2033 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at Central Parkway (Signalized)	EBL	D	0.57	42	61	D	0.58	43	48
	EBT	E	0.80	71	105	E	0.76	69	97
	EBR	B	0.23	11	15	A	0.17	6	8
	WBL	F	0.99	86	#138	E	0.93	69	#125
	WBT	E	0.50	55	75	E	0.68	59	108
	WBR	B	0.29	18	28	A	0.15	7	11
	NBL	E	0.58	59	19	D	0.61	52	22
	NBT/R	B	0.85	17	104	C	0.83	20	177
	SBL	D	0.76	55	#49	D	0.68	44	37
	SBT/R	D	0.91	47	#290	D	0.85	45	#249
	Overall	D	-	43	-	D	-	43	-

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at John Street (Signalized)	EBL	D	0.18	42	18	D	0.58	52	42
	EBT/R	D	0.01	38	5	C	0.02	31	5
	WBL	D	0.08	51	11	D	0.08	49	15
	WBT/R	B	0.48	11	23	B	0.64	20	61
	NBL	A	0.02	7	<1	A	0.01	5	<1
	NBT/R	B	0.69	17	206	C	0.84	22	244
	SBL	C	0.70	24	25	D	0.86	50	66
	SBT	C	0.75	24	302	C	0.72	23	243
	SBR	A	0.38	7	74	A	0.02	0	0
	Overall	B	-	19	-	C	-	25	-
Hurontario Street at Hillcrest Avenue / Kirwin Avenue (Signalized)	EBL	D	0.65	44	80	D	0.39	40	23
	EBT	D	0.30	38	57	D	0.29	41	58
	EBR	A	0.17	6	11	A	0.21	7	13
	WBL	D	0.09	42	12	D	0.15	45	21
	WBT/R	D	0.42	46	58	E	0.90	78	162
	NBL	B	0.26	19	6	E	0.50	57	22
	NBT/R	C	0.82	24	145	B	0.69	16	40
	SBL	C	0.30	24	15	A	0.32	9	3
	SBT	C	0.79	34	119	C	0.86	21	96
	SBR	A	0.32	2	<1	A	0.20	1	0
	Overall	C	-	29	-	C	-	28	-
Hurontario Street at Dundas Street (Signalized)	EBL	C	0.43	26	34	F	0.93	98	#62
	EBT/R	E	0.98	65	#263	D	0.86	54	186
	WBL	F	0.88	98	#53	C	0.77	35	38
	WBT/R	E	0.54	55	127	E	1.04	76	#293
	NBT/R	E	0.89	61	#192	F	1.02	90	#209
	SBL	F	0.81	88	#64	F	1.01	113	#85
	SBT/R	E	0.65	78	182	F	0.98	92	#264
	Overall	E	-	66	-	E	-	79	-
Dundas Street at Jaguar Valley Drive / 60 Dundas Plaza Access (Unsignalized)	EBL	A	0.02	10	0	C	0.14	17	4
	EBT/R	-	-	-	-	-	-	-	-
	WBL	B	0.01	14	0	B	0.05	12	1
	WBT/R	-	-	-	-	-	-	-	-
	NBL/T/R	E	0.12	38	3	F	1.44	567	33
	SBL/T/R	E	0.32	44	10	F	4.13	1920	65
Dundas Street at Kirwin Avenue / Camilla Road (Signalized)	EBL	A	0.03	6	2	D	0.50	38	6
	EBT/R	B	0.71	15	271	A	0.45	9	99
	WBL	C	0.32	28	18	B	0.35	18	28
	WBT/R	B	0.34	15	77	C	0.87	28	304
	NBL	F	0.31	85	17	F	0.64	105	#38
	NBT/R	C	0.20	28	28	D	0.41	48	67
	SBL	F	0.89	90	107	F	0.92	105	#106
	SBT/R	D	0.19	42	31	E	0.46	56	64
	Overall	C	-	24	-	C	-	30	-
Kirwin Avenue at Jaguar Valley Drive (Unsignalized)	EBL	A	0.03	9	1	B	0.17	11	5
	EBT/R	B	0.54	15	25	C	0.61	17	30
	WBL	A	0.01	9	0	A	0.03	10	1
	WBT/R	B	0.30	11	10	C	0.68	21	40
	NBL/T/R	A	0.17	10	5	B	0.30	13	10
	SBL/T/R	A	0.18	10	5	B	0.18	11	5
Notes:	# - 95% percentile exceeds capacity								

The volume for the 95th percentile cycle exceeds capacity at some movements in the Study Area, and predominantly during the PM peak hour period. However, where a V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

With changes to the traffic volumes between 2028 and 2033 background horizons, the signalized intersection operations in the Study Area remain relatively similar. At the unsignalized intersection of Dundas Street at Jaguar Valley Drive / 60 Dundas Plaza an exponential growth in operational performance variables is observed at both the northbound and southbound approaches during the PM peak period. However, as previously discussed, the high delays and queues at the stop-controlled approaches of this intersection will not be realized, as some of the traffic can reroute to nearby signalized intersections.

6.5 2033 Total Future Traffic Conditions

The 2033 Total Future intersection volumes, including the site generated traffic and other development traffic have been analyzed to understand the impact of the subject development on the Study Area intersections. Table 17 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix M.

Table 17: 2033 Total Future Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at Central Parkway (Signalized)	EBL	D	0.57	42	61	D	0.60	45	50
	EBT	E	0.80	71	105	E	0.76	69	97
	EBR	B	0.24	12	16	A	0.19	8	11
	WBL	F	0.99	86	#138	E	0.96	79	#132
	WBT	E	0.50	55	75	E	0.70	61	110
	WBR	B	0.29	18	29	A	0.16	8	12
	NBL	E	0.63	65	21	E	0.69	62	25
	NBT/R	B	0.88	20	#172	B	0.83	18	154
	SBL	E	0.82	71	#57	D	0.72	48	#42
	SBT/R	D	0.93	50	#299	D	0.87	45	#255
	Overall	D	-	45	-	D	-	43	-
Hurontario Street at John Street (Signalized)	EBL	D	0.18	42	18	D	0.59	52	42
	EBT/R	D	0.01	38	5	C	0.02	31	5
	WBL	D	0.08	51	11	D	0.08	49	15
	WBT/R	B	0.48	11	23	C	0.65	21	63
	NBL	A	0.02	7	<1	A	0.01	5	<1
	NBT/R	B	0.73	19	226	C	0.87	22	245
	SBL	C	0.71	29	29	E	0.89	57	68
	SBT	C	0.76	23	306	C	0.75	23	254
	SBR	A	0.38	6	70	A	0.02	0	0
	Overall	B	-	20	-	C	-	26	-
Hurontario Street at Hillcrest Avenue / Kirwin Avenue (Signalized)	EBL	D	0.69	48	82	D	0.39	40	23
	EBT	D	0.31	39	60	D	0.30	41	61
	EBR	A	0.17	7	11	A	0.21	7	13
	WBL	D	0.43	54	45	D	0.36	50	44
	WBT/R	D	0.44	47	61	E	0.91	78	164
	NBL	B	0.26	16	6	D	0.50	54	22
	NBT/R	C	0.85	27	192	B	0.75	19	58
	SBL	D	0.38	41	26	D	0.52	37	38
	SBT	C	0.77	30	108	C	0.86	23	121
	SBR	A	0.33	2	<1	A	0.20	1	0
	Overall	C	-	30	-	C	-	30	-

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95 th)	LOS	V/C	Del. (s)	Q (95 th)
Hurontario Street at Dundas Street (Signalized)	EBL	C	0.44	26	35	F	1.01	117	#68
	EBT/R	E	0.98	65	#263	E	0.88	57	186
	WBL	F	0.88	97	#53	D	0.81	40	38
	WBT/R	E	0.54	57	128	F	1.08	89	#303
	NBT/R	E	0.92	64	#199	F	1.04	94	#225
	SBL	F	0.87	92	#75	F	1.06	125	#77
	SBT/R	E	0.71	76	195	F	0.99	95	#275
	Overall	E	-	67	-	F	-	85	-
Dundas Street at Jaguar Valley Drive / 60 Dundas Plaza Access (Unsignalized)	EBL	A	0.02	10	0	C	0.14	17	4
	EBT/R	-	-	-	-	-	-	-	-
	WBL	B	0.01	14	0	B	0.05	12	1
	WBT/R	-	-	-	-	-	-	-	-
	NBL/T/R	E	0.12	38	3	F	1.44	567	33
	SBL/T/R	E	0.33	45	10	F	4.13	1920	65
Dundas Street at Kirwin Avenue / Camilla Road (Signalized)	EBL	A	0.04	6	2	D	0.58	47	8
	EBT/R	B	0.73	17	275	A	0.46	9	99
	WBL	C	0.35	30	19	B	0.37	19	29
	WBT/R	B	0.35	16	78	C	0.90	32	315
	NBL	F	0.34	88	17	F	0.70	114	#41
	NBT/R	C	0.20	28	28	D	0.39	46	66
	SBL	F	0.90	89	#121	F	0.93	106	#113
	SBT/R	D	0.18	41	30	D	0.45	54	63
	Overall	C	-	25	-	C	-	32	-
Kirwin Avenue at Jaguar Valley Drive (Unsignalized)	EBL	A	0.03	9	1	B	0.17	11	5
	EBT/R	C	0.57	15	27	C	0.63	18	33
	WBL	A	0.01	9	0	A	0.03	10	1
	WBT/R	B	0.31	11	10	C	0.71	23	44
	NBL/T/R	B	0.17	10	5	B	0.31	13	10
	SBL/T/R	B	0.18	10	5	B	0.18	11	5
Kirwin Avenue at Site Access #1 (Unsignalized)	EBT/R	-	-	-	-	-	-	-	-
	WBT/L	A	0.01	9	0	A	0.02	9	1
	NBL/R	C	0.25	16	8	C	0.29	24	8
Hurontario Street at Site Access #2 (Unsignalized)	WBR	C	0.21	21	6	D	0.20	27	5
	NBT/R	-	-	-	-	-	-	-	-
	SBT	-	-	-	-	-	-	-	-
Notes:	# - 95% percentile exceeds capacity								

It has been noted that the 95th percentile cycle exceeds capacity at several approaches and time periods in the Study Area. However, where the V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

Similarly to 2028 Future Total horizon, the site-generated traffic does not have a significant effect on the Study Area network when combined with 2033 Future Background conditions. At movements which were operating at a lower level of service in the 2033 Future Background horizon and then coupled with site-generated trips as part of the Future Total horizon, the V/C ratio increased between two and seven percent. This is less than the impact observed in 2028 Future Total scenario despite the site trip generation remaining constant over the two future horizons. This indicates that the performance of congested movements is predominantly driven by the background conditions. As previously stated, it is expected that with intensification the mode shares in the Study Area and in the City of Mississauga will shift towards non-auto mode, effect of which is hard to predict and was not accounted for as part of the background volumes. Further, given the plans for higher order transit

implementation in the Study Area, through traffic along Dundas Street and Hurontario Street is likely shift to other, more attractive alternative routes in less dense areas, creating capacity for trips originating in or destined to the Cooksville and Dundas MTSAs.

At the intersection of Dundas Street and Jaguar Valley Drive, the growth along Dundas Street results in delays and queues beyond capacity at southbound and northbound approaches. Similar to 2028 Future Background horizon, the signal warrant has been reviewed at this intersection using the 2033 Future Total volumes and the OTM Book 12 Justification 7 methodology. Signal warrants can be seen in Appendix E. It was found that traffic signals are not warranted at this intersection. Therefore, it is expected that some of the southbound and northbound trips at this intersection will naturally reroute to the nearby intersection of Dundas Street at Kirwin Avenue / Camilla Road, where sufficient residual capacity has been observed at northbound and southbound approaches.

Both the full-movement site access along Kirwin Avenue, and the right-in / right-out access along Hurontario Street operate well with LOS ranging between A and D. Vehicles making a westbound left turn into the site at Access #1 will experience minimal average delays and the 95th percentile queues out of the site can be accommodated in by the throat lengths at either access.

7 Conclusions

This Transportation Impact Study has examined the trip generation, access requirements, and Study Area road network impact of the proposed development at 3085 Hurontario Street. The TIS has shown the following:

- a) The proposed development will include three residential building with 1,081 units in total, and 11,044 square feet of mixed-use space.
- b) The subject development will include 1,038 vehicular parking spaces, and 797 bicycle parking spaces. Parking justification section has been prepared as part of this report to support the proposed vehicular parking provision rates.
- c) Access to the development will be accommodated via Kirwin Avenue (Site Access #1) to the north and Hurontario Street (Site Access #2) to the west. Site Access #2 will be restricted to right in / right out only, as a result of the proposed Light Rail Transit along Hurontario Street.
- d) The growth rates in the Study Area were provided by the City of Mississauga staff, and range between - 2% to +1% depending on the studied segment and horizon year.
- e) The proposed development is located within the Dundas MTSA and is adjacent to the Cooksville MTSA, outlined as part of the preliminary MTSA report published by Region of Peel in 2020. The proposed improvements in the Study Area include implementation of Hurontario LRT, and Dundas BRT. Further, Cooksville Mobility Hub has been recently improved to provide better service and increase transit competitiveness in the Study Area. As both Hurontario LRT and Dundas BRT are expected to be implemented by the full build-out of the proposed development, the effects of these projects on the mode shares were estimated and used to adjust the 2016 TTS Study Area road network mode shares to the 2028 horizon.
- f) To estimate the impact of the subject development on the Study Area ITE average and fitted curve person trip rates were used. The subject development is anticipated to generate 414 AM and 542 PM two-way peak hour person trips. Using the projected mode shares for 2028, the vehicle trips were calculated and are equal to 208 AM and 271 PM peak hour two-way trips.

- g) Using the available turning movement counts in the Study Area, which were balanced between adjacent intersections and increased to reflect the expansion of Cooksville GO, an operational analysis of existing conditions was undertaken. The key findings of the existing horizon operational analysis are listed below:
 - a. Majority of the Study Area intersections operate well. Minor approaches experience high delays as a result of 160 second cycle lengths.
 - b. Limited gaps are available for southbound vehicles at Dundas Street and Jaguar Valley Drive, resulting in a V/C ratio above one and high delays.
 - c. Several movements at Hurontario Street and Dundas Street intersection operate at or slightly above capacity. However, provided the classification of the two intersecting roads, congestion at such intersections is expected.
- h) The 2028 Future Background traffic volumes, including background developments, growth, and geometric changes to Hurontario Street and Dundas Street as a result of Hurontario LRT and Dundas BRT implementation were analysed. With these changes the Study Area performs at a lower level of service when compared to the existing horizon. However, where the operational performance decreased, the movements are projected to operate at or below capacity with the exception of one movement at Dundas Street at Jaguar Valley Drive intersection. A signal warrant has been reviewed at this intersection, and the results show that signals are not warranted at Dundas Street and Jaguar Valley Drive in 2028 Future Background horizon. It is expected that over time southbound drivers will anticipate poor performance at this approach and naturally reroute to adjacent signalized intersections with residual southbound capacity, such as Dundas Street at Kirwin Avenue.
- i) The addition of the site generated trips to the 2028 Future Background volumes does not significantly impact the Study Area and the level of service remains relatively the same at majority of intersections. At constrained movements which were impacted by the site-generated trips, the increase in V/C ratio ranged between four and ten percent. At Site Access #1 and Site Access #2, all approaches operate well with LOS ranging between A and D. Vehicles making a westbound left turn into the site at Access #1 will experience minimal average delay of 9 seconds. Further, the 95th percentile queues out of the site can be accommodated by the throat lengths at both site accesses.
- j) With changes to the traffic volumes between 2028 and 2033 background horizons, the signalized intersection operations in the Study Area remain relatively similar, with slightly better performance along Hurontario Street, and more congested operations along Dundas Street. At Dundas Street at Jaguar Valley Drive an exponential growth in operational performance variables is observed at both the northbound and southbound approaches during the PM peak period. As previously discussed, some of the traffic from these approaches can be rerouted to nearby signalized intersections with available residual capacity.
- k) Similarly to 2028 Future Total horizon, the site-generated traffic does not have a significant effect on the Study Area network in the 2033 Future Total horizon. At movements which performed at a low LOS in the background horizon, the V/C ratio increased between two and seven percent. This is less than the impact observed in 2028 Future Total scenario despite the site trip generation remaining constant over the two future horizons. This indicates that the performance of congested movements is predominantly driven by the background conditions. Site Access #1 and Site Access #2 operate well in 2033 Future Total horizon with LOS ranging between A and D. Vehicles making a westbound left turn into the site at Access #1 will experience minimal average delays and the 95th percentile queues out of the site can be accommodated by the throat lengths at either access.
- l) It is expected that with intensification, the mode shares in the Study Area and in the City of Mississauga will shift towards non-auto modes, the effect of which is hard to predict and was not accounted for as

part of the background volumes. Further, given the plans for higher order transit implementation in the Study Area, part of the through traffic along Dundas Street and Hurontario Street is likely shift to other, more attractive alternative routes in less dense areas, creating capacity for trips originating in or destined to the Cooksville and Dundas MTSAs.

- m) Site design elements and TDM measures supportive of sustainable modes have been proposed for 3085 Hurontario Street to ensure that the mode shares at the proposed development contribute to the Study Area traffic superzone meeting the Regional mode share targets. Some of the proposed TDM measures include reduced vehicular parking provisions, and enhanced-usability bike parking.

The proposed development will have a minor impact on the Study Area road network and the proposed accesses will operate well. The 3085 Hurontario Street site design aligns with the future surrounding area context, with an emphasis on sustainable modes of travel. It is recommended that, from a transportation perspective, the proposed development application proceed.

Prepared By:



Viktoriya Zaytseva, E.I.T.

437-221-1343

Viktoriya.Zaytseva@CGHTransportation.com

Reviewed By:



Mark Crockford, P. Eng.

905-251-4070

Mark.Crockford@CGHTransportation.com

Appendix A

Scope Confirmation



Technical Memorandum

To:	Daphne Chen – City of Mississauga	Date:	2021-01-21
Cc:	Viktoriya Zaytseva – CGH Transportation		
From:	Mark Crockford	Project Number:	2020-72

Re: 3085 Hurontario Street Transportation Impact Study – Terms of Reference

We have been asked to undertake a Transportation Impact Study (TIS) for Doracin Terra Strategies Ltd. property at 3085 Hurontario Street in Mississauga, located approximately 250 metres north of Hurontario Street at Dundas Street intersection. The proposed development includes three residential buildings with approximately 1,004 residential units in total, and 1257 square metres of retail space. Currently, the 3085 Hurontario Street property lot is occupied by a retail building and an adjacent two-storey parking lot. The existing uses will be removed as part of the proposed development.

We have prepared the following TIS scope of work for review. Please let us know if you have any comments or additions.

Transportation Impact Study Requirements:

The study will be in accordance with City of Mississauga *Traffic Impact Study Guidelines*.

Proposed Development Overview:

- A description of the proposed development
- Outline of land use as it relates to the development and site statistics
- Identification of proposed site access locations

Study Area:

- An overview of the transportation network existing conditions will be documented (including transit, cycling, pedestrian and automobile modes)
- An overview of the study area road network will be provided including the road classification and descriptions of:
 - Hurontario Street
 - Hillcrest Avenue / Kirwin Avenue
 - Jaguar Valley Drive
 - Dundas Street
 - Central Parkway
- The following intersections will be included in the Transportation Impact Study:
 - Hurontario Street at Central Parkway
 - Hurontario Street at Hillcrest Avenue / Kirwin Avenue
 - Hurontario Street at Dundas Street
 - Kirwin Avenue at Jaguar Valley Drive
- The following sources are available for Turning Movement Count (TMC) data:
 - **Method 1:** City of Mississauga - the available data is 4-6 years old at study area intersections along Hurontario Street, and 15 years old at Kirwin Avenue at Jaguar Valley Drive

- **Method 2:** A third-party consultant – current TMCs can be collected by a third-party consultant, however, it should be noted that this data will be collected during COVID-19 lockdown measures and may not represent normal traffic conditions.

Through the review of this TOR, CGH would like to confirm which data source is preferred by the City of Mississauga

- Signal Timing Plans for study area intersections were retained from the City of Mississauga

Study Horizon & Peak Periods:

- Base year 2020, followed by a build-out future horizon of 2028
- AM, and PM peak hour periods

Background Growth:

- As per TIS Guidelines and as part of this TOR, CGH would like to acquire growth rates for all study area segments from a calibrated traffic forecasting model from the City of Mississauga's Transportation Planning section

Changes to Area Transportation Network:

- Hurontario LRT Corridor with expected completion in 2024. As part of this project, Hurontario Street drive lanes would be reduced from three to two in each direction. As part of this TOR, CGH would like to acquire the projected pedestrian volumes at the intersections of Hurontario Street and Kirwin Avenue, and Hurontario Street at Dundas Street, and/or future signal timing splits at these intersections for the operational analysis of future horizons including the Hurontario LRT.
- Dundas BRT Corridor – CGH would like to confirm the expected completion date of this project as part of this TOR

Development Site Traffic:

- Trip generation: ITE Trip Generation Manual 10th Edition
- Existing Modal Split: TTS
- Future Modal Split – as the proposed development is fronting the future Hurontario LRT and is within 300 metres of Cooksville GO MTSA and proposed Dundas BRT, it is not recommended that the existing TAZ mode shares are used in determining the future modal share in the Study Area. Instead, CGH would like to acquire target mode shares in the area from the City of Mississauga as part of this TOR to use in the analysis of future horizons.
- Trip distribution and assignment of auto trips: TTS, surrounding area characteristics
- Trip reductions as required

Analysis:

- Traffic analysis to be performed using Synchro 11, on study area network intersections to determine the LOS, delay, V / C ratio and the 95th percentile queues for both signalized and unsignalized intersections as well as individual critical movements
 - Heavy Vehicle %, Peak Hour Factors, pedestrian volumes, and cyclist volumes will be taken from the collected TMC data
 - Other Synchro inputs will be based on site observations as well as Synchro default parameters
- A qualitative transit, cycling, and pedestrian analysis in consideration of any planned improvements
- Access location analysis including a sight distance evaluation
- Site parking, loading and circulation to be considered where necessary

Recommendations:

- Any recommended offsite and onsite improvements or mitigation measures, which may include turn lane requirements, pedestrian / cycling / transit amenities, TDM measures, construction impacts, safety measures etc.

From: [Daphne Chen](#)
To: [Mark Crockford](#)
Cc: [Viktoriya Zaytseva](#); [James Doracin](#); [Ryan Au](#)
Subject: RE: 3085 Hurontario - TIS TOR
Date: January 26, 2021 10:11:07 AM
Attachments: [image001.png](#)

Hi Mark,

My team has forwarded the TOR to the Region for review.

Based on our review of the Terms of Reference for 3085 Hurontario Street, dated January 21st, 2020, the following comments are provided:

-

- **Study Area:** – Please also include the following intersections
 - a. Hurontario Street / John Street (signalized)
 - b. Hurontario Street / Agnes Street (unsignalized)
 - c. Dundas Street East / Jaguar Valley Drive (unsignalized)
 - d. John Street/ Jaguar Valley Drive (unsignalized)
- **Traffic Data:** The historical AADT data and Turning Movement Count can be obtained from Tyler Xuereb (tyler.xuereb@mississauga.ca, Ext. 4783). Method 1 mentioned in the Terms of Reference is confirmed.
- **Growth Rates:** Please contact Tyler Xuereb from Transportation Planning Section (tyler.xuereb@mississauga.ca, Ext. 4783) for growth rate.
- **Signal Timing Plans:** The signal timing plan for signalized intersections can be obtained from Jim Kartsomanis (Jim.Kartsomanis@mississauga.ca, Ext. 3964). If new signal is considered include Signal Warrant analysis.
- **Collision Data:** Please contact Colin Patterson from T&W Road Safety (Colin.Patterson@mississauga.ca, ext.5145) for existing traffic related complains and collision history.
- **Background Developments:** Please use the following link to gather information of any development proposed in the neighbouring lands for background traffic:
<https://mississauga.maps.arcgis.com/apps/MapSeries/index.html?appid=2103d1a57cf044a3ab801950bc174686>
- **Community Impacts:** Any traffic related impacts on the existing community and comments from the public through the planning approvals process shall be addressed in this section.
- **On Site Circulation and Site Access Review:**
 - a. Emergency vehicles pathway – provide AUTO turning templates, show turn around space.
 - b. Parking - provide AUTO turning templates for corner parking spots or potential conflict points. Consider providing adequate back out space for parking spots adjacent to the walls.
 - c. Access configuration requirements – check corner clearances, throat length, sight line distances, proximity to utilities and other driveways/roads (TAC).
 - d. Pedestrian circulation – internal facilities for pedestrians, walkways.
- The Traffic Impact Study is required to be signed and stamped by a Professional Engineer.

- **TDM:** A comprehensive Transportation Demand Management Plan is to be part of the report. Provide a TDM plan to demonstrate measures to be implemented to reduce single occupancy vehicle (SOV) trips to the site in support of the city's vision of Hurontario Corridor.
- **LRT**
 - a. The Hurontario-Main LRT (LRT) has been funded; therefore, 5 year and 2031 horizons with LRT scenario are to be analyzed and the LRT Infrastructure Design is to be referenced for future lane and intersection conditions (<http://lrt-mississauga.brampton.ca/EN/EPR/Pages/Welcome.aspx>).
 - b. The Hurontario-Main LRT is scheduled to be completed by 2024. Depending on the development location, downtown LRT loop implementation should be included into TIS study as one of the future scenario options.

The applicant is to contact Matthew Williams, Project Manager, LRT (matthew.williams@mississauga.ca, ext. 5834) to ensure the proposed application has no conflicts or requirements for the future LRT.
- **BRT:** For any information regarding the Dundas BRT Corridor, please contact Matthew Williams (matthew.williams@mississauga.ca)
- **Additional Information:**
 - a. Provide all supporting documentation within the appendices.
 - b. Due to current events, collecting traffic data in the field is not recommended and would not reflect normal peak hour conditions. The consultant is advised to consult methodology with staff once available counts and growths rates are known.

Regards,
Daphne Chen

From: Mark Crockford <mark.crockford@cghtransportation.com>
Sent: Thursday, January 21, 2021 5:00 PM
To: Daphne Chen <Xinyi.Chen@mississauga.ca>
Cc: Viktoriya Zaytseva <viktoriya.zaytseva@cghtransportation.com>; James Doracin <james@doracintsl.com>
Subject: 3085 Hurontario - TIS TOR

Hi Daphne,

Attached is our draft terms reference for your review for the required traffic impact study to support the development application for 3085 Hurontario. Please let us know if you have any comments or questions. Please note we have a few requests for information within our TOR. If you are not the right person to contact for this information please provide the appropriate contact. Also, do you know who from the region will be reviewing this file? If so can you either forward the attached with a CC or send us an email address for them?

Thanks,
Mark

Appendix B

Turning Movement Count Data



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 KIo@LEA.ca

Count Name:
20287_HurontarioSt&CentralPkwY-AM
Site Code: 20287
Start Date: 11/19/2019
Page No: 1

Turning Movement Data

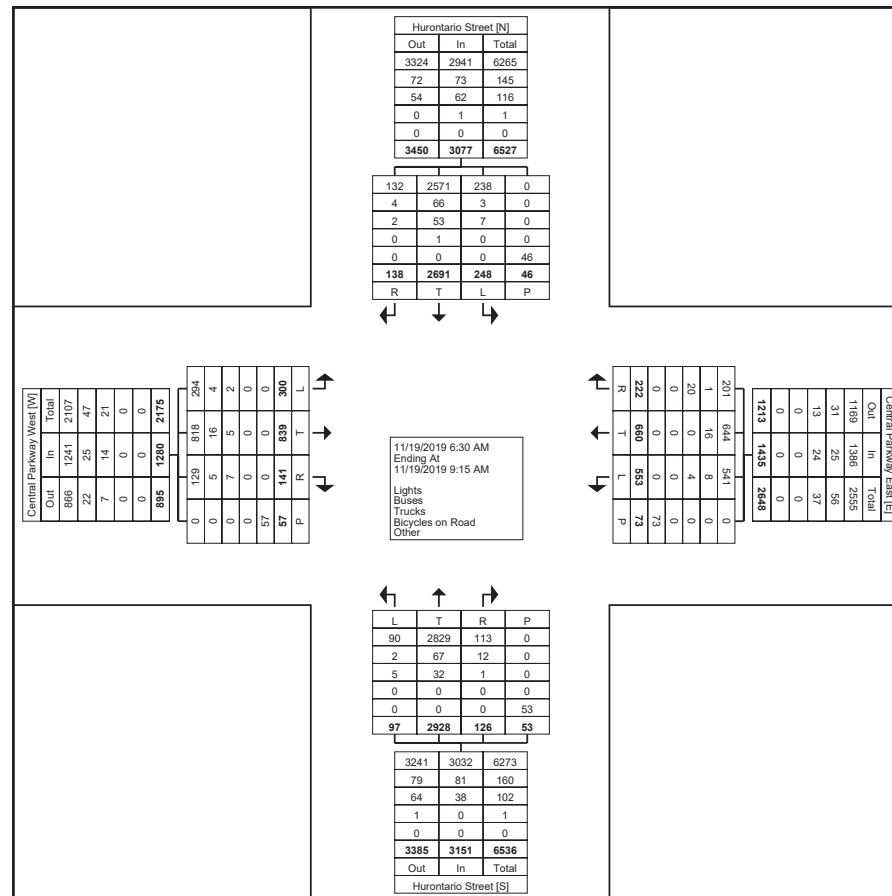
Start Time	Hurontario Street Southbound					Central Parkway East Westbound					Hurontario Street Northbound					Central Parkway West Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
6:30 AM	19	166	11	0	196	46	31	13	1	90	3	219	8	1	230	24	31	9	0	64	580
6:45 AM	23	213	12	1	248	34	27	19	7	80	6	216	13	2	235	14	32	11	3	57	620
Hourly Total	42	379	23	1	444	80	58	32	8	170	9	435	21	3	465	38	63	20	3	121	1200
7:00 AM	20	206	8	3	234	38	32	20	6	90	5	212	9	1	226	15	53	6	1	74	624
7:15 AM	19	244	10	6	273	60	53	12	9	125	10	279	17	3	306	28	56	6	4	90	794
7:30 AM	29	315	16	4	360	64	58	12	5	134	5	312	14	13	331	35	98	18	8	151	976
7:45 AM	29	350	12	12	391	60	118	24	13	202	8	321	18	7	347	25	119	15	6	159	1099
Hourly Total	97	1115	46	25	1258	222	261	68	33	551	28	1124	58	24	1210	103	326	45	19	474	3493
8:00 AM	36	404	18	3	458	76	84	33	15	193	12	350	7	10	369	37	123	21	13	181	1201
8:15 AM	28	274	7	6	309	79	67	30	7	176	11	307	8	6	326	50	140	18	5	208	1019
8:30 AM	20	256	24	6	300	50	104	33	4	187	20	365	17	5	402	33	84	11	10	128	1017
8:45 AM	25	263	20	5	308	46	86	26	6	158	17	346	15	5	378	39	103	26	7	168	1012
Hourly Total	109	1197	69	20	1375	251	341	122	32	714	60	1368	47	26	1475	159	450	76	35	685	4249
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Grand Total	248	2691	138	46	3077	553	660	222	73	1435	97	2928	126	53	3151	300	839	141	57	1280	8943
Approach %	8.1	87.5	4.5	-	-	38.5	46.0	15.5	-	-	3.1	92.9	4.0	-	-	23.4	65.5	11.0	-	-	-
Total %	2.8	30.1	1.5	-	34.4	6.2	7.4	2.5	-	16.0	1.1	32.7	1.4	-	35.2	3.4	9.4	1.6	-	14.3	-
Lights	238	2571	132	-	2941	541	644	201	-	1386	90	2829	113	-	3032	294	818	129	-	1241	8600
% Lights	96.0	95.5	95.7	-	95.6	97.8	97.6	90.5	-	96.6	92.8	96.6	89.7	-	96.2	98.0	97.5	91.5	-	97.0	96.2
Buses	3	66	4	-	73	8	16	1	-	25	2	67	12	-	81	4	16	5	-	25	204
% Buses	1.2	2.5	2.9	-	2.4	1.4	2.4	0.5	-	1.7	2.1	2.3	9.5	-	2.6	1.3	1.9	3.5	-	2.0	2.3
Trucks	7	53	2	-	62	4	0	20	-	24	5	32	1	-	38	2	5	7	-	14	138
% Trucks	2.8	2.0	1.4	-	2.0	0.7	0.0	9.0	-	1.7	5.2	1.1	0.8	-	1.2	0.7	0.6	5.0	-	1.1	1.5
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	0	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	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	1.9	-	-	-	-	1.8	-	-
Pedestrians	-	-	-	46	-	-	-	-	73	-	-	-	-	52	-	-	-	-	56	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	98.1	-	-	-	-	98.2	-	-



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 KIo@LEA.ca

Count Name:
20287_HurontarioSt&CentralPkw-AM
Site Code: 20287
Start Date: 11/19/2019
Page No: 2



Turning Movement Data Plot



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905-470-0015 x240 Kio@LEA.ca

Count Name:
20287_HurontarioSt&CentralPkwY-AM
Site Code: 20287
Start Date: 11/19/2019
Page No: 3

Turning Movement Peak Hour Data (7:45 AM)

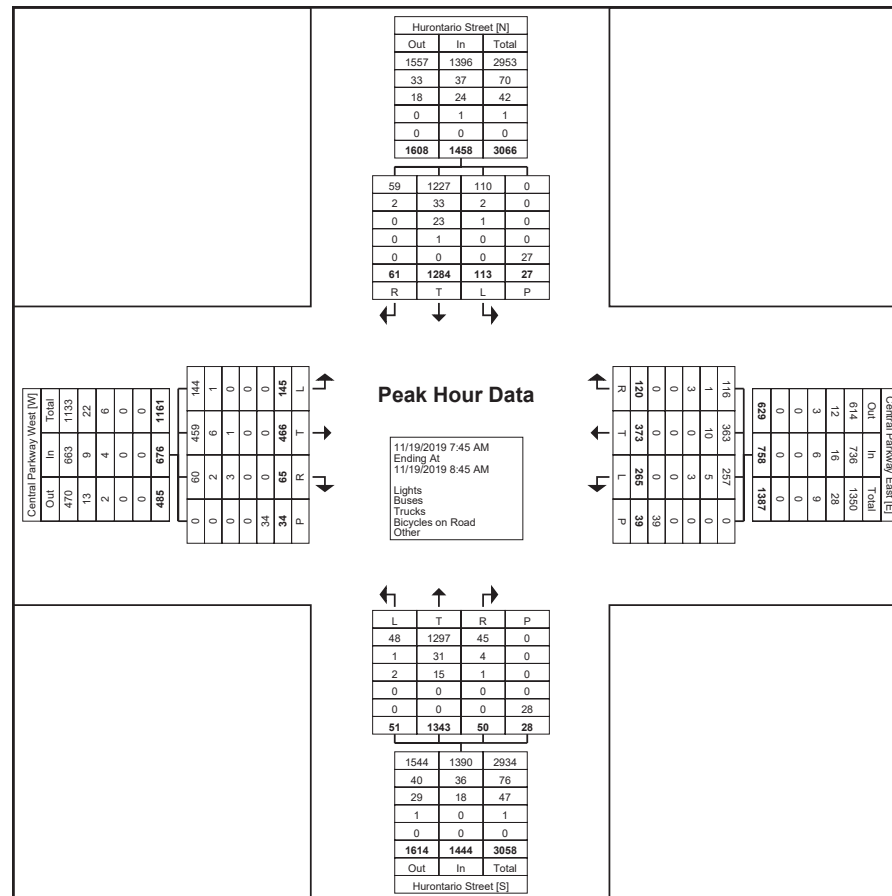
Start Time	Hurontario Street Southbound					Central Parkway East Westbound					Hurontario Street Northbound					Central Parkway West Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:45 AM	29	350	12	12	391	60	118	24	13	202	8	321	18	7	347	25	119	15	6	159	1099
8:00 AM	36	404	18	3	458	76	84	33	15	193	12	350	7	10	369	37	123	21	13	181	1201
8:15 AM	28	274	7	6	309	79	67	30	7	176	11	307	8	6	326	50	140	18	5	208	1019
8:30 AM	20	256	24	6	300	50	104	33	4	187	20	365	17	5	402	33	84	11	10	128	1017
Total	113	1284	61	27	1458	265	373	120	39	758	51	1343	50	28	1444	145	466	65	34	676	4336
Approach %	7.8	88.1	4.2	-	-	35.0	49.2	15.8	-	-	3.5	93.0	3.5	-	-	21.4	68.9	9.6	-	-	-
Total %	2.6	29.6	1.4	-	33.6	6.1	8.6	2.8	-	17.5	1.2	31.0	1.2	-	33.3	3.3	10.7	1.5	-	15.6	-
PHF	0.785	0.795	0.635	-	0.796	0.839	0.790	0.909	-	0.938	0.638	0.920	0.694	-	0.898	0.725	0.832	0.774	-	0.813	0.903
Lights	110	1227	59	-	1396	257	363	116	-	736	48	1297	45	-	1390	144	459	60	-	663	4185
% Lights	97.3	95.6	96.7	-	95.7	97.0	97.3	96.7	-	97.1	94.1	96.6	90.0	-	96.3	99.3	98.5	92.3	-	98.1	96.5
Buses	2	33	2	-	37	5	10	1	-	16	1	31	4	-	36	1	6	2	-	9	98
% Buses	1.8	2.6	3.3	-	2.5	1.9	2.7	0.8	-	2.1	2.0	2.3	8.0	-	2.5	0.7	1.3	3.1	-	1.3	2.3
Trucks	1	23	0	-	24	3	0	3	-	6	2	15	1	-	18	0	1	3	-	4	52
% Trucks	0.9	1.8	0.0	-	1.6	1.1	0.0	2.5	-	0.8	3.9	1.1	2.0	-	1.2	0.0	0.2	4.6	-	0.6	1.2
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	3.6	-	-	-	-	2.9	-	-
Pedestrians	-	-	-	27	-	-	-	-	39	-	-	-	-	27	-	-	-	-	33	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	96.4	-	-	-	-	97.1	-	-



LEA Consulting Ltd.
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Count Name:
20287_HurontarioSt&CentralPkw-AM
Site Code: 20287
Start Date: 11/19/2019
Page No: 4



Turning Movement Peak Hour Data Plot (7:45 AM)



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Kio@LEA.ca

Count Name:
20287_HurontarioSt&CentralPkwY-PM
Site Code: 20287
Start Date: 11/19/2019
Page No: 1

Turning Movement Data

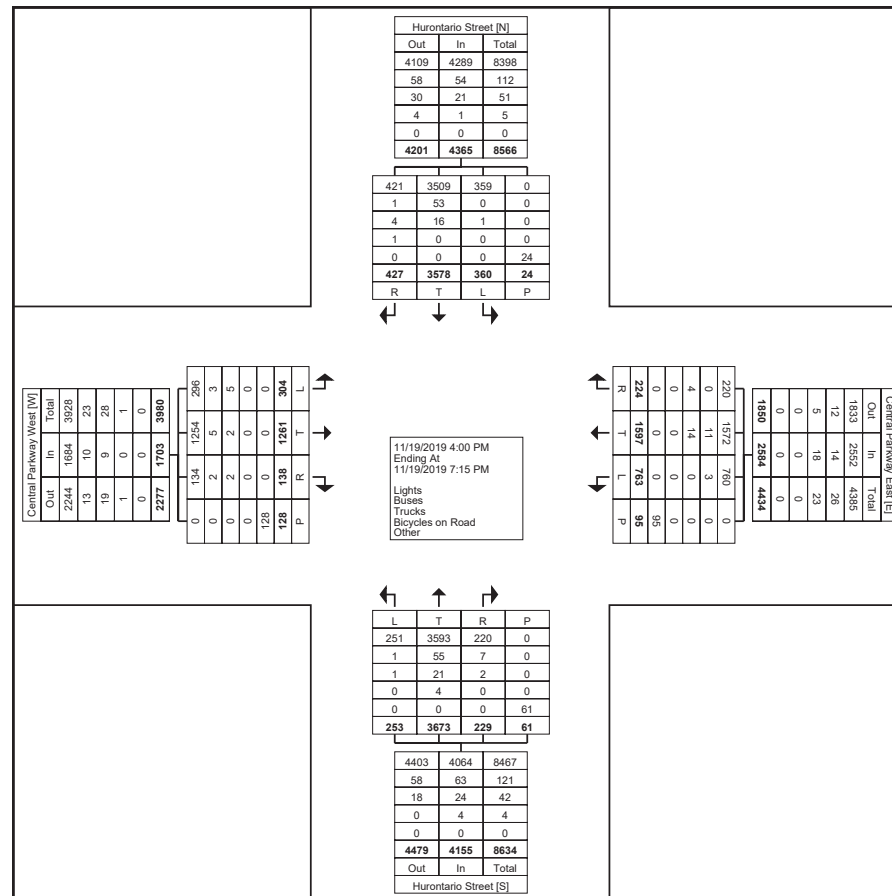
Start Time	Hurontario Street Southbound					Central Parkway East Westbound					Hurontario Street Northbound					Central Parkway West Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
4:00 PM	30	301	20	2	351	63	127	17	8	207	26	258	23	7	307	21	125	9	8	155	1020
4:15 PM	22	336	39	0	397	57	124	22	10	203	25	316	24	6	365	25	82	8	11	115	1080
4:30 PM	26	349	31	4	406	57	134	22	14	213	18	281	16	11	315	28	94	13	12	135	1069
4:45 PM	32	289	36	0	357	64	182	24	9	270	18	309	25	3	352	26	116	10	4	152	1131
Hourly Total	110	1275	126	6	1511	241	567	85	41	893	87	1164	88	27	1339	100	417	40	35	557	4300
5:00 PM	27	353	30	2	410	61	114	5	4	180	24	316	10	3	350	24	85	13	13	122	1062
5:15 PM	37	295	44	0	376	80	137	16	5	233	14	281	21	5	316	26	126	10	7	162	1087
5:30 PM	22	274	51	1	347	58	128	8	12	194	16	357	24	4	397	24	124	7	14	155	1093
5:45 PM	38	202	33	1	273	75	102	8	7	185	29	314	20	6	363	27	112	10	10	149	970
Hourly Total	124	1124	158	4	1406	274	481	37	28	792	83	1268	75	18	1426	101	447	40	44	588	4212
6:00 PM	31	297	34	5	362	72	198	33	7	303	21	304	16	3	341	27	120	16	11	163	1169
6:15 PM	24	341	39	5	404	62	127	20	5	209	18	367	27	4	412	23	82	16	18	121	1146
6:30 PM	42	296	34	3	372	65	118	23	8	206	19	315	16	3	350	31	115	12	9	158	1086
6:45 PM	29	245	36	1	310	49	106	26	6	181	25	255	7	6	287	22	80	14	10	116	894
Hourly Total	126	1179	143	14	1448	248	549	102	26	899	83	1241	66	16	1390	103	397	58	48	558	4295
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Grand Total	360	3578	427	24	4365	763	1597	224	95	2584	253	3673	229	61	4155	304	1261	138	128	1703	12807
Approach %	8.2	82.0	9.8	-	-	29.5	61.8	8.7	-	-	6.1	88.4	5.5	-	-	17.9	74.0	8.1	-	-	-
Total %	2.8	27.9	3.3	-	34.1	6.0	12.5	1.7	-	20.2	2.0	28.7	1.8	-	32.4	2.4	9.8	1.1	-	13.3	-
Lights	359	3509	421	-	4289	760	1572	220	-	2552	251	3593	220	-	4064	296	1254	134	-	1684	12589
% Lights	99.7	98.1	98.6	-	98.3	99.6	98.4	98.2	-	98.8	99.2	97.8	96.1	-	97.8	97.4	99.4	97.1	-	98.9	98.3
Buses	0	53	1	-	54	3	11	0	-	14	1	55	7	-	63	3	5	2	-	10	141
% Buses	0.0	1.5	0.2	-	1.2	0.4	0.7	0.0	-	0.5	0.4	1.5	3.1	-	1.5	1.0	0.4	1.4	-	0.6	1.1
Trucks	1	16	4	-	21	0	14	4	-	18	1	21	2	-	24	5	2	2	-	9	72
% Trucks	0.3	0.4	0.9	-	0.5	0.0	0.9	1.8	-	0.7	0.4	0.6	0.9	-	0.6	1.6	0.2	1.4	-	0.5	0.6
Bicycles on Road	0	0	1	-	1	0	0	0	-	0	0	4	0	-	4	0	0	0	-	0	5
% Bicycles on Road	0.0	0.0	0.2	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	1.6	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	24	-	-	-	-	95	-	-	-	-	60	-	-	-	-	128	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	98.4	-	-	-	-	100.0	-	-



LEA Consulting Ltd.
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Count Name:
20287_HurontarioSt&CentralPkw-PM
Site Code: 20287
Start Date: 11/19/2019
Page No: 2



Turning Movement Data Plot



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 KIo@LEA.ca

Count Name:
20287_HurontarioSt&CentralPkw-PM
Site Code: 20287
Start Date: 11/19/2019
Page No: 3

Turning Movement Peak Hour Data (5:30 PM)

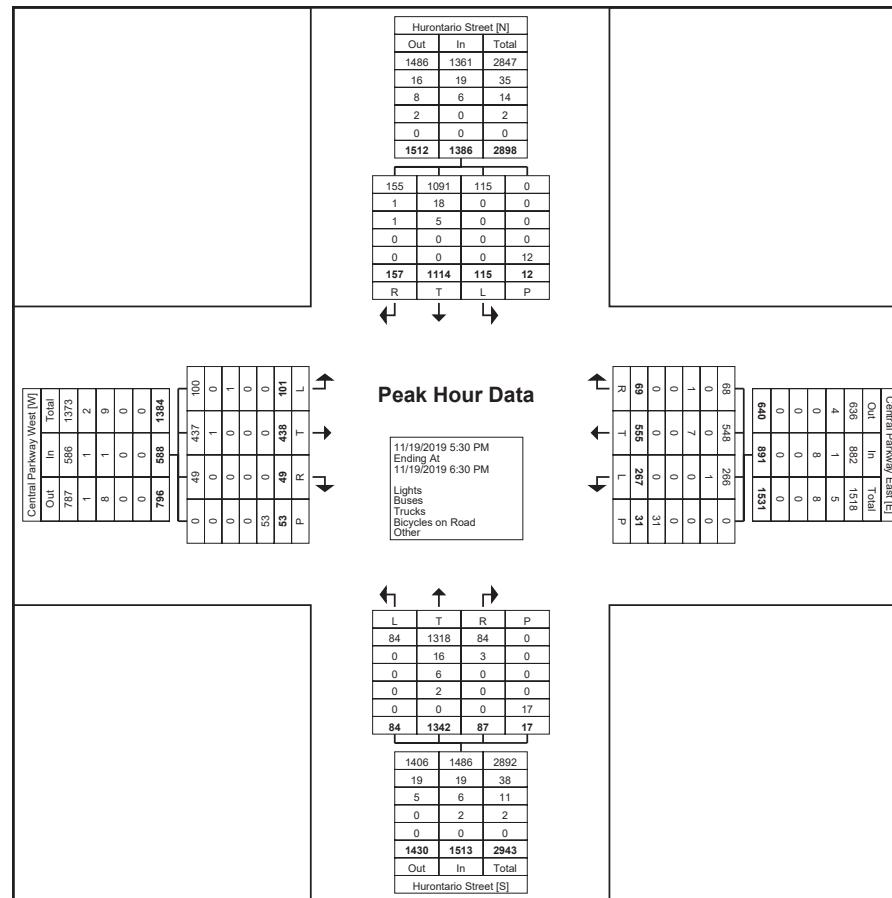
Start Time	Hurontario Street Southbound					Central Parkway East Westbound					Hurontario Street Northbound					Central Parkway West Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
5:30 PM	22	274	51	1	347	58	128	8	12	194	16	357	24	4	397	24	124	7	14	155	1093
5:45 PM	38	202	33	1	273	75	102	8	7	185	29	314	20	6	363	27	112	10	10	149	970
6:00 PM	31	297	34	5	362	72	198	33	7	303	21	304	16	3	341	27	120	16	11	163	1169
6:15 PM	24	341	39	5	404	62	127	20	5	209	18	367	27	4	412	23	82	16	18	121	1146
Total	115	1114	157	12	1386	267	555	69	31	891	84	1342	87	17	1513	101	438	49	53	588	4378
Approach %	8.3	80.4	11.3	-	-	30.0	62.3	7.7	-	-	5.6	88.7	5.8	-	-	17.2	74.5	8.3	-	-	-
Total %	2.6	25.4	3.6	-	31.7	6.1	12.7	1.6	-	20.4	1.9	30.7	2.0	-	34.6	2.3	10.0	1.1	-	13.4	-
PHF	0.757	0.817	0.770	-	0.858	0.890	0.701	0.523	-	0.735	0.724	0.914	0.806	-	0.918	0.935	0.883	0.766	-	0.902	0.936
Lights	115	1091	155	-	1361	266	548	68	-	882	84	1318	84	-	1486	100	437	49	-	586	4315
% Lights	100.0	97.9	98.7	-	98.2	99.6	98.7	98.6	-	99.0	100.0	98.2	96.6	-	98.2	99.0	99.8	100.0	-	99.7	98.6
Buses	0	18	1	-	19	1	0	0	-	1	0	16	3	-	19	0	1	0	-	1	40
% Buses	0.0	1.6	0.6	-	1.4	0.4	0.0	0.0	-	0.1	0.0	1.2	3.4	-	1.3	0.0	0.2	0.0	-	0.2	0.9
Trucks	0	5	1	-	6	0	7	1	-	8	0	6	0	-	6	1	0	0	-	1	21
% Trucks	0.0	0.4	0.6	-	0.4	0.0	1.3	1.4	-	0.9	0.0	0.4	0.0	-	0.4	1.0	0.0	0.0	-	0.2	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	5.9	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	12	-	-	-	-	31	-	-	-	-	16	-	-	-	-	53	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	94.1	-	-	-	-	100.0	-	-



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Kio@LEA.ca

Count Name:
20287_HurontarioSt&CentralPkw-PM
Site Code: 20287
Start Date: 11/19/2019
Page No: 4



Turning Movement Peak Hour Data Plot (5:30 PM)



Turning Movements Report - AM Period

Location..... HURONTARIO ST @ JOHN ST

Municipality..... Mississauga

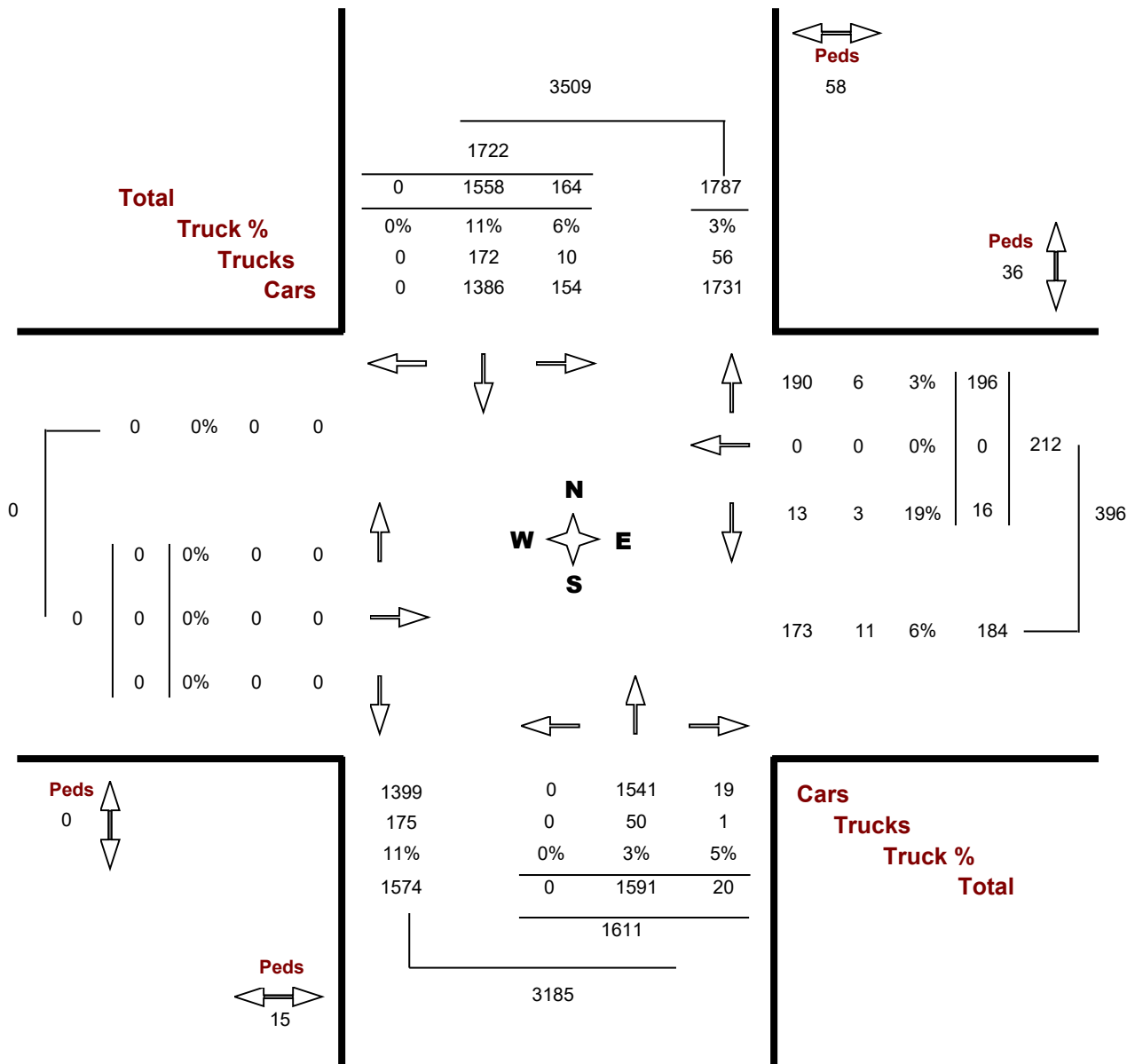
GeoID..... 349455

Count Date..... Tuesday, 05 May, 2015

Peak Hour..... 07:30 AM — 08:30 AM

Road 1 JOHN ST

Road 2 HURONTARIO ST





Turning Movements Report - PM Period

Location..... HURONTARIO ST @ JOHN ST

Municipality..... Mississauga

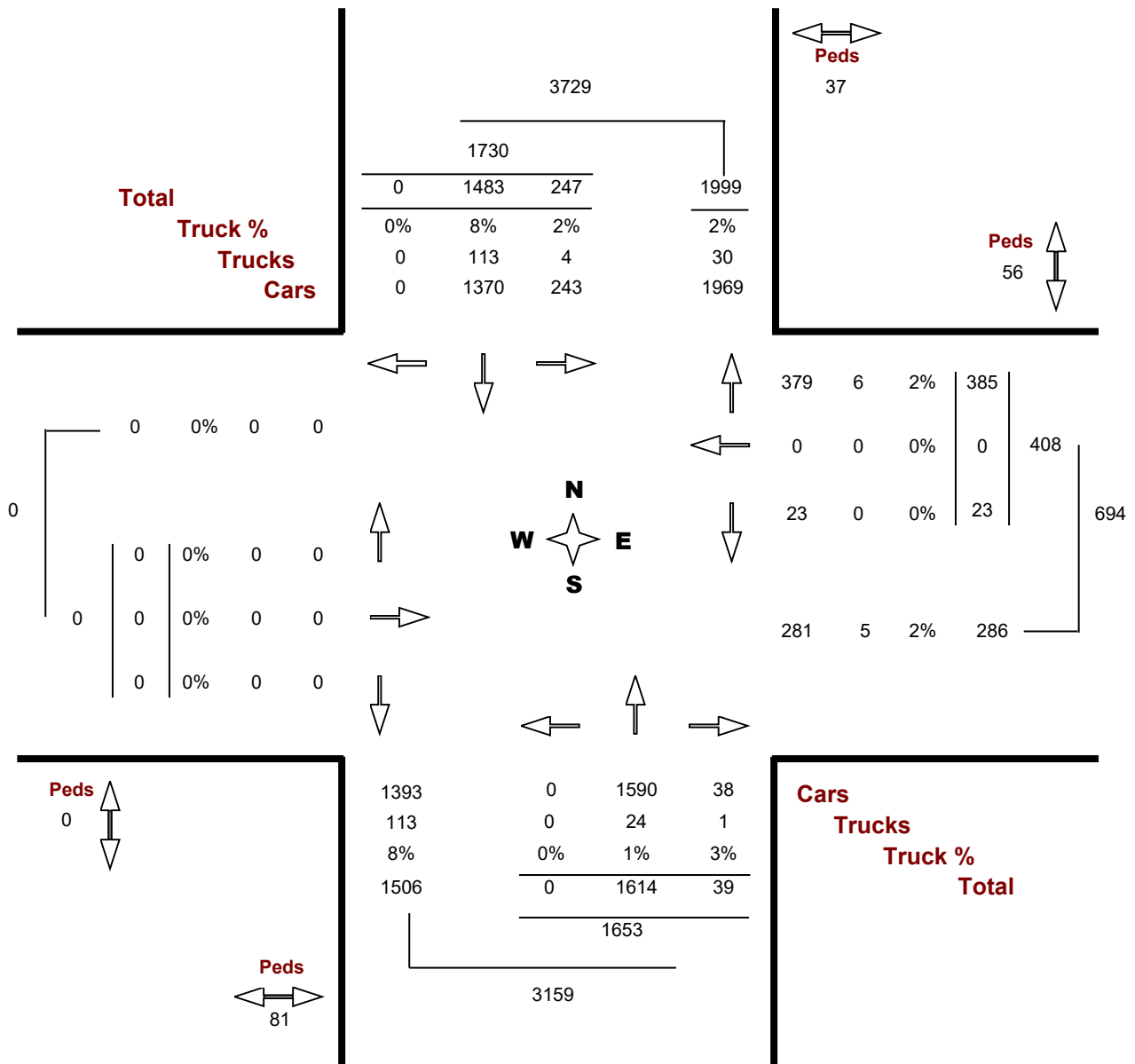
GeoID..... 349455

Count Date..... Tuesday, 05 May, 2015

Peak Hour..... 05:00 PM — 06:00 PM

Road 1 JOHN ST

Road 2 HURONTARIO ST





Turning Movements Report - AM Period

Location..... HURONTARIO ST @ KIRWIN AVE / HILLCREST AVE

Municipality..... Mississauga

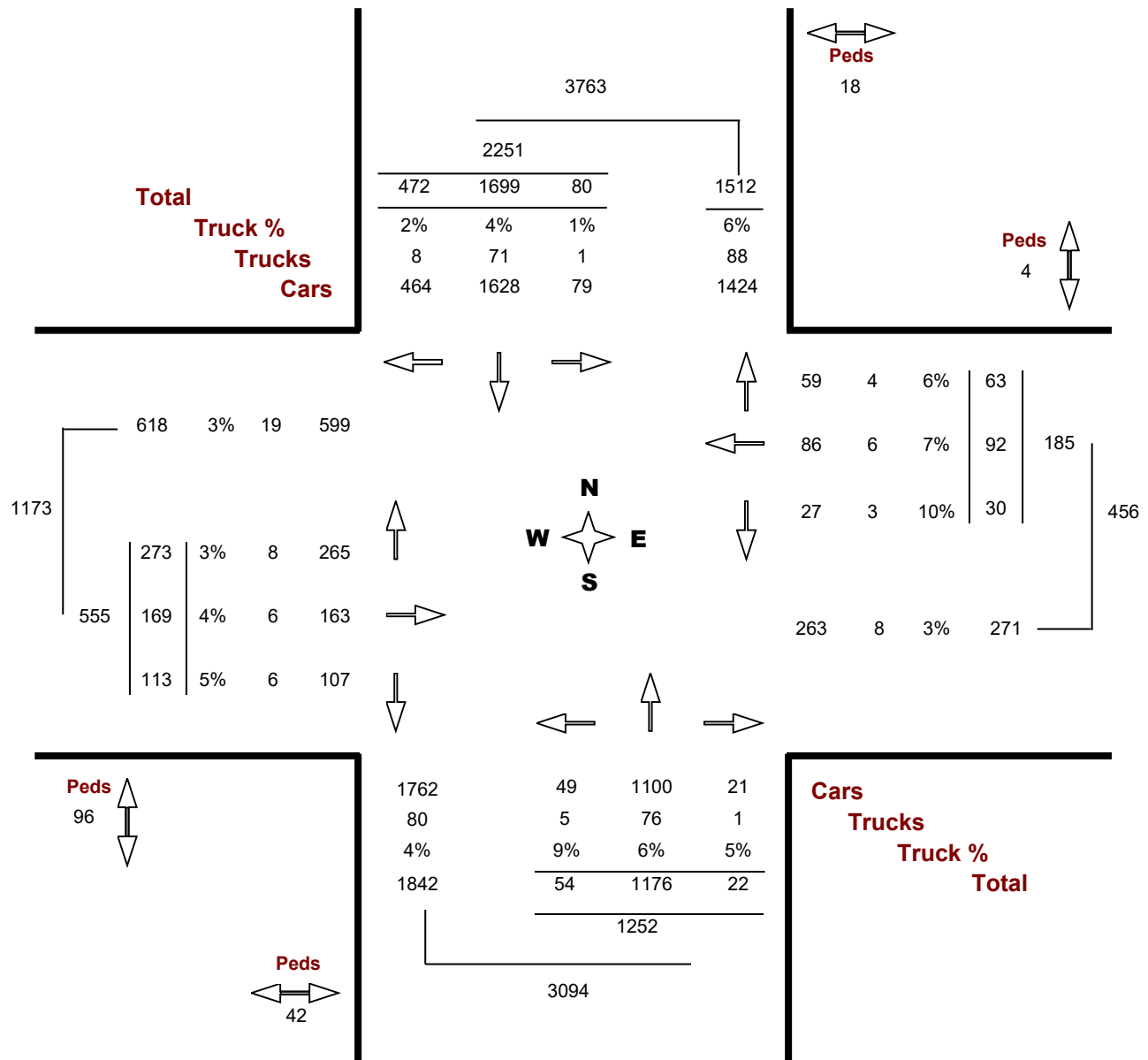
GeoID..... 349513

Count Date..... Tuesday, 22 November, 201

Peak Hour..... 07:45 AM — 08:45 AM

Road 1 HURONTARIO ST

Road 2 KIRWIN AVE / HILLCREST AVE





Turning Movements Report - PM Period

Location..... HURONTARIO ST @ KIRWIN AVE / HILLCREST AVE

Municipality..... Mississauga

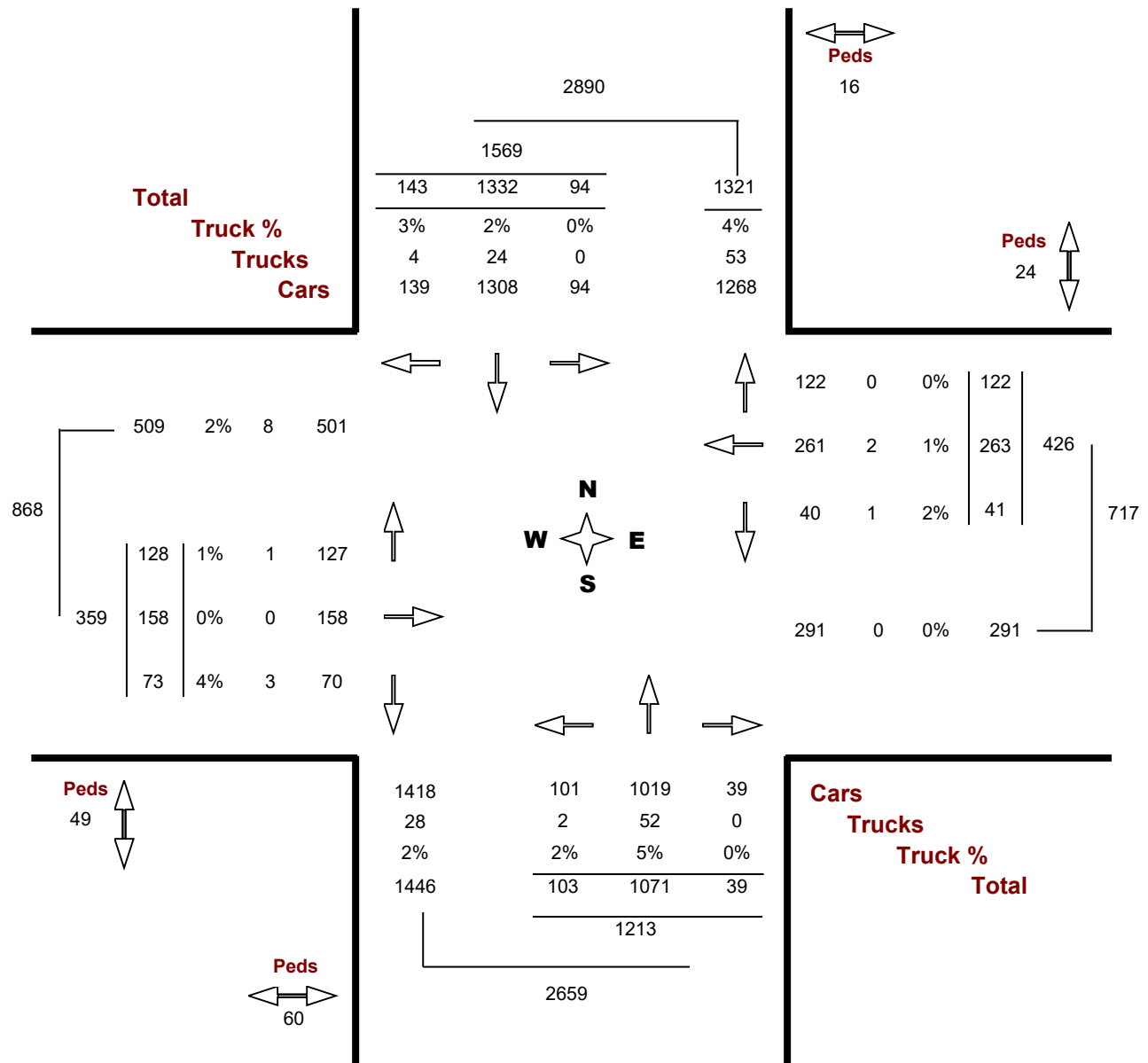
GeoID..... 349513

Count Date..... Tuesday, 22 November, 201

Peak Hour..... 04:15 PM — 05:15 PM

Road 1 HURONTARIO ST

Road 2 KIRWIN AVE / HILLCREST AVE





Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19399 - GHD

Intersection Count Report

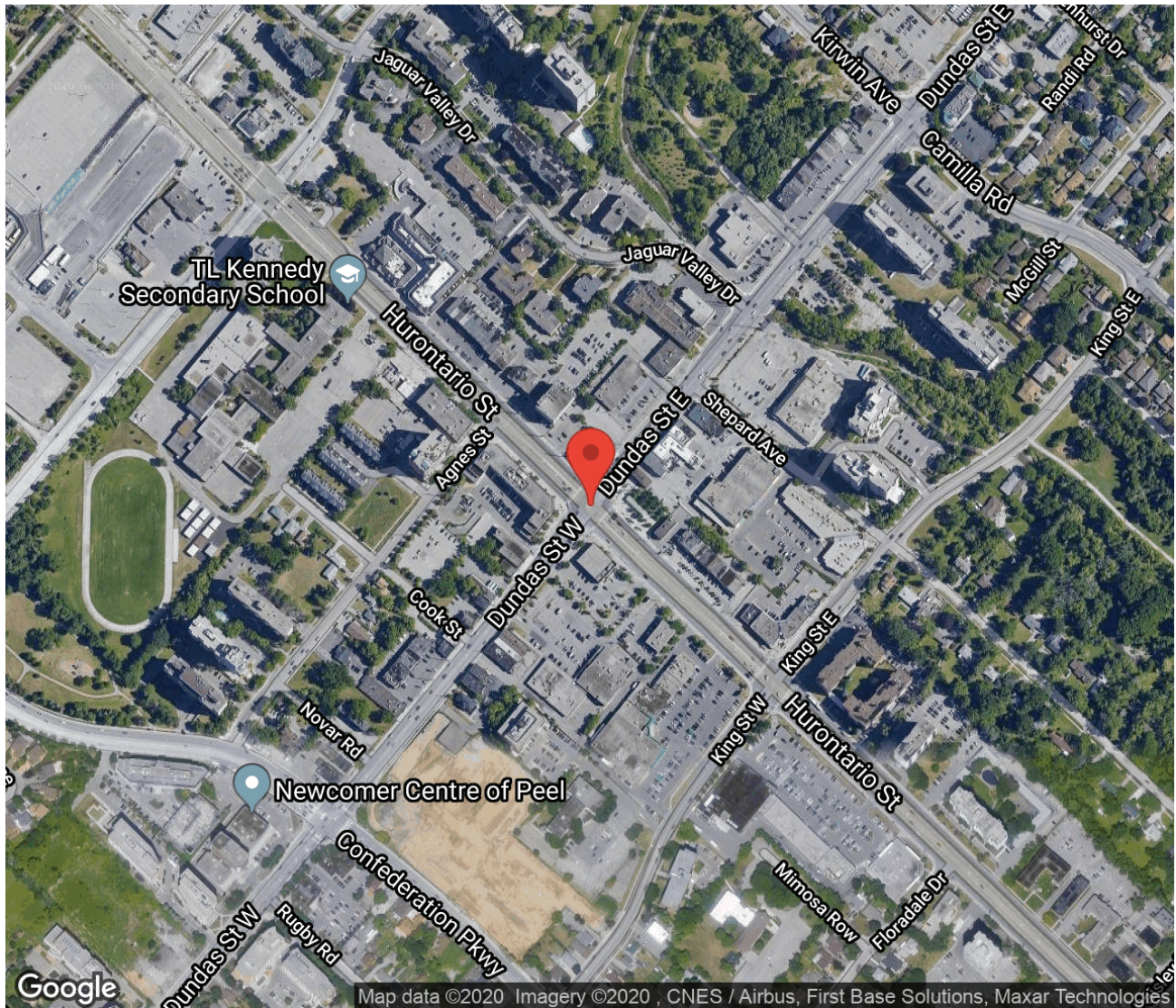
Intersection:	Dundas St W & Hurontario St
Municipality:	Mississauga
Count Date:	Dec 18, 2019
Site Code:	1939900003
Count Categories:	Cars, Trucks, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Map

Intersection: Dundas St W & Hurontario St
Municipality: Mississauga
Count Date: Dec 18, 2019





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Dundas St W & Hurontario St
Municipality: Mississauga
Count Date: Dec 18, 2019

Hurontario St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	93	770	42	0	905	42	90	752	41	1	884	105
08:00 - 09:00	145	842	72	3	1062	58	106	980	96	0	1182	110
BREAK												
16:00 - 17:00	169	1165	115	0	1449	85	157	945	101	1	1204	266
17:00 - 18:00	148	1100	146	1	1395	76	146	894	133	0	1173	213
GRAND TOTAL	555	3877	375	4	4811	261	499	3571	371	2	4443	694



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Dundas St W & Hurontario St
Municipality: Mississauga
Count Date: Dec 18, 2019

Dundas St W - Traffic Summary

Hour	East Approach Totals						West Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	40	316	45	0	401	49	57	911	77	0	1045	107
08:00 - 09:00	74	472	62	0	608	71	101	1031	95	0	1227	136
BREAK												
16:00 - 17:00	142	1001	139	0	1282	127	91	696	155	0	942	237
17:00 - 18:00	141	936	119	0	1196	144	143	687	118	0	948	233
GRAND TOTAL	397	2725	365	0	3487	391	392	3325	445	0	4162	713



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Dundas St W & Hurontario St
Municipality: Mississauga
Count Date: Dec 18, 2019

North Approach - Hurontario St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	15	146	6	0	167	0	14	1	0	15	8
07:15	21	167	14	0	202	2	18	1	0	21	8
07:30	23	196	4	0	223	2	19	3	0	24	14
07:45	27	193	10	0	230	3	17	3	0	23	12
08:00	40	197	13	0	250	2	23	0	0	25	7
08:15	41	200	15	0	256	4	19	1	0	24	19
08:30	28	175	18	1	222	0	15	5	0	20	13
08:45	26	199	16	2	243	4	14	4	0	22	19
SUBTOTAL	221	1473	96	3	1793	17	139	18	0	174	100



Ontario Traffic Inc.

TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Dundas St W & Hurontario St

Municipality: Mississauga

Count Date: Dec 18, 2019

North Approach - Hurontario St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	39	247	26	0	312	2	16	1	0	19	25
16:15	39	254	25	0	318	4	17	3	0	24	22
16:30	38	302	34	0	374	1	21	3	0	25	24
16:45	43	297	22	0	362	3	11	1	0	15	14
17:00	36	264	35	0	335	1	12	3	0	16	29
17:15	42	264	38	0	344	1	9	3	0	13	11
17:30	27	259	38	1	325	1	7	0	0	8	19
17:45	38	276	28	0	342	2	9	1	0	12	17
SUBTOTAL	302	2163	246	1	2712	15	102	15	0	132	161
GRAND TOTAL	523	3636	342	4	4505	32	241	33	0	306	261



Ontario Traffic Inc.

TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Dundas St W & Hurontario St

Municipality: Mississauga

Count Date: Dec 18, 2019

South Approach - Hurontario St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	19	128	8	0	155	2	13	1	0	16	28
07:15	11	169	8	1	189	8	13	1	0	22	34
07:30	13	200	7	0	220	3	22	0	0	25	20
07:45	28	192	13	0	233	6	15	3	0	24	23
08:00	26	238	16	0	280	0	22	7	0	29	26
08:15	17	226	24	0	267	2	12	1	0	15	19
08:30	24	210	22	0	256	1	32	4	0	37	36
08:45	30	221	19	0	270	6	19	3	0	28	29
SUBTOTAL	168	1584	117	1	1870	28	148	20	0	196	215



Ontario Traffic Inc.

TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Dundas St W & Hurontario St

Municipality: Mississauga

Count Date: Dec 18, 2019

South Approach - Hurontario St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	34	214	31	0	279	3	21	0	0	24	78
16:15	41	234	29	0	304	1	16	0	0	17	68
16:30	38	238	20	1	297	4	15	3	0	22	60
16:45	33	199	18	0	250	3	8	0	0	11	60
17:00	43	215	39	0	297	2	14	0	0	16	63
17:15	35	213	34	0	282	1	10	1	0	12	43
17:30	26	188	21	0	235	2	15	3	0	20	61
17:45	36	228	34	0	298	1	11	1	0	13	46
SUBTOTAL	286	1729	226	1	2242	17	110	8	0	135	479
GRAND TOTAL	454	3313	343	2	4112	45	258	28	0	331	694



Ontario Traffic Inc.

TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

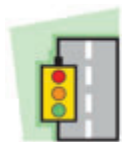
Intersection: Dundas St W & Hurontario St

Municipality: Mississauga

Count Date: Dec 18, 2019

East Approach - Dundas St W

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	7	65	11	0	83	2	12	2	0	16	9
07:15	4	64	8	0	76	2	11	1	0	14	9
07:30	9	71	8	0	88	2	10	1	0	13	20
07:45	13	70	13	0	96	1	13	1	0	15	11
08:00	14	83	7	0	104	2	9	3	0	14	8
08:15	16	123	12	0	151	0	16	4	0	20	16
08:30	19	124	10	0	153	3	14	4	0	21	18
08:45	17	90	20	0	127	3	13	2	0	18	29
SUBTOTAL	99	690	89	0	878	15	98	18	0	131	120



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Dundas St W & Hurontario St
Municipality: Mississauga
Count Date: Dec 18, 2019

East Approach - Dundas St W

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	19	231	43	0	293	2	20	1	0	23	33
16:15	34	235	26	0	295	1	13	3	0	17	33
16:30	40	208	33	0	281	2	17	1	0	20	32
16:45	42	255	32	0	329	2	22	0	0	24	29
17:00	35	212	23	0	270	3	23	1	0	27	51
17:15	25	219	33	0	277	0	18	2	0	20	38
17:30	37	243	28	0	308	2	9	2	0	13	26
17:45	37	203	30	0	270	2	9	0	0	11	29
SUBTOTAL	269	1806	248	0	2323	14	131	10	0	155	271
GRAND TOTAL	368	2496	337	0	3201	29	229	28	0	286	391



Ontario Traffic Inc.

TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Dundas St W & Hurontario St

Municipality: Mississauga

Count Date: Dec 18, 2019

West Approach - Dundas St W

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	11	155	12	0	178	2	21	1	0	24	27
07:15	13	178	19	0	210	2	19	2	0	23	35
07:30	12	228	17	0	257	3	21	3	0	27	30
07:45	12	269	17	0	298	2	20	6	0	28	15
08:00	14	287	10	0	311	2	19	5	0	26	47
08:15	19	243	18	0	280	3	19	9	0	31	40
08:30	29	248	22	0	299	5	5	3	0	13	23
08:45	25	192	21	0	238	4	18	7	0	29	26
SUBTOTAL	135	1800	136	0	2071	23	142	36	0	201	243



Ontario Traffic Inc.

TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Dundas St W & Hurontario St

Municipality: Mississauga

Count Date: Dec 18, 2019

West Approach - Dundas St W

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	19	177	43	0	239	0	15	7	0	22	64
16:15	22	135	35	0	192	0	13	4	0	17	58
16:30	24	165	34	0	223	3	15	1	0	19	80
16:45	22	164	30	0	216	1	12	1	0	14	35
17:00	28	153	22	0	203	0	9	1	0	10	71
17:15	37	179	27	0	243	3	9	1	0	13	58
17:30	34	160	24	0	218	1	11	2	0	14	51
17:45	40	158	39	0	237	0	8	2	0	10	53
SUBTOTAL	226	1291	254	0	1771	8	92	19	0	119	470
GRAND TOTAL	361	3091	390	0	3842	31	234	55	0	320	713



Ontario Traffic Inc.

TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 09:00:00

One Hour Peak

From: 08:00:00
To: 09:00:00

Intersection: Dundas St W & Hurontario St
Site ID: 1939900003
Count Date: Dec 18, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Dundas St W runs E/W

North Approach

	Out	In	Total
	971	1034	2005
	91	112	203
Totals	1062	1146	2208

Hurontario St

	10	71	10	0
	62	771	135	3
Totals	72	842	145	3

East Approach

	Out	In	Total
	535	1186	1721
	73	86	159
Totals	608	1272	1880

Dundas St W

	Out	In	Total	
	0	0	0	
	14	87	101	
	61	970	1031	
	24	71	95	

Peds: 58

Peds: 136



Peds: 71

Peds: 110

Dundas St W

	Totals	Out	In
	0	0	0
	62	49	13
	472	420	52
	74	66	8

West Approach

	Out	In	Total
	1128	579	1707
	99	71	170
Totals	1227	650	1877

	106	980	96	0
	97	895	81	0
	9	85	15	0
Totals	106	980	96	0

Hurontario St

South Approach

	Out	In	Total
	1073	908	1981
	109	103	212
Totals	1182	1011	2193

- Cars

- Trucks

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Dundas St W & Hurontario St
Count Date: Dec 18, 2019
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Hurontario St						South Approach Hurontario St						East Approach Dundas St W						West Approach Dundas St W						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
08:00	42	220	13	0	7	275	26	260	23	0	26	309	16	92	10	0	8	118	16	306	15	0	47	337	1039
08:15	45	219	16	0	19	280	19	238	25	0	19	282	16	139	16	0	16	171	22	262	27	0	40	311	1044
08:30	28	190	23	1	13	242	25	242	26	0	36	293	22	138	14	0	18	174	34	253	25	0	23	312	1021
08:45	30	213	20	2	19	265	36	240	22	0	29	298	20	103	22	0	29	145	29	210	28	0	26	267	975
Grand Total	145	842	72	3	58	1062	106	980	96	0	110	1182	74	472	62	0	71	608	101	1031	95	0	136	1227	4079
Approach %	13.7	79.3	6.8	0.3	-	-	9	82.9	8.1	0	-	-	12.2	77.6	10.2	0	-	-	8.2	84	7.7	0	-	-	-
Totals %	3.6	20.6	1.8	0.1	-	26	2.6	24	2.4	0	-	29	1.8	11.6	1.5	0	-	14.9	2.5	25.3	2.3	0	-	30.1	-
PHF	0.81	0.96	0.78	0.38	-	0.95	0.74	0.94	0.92	0	-	0.96	0.84	0.85	0.7	0	-	0.87	0.74	0.84	0.85	0	-	0.91	0.98
Cars	135	771	62	3	-	971	97	895	81	0	-	1073	66	420	49	0	-	535	87	970	71	0	-	1128	3707
% Cars	93.1	91.6	86.1	100	-	91.4	91.5	91.3	84.4	0	-	90.8	89.2	89	79	0	-	88	86.1	94.1	74.7	0	-	91.9	90.9
Trucks	10	71	10	0	-	91	9	85	15	0	-	109	8	52	13	0	-	73	14	61	24	0	-	99	372
% Trucks	6.9	8.4	13.9	0	-	8.6	8.5	8.7	15.6	0	-	9.2	10.8	11	21	0	-	12	13.9	5.9	25.3	0	-	8.1	9.1
Peds	-	-	-	-	58	-	-	-	-	-	110	-	-	-	-	-	71	-	-	-	-	-	136	-	375
% Peds	-	-	-	-	15.5	-	-	-	-	-	29.3	-	-	-	-	-	18.9	-	-	-	-	-	36.3	-	-



Ontario Traffic Inc.

TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Diagram

Specified Period

From: 16:00:00
To: 18:00:00

One Hour Peak

From: 16:00:00
To: 17:00:00

Intersection: Dundas St W & Hurontario St
Site ID: 1939900003
Count Date: Dec 18, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Dundas St W runs E/W

North Approach

	Out	In	Total
	1366	1106	2472
	83	69	152
Totals	1449	1175	2624

Hurontario St

	8	65	10	0
	107	1100	159	0
Totals	115	1165	169	0

East Approach

	Out	In	Total
	1198	898	2096
	84	68	152
Totals	1282	966	2248

Dundas St W

	Out	In	Total	
	0	0	0	
	4	87	91	
	55	641	696	
	13	142	155	

Peds: 85

Peds: 237



Peds: 127

Peds: 266

Dundas St W

	Totals	Out	In
	0	0	0
	139	134	5
	1001	929	72
	142	135	7

West Approach

	Out	In	Total
	870	1182	2052
	72	91	163
Totals	942	1273	2215

	157	945	101	1
	146	885	98	1
	11	60	3	0

Hurontario St

South Approach

	Out	In	Total
	1130	1378	2508
	74	85	159
Totals	1204	1463	2667

- Cars

- Trucks

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Dundas St W & Hurontario St
Count Date: Dec 18, 2019
Period: 16:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach Hurontario St						South Approach Hurontario St						East Approach Dundas St W						West Approach Dundas St W						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:00	41	263	27	0	25	331	37	235	31	0	78	303	21	251	44	0	33	316	19	192	50	0	64	261	1211
16:15	43	271	28	0	22	342	42	250	29	0	68	321	35	248	29	0	33	312	22	148	39	0	58	209	1184
16:30	39	323	37	0	24	399	42	253	23	1	60	319	42	225	34	0	32	301	27	180	35	0	80	242	1261
16:45	46	308	23	0	14	377	36	207	18	0	60	261	44	277	32	0	29	353	23	176	31	0	35	230	1221
Grand Total	169	1165	115	0	85	1449	157	945	101	1	266	1204	142	1001	139	0	127	1282	91	696	155	0	237	942	4877
Approach %	11.7	80.4	7.9	0	-	-	13	78.5	8.4	0.1	-	-	11.1	78.1	10.8	0	-	-	9.7	73.9	16.5	0	-	-	-
Totals %	3.5	23.9	2.4	0	-	29.7	3.2	19.4	2.1	0	-	24.7	2.9	20.5	2.9	0	-	26.3	1.9	14.3	3.2	0	-	19.3	-
PHF	0.92	0.9	0.78	0	-	0.91	0.93	0.93	0.81	0.25	-	0.94	0.81	0.9	0.79	0	-	0.91	0.84	0.91	0.78	0	-	0.9	0.97
Cars	159	1100	107	0	-	1366	146	885	98	1	-	1130	135	929	134	0	-	1198	87	641	142	0	-	870	4564
% Cars	94.1	94.4	93	0	-	94.3	93	93.7	97	100	-	93.9	95.1	92.8	96.4	0	-	93.4	95.6	92.1	91.6	0	-	92.4	93.6
Trucks	10	65	8	0	-	83	11	60	3	0	-	74	7	72	5	0	-	84	4	55	13	0	-	72	313
% Trucks	5.9	5.6	7	0	-	5.7	7	6.3	3	0	-	6.1	4.9	7.2	3.6	0	-	6.6	4.4	7.9	8.4	0	-	7.6	6.4
Peds	-	-	-	-	85	-	-	-	-	-	266	-	-	-	-	-	127	-	-	-	-	-	237	-	715
% Peds	-	-	-	-	11.9	-	-	-	-	-	37.2	-	-	-	-	-	17.8	-	-	-	-	-	33.1	-	-



Turning Movements Report - AM Period

Location..... DUNDAS ST E @ JAGUAR VALLEY DR

Municipality..... Mississauga

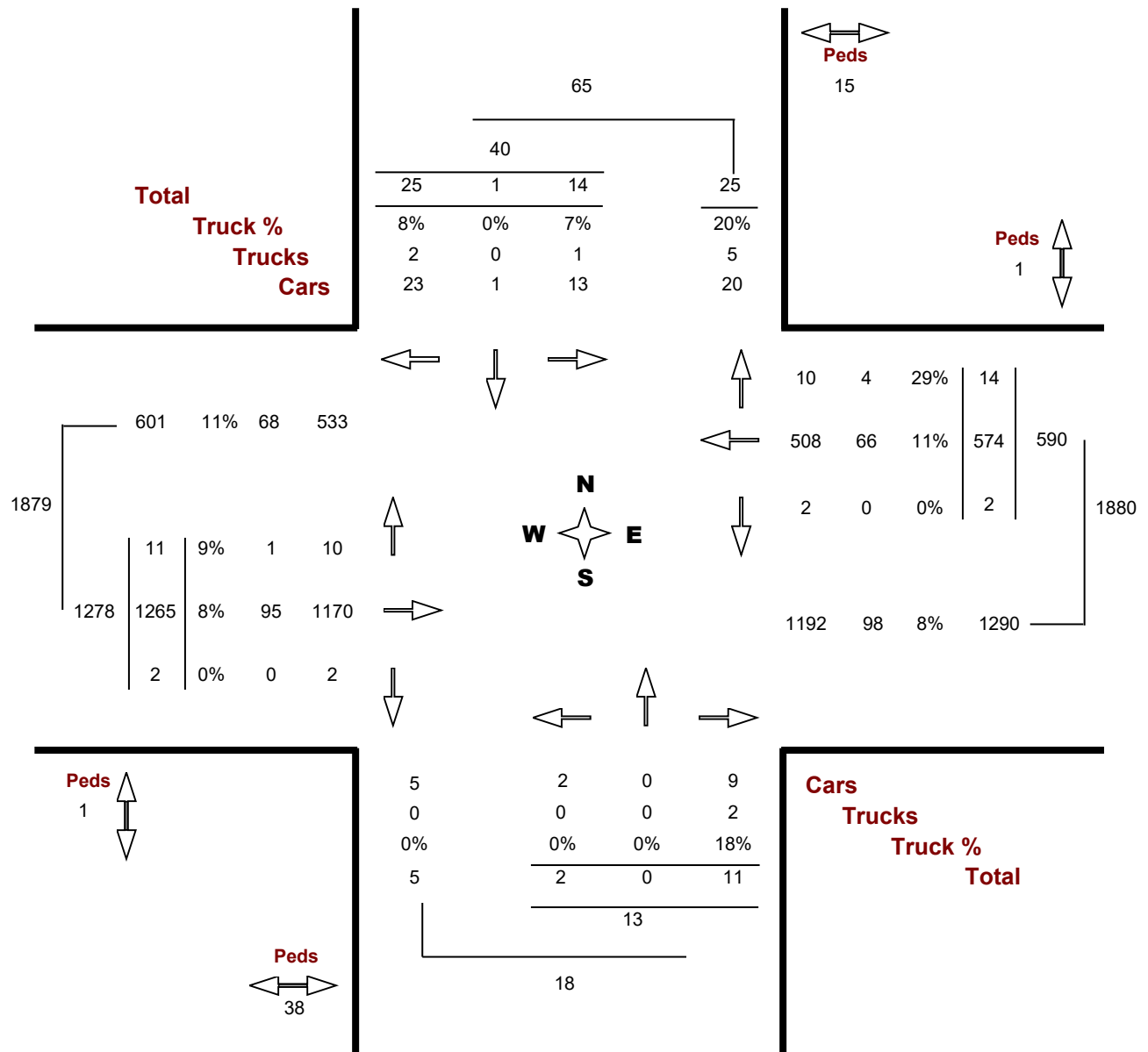
GeolD..... 349803

Count Date..... Tuesday, 19 June, 2018

Peak Hour..... 07:45 AM — 08:45 AM

Road 1 JAGUAR VALLEY DR

Road 2 DUNDAS ST E





Turning Movements Report - PM Period

Location..... DUNDAS ST E @ JAGUAR VALLEY DR

Municipality..... Mississauga

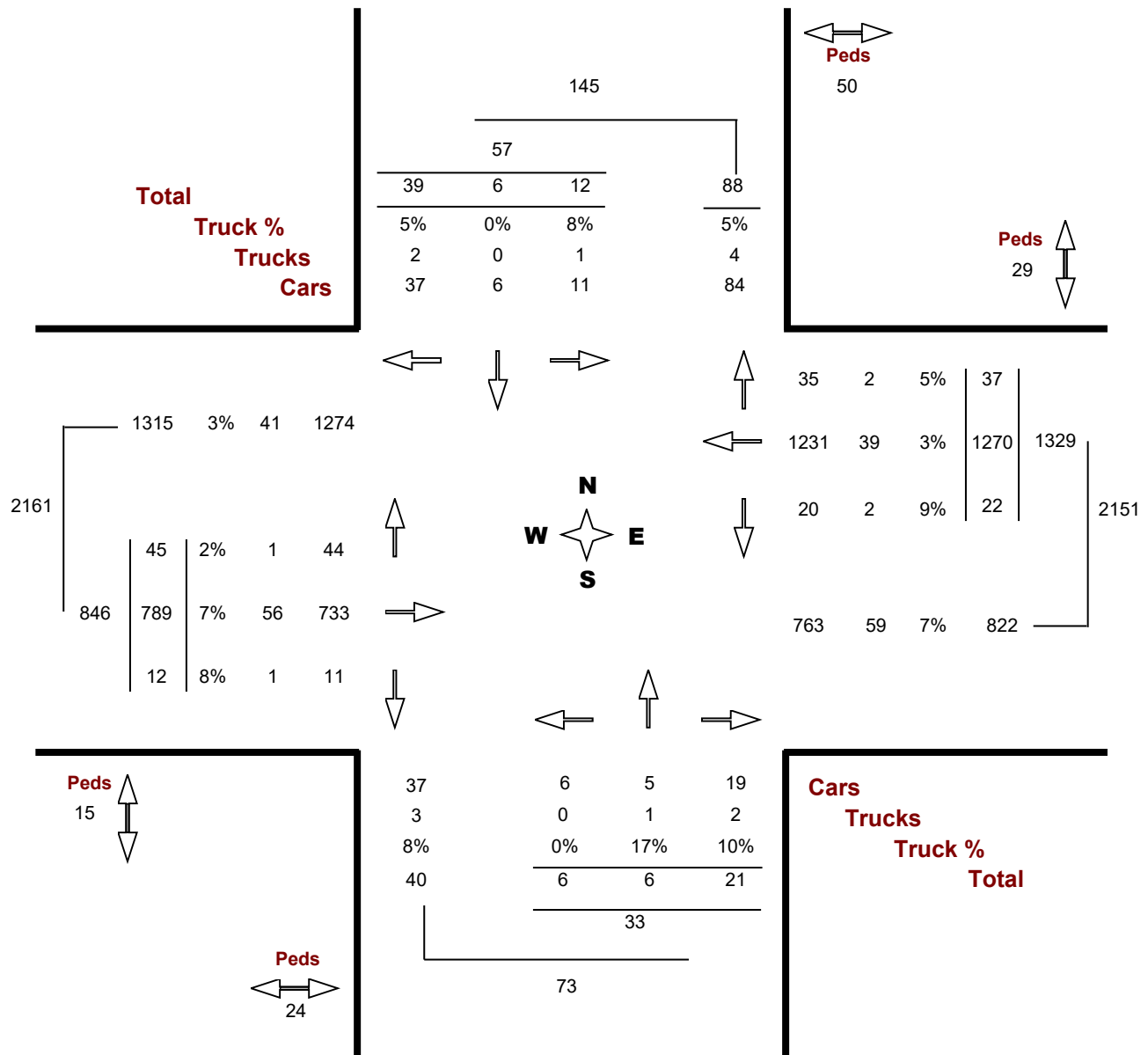
GeolD..... 349803

Count Date..... Tuesday, 19 June, 2018

Peak Hour..... 04:15 PM — 05:15 PM

Road 1 JAGUAR VALLEY DR

Road 2 DUNDAS ST E



Ontario Traffic Inc

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 8:00:00

To: 9:00:00

Municipality: Mississauga

Site #: 1612600001

Intersection: Dundas St E & Kirwin Ave/Camilla F

TFR File #: 1

Count date: 12-Apr-16

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 423

North Entering: 295

North Peds: 4

Peds Cross: $\times$

Heavys	0	0	3	3
Trucks	1	1	3	5
Cars	16	52	219	287
Totals	17	53	225	

Heavys	0
Trucks	4
Cars	124
Totals	128

East Leg Total: 2022

East Entering: 593

East Peds: 6

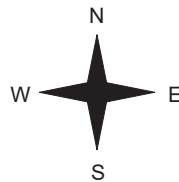
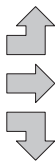
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
0	38	485	523



Dundas St E

Heavys	Trucks	Cars	Totals
0	1	11	12
0	44	1117	1161
0	2	49	51
0	47	1177	



Kirwin Ave/Camilla Rd



Cars	Trucks	Heavys	Totals
72	2	0	74
452	35	0	487
32	0	0	32
556	37	0	

Dundas St E



Cars	Trucks	Heavys	Totals
1377	49	3	1429

Peds Cross: $\times$

West Peds: 11

West Entering: 1224

West Leg Total: 1747

Cars	133	Cars	17	41	41	99
Trucks	3	Trucks	2	1	2	5
Heavys	0	Heavys	0	0	0	0
Totals	136	Totals	19	42	43	



Camilla Rd

Peds Cross: $\times$

South Peds: 4

South Entering: 104

South Leg Total: 240

Comments

Ontario Traffic Inc

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 18:00:00

One Hour Peak

From: 17:00:00

To: 18:00:00

Municipality: Mississauga

Site #: 1612600001

Intersection: Dundas St E & Kirwin Ave/Camilla F

TFR File #: 1

Count date: 12-Apr-16

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 798

North Entering: 326

North Peds: 30

Peds Cross: $\times$

Heavys	0	0	0	0
Trucks	0	1	2	3
Cars	49	95	179	323
Totals	49	96	181	



Heavys 2

Trucks 3

Cars 467

Totals 472

East Leg Total: 2629

East Entering: 1635

East Peds: 12

Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
0	27	1289	1316

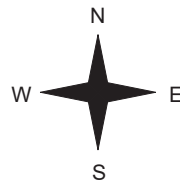


Dundas St E

Heavys	Trucks	Cars	Totals
0	0	24	24
0	22	740	762
0	1	40	41
0	23	804	



Kirwin Ave/Camilla Rd



Cars	Trucks	Heavys	Totals
328	2	2	332
1187	27	0	1214
89	0	0	89
1604	29	2	

Dundas St E



Cars	Trucks	Heavys	Totals
969	25	0	994

Peds Cross: $\times$

West Peds: 11

West Entering: 827

West Leg Total: 2143

Cars	224
Trucks	2
Heavys	0
Totals	226



Cars	53	115	50	218
Trucks	0	1	1	2
Heavys	0	0	0	0
Totals	53	116	51	

Peds Cross: $\times$

South Peds: 13

South Entering: 220

South Leg Total: 446

Comments

Ontario Traffic Inc

Total Count Diagram

Municipality: Mississauga

Site #: 1612600001

Intersection: Dundas St E & Kirwin Ave/Camilla F

TFR File #: 1

Count date: 12-Apr-16

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 2298

North Entering: 1190

North Peds: 72

Peds Cross: $\nlessgtr$

Heavys	0	0	3	3
Trucks	1	5	8	14
Cars	97	280	796	1173
Totals	98	285	807	

Heavys 2

Trucks 17

Cars 1089

Totals 1108

East Leg Total: 8855

East Entering: 4122

East Peds: 38

Peds Cross: $\nlessgtr$

Heavys	Trucks	Cars	Totals
1	110	3262	3373

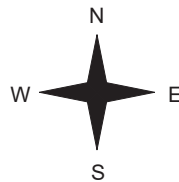


Dundas St E

Heavys	Trucks	Cars	Totals
0	3	71	74
0	129	3592	3721
0	3	147	150
0	135	3810	



Kirwin Ave/Camilla Rd



Cars	Trucks	Heavys	Totals
738	10	2	750
3039	107	1	3147
223	2	0	225
4000	119	3	

Dundas St E



Cars	Trucks	Heavys	Totals
4589	141	3	4733

Peds Cross: $\nlessgtr$

West Peds: 45

West Entering: 3945

West Leg Total: 7318

Cars	650	Cars	126	280	201	607
Trucks	10	Trucks	2	4	4	10
Heavys	0	Heavys	0	0	0	0
Totals	660	Totals	128	284	205	

Peds Cross: $\nlessgtr$

South Peds: 43

South Entering: 617

South Leg Total: 1277

Comments

Ontario Traffic Inc

Traffic Count Summary

Intersection: Dundas St E & Kirwin Ave/Camilla						Count Date: 12-Apr-16		Municipality: Mississauga					
North Approach Totals						North/South Total Approaches	South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0	
8:00:00	204	53	11	268	2	362	8:00:00	12	29	53	94	5	
9:00:00	225	53	17	295	4	399	9:00:00	19	42	43	104	4	
16:00:00	0	0	0	0	0	2	16:00:00	1	1	0	2	0	
17:00:00	197	83	21	301	36	498	17:00:00	43	96	58	197	21	
18:00:00	181	96	49	326	30	546	18:00:00	53	116	51	220	13	
Totals:						1807	128 284 205 617 43						
East Approach Totals						East/West Total Approaches	West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0	
8:00:00	12	309	60	381	2	1477	8:00:00	9	1067	20	1096	5	
9:00:00	32	487	74	593	6	1817	9:00:00	12	1161	51	1224	11	
16:00:00	0	3	0	3	0	4	16:00:00	0	0	1	1	0	
17:00:00	92	1128	282	1502	18	2296	17:00:00	29	728	37	794	18	
18:00:00	89	1214	332	1635	12	2462	18:00:00	24	762	41	827	11	
Totals:						8056	74 3718 150 3942 45						
Calculated Values for Traffic Crossing Major Street													
Hours Ending:	0:00	0:00	7:00	8:00			9:00	16:00	17:00	18:00			
Crossing Values:	0	0	0	276			314	2	372	373			

[illegible]

Count Date: 12-Apr-16 **Site #:** 1612600001

[illegible]

[illegible]

Count Date: 12-Apr-16 **Site #:** 1612600001

[illegible]

[illegible]

Count Date: 12-Apr-16 Site #: 1612600001

[illegible]

[illegible]

Count Date: 12-Apr-16 Site #: 1612600001

[illegible]



Turning Movements Report - AM Period

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

Municipality..... Mississauga

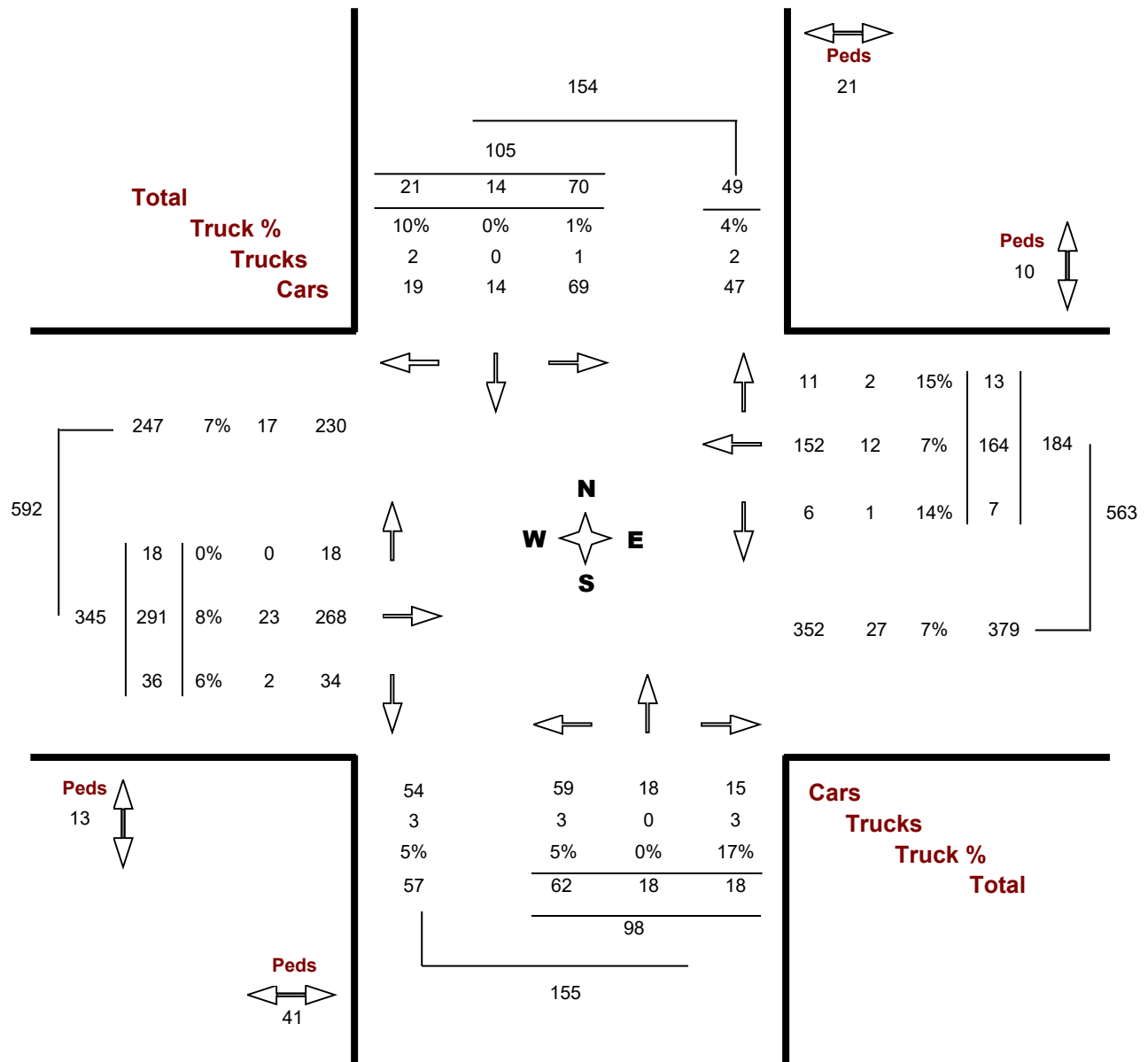
Geoid..... 349562

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

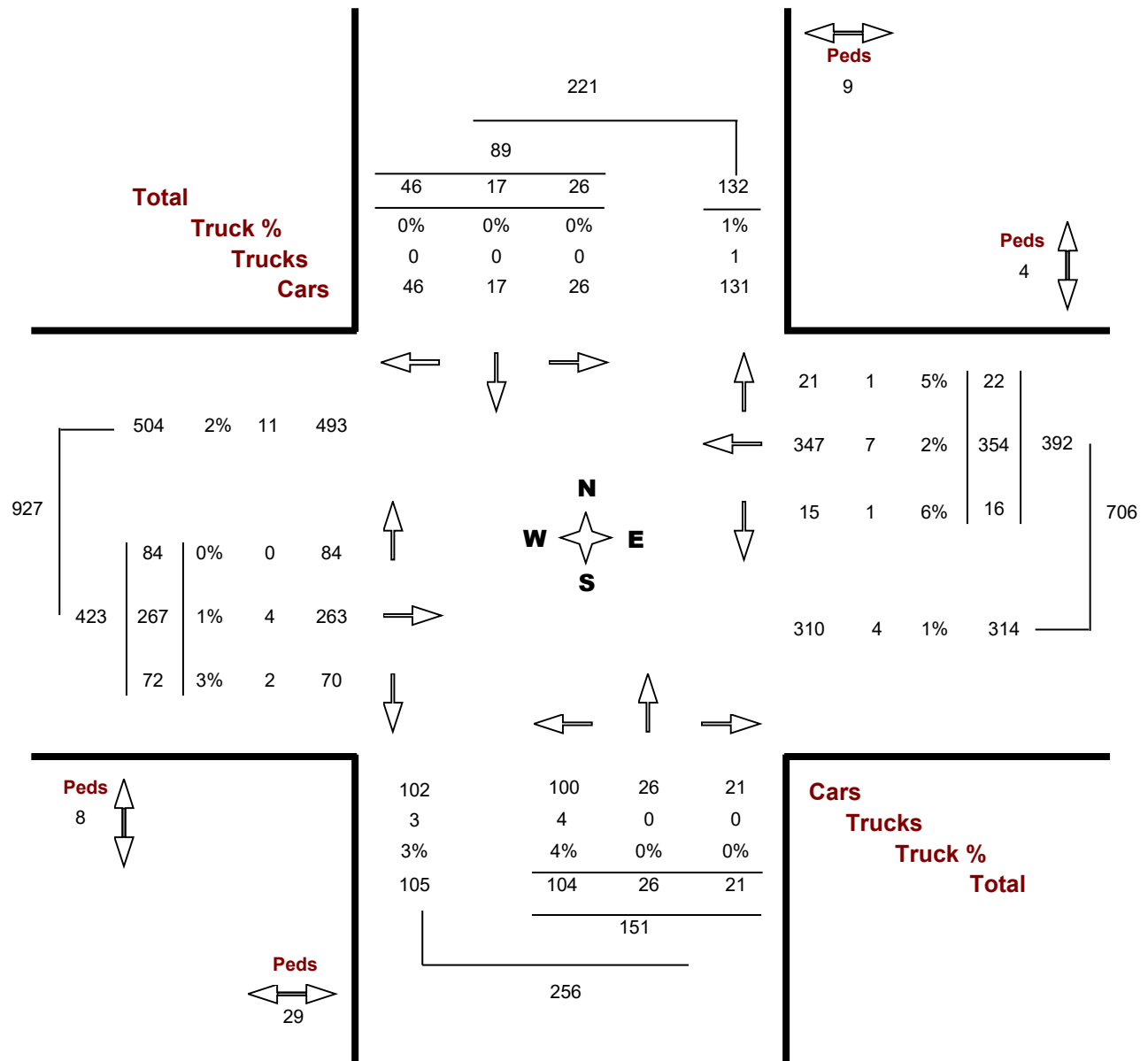
GeolD..... 349562

Count Date..... Monday, 06 June, 2005

Peak Hour..... 05:00 PM — 06:00 PM

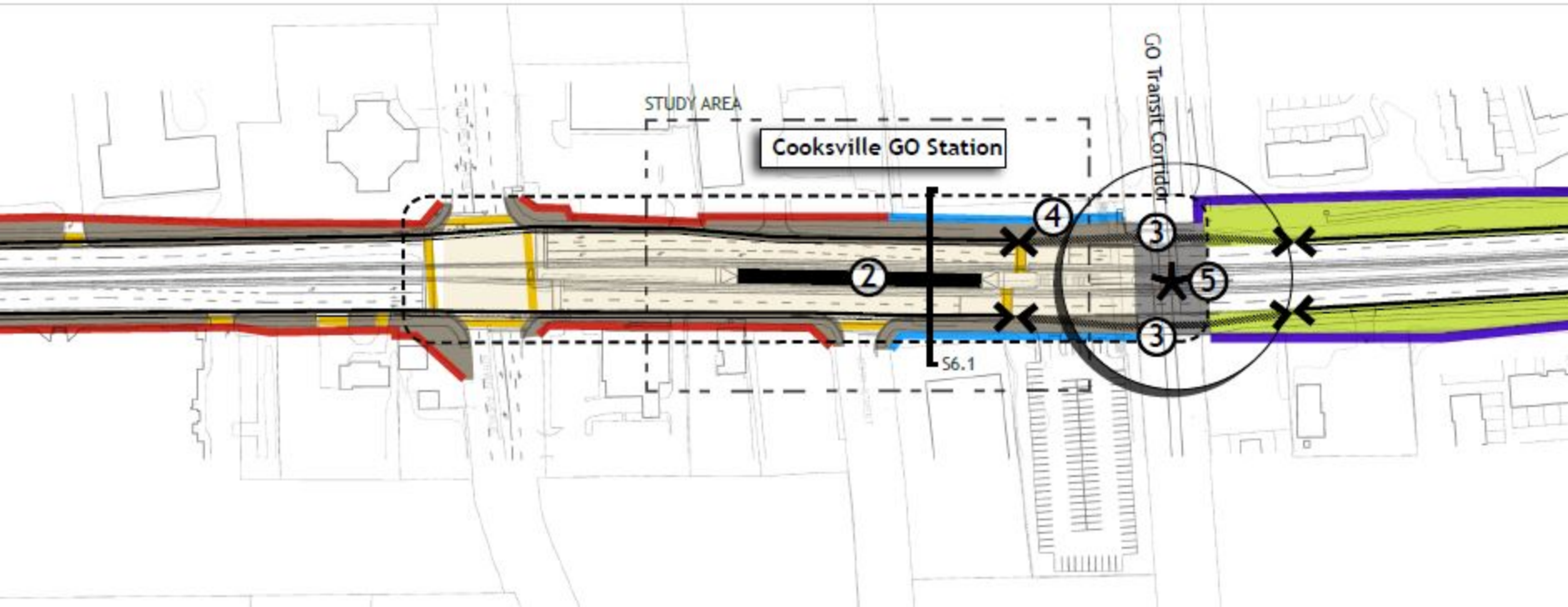
Road 1 JAGUAR VALLEY DR

Road 2 KIRWIN AVE



Appendix C

Hurontario LRT Plan Drawings



Appendix D

Background Development Trip Generation Figures

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 Pkwy)	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

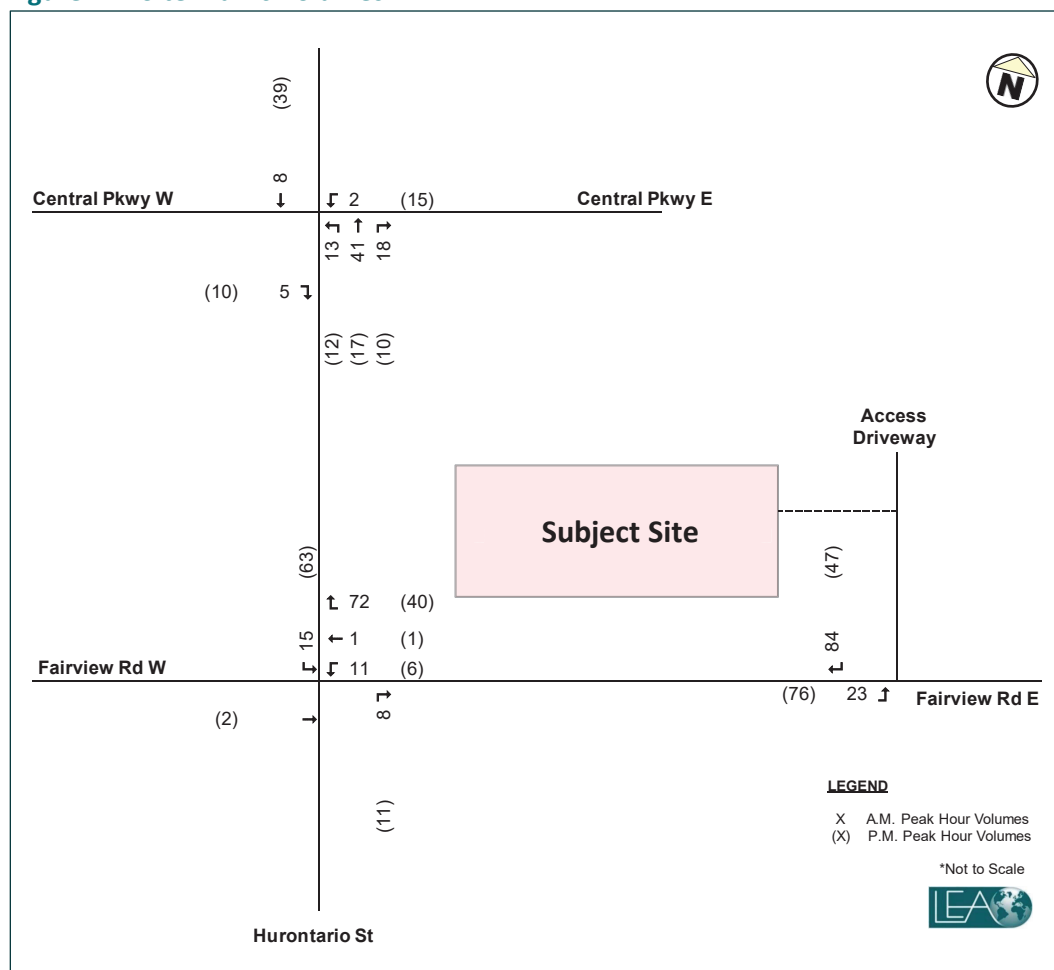
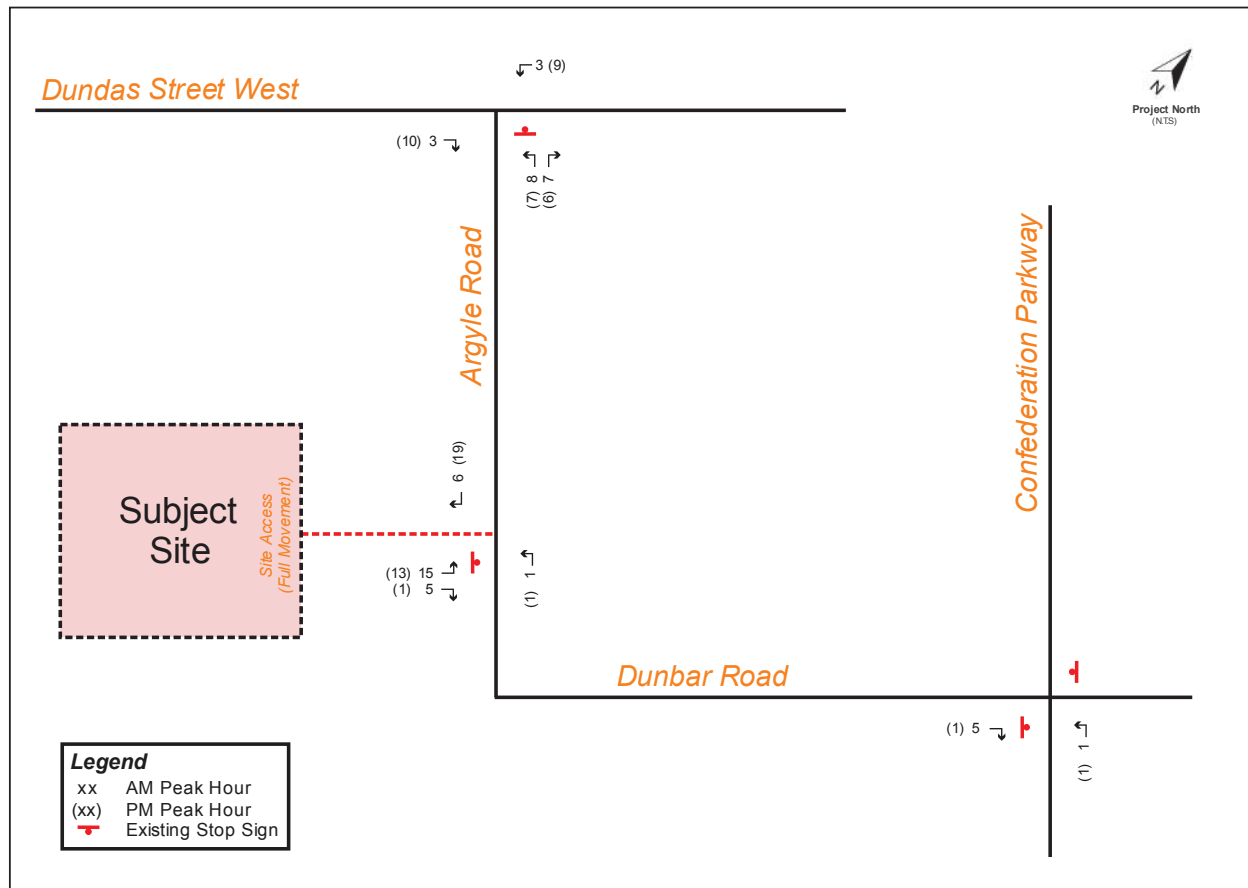


Table 4.2 – Site Traffic Trip Distribution

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**.

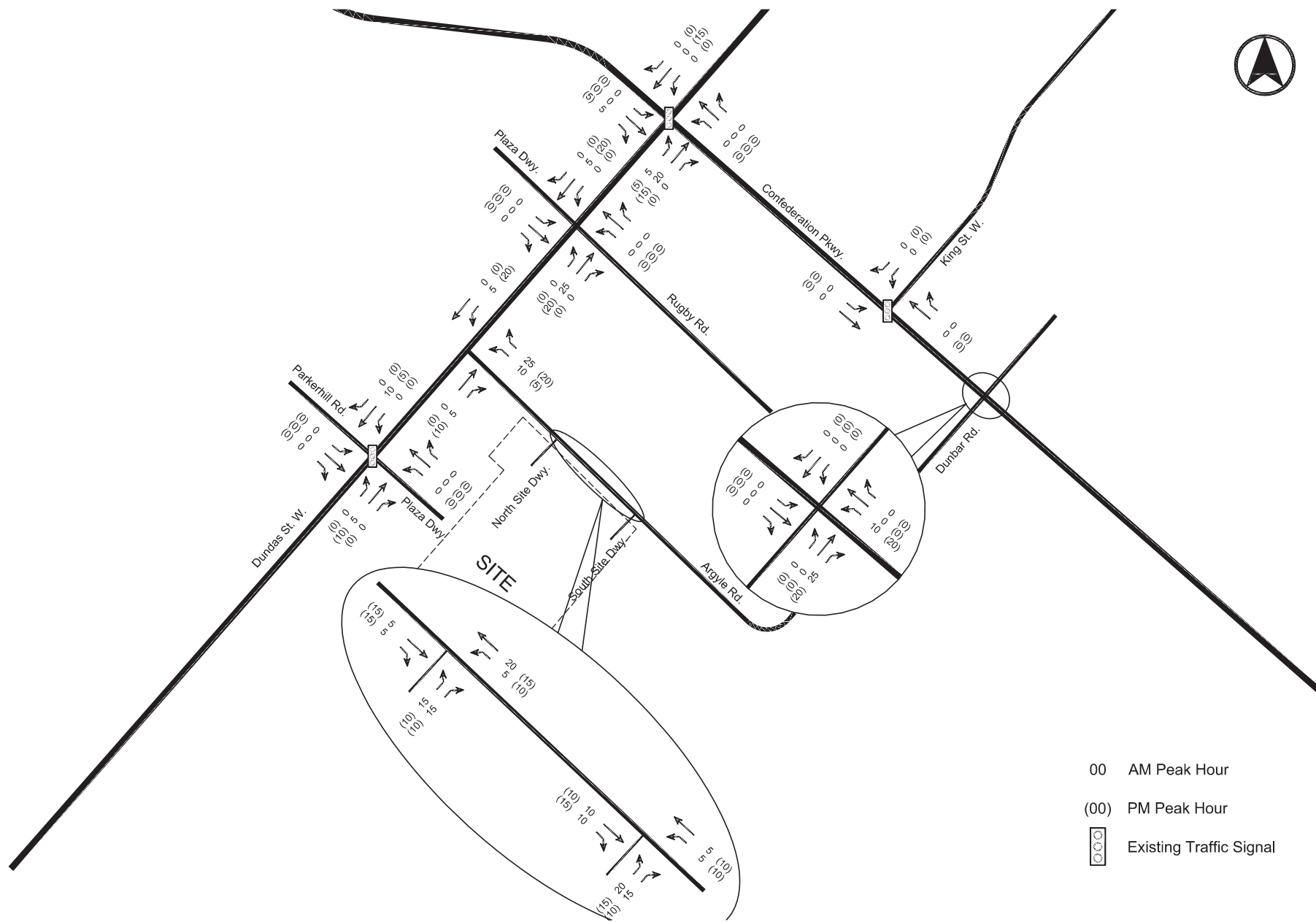
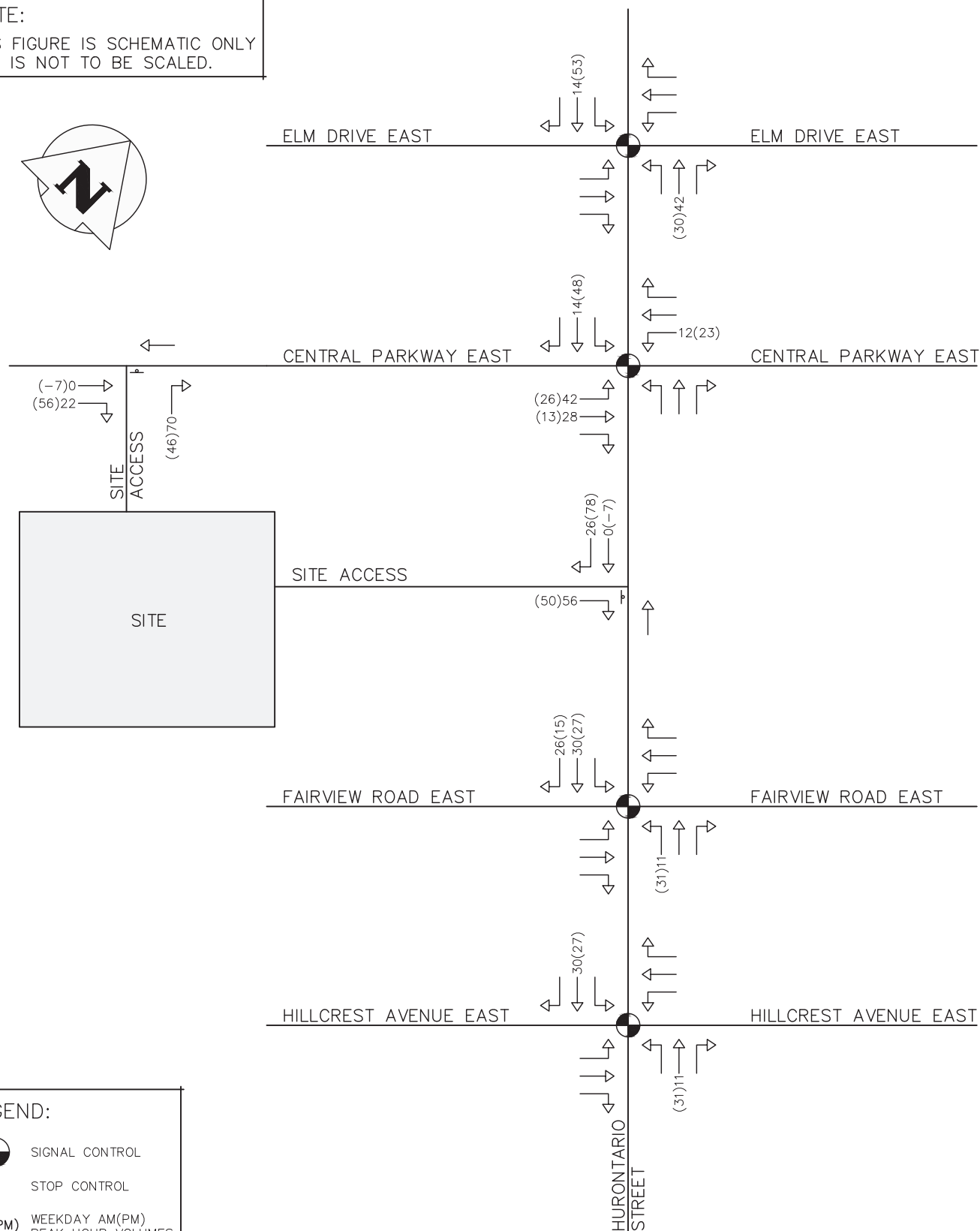
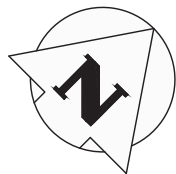


FIGURE 8 NEW SITE TRAFFIC VOLUMES

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

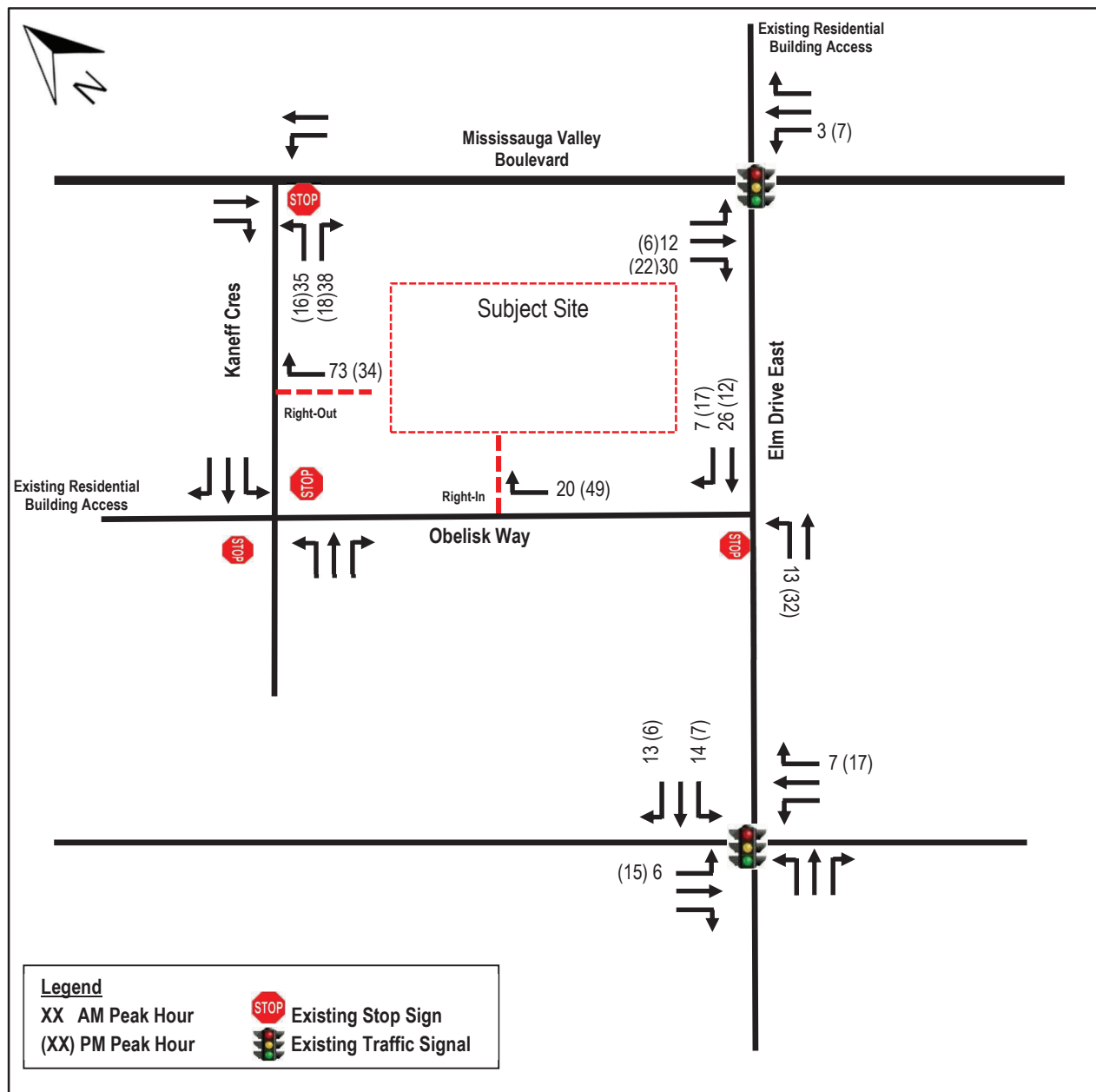


CROZIER
CONSULTING ENGINEERS

2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

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

Figure 9 – Site Generated Traffic Volumes

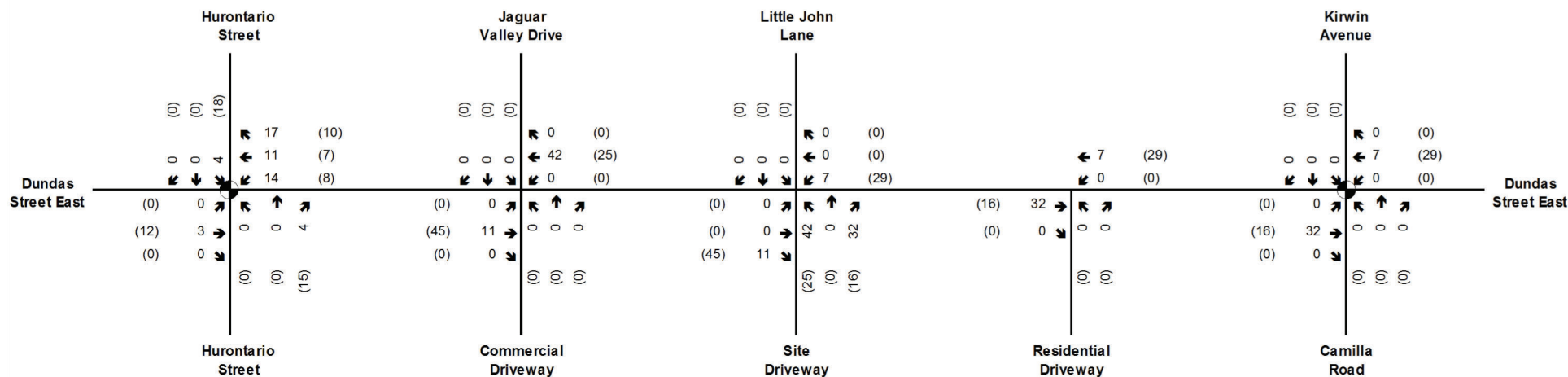


6.0 FUTURE TOTAL TRAFFIC CONDITIONS

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

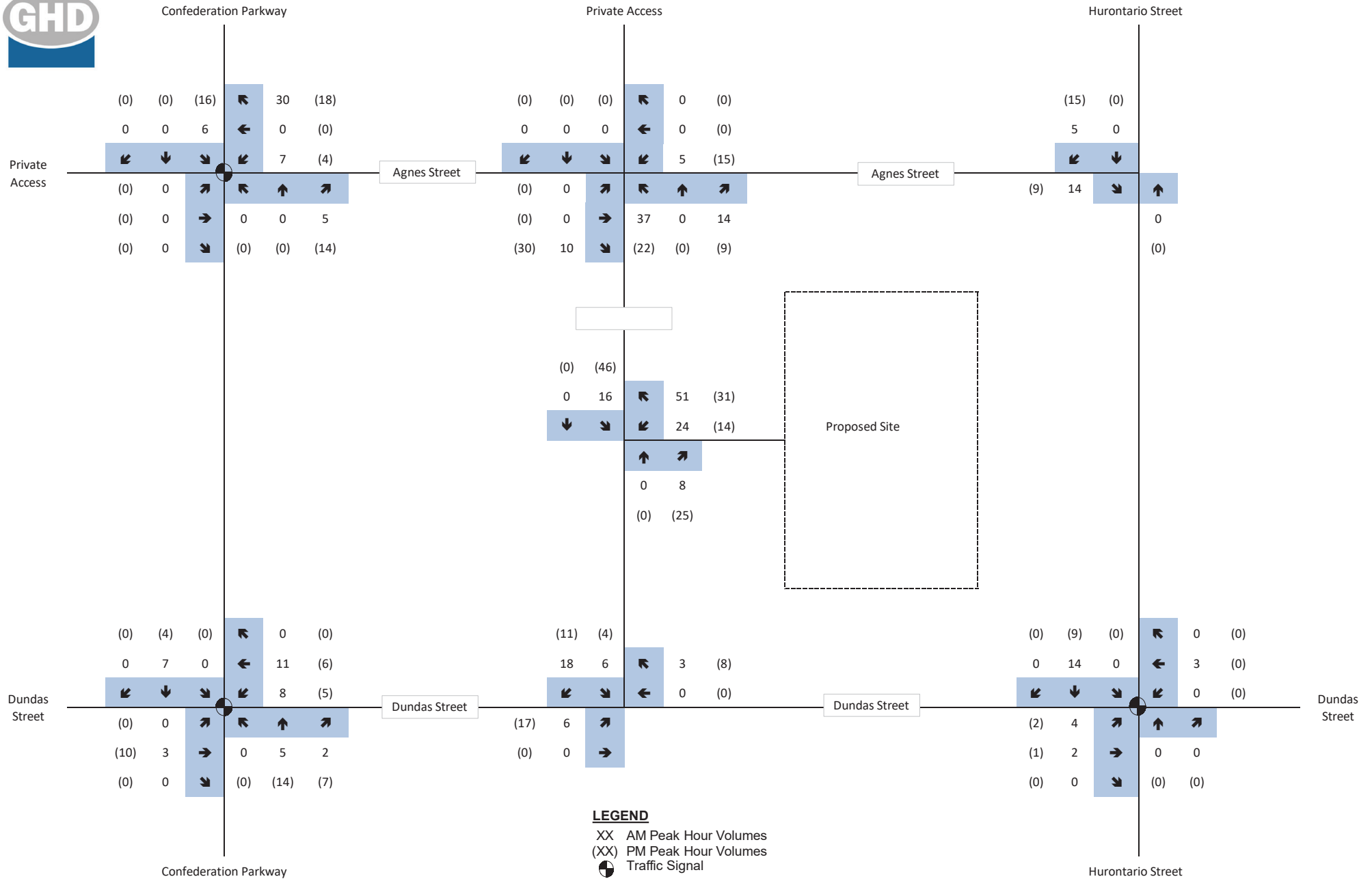


Figure 9 Estimated Residential Site Trips

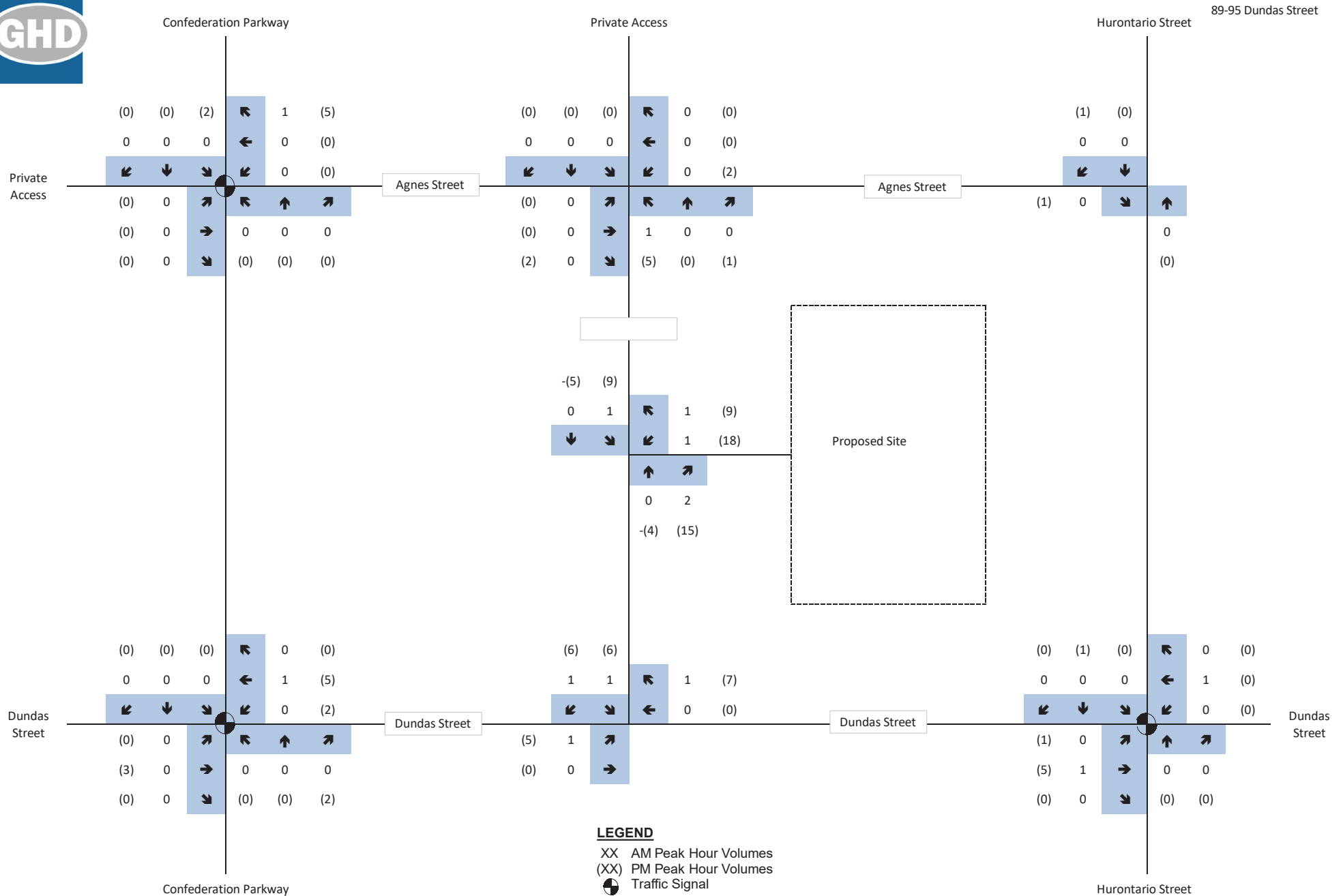


Figure 10 Estimated Commercial Trips

Appendix E

Traffic Control Signal Warrants

Access #2 at Hurontario Street
Future Total 2028

Justification #7

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			Entire %
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1292	144%	21%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	35	21%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1269	141%	0%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	0	0%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, $AHV = PM/2$ or $(AM + PM) / 4$
4. T-intersection factor corrected, applies only to 1B

Access #2 at Hurontario Street
Future Total 2033

Justification #7

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1258	140%	21%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	35	21%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1235	137%	0%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	0	0%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, $AHV = PM/2 \text{ or } (AM + PM) / 4$
4. T-intersection factor corrected, applies only to 1B

Access #2 at Kirwin Avenue
Future Total 2028

Justification #7

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	360	50%	38%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	65	38%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	317	44%	44%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	33	44%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, $AHV = PM/2$ or $(AM + PM) / 4$
4. T-intersection factor corrected, applies only to 1B

Access #2 at Kirwin Avenue
Future Total 2033

Justification #7

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	360	50%	38%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	65	38%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	317	44%	44%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	33	44%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, $AHV = PM/2$ or $(AM + PM) / 4$
4. T-intersection factor corrected, applies only to 1B

Jaguar Valley Drive at Dundas Street
Future Background 2028

Justification #7

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1159	129%	21%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	36	21%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1124	125%	14%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	10	14%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, $AHV = PM/2$ or $(AM + PM) / 4$
4. T-intersection factor corrected, applies only to 1B

Jaguar Valley Drive at Dundas Street
Future Total 2033

Justification #7

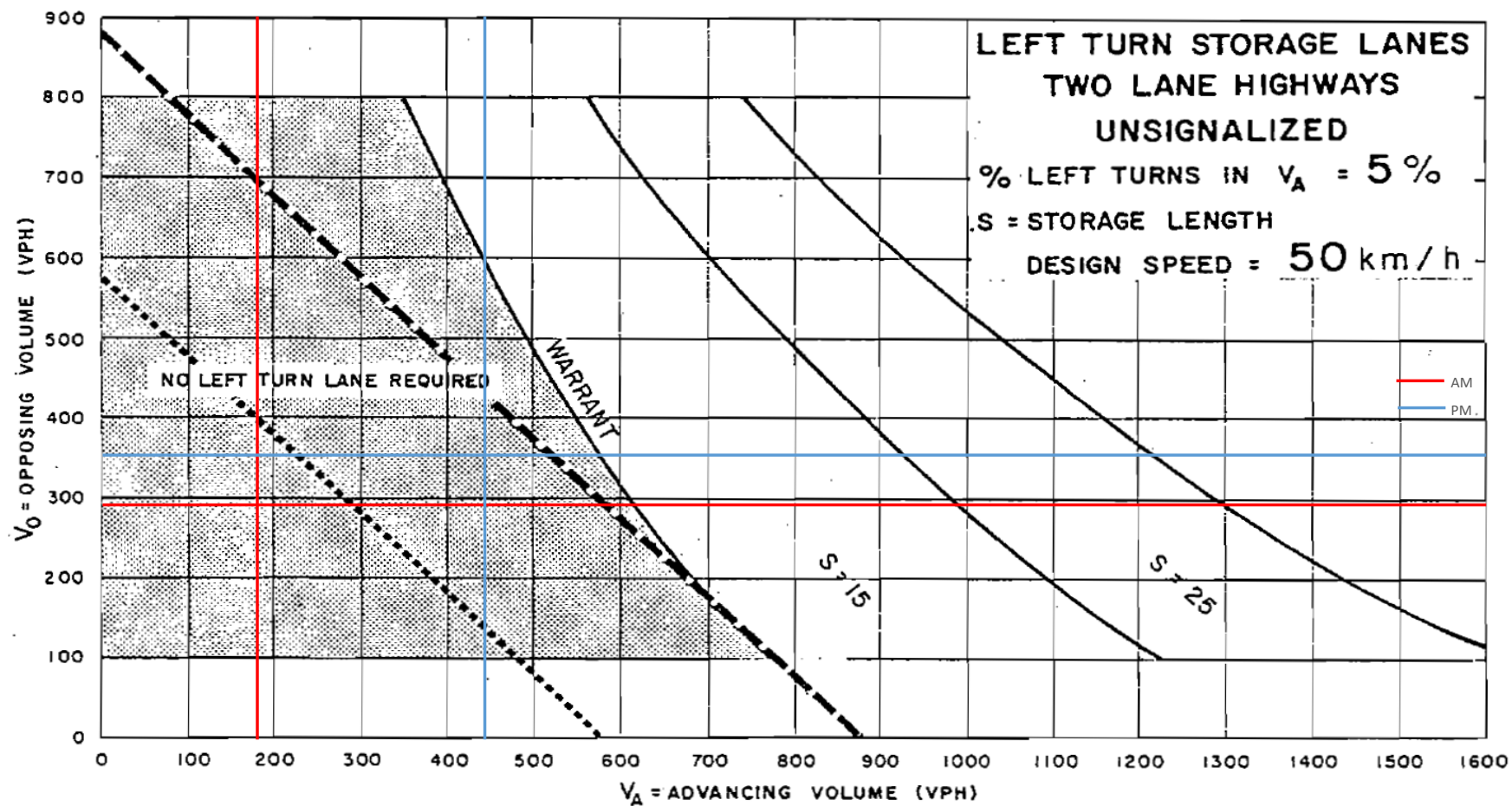
Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		Entire %
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1226	136%	21%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	36	21%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1191	132%	14%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	10	14%		

Notes

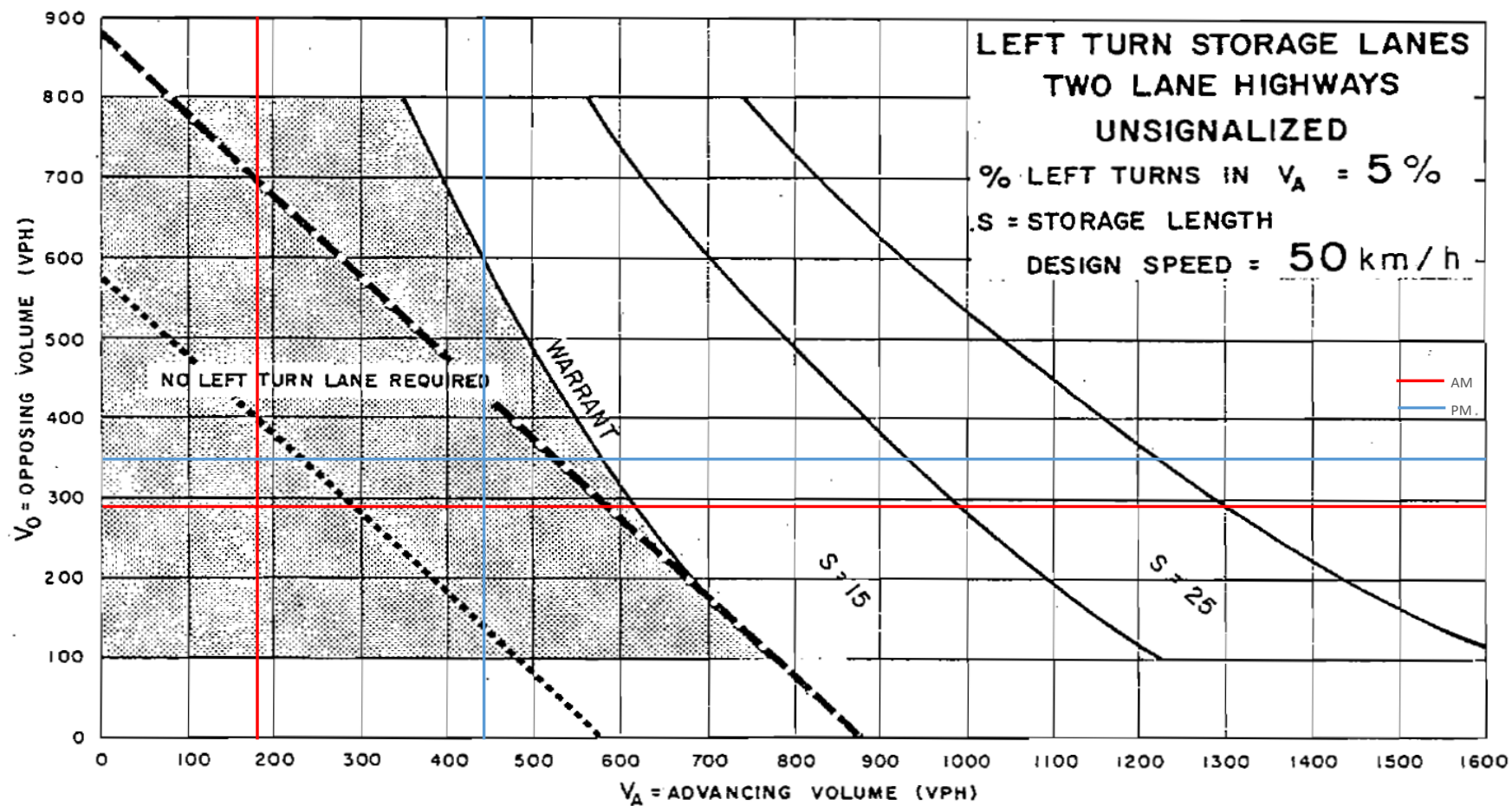
1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, $AHV = PM/2$ or $(AM + PM) / 4$
4. T-intersection factor corrected, applies only to 1B

Appendix F

Left Turn Lane Warrants



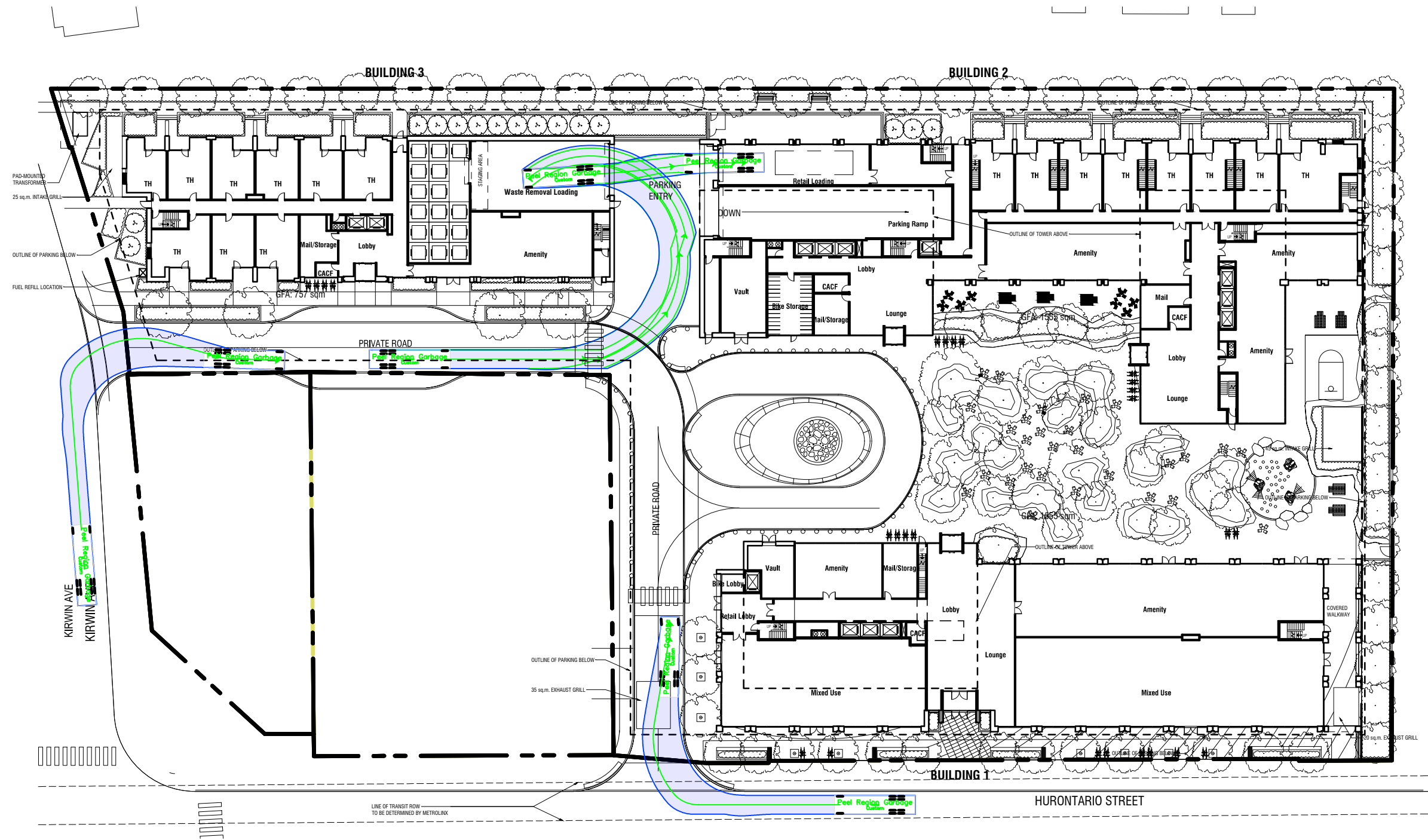
Design Speed	Westbound Left			Yes												%Left Turn	Volume Advancing	Volume Opposing
60 km/h	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
	AM		271	21	5	174		78		23						2.8%	179	292
	PM		289	65	16	426		55		16						3.6%	442	354



Design Speed 60 km/h	Westbound Left			Yes														
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing			
	AM		271	19	5	174		77		23			2.8%	179	290			
	PM		289	60	15	426		48		14			3.4%	441	349			

Appendix G

Turning Template Drawings



Notes:

01	Issued for Review	MC	2021-07-23
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			



CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

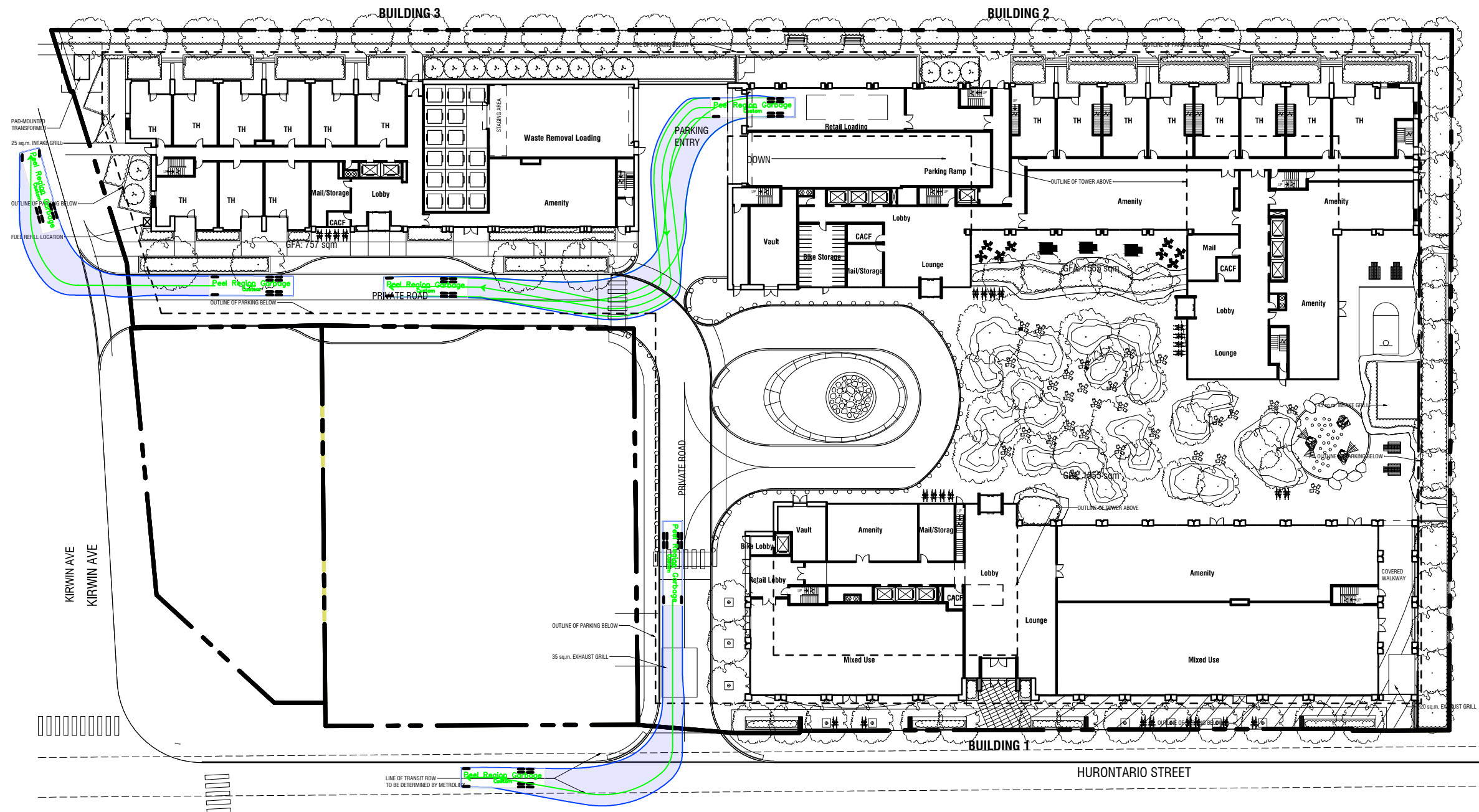
CLIENT: Doracin Terra Strategies Ltd.

ARCHITECT:

SITE:
3085 Hurontario Street

TITLE:
Waste Removal Vehicle
Turning Movement Analysis

SCALE AT A3: N.T.S.	DATE: 2021-07-23	DRAWN: AL	CHECKED: MC
PROJECT NO: 2020-72	DRAWING NO: 001	REVISION: 01	



Notes:

01	Issued for Review	MC	2021-07-23
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

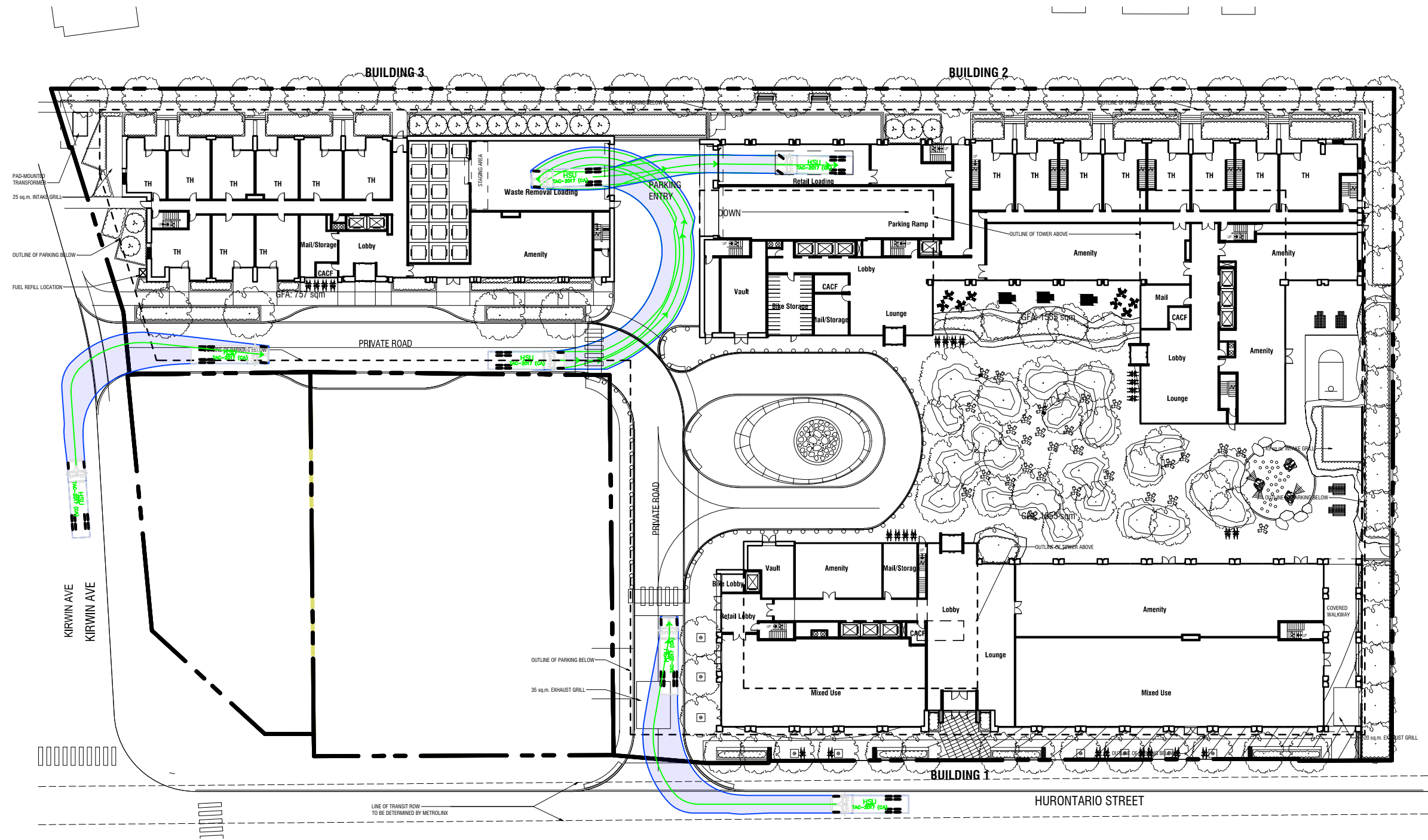
CLIENT: Doracin Terra Strategies Ltd.

ARCHITECT:

SITE:
3085 Hurontario Street

TITLE: Waste Removal Vehicle
Turning Movement Analysis

SCALE AT A3: N.T.S	DATE: 2021-07-23	DRAWN: AL	CHECKED: MC
PROJECT NO: 2020-72	DRAWING NO: 002	REVISION: 01	



Notes:

01	Issued for Review	MC	2021-07-23
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			



CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

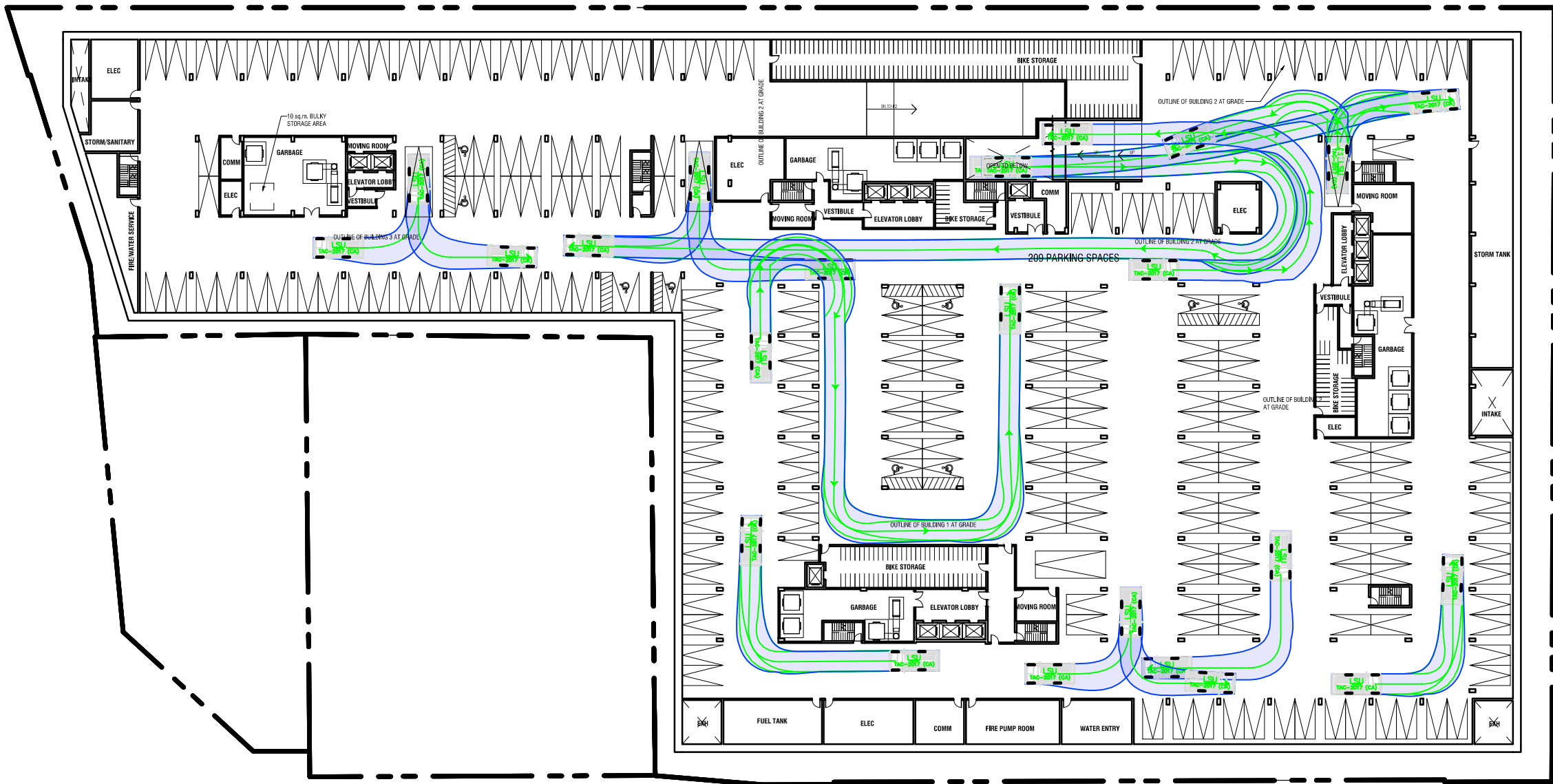
CLIENT: Doracin Terra Strategies Ltd.

ARCHITECT:

SITE:
3085 Hurontario Street

TITLE: HSU Design Vehicle
Turning Movement Analysis

SCALE AT A3: N.T.S	DATE: 2021-07-23	DRAWN: AL	CHECKED: MC
PROJECT NO: 2020-72	DRAWING NO: 003	REVISION: 01	



Notes:

01	Issued for Review	MC	2021-07-23
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			



CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Doracin Terra Strategies Ltd.

ARCHITECT:

SITE:
3085 Hurontario Street

TITLE: LSU Design Vehicle
Turning Movement Analysis

SCALE AT A3: N.T.S	DATE: 2021-07-23	DRAWN: AL	CHECKED: MC
PROJECT NO: 2020-72	DRAWING NO: 005	REVISION: 01	

Appendix H

2021 Existing Conditions Synchro Worksheets

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  			  	
Traffic Volume (vph)	145	466	70	277	363	116	51	1353	50	113	1382	61
Future Volume (vph)	145	466	70	277	363	116	51	1353	50	113	1382	61
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	0.98		0.95	0.99		0.95		1.00			1.00	
Frt			0.850			0.850		0.995			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1276	1696	3466	1338	1648	4931	0	1696	4892	0
Flt Permitted	0.515			0.195			0.078			0.077		
Satd. Flow (perm)	908	3500	1212	343	3466	1272	135	4931	0	138	4892	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			76		4			5	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	27		28	28		27	34		39	39		34
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	8%	3%	3%	3%	6%	3%	10%	3%	4%	3%
Adj. Flow (vph)	161	518	78	308	403	129	57	1503	56	126	1536	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	518	78	308	403	129	57	1559	0	126	1604	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	18.0	41.0	14.6	33.0	56.0	20.0	14.6	66.0		20.0	71.4	
Total Split (%)	11.3%	25.6%	9.1%	20.6%	35.0%	12.5%	9.1%	41.3%		12.5%	44.6%	
Maximum Green (s)	13.5	34.0	10.1	30.0	49.0	17.0	10.1	59.0		17.0	64.4	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		28			27			39			34	
Act Effect Green (s)	45.8	30.2	40.8	64.1	42.5	58.1	81.8	71.3		88.4	73.3	
Actuated g/C Ratio	0.29	0.19	0.26	0.40	0.27	0.36	0.51	0.45		0.55	0.46	
v/c Ratio	0.50	0.78	0.20	0.85	0.44	0.25	0.39	0.71		0.67	0.71	
Control Delay	38.4	70.5	4.5	56.8	49.5	13.4	36.4	13.4		41.2	38.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	38.4	70.5	4.5	56.8	49.5	13.4	36.4	13.4		41.2	38.5	
LOS	D	E	A	E	D	B	D	B		D	D	
Approach Delay		56.9			46.6			14.2			38.7	
Approach LOS		E			D			B			D	
Queue Length 50th (m)	32.7	81.0	0.0	68.0	54.4	10.4	2.4	53.6		19.7	156.7	
Queue Length 95th (m)	48.4	101.6	7.4	98.6	68.7	22.9	m18.4	37.1		41.3	184.1	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	329	743	400	391	1061	557	166	2199		243	2245	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.49	0.70	0.20	0.79	0.38	0.23	0.34	0.71		0.52	0.71	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2021 Existing AM
3085 Hurontario Street

Intersection Signal Delay: 34.8

Intersection LOS: C

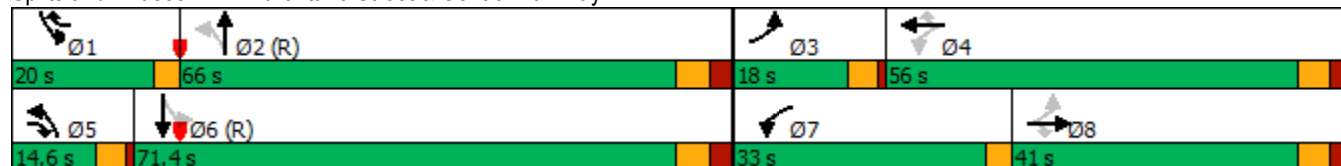
Intersection Capacity Utilization 90.2%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 1: Hurontario Street & Central Parkway



Lanes, Volumes, Timings
2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	169	74	19	92	63	65	1179	22	80	1087	209
Future Volume (vph)	247	169	74	19	92	63	65	1179	22	80	1087	209
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	0.99		0.94	0.97	0.99		0.98	1.00		1.00		0.81
Frt			0.850		0.939			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1696	1807	1313	1589	1633	0	1603	4822	0	1713	4932	1351
Flt Permitted	0.524			0.641			0.119			0.087		
Satd. Flow (perm)	923	1807	1240	1037	1633	0	196	4822	0	157	4932	1089
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		24			2				227
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			159.2			433.4			126.6	
Travel Time (s)		15.0			11.5			31.2			9.1	
Confl. Peds. (#/hr)	18		42	42		18	96		4	4		96
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	4%	5%	10%	7%	6%	9%	6%	5%	2%	4%	2%
Adj. Flow (vph)	268	184	80	21	100	68	71	1282	24	87	1182	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	184	80	21	168	0	71	1306	0	87	1182	227
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	21.0	85.0	85.0	64.0	64.0		13.0	62.0		13.0	62.0	21.0
Total Split (%)	13.1%	53.1%	53.1%	40.0%	40.0%		8.1%	38.8%		8.1%	38.8%	13.1%
Maximum Green (s)	18.0	77.0	77.0	56.0	56.0		10.0	54.5		10.0	54.5	18.0
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		42	42	18	18			4			96	
Act Effect Green (s)	62.6	57.6	57.6	36.6	36.6		88.4	54.5		88.4	54.5	77.0
Actuated g/C Ratio	0.39	0.36	0.36	0.23	0.23		0.55	0.34		0.55	0.34	0.48
v/c Ratio	0.60	0.28	0.16	0.09	0.43		0.19	0.79		0.23	0.70	0.34
Control Delay	39.6	35.5	5.8	42.8	45.5		22.0	28.4		37.6	22.5	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.4		0.0	1.3	0.3
Total Delay	39.6	35.5	5.8	42.8	45.5		22.0	28.8		37.6	23.8	3.5
LOS	D	D	A	D	D		C	C		D	C	A
Approach Delay		33.1			45.2			28.4			21.5	
Approach LOS		C			D			C			C	
Queue Length 50th (m)	53.8	36.8	0.0	4.8	35.6		5.0	86.1		5.6	115.9	13.6
Queue Length 95th (m)	76.1	54.7	10.3	12.0	56.9		m16.7	80.1		29.9	47.3	0.0
Internal Link Dist (m)		184.4			135.2			409.4			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	447	869	638	362	587		367	1643		372	1679	671
Starvation Cap Reductn	0	0	0	0	0		0	0		0	278	115
Spillback Cap Reductn	0	0	0	0	0		0	68		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.60	0.21	0.13	0.06	0.29		0.19	0.83		0.23	0.84	0.41

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Lanes, Volumes, Timings 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2021 Existing AM
3085 Hurontario Street

Intersection Signal Delay: 27.1

Intersection LOS: C

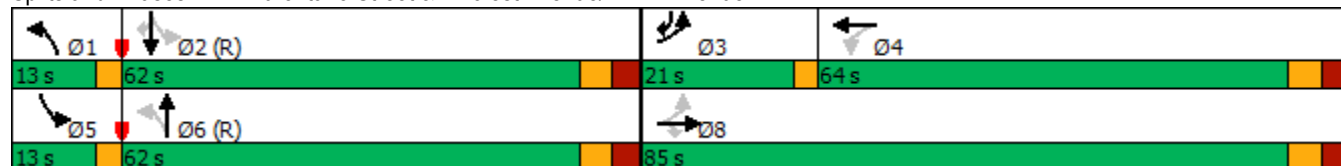
Intersection Capacity Utilization 104.4%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue



Lanes, Volumes, Timings
3: Hurontario Street / Hurontario Street & Dundas Street

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	1031	95	74	472	63	106	992	96	148	844	72
Future Volume (vph)	102	1031	95	74	472	63	106	992	96	148	844	72
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		25.0	30.0		0.0	45.0		0.0	60.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	0.96		0.82	0.98	0.99		0.98	0.99		0.98	0.99	
Frt			0.850		0.982			0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1533	3368	1103	1574	3088	0	1603	4551	0	1633	4637	0
Flt Permitted	0.339			0.080			0.231			0.162		
Satd. Flow (perm)	528	3368	902	130	3088	0	383	4551	0	272	4637	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		10			11			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			433.4	
Travel Time (s)		16.6			17.6			11.9			31.2	
Confl. Peds. (#/hr)	71		136	136		71	58		110	110		58
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	14%	6%	25%	11%	11%	21%	9%	9%	16%	7%	8%	14%
Adj. Flow (vph)	104	1052	97	76	482	64	108	1012	98	151	861	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	1052	97	76	546	0	108	1110	0	151	934	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
3: Hurontario Street / Hurontario Street & Dundas Street

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4			6			2		
Detector Phase	3	8	8	7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5	45.5	8.0	45.5		10.0	41.0		8.0	41.0	
Total Split (s)	14.0	66.0	66.0	14.0	66.0		14.0	66.0		14.0	66.0	
Total Split (%)	8.8%	41.3%	41.3%	8.8%	41.3%		8.8%	41.3%		8.8%	41.3%	
Maximum Green (s)	11.0	58.5	58.5	11.0	58.5		11.0	59.0		11.0	59.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5	3.5	0.0	3.5		0.0	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		3.0	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0		2.0	3.0	
Recall Mode	None	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)		136	136		71			110			58	
Act Effect Green (s)	69.5	55.0	55.0	67.9	54.3		77.9	64.5		80.6	65.8	
Actuated g/C Ratio	0.43	0.34	0.34	0.42	0.34		0.49	0.40		0.50	0.41	
v/c Ratio	0.36	0.91	0.27	0.55	0.52		0.42	0.60		0.66	0.49	
Control Delay	28.5	61.9	14.7	53.7	60.8		26.8	40.0		77.7	84.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.5	61.9	14.7	53.7	60.8		26.8	40.0		77.7	84.4	
LOS	C	E	B	D	E		C	D		E	F	
Approach Delay		55.5			60.0			38.8			83.5	
Approach LOS		E			E			D			F	
Queue Length 50th (m)	18.8	164.7	6.1	19.1	87.8		18.2	105.9		46.7	110.9	
Queue Length 95th (m)	30.3	191.4	20.7	34.0	109.7		30.9	123.0		m68.8	126.8	
Internal Link Dist (m)		206.3			220.0			141.0			409.4	
Turn Bay Length (m)	35.0		25.0	30.0			45.0			60.0		
Base Capacity (vph)	300	1231	372	156	1135		274	1841		234	1914	
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	0.35	0.85	0.26	0.49	0.48		0.39	0.60		0.65	0.49	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Lanes, Volumes, Timings 3: Hurontario Street /Hurontario Street & Dundas Street

2021 Existing AM
3085 Hurontario Street

Intersection Signal Delay: 58.5

Intersection LOS: E

Intersection Capacity Utilization 91.4%

ICU Level of Service F

Analysis Period (min) 15

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

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

 Ø1	 Ø2 (R)	 Ø3	 Ø4
14 s	66 s	14 s	66 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
14 s	66 s	14 s	66 s

Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	291	36	7	164	13	62	18	18	70	14	21
Future Volume (vph)	18	291	36	7	164	13	62	18	18	70	14	21
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.989			0.975			0.973	
Flt Protected	0.950			0.950				0.970			0.968	
Satd. Flow (prot)	1713	1715	0	1533	1727	0	0	1666	0	0	1708	0
Flt Permitted	0.950			0.950				0.970			0.968	
Satd. Flow (perm)	1713	1715	0	1533	1727	0	0	1666	0	0	1708	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.2			182.9			222.8			87.4	
Travel Time (s)		11.5			13.2			16.0			6.3	
Confl. Peds. (#/hr)	21		41	41		21	13		10	10		13
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	8%	6%	14%	7%	15%	5%	2%	17%	2%	2%	10%
Adj. Flow (vph)	20	316	39	8	178	14	67	20	20	76	15	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	355	0	8	192	0	0	107	0	0	114	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.0%											
Analysis Period (min)	15											
	ICU Level of Service A											

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	291	36	7	164	13	62	18	18	70	14	21
Future Vol, veh/h	18	291	36	7	164	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
Heavy Vehicles, %	2	8	6	14	7	15	5	2	17	2	2	10
Mvmt Flow	20	316	39	8	178	14	67	20	20	76	15	23
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	14.2	10.8	10	10
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	63%	100%	0%	100%	0%	67%
Vol Thru, %	18%	0%	89%	0%	93%	13%
Vol Right, %	18%	0%	11%	0%	7%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	18	327	7	177	105
LT Vol	62	18	0	7	0	70
Through Vol	18	0	291	0	164	14
RT Vol	18	0	36	0	13	21
Lane Flow Rate	107	20	355	8	192	114
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.171	0.032	0.542	0.013	0.303	0.181
Departure Headway (Hd)	5.772	5.968	5.488	6.354	5.675	5.704
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	621	604	661	564	635	629
Service Time	3.81	3.668	3.188	4.082	3.403	3.741
HCM Lane V/C Ratio	0.172	0.033	0.537	0.014	0.302	0.181
HCM Control Delay	10	8.9	14.5	9.2	10.9	10
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.6	0.1	3.3	0	1.3	0.7

Lanes, Volumes, Timings
5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1265	2	2	575	14	2	0	11	14	1	25
Future Volume (vph)	11	1265	2	2	575	14	2	0	11	14	1	25
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.996			0.884			0.915	
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1603	3306	0	1713	3191	0	0	1425	0	0	1572	0
Flt Permitted	0.950			0.950				0.993			0.983	
Satd. Flow (perm)	1603	3306	0	1713	3191	0	0	1425	0	0	1572	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			248.2			137.5			244.3	
Travel Time (s)		17.6			17.9			9.9			17.6	
Confl. Peds. (#/hr)	15		38	38		15	1		1	1		1
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	8%	2%	2%	11%	29%	2%	2%	18%	7%	2%	8%
Adj. Flow (vph)	12	1375	2	2	625	15	2	0	12	15	1	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1377	0	2	640	0	0	14	0	0	43	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	46.7%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1265	2	2	575	14	2	0	11	14	1	25
Future Vol, veh/h	11	1265	2	2	575	14	2	0	11	14	1	25
Conflicting Peds, #/hr	15	0	38	38	0	15	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	8	2	2	11	29	2	2	18	7	2	8
Mvmt Flow	12	1375	2	2	625	15	2	0	12	15	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	655	0	0	1415	0	0	1756	2097	728	1365	2091	336
Stage 1	-	-	-	-	-	-	1438	1438	-	652	652	-
Stage 2	-	-	-	-	-	-	318	659	-	713	1439	-
Critical Hdwy	4.28	-	-	4.14	-	-	7.54	6.54	7.26	7.64	6.54	7.06
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Follow-up Hdwy	2.29	-	-	2.22	-	-	3.52	4.02	3.48	3.57	4.02	3.38
Pot Cap-1 Maneuver	882	-	-	478	-	-	54	51	332	102	52	643
Stage 1	-	-	-	-	-	-	140	197	-	411	462	-
Stage 2	-	-	-	-	-	-	668	459	-	378	197	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	870	-	-	461	-	-	48	48	320	95	49	633
Mov Cap-2 Maneuver	-	-	-	-	-	-	48	48	-	95	49	-
Stage 1	-	-	-	-	-	-	133	187	-	399	454	-
Stage 2	-	-	-	-	-	-	634	451	-	359	187	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			27.9			29		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	171	870	-	-	461	-	-	193
HCM Lane V/C Ratio	0.083	0.014	-	-	0.005	-	-	0.225
HCM Control Delay (s)	27.9	9.2	-	-	12.8	-	-	29
HCM Lane LOS	D	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.8

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	5	1	16	5	176	3	1426	20	164	1564	385
Future Volume (vph)	37	5	1	16	5	176	3	1426	20	164	1564	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	0.95	0.99		0.98	0.91			1.00				0.99
Frt		0.975			0.854			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1786	0	1500	1425	0	1750	4961	0	1684	4621	1566
Flt Permitted	0.408			0.754			0.116			0.105		
Satd. Flow (perm)	715	1786	0	1168	1425	0	214	4961	0	186	4621	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			191			2				172
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6			426.6	
Travel Time (s)		7.0			7.6			9.1			30.7	
Confl. Peds. (#/hr)	58		15	15		58			36	36		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	19%	2%	3%	2%	3%	5%	6%	11%	2%
Adj. Flow (vph)	40	5	1	17	5	191	3	1550	22	178	1700	418
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	6	0	17	196	0	3	1572	0	178	1700	418
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	38.0	38.0
Total Split (s)	15.0	61.0		46.0	46.0		20.0	79.0		20.0	79.0	79.0
Total Split (%)	9.4%	38.1%		28.8%	28.8%		12.5%	49.4%		12.5%	49.4%	49.4%
Maximum Green (s)	12.0	53.0		38.0	38.0		17.0	72.0		17.0	72.0	72.0
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		58		15	15			0			36	36
Act Effect Green (s)	41.7	36.7		28.1	28.1		101.0	92.0		112.3	106.7	106.7
Actuated g/C Ratio	0.26	0.23		0.18	0.18		0.63	0.58		0.70	0.67	0.67
v/c Ratio	0.17	0.01		0.08	0.48		0.02	0.55		0.70	0.55	0.38
Control Delay	40.4	36.5		50.6	10.9		5.7	10.1		22.7	21.8	11.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.2		0.0	0.0	0.0
Total Delay	40.4	36.5		50.6	10.9		5.7	10.4		22.7	21.8	11.6
LOS	D	D		D	B		A	B		C	C	B
Approach Delay		39.9			14.0			10.4			20.0	
Approach LOS		D			B			B			C	
Queue Length 50th (m)	9.6	1.2		4.6	1.3		0.0	28.4		22.2	161.3	65.2
Queue Length 95th (m)	17.5	4.9		11.2	22.5		m0.2	77.4		m41.3	200.3	117.8
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	263	592		277	484		310	2854		296	3082	1086
Starvation Cap Reductn	0	0		0	0		0	512		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	100	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.15	0.01		0.06	0.40		0.01	0.67		0.60	0.57	0.38

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70

Lanes, Volumes, Timings 6: Hurontario Street & John Street

2021 Existing AM
3085 Hurontario Street

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 84.1%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings
10: Camilla Road/Jaguar Valley Drive & Dundas Street

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1161	51	32	495	74	20	42	43	225	53	17
Future Volume (vph)	12	1161	51	32	495	74	20	42	43	225	53	17
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		30.0	35.0		65.0	35.0		0.0	35.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97			0.97	0.98	0.99		0.99	0.99	
Frt			0.850			0.850		0.924			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1618	3433	1325	1713	3336	1338	1574	1656	0	1696	1742	0
Flt Permitted	0.427			0.152			0.950			0.695		
Satd. Flow (perm)	724	3433	1282	274	3336	1294	1548	1656	0	1230	1742	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			48			82		35			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		248.2			145.1			138.7			167.9	
Travel Time (s)		17.9			10.4			10.0			12.1	
Confl. Peds. (#/hr)	4		4	4		4	11		6	6		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	4%	4%	2%	7%	3%	11%	2%	5%	3%	2%	6%
Adj. Flow (vph)	13	1290	57	36	550	82	22	47	48	250	59	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1290	57	36	550	82	22	95	0	250	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
10: Camilla Road/Jaguar Valley Drive & Dundas Street

2021 Existing AM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6				4		
Detector Phase	2	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	9.5	36.0		36.0	36.0	
Total Split (s)	98.0	98.0	98.0	98.0	98.0	98.0	17.0	62.0		45.0	45.0	
Total Split (%)	61.3%	61.3%	61.3%	61.3%	61.3%	61.3%	10.6%	38.8%		28.1%	28.1%	
Maximum Green (s)	91.0	91.0	91.0	91.0	91.0	91.0	14.0	55.0		38.0	38.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0		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	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)	13.0	13.0	13.0	13.0	13.0	13.0		11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0		18.0		18.0	18.0	
Pedestrian Calls (#/hr)	4	4	4	4	4	4		6		11	11	
Act Effect Green (s)	101.5	101.5	101.5	101.5	101.5	101.5	7.8	44.5		37.3	37.3	
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63	0.63	0.05	0.28		0.23	0.23	
v/c Ratio	0.03	0.59	0.07	0.21	0.26	0.10	0.29	0.20		0.87	0.19	
Control Delay	5.1	10.3	0.6	19.8	14.6	3.2	82.3	25.5		87.2	42.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	5.1	10.3	0.6	19.8	14.6	3.2	82.3	25.5		87.2	42.3	
LOS	A	B	A	B	B	A	F	C		F	D	
Approach Delay		9.9			13.5			36.2			76.5	
Approach LOS		A			B			D			E	
Queue Length 50th (m)	0.4	182.3	0.2	5.1	42.5	0.0	6.9	13.7		75.9	17.1	
Queue Length 95th (m)	m0.9	220.0	m1.1	13.8	57.6	7.8	16.6	27.0		#116.3	31.2	
Internal Link Dist (m)		224.2			121.1			114.7			143.9	
Turn Bay Length (m)	15.0		30.0	35.0		65.0	35.0			35.0		
Base Capacity (vph)	459	2178	830	173	2117	851	137	592		308	443	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.03	0.59	0.07	0.21	0.26	0.10	0.16	0.16		0.81	0.18	

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87

Lanes, Volumes, Timings 10: Camilla Road/Jaguar Valley Drive & Dundas Street

2021 Existing AM
 3085 Hurontario Street

Intersection Signal Delay: 20.9 Intersection LOS: C
 Intersection Capacity Utilization 64.6% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Camilla Road/Jaguar Valley Drive & Dundas Street



Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	438	49	267	555	69	86	1371	89	115	1114	157
Future Volume (vph)	101	438	49	267	555	69	86	1371	89	115	1114	157
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	0.99		0.96	0.99		0.97	0.99	1.00			0.99	
Frt			0.850			0.850		0.991			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1351	1713	3500	1351	1713	4963	0	1713	4880	0
Flt Permitted	0.373			0.235			0.126			0.086		
Satd. Flow (perm)	668	3500	1303	420	3500	1313	226	4963	0	155	4880	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			65		7			19	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	12		17	17		12	53		31	31		53
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	107	466	52	284	590	73	91	1459	95	122	1185	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	466	52	284	590	73	91	1554	0	122	1352	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	14.5	41.0	17.0	31.0	57.5	19.0	17.0	69.0		19.0	71.0	
Total Split (%)	9.1%	25.6%	10.6%	19.4%	35.9%	11.9%	10.6%	43.1%		11.9%	44.4%	
Maximum Green (s)	10.0	34.0	12.5	28.0	50.5	16.0	12.5	62.0		16.0	64.0	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		17			12			31			53	
Act Effect Green (s)	41.6	29.3	41.4	61.1	42.9	58.1	86.7	74.7		90.1	74.9	
Actuated g/C Ratio	0.26	0.18	0.26	0.38	0.27	0.36	0.54	0.47		0.56	0.47	
v/c Ratio	0.45	0.73	0.13	0.79	0.63	0.14	0.43	0.67		0.62	0.59	
Control Delay	39.5	68.0	3.2	51.6	53.9	7.2	23.4	13.6		34.3	33.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	39.5	68.0	3.2	51.6	53.9	7.2	23.4	13.6		34.3	33.8	
LOS	D	E	A	D	D	A	C	B		C	C	
Approach Delay		57.8			49.6			14.1			33.9	
Approach LOS		E			D			B			C	
Queue Length 50th (m)	21.2	71.6	0.0	62.3	82.8	1.5	6.0	42.2		18.7	121.9	
Queue Length 95th (m)	34.3	90.9	4.1	85.9	101.0	10.9	m18.1	60.6		36.2	145.0	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	240	743	421	386	1104	559	241	2320		245	2293	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.45	0.63	0.12	0.74	0.53	0.13	0.38	0.67		0.50	0.59	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2021 Existing PM
3085 Hurontario Street

Intersection Signal Delay: 33.3

Intersection LOS: C

Intersection Capacity Utilization 87.7%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 1: Hurontario Street & Central Parkway

 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	69 s	14.5 s	57.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
17 s	71 s	31 s	41 s

Lanes, Volumes, Timings
2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	158	89	41	263	122	106	1072	39	92	1301	126
Future Volume (vph)	57	158	89	41	263	122	106	1072	39	92	1301	126
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	0.99		0.93	0.95	0.99		0.99	1.00		0.99		0.89
Frt			0.850		0.952			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1842	1325	1713	1737	0	1713	4854	0	1713	5029	1338
Flt Permitted	0.174			0.649			0.073			0.112		
Satd. Flow (perm)	312	1842	1229	1115	1737	0	131	4854	0	201	5029	1190
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97		16			4				126
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			159.2			433.4			126.6	
Travel Time (s)		15.0			11.5			31.2			9.1	
Confl. Peds. (#/hr)	16		60	60		16	49		24	24		49
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	5%	2%	2%	2%	3%
Adj. Flow (vph)	62	172	97	45	286	133	115	1165	42	100	1414	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	172	97	45	419	0	115	1207	0	100	1414	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	21.0	85.0	85.0	64.0	64.0		13.0	62.0		13.0	62.0	21.0
Total Split (%)	13.1%	53.1%	53.1%	40.0%	40.0%		8.1%	38.8%		8.1%	38.8%	13.1%
Maximum Green (s)	18.0	77.0	77.0	56.0	56.0		10.0	54.5		10.0	54.5	18.0
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		60	60	16	16			24			49	
Act Effct Green (s)	59.2	54.2	54.2	43.0	43.0		91.8	54.5		91.8	54.5	67.2
Actuated g/C Ratio	0.37	0.34	0.34	0.27	0.27		0.57	0.34		0.57	0.34	0.42
v/c Ratio	0.33	0.28	0.20	0.15	0.88		0.29	0.73		0.24	0.83	0.24
Control Delay	34.9	38.0	6.1	42.7	72.5		53.2	21.9		35.1	20.9	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.8		0.0	1.3	0.0
Total Delay	34.9	38.0	6.1	42.7	72.5		53.2	22.8		35.1	22.3	1.0
LOS	C	D	A	D	E		D	C		D	C	A
Approach Delay		28.0			69.7			25.4			21.3	
Approach LOS		C			E			C			C	
Queue Length 50th (m)	12.8	39.7	0.0	11.0	123.7		21.3	46.1		8.5	104.1	0.0
Queue Length 95th (m)	20.4	52.1	11.5	19.9	152.0		m40.9	m57.7		30.4	38.7	0.0
Internal Link Dist (m)		184.4			135.2			409.4			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	272	886	641	390	618		399	1656		424	1713	654
Starvation Cap Reductn	0	0	0	0	0		0	0		0	136	0
Spillback Cap Reductn	0	0	0	0	0		0	193		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.23	0.19	0.15	0.12	0.68		0.29	0.83		0.24	0.90	0.21

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Lanes, Volumes, Timings 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2021 Existing PM
3085 Hurontario Street

Intersection Signal Delay: 29.3

Intersection LOS: C

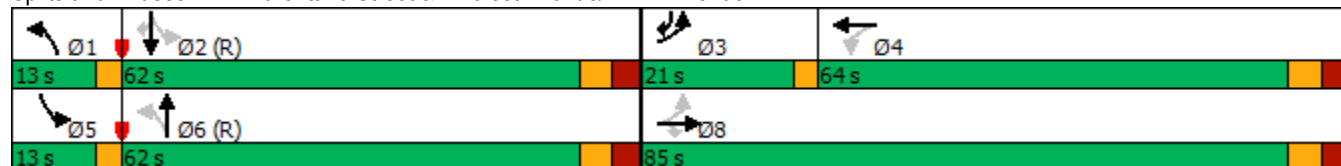
Intersection Capacity Utilization 107.3%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue



Lanes, Volumes, Timings
3: Hurontario Street / Hurontario Street & Dundas Street

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	696	155	142	1001	139	158	948	101	171	1180	117
Future Volume (vph)	91	696	155	142	1001	139	158	948	101	171	1180	117
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		25.0	30.0		0.0	45.0		0.0	60.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor			0.69	0.91	0.98		0.99	0.97		0.95	0.99	
Frt			0.850		0.982			0.986			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1680	3305	1276	1664	3219	0	1633	4636	0	1648	4710	0
Flt Permitted	0.069			0.261			0.097			0.168		
Satd. Flow (perm)	122	3305	885	418	3219	0	165	4636	0	277	4710	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		10			12			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			433.4	
Travel Time (s)		16.6			17.6			11.9			31.2	
Confl. Peds. (#/hr)	127		237	237		127	85		266	266		85
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	8%	8%	5%	7%	4%	7%	6%	3%	6%	6%	7%
Adj. Flow (vph)	94	718	160	146	1032	143	163	977	104	176	1216	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	718	160	146	1175	0	163	1081	0	176	1337	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
3: Hurontario Street / Hurontario Street & Dundas Street

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4			6			2		
Detector Phase	3	8	8	7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5	45.5	8.0	45.5		10.0	41.0		8.0	41.0	
Total Split (s)	14.0	66.0	66.0	14.0	66.0		14.0	66.0		14.0	66.0	
Total Split (%)	8.8%	41.3%	41.3%	8.8%	41.3%		8.8%	41.3%		8.8%	41.3%	
Maximum Green (s)	11.0	58.5	58.5	11.0	58.5		11.0	59.0		11.0	59.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5	3.5	0.0	3.5		0.0	3.0		0.0	3.0	
Lost Time Adjust (s)	1.0	3.0	0.0	1.0	3.0		1.0	3.0		1.0	3.0	
Total Lost Time (s)	4.0	10.5	7.5	4.0	10.5		4.0	10.0		4.0	10.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0		2.0	3.0	
Recall Mode	None	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)		237	237		127			266			85	
Act Effect Green (s)	70.7	56.1	59.1	73.3	57.4		72.0	56.0		72.0	56.0	
Actuated g/C Ratio	0.44	0.35	0.37	0.46	0.36		0.45	0.35		0.45	0.35	
v/c Ratio	0.71	0.62	0.43	0.55	1.01		0.98	0.66		0.84	0.81	
Control Delay	55.9	46.1	25.5	45.4	90.5		96.5	45.9		93.4	98.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	55.9	46.1	25.5	45.4	90.5		96.5	45.9		93.4	98.6	
LOS	E	D	C	D	F		F	D		F	F	
Approach Delay		43.6			85.5			52.5			98.0	
Approach LOS		D			F			D			F	
Queue Length 50th (m)	16.4	100.4	21.6	39.3	~211.4		31.0	105.5		55.6	163.5	
Queue Length 95th (m)	#33.9	122.1	44.0	60.1	#259.7		#80.5	121.9		m#69.0	179.3	
Internal Link Dist (m)		206.3			220.0			141.0			409.4	
Turn Bay Length (m)	35.0		25.0	30.0			45.0			60.0		
Base Capacity (vph)	152	1158	369	270	1160		166	1630		210	1655	
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	0.62	0.62	0.43	0.54	1.01		0.98	0.66		0.84	0.81	

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01

Lanes, Volumes, Timings

3: Hurontario Street /Hurontario Street & Dundas Street

2021 Existing PM
3085 Hurontario Street

Intersection Signal Delay: 73.1

Intersection LOS: E

Intersection Capacity Utilization 101.5%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

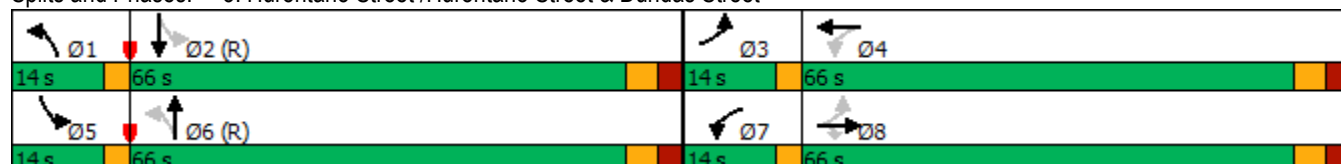
Queue shown is maximum after two cycles.

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 /Hurontario Street & Dundas Street



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	269	72	16	354	22	104	26	21	26	17	46
Future Volume (vph)	84	269	72	16	354	22	104	26	21	26	17	46
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.968			0.991			0.981			0.930	
Flt Protected	0.950			0.950				0.967			0.986	
Satd. Flow (prot)	1713	1779	0	1648	1822	0	0	1724	0	0	1689	0
Flt Permitted	0.950			0.950				0.967			0.986	
Satd. Flow (perm)	1713	1779	0	1648	1822	0	0	1724	0	0	1689	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.2			185.6			222.8			87.4	
Travel Time (s)		11.5			13.4			16.0			6.3	
Confl. Peds. (#/hr)			29	29		9	8		4	4		8
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	6%	2%	5%	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	91	292	78	17	385	24	113	28	23	28	18	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	370	0	17	409	0	0	164	0	0	96	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.9%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	269	72	16	354	22	104	26	21	26	17	46
Future Vol, veh/h	84	269	72	16	354	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
Heavy Vehicles, %	2	2	3	6	2	5	4	2	2	2	2	2
Mvmt Flow	91	292	78	17	385	24	113	28	23	28	18	50
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15.9	20.3	12.5	11
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	69%	100%	0%	100%	0%	29%
Vol Thru, %	17%	0%	79%	0%	94%	19%
Vol Right, %	14%	0%	21%	0%	6%	52%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	84	341	16	376	89
LT Vol	104	84	0	16	0	26
Through Vol	26	0	269	0	354	17
RT Vol	21	0	72	0	22	46
Lane Flow Rate	164	91	371	17	409	97
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.3	0.165	0.603	0.032	0.682	0.176
Departure Headway (Hd)	6.585	6.514	5.855	6.622	6.004	6.565
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	542	548	612	538	601	549
Service Time	4.677	4.285	3.627	4.393	3.774	4.565
HCM Lane V/C Ratio	0.303	0.166	0.606	0.032	0.681	0.177
HCM Control Delay	12.5	10.6	17.2	9.6	20.8	11
HCM Lane LOS	B	B	C	A	C	B
HCM 95th-tile Q	1.3	0.6	4	0.1	5.3	0.6

Lanes, Volumes, Timings
5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	812	12	22	1270	37	6	6	21	12	6	39
Future Volume (vph)	46	812	12	22	1270	37	6	6	21	12	6	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.996			0.916			0.909	
Flt Protected	0.950			0.950				0.991			0.990	
Satd. Flow (prot)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Flt Permitted	0.950			0.950				0.991			0.990	
Satd. Flow (perm)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			250.7			137.9			244.3	
Travel Time (s)		17.6			18.1			9.9			17.6	
Confl. Peds. (#/hr)	50		24	24		50	15		29	29		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	7%	8%	9%	3%	5%	2%	17%	10%	8%	2%	5%
Adj. Flow (vph)	50	883	13	24	1380	40	7	7	23	13	7	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	896	0	24	1420	0	0	37	0	0	62	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 54.7%	ICU Level of Service A											
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	10.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱			↰↱			↰↱	
Traffic Vol, veh/h	46	812	12	22	1270	37	6	6	21	12	6	39
Future Vol, veh/h	46	812	12	22	1270	37	6	6	21	12	6	39
Conflicting Peds, #/hr	50	0	24	24	0	50	15	0	29	29	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	7	8	9	3	5	2	17	10	8	2	5
Mvmt Flow	50	883	13	24	1380	40	7	7	23	13	7	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1470	0	0	920	0	0	1771	2532	501	2072	2518	775
Stage 1	-	-	-	-	-	-	1014	1014	-	1498	1498	-
Stage 2	-	-	-	-	-	-	757	1518	-	574	1020	-
Critical Hdwy	4.14	-	-	4.28	-	-	7.54	6.84	7.1	7.66	6.54	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Follow-up Hdwy	2.22	-	-	2.29	-	-	3.52	4.17	3.4	3.58	4.02	3.35
Pot Cap-1 Maneuver	455	-	-	696	-	-	53	22	495	29	28	334
Stage 1	-	-	-	-	-	-	256	283	-	121	184	-
Stage 2	-	-	-	-	-	-	366	156	-	456	312	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	434	-	-	680	-	-	30	18	471	16	22	314
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	18	-	16	22	-
Stage 1	-	-	-	-	-	-	221	245	-	102	169	-
Stage 2	-	-	-	-	-	-	290	144	-	364	270	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.2	142.4	\$ 338.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	57	434	-	-	680	-	-	50
HCM Lane V/C Ratio	0.629	0.115	-	-	0.035	-	-	1.239
HCM Control Delay (s)	142.4	14.4	-	-	10.5	-	-	\$ 338.3
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.6	0.4	-	-	0.1	-	-	5.6

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	104	5	3	23	5	322	1	1354	39	228	1354	19
Future Volume (vph)	104	5	3	23	5	322	1	1354	39	228	1354	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	0.98	0.96		0.90	0.94			1.00				0.99
Frt		0.944			0.852			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1664	0	1750	1473	0	1750	4984	0	1750	4749	1566
Flt Permitted	0.214			0.752			0.151			0.087		
Satd. Flow (perm)	387	1664	0	1245	1473	0	278	4984	0	160	4749	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			235			3				75
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6				426.6
Travel Time (s)		7.0			7.6			9.1				30.7
Confl. Peds. (#/hr)	37		81	81		37			56	56		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	8%	2%
Adj. Flow (vph)	113	5	3	25	5	350	1	1472	42	248	1472	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	8	0	25	355	0	1	1514	0	248	1472	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	43.0	43.0
Total Split (s)	15.0	61.0		46.0	46.0		20.0	79.0		20.0	79.0	79.0
Total Split (%)	9.4%	38.1%		28.8%	28.8%		12.5%	49.4%		12.5%	49.4%	49.4%
Maximum Green (s)	12.0	53.0		38.0	38.0		17.0	72.0		17.0	72.0	72.0
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		37		81	81			0			56	56
Act Effect Green (s)	56.6	51.6		38.0	38.0		82.3	73.3		97.4	91.8	91.8
Actuated g/C Ratio	0.35	0.32		0.24	0.24		0.51	0.46		0.61	0.57	0.57
v/c Ratio	0.50	0.01		0.08	0.67		0.01	0.66		0.93	0.54	0.02
Control Delay	43.3	28.9		48.6	24.9		6.0	14.5		58.6	28.4	1.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.0		0.0	0.0	0.0
Total Delay	43.3	28.9		48.6	24.9		6.0	15.5		58.6	28.4	1.7
LOS	D	C		D	C		A	B		E	C	A
Approach Delay		42.4			26.5			15.5			32.4	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	24.6	1.1		6.3	34.8		0.0	111.2		54.5	143.5	0.0
Queue Length 95th (m)	39.7	5.2		14.9	72.5		m0.1	80.8		#104.7	164.5	m0.6
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	239	553		295	529		319	2286		271	2725	917
Starvation Cap Reductn	0	0		0	0		0	470		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	101	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.47	0.01		0.08	0.67		0.00	0.83		0.92	0.56	0.02

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Lanes, Volumes, Timings 6: Hurontario Street & John Street

2021 Existing PM
3085 Hurontario Street

Intersection Signal Delay: 25.3

Intersection LOS: C

Intersection Capacity Utilization 98.9%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings
10: Camilla Road/Jaguar Valley Drive & Dundas Street

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	764	41	89	1214	332	53	116	51	181	96	49
Future Volume (vph)	24	764	41	89	1214	332	53	116	51	181	96	49
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		30.0	35.0		65.0	35.0		0.0	35.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.95	0.99		0.90	0.99	0.99		0.98	0.99	
Frt			0.850			0.850		0.954			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3466	1351	1713	3500	1351	1713	1738	0	1713	1728	0
Flt Permitted	0.144			0.296			0.950			0.642		
Satd. Flow (perm)	260	3466	1284	530	3500	1221	1688	1738	0	1138	1728	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			48			259		15			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		250.7			167.6			137.0			176.2	
Travel Time (s)		18.1			12.1			9.9			12.7	
Confl. Peds. (#/hr)	30		11	11		30	11		13	13		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	26	840	45	98	1334	365	58	127	56	199	105	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	840	45	98	1334	365	58	183	0	199	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
10: Camilla Road/Jaguar Valley Drive & Dundas Street

2021 Existing PM
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6				4		
Detector Phase	2	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	9.5	36.0		36.0	36.0	
Total Split (s)	98.0	98.0	98.0	98.0	98.0	98.0	17.0	62.0		45.0	45.0	
Total Split (%)	61.3%	61.3%	61.3%	61.3%	61.3%	61.3%	10.6%	38.8%		28.1%	28.1%	
Maximum Green (s)	91.0	91.0	91.0	91.0	91.0	91.0	14.0	55.0		38.0	38.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0		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	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)	13.0	13.0	13.0	13.0	13.0	13.0		11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0		18.0		18.0	18.0	
Pedestrian Calls (#/hr)	11	11	11	30	30	30		13		11	11	
Act Effct Green (s)	102.2	102.2	102.2	102.2	102.2	102.2	10.6	43.8		32.1	32.1	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.64	0.64	0.07	0.27		0.20	0.20	
v/c Ratio	0.16	0.38	0.05	0.29	0.60	0.42	0.51	0.38		0.87	0.44	
Control Delay	9.8	8.3	0.6	18.5	20.1	6.4	87.4	43.0		95.1	53.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	9.8	8.3	0.6	18.5	20.1	6.4	87.4	43.0		95.1	53.4	
LOS	A	A	A	B	C	A	F	D		F	D	
Approach Delay		8.0			17.2			53.7			76.6	
Approach LOS		A			B			D			E	
Queue Length 50th (m)	0.8	18.0	0.0	14.1	132.7	13.6	18.2	42.1		61.3	40.1	
Queue Length 95th (m)	m4.6	121.8	m1.4	30.0	174.9	38.5	33.1	60.1		#94.1	60.9	
Internal Link Dist (m)		226.7			143.6			113.0			152.2	
Turn Bay Length (m)	15.0		30.0	35.0		65.0	35.0			35.0		
Base Capacity (vph)	165	2214	837	338	2235	873	149	607		270	422	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.16	0.38	0.05	0.29	0.60	0.42	0.39	0.30		0.74	0.38	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Lanes, Volumes, Timings 10: Camilla Road/Jaguar Valley Drive & Dundas Street

2021 Existing PM
 3085 Hurontario Street

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 88.5%

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.

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

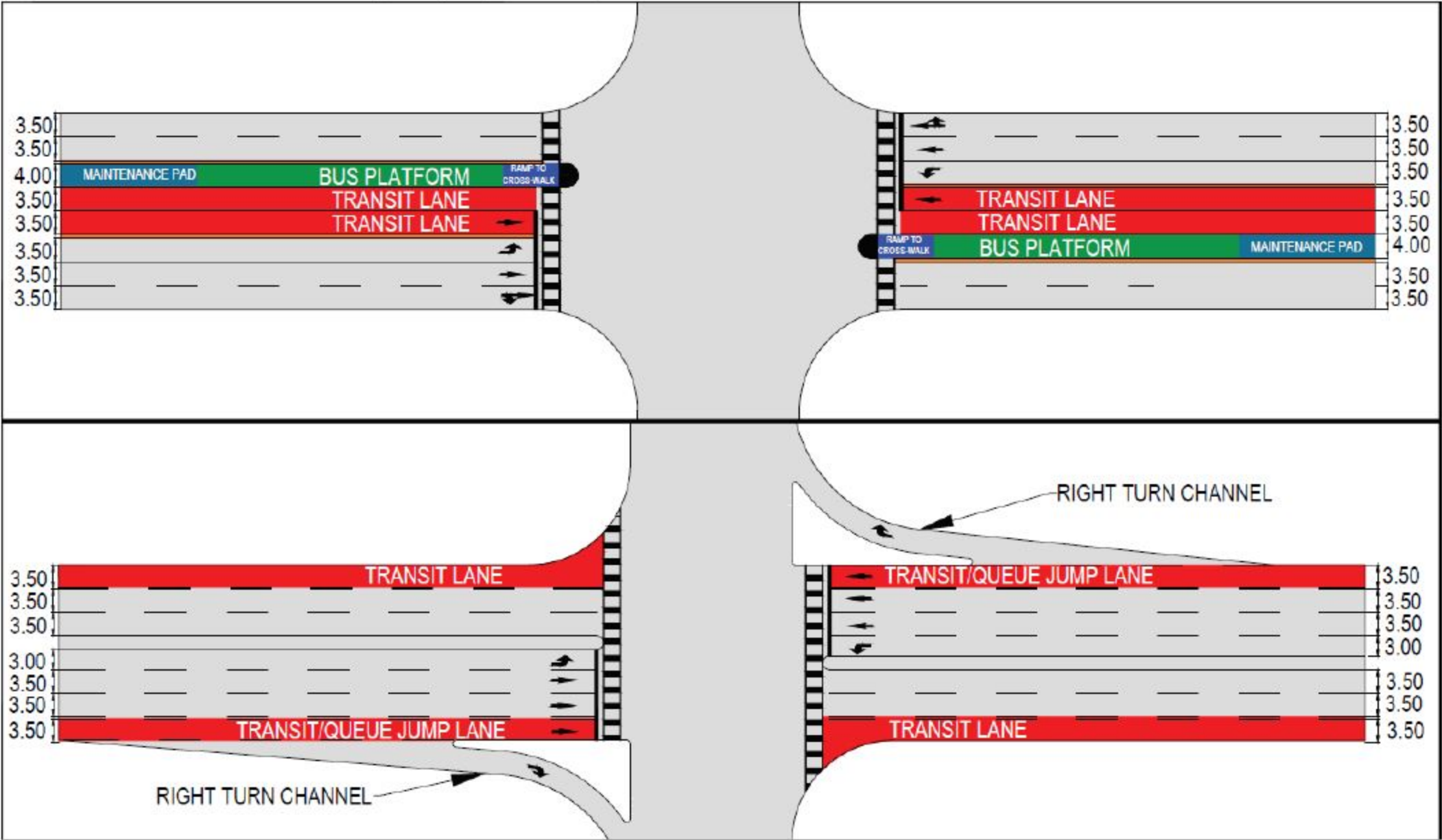
Splits and Phases: 10: Camilla Road/Jaguar Valley Drive & Dundas Street



Appendix I

Dundas BRT Plan Drawing

Figure 3.8: BRT intersection layout proposed by Dundas Connects



Appendix J

2028 Future Background Conditions Synchro Worksheets

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	479	75	293	363	117	58	1245	62	106	1329	58
Future Volume (vph)	172	479	75	293	363	117	58	1245	62	106	1329	58
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98		0.95	0.99		0.95		1.00			1.00	
Frt			0.850			0.850		0.993			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1276	1696	3466	1338	1648	3420	0	1696	3405	0
Flt Permitted	0.452			0.184			0.051			0.055		
Satd. Flow (perm)	798	3500	1212	324	3466	1272	88	3420	0	98	3405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			73		4			4	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	27		28	28		27	34		39	39		34
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	8%	3%	3%	3%	6%	3%	10%	3%	4%	3%
Adj. Flow (vph)	191	532	83	326	403	130	64	1383	69	118	1477	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	532	83	326	403	130	64	1452	0	118	1541	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	21.0	41.0	10.2	26.0	46.0	12.0	10.2	81.0		12.0	82.8	
Total Split (%)	13.1%	25.6%	6.4%	16.3%	28.8%	7.5%	6.4%	50.6%		7.5%	51.8%	
Maximum Green (s)	16.5	34.0	5.7	23.0	39.0	9.0	5.7	74.0		9.0	75.8	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		28			27			39			34	
Act Effct Green (s)	48.6	30.4	39.1	60.4	36.2	49.2	86.3	77.6		91.8	78.9	
Actuated g/C Ratio	0.30	0.19	0.24	0.38	0.23	0.31	0.54	0.48		0.57	0.49	
v/c Ratio	0.58	0.80	0.23	1.02	0.51	0.29	0.60	0.87		0.81	0.92	
Control Delay	43.4	71.3	10.9	94.9	56.3	18.9	60.1	17.9		67.9	47.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	43.4	71.3	10.9	94.9	56.3	18.9	60.1	17.9		67.9	47.5	
LOS	D	E	B	F	E	B	E	B		E	D	
Approach Delay		58.5			65.3			19.7			49.0	
Approach LOS		E			E			B			D	
Queue Length 50th (m)	41.6	83.6	1.1	77.0	58.2	12.5	7.2	211.4		21.1	244.0	
Queue Length 95th (m)	61.7	104.6	14.5	#141.8	75.3	29.4	m17.6	136.7		#56.9	#296.1	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	340	743	357	319	844	447	107	1661		148	1681	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.56	0.72	0.23	1.02	0.48	0.29	0.60	0.87		0.80	0.92	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2028 Future Background - AM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 44.3

Intersection LOS: D

Intersection Capacity Utilization 100.6%

ICU Level of Service G

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: 1: Hurontario Street & Central Parkway

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	81 s	21 s	46 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
10.2 s	82.8 s	26 s	41 s

Lanes, Volumes, Timings

2028 Future Background - AM Peak Hour

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	169	74	19	92	63	65	1090	22	80	1074	209
Future Volume (vph)	247	169	74	19	92	63	65	1090	22	80	1074	209
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.94	0.97	0.99		0.98	1.00		1.00		0.81
Frt			0.850		0.939			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1696	1807	1313	1589	1633	0	1603	3356	0	1713	3433	1351
Flt Permitted	0.530			0.641			0.105			0.092		
Satd. Flow (perm)	934	1807	1240	1037	1633	0	174	3356	0	166	3433	1089
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		22			2				198
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			159.2			433.4			126.6	
Travel Time (s)		15.0			11.5			31.2			9.1	
Confl. Peds. (#/hr)	18		42	42		18	96		4	4		96
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	4%	5%	10%	7%	6%	9%	6%	5%	2%	4%	2%
Adj. Flow (vph)	268	184	80	21	100	68	71	1185	24	87	1167	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	184	80	21	168	0	71	1209	0	87	1167	227
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	15.0	71.0	71.0	56.0	56.0		12.0	77.0		12.0	77.0	15.0
Total Split (%)	9.4%	44.4%	44.4%	35.0%	35.0%		7.5%	48.1%		7.5%	48.1%	9.4%
Maximum Green (s)	12.0	63.0	63.0	48.0	48.0		9.0	69.5		9.0	69.5	12.0
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		42	42	18	18			4			96	
Act Effect Green (s)	57.8	52.8	52.8	37.8	37.8		93.2	69.5		93.2	69.5	86.0
Actuated g/C Ratio	0.36	0.33	0.33	0.24	0.24		0.58	0.43		0.58	0.43	0.54
v/c Ratio	0.68	0.31	0.17	0.09	0.42		0.26	0.83		0.31	0.78	0.33
Control Delay	47.5	39.2	6.6	42.3	45.2		18.3	23.3		26.0	21.8	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	2.0		0.0	10.7	0.4
Total Delay	47.5	39.2	6.6	42.3	45.2		18.3	25.2		26.0	32.5	2.0
LOS	D	D	A	D	D		B	C		C	C	A
Approach Delay		38.5			44.9			24.8			27.5	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	57.8	39.3	0.0	4.8	36.1		4.0	112.9		1.7	92.4	4.0
Queue Length 95th (m)	81.8	58.6	11.1	12.0	57.5		m5.9	143.3		m14.0	113.6	m0.0
Internal Link Dist (m)		184.4			135.2			409.4			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	394	711	536	311	505		272	1458		282	1491	696
Starvation Cap Reductn	0	0	0	0	0		0	0		0	311	166
Spillback Cap Reductn	0	0	0	0	0		0	128		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.68	0.26	0.15	0.07	0.33		0.26	0.91		0.31	0.99	0.43

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 29.1

Intersection LOS: C

Intersection Capacity Utilization 104.4%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	77 s	15 s	56 s
 Ø5	 Ø6 (R)	 Ø8	
12 s	77 s	71 s	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1106	100	93	523	87	0	900	87	150	844	71
Future Volume (vph)	118	1106	100	93	523	87	0	900	87	150	844	71
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.97	0.98			0.99			0.99			0.99	
Frt		0.988			0.979			0.987			0.988	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1533	3229	0	1574	3063	0	0	3167	0	1633	3228	0
Flt Permitted	0.298			0.067						0.105		
Satd. Flow (perm)	467	3229	0	111	3063	0	0	3167	0	180	3228	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			13			7			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			433.4	
Travel Time (s)		16.6			17.6			11.9			31.2	
Confl. Peds. (#/hr)	71		136	136		71	58		110	110		58
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	14%	6%	25%	11%	11%	21%	9%	9%	16%	7%	8%	14%
Adj. Flow (vph)	120	1129	102	95	534	89	0	918	89	153	861	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1231	0	95	623	0	0	1007	0	153	933	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA			NA		pm+pt	NA	
Protected Phases	3	8		7	4			6		5	2	
Permitted Phases	8			4						2		
Detector Phase	3	8		7	4			6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0			8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5		8.0	45.5			41.0		8.0	41.0	
Total Split (s)	14.0	71.0		10.0	67.0			64.0		15.0	79.0	
Total Split (%)	8.8%	44.4%		6.3%	41.9%			40.0%		9.4%	49.4%	
Maximum Green (s)	11.0	63.5		7.0	59.5			57.0		12.0	72.0	
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	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	
Total Lost Time (s)	3.0	7.5		3.0	7.5			7.0		3.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes			Yes		Yes		
Vehicle Extension (s)	2.0	3.0		2.0	3.0			3.0		2.0	3.0	
Recall Mode	None	None		None	None			C-Max		None	C-Max	
Walk Time (s)		16.0			16.0			14.0			14.0	
Flash Dont Walk (s)		22.0			22.0			20.0			20.0	
Pedestrian Calls (#/hr)		136			71			110			58	
Act Effect Green (s)	76.8	62.9		71.3	59.8			58.1		76.6	72.6	
Actuated g/C Ratio	0.48	0.39		0.45	0.37			0.36		0.48	0.45	
v/c Ratio	0.41	0.97		0.84	0.54			0.87		0.81	0.64	
Control Delay	27.5	65.5		91.9	58.4			56.9		83.9	77.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	27.5	65.5		91.9	58.4			56.9		83.9	77.3	
LOS	C	E		F	E			E		F	E	
Approach Delay		62.1			62.8			56.9			78.2	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	20.9	198.8		23.7	102.6			157.8		49.1	163.0	
Queue Length 95th (m)	33.8	#246.5		#49.8	122.6			188.1		m#65.7	185.3	
Internal Link Dist (m)		206.3			220.0			141.0			409.4	
Turn Bay Length (m)	35.0			30.0						60.0		
Base Capacity (vph)	298	1285		113	1153			1154		195	1468	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.40	0.96		0.84	0.54			0.87		0.78	0.64	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 65.2

Intersection LOS: E

Intersection Capacity Utilization 95.2%

ICU Level of Service F

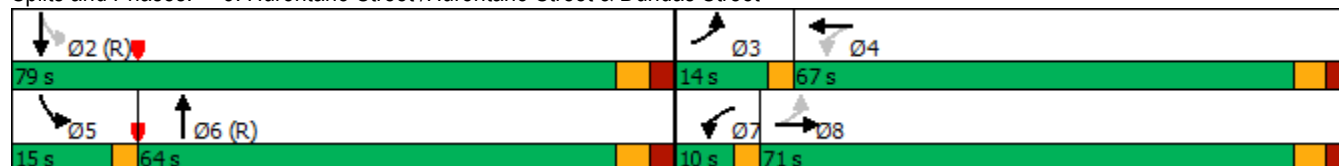
Analysis Period (min) 15

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 /Hurontario Street & Dundas Street



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	291	36	7	164	13	62	18	18	70	14	21
Future Volume (vph)	18	291	36	7	164	13	62	18	18	70	14	21
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.989			0.975			0.973	
Flt Protected	0.950			0.950				0.970			0.968	
Satd. Flow (prot)	1713	1715	0	1533	1727	0	0	1666	0	0	1708	0
Flt Permitted	0.950			0.950				0.970			0.968	
Satd. Flow (perm)	1713	1715	0	1533	1727	0	0	1666	0	0	1708	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.2			182.9			222.8			87.4	
Travel Time (s)		11.5			13.2			16.0			6.3	
Confl. Peds. (#/hr)	21		41	41		21	13		10	10		13
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	8%	6%	14%	7%	15%	5%	2%	17%	2%	2%	10%
Adj. Flow (vph)	20	316	39	8	178	14	67	20	20	76	15	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	355	0	8	192	0	0	107	0	0	114	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.0%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	291	36	7	164	13	62	18	18	70	14	21
Future Vol, veh/h	18	291	36	7	164	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
Heavy Vehicles, %	2	8	6	14	7	15	5	2	17	2	2	10
Mvmt Flow	20	316	39	8	178	14	67	20	20	76	15	23
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	14.2	10.8	10	10
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	63%	100%	0%	100%	0%	67%
Vol Thru, %	18%	0%	89%	0%	93%	13%
Vol Right, %	18%	0%	11%	0%	7%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	18	327	7	177	105
LT Vol	62	18	0	7	0	70
Through Vol	18	0	291	0	164	14
RT Vol	18	0	36	0	13	21
Lane Flow Rate	107	20	355	8	192	114
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.171	0.032	0.542	0.013	0.303	0.181
Departure Headway (Hd)	5.772	5.968	5.488	6.354	5.675	5.704
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	621	604	661	564	635	629
Service Time	3.81	3.668	3.188	4.082	3.403	3.741
HCM Lane V/C Ratio	0.172	0.033	0.537	0.014	0.302	0.181
HCM Control Delay	10	8.9	14.5	9.2	10.9	10
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.6	0.1	3.3	0	1.3	0.7

Lanes, Volumes, Timings

2028 Future Background - AM Peak Hour

5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1355	2	2	666	14	2	0	11	14	1	25
Future Volume (vph)	11	1355	2	2	666	14	2	0	11	14	1	25
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.884			0.915	
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1603	3306	0	1713	3196	0	0	1425	0	0	1572	0
Flt Permitted	0.950			0.950				0.993			0.983	
Satd. Flow (perm)	1603	3306	0	1713	3196	0	0	1425	0	0	1572	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			248.2			137.5			244.3	
Travel Time (s)		17.6			17.9			9.9			17.6	
Confl. Peds. (#/hr)	15		38	38		15	1		1	1		1
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	8%	2%	2%	11%	29%	2%	2%	18%	7%	2%	8%
Adj. Flow (vph)	12	1473	2	2	724	15	2	0	12	15	1	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1475	0	2	739	0	0	14	0	0	43	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.2%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1355	2	2	666	14	2	0	11	14	1	25
Future Vol, veh/h	11	1355	2	2	666	14	2	0	11	14	1	25
Conflicting Peds, #/hr	15	0	38	38	0	15	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	8	2	2	11	29	2	2	18	7	2	8
Mvmt Flow	12	1473	2	2	724	15	2	0	12	15	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	754	0	0	1513	0	0	1904	2294	777	1513	2288	386
Stage 1	-	-	-	-	-	-	1536	1536	-	751	751	-
Stage 2	-	-	-	-	-	-	368	758	-	762	1537	-
Critical Hdwy	4.28	-	-	4.14	-	-	7.54	6.54	7.26	7.64	6.54	7.06
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Follow-up Hdwy	2.29	-	-	2.22	-	-	3.52	4.02	3.48	3.57	4.02	3.38
Pot Cap-1 Maneuver	808	-	-	438	-	-	42	39	307	79	39	596
Stage 1	-	-	-	-	-	-	121	176	-	358	416	-
Stage 2	-	-	-	-	-	-	624	413	-	352	176	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	797	-	-	422	-	-	37	36	296	74	36	587
Mov Cap-2 Maneuver	-	-	-	-	-	-	37	36	-	74	36	-
Stage 1	-	-	-	-	-	-	115	167	-	348	408	-
Stage 2	-	-	-	-	-	-	590	405	-	332	167	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	32.9	37.3
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	143	797	-	-	422	-	-	154
HCM Lane V/C Ratio	0.099	0.015	-	-	0.005	-	-	0.282
HCM Control Delay (s)	32.9	9.6	-	-	13.6	-	-	37.3
HCM Lane LOS	D	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	1.1

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	5	1	16	5	176	3	1307	20	164	1530	385
Future Volume (vph)	37	5	1	16	5	176	3	1307	20	164	1530	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.95	0.99		0.98	0.91			1.00				0.99
Frt		0.975			0.854			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1786	0	1500	1425	0	1750	3452	0	1684	3216	1566
Flt Permitted	0.410			0.754			0.095			0.095		
Satd. Flow (perm)	719	1786	0	1168	1425	0	175	3452	0	168	3216	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			191			1				150
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6				426.6
Travel Time (s)		7.0			7.6			9.1				30.7
Confl. Peds. (#/hr)	58		15	15		58			36	36		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	19%	2%	3%	2%	3%	5%	6%	11%	2%
Adj. Flow (vph)	40	5	1	17	5	191	3	1421	22	178	1663	418
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	6	0	17	196	0	3	1443	0	178	1663	418
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	38.0	38.0
Total Split (s)	9.5	55.5		46.0	46.0		9.5	84.4		20.1	95.0	95.0
Total Split (%)	5.9%	34.7%		28.8%	28.8%		5.9%	52.8%		12.6%	59.4%	59.4%
Maximum Green (s)	6.5	47.5		38.0	38.0		6.5	77.4		17.1	88.0	88.0
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		58		15	15			0			36	36
Act Effect Green (s)	40.8	35.8		28.3	28.3		101.3	92.3		113.2	107.6	107.6
Actuated g/C Ratio	0.26	0.22		0.18	0.18		0.63	0.58		0.71	0.67	0.67
v/c Ratio	0.18	0.01		0.08	0.48		0.02	0.72		0.71	0.77	0.38
Control Delay	41.6	37.7		50.5	10.8		8.0	18.0		28.5	23.4	6.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.8		0.0	0.2	0.0
Total Delay	41.6	37.7		50.5	10.8		8.0	18.8		28.5	23.6	6.5
LOS	D	D		D	B		A	B		C	C	A
Approach Delay		41.1			14.0			18.8			20.8	
Approach LOS		D			B			B			C	
Queue Length 50th (m)	9.6	1.2		4.6	1.3		0.2	56.1		15.3	240.7	26.5
Queue Length 95th (m)	18.0	5.0		11.2	22.5		m0.3	235.2		m28.6	m306.5	m69.5
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	225	530		277	484		176	1991		280	2162	1087
Starvation Cap Reductn	0	0		0	0		0	252		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	81	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.01		0.06	0.40		0.02	0.83		0.64	0.80	0.38

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

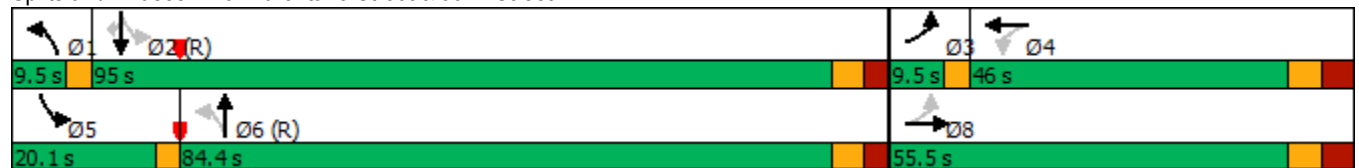
Lanes, Volumes, Timings 6: Hurontario Street & John Street

2028 Future Background - AM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings

2028 Future Background - AM Peak Hour

10: Camilla Road/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1268	51	32	546	74	20	42	43	225	53	17
Future Volume (vph)	12	1268	51	32	546	74	20	42	43	225	53	17
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		0.0	35.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00		0.98	0.99		0.99	0.99	
Frt		0.994			0.982			0.924			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1618	3408	0	1713	3278	0	1574	1656	0	1696	1743	0
Flt Permitted	0.360			0.114			0.950			0.695		
Satd. Flow (perm)	611	3408	0	206	3278	0	1548	1656	0	1230	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			15			35			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		248.2			145.1			138.7			167.9	
Travel Time (s)		17.9			10.4			10.0			12.1	
Confl. Peds. (#/hr)	4		4	4		4	11		6	6		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	4%	4%	2%	7%	3%	11%	2%	5%	3%	2%	6%
Adj. Flow (vph)	13	1409	57	36	607	82	22	47	48	250	59	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1466	0	36	689	0	22	95	0	250	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6						4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	36.0		36.0	36.0	
Total Split (s)	96.2	96.2		96.2	96.2		9.8	63.8		54.0	54.0	
Total Split (%)	60.1%	60.1%		60.1%	60.1%		6.1%	39.9%		33.8%	33.8%	
Maximum Green (s)	89.2	89.2		89.2	89.2		6.8	56.8		47.0	47.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0			11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)	4	4		4	4			6		11	11	
Act Effect Green (s)	102.8	102.8		102.8	102.8		6.5	43.2		37.3	37.3	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.04	0.27		0.23	0.23	
v/c Ratio	0.03	0.67		0.27	0.33		0.35	0.20		0.87	0.19	
Control Delay	5.6	12.7		23.7	14.7		89.8	25.8		87.0	41.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.6	12.7		23.7	14.7		89.8	25.8		87.0	41.5	
LOS	A	B		C	B		F	C		F	D	
Approach Delay		12.6			15.1			37.9			76.2	
Approach LOS		B			B			D			E	
Queue Length 50th (m)	0.4	203.8		5.1	52.7		6.9	14.0		76.9	17.3	
Queue Length 95th (m)	m1.5	m251.8		16.1	75.3		17.1	26.4		104.5	29.7	
Internal Link Dist (m)		224.2			121.1			114.7			143.9	
Turn Bay Length (m)	15.0			35.0			35.0			35.0		
Base Capacity (vph)	392	2192		132	2112		66	610		361	519	
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	0.03	0.67		0.27	0.33		0.33	0.16		0.69	0.15	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 22.3

Intersection LOS: C

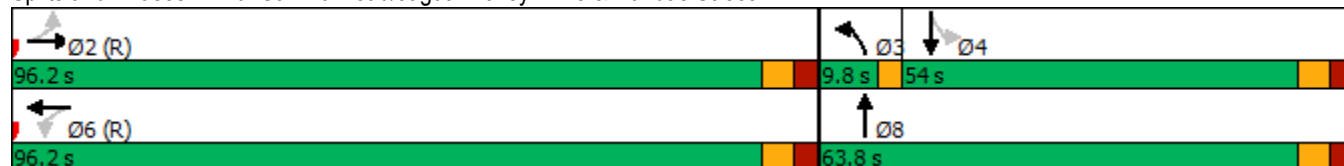
Intersection Capacity Utilization 69.2%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 10: Camilla Road/Jaguar Valley Drive & Dundas Street



Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	466	61	311	555	70	88	1236	88	108	1161	147
Future Volume (vph)	144	466	61	311	555	70	88	1236	88	108	1161	147
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.96	0.99		0.97		1.00			0.99	
Frt			0.850			0.850		0.990			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1351	1713	3500	1351	1713	3449	0	1713	3407	0
Flt Permitted	0.304			0.211			0.062			0.063		
Satd. Flow (perm)	545	3500	1303	377	3500	1313	112	3449	0	114	3407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			69		6			11	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	12		17	17		12	53		31	31		53
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	153	496	65	331	590	74	94	1315	94	115	1235	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	496	65	331	590	74	94	1409	0	115	1391	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	19.2	41.0	13.8	28.0	49.8	13.0	13.8	78.0		13.0	77.2	
Total Split (%)	12.0%	25.6%	8.6%	17.5%	31.1%	8.1%	8.6%	48.8%		8.1%	48.3%	
Maximum Green (s)	14.7	34.0	9.3	25.0	42.8	10.0	9.3	71.0		10.0	70.2	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		17			12			31			53	
Act Effct Green (s)	46.0	29.8	41.0	61.5	39.3	52.4	87.5	76.4		88.4	75.3	
Actuated g/C Ratio	0.29	0.19	0.26	0.38	0.25	0.33	0.55	0.48		0.55	0.47	
v/c Ratio	0.60	0.76	0.16	0.94	0.69	0.15	0.64	0.85		0.75	0.86	
Control Delay	44.3	69.4	6.0	73.7	58.9	8.4	56.5	20.6		55.9	45.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.3	69.4	6.0	73.7	58.9	8.4	56.5	20.6		55.9	45.2	
LOS	D	E	A	E	E	A	E	C		E	D	
Approach Delay		58.2			60.1			22.9			46.0	
Approach LOS		E			E			C			D	
Queue Length 50th (m)	31.7	77.1	0.0	76.3	87.6	1.0	15.1	111.0		18.4	217.0	
Queue Length 95th (m)	49.0	97.2	8.3	#128.6	108.5	12.1	m23.6	178.8		#47.6	#256.1	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	267	743	399	353	936	485	154	1649		163	1609	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.57	0.67	0.16	0.94	0.63	0.15	0.61	0.85		0.71	0.86	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2028 Future Background - PM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 43.4

Intersection LOS: D

Intersection Capacity Utilization 98.8%

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: 1: Hurontario Street & Central Parkway

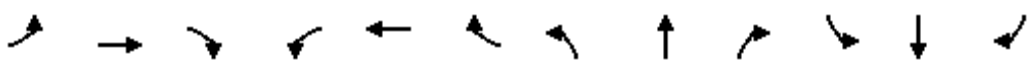
 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	78 s	19.2 s	49.8 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13.8 s	77.2 s	28 s	41 s

Lanes, Volumes, Timings

2028 Future Background - PM Peak Hour

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	158	89	41	263	122	106	982	39	92	1286	126
Future Volume (vph)	57	158	89	41	263	122	106	982	39	92	1286	126
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.93	0.95	0.99			1.00		0.99		0.89
Frt			0.850		0.952			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1842	1325	1713	1736	0	1713	3375	0	1713	3500	1338
Flt Permitted	0.162			0.649			0.054			0.140		
Satd. Flow (perm)	290	1842	1228	1115	1736	0	97	3375	0	251	3500	1190
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97		15			3				97
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			159.2			433.4			126.6	
Travel Time (s)		15.0			11.5			31.2			9.1	
Confl. Peds. (#/hr)	16		60	60		16	49		24	24		49
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	5%	2%	2%	2%	3%
Adj. Flow (vph)	62	172	97	45	286	133	115	1067	42	100	1398	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	172	97	45	419	0	115	1109	0	100	1398	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

05-11-2021

VZ

CGH Transportation

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	9.8	65.8	65.8	56.0	56.0		14.0	81.0		13.2	80.2	9.8
Total Split (%)	6.1%	41.1%	41.1%	35.0%	35.0%		8.8%	50.6%		8.3%	50.1%	6.1%
Maximum Green (s)	6.8	57.8	57.8	48.0	48.0		11.0	73.5		10.2	72.7	6.8
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		60	60	16	16			24			49	
Act Effect Green (s)	56.4	51.4	51.4	41.8	41.8		95.4	73.5		93.8	72.7	83.7
Actuated g/C Ratio	0.35	0.32	0.32	0.26	0.26		0.60	0.46		0.59	0.45	0.52
v/c Ratio	0.39	0.29	0.21	0.15	0.90		0.49	0.71		0.33	0.88	0.20
Control Delay	39.9	40.9	7.0	44.5	77.8		61.9	15.3		12.0	19.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	1.4		0.0	5.5	0.0
Total Delay	39.9	40.9	7.0	44.5	77.8		61.9	16.7		12.0	25.2	0.8
LOS	D	D	A	D	E		E	B		B	C	A
Approach Delay		30.8			74.6			20.9			22.4	
Approach LOS		C			E			C			C	
Queue Length 50th (m)	13.1	40.5	0.0	11.0	124.4		23.6	42.7		2.3	214.1	1.7
Queue Length 95th (m)	22.9	58.0	12.8	21.1	161.5		m25.1	m43.8		m5.2	127.5	m0.0
Internal Link Dist (m)		184.4			135.2			409.4			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	162	665	505	334	531		234	1552		299	1590	677
Starvation Cap Reductn	0	0	0	0	0		0	0		0	150	0
Spillback Cap Reductn	0	0	0	0	1		0	244		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.38	0.26	0.19	0.13	0.79		0.49	0.85		0.33	0.97	0.20

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 29.3

Intersection LOS: C

Intersection Capacity Utilization 107.3%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
14 s	80.2 s	9.8 s	56 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13.2 s	81 s	65.8 s	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	747	165	160	1102	163	0	853	103	182	1142	114
Future Volume (vph)	102	747	165	160	1102	163	0	853	103	182	1142	114
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		25.0	30.0		0.0	45.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.94		0.95	0.98			0.97			0.99	
Frt		0.973			0.981			0.984			0.986	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1680	3038	0	1664	3212	0	0	3209	0	1648	3278	0
Flt Permitted	0.067			0.149						0.085		
Satd. Flow (perm)	118	3038	0	249	3212	0	0	3209	0	147	3278	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			12			8			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			433.4	
Travel Time (s)		16.6			17.6			11.9			31.2	
Confl. Peds. (#/hr)	127		237	237		127	85		266	266		85
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	8%	8%	5%	7%	4%	7%	6%	3%	6%	6%	7%
Adj. Flow (vph)	105	770	170	165	1136	168	0	879	106	188	1177	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	940	0	165	1304	0	0	985	0	188	1295	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA			NA		pm+pt	NA	
Protected Phases	3	8		7	4			6		5	2	
Permitted Phases	8			4						2		
Detector Phase	3	8		7	4			6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0			8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5		8.0	45.5			41.0		8.0	41.0	
Total Split (s)	10.0	67.0		16.0	73.0			59.0		18.0	77.0	
Total Split (%)	6.3%	41.9%		10.0%	45.6%			36.9%		11.3%	48.1%	
Maximum Green (s)	7.0	59.5		13.0	65.5			52.0		15.0	70.0	
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5		0.0	3.5			3.0		0.0	3.0	
Lost Time Adjust (s)	1.0	3.0		1.0	3.0			3.0		1.0	3.0	
Total Lost Time (s)	4.0	10.5		4.0	10.5			10.0		4.0	10.0	
Lead/Lag	Lead	Lag		Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes			Yes		Yes		
Vehicle Extension (s)	2.0	3.0		2.0	3.0			3.0		2.0	3.0	
Recall Mode	None	None		None	None			C-Max		None	C-Max	
Walk Time (s)		16.0			16.0			14.0			14.0	
Flash Dont Walk (s)		22.0			22.0			20.0			20.0	
Pedestrian Calls (#/hr)		237			127			266			85	
Act Effect Green (s)	70.0	57.5		78.7	62.5			49.0		73.0	67.0	
Actuated g/C Ratio	0.44	0.36		0.49	0.39			0.31		0.46	0.42	
v/c Ratio	0.95	0.85		0.75	1.03			1.00		0.95	0.94	
Control Delay	105.6	55.4		39.4	79.3			82.0		96.3	85.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	105.6	55.4		39.4	79.3			82.0		96.3	85.9	
LOS	F	E		D	E			F		F	F	
Approach Delay		60.4			74.8			82.0			87.2	
Approach LOS		E			E			F			F	
Queue Length 50th (m)	18.2	144.5		36.7	~236.1			164.4		61.7	228.7	
Queue Length 95th (m)	#58.8	173.5		m40.4	#280.1			#212.0		m#79.4	#258.4	
Internal Link Dist (m)		206.3			220.0			141.0			409.4	
Turn Bay Length (m)	35.0			30.0						60.0		
Base Capacity (vph)	110	1102		229	1262			988		198	1377	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.95	0.85		0.72	1.03			1.00		0.95	0.94	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 76.9

Intersection LOS: E

Intersection Capacity Utilization 104.7%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

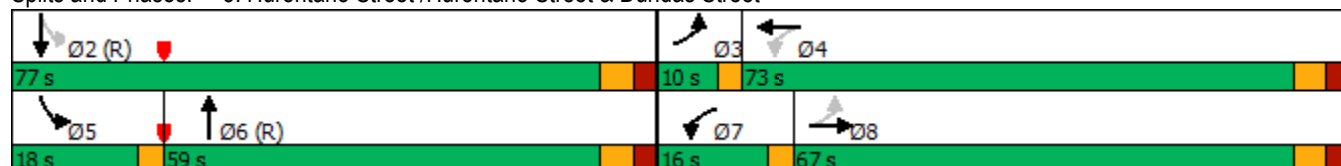
Queue shown is maximum after two cycles.

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 /Hurontario Street & Dundas Street



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2028 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	269	72	16	354	22	104	26	21	26	17	46
Future Volume (vph)	84	269	72	16	354	22	104	26	21	26	17	46
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.968			0.991			0.981			0.930	
Flt Protected	0.950			0.950				0.967			0.986	
Satd. Flow (prot)	1713	1779	0	1648	1822	0	0	1724	0	0	1689	0
Flt Permitted	0.950			0.950				0.967			0.986	
Satd. Flow (perm)	1713	1779	0	1648	1822	0	0	1724	0	0	1689	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.2			185.6			222.8			87.4	
Travel Time (s)		11.5			13.4			16.0			6.3	
Confl. Peds. (#/hr)			29	29		9	8		4	4		8
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	6%	2%	5%	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	91	292	78	17	385	24	113	28	23	28	18	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	370	0	17	409	0	0	164	0	0	96	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.9%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	269	72	16	354	22	104	26	21	26	17	46
Future Vol, veh/h	84	269	72	16	354	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
Heavy Vehicles, %	2	2	3	6	2	5	4	2	2	2	2	2
Mvmt Flow	91	292	78	17	385	24	113	28	23	28	18	50
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15.9	20.3	12.5	11
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	69%	100%	0%	100%	0%	29%
Vol Thru, %	17%	0%	79%	0%	94%	19%
Vol Right, %	14%	0%	21%	0%	6%	52%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	84	341	16	376	89
LT Vol	104	84	0	16	0	26
Through Vol	26	0	269	0	354	17
RT Vol	21	0	72	0	22	46
Lane Flow Rate	164	91	371	17	409	97
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.3	0.165	0.603	0.032	0.682	0.176
Departure Headway (Hd)	6.585	6.514	5.855	6.622	6.004	6.565
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	542	548	612	538	601	549
Service Time	4.677	4.285	3.627	4.393	3.774	4.565
HCM Lane V/C Ratio	0.303	0.166	0.606	0.032	0.681	0.177
HCM Control Delay	12.5	10.6	17.2	9.6	20.8	11
HCM Lane LOS	B	B	C	A	C	B
HCM 95th-tile Q	1.3	0.6	4	0.1	5.3	0.6

Lanes, Volumes, Timings

2028 Future Background - PM Peak Hour

5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

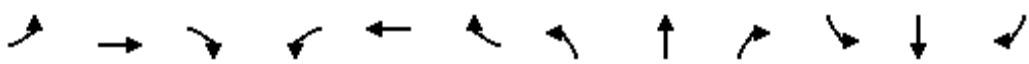
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	914	12	24	1411	37	6	6	21	12	6	39
Future Volume (vph)	46	914	12	24	1411	37	6	6	21	12	6	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.996			0.916			0.909	
Flt Protected	0.950			0.950				0.991			0.990	
Satd. Flow (prot)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Flt Permitted	0.950			0.950				0.991			0.990	
Satd. Flow (perm)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			250.7			137.9			244.3	
Travel Time (s)		17.6			18.1			9.9			17.6	
Confl. Peds. (#/hr)	50		24	24		50	15		29	29		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	7%	8%	9%	3%	5%	2%	17%	10%	8%	2%	5%
Adj. Flow (vph)	50	993	13	26	1534	40	7	7	23	13	7	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	1006	0	26	1574	0	0	37	0	0	62	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 56.8%	ICU Level of Service B											
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	24											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	914	12	24	1411	37	6	6	21	12	6	39
Future Vol, veh/h	46	914	12	24	1411	37	6	6	21	12	6	39
Conflicting Peds, #/hr	50	0	24	24	0	50	15	0	29	29	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	7	8	9	3	5	2	17	10	8	2	5
Mvmt Flow	50	993	13	26	1534	40	7	7	23	13	7	42
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1624	0	0	1030	0	0	1962	2800	556	2285	2786	852
Stage 1	-	-	-	-	-	-	1124	1124	-	1656	1656	-
Stage 2	-	-	-	-	-	-	838	1676	-	629	1130	-
Critical Hdwy	4.14	-	-	4.28	-	-	7.54	6.84	7.1	7.66	6.54	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Follow-up Hdwy	2.22	-	-	2.29	-	-	3.52	4.17	3.4	3.58	4.02	3.35
Pot Cap-1 Maneuver	397	-	-	630	-	-	38	14	455	20	18	297
Stage 1	-	-	-	-	-	-	219	249	-	96	154	-
Stage 2	-	-	-	-	-	-	327	129	-	422	277	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	379	-	-	616	-	-	17	11	433	~ 8	14	279
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	11	-	~ 8	14	-
Stage 1	-	-	-	-	-	-	186	211	-	79	141	-
Stage 2	-	-	-	-	-	-	250	118	-	327	235	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.2			\$ 331.3			\$ 856.4		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	35	379	-	-	616	-	-	28				
HCM Lane V/C Ratio	1.025	0.132	-	-	0.042	-	-	2.213				
HCM Control Delay (s)	\$ 331.3	15.9	-	-	11.1	-	-	\$ 856.4				
HCM Lane LOS	F	C	-	-	B	-	-	F				
HCM 95th %tile Q(veh)	3.7	0.5	-	-	0.1	-	-	7.4				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	5	3	23	5	322	1	1227	39	228	1328	19
Future Volume (vph)	104	5	3	23	5	322	1	1227	39	228	1328	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.96		0.90	0.94			0.99				0.99
Frt		0.944			0.852			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1664	0	1750	1473	0	1750	3464	0	1750	3305	1566
Flt Permitted	0.214			0.752			0.127			0.055		
Satd. Flow (perm)	387	1664	0	1245	1473	0	234	3464	0	101	3305	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			260			2				75
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6			426.6	
Travel Time (s)		7.0			7.6			9.1			30.7	
Confl. Peds. (#/hr)	37		81	81		37			56	56		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	8%	2%
Adj. Flow (vph)	113	5	3	25	5	350	1	1334	42	248	1443	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	8	0	25	355	0	1	1376	0	248	1443	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	43.0	43.0
Total Split (s)	10.5	56.5		46.0	46.0		9.5	76.9		26.6	94.0	94.0
Total Split (%)	6.6%	35.3%		28.8%	28.8%		5.9%	48.1%		16.6%	58.8%	58.8%
Maximum Green (s)	7.5	48.5		38.0	38.0		6.5	69.9		23.6	87.0	87.0
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		37		81	81			0			56	56
Act Effect Green (s)	53.5	48.5		38.0	38.0		81.8	72.8		100.5	94.9	94.9
Actuated g/C Ratio	0.33	0.30		0.24	0.24		0.51	0.46		0.63	0.59	0.59
v/c Ratio	0.59	0.02		0.08	0.65		0.01	0.87		0.90	0.74	0.02
Control Delay	52.0	31.3		48.6	20.7		5.0	22.8		59.0	23.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.4		0.0	0.4	0.0
Total Delay	52.0	31.3		48.6	20.7		5.0	23.2		59.0	23.4	0.2
LOS	D	C		D	C		A	C		E	C	A
Approach Delay		50.6			22.5			23.2			28.3	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	25.6	1.1		6.3	26.3		0.0	228.9		52.9	208.0	0.0
Queue Length 95th (m)	41.5	5.4		14.9	63.2		m0.1	254.5		m70.0	m249.2	m0.0
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	193	506		295	548		183	1576		306	1960	945
Starvation Cap Reductn	0	0		0	0		0	29		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	147	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.59	0.02		0.08	0.65		0.01	0.89		0.81	0.80	0.02

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Background - PM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 26.5

Intersection LOS: C

Intersection Capacity Utilization 107.1%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings

2028 Future Background - PM Peak Hour

10: Camilla Road/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	835	41	89	1357	332	53	116	51	181	96	49
Future Volume (vph)	24	835	41	89	1357	332	53	116	51	181	96	49
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		30.0	35.0		65.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.98		0.99	0.99		0.98	0.99	
Frt		0.993			0.971			0.954			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3435	0	1713	3334	0	1713	1738	0	1713	1727	0
Flt Permitted	0.050			0.254			0.950			0.642		
Satd. Flow (perm)	90	3435	0	456	3334	0	1688	1738	0	1138	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			34			14			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		250.7			167.6			137.0			176.2	
Travel Time (s)		18.1			12.1			9.9			12.7	
Confl. Peds. (#/hr)	30		11	11		30	11		13	13		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	26	918	45	98	1491	365	58	127	56	199	105	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	963	0	98	1856	0	58	183	0	199	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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VZ

CGH Transportation

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6						4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	36.0		36.0	36.0	
Total Split (s)	104.0	104.0		104.0	104.0		14.0	56.0		42.0	42.0	
Total Split (%)	65.0%	65.0%		65.0%	65.0%		8.8%	35.0%		26.3%	26.3%	
Maximum Green (s)	97.0	97.0		97.0	97.0		11.0	49.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0			11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)	11	11		30	30			13		11	11	
Act Effct Green (s)	104.0	104.0		104.0	104.0		9.7	42.0		31.3	31.3	
Actuated g/C Ratio	0.65	0.65		0.65	0.65		0.06	0.26		0.20	0.20	
v/c Ratio	0.45	0.43		0.33	0.85		0.56	0.39		0.90	0.46	
Control Delay	32.0	8.2		18.5	28.3		93.4	45.5		100.7	54.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.0	8.2		18.5	28.3		93.4	45.5		100.7	54.8	
LOS	C	A		B	C		F	D		F	D	
Approach Delay		8.9			27.8			57.0			80.3	
Approach LOS		A			C			E			F	
Queue Length 50th (m)	4.9	91.0		14.8	255.9		18.2	42.0		60.9	39.9	
Queue Length 95th (m)	m6.5	m94.9		29.2	300.4		33.8	63.9		#101.2	62.4	
Internal Link Dist (m)		226.7			143.6			113.0			152.2	
Turn Bay Length (m)	15.0			35.0			35.0			35.0		
Base Capacity (vph)	58	2234		296	2178		117	541		248	389	
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	0.45	0.43		0.33	0.85		0.50	0.34		0.80	0.41	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 29.8

Intersection LOS: C

Intersection Capacity Utilization 103.6%

ICU Level of Service G

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: 10: Camilla Road/Jaguar Valley Drive & Dundas Street



Appendix K

2028 Future Total Conditions Synchro Worksheets

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Total - AM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	479	78	293	363	117	66	1292	62	106	1345	58
Future Volume (vph)	172	479	78	293	363	117	66	1292	62	106	1345	58
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98		0.95	0.99		0.95		1.00			1.00	
Frt			0.850			0.850		0.993			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1276	1696	3466	1338	1648	3420	0	1696	3405	0
Flt Permitted	0.429			0.184			0.051			0.050		
Satd. Flow (perm)	758	3500	1212	324	3466	1272	88	3420	0	89	3405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			71		4			4	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	27		28	28		27	34		39	39		34
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	8%	3%	3%	3%	6%	3%	10%	3%	4%	3%
Adj. Flow (vph)	191	532	87	326	403	130	73	1436	69	118	1494	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	532	87	326	403	130	73	1505	0	118	1558	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Total - AM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	21.4	41.0	11.0	25.0	44.6	11.0	11.0	83.0		11.0	83.0	
Total Split (%)	13.4%	25.6%	6.9%	15.6%	27.9%	6.9%	6.9%	51.9%		6.9%	51.9%	
Maximum Green (s)	16.9	34.0	6.5	22.0	37.6	8.0	6.5	76.0		8.0	76.0	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		28			27			39			34	
Act Effct Green (s)	48.9	30.4	39.7	59.4	35.0	47.7	88.1	78.9		92.0	79.3	
Actuated g/C Ratio	0.31	0.19	0.25	0.37	0.22	0.30	0.55	0.49		0.58	0.50	
v/c Ratio	0.59	0.80	0.24	1.06	0.53	0.30	0.64	0.89		0.86	0.92	
Control Delay	44.3	71.3	11.8	105.1	57.8	20.3	65.3	17.3		78.2	47.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.3	71.3	11.8	105.1	57.8	20.3	65.3	17.3		78.2	47.9	
LOS	D	E	B	F	E	C	E	B		E	D	
Approach Delay		58.6			70.0			19.5			50.0	
Approach LOS		E			E			B			D	
Queue Length 50th (m)	42.0	83.6	2.0	~82.7	59.0	13.2	0.0	202.0		23.0	248.3	
Queue Length 95th (m)	62.3	104.6	15.7	#145.4	76.3	30.6	m20.0	#112.4		#63.4	#301.3	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	336	743	361	309	814	432	114	1687		138	1690	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.57	0.72	0.24	1.06	0.50	0.30	0.64	0.89		0.86	0.92	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2028 Future Total - AM Peak Hour
3085 Hurontario Street

Intersection Signal Delay: 45.1

Intersection LOS: D

Intersection Capacity Utilization 101.2%

ICU Level of Service G

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: 1: Hurontario Street & Central Parkway

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11 s	83 s	21.4 s	44.6 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
11 s	83 s	25 s	41 s

Lanes, Volumes, Timings

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2028 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	172	74	97	100	63	65	1145	22	98	1074	209
Future Volume (vph)	247	172	74	97	100	63	65	1145	22	98	1074	209
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.94	0.97	0.99		0.98	1.00				0.81
Frt			0.850		0.942			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1696	1807	1313	1589	1639	0	1603	3356	0	1713	3433	1351
Flt Permitted	0.515			0.640			0.107			0.069		
Satd. Flow (perm)	908	1807	1240	1035	1639	0	177	3356	0	124	3433	1089
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		20			1				198
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			77.4			88.7			126.6	
Travel Time (s)		15.0			5.6			6.4			9.1	
Confl. Peds. (#/hr)	18		42	42		18	96		4	4		96
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	4%	5%	10%	7%	6%	9%	6%	5%	2%	4%	2%
Adj. Flow (vph)	268	187	80	105	109	68	71	1245	24	107	1167	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	187	80	105	177	0	71	1269	0	107	1167	227
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

2028 Future Total - AM Peak Hour

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	15.0	71.0	71.0	56.0	56.0		12.0	76.0		13.0	77.0	15.0
Total Split (%)	9.4%	44.4%	44.4%	35.0%	35.0%		7.5%	47.5%		8.1%	48.1%	9.4%
Maximum Green (s)	12.0	63.0	63.0	48.0	48.0		9.0	68.5		10.0	69.5	12.0
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		42	42	18	18			4			96	
Act Effect Green (s)	58.0	53.0	53.0	38.0	38.0		92.0	68.5		94.0	69.5	86.0
Actuated g/C Ratio	0.36	0.33	0.33	0.24	0.24		0.58	0.43		0.59	0.43	0.54
v/c Ratio	0.69	0.31	0.17	0.43	0.44		0.26	0.88		0.39	0.78	0.33
Control Delay	48.1	39.2	6.6	54.1	46.8		17.5	28.6		49.2	22.1	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	6.5		0.0	11.4	0.4
Total Delay	48.1	39.2	6.6	54.1	46.8		17.5	35.1		49.2	33.6	1.9
LOS	D	D	A	D	D		B	D		D	C	A
Approach Delay		38.8			49.5			34.2			29.9	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	57.8	40.1	0.0	26.2	39.1		4.4	170.5		12.5	89.1	3.4
Queue Length 95th (m)	81.8	59.7	11.1	44.6	61.4		m6.1	214.9		m28.6	111.8	m0.3
Internal Link Dist (m)		184.4			53.4			64.7			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	388	711	536	310	505		271	1437		271	1491	696
Starvation Cap Reductn	0	0	0	0	0		0	0		0	315	170
Spillback Cap Reductn	0	0	0	0	0		0	137		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.69	0.26	0.15	0.34	0.35		0.26	0.98		0.39	0.99	0.43

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 34.3

Intersection LOS: C

Intersection Capacity Utilization 104.5%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	77 s	15 s	56 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	76 s	71 s	

Lanes, Volumes, Timings

3: Hurontario Street / Hurontario Street & Dundas Street

2028 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1106	100	93	523	90	0	921	87	158	906	79
Future Volume (vph)	121	1106	100	93	523	90	0	921	87	158	906	79
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.97	0.98			0.98			0.99			0.99	
Frt		0.988			0.978			0.987			0.988	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1533	3229	0	1574	3058	0	0	3168	0	1633	3226	0
Flt Permitted	0.296			0.067						0.095		
Satd. Flow (perm)	464	3229	0	111	3058	0	0	3168	0	163	3226	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			14			7			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			344.7	
Travel Time (s)		16.6			17.6			11.9			24.8	
Confl. Peds. (#/hr)	71		136	136		71	58		110	110		58
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	14%	6%	25%	11%	11%	21%	9%	9%	16%	7%	8%	14%
Adj. Flow (vph)	123	1129	102	95	534	92	0	940	89	161	924	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1231	0	95	626	0	0	1029	0	161	1005	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

2028 Future Total - AM Peak Hour

3: Hurontario Street / Hurontario Street & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA			NA		pm+pt	NA	
Protected Phases	3	8		7	4			6		5	2	
Permitted Phases	8			4						2		
Detector Phase	3	8		7	4			6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0			8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5		8.0	45.5			41.0		8.0	41.0	
Total Split (s)	14.0	71.0		10.0	67.0			64.0		15.0	79.0	
Total Split (%)	8.8%	44.4%		6.3%	41.9%			40.0%		9.4%	49.4%	
Maximum Green (s)	11.0	63.5		7.0	59.5			57.0		12.0	72.0	
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	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	
Total Lost Time (s)	3.0	7.5		3.0	7.5			7.0		3.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes			Yes		Yes		
Vehicle Extension (s)	2.0	3.0		2.0	3.0			3.0		2.0	3.0	
Recall Mode	None	None		None	None			C-Max		None	C-Max	
Walk Time (s)		16.0			16.0			14.0			14.0	
Flash Dont Walk (s)		22.0			22.0			20.0			20.0	
Pedestrian Calls (#/hr)		136			71			110			58	
Act Effct Green (s)	76.9	62.9		71.2	59.7			57.8		76.6	72.6	
Actuated g/C Ratio	0.48	0.39		0.44	0.37			0.36		0.48	0.45	
v/c Ratio	0.42	0.97		0.84	0.54			0.90		0.87	0.69	
Control Delay	27.8	65.5		92.4	58.9			59.1		88.9	75.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	27.8	65.5		92.4	58.9			59.1		88.9	75.7	
LOS	C	E		F	E			E		F	E	
Approach Delay		62.1			63.3			59.1			77.6	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	21.5	198.8		24.1	103.1			163.1		48.5	175.2	
Queue Length 95th (m)	34.6	#246.5		#48.6	123.4			#201.9		m#72.3	198.4	
Internal Link Dist (m)		206.3			220.0			141.0			320.7	
Turn Bay Length (m)	35.0			30.0						60.0		
Base Capacity (vph)	297	1285		113	1150			1149		188	1467	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.41	0.96		0.84	0.54			0.90		0.86	0.69	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 65.8

Intersection LOS: E

Intersection Capacity Utilization 96.0%

ICU Level of Service F

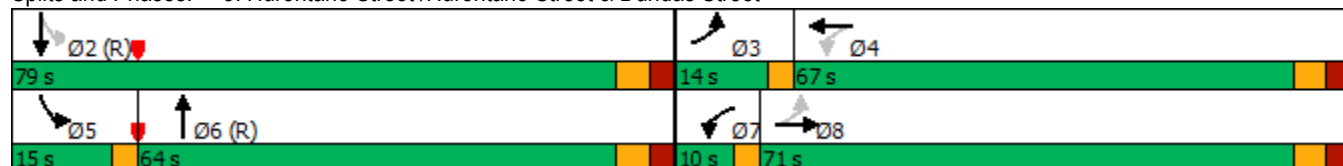
Analysis Period (min) 15

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 /Hurontario Street & Dundas Street



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2028 Future Total - AM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	307	36	7	169	13	62	18	18	70	14	21
Future Volume (vph)	18	307	36	7	169	13	62	18	18	70	14	21
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.989			0.975			0.973	
Flt Protected	0.950			0.950				0.970			0.968	
Satd. Flow (prot)	1713	1715	0	1533	1728	0	0	1666	0	0	1708	0
Flt Permitted	0.950			0.950				0.970			0.968	
Satd. Flow (perm)	1713	1715	0	1533	1728	0	0	1666	0	0	1708	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.0			182.9			222.8			87.4	
Travel Time (s)		5.8			13.2			16.0			6.3	
Confl. Peds. (#/hr)	21		41	41		21	13		10	10		13
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	8%	6%	14%	7%	15%	5%	2%	17%	2%	2%	10%
Adj. Flow (vph)	20	334	39	8	184	14	67	20	20	76	15	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	373	0	8	198	0	0	107	0	0	114	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.8%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	307	36	7	169	13	62	18	18	70	14	21
Future Vol, veh/h	18	307	36	7	169	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
Heavy Vehicles, %	2	8	6	14	7	15	5	2	17	2	2	10
Mvmt Flow	20	334	39	8	184	14	67	20	20	76	15	23
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15	10.9	10.1	10.1
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	63%	100%	0%	100%	0%	67%
Vol Thru, %	18%	0%	90%	0%	93%	13%
Vol Right, %	18%	0%	10%	0%	7%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	18	343	7	182	105
LT Vol	62	18	0	7	0	70
Through Vol	18	0	307	0	169	14
RT Vol	18	0	36	0	13	21
Lane Flow Rate	107	20	373	8	198	114
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.173	0.032	0.571	0.013	0.314	0.183
Departure Headway (Hd)	5.843	5.963	5.509	6.385	5.708	5.774
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	614	602	660	561	631	621
Service Time	3.884	3.685	3.209	4.114	3.437	3.815
HCM Lane V/C Ratio	0.174	0.033	0.565	0.014	0.314	0.184
HCM Control Delay	10.1	8.9	15.3	9.2	11	10.1
HCM Lane LOS	B	A	C	A	B	B
HCM 95th-tile Q	0.6	0.1	3.6	0	1.3	0.7

Lanes, Volumes, Timings

2028 Future Total - AM Peak Hour

5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1363	2	2	669	14	2	0	11	14	1	25
Future Volume (vph)	11	1363	2	2	669	14	2	0	11	14	1	25
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.884			0.915	
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1603	3306	0	1713	3196	0	0	1425	0	0	1572	0
Flt Permitted	0.950			0.950				0.993			0.983	
Satd. Flow (perm)	1603	3306	0	1713	3196	0	0	1425	0	0	1572	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			248.2			137.5			244.3	
Travel Time (s)		17.6			17.9			9.9			17.6	
Confl. Peds. (#/hr)	15		38	38		15	1		1	1		1
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	8%	2%	2%	11%	29%	2%	2%	18%	7%	2%	8%
Adj. Flow (vph)	12	1482	2	2	727	15	2	0	12	15	1	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1484	0	2	742	0	0	14	0	0	43	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.4%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1363	2	2	669	14	2	0	11	14	1	25
Future Vol, veh/h	11	1363	2	2	669	14	2	0	11	14	1	25
Conflicting Peds, #/hr	15	0	38	38	0	15	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	8	2	2	11	29	2	2	18	7	2	8
Mvmt Flow	12	1482	2	2	727	15	2	0	12	15	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	757	0	0	1522	0	0	1914	2306	781	1520	2300	387
Stage 1	-	-	-	-	-	-	1545	1545	-	754	754	-
Stage 2	-	-	-	-	-	-	369	761	-	766	1546	-
Critical Hdwy	4.28	-	-	4.14	-	-	7.54	6.54	7.26	7.64	6.54	7.06
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Follow-up Hdwy	2.29	-	-	2.22	-	-	3.52	4.02	3.48	3.57	4.02	3.38
Pot Cap-1 Maneuver	805	-	-	434	-	-	41	38	305	78	38	595
Stage 1	-	-	-	-	-	-	120	174	-	356	415	-
Stage 2	-	-	-	-	-	-	623	412	-	350	174	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	794	-	-	419	-	-	36	35	294	73	35	586
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	35	-	73	35	-
Stage 1	-	-	-	-	-	-	114	165	-	346	407	-
Stage 2	-	-	-	-	-	-	589	404	-	330	165	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	33.6	37.9
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	140	794	-	-	419	-	-	152
HCM Lane V/C Ratio	0.101	0.015	-	-	0.005	-	-	0.286
HCM Control Delay (s)	33.6	9.6	-	-	13.6	-	-	37.9
HCM Lane LOS	D	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	1.1

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	5	1	16	5	176	3	1362	20	164	1548	385
Future Volume (vph)	37	5	1	16	5	176	3	1362	20	164	1548	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.95	0.99		0.98	0.91			1.00				0.99
Frt		0.975			0.854			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1786	0	1500	1425	0	1750	3452	0	1684	3216	1566
Flt Permitted	0.410			0.754			0.091			0.081		
Satd. Flow (perm)	719	1786	0	1168	1425	0	168	3452	0	144	3216	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			191			1				148
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6				426.6
Travel Time (s)		7.0			7.6			9.1				30.7
Confl. Peds. (#/hr)	58		15	15		58			36	36		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	19%	2%	3%	2%	3%	5%	6%	11%	2%
Adj. Flow (vph)	40	5	1	17	5	191	3	1480	22	178	1683	418
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	6	0	17	196	0	3	1502	0	178	1683	418
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Total - AM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	38.0	38.0
Total Split (s)	9.5	55.5		46.0	46.0		9.5	84.2		20.3	95.0	95.0
Total Split (%)	5.9%	34.7%		28.8%	28.8%		5.9%	52.6%		12.7%	59.4%	59.4%
Maximum Green (s)	6.5	47.5		38.0	38.0		6.5	77.2		17.3	88.0	88.0
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		58		15	15			0			36	36
Act Effect Green (s)	40.8	35.8		28.3	28.3		100.8	91.8		113.2	107.6	107.6
Actuated g/C Ratio	0.26	0.22		0.18	0.18		0.63	0.57		0.71	0.67	0.67
v/c Ratio	0.18	0.01		0.08	0.48		0.02	0.76		0.74	0.78	0.38
Control Delay	41.6	37.7		50.5	10.8		7.3	18.0		36.5	22.6	5.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.3		0.0	0.2	0.0
Total Delay	41.6	37.7		50.5	10.8		7.3	19.3		36.5	22.8	5.8
LOS	D	D		D	B		A	B		D	C	A
Approach Delay		41.1			14.0			19.3			20.8	
Approach LOS		D			B			B			C	
Queue Length 50th (m)	9.6	1.2		4.6	1.3		0.2	56.1		21.1	244.5	22.2
Queue Length 95th (m)	18.0	5.0		11.2	22.5		m0.3	280.4		m33.3	m309.0	m64.3
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	225	530		277	484		171	1981		268	2162	1086
Starvation Cap Reductn	0	0		0	0		0	264		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	75	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.01		0.06	0.40		0.02	0.87		0.66	0.81	0.38

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Lanes, Volumes, Timings 6: Hurontario Street & John Street

2028 Future Total - AM Peak Hour
3085 Hurontario Street

Intersection Signal Delay: 20.1

Intersection LOS: C

Intersection Capacity Utilization 94.4%

ICU Level of Service F

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings
7: Site Access #1 & Kirwin Avenue

2028 Future Total - AM Peak Hour
3085 Hurontario Street

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	271	21	5	174	86	16
Future Volume (vph)	271	21	5	174	86	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.979	
Flt Protected				0.999	0.959	
Satd. Flow (prot)	1824	0	0	1840	1729	0
Flt Permitted				0.999	0.959	
Satd. Flow (perm)	1824	0	0	1840	1729	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	77.4			81.0	81.4	
Travel Time (s)	5.6			5.8	5.9	
Confl. Peds. (#/hr)		94	94			
Confl. Bikes (#/hr)		7				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	23	5	189	93	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	0	0	194	110	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	271	21	5	174	86	16
Future Vol, veh/h	271	21	5	174	86	16
Conflicting Peds, #/hr	0	94	94	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	295	23	5	189	93	17
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	412	0	600	401
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1147	-	464	649
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	835	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1047	-	421	592
Mov Cap-2 Maneuver	-	-	-	-	421	-
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	831	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		15.9	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	441	-	-	1047	-	
HCM Lane V/C Ratio	0.251	-	-	0.005	-	
HCM Control Delay (s)	15.9	-	-	8.5	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1	-	-	0	-	

Lanes, Volumes, Timings
8: Hurontario Street & Site Access #2

2028 Future Total - AM Peak Hour
3085 Hurontario Street

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	55	1168	26	0	1250
Future Volume (vph)	0	55	1168	26	0	1250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.865	0.997			
Flt Protected						
Satd. Flow (prot)	0	1593	3489	0	0	3500
Flt Permitted						
Satd. Flow (perm)	0	1593	3489	0	0	3500
Link Speed (k/h)	50		50			50
Link Distance (m)	84.6		344.7			88.7
Travel Time (s)	6.1		24.8			6.4
Confl. Peds. (#/hr)				163		
Confl. Bikes (#/hr)				10		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	60	1270	28	0	1359
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	60	1298	0	0	1359
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	3.0		3.0			3.0
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	55	1168	26	0	1250
Future Vol, veh/h	0	55	1168	26	0	1250
Conflicting Peds, #/hr	0	0	0	163	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	1270	28	0	1359
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	812	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	322	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	273	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	21.8	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	273		-		
HCM Lane V/C Ratio	-	0.219		-		
HCM Control Delay (s)	-	21.8		-		
HCM Lane LOS	-	C		-		
HCM 95th %tile Q(veh)	-	0.8		-		

Lanes, Volumes, Timings

10: Camilla Road/Jaguar Valley Drive & Dundas Street

2028 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1276	51	32	549	79	20	42	43	241	53	17
Future Volume (vph)	12	1276	51	32	549	79	20	42	43	241	53	17
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		0.0	35.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00		0.98	0.99		0.99	0.99	
Frt		0.994			0.981			0.924			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1618	3408	0	1713	3275	0	1574	1656	0	1696	1743	0
Flt Permitted	0.353			0.107			0.950			0.695		
Satd. Flow (perm)	599	3408	0	193	3275	0	1548	1656	0	1230	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			16			31			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		248.2			145.1			138.7			167.9	
Travel Time (s)		17.9			10.4			10.0			12.1	
Confl. Peds. (#/hr)	4		4	4		4	11		6	6		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	4%	4%	2%	7%	3%	11%	2%	5%	3%	2%	6%
Adj. Flow (vph)	13	1418	57	36	610	88	22	47	48	268	59	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1475	0	36	698	0	22	95	0	268	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
10: Camilla Road/Jaguar Valley Drive & Dundas Street

2028 Future Total - AM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6						4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	36.0		36.0	36.0	
Total Split (s)	93.8	93.8		93.8	93.8		11.2	66.2		55.0	55.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		7.0%	41.4%		34.4%	34.4%	
Maximum Green (s)	86.8	86.8		86.8	86.8		8.2	59.2		48.0	48.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0			11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)	4	4		4	4			6		11	11	
Act Effect Green (s)	100.2	100.2		100.2	100.2		7.2	45.8		39.2	39.2	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.04	0.29		0.24	0.24	
v/c Ratio	0.03	0.69		0.30	0.34		0.31	0.19		0.89	0.18	
Control Delay	6.2	14.0		27.1	16.0		85.3	26.3		87.8	40.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.2	14.0		27.1	16.0		85.3	26.3		87.8	40.1	
LOS	A	B		C	B		F	C		F	D	
Approach Delay		13.9			16.6			37.4			77.1	
Approach LOS		B			B			D			E	
Queue Length 50th (m)	0.4	222.4		5.5	56.5		6.9	14.5		82.2	17.0	
Queue Length 95th (m)	m1.5	m256.1		17.4	79.1		16.9	26.7		112.2	29.4	
Internal Link Dist (m)		224.2			121.1			114.7			143.9	
Turn Bay Length (m)	15.0			35.0			35.0			35.0		
Base Capacity (vph)	375	2135		120	2057		80	632		369	529	
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	0.03	0.69		0.30	0.34		0.28	0.15		0.73	0.15	

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89

Intersection Signal Delay: 23.8

Intersection LOS: C

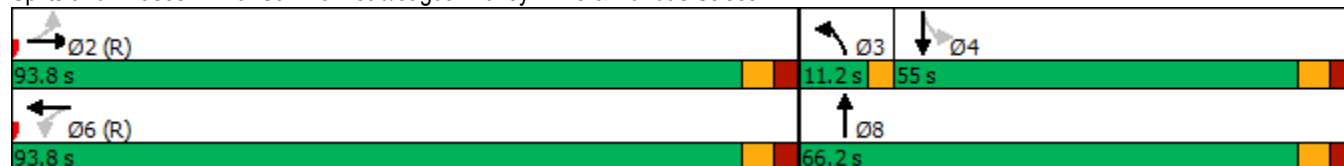
Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 10: Camilla Road/Jaguar Valley Drive & Dundas Street



Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	466	69	311	555	70	93	1269	88	108	1210	147
Future Volume (vph)	144	466	69	311	555	70	93	1269	88	108	1210	147
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.96	0.99		0.97		1.00			0.99	
Frt			0.850			0.850		0.990			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1351	1713	3500	1351	1713	3450	0	1713	3411	0
Flt Permitted	0.286			0.212			0.052			0.058		
Satd. Flow (perm)	512	3500	1303	379	3500	1313	94	3450	0	105	3411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			70		6			11	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	12		17	17		12	53		31	31		53
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	153	496	73	331	590	74	99	1350	94	115	1287	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	496	73	331	590	74	99	1444	0	115	1443	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	19.8	41.0	13.0	27.0	48.2	12.0	13.0	80.0		12.0	79.0	
Total Split (%)	12.4%	25.6%	8.1%	16.9%	30.1%	7.5%	8.1%	50.0%		7.5%	49.4%	
Maximum Green (s)	15.3	34.0	8.5	24.0	41.2	9.0	8.5	73.0		9.0	72.0	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		17			12			31			53	
Act Effct Green (s)	46.4	29.8	40.7	60.8	38.3	51.0	88.3	77.5		89.0	76.3	
Actuated g/C Ratio	0.29	0.19	0.25	0.38	0.24	0.32	0.55	0.48		0.56	0.48	
v/c Ratio	0.60	0.76	0.19	0.96	0.70	0.16	0.73	0.86		0.79	0.88	
Control Delay	45.1	69.4	7.9	78.6	60.5	8.6	68.5	19.8		64.2	46.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.1	69.4	7.9	78.6	60.5	8.6	68.5	19.8		64.2	46.0	
LOS	D	E	A	E	E	A	E	B		E	D	
Approach Delay		58.0			62.7			22.9			47.3	
Approach LOS		E			E			C			D	
Queue Length 50th (m)	32.1	77.1	0.0	77.1	88.9	0.8	19.1	89.3		19.7	226.2	
Queue Length 95th (m)	49.5	97.2	11.0	#131.8	110.1	12.2	m27.0	174.0		#53.2	#274.5	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	267	743	394	344	901	470	138	1673		149	1632	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.57	0.67	0.19	0.96	0.65	0.16	0.72	0.86		0.77	0.88	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2028 Future Total - PM Peak Hour
3085 Hurontario Street

Intersection Signal Delay: 44.3

Intersection LOS: D

Intersection Capacity Utilization 99.8%

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: 1: Hurontario Street & Central Parkway

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	80 s	19.8 s	48.2 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	79 s	27 s	41 s

Lanes, Volumes, Timings

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2028 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	166	89	96	268	122	106	1020	39	149	1286	126
Future Volume (vph)	57	166	89	96	268	122	106	1020	39	149	1286	126
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.93	0.95	0.99			1.00		1.00		0.89
Frt			0.850		0.953			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1842	1325	1713	1738	0	1713	3378	0	1713	3500	1338
Flt Permitted	0.157			0.644			0.057			0.106		
Satd. Flow (perm)	281	1842	1228	1107	1738	0	103	3378	0	190	3500	1190
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97		15			3				97
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			79.7			87.8			126.6	
Travel Time (s)		15.0			5.7			6.3			9.1	
Confl. Peds. (#/hr)	16		60	60		16	49		24	24		49
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	5%	2%	2%	2%	3%
Adj. Flow (vph)	62	180	97	104	291	133	115	1109	42	162	1398	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	180	97	104	424	0	115	1151	0	162	1398	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

05-13-2021

VZ

CGH Transportation

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Lanes, Volumes, Timings

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2028 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	9.8	65.8	65.8	56.0	56.0		14.0	77.2		17.0	80.2	9.8
Total Split (%)	6.1%	41.1%	41.1%	35.0%	35.0%		8.8%	48.3%		10.6%	50.1%	6.1%
Maximum Green (s)	6.8	57.8	57.8	48.0	48.0		11.0	69.7		14.0	72.7	6.8
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		60	60	16	16			24			49	
Act Effect Green (s)	56.6	51.6	51.6	42.1	42.1		91.4	69.7		97.4	72.7	83.7
Actuated g/C Ratio	0.35	0.32	0.32	0.26	0.26		0.57	0.44		0.61	0.45	0.52
v/c Ratio	0.39	0.30	0.21	0.36	0.91		0.50	0.78		0.53	0.88	0.20
Control Delay	40.1	41.0	7.0	50.3	78.2		56.9	18.8		45.6	19.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	3.5		0.0	8.9	0.0
Total Delay	40.1	41.0	7.0	50.3	78.2		56.9	22.3		45.6	27.9	0.6
LOS	D	D	A	D	E		E	C		D	C	A
Approach Delay		31.1			72.7			25.5			27.4	
Approach LOS		C			E			C			C	
Queue Length 50th (m)	13.0	42.4	0.0	26.8	125.9		22.8	83.3		19.4	128.2	0.1
Queue Length 95th (m)	22.9	60.6	12.8	43.7	164.2		m24.7	m83.3		m41.9	149.5	m0.0
Internal Link Dist (m)		184.4			55.7			63.8			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	160	665	505	332	531		231	1473		307	1590	677
Starvation Cap Reductn	0	0	0	0	0		0	0		0	180	0
Spillback Cap Reductn	0	0	0	0	0		0	231		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.39	0.27	0.19	0.31	0.80		0.50	0.93		0.53	0.99	0.20

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 33.3

Intersection LOS: C

Intersection Capacity Utilization 110.5%

ICU Level of Service H

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue



Lanes, Volumes, Timings

3: Hurontario Street /Hurontario Street & Dundas Street

2028 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	747	165	160	1102	171	0	918	103	187	1186	119
Future Volume (vph)	110	747	165	160	1102	171	0	918	103	187	1186	119
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		25.0	30.0		0.0	45.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.94		0.95	0.98			0.97			0.99	
Frt		0.973			0.980			0.985			0.986	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1680	3038	0	1664	3207	0	0	3219	0	1648	3278	0
Flt Permitted	0.069			0.142						0.075		
Satd. Flow (perm)	122	3038	0	237	3207	0	0	3219	0	130	3278	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			12			8			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			345.6	
Travel Time (s)		16.6			17.6			11.9			24.9	
Confl. Peds. (#/hr)	127		237	237		127	85		266	266		85
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	8%	8%	5%	7%	4%	7%	6%	3%	6%	6%	7%
Adj. Flow (vph)	113	770	170	165	1136	176	0	946	106	193	1223	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	940	0	165	1312	0	0	1052	0	193	1346	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

2028 Future Total - PM Peak Hour

3: Hurontario Street / Hurontario Street & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA			NA		pm+pt	NA	
Protected Phases	3	8		7	4			6		5	2	
Permitted Phases	8			4						2		
Detector Phase	3	8		7	4			6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0			8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5		8.0	45.5			41.0		8.0	41.0	
Total Split (s)	10.0	66.0		15.0	71.0			62.0		17.0	79.0	
Total Split (%)	6.3%	41.3%		9.4%	44.4%			38.8%		10.6%	49.4%	
Maximum Green (s)	7.0	58.5		12.0	63.5			55.0		14.0	72.0	
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5		0.0	3.5			3.0		0.0	3.0	
Lost Time Adjust (s)	1.0	3.0		1.0	3.0			3.0		1.0	3.0	
Total Lost Time (s)	4.0	10.5		4.0	10.5			10.0		4.0	10.0	
Lead/Lag	Lead	Lag		Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes			Yes		Yes		
Vehicle Extension (s)	2.0	3.0		2.0	3.0			3.0		2.0	3.0	
Recall Mode	None	None		None	None			C-Max		None	C-Max	
Walk Time (s)		16.0			16.0			14.0			14.0	
Flash Dont Walk (s)		22.0			22.0			20.0			20.0	
Pedestrian Calls (#/hr)		237			127			266			85	
Act Effct Green (s)	68.4	55.9		76.8	60.5			52.0		75.0	69.0	
Actuated g/C Ratio	0.43	0.35		0.48	0.38			0.32		0.47	0.43	
v/c Ratio	1.03	0.88		0.79	1.08			1.00		1.05	0.95	
Control Delay	123.7	58.2		44.9	92.5			80.7		120.6	88.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	123.7	58.2		44.9	92.5			80.7		120.6	88.9	
LOS	F	E		D	F			F		F	F	
Approach Delay		65.2			87.2			80.7			92.9	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~22.1	146.0		37.5	~246.8			~175.8		~64.8	237.7	
Queue Length 95th (m)	#64.2	175.2		m40.7	#290.6			#224.7		m#72.9	#269.0	
Internal Link Dist (m)		206.3			220.0			141.0			321.6	
Turn Bay Length (m)	35.0			30.0						60.0		
Base Capacity (vph)	110	1073		212	1220			1051		184	1418	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	1.03	0.88		0.78	1.08			1.00		1.05	0.95	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 83.1

Intersection LOS: F

Intersection Capacity Utilization 106.9%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

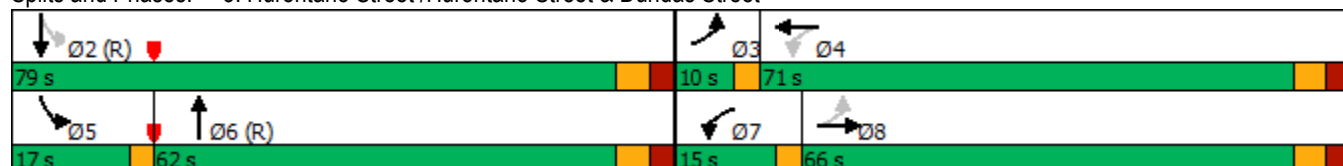
Queue shown is maximum after two cycles.

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 /Hurontario Street & Dundas Street



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2028 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	280	72	16	370	22	104	26	21	26	17	46
Future Volume (vph)	84	280	72	16	370	22	104	26	21	26	17	46
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.992			0.981			0.930	
Flt Protected	0.950			0.950				0.967			0.986	
Satd. Flow (prot)	1713	1781	0	1648	1824	0	0	1724	0	0	1689	0
Flt Permitted	0.950			0.950				0.967			0.986	
Satd. Flow (perm)	1713	1781	0	1648	1824	0	0	1724	0	0	1689	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		78.6			185.6			222.8			87.4	
Travel Time (s)		5.7			13.4			16.0			6.3	
Confl. Peds. (#/hr)			29	29		9	8		4	4		8
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	6%	2%	5%	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	91	304	78	17	402	24	113	28	23	28	18	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	382	0	17	426	0	0	164	0	0	96	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 50.7%	ICU Level of Service A											
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	280	72	16	370	22	104	26	21	26	17	46
Future Vol, veh/h	84	280	72	16	370	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
Heavy Vehicles, %	2	2	3	6	2	5	4	2	2	2	2	2
Mvmt Flow	91	304	78	17	402	24	113	28	23	28	18	50
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	16.7	22.2	12.7	11.1
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	69%	100%	0%	100%	0%	29%
Vol Thru, %	17%	0%	80%	0%	94%	19%
Vol Right, %	14%	0%	20%	0%	6%	52%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	84	352	16	392	89
LT Vol	104	84	0	16	0	26
Through Vol	26	0	280	0	370	17
RT Vol	21	0	72	0	22	46
Lane Flow Rate	164	91	383	17	426	97
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.304	0.166	0.627	0.032	0.715	0.179
Departure Headway (Hd)	6.671	6.553	5.899	6.654	6.037	6.668
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	533	544	608	535	597	542
Service Time	4.771	4.331	3.677	4.431	3.813	4.668
HCM Lane V/C Ratio	0.308	0.167	0.63	0.032	0.714	0.179
HCM Control Delay	12.7	10.6	18.2	9.7	22.7	11.1
HCM Lane LOS	B	B	C	A	C	B
HCM 95th-tile Q	1.3	0.6	4.4	0.1	5.9	0.6

Lanes, Volumes, Timings

2028 Future Total - PM Peak Hour

5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	919	12	24	1419	37	6	6	21	12	6	39
Future Volume (vph)	46	919	12	24	1419	37	6	6	21	12	6	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.996			0.916			0.909	
Flt Protected	0.950			0.950				0.991			0.990	
Satd. Flow (prot)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Flt Permitted	0.950			0.950				0.991			0.990	
Satd. Flow (perm)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			250.7			137.9			244.3	
Travel Time (s)		17.6			18.1			9.9			17.6	
Confl. Peds. (#/hr)	50		24	24		50	15		29	29		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	7%	8%	9%	3%	5%	2%	17%	10%	8%	2%	5%
Adj. Flow (vph)	50	999	13	26	1542	40	7	7	23	13	7	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	1012	0	26	1582	0	0	37	0	0	62	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	57.0%											
Analysis Period (min)	15											
ICU Level of Service B												

Intersection

Int Delay, s/veh 23.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	919	12	24	1419	37	6	6	21	12	6	39
Future Vol, veh/h	46	919	12	24	1419	37	6	6	21	12	6	39
Conflicting Peds, #/hr	50	0	24	24	0	50	15	0	29	29	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	7	8	9	3	5	2	17	10	8	2	5
Mvmt Flow	50	999	13	26	1542	40	7	7	23	13	7	42

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	1632	0	0	1036	0	0	1972	2814	559	2296	2800	856
Stage 1	-	-	-	-	-	-	1130	1130	-	1664	1664	-
Stage 2	-	-	-	-	-	-	842	1684	-	632	1136	-
Critical Hdwy	4.14	-	-	4.28	-	-	7.54	6.84	7.1	7.66	6.54	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Follow-up Hdwy	2.22	-	-	2.29	-	-	3.52	4.17	3.4	3.58	4.02	3.35
Pot Cap-1 Maneuver	394	-	-	626	-	-	37	14	453	19	18	295
Stage 1	-	-	-	-	-	-	217	248	-	95	152	-
Stage 2	-	-	-	-	-	-	325	128	-	421	275	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	376	-	-	612	-	-	17	11	431	~ 8	14	277
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	11	-	~ 8	14	-
Stage 1	-	-	-	-	-	-	184	210	-	79	139	-
Stage 2	-	-	-	-	-	-	248	117	-	326	233	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.2	\$ 331.3	\$ 856.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	35	376	-	-	612	-	-	28
HCM Lane V/C Ratio	1.025	0.133	-	-	0.043	-	-	2.213
HCM Control Delay (s)	\$ 331.3	16	-	-	11.1	-	-	\$ 856.4
HCM Lane LOS	F	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	3.7	0.5	-	-	0.1	-	-	7.4

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	5	3	23	5	322	1	1265	39	228	1385	19
Future Volume (vph)	104	5	3	23	5	322	1	1265	39	228	1385	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.96		0.90	0.94			1.00				0.99
Frt		0.944			0.852			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1664	0	1750	1473	0	1750	3468	0	1750	3305	1566
Flt Permitted	0.214			0.752			0.111			0.052		
Satd. Flow (perm)	387	1664	0	1245	1473	0	204	3468	0	96	3305	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			248			2				75
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6				426.6
Travel Time (s)		7.0			7.6			9.1				30.7
Confl. Peds. (#/hr)	37		81	81		37			56	56		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	8%	2%
Adj. Flow (vph)	113	5	3	25	5	350	1	1375	42	248	1505	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	8	0	25	355	0	1	1417	0	248	1505	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	43.0	43.0
Total Split (s)	10.0	56.0		46.0	46.0		9.5	78.2		25.8	94.5	94.5
Total Split (%)	6.3%	35.0%		28.8%	28.8%		5.9%	48.9%		16.1%	59.1%	59.1%
Maximum Green (s)	7.0	48.0		38.0	38.0		6.5	71.2		22.8	87.5	87.5
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		37		81	81			0			56	56
Act Effect Green (s)	53.0	48.0		38.0	38.0		82.5	73.5		101.0	95.4	95.4
Actuated g/C Ratio	0.33	0.30		0.24	0.24		0.52	0.46		0.63	0.60	0.60
v/c Ratio	0.60	0.02		0.08	0.66		0.01	0.89		0.91	0.76	0.02
Control Delay	54.1	31.6		48.6	22.7		5.0	22.7		62.1	23.8	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.7		0.0	0.4	0.0
Total Delay	54.1	31.6		48.6	22.7		5.0	23.4		62.1	24.2	0.2
LOS	D	C		D	C		A	C		E	C	A
Approach Delay		52.6			24.4			23.4			29.2	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	25.8	1.1		6.3	30.4		0.0	240.5		54.8	218.5	0.0
Queue Length 95th (m)	41.7	5.5		14.9	67.6		m0.1	253.7		m69.2	m264.6	m0.0
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	187	501		295	538		169	1594		296	1970	950
Starvation Cap Reductn	0	0		0	0		0	37		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	119	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.60	0.02		0.08	0.66		0.01	0.91		0.84	0.81	0.02

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Total - PM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 27.2

Intersection LOS: C

Intersection Capacity Utilization 108.1%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings
7: Site Access #1 & Kirwin Avenue

2028 Future Total - PM Peak Hour
3085 Hurontario Street

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	289	65	16	426	60	11
Future Volume (vph)	289	65	16	426	60	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.975				0.979	
Flt Protected				0.998	0.960	
Satd. Flow (prot)	1796	0	0	1838	1731	0
Flt Permitted				0.998	0.960	
Satd. Flow (perm)	1796	0	0	1838	1731	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			78.6	86.3	
Travel Time (s)	5.7			5.7	6.2	
Confl. Peds. (#/hr)		114	114			
Confl. Bikes (#/hr)		8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	314	71	17	463	65	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	385	0	0	480	77	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	289	65	16	426	60	11
Future Vol, veh/h	289	65	16	426	60	11
Conflicting Peds, #/hr	0	114	114	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	314	71	17	463	65	12
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	499	0	961	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	497	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1065	-	284	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	952	-	248	535
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	596	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.3		23.6		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	270	-	-	952	-	
HCM Lane V/C Ratio	0.286	-	-	0.018	-	
HCM Control Delay (s)	23.6	-	-	8.9	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-	

Lanes, Volumes, Timings
8: Hurontario Street & Site Access #2

2028 Future Total - PM Peak Hour
3085 Hurontario Street

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	38	1109	81	0	1455
Future Volume (vph)	0	38	1109	81	0	1455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.865	0.990			
Flt Protected						
Satd. Flow (prot)	0	1593	3465	0	0	3500
Flt Permitted						
Satd. Flow (perm)	0	1593	3465	0	0	3500
Link Speed (k/h)	50		50			50
Link Distance (m)	88.8		345.6			87.8
Travel Time (s)	6.4		24.9			6.3
Confl. Peds. (#/hr)				284		
Confl. Bikes (#/hr)				11		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	41	1205	88	0	1582
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	41	1293	0	0	1582
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	3.0		3.0			3.0
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	38	1109	81	0	1455
Future Vol, veh/h	0	38	1109	81	0	1455
Conflicting Peds, #/hr	0	0	0	284	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	41	1205	88	0	1582
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	931	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	268	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	197	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	28.1	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	197		-		
HCM Lane V/C Ratio	-	0.21		-		
HCM Control Delay (s)	-	28.1		-		
HCM Lane LOS	-	D		-		
HCM 95th %tile Q(veh)	-	0.8		-		

Lanes, Volumes, Timings

10: Camilla Road/Jaguar Valley Drive & Dundas Street

2028 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	840	41	89	1365	348	53	116	51	192	96	49
Future Volume (vph)	24	840	41	89	1365	348	53	116	51	192	96	49
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		30.0	35.0		65.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.98		0.99	0.99		0.98	0.99	
Frt		0.993			0.970			0.954			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3435	0	1713	3329	0	1713	1738	0	1713	1727	0
Flt Permitted	0.047			0.252			0.950			0.642		
Satd. Flow (perm)	85	3435	0	452	3329	0	1688	1738	0	1138	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			37			14			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		250.7			167.6			137.0			176.2	
Travel Time (s)		18.1			12.1			9.9			12.7	
Confl. Peds. (#/hr)	30		11	11		30	11		13	13		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	26	923	45	98	1500	382	58	127	56	211	105	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	968	0	98	1882	0	58	183	0	211	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
10: Camilla Road/Jaguar Valley Drive & Dundas Street

2028 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6						4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	36.0		36.0	36.0	
Total Split (s)	106.2	106.2		106.2	106.2		11.8	53.8		42.0	42.0	
Total Split (%)	66.4%	66.4%		66.4%	66.4%		7.4%	33.6%		26.3%	26.3%	
Maximum Green (s)	99.2	99.2		99.2	99.2		8.8	46.8		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0			11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)	11	11		30	30			13		11	11	
Act Effect Green (s)	104.2	104.2		104.2	104.2		8.4	41.8		32.4	32.4	
Actuated g/C Ratio	0.65	0.65		0.65	0.65		0.05	0.26		0.20	0.20	
v/c Ratio	0.47	0.43		0.33	0.86		0.64	0.39		0.92	0.44	
Control Delay	32.5	7.6		17.9	28.5		104.9	46.1		103.2	53.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.5	7.6		17.9	28.5		104.9	46.1		103.2	53.9	
LOS	C	A		B	C		F	D		F	D	
Approach Delay		8.3			28.0			60.2			82.0	
Approach LOS		A			C			E			F	
Queue Length 50th (m)	5.1	87.0		14.5	258.1		18.4	42.6		65.1	39.6	
Queue Length 95th (m)	m5.5	m81.9		28.1	298.5		#38.2	65.3		#110.4	62.4	
Internal Link Dist (m)		226.7			143.6			113.0			152.2	
Turn Bay Length (m)	15.0			35.0			35.0			35.0		
Base Capacity (vph)	55	2238		294	2180		94	518		248	389	
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	0.47	0.43		0.33	0.86		0.62	0.35		0.85	0.41	

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92

Intersection Signal Delay: 30.3

Intersection LOS: C

Intersection Capacity Utilization 105.0%

ICU Level of Service G

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: 10: Camilla Road/Jaguar Valley Drive & Dundas Street

 Ø2 (R)	 Ø3	 Ø4
106.2 s	11.8 s	42 s
 Ø5 (R)	 Ø8	
106.2 s	53.8 s	

Appendix L

2033 Future Background Conditions Synchro Worksheets

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	479	75	293	363	117	57	1198	61	104	1303	57
Future Volume (vph)	172	479	75	293	363	117	57	1198	61	104	1303	57
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98		0.95	0.99		0.95		1.00			1.00	
Frt			0.850			0.850		0.993			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1276	1696	3466	1338	1648	3419	0	1696	3405	0
Flt Permitted	0.475			0.184			0.052			0.065		
Satd. Flow (perm)	839	3500	1212	324	3466	1272	90	3419	0	116	3405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			76		4			4	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	27		28	28		27	34		39	39		34
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	8%	3%	3%	3%	6%	3%	10%	3%	4%	3%
Adj. Flow (vph)	191	532	83	326	403	130	63	1331	68	116	1448	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	532	83	326	403	130	63	1399	0	116	1511	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	20.8	41.0	10.2	27.0	47.2	12.0	10.2	80.0		12.0	81.8	
Total Split (%)	13.0%	25.6%	6.4%	16.9%	29.5%	7.5%	6.4%	50.0%		7.5%	51.1%	
Maximum Green (s)	16.3	34.0	5.7	24.0	40.2	9.0	5.7	73.0		9.0	74.8	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		28			27			39			34	
Act Effct Green (s)	48.5	30.4	39.1	61.4	37.4	50.2	85.4	76.7		90.8	77.9	
Actuated g/C Ratio	0.30	0.19	0.24	0.38	0.23	0.31	0.53	0.48		0.57	0.49	
v/c Ratio	0.57	0.80	0.23	0.99	0.50	0.29	0.58	0.85		0.76	0.91	
Control Delay	42.3	71.3	10.9	85.8	55.1	17.7	59.4	17.1		54.8	47.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	42.3	71.3	10.9	85.8	55.1	17.7	59.4	17.1		54.8	47.4	
LOS	D	E	B	F	E	B	E	B		D	D	
Approach Delay		58.2			61.1			18.9			47.9	
Approach LOS		E			E			B			D	
Queue Length 50th (m)	41.1	83.6	1.1	76.1	57.6	11.6	6.8	195.6		17.4	238.2	
Queue Length 95th (m)	61.0	104.6	14.5	#138.2	74.5	28.2	m18.6	103.6		#49.3	#289.6	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	346	743	357	330	870	457	108	1642		155	1660	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.55	0.72	0.23	0.99	0.46	0.28	0.58	0.85		0.75	0.91	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2028 Future Background - AM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 43.1

Intersection LOS: D

Intersection Capacity Utilization 99.9%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hurontario Street & Central Parkway

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	80 s	20.8 s	47.2 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
10.2 s	81.8 s	27 s	41 s

Lanes, Volumes, Timings

2028 Future Background - AM Peak Hour

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	169	74	19	92	63	65	1052	22	80	1055	209
Future Volume (vph)	247	169	74	19	92	63	65	1052	22	80	1055	209
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.94	0.97	0.99		0.98	1.00		1.00		0.81
Frt			0.850		0.939			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1696	1807	1313	1589	1633	0	1603	3356	0	1713	3433	1351
Flt Permitted	0.528			0.641			0.107			0.097		
Satd. Flow (perm)	930	1807	1240	1037	1633	0	177	3356	0	175	3433	1089
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		22			2				202
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			159.2			433.4			126.6	
Travel Time (s)		15.0			11.5			31.2			9.1	
Confl. Peds. (#/hr)	18		42	42		18	96		4	4		96
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	4%	5%	10%	7%	6%	9%	6%	5%	2%	4%	2%
Adj. Flow (vph)	268	184	80	21	100	68	71	1143	24	87	1147	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	184	80	21	168	0	71	1167	0	87	1147	227
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	17.0	73.0	73.0	56.0	56.0		11.5	75.0		12.0	75.5	17.0
Total Split (%)	10.6%	45.6%	45.6%	35.0%	35.0%		7.2%	46.9%		7.5%	47.2%	10.6%
Maximum Green (s)	14.0	65.0	65.0	48.0	48.0		8.5	67.5		9.0	68.0	14.0
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		42	42	18	18			4			96	
Act Effect Green (s)	59.4	54.4	54.4	37.4	37.4		91.1	67.5		92.1	68.0	86.5
Actuated g/C Ratio	0.37	0.34	0.34	0.23	0.23		0.57	0.42		0.58	0.42	0.54
v/c Ratio	0.65	0.30	0.17	0.09	0.42		0.26	0.82		0.30	0.79	0.32
Control Delay	44.4	37.9	6.3	42.4	45.6		18.7	22.9		24.2	23.3	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	1.2		0.0	10.7	0.4
Total Delay	44.4	37.9	6.3	42.4	45.6		18.7	24.0		24.2	34.0	2.0
LOS	D	D	A	D	D		B	C		C	C	A
Approach Delay		36.4			45.2			23.7			28.5	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	56.5	38.5	0.0	4.8	36.1		4.1	99.1		1.9	87.8	3.2
Queue Length 95th (m)	79.9	57.3	10.8	12.0	57.5		m6.0	144.7		m14.5	119.3	m0.3
Internal Link Dist (m)		184.4			135.2			409.4			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	412	734	551	311	505		270	1416		288	1459	704
Starvation Cap Reductn	0	0	0	0	0		0	0		0	299	163
Spillback Cap Reductn	0	0	0	0	0		0	94		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.65	0.25	0.15	0.07	0.33		0.26	0.88		0.30	0.99	0.42

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 28.9

Intersection LOS: C

Intersection Capacity Utilization 104.4%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11.5 s	75.5 s	17 s	56 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
12 s	75 s	73 s	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1177	107	97	549	90	0	866	84	147	828	70
Future Volume (vph)	125	1177	107	97	549	90	0	866	84	147	828	70
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.97	0.98			0.99			0.99			0.99	
Frt		0.988			0.979			0.987			0.988	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1533	3229	0	1574	3064	0	0	3167	0	1633	3228	0
Flt Permitted	0.292			0.063						0.103		
Satd. Flow (perm)	458	3229	0	104	3064	0	0	3167	0	177	3228	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			14			7			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			433.4	
Travel Time (s)		16.6			17.6			11.9			31.2	
Confl. Peds. (#/hr)	71		136	136		71	58		110	110		58
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	14%	6%	25%	11%	11%	21%	9%	9%	16%	7%	8%	14%
Adj. Flow (vph)	128	1201	109	99	560	92	0	884	86	150	845	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	1310	0	99	652	0	0	970	0	150	916	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA			NA		pm+pt	NA	
Protected Phases	3	8		7	4			6		5	2	
Permitted Phases	8			4						2		
Detector Phase	3	8		7	4			6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0			8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5		8.0	45.5			41.0		8.0	41.0	
Total Split (s)	14.0	74.0		10.0	70.0			61.0		15.0	76.0	
Total Split (%)	8.8%	46.3%		6.3%	43.8%			38.1%		9.4%	47.5%	
Maximum Green (s)	11.0	66.5		7.0	62.5			54.0		12.0	69.0	
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	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	
Total Lost Time (s)	3.0	7.5		3.0	7.5			7.0		3.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes			Yes		Yes		
Vehicle Extension (s)	2.0	3.0		2.0	3.0			3.0		2.0	3.0	
Recall Mode	None	None		None	None			C-Max		None	C-Max	
Walk Time (s)		16.0			16.0			14.0			14.0	
Flash Dont Walk (s)		22.0			22.0			20.0			20.0	
Pedestrian Calls (#/hr)		136			71			110			58	
Act Effect Green (s)	80.3	66.2		74.6	63.1			54.7		73.3	69.3	
Actuated g/C Ratio	0.50	0.41		0.47	0.39			0.34		0.46	0.43	
v/c Ratio	0.43	0.98		0.88	0.54			0.89		0.81	0.65	
Control Delay	26.1	65.3		97.5	55.1			60.9		87.5	78.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	26.1	65.3		97.5	55.1			60.9		87.5	78.3	
LOS	C	E		F	E			E		F	E	
Approach Delay		61.8			60.7			60.9			79.6	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	21.5	213.1		24.1	105.1			154.2		49.2	160.1	
Queue Length 95th (m)	34.3	#263.1		#53.3	127.3			#191.7		m#64.2	182.1	
Internal Link Dist (m)		206.3			220.0			141.0			409.4	
Turn Bay Length (m)	35.0			30.0						60.0		
Base Capacity (vph)	304	1346		112	1216			1088		189	1402	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.42	0.97		0.88	0.54			0.89		0.79	0.65	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 65.9

Intersection LOS: E

Intersection Capacity Utilization 97.4%

ICU Level of Service F

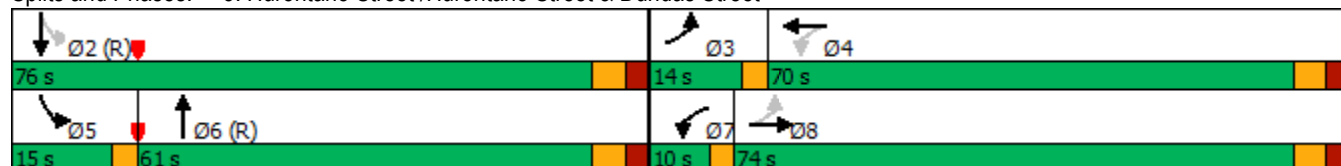
Analysis Period (min) 15

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 /Hurontario Street & Dundas Street



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	291	36	7	164	13	62	18	18	70	14	21
Future Volume (vph)	18	291	36	7	164	13	62	18	18	70	14	21
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.989			0.975			0.973	
Flt Protected	0.950			0.950				0.970			0.968	
Satd. Flow (prot)	1713	1715	0	1533	1727	0	0	1666	0	0	1708	0
Flt Permitted	0.950			0.950				0.970			0.968	
Satd. Flow (perm)	1713	1715	0	1533	1727	0	0	1666	0	0	1708	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.2			182.9			222.8			87.4	
Travel Time (s)		11.5			13.2			16.0			6.3	
Confl. Peds. (#/hr)	21		41	41		21	13		10	10		13
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	8%	6%	14%	7%	15%	5%	2%	17%	2%	2%	10%
Adj. Flow (vph)	20	316	39	8	178	14	67	20	20	76	15	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	355	0	8	192	0	0	107	0	0	114	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.0%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	291	36	7	164	13	62	18	18	70	14	21
Future Vol, veh/h	18	291	36	7	164	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
Heavy Vehicles, %	2	8	6	14	7	15	5	2	17	2	2	10
Mvmt Flow	20	316	39	8	178	14	67	20	20	76	15	23
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	14.2	10.8	10	10
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	63%	100%	0%	100%	0%	67%
Vol Thru, %	18%	0%	89%	0%	93%	13%
Vol Right, %	18%	0%	11%	0%	7%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	18	327	7	177	105
LT Vol	62	18	0	7	0	70
Through Vol	18	0	291	0	164	14
RT Vol	18	0	36	0	13	21
Lane Flow Rate	107	20	355	8	192	114
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.171	0.032	0.542	0.013	0.303	0.181
Departure Headway (Hd)	5.772	5.968	5.488	6.354	5.675	5.704
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	621	604	661	564	635	629
Service Time	3.81	3.668	3.188	4.082	3.403	3.741
HCM Lane V/C Ratio	0.172	0.033	0.537	0.014	0.302	0.181
HCM Control Delay	10	8.9	14.5	9.2	10.9	10
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.6	0.1	3.3	0	1.3	0.7

Lanes, Volumes, Timings

2028 Future Background - AM Peak Hour

5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

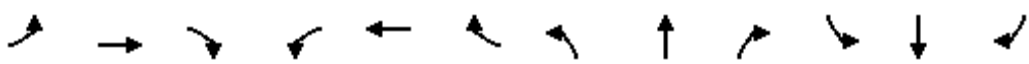
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1442	2	2	698	14	2	0	11	14	1	25
Future Volume (vph)	11	1442	2	2	698	14	2	0	11	14	1	25
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.884			0.915	
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1603	3306	0	1713	3196	0	0	1425	0	0	1572	0
Flt Permitted	0.950			0.950				0.993			0.983	
Satd. Flow (perm)	1603	3306	0	1713	3196	0	0	1425	0	0	1572	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			248.2			137.5			244.3	
Travel Time (s)		17.6			17.9			9.9			17.6	
Confl. Peds. (#/hr)	15		38	38		15	1		1	1		1
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	8%	2%	2%	11%	29%	2%	2%	18%	7%	2%	8%
Adj. Flow (vph)	12	1567	2	2	759	15	2	0	12	15	1	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1569	0	2	774	0	0	14	0	0	43	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	51.6%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1442	2	2	698	14	2	0	11	14	1	25
Future Vol, veh/h	11	1442	2	2	698	14	2	0	11	14	1	25
Conflicting Peds, #/hr	15	0	38	38	0	15	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	8	2	2	11	29	2	2	18	7	2	8
Mvmt Flow	12	1567	2	2	759	15	2	0	12	15	1	27
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	789	0	0	1607	0	0	2015	2423	824	1595	2417	403
Stage 1	-	-	-	-	-	-	1630	1630	-	786	786	-
Stage 2	-	-	-	-	-	-	385	793	-	809	1631	-
Critical Hdwy	4.28	-	-	4.14	-	-	7.54	6.54	7.26	7.64	6.54	7.06
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Follow-up Hdwy	2.29	-	-	2.22	-	-	3.52	4.02	3.48	3.57	4.02	3.38
Pot Cap-1 Maneuver	783	-	-	403	-	-	34	32	285	68	32	580
Stage 1	-	-	-	-	-	-	106	158	-	341	401	-
Stage 2	-	-	-	-	-	-	610	398	-	330	158	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	772	-	-	389	-	-	30	30	275	63	30	571
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	30	-	63	30	-
Stage 1	-	-	-	-	-	-	101	150	-	331	393	-
Stage 2	-	-	-	-	-	-	576	390	-	310	150	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			38.3			44.3		
HCM LOS							E			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	122	772	-	-	389	-	-	134				
HCM Lane V/C Ratio	0.116	0.015	-	-	0.006	-	-	0.324				
HCM Control Delay (s)	38.3	9.7	-	-	14.3	-	-	44.3				
HCM Lane LOS	E	A	-	-	B	-	-	E				
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	1.3				

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	5	1	16	5	176	3	1258	20	164	1501	385
Future Volume (vph)	37	5	1	16	5	176	3	1258	20	164	1501	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.95	0.99		0.98	0.91			1.00				0.99
Frt		0.975			0.854			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1786	0	1500	1425	0	1750	3452	0	1684	3216	1566
Flt Permitted	0.410			0.754			0.100			0.109		
Satd. Flow (perm)	719	1786	0	1168	1425	0	184	3452	0	193	3216	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			191			1				152
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6			426.6	
Travel Time (s)		7.0			7.6			9.1			30.7	
Confl. Peds. (#/hr)	58		15	15		58			36	36		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	19%	2%	3%	2%	3%	5%	6%	11%	2%
Adj. Flow (vph)	40	5	1	17	5	191	3	1367	22	178	1632	418
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	6	0	17	196	0	3	1389	0	178	1632	418
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2028 Future Background - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	38.0	38.0
Total Split (s)	9.5	55.5		46.0	46.0		9.5	85.3		19.2	95.0	95.0
Total Split (%)	5.9%	34.7%		28.8%	28.8%		5.9%	53.3%		12.0%	59.4%	59.4%
Maximum Green (s)	6.5	47.5		38.0	38.0		6.5	78.3		16.2	88.0	88.0
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		58		15	15			0			36	36
Act Effect Green (s)	40.8	35.8		28.3	28.3		102.4	93.4		113.2	107.6	107.6
Actuated g/C Ratio	0.26	0.22		0.18	0.18		0.64	0.58		0.71	0.67	0.67
v/c Ratio	0.18	0.01		0.08	0.48		0.02	0.69		0.70	0.75	0.38
Control Delay	41.6	37.7		50.5	10.8		7.0	16.6		23.5	23.6	6.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.7		0.0	0.2	0.0
Total Delay	41.6	37.7		50.5	10.8		7.0	17.3		23.5	23.8	6.9
LOS	D	D		D	B		A	B		C	C	A
Approach Delay		41.1			14.0			17.3			20.6	
Approach LOS		D			B			B			C	
Queue Length 50th (m)	9.6	1.2		4.6	1.3		0.2	51.6		15.3	234.7	29.1
Queue Length 95th (m)	18.0	5.0		11.2	22.5		m0.2	205.8		m25.0	m301.7	m74.4
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	225	530		277	484		182	2014		287	2162	1087
Starvation Cap Reductn	0	0		0	0		0	301		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	79	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.01		0.06	0.40		0.02	0.81		0.62	0.78	0.38

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Lanes, Volumes, Timings 6: Hurontario Street & John Street

2028 Future Background - AM Peak Hour
3085 Hurontario Street

Intersection Signal Delay: 19.3

Intersection LOS: B

Intersection Capacity Utilization 92.6%

ICU Level of Service F

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings

2028 Future Background - AM Peak Hour

10: Camilla Road/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1348	51	32	573	74	20	42	43	225	53	17
Future Volume (vph)	12	1348	51	32	573	74	20	42	43	225	53	17
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		0.0	35.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00		0.98	0.99		0.99	0.99	
Frt		0.995			0.983			0.924			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1618	3411	0	1713	3281	0	1574	1656	0	1696	1743	0
Flt Permitted	0.346			0.096			0.950			0.695		
Satd. Flow (perm)	587	3411	0	173	3281	0	1548	1656	0	1230	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			14			30			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		248.2			145.1			138.7			167.9	
Travel Time (s)		17.9			10.4			10.0			12.1	
Confl. Peds. (#/hr)	4		4	4		4	11		6	6		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	4%	4%	2%	7%	3%	11%	2%	5%	3%	2%	6%
Adj. Flow (vph)	13	1498	57	36	637	82	22	47	48	250	59	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1555	0	36	719	0	22	95	0	250	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

05-11-2021

VZ

CGH Transportation

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6						4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	36.0		36.0	36.0	
Total Split (s)	97.8	97.8		97.8	97.8		11.2	62.2		51.0	51.0	
Total Split (%)	61.1%	61.1%		61.1%	61.1%		7.0%	38.9%		31.9%	31.9%	
Maximum Green (s)	90.8	90.8		90.8	90.8		8.2	55.2		44.0	44.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0			11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)	4	4		4	4			6		11	11	
Act Effct Green (s)	102.7	102.7		102.7	102.7		7.2	43.3		36.7	36.7	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.04	0.27		0.23	0.23	
v/c Ratio	0.03	0.71		0.32	0.34		0.31	0.20		0.89	0.19	
Control Delay	6.2	15.4		27.7	14.9		85.3	28.3		89.9	42.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.2	15.4		27.7	14.9		85.3	28.3		89.9	42.2	
LOS	A	B		C	B		F	C		F	D	
Approach Delay		15.3			15.5			39.0			78.6	
Approach LOS		B			B			D			E	
Queue Length 50th (m)	0.6	236.7		5.4	56.6		6.9	15.1		76.9	17.3	
Queue Length 95th (m)	m1.5	m271.3		17.7	77.2		16.9	28.1		107.4	30.5	
Internal Link Dist (m)		224.2			121.1			114.7			143.9	
Turn Bay Length (m)	15.0			35.0			35.0			35.0		
Base Capacity (vph)	376	2190		111	2110		80	590		338	486	
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	0.03	0.71		0.32	0.34		0.28	0.16		0.74	0.16	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 23.9

Intersection LOS: C

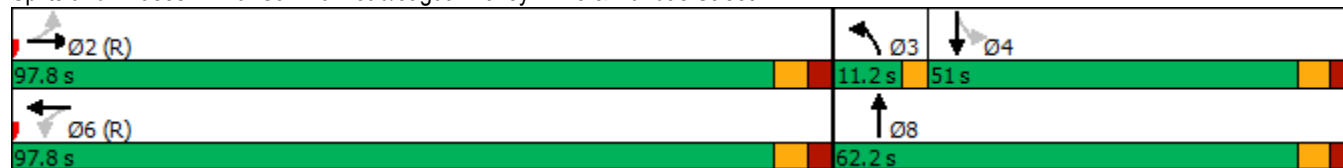
Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 10: Camilla Road/Jaguar Valley Drive & Dundas Street



Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2033 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	466	61	311	555	70	85	1189	85	106	1141	144
Future Volume (vph)	144	466	61	311	555	70	85	1189	85	106	1141	144
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.96	0.99		0.97		1.00			0.99	
Frt			0.850			0.850		0.990			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1351	1713	3500	1351	1713	3449	0	1713	3407	0
Flt Permitted	0.308			0.211			0.066			0.072		
Satd. Flow (perm)	552	3500	1303	377	3500	1313	119	3449	0	130	3407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			74		6			11	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	12		17	17		12	53		31	31		53
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	153	496	65	331	590	74	90	1265	90	113	1214	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	496	65	331	590	74	90	1355	0	113	1367	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2033 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	20.1	41.0	13.6	29.0	49.9	14.0	13.6	76.0		14.0	76.4	
Total Split (%)	12.6%	25.6%	8.5%	18.1%	31.2%	8.8%	8.5%	47.5%		8.8%	47.8%	
Maximum Green (s)	15.6	34.0	9.1	26.0	42.9	11.0	9.1	69.0		11.0	69.4	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		17			12			31			53	
Act Effct Green (s)	46.6	29.8	40.8	62.2	39.5	53.0	86.3	75.3		88.3	74.9	
Actuated g/C Ratio	0.29	0.19	0.26	0.39	0.25	0.33	0.54	0.47		0.55	0.47	
v/c Ratio	0.58	0.76	0.17	0.93	0.68	0.15	0.61	0.83		0.68	0.85	
Control Delay	42.9	69.4	6.0	69.3	58.7	6.9	52.3	20.3		44.4	44.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	42.9	69.4	6.0	69.3	58.7	6.9	52.3	20.3		44.4	44.9	
LOS	D	E	A	E	E	A	D	C		D	D	
Approach Delay		58.0			58.3			22.3			44.8	
Approach LOS		E			E			C			D	
Queue Length 50th (m)	31.4	77.1	0.0	75.4	87.4	0.0	13.1	113.1		17.1	212.8	
Queue Length 95th (m)	48.4	97.2	8.3	#125.0	108.3	10.8	m22.0	177.4		36.8	#249.0	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	278	743	397	363	939	498	155	1626		181	1600	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.55	0.67	0.16	0.91	0.63	0.15	0.58	0.83		0.62	0.85	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2033 Future Background - PM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 42.7

Intersection LOS: D

Intersection Capacity Utilization 97.3%

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: 1: Hurontario Street & Central Parkway

 Ø1	 Ø2 (R)	 Ø3	 Ø4
14 s	76 s	20.1 s	49.9 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13.6 s	76.4 s	29 s	41 s

Lanes, Volumes, Timings

2033 Future Background - PM Peak Hour

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	158	89	41	263	122	106	946	39	92	1264	126
Future Volume (vph)	57	158	89	41	263	122	106	946	39	92	1264	126
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.93	0.95	0.99			1.00		0.99		0.89
Frt			0.850		0.952			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1842	1325	1713	1736	0	1713	3374	0	1713	3500	1338
Flt Permitted	0.162			0.649			0.061			0.152		
Satd. Flow (perm)	290	1842	1228	1115	1736	0	110	3374	0	272	3500	1190
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97		15			3				100
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			159.2			433.4			126.6	
Travel Time (s)		15.0			11.5			31.2			9.1	
Confl. Peds. (#/hr)	16		60	60		16	49		24	24		49
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	5%	2%	2%	2%	3%
Adj. Flow (vph)	62	172	97	45	286	133	115	1028	42	100	1374	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	172	97	45	419	0	115	1070	0	100	1374	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	9.8	65.8	65.8	56.0	56.0		13.2	81.2		13.0	81.0	9.8
Total Split (%)	6.1%	41.1%	41.1%	35.0%	35.0%		8.3%	50.8%		8.1%	50.6%	6.1%
Maximum Green (s)	6.8	57.8	57.8	48.0	48.0		10.2	73.7		10.0	73.5	6.8
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		60	60	16	16			24			49	
Act Effect Green (s)	56.4	51.4	51.4	41.8	41.8		94.8	73.7		94.4	73.5	84.5
Actuated g/C Ratio	0.35	0.32	0.32	0.26	0.26		0.59	0.46		0.59	0.46	0.53
v/c Ratio	0.39	0.29	0.21	0.15	0.90		0.50	0.69		0.32	0.86	0.20
Control Delay	39.9	40.9	7.0	44.5	77.8		57.4	15.3		9.1	17.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.9		0.0	3.4	0.0
Total Delay	39.9	40.9	7.0	44.5	77.8		57.4	16.2		9.1	21.3	0.9
LOS	D	D	A	D	E		E	B		A	C	A
Approach Delay		30.8			74.5			20.2			18.8	
Approach LOS		C			E			C			B	
Queue Length 50th (m)	13.1	40.5	0.0	11.0	124.4		21.5	44.5		2.3	209.4	1.9
Queue Length 95th (m)	22.9	58.0	12.8	21.1	161.5		m21.9	m39.7		m3.4	95.6	m0.0
Internal Link Dist (m)		184.4			135.2			409.4			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	162	665	505	334	531		231	1555		308	1607	683
Starvation Cap Reductn	0	0	0	0	0		0	0		0	154	0
Spillback Cap Reductn	0	0	0	0	0		0	222		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.38	0.26	0.19	0.13	0.79		0.50	0.80		0.32	0.95	0.20

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 27.6

Intersection LOS: C

Intersection Capacity Utilization 107.3%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13.2 s	81 s	9.8 s	56 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	81.2 s	65.8 s	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	795	175	168	1157	171	0	820	99	179	1120	112
Future Volume (vph)	109	795	175	168	1157	171	0	820	99	179	1120	112
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		25.0	30.0		0.0	45.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.94		0.96	0.98			0.97			0.99	
Frt		0.973			0.981			0.984			0.986	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1680	3039	0	1664	3212	0	0	3209	0	1648	3278	0
Flt Permitted	0.064			0.137						0.083		
Satd. Flow (perm)	113	3039	0	230	3212	0	0	3209	0	144	3278	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			12			8			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			433.4	
Travel Time (s)		16.6			17.6			11.9			31.2	
Confl. Peds. (#/hr)	127		237	237		127	85		266	266		85
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	8%	8%	5%	7%	4%	7%	6%	3%	6%	6%	7%
Adj. Flow (vph)	112	820	180	173	1193	176	0	845	102	185	1155	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	1000	0	173	1369	0	0	947	0	185	1270	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA			NA		pm+pt	NA	
Protected Phases	3	8		7	4			6		5	2	
Permitted Phases	8			4						2		
Detector Phase	3	8		7	4			6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0			8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5		8.0	45.5			41.0		8.0	41.0	
Total Split (s)	11.0	69.0		18.0	76.0			56.0		17.0	73.0	
Total Split (%)	6.9%	43.1%		11.3%	47.5%			35.0%		10.6%	45.6%	
Maximum Green (s)	8.0	61.5		15.0	68.5			49.0		14.0	66.0	
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5		0.0	3.5			3.0		0.0	3.0	
Lost Time Adjust (s)	1.0	3.0		1.0	3.0			3.0		1.0	3.0	
Total Lost Time (s)	4.0	10.5		4.0	10.5			10.0		4.0	10.0	
Lead/Lag	Lead	Lag		Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes			Yes		Yes		
Vehicle Extension (s)	2.0	3.0		2.0	3.0			3.0		2.0	3.0	
Recall Mode	None	None		None	None			C-Max		None	C-Max	
Walk Time (s)		16.0			16.0			14.0			14.0	
Flash Dont Walk (s)		22.0			22.0			20.0			20.0	
Pedestrian Calls (#/hr)		237			127			266			85	
Act Effect Green (s)	74.0	60.5		82.5	65.5			46.0		69.0	63.0	
Actuated g/C Ratio	0.46	0.38		0.52	0.41			0.29		0.43	0.39	
v/c Ratio	0.93	0.86		0.77	1.04			1.02		1.01	0.98	
Control Delay	97.6	54.2		34.9	76.0			89.5		112.6	92.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	97.6	54.2		34.9	76.0			89.5		112.6	92.1	
LOS	F	D		C	E			F		F	F	
Approach Delay		58.6			71.4			89.5			94.7	
Approach LOS		E			E			F			F	
Queue Length 50th (m)	20.1	153.2		34.6	~248.4			~166.5		~61.0	224.3	
Queue Length 95th (m)	#61.6	185.5		m37.8	#292.6			#209.0		m#85.3	#263.8	
Internal Link Dist (m)		206.3			220.0			141.0			409.4	
Turn Bay Length (m)	35.0			30.0						60.0		
Base Capacity (vph)	120	1160		244	1322			928		184	1295	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.93	0.86		0.71	1.04			1.02		1.01	0.98	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 78.7

Intersection LOS: E

Intersection Capacity Utilization 106.7%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

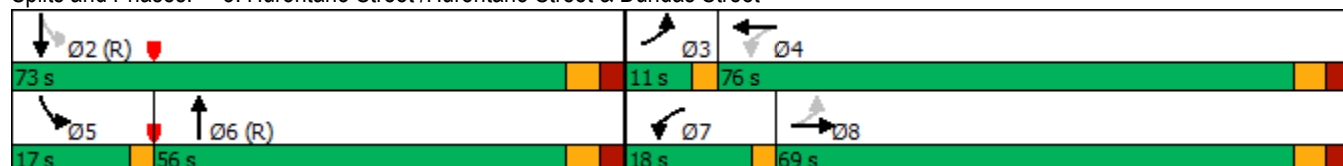
Queue shown is maximum after two cycles.

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 /Hurontario Street & Dundas Street



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2033 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	269	72	16	354	22	104	26	21	26	17	46
Future Volume (vph)	84	269	72	16	354	22	104	26	21	26	17	46
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.968			0.991			0.981			0.930	
Flt Protected	0.950			0.950				0.967			0.986	
Satd. Flow (prot)	1713	1779	0	1648	1822	0	0	1724	0	0	1689	0
Flt Permitted	0.950			0.950				0.967			0.986	
Satd. Flow (perm)	1713	1779	0	1648	1822	0	0	1724	0	0	1689	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.2			185.6			222.8			87.4	
Travel Time (s)		11.5			13.4			16.0			6.3	
Confl. Peds. (#/hr)			29	29		9	8		4	4		8
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	6%	2%	5%	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	91	292	78	17	385	24	113	28	23	28	18	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	370	0	17	409	0	0	164	0	0	96	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.9%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	269	72	16	354	22	104	26	21	26	17	46
Future Vol, veh/h	84	269	72	16	354	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
Heavy Vehicles, %	2	2	3	6	2	5	4	2	2	2	2	2
Mvmt Flow	91	292	78	17	385	24	113	28	23	28	18	50
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15.9	20.3	12.5	11
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	69%	100%	0%	100%	0%	29%
Vol Thru, %	17%	0%	79%	0%	94%	19%
Vol Right, %	14%	0%	21%	0%	6%	52%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	84	341	16	376	89
LT Vol	104	84	0	16	0	26
Through Vol	26	0	269	0	354	17
RT Vol	21	0	72	0	22	46
Lane Flow Rate	164	91	371	17	409	97
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.3	0.165	0.603	0.032	0.682	0.176
Departure Headway (Hd)	6.585	6.514	5.855	6.622	6.004	6.565
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	542	548	612	538	601	549
Service Time	4.677	4.285	3.627	4.393	3.774	4.565
HCM Lane V/C Ratio	0.303	0.166	0.606	0.032	0.681	0.177
HCM Control Delay	12.5	10.6	17.2	9.6	20.8	11
HCM Lane LOS	B	B	C	A	C	B
HCM 95th-tile Q	1.3	0.6	4	0.1	5.3	0.6

Lanes, Volumes, Timings

2033 Future Background - PM Peak Hour

5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	970	12	24	1480	37	6	6	21	12	6	39
Future Volume (vph)	46	970	12	24	1480	37	6	6	21	12	6	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.996			0.916			0.909	
Flt Protected	0.950			0.950				0.991			0.990	
Satd. Flow (prot)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Flt Permitted	0.950			0.950				0.991			0.990	
Satd. Flow (perm)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			250.7			137.9			244.3	
Travel Time (s)		17.6			18.1			9.9			17.6	
Confl. Peds. (#/hr)	50		24	24		50	15		29	29		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	7%	8%	9%	3%	5%	2%	17%	10%	8%	2%	5%
Adj. Flow (vph)	50	1054	13	26	1609	40	7	7	23	13	7	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	1067	0	26	1649	0	0	37	0	0	62	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.7%											
Analysis Period (min)	15											
ICU Level of Service B												

Intersection												
Int Delay, s/veh	48.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	970	12	24	1480	37	6	6	21	12	6	39
Future Vol, veh/h	46	970	12	24	1480	37	6	6	21	12	6	39
Conflicting Peds, #/hr	50	0	24	24	0	50	15	0	29	29	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	7	8	9	3	5	2	17	10	8	2	5
Mvmt Flow	50	1054	13	26	1609	40	7	7	23	13	7	42
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1699	0	0	1091	0	0	2060	2936	587	2391	2922	890
Stage 1	-	-	-	-	-	-	1185	1185	-	1731	1731	-
Stage 2	-	-	-	-	-	-	875	1751	-	660	1191	-
Critical Hdwy	4.14	-	-	4.28	-	-	7.54	6.84	7.1	7.66	6.54	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Follow-up Hdwy	2.22	-	-	2.29	-	-	3.52	4.17	3.4	3.58	4.02	3.35
Pot Cap-1 Maneuver	371	-	-	596	-	-	32	11	433	16	15	280
Stage 1	-	-	-	-	-	-	201	232	-	86	141	-
Stage 2	-	-	-	-	-	-	310	118	-	404	259	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	354	-	-	583	-	-	12	8	412	~ 4	11	263
Mov Cap-2 Maneuver	-	-	-	-	-	-	12	8	-	~ 4	11	-
Stage 1	-	-	-	-	-	-	169	195	-	70	128	-
Stage 2	-	-	-	-	-	-	232	107	-	308	218	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.2			\$ 567.1			\$ 1920		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	25	354	-	-	583	-	-	15				
HCM Lane V/C Ratio	1.435	0.141	-	-	0.045	-	-	4.13				
HCM Control Delay (s)	\$ 567.1	16.8	-	-	11.5	-	-	-\$ 1920				
HCM Lane LOS	F	C	-	-	B	-	-	F				
HCM 95th %tile Q(veh)	4.4	0.5	-	-	0.1	-	-	8.6				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2033 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	5	3	23	5	322	1	1181	39	228	1303	19
Future Volume (vph)	104	5	3	23	5	322	1	1181	39	228	1303	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.96		0.90	0.94			0.99				0.99
Frt		0.944			0.852			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1664	0	1750	1473	0	1750	3463	0	1750	3305	1566
Flt Permitted	0.214			0.752			0.134			0.066		
Satd. Flow (perm)	387	1664	0	1245	1473	0	247	3463	0	122	3305	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			266			3				75
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6				426.6
Travel Time (s)		7.0			7.6			9.1				30.7
Confl. Peds. (#/hr)	37		81	81		37			56	56		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	8%	2%
Adj. Flow (vph)	113	5	3	25	5	350	1	1284	42	248	1416	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	8	0	25	355	0	1	1326	0	248	1416	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2033 Future Background - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	43.0	43.0
Total Split (s)	10.6	56.6		46.0	46.0		9.5	76.4		27.0	93.9	93.9
Total Split (%)	6.6%	35.4%		28.8%	28.8%		5.9%	47.8%		16.9%	58.7%	58.7%
Maximum Green (s)	7.6	48.6		38.0	38.0		6.5	69.4		24.0	86.9	86.9
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		37		81	81			0			56	56
Act Effect Green (s)	53.6	48.6		38.0	38.0		81.6	72.6		100.4	94.8	94.8
Actuated g/C Ratio	0.34	0.30		0.24	0.24		0.51	0.45		0.63	0.59	0.59
v/c Ratio	0.58	0.02		0.08	0.64		0.01	0.84		0.86	0.72	0.02
Control Delay	51.7	31.3		48.6	19.8		5.0	21.5		50.2	22.8	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.3		0.0	0.3	0.0
Total Delay	51.7	31.3		48.6	19.8		5.0	21.8		50.2	23.1	0.3
LOS	D	C		D	B		A	C		D	C	A
Approach Delay		50.3			21.7			21.8			26.8	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	25.6	1.1		6.3	24.3		0.0	216.8		48.3	203.6	0.0
Queue Length 95th (m)	41.5	5.4		14.9	60.9		m0.1	243.6		m66.0	242.9	m0.0
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	194	507		295	552		189	1572		320	1958	945
Starvation Cap Reductn	0	0		0	0		0	34		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	138	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.58	0.02		0.08	0.64		0.01	0.86		0.78	0.78	0.02

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2033 Future Background - PM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 25.2

Intersection LOS: C

Intersection Capacity Utilization 105.8%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & John Street



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	888	41	89	1423	332	53	116	51	181	96	49
Future Volume (vph)	24	888	41	89	1423	332	53	116	51	181	96	49
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		30.0	35.0		65.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	0.98		0.99	0.99		0.98	0.99	
Frt		0.993			0.972			0.954			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3436	0	1713	3340	0	1713	1737	0	1713	1727	0
Flt Permitted	0.044			0.237			0.950			0.642		
Satd. Flow (perm)	79	3436	0	425	3340	0	1688	1737	0	1138	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			34			14			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		250.7			167.6			137.0			176.2	
Travel Time (s)		18.1			12.1			9.9			12.7	
Confl. Peds. (#/hr)	30		11	11		30	11		13	13		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	26	976	45	98	1564	365	58	127	56	199	105	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1021	0	98	1929	0	58	183	0	199	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6						4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	36.0		36.0	36.0	
Total Split (s)	108.2	108.2		108.2	108.2		11.8	51.8		40.0	40.0	
Total Split (%)	67.6%	67.6%		67.6%	67.6%		7.4%	32.4%		25.0%	25.0%	
Maximum Green (s)	101.2	101.2		101.2	101.2		8.8	44.8		33.0	33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0			11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)	11	11		30	30			13		11	11	
Act Effect Green (s)	105.9	105.9		105.9	105.9		8.4	40.1		30.6	30.6	
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.05	0.25		0.19	0.19	
v/c Ratio	0.50	0.45		0.35	0.87		0.64	0.41		0.92	0.46	
Control Delay	38.0	8.7		17.7	27.9		104.9	47.8		105.1	55.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.0	8.7		17.7	27.9		104.9	47.8		105.1	55.9	
LOS	D	A		B	C		F	D		F	E	
Approach Delay		9.5			27.4			61.5			83.3	
Approach LOS		A			C			E			F	
Queue Length 50th (m)	6.3	112.4		14.2	262.7		18.4	43.4		61.6	40.3	
Queue Length 95th (m)	m6.4	m98.6		28.0	304.2		#38.2	66.5		#105.9	63.5	
Internal Link Dist (m)		226.7			143.6			113.0			152.2	
Turn Bay Length (m)	15.0			35.0			35.0			35.0		
Base Capacity (vph)	52	2277		281	2223		94	496		234	368	
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	0.50	0.45		0.35	0.87		0.62	0.37		0.85	0.43	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 29.9

Intersection LOS: C

Intersection Capacity Utilization 105.4%

ICU Level of Service G

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: 10: Camilla Road/Jaguar Valley Drive & Dundas Street

 Ø2 (R)	 Ø3	 Ø4
108.2 s	11.8 s	40 s
 Ø5 (R)	 Ø8	
108.2 s	51.8 s	

Appendix M

2033 Future Total Conditions Synchro Worksheets

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2033 Future Total - AM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	479	78	293	363	117	65	1245	61	104	1319	57
Future Volume (vph)	172	479	78	293	363	117	65	1245	61	104	1319	57
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98		0.95	0.99		0.95		1.00			1.00	
Frt			0.850			0.850		0.993			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1276	1696	3466	1338	1648	3420	0	1696	3405	0
Flt Permitted	0.471			0.185			0.052			0.053		
Satd. Flow (perm)	832	3500	1212	326	3466	1272	90	3420	0	95	3405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			74		4			4	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	27		28	28		27	34		39	39		34
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	8%	3%	3%	3%	6%	3%	10%	3%	4%	3%
Adj. Flow (vph)	191	532	87	326	403	130	72	1383	68	116	1466	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	532	87	326	403	130	72	1451	0	116	1529	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2033 Future Total - AM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	21.0	41.0	11.0	27.0	47.0	12.0	11.0	80.0		12.0	81.0	
Total Split (%)	13.1%	25.6%	6.9%	16.9%	29.4%	7.5%	6.9%	50.0%		7.5%	50.6%	
Maximum Green (s)	16.5	34.0	6.5	24.0	40.0	9.0	6.5	73.0		9.0	74.0	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		28			27			39			34	
Act Effect Green (s)	48.6	30.4	39.7	61.4	37.3	50.1	86.0	76.7		90.1	77.3	
Actuated g/C Ratio	0.30	0.19	0.25	0.38	0.23	0.31	0.54	0.48		0.56	0.48	
v/c Ratio	0.57	0.80	0.24	0.99	0.50	0.29	0.63	0.88		0.82	0.93	
Control Delay	42.3	71.3	11.8	85.7	55.3	18.3	64.5	19.5		70.9	49.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	42.3	71.3	11.8	85.7	55.3	18.3	64.5	19.5		70.9	49.9	
LOS	D	E	B	F	E	B	E	B		E	D	
Approach Delay		58.1			61.2			21.7			51.4	
Approach LOS		E			E			C			D	
Queue Length 50th (m)	41.1	83.6	2.0	75.9	57.7	12.1	9.9	206.4		21.3	246.2	
Queue Length 95th (m)	61.0	104.6	15.7	#137.9	74.7	28.8	m20.9	#172.1		#56.6	#299.0	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	347	743	362	330	866	454	114	1642		144	1646	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.55	0.72	0.24	0.99	0.47	0.29	0.63	0.88		0.81	0.93	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2033 Future Total - AM Peak Hour
3085 Hurontario Street

Intersection Signal Delay: 44.9

Intersection LOS: D

Intersection Capacity Utilization 100.3%

ICU Level of Service G

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: 1: Hurontario Street & Central Parkway

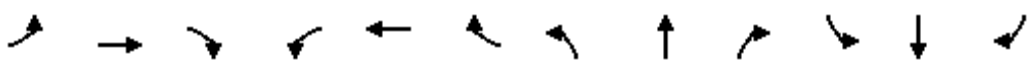
 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	80 s	21 s	47 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
11 s	81 s	27 s	41 s

Lanes, Volumes, Timings

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2033 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	172	74	97	100	63	65	1107	22	98	1055	209
Future Volume (vph)	247	172	74	97	100	63	65	1107	22	98	1055	209
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.94	0.97	0.99		0.98	1.00				0.81
Frt			0.850		0.942			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1696	1807	1313	1589	1639	0	1603	3356	0	1713	3433	1351
Flt Permitted	0.515			0.640			0.113			0.082		
Satd. Flow (perm)	908	1807	1240	1035	1639	0	187	3356	0	148	3433	1089
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		20			2				201
Link Speed (k/h)		50			50			50				50
Link Distance (m)		208.4			77.4			88.7			126.6	
Travel Time (s)		15.0			5.6			6.4			9.1	
Confl. Peds. (#/hr)	18		42	42		18	96		4	4		96
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	4%	5%	10%	7%	6%	9%	6%	5%	2%	4%	2%
Adj. Flow (vph)	268	187	80	105	109	68	71	1203	24	107	1147	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	187	80	105	177	0	71	1227	0	107	1147	227
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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VZ

CGH Transportation

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Lanes, Volumes, Timings

2033 Future Total - AM Peak Hour

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	15.0	71.0	71.0	56.0	56.0		12.0	76.0		13.0	77.0	15.0
Total Split (%)	9.4%	44.4%	44.4%	35.0%	35.0%		7.5%	47.5%		8.1%	48.1%	9.4%
Maximum Green (s)	12.0	63.0	63.0	48.0	48.0		9.0	68.5		10.0	69.5	12.0
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		42	42	18	18			4			96	
Act Effect Green (s)	58.0	53.0	53.0	38.0	38.0		92.0	68.5		94.0	69.5	86.0
Actuated g/C Ratio	0.36	0.33	0.33	0.24	0.24		0.58	0.43		0.59	0.43	0.54
v/c Ratio	0.69	0.31	0.17	0.43	0.44		0.26	0.85		0.38	0.77	0.33
Control Delay	48.1	39.2	6.6	54.1	46.8		15.8	24.5		40.8	21.5	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	2.8		0.0	8.8	0.4
Total Delay	48.1	39.2	6.6	54.1	46.8		15.8	27.3		40.8	30.2	2.0
LOS	D	D	A	D	D		B	C		D	C	A
Approach Delay		38.8			49.5			26.7			26.7	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	57.8	40.1	0.0	26.2	39.1		4.3	131.8		8.9	84.3	3.4
Queue Length 95th (m)	81.8	59.7	11.1	44.6	61.4		m6.1	m191.7		m26.4	108.2	m0.4
Internal Link Dist (m)		184.4			53.4			64.7			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	388	711	536	310	505		275	1437		282	1491	697
Starvation Cap Reductn	0	0	0	0	0		0	0		0	317	167
Spillback Cap Reductn	0	0	0	0	0		0	123		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.69	0.26	0.15	0.34	0.35		0.26	0.93		0.38	0.98	0.43

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 30.3

Intersection LOS: C

Intersection Capacity Utilization 104.5%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	77 s	15 s	56 s
 Ø5	 Ø6 (R)	 Ø8	
13 s	76 s	71 s	

Lanes, Volumes, Timings

3: Hurontario Street / Hurontario Street & Dundas Street

2033 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	1177	107	97	549	93	0	887	84	155	890	78
Future Volume (vph)	128	1177	107	97	549	93	0	887	84	155	890	78
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.97	0.98			0.99			0.99			0.99	
Frt		0.988			0.978			0.987			0.988	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1533	3229	0	1574	3059	0	0	3168	0	1633	3226	0
Flt Permitted	0.288			0.064						0.093		
Satd. Flow (perm)	452	3229	0	106	3059	0	0	3168	0	160	3226	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			14			7			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			344.7	
Travel Time (s)		16.6			17.6			11.9			24.8	
Confl. Peds. (#/hr)	71		136	136		71	58		110	110		58
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	14%	6%	25%	11%	11%	21%	9%	9%	16%	7%	8%	14%
Adj. Flow (vph)	131	1201	109	99	560	95	0	905	86	158	908	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	1310	0	99	655	0	0	991	0	158	988	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

2033 Future Total - AM Peak Hour

3: Hurontario Street / Hurontario Street & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA			NA		pm+pt	NA	
Protected Phases	3	8		7	4			6		5	2	
Permitted Phases	8			4						2		
Detector Phase	3	8		7	4			6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0			8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5		8.0	45.5			41.0		8.0	41.0	
Total Split (s)	15.0	74.0		10.0	69.0			61.0		15.0	76.0	
Total Split (%)	9.4%	46.3%		6.3%	43.1%			38.1%		9.4%	47.5%	
Maximum Green (s)	12.0	66.5		7.0	61.5			54.0		12.0	69.0	
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	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	
Total Lost Time (s)	3.0	7.5		3.0	7.5			7.0		3.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes			Yes		Yes		
Vehicle Extension (s)	2.0	3.0		2.0	3.0			3.0		2.0	3.0	
Recall Mode	None	None		None	None			C-Max		None	C-Max	
Walk Time (s)		16.0			16.0			14.0			14.0	
Flash Dont Walk (s)		22.0			22.0			20.0			20.0	
Pedestrian Calls (#/hr)		136			71			110			58	
Act Effect Green (s)	80.3	66.2		74.0	62.5			54.5		73.3	69.3	
Actuated g/C Ratio	0.50	0.41		0.46	0.39			0.34		0.46	0.43	
v/c Ratio	0.44	0.98		0.88	0.54			0.92		0.87	0.71	
Control Delay	26.3	65.3		97.1	56.5			63.7		92.3	76.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	26.3	65.3		97.1	56.5			63.7		92.3	76.3	
LOS	C	E		F	E			E		F	E	
Approach Delay		61.7			61.9			63.7			78.5	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	22.1	213.1		24.0	107.9			159.1		48.5	172.3	
Queue Length 95th (m)	35.1	#263.1		#53.3	128.4			#199.1		m#74.7	195.1	
Internal Link Dist (m)		206.3			220.0			141.0			320.7	
Turn Bay Length (m)	35.0			30.0						60.0		
Base Capacity (vph)	308	1346		113	1203			1082		183	1401	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.43	0.97		0.88	0.54			0.92		0.86	0.71	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 66.6

Intersection LOS: E

Intersection Capacity Utilization 97.9%

ICU Level of Service F

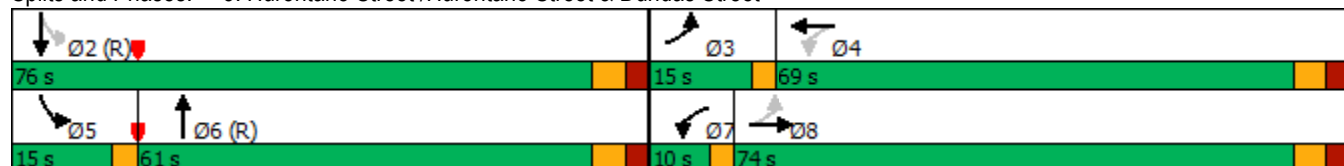
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2033 Future Total - AM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	307	36	7	169	13	62	18	18	70	14	21
Future Volume (vph)	18	307	36	7	169	13	62	18	18	70	14	21
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.989			0.975			0.973	
Flt Protected	0.950			0.950				0.970			0.968	
Satd. Flow (prot)	1713	1715	0	1533	1728	0	0	1666	0	0	1708	0
Flt Permitted	0.950			0.950				0.970			0.968	
Satd. Flow (perm)	1713	1715	0	1533	1728	0	0	1666	0	0	1708	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.0			182.9			222.8			87.4	
Travel Time (s)		5.8			13.2			16.0			6.3	
Confl. Peds. (#/hr)	21		41	41		21	13		10	10		13
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	8%	6%	14%	7%	15%	5%	2%	17%	2%	2%	10%
Adj. Flow (vph)	20	334	39	8	184	14	67	20	20	76	15	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	373	0	8	198	0	0	107	0	0	114	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.8%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	307	36	7	169	13	62	18	18	70	14	21
Future Vol, veh/h	18	307	36	7	169	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
Heavy Vehicles, %	2	8	6	14	7	15	5	2	17	2	2	10
Mvmt Flow	20	334	39	8	184	14	67	20	20	76	15	23
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15	10.9	10.1	10.1
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	63%	100%	0%	100%	0%	67%
Vol Thru, %	18%	0%	90%	0%	93%	13%
Vol Right, %	18%	0%	10%	0%	7%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	18	343	7	182	105
LT Vol	62	18	0	7	0	70
Through Vol	18	0	307	0	169	14
RT Vol	18	0	36	0	13	21
Lane Flow Rate	107	20	373	8	198	114
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.173	0.032	0.571	0.013	0.314	0.183
Departure Headway (Hd)	5.843	5.963	5.509	6.385	5.708	5.774
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	614	602	660	561	631	621
Service Time	3.884	3.685	3.209	4.114	3.437	3.815
HCM Lane V/C Ratio	0.174	0.033	0.565	0.014	0.314	0.184
HCM Control Delay	10.1	8.9	15.3	9.2	11	10.1
HCM Lane LOS	B	A	C	A	B	B
HCM 95th-tile Q	0.6	0.1	3.6	0	1.3	0.7

Lanes, Volumes, Timings

2033 Future Total - AM Peak Hour

5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1450	2	2	701	14	2	0	11	14	1	25
Future Volume (vph)	11	1450	2	2	701	14	2	0	11	14	1	25
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.884			0.915	
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1603	3306	0	1713	3196	0	0	1425	0	0	1572	0
Flt Permitted	0.950			0.950				0.993			0.983	
Satd. Flow (perm)	1603	3306	0	1713	3196	0	0	1425	0	0	1572	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			248.2			137.5			244.3	
Travel Time (s)		17.6			17.9			9.9			17.6	
Confl. Peds. (#/hr)	15		38	38		15	1		1	1		1
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	8%	2%	2%	11%	29%	2%	2%	18%	7%	2%	8%
Adj. Flow (vph)	12	1576	2	2	762	15	2	0	12	15	1	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1578	0	2	777	0	0	14	0	0	43	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	51.8%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1450	2	2	701	14	2	0	11	14	1	25
Future Vol, veh/h	11	1450	2	2	701	14	2	0	11	14	1	25
Conflicting Peds, #/hr	15	0	38	38	0	15	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	8	2	2	11	29	2	2	18	7	2	8
Mvmt Flow	12	1576	2	2	762	15	2	0	12	15	1	27
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	792	0	0	1616	0	0	2026	2435	828	1602	2429	405
Stage 1	-	-	-	-	-	-	1639	1639	-	789	789	-
Stage 2	-	-	-	-	-	-	387	796	-	813	1640	-
Critical Hdwy	4.28	-	-	4.14	-	-	7.54	6.54	7.26	7.64	6.54	7.06
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.64	5.54	-
Follow-up Hdwy	2.29	-	-	2.22	-	-	3.52	4.02	3.48	3.57	4.02	3.38
Pot Cap-1 Maneuver	780	-	-	399	-	-	34	31	283	67	32	579
Stage 1	-	-	-	-	-	-	105	157	-	339	400	-
Stage 2	-	-	-	-	-	-	608	397	-	328	157	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	769	-	-	385	-	-	30	29	273	62	30	570
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	29	-	62	30	-
Stage 1	-	-	-	-	-	-	100	149	-	329	392	-
Stage 2	-	-	-	-	-	-	574	389	-	308	149	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			38.3			45.1		
HCM LOS							E			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	122	769	-	-	385	-	-	132				
HCM Lane V/C Ratio	0.116	0.016	-	-	0.006	-	-	0.329				
HCM Control Delay (s)	38.3	9.8	-	-	14.4	-	-	45.1				
HCM Lane LOS	E	A	-	-	B	-	-	E				
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	1.3				

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2033 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	5	1	16	5	176	3	1313	20	164	1519	385
Future Volume (vph)	37	5	1	16	5	176	3	1313	20	164	1519	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.95	0.99		0.98	0.91			1.00				0.99
Frt		0.975			0.854			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1786	0	1500	1425	0	1750	3452	0	1684	3216	1566
Flt Permitted	0.410			0.754			0.097			0.093		
Satd. Flow (perm)	719	1786	0	1168	1425	0	179	3452	0	165	3216	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			191			1				151
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6				426.6
Travel Time (s)		7.0			7.6			9.1				30.7
Confl. Peds. (#/hr)	58		15	15		58			36	36		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	19%	2%	3%	2%	3%	5%	6%	11%	2%
Adj. Flow (vph)	40	5	1	17	5	191	3	1427	22	178	1651	418
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	6	0	17	196	0	3	1449	0	178	1651	418
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2033 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	38.0	38.0
Total Split (s)	9.5	55.5		46.0	46.0		9.5	84.4		20.1	95.0	95.0
Total Split (%)	5.9%	34.7%		28.8%	28.8%		5.9%	52.8%		12.6%	59.4%	59.4%
Maximum Green (s)	6.5	47.5		38.0	38.0		6.5	77.4		17.1	88.0	88.0
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		58		15	15			0			36	36
Act Effect Green (s)	40.8	35.8		28.3	28.3		101.2	92.2		113.2	107.6	107.6
Actuated g/C Ratio	0.26	0.22		0.18	0.18		0.63	0.58		0.71	0.67	0.67
v/c Ratio	0.18	0.01		0.08	0.48		0.02	0.73		0.71	0.76	0.38
Control Delay	41.6	37.7		50.5	10.8		7.3	17.7		29.2	23.1	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.0		0.0	0.1	0.0
Total Delay	41.6	37.7		50.5	10.8		7.3	18.6		29.2	23.2	6.4
LOS	D	D		D	B		A	B		C	C	A
Approach Delay		41.1			14.0			18.6			20.5	
Approach LOS		D			B			B			C	
Queue Length 50th (m)	9.6	1.2		4.6	1.3		0.2	55.3		16.1	238.1	25.1
Queue Length 95th (m)	18.0	5.0		11.2	22.5		m0.3	225.9		m28.7	m306.0	m70.4
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	225	530		277	484		178	1990		279	2162	1087
Starvation Cap Reductn	0	0		0	0		0	276		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	67	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.01		0.06	0.40		0.02	0.85		0.64	0.79	0.38

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Lanes, Volumes, Timings 6: Hurontario Street & John Street

2033 Future Total - AM Peak Hour
3085 Hurontario Street

Intersection Signal Delay: 19.7

Intersection LOS: B

Intersection Capacity Utilization 93.1%

ICU Level of Service F

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings
7: Site Access #1 & Kirwin Avenue

2033 Future Total - AM Peak Hour
3085 Hurontario Street

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	271	21	5	174	86	16
Future Volume (vph)	271	21	5	174	86	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.979	
Flt Protected				0.999	0.959	
Satd. Flow (prot)	1824	0	0	1840	1729	0
Flt Permitted				0.999	0.959	
Satd. Flow (perm)	1824	0	0	1840	1729	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	77.4			81.0	81.4	
Travel Time (s)	5.6			5.8	5.9	
Confl. Peds. (#/hr)		94	94			
Confl. Bikes (#/hr)		7				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	23	5	189	93	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	0	0	194	110	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	271	21	5	174	86	16
Future Vol, veh/h	271	21	5	174	86	16
Conflicting Peds, #/hr	0	94	94	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	295	23	5	189	93	17
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	412	0	600	401
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1147	-	464	649
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	835	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1047	-	421	592
Mov Cap-2 Maneuver	-	-	-	-	421	-
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	831	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		15.9	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	441	-	-	1047	-	
HCM Lane V/C Ratio	0.251	-	-	0.005	-	
HCM Control Delay (s)	15.9	-	-	8.5	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1	-	-	0	-	

Lanes, Volumes, Timings
8: Hurontario Street & Site Access #2

2033 Future Total - AM Peak Hour

3085 Hurontario Street

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	55	1124	26	0	1228
Future Volume (vph)	0	55	1124	26	0	1228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.865	0.997			
Flt Protected						
Satd. Flow (prot)	0	1593	3489	0	0	3500
Flt Permitted						
Satd. Flow (perm)	0	1593	3489	0	0	3500
Link Speed (k/h)	50		50			50
Link Distance (m)	84.6		344.7			88.7
Travel Time (s)	6.1		24.8			6.4
Confl. Peds. (#/hr)				163		
Confl. Bikes (#/hr)				10		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	60	1222	28	0	1335
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	60	1250	0	0	1335
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	3.0		3.0			3.0
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	42.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	55	1124	26	0	1228
Future Vol, veh/h	0	55	1124	26	0	1228
Conflicting Peds, #/hr	0	0	0	163	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	1222	28	0	1335
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	788	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	334	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	283	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	21.1	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	-	283			
HCM Lane V/C Ratio	-	-	0.211			
HCM Control Delay (s)	-	-	21.1			
HCM Lane LOS	-	-	C			
HCM 95th %tile Q(veh)	-	-	0.8			

Lanes, Volumes, Timings

10: Camilla Road/Jaguar Valley Drive & Dundas Street

2033 Future Total - AM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1356	51	32	576	79	20	42	43	241	53	17
Future Volume (vph)	12	1356	51	32	576	79	20	42	43	241	53	17
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		0.0	35.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00		0.98	0.99		0.99	0.99	
Frt		0.995			0.982			0.924			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1618	3411	0	1713	3278	0	1574	1656	0	1696	1743	0
Flt Permitted	0.340			0.091			0.950			0.695		
Satd. Flow (perm)	577	3411	0	164	3278	0	1548	1656	0	1230	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			16			29			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		248.2			145.1			138.7			167.9	
Travel Time (s)		17.9			10.4			10.0			12.1	
Confl. Peds. (#/hr)	4		4	4		4	11		6	6		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	4%	4%	2%	7%	3%	11%	2%	5%	3%	2%	6%
Adj. Flow (vph)	13	1507	57	36	640	88	22	47	48	268	59	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1564	0	36	728	0	22	95	0	268	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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VZ

CGH Transportation

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Lanes, Volumes, Timings

2033 Future Total - AM Peak Hour

10: Camilla Road/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6						4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	36.0		36.0	36.0	
Total Split (s)	97.8	97.8		97.8	97.8		10.2	62.2		52.0	52.0	
Total Split (%)	61.1%	61.1%		61.1%	61.1%		6.4%	38.9%		32.5%	32.5%	
Maximum Green (s)	90.8	90.8		90.8	90.8		7.2	55.2		45.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0			11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)	4	4		4	4			6		11	11	
Act Effect Green (s)	101.0	101.0		101.0	101.0		6.7	45.0		38.9	38.9	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.04	0.28		0.24	0.24	
v/c Ratio	0.04	0.73		0.35	0.35		0.34	0.20		0.90	0.18	
Control Delay	6.3	16.6		30.3	15.6		88.2	28.1		89.2	40.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.3	16.6		30.3	15.6		88.2	28.1		89.2	40.7	
LOS	A	B		C	B		F	C		F	D	
Approach Delay		16.5			16.3			39.4			78.3	
Approach LOS		B			B			D			E	
Queue Length 50th (m)	0.8	239.1		5.8	59.8		6.9	15.0		81.9	16.9	
Queue Length 95th (m)	m1.5	m274.9		18.5	78.2		17.0	28.4		#120.6	30.2	
Internal Link Dist (m)		224.2			121.1			114.7			143.9	
Turn Bay Length (m)	15.0			35.0			35.0			35.0		
Base Capacity (vph)	364	2153		103	2074		70	590		345	497	
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	0.04	0.73		0.35	0.35		0.31	0.16		0.78	0.16	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 25.0

Intersection LOS: C

Intersection Capacity Utilization 72.3%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Camilla Road/Jaguar Valley Drive & Dundas Street



Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2033 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	466	69	311	555	70	90	1222	85	106	1190	144
Future Volume (vph)	144	466	69	311	555	70	90	1222	85	106	1190	144
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	70.0		45.0	80.0		85.0	120.0		0.0	70.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	45.0			35.0			55.0			10.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.96	0.99		0.97		1.00			0.99	
Frt			0.850			0.850		0.990			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3500	1351	1713	3500	1351	1713	3450	0	1713	3411	0
Flt Permitted	0.286			0.212			0.058			0.069		
Satd. Flow (perm)	512	3500	1303	379	3500	1313	105	3450	0	124	3411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			71		6			11	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		149.8			234.0			465.7			185.2	
Travel Time (s)		10.8			16.8			27.9			11.1	
Confl. Peds. (#/hr)	12		17	17		12	53		31	31		53
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	153	496	73	331	590	74	96	1300	90	113	1266	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	496	73	331	590	74	96	1390	0	113	1419	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Hurontario Street & Central Parkway

2033 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8	5	7	4	1	5	2		1	6	
Permitted Phases	8		8	4		4	2			6		
Detector Phase	3	8	5	7	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	5.0	5.0	8.0	5.0	5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	41.0	9.5	8.0	41.0	8.0	9.5	40.0		8.0	40.0	
Total Split (s)	19.8	41.0	13.0	27.0	48.2	13.0	13.0	79.0		13.0	79.0	
Total Split (%)	12.4%	25.6%	8.1%	16.9%	30.1%	8.1%	8.1%	49.4%		8.1%	49.4%	
Maximum Green (s)	15.3	34.0	8.5	24.0	41.2	10.0	8.5	72.0		10.0	72.0	
Yellow Time (s)	3.5	4.0	3.5	3.0	4.0	3.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0	1.0	0.0	3.0	0.0	1.0	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	0.0	
Total Lost Time (s)	4.5	7.0	4.5	3.0	7.0	3.0	4.5	7.0		3.0	7.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		14.0			14.0			14.0			14.0	
Flash Dont Walk (s)		20.0			20.0			19.0			19.0	
Pedestrian Calls (#/hr)		17			12			31			53	
Act Effct Green (s)	46.4	29.8	40.6	60.8	38.3	51.3	87.9	77.1		89.4	76.4	
Actuated g/C Ratio	0.29	0.19	0.25	0.38	0.24	0.32	0.55	0.48		0.56	0.48	
v/c Ratio	0.60	0.76	0.19	0.96	0.70	0.16	0.69	0.83		0.72	0.87	
Control Delay	45.1	69.4	7.9	78.6	60.5	8.2	61.7	18.3		48.0	44.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.1	69.4	7.9	78.6	60.5	8.2	61.7	18.3		48.0	44.7	
LOS	D	E	A	E	E	A	E	B		D	D	
Approach Delay		58.0			62.6			21.1			44.9	
Approach LOS		E			E			C			D	
Queue Length 50th (m)	32.1	77.1	0.0	77.1	88.9	0.6	16.5	101.1		16.6	219.7	
Queue Length 95th (m)	49.5	97.2	11.0	#131.8	110.1	11.8	m25.1	154.0		#41.5	#255.0	
Internal Link Dist (m)		125.8			210.0			441.7			161.2	
Turn Bay Length (m)	70.0		45.0	80.0		85.0	120.0			70.0		
Base Capacity (vph)	267	743	393	344	901	479	143	1665		169	1634	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.57	0.67	0.19	0.96	0.65	0.15	0.67	0.83		0.67	0.87	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Lanes, Volumes, Timings

1: Hurontario Street & Central Parkway

2033 Future Total - PM Peak Hour
3085 Hurontario Street

Intersection Signal Delay: 43.2

Intersection LOS: D

Intersection Capacity Utilization 98.9%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hurontario Street & Central Parkway

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	79 s	19.8 s	48.2 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	79 s	27 s	41 s

Lanes, Volumes, Timings

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

2033 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	166	89	96	268	122	106	984	39	149	1264	126
Future Volume (vph)	57	166	89	96	268	122	106	984	39	149	1264	126
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	0.0		0.0	50.0		0.0	70.0		0.0	65.0		0.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	15.0			45.0			25.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.93	0.95	0.99			1.00		0.99		0.89
Frt			0.850		0.953			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1842	1325	1713	1738	0	1713	3375	0	1713	3500	1338
Flt Permitted	0.157			0.644			0.064			0.122		
Satd. Flow (perm)	281	1842	1228	1107	1738	0	115	3375	0	219	3500	1190
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97		15			3				100
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		208.4			79.7			87.8			126.6	
Travel Time (s)		15.0			5.7			6.3			9.1	
Confl. Peds. (#/hr)	16		60	60		16	49		24	24		49
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	5%	2%	2%	2%	3%
Adj. Flow (vph)	62	180	97	104	291	133	115	1070	42	162	1374	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	180	97	104	424	0	115	1112	0	162	1374	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

2033 Future Total - PM Peak Hour

2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8			4		1	6		5	2	3
Permitted Phases	8		8	4			6			2		2
Detector Phase	3	8	8	4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		7.0	8.0		5.0	8.0	5.0
Minimum Split (s)	9.5	56.0	56.0	56.0	56.0		11.5	51.5		9.5	51.5	9.5
Total Split (s)	9.8	65.8	65.8	56.0	56.0		13.2	78.0		16.2	81.0	9.8
Total Split (%)	6.1%	41.1%	41.1%	35.0%	35.0%		8.3%	48.8%		10.1%	50.6%	6.1%
Maximum Green (s)	6.8	57.8	57.8	48.0	48.0		10.2	70.5		13.2	73.5	6.8
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0		0.0	3.5		0.0	3.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0		3.0	7.5		3.0	7.5	3.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		2.0	3.0		2.0	3.0	2.0
Recall Mode	None	None	None	None	None		Max	C-Max		Max	C-Max	None
Walk Time (s)		15.0	15.0	15.0	15.0			14.0			14.0	
Flash Dont Walk (s)		33.0	33.0	33.0	33.0			30.0			30.0	
Pedestrian Calls (#/hr)		60	60	16	16			24			49	
Act Effect Green (s)	56.6	51.6	51.6	42.1	42.1		91.4	70.5		97.4	73.5	84.5
Actuated g/C Ratio	0.35	0.32	0.32	0.26	0.26		0.57	0.44		0.61	0.46	0.53
v/c Ratio	0.39	0.30	0.21	0.36	0.91		0.50	0.75		0.52	0.86	0.20
Control Delay	40.1	41.0	7.0	50.3	78.2		53.6	17.0		37.2	17.1	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	1.9		0.0	5.3	0.0
Total Delay	40.1	41.0	7.0	50.3	78.2		53.6	18.9		37.2	22.5	0.7
LOS	D	D	A	D	E		D	B		D	C	A
Approach Delay		31.1			72.7			22.1			22.1	
Approach LOS		C			E			C			C	
Queue Length 50th (m)	13.0	42.4	0.0	26.8	125.9		21.1	65.5		13.4	129.9	0.3
Queue Length 95th (m)	22.9	60.6	12.8	43.7	164.2		m21.6	m57.7		m37.8	121.2	m0.0
Internal Link Dist (m)		184.4			55.7			63.8			102.6	
Turn Bay Length (m)				50.0			70.0			65.0		
Base Capacity (vph)	160	665	505	332	531		229	1488		314	1607	683
Starvation Cap Reductn	0	0	0	0	0		0	0		0	184	0
Spillback Cap Reductn	0	0	0	0	0		0	225		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.39	0.27	0.19	0.31	0.80		0.50	0.88		0.52	0.97	0.20

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 30.0

Intersection LOS: C

Intersection Capacity Utilization 110.5%

ICU Level of Service H

Analysis Period (min) 15

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

Splits and Phases: 2: Hurontario Street & Hillcrest Avenue/Kirwin Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13.2 s	81 s	9.8 s	56 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
16.2 s	78 s	65.8 s	

Lanes, Volumes, Timings

3: Hurontario Street / Hurontario Street & Dundas Street

2033 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	795	175	168	1157	179	0	885	99	184	1164	117
Future Volume (vph)	117	795	175	168	1157	179	0	885	99	184	1164	117
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	35.0		25.0	30.0		0.0	45.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	25.0			15.0			10.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.94		0.96	0.98			0.97			0.99	
Frt		0.973			0.980			0.985			0.986	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1680	3039	0	1664	3207	0	0	3219	0	1648	3278	0
Flt Permitted	0.065			0.132						0.074		
Satd. Flow (perm)	115	3039	0	222	3207	0	0	3219	0	128	3278	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			13			8			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		230.3			244.0			165.0			345.6	
Travel Time (s)		16.6			17.6			11.9			24.9	
Confl. Peds. (#/hr)	127		237	237		127	85		266	266		85
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	8%	8%	5%	7%	4%	7%	6%	3%	6%	6%	7%
Adj. Flow (vph)	121	820	180	173	1193	185	0	912	102	190	1200	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	1000	0	173	1378	0	0	1014	0	190	1321	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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VZ

CGH Transportation

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Lanes, Volumes, Timings

2033 Future Total - PM Peak Hour

3: Hurontario Street / Hurontario Street & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA			NA		pm+pt	NA	
Protected Phases	3	8		7	4			6		5	2	
Permitted Phases	8			4						2		
Detector Phase	3	8		7	4			6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0			8.0		5.0	8.0	
Minimum Split (s)	8.0	45.5		8.0	45.5			41.0		8.0	41.0	
Total Split (s)	11.0	69.0		16.0	74.0			58.0		17.0	75.0	
Total Split (%)	6.9%	43.1%		10.0%	46.3%			36.3%		10.6%	46.9%	
Maximum Green (s)	8.0	61.5		13.0	66.5			51.0		14.0	68.0	
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0		3.0	4.0	
All-Red Time (s)	0.0	3.5		0.0	3.5			3.0		0.0	3.0	
Lost Time Adjust (s)	1.0	3.0		1.0	3.0			3.0		1.0	3.0	
Total Lost Time (s)	4.0	10.5		4.0	10.5			10.0		4.0	10.0	
Lead/Lag	Lead	Lag		Lead	Lag			Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes			Yes		Yes		
Vehicle Extension (s)	2.0	3.0		2.0	3.0			3.0		2.0	3.0	
Recall Mode	None	None		None	None			C-Max		None	C-Max	
Walk Time (s)		16.0			16.0			14.0			14.0	
Flash Dont Walk (s)		22.0			22.0			20.0			20.0	
Pedestrian Calls (#/hr)		237			127			266			85	
Act Effct Green (s)	72.7	59.2		80.6	63.5			48.0		71.0	65.0	
Actuated g/C Ratio	0.45	0.37		0.50	0.40			0.30		0.44	0.41	
v/c Ratio	1.01	0.88		0.81	1.08			1.04		1.06	0.99	
Control Delay	116.9	56.6		39.5	88.5			93.9		125.1	94.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	116.9	56.6		39.5	88.5			93.9		125.1	94.8	
LOS	F	E		D	F			F		F	F	
Approach Delay		63.1			83.0			93.9			98.6	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~23.8	155.1		35.5	~259.2			~182.4		~64.9	233.4	
Queue Length 95th (m)	#67.7	185.5		m37.5	#303.2			#225.2		m#77.2	#275.3	
Internal Link Dist (m)		206.3			220.0			141.0			321.6	
Turn Bay Length (m)	35.0			30.0						60.0		
Base Capacity (vph)	120	1135		220	1280			971		180	1336	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	1.01	0.88		0.79	1.08			1.04		1.06	0.99	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 85.4

Intersection LOS: F

Intersection Capacity Utilization 107.8%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

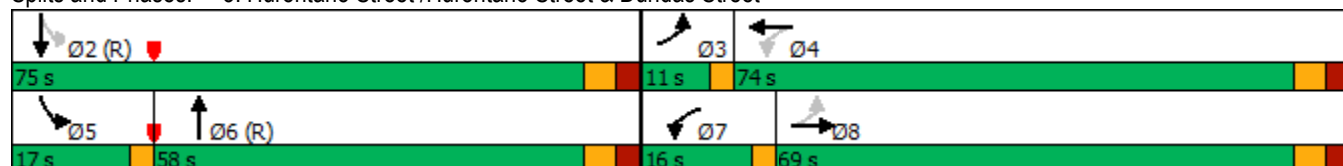
Queue shown is maximum after two cycles.

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 /Hurontario Street & Dundas Street



Lanes, Volumes, Timings
4: Jaguar Valley Drive & Kirwin Avenue

2033 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	280	72	16	370	22	104	26	21	26	17	46
Future Volume (vph)	84	280	72	16	370	22	104	26	21	26	17	46
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	20.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.992			0.981			0.930	
Flt Protected	0.950			0.950				0.967			0.986	
Satd. Flow (prot)	1713	1781	0	1648	1824	0	0	1724	0	0	1689	0
Flt Permitted	0.950			0.950				0.967			0.986	
Satd. Flow (perm)	1713	1781	0	1648	1824	0	0	1724	0	0	1689	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		78.6			185.6			222.8			87.4	
Travel Time (s)		5.7			13.4			16.0			6.3	
Confl. Peds. (#/hr)			29	29		9	8		4	4		8
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	6%	2%	5%	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	91	304	78	17	402	24	113	28	23	28	18	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	382	0	17	426	0	0	164	0	0	96	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 50.7%	ICU Level of Service A											
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	280	72	16	370	22	104	26	21	26	17	46
Future Vol, veh/h	84	280	72	16	370	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
Heavy Vehicles, %	2	2	3	6	2	5	4	2	2	2	2	2
Mvmt Flow	91	304	78	17	402	24	113	28	23	28	18	50
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	16.7	22.2	12.7	11.1
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	69%	100%	0%	100%	0%	29%
Vol Thru, %	17%	0%	80%	0%	94%	19%
Vol Right, %	14%	0%	20%	0%	6%	52%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	84	352	16	392	89
LT Vol	104	84	0	16	0	26
Through Vol	26	0	280	0	370	17
RT Vol	21	0	72	0	22	46
Lane Flow Rate	164	91	383	17	426	97
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.304	0.166	0.627	0.032	0.715	0.179
Departure Headway (Hd)	6.671	6.553	5.899	6.654	6.037	6.668
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	533	544	608	535	597	542
Service Time	4.771	4.331	3.677	4.431	3.813	4.668
HCM Lane V/C Ratio	0.308	0.167	0.63	0.032	0.714	0.179
HCM Control Delay	12.7	10.6	18.2	9.7	22.7	11.1
HCM Lane LOS	B	B	C	A	C	B
HCM 95th-tile Q	1.3	0.6	4.4	0.1	5.9	0.6

Lanes, Volumes, Timings

2033 Future Total - PM Peak Hour

5: 60 Dundas Plaza Access/Jaguar Valley Drive & Dundas Street

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	975	12	24	1488	37	6	6	21	12	6	39
Future Volume (vph)	46	975	12	24	1488	37	6	6	21	12	6	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.996			0.916			0.909	
Flt Protected	0.950			0.950				0.991			0.990	
Satd. Flow (prot)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Flt Permitted	0.950			0.950				0.991			0.990	
Satd. Flow (perm)	1750	3329	0	1638	3450	0	0	1553	0	0	1606	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		244.0			250.7			137.9			244.3	
Travel Time (s)		17.6			18.1			9.9			17.6	
Confl. Peds. (#/hr)	50		24	24		50	15		29	29		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	7%	8%	9%	3%	5%	2%	17%	10%	8%	2%	5%
Adj. Flow (vph)	50	1060	13	26	1617	40	7	7	23	13	7	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	1073	0	26	1657	0	0	37	0	0	62	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.9%											
Analysis Period (min)	15											
ICU Level of Service B												

Intersection

Int Delay, s/veh 48.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	975	12	24	1488	37	6	6	21	12	6	39
Future Vol, veh/h	46	975	12	24	1488	37	6	6	21	12	6	39
Conflicting Peds, #/hr	50	0	24	24	0	50	15	0	29	29	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	7	8	9	3	5	2	17	10	8	2	5
Mvmt Flow	50	1060	13	26	1617	40	7	7	23	13	7	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1707	0	0	1097	0	0	2070	2950	590	2402	2936	894
Stage 1	-	-	-	-	-	-	1191	1191	-	1739	1739	-
Stage 2	-	-	-	-	-	-	879	1759	-	663	1197	-
Critical Hdwy	4.14	-	-	4.28	-	-	7.54	6.84	7.1	7.66	6.54	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.84	-	6.66	5.54	-
Follow-up Hdwy	2.22	-	-	2.29	-	-	3.52	4.17	3.4	3.58	4.02	3.35
Pot Cap-1 Maneuver	368	-	-	593	-	-	31	11	431	16	15	278
Stage 1	-	-	-	-	-	-	199	231	-	85	140	-
Stage 2	-	-	-	-	-	-	309	117	-	403	257	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	351	-	-	580	-	-	12	8	410	~ 4	11	261
Mov Cap-2 Maneuver	-	-	-	-	-	-	12	8	-	~ 4	11	-
Stage 1	-	-	-	-	-	-	167	194	-	70	127	-
Stage 2	-	-	-	-	-	-	231	106	-	307	216	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.2	\$ 567.1	\$ 1920
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	25	351	-	-	580	-	-	15
HCM Lane V/C Ratio	1.435	0.142	-	-	0.045	-	-	4.13
HCM Control Delay (s)	\$ 567.1	17	-	-	11.5	-	-	\$ 1920
HCM Lane LOS	F	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	4.4	0.5	-	-	0.1	-	-	8.6

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2033 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	5	3	23	5	322	1	1219	39	228	1360	19
Future Volume (vph)	104	5	3	23	5	322	1	1219	39	228	1360	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	15.0		0.0	35.0		40.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	15.0			15.0			15.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.96		0.90	0.94			0.99				0.99
Frt		0.944			0.852			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	1664	0	1750	1473	0	1750	3464	0	1750	3305	1566
Flt Permitted	0.214			0.752			0.117			0.057		
Satd. Flow (perm)	387	1664	0	1245	1473	0	216	3464	0	105	3305	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			260			2				75
Link Speed (k/h)		50			50			50				50
Link Distance (m)		97.7			105.4			126.6				426.6
Travel Time (s)		7.0			7.6			9.1				30.7
Confl. Peds. (#/hr)	37		81	81		37			56	56		
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	8%	2%
Adj. Flow (vph)	113	5	3	25	5	350	1	1325	42	248	1478	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	8	0	25	355	0	1	1367	0	248	1478	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
6: Hurontario Street & John Street

2033 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	8.0		5.0	8.0	8.0
Minimum Split (s)	9.5	46.0		46.0	46.0		9.5	38.0		9.5	43.0	43.0
Total Split (s)	10.5	56.5		46.0	46.0		9.5	76.9		26.6	94.0	94.0
Total Split (%)	6.6%	35.3%		28.8%	28.8%		5.9%	48.1%		16.6%	58.8%	58.8%
Maximum Green (s)	7.5	48.5		38.0	38.0		6.5	69.9		23.6	87.0	87.0
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	4.0		4.0	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		8.0	8.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	3.0		3.0	3.0		2.0	3.0		2.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		12.0		12.0	12.0			10.0			10.0	10.0
Flash Dont Walk (s)		26.0		26.0	26.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		37		81	81			0			56	56
Act Effect Green (s)	53.5	48.5		38.0	38.0		81.8	72.8		100.5	94.9	94.9
Actuated g/C Ratio	0.33	0.30		0.24	0.24		0.51	0.46		0.63	0.59	0.59
v/c Ratio	0.59	0.02		0.08	0.65		0.01	0.87		0.89	0.75	0.02
Control Delay	52.0	31.3		48.6	20.7		5.0	21.7		57.1	23.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.4		0.0	0.3	0.0
Total Delay	52.0	31.3		48.6	20.7		5.0	22.2		57.1	23.4	0.2
LOS	D	C		D	C		A	C		E	C	A
Approach Delay		50.6			22.5			22.1			27.9	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	25.6	1.1		6.3	26.3		0.0	227.5		52.2	214.5	0.0
Queue Length 95th (m)	41.5	5.4		14.9	63.2		m0.1	244.7		m68.0	m254.4	m0.0
Internal Link Dist (m)		73.7			81.4			102.6			402.6	
Turn Bay Length (m)	15.0			20.0			15.0			35.0		40.0
Base Capacity (vph)	193	506		295	548		174	1576		308	1960	945
Starvation Cap Reductn	0	0		0	0		0	32		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	110	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.59	0.02		0.08	0.65		0.01	0.89		0.81	0.80	0.02

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 107 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Lanes, Volumes, Timings
 6: Hurontario Street & John Street

2033 Future Total - PM Peak Hour

3085 Hurontario Street

Intersection Signal Delay: 25.9

Intersection LOS: C

Intersection Capacity Utilization 106.9%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 6: Hurontario Street & John Street



Lanes, Volumes, Timings
7: Site Access #1 & Kirwin Avenue

2033 Future Total - PM Peak Hour
3085 Hurontario Street

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	289	65	16	426	60	11
Future Volume (vph)	289	65	16	426	60	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.975				0.979	
Flt Protected				0.998	0.960	
Satd. Flow (prot)	1796	0	0	1838	1731	0
Flt Permitted				0.998	0.960	
Satd. Flow (perm)	1796	0	0	1838	1731	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			78.6	86.3	
Travel Time (s)	5.7			5.7	6.2	
Confl. Peds. (#/hr)		114	114			
Confl. Bikes (#/hr)		8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	314	71	17	463	65	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	385	0	0	480	77	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	289	65	16	426	60	11
Future Vol, veh/h	289	65	16	426	60	11
Conflicting Peds, #/hr	0	114	114	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	314	71	17	463	65	12

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	499
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1065
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	952
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	23.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	270	-	-	952	-
HCM Lane V/C Ratio	0.286	-	-	0.018	-
HCM Control Delay (s)	23.6	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-

Lanes, Volumes, Timings
8: Hurontario Street & Site Access #2

2033 Future Total - PM Peak Hour
3085 Hurontario Street

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	38	1066	81	0	1428
Future Volume (vph)	0	38	1066	81	0	1428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.865	0.989			
Flt Protected						
Satd. Flow (prot)	0	1593	3461	0	0	3500
Flt Permitted						
Satd. Flow (perm)	0	1593	3461	0	0	3500
Link Speed (k/h)	50		50			50
Link Distance (m)	88.8		345.6			87.8
Travel Time (s)	6.4		24.9			6.3
Confl. Peds. (#/hr)				284		
Confl. Bikes (#/hr)				11		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	41	1159	88	0	1552
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	41	1247	0	0	1552
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	3.0		3.0			3.0
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	42.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕			↕↕
Traffic Vol, veh/h	0	38	1066	81	0	1428
Future Vol, veh/h	0	38	1066	81	0	1428
Conflicting Peds, #/hr	0	0	0	284	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	41	1159	88	0	1552
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	908	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	278	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	204	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	27.1	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	204		-		
HCM Lane V/C Ratio	-	0.202		-		
HCM Control Delay (s)	-	27.1		-		
HCM Lane LOS	-	D		-		
HCM 95th %tile Q(veh)	-	0.7		-		

Lanes, Volumes, Timings

10: Camilla Road/Jaguar Valley Drive & Dundas Street

2033 Future Total - PM Peak Hour

3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	893	41	89	1431	348	53	116	51	192	96	49
Future Volume (vph)	24	893	41	89	1431	348	53	116	51	192	96	49
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Storage Length (m)	15.0		30.0	35.0		65.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			5.0			55.0			60.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	0.98		0.99	0.99		0.98	0.99	
Frt		0.993			0.971			0.954			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3436	0	1713	3335	0	1713	1737	0	1713	1727	0
Flt Permitted	0.039			0.232			0.950			0.642		
Satd. Flow (perm)	70	3436	0	416	3335	0	1688	1737	0	1138	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			36			14			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		250.7			167.6			137.0			176.2	
Travel Time (s)		18.1			12.1			9.9			12.7	
Confl. Peds. (#/hr)	30		11	11		30	11		13	13		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	26	981	45	98	1573	382	58	127	56	211	105	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1026	0	98	1955	0	58	183	0	211	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
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	1.04	1.01	1.22
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
10: Camilla Road/Jaguar Valley Drive & Dundas Street

2033 Future Total - PM Peak Hour
3085 Hurontario Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6						4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0		39.0	39.0		9.5	36.0		36.0	36.0	
Total Split (s)	108.0	108.0		108.0	108.0		11.0	52.0		41.0	41.0	
Total Split (%)	67.5%	67.5%		67.5%	67.5%		6.9%	32.5%		25.6%	25.6%	
Maximum Green (s)	101.0	101.0		101.0	101.0		8.0	45.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	7.0		7.0	7.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0			11.0		11.0	11.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)	11	11		30	30			13		11	11	
Act Effct Green (s)	103.2	103.2		103.2	103.2		7.8	42.8		32.0	32.0	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.05	0.27		0.20	0.20	
v/c Ratio	0.58	0.46		0.37	0.90		0.70	0.39		0.93	0.45	
Control Delay	47.1	9.2		18.7	31.5		113.5	46.1		105.6	54.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.1	9.2		18.7	31.5		113.5	46.1		105.6	54.4	
LOS	D	A		B	C		F	D		F	D	
Approach Delay		10.1			30.9			62.3			83.6	
Approach LOS		B			C			E			F	
Queue Length 50th (m)	6.6	106.0		14.4	272.5		18.5	43.3		65.6	40.0	
Queue Length 95th (m)	m7.7	m98.5		28.6	315.3		#41.0	66.4		#112.7	62.9	
Internal Link Dist (m)		226.7			143.6			113.0			152.2	
Turn Bay Length (m)	15.0			35.0			35.0			35.0		
Base Capacity (vph)	45	2217		268	2163		85	498		241	378	
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	0.58	0.46		0.37	0.90		0.68	0.37		0.88	0.42	

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 38 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93

Intersection Signal Delay: 32.3

Intersection LOS: C

Intersection Capacity Utilization 106.8%

ICU Level of Service G

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: 10: Camilla Road/Jaguar Valley Drive & Dundas Street

 Ø2 (R)	 Ø3	 Ø4
108 s	11 s	41 s
 Ø5 (R)	 Ø8	
108 s	52 s	