Capoak Inc. and Redoak G & A Inc. Proposed Redoak/Capoak Residential Development

Traffic Impact Study

GHD | 6705 Millcreek Drive Mississauga Ontario L5N 5M4 Canada

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Executive Summary

GHD was retained to prepare a Traffic Impact Study (TIS) for a proposed residential subdivision development located northeast quadrant of the intersection of Dundas Street East and Eighth Line Road, in the Town of Oakville. This report determines the site related traffic and the subsequent traffic-related impacts on the adjacent road network during the weekday a.m. and p.m. peak hours from the proposed development. These impacts are based on projected future background traffic and road network conditions derived for a 2022 and 2027 planning horizon years.

Proposed Site Characteristics

The subject development proposal is within the North Oakville East of Sixteen Mile Creek Secondary Plan. The proposed development consists of 116 single family detached units and 459 townhouse units, with up to an additional 35 part or future residential units. It is estimated, based on current concept plans, that there will be approximately 578 condominium apartment and back-to-back townhouse units within the Dundas Street Urban Core blocks.

New Site Traffic

As requested by the Region, a sensitivity analysis was conducted for comparing a transit modal split 10% representing 2021-2031 conditions. With a transit modal split of 10%, it is estimated that the proposed development will generate approximately an additional 471 new two-way vehicle trips during the a.m. peak hour consisting of 115 inbound and 356 outbound trips. During the p.m. peak hour it is expected to generate 584 new two-way vehicle trips consisting of 363 inbound and 221 outbound trips.

Under future 2022 and 2027 conditions, the incremental impact of the site generated traffic is expected to be nominal, with no recommended geometric improvements to the study area intersections in response to the subject development. While some intersections and specific movements are expected to operate with reduced capacity and some operational concerns, these are a direct result of background corridor growth and background development traffic and any recommended improvements are in response to the background traffic demands.

The intersection of Eighth Line and Dundas Street East is expected to operate generally well under all future conditions with all movements operating at v/c ratio below 1.0 and the three site access intersections are all expected to operate very well under future conditions with no significant issues.

The intersection of Prince Michael Drive at Dundas Street East is expected to be nearing capacity under 2022 future background conditions as a result of general corridor growth and build-out of nearby background developments, with similar operating characteristics continuing into the 2027 future total conditions with the addition of site generated traffic. It is expected that upon build-out of the subject development and the surrounding future developments including the planned extension of the William Halton Parkway to Ninth Line, the Dundas Street East corridor traffic flow will improve sufficiently that all intersection will operate without capacity issues.

We trust that this satisfies your requirements, but do not hesitate to contact the undersigned if you have any questions.

GHD

William Maria, P. Eng.
Senior Project Manager

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1. Introduction

1.1 Retainer and Objective

GHD Ltd. was retained to prepare a Traffic Impact Study (TIS) for a proposed residential subdivision development located northeast quadrant of the intersection of Dundas Street East and Eighth Line Road, in the Town of Oakville.

This report is a resubmission based on updated site plan dated March 2020.

The site location within the local transportation network is shown in **Figure 1**.

The objective of this study is to determine the traffic volumes anticipated to be generated by the proposed development during the weekday a.m. and p.m. peak hours, to assess the impact of this traffic on the adjacent road network, and if needed, to recommend improvements to accommodate the forecasted traffic. Traffic for the 2027 horizon year was analysed assuming a 5 year horizon subsequent to the anticipated build-out in 2022.

Figure 1 Site Location

1.2 Study Team

The GHD team involved in the preparation of the study are:

- William Maria, P. Eng., Senior Project Manager
- Ameer Al Rijjal, Transportation Planner

2. Site Characteristics

2.1 Study Area

The study area includes the following intersections:

- Dundas Street East at Eighth Line;
- Dundas Street East at Prince Michael Drive;
- Eighth Line at the proposed Street A (internal east-west collector road);
- Future Prince Michael Drive extension at the proposed Street A (internal east-west collector road); and
- Dundas Street East at the proposed Dundas Street access Street B.

2.2 Development Plan

Figure 2 presents the Development Plan which consists of 116 single family detached units and 459 townhouse units, with up to an additional 35 part or future residential units. It is estimated, based on current concept plans, that there will be approximately an additional 578 condominium apartment and back-to-back townhouse units within the Dundas Street Urban Core blocks.

Access is proposed to Dundas Street via a right-in/out driveway, and through adjacent draft plans via the future extension of Prince Michael Drive north of Dundas Street to the east and a connection from Street A to Eighth Line to the west.

For the purpose of the capacity analysis and as requested by the Region, GHD has included the internal minor collector road Street 'A' in the analysis, and more specifically its unsignalized intersections with Eighth Line and Prince Michael Drive. Both future intersections have been modelled as two-way stop controlled.

A review of the Development Plan found no significant road user safety concerns pertaining to horizontal curves in road alignment and/or sightlines at internal site intersections were not identified, and it is expected that the proposed road network configuration will provide an acceptable level of road user safety.

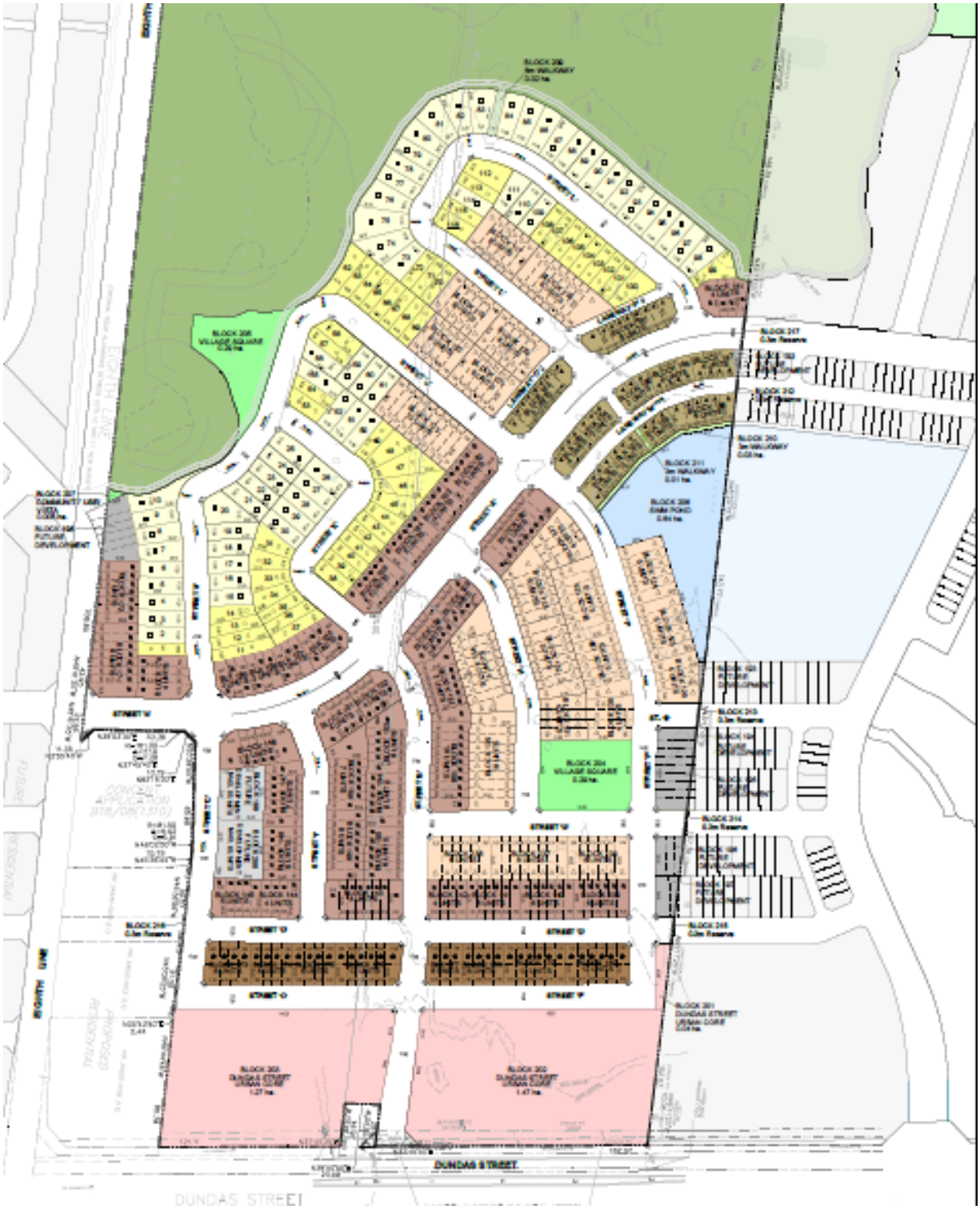


Figure 2 Proposed Development Plan

3. Existing Conditions

3.1 Existing Road Network

The following describes the existing road infrastructure within the study area.

Dundas Street East is an east-west urban arterial road under the jurisdiction of Halton Region. It currently has a six lane urban cross-section with a posted speed limit of 60 km/h through the study area. Dundas Street East has a signalized t-intersection with Prince Michael Drive, consisting of auxiliary right and left-turn lanes in the eastbound and westbound directions, respectively, and with the future extension of Prince Michael Drive northwards the intersection will become a four-legged intersection with the addition of auxiliary left and right-turn lanes in the eastbound and westbound directions, respectively. It also has a signalized four-legged intersection with Eighth Line, consisting of auxiliary left and right-turn lanes in both directions.

Eighth Line south of Dundas Street has a four lane urban cross-section with a posted speed limit of 50 km/h. North of Dundas Street, Eighth Line is a two lane road with a posted speed limit of 50 km/h. The intersection of Eighth Line and Dundas Street is a four leg signalized intersection with auxiliary left turn lanes on the north and south approaches.

Prince Michael Drive is a north-south urban collector road under the jurisdiction of the Town of Oakville. It currently has a two lane urban cross-section with a posted speed limit of 50 km/h through the study area. Prince Michael has a signalized t-intersection with Dundas Street East, consisting of an auxiliary left-turn lane in the northbound direction. With the future extension of Prince Michael Drive northwards into the DunOak Draft Plan, the intersection will become a four-leg intersection including an auxiliary left-turn lane in the southbound direction.

3.2 Existing Traffic

The area north of Dundas Street East is currently being developed as part of the North Oakville East Secondary Plan. As such the existing traffic volumes along Dundas Street East are constantly changing as development proceeds and new intersections and/or roads are built. Sections of Dundas Street East have also been under construction for the past number of years making existing traffic patterns and volumes inconsistent and not indicative of normal operations.

There have been several traffic counts undertaken by the Region at several intersections along Dundas Street East which show that corridor volumes have changed little over the years and continue to be at, or near, capacity at key intersections such as at Trafalgar Road.

The analysis in this report therefore focuses on the operation of the study intersections at the 2022 and 2027 horizon years which includes planned road improvements along Dundas Street East.

3.3 Existing Transit Routes

The existing transit route servicing the vicinity of the site is Oakville Transit Route 24 running east-west on Dundas Street East, as shown in **Figure 3**. Far-side transit stops are available for both directions at Eighth Line and at Prince Michael Drive. This route provides connections to the South Common Centre, Uptown Core, Oakville GO and Sheridan College.

Figure 3 Oakville Transit Map

3.4 Existing Pedestrian and Bicycle Facilities

There is currently a multi-use path on the south side of Dundas Street East. Eighth Line and Prince Michael Drive, south of Dundas Street East have sidewalks and on-street bike lanes on both sides of the road. Eighth Line, north of Dundas Street East, has a signed bike route as per the Town of Oakville Active Transportation Plan.

4. Future Background Conditions

4.1 Study Horizon Year

A planning horizon for build-out in 2022 and 2027 was selected to correspond with a 5 year horizon from the anticipated build-out of the development in 2022.

4.2 Planned Study Area Network

An extension of Prince Michael Drive north of Dundas Street East into the DunOak Draft Plan is planned to accommodate future development, including the subject site. The extension is expected to be a north-south minor collector road under the jurisdiction of the Town of Oakville, with a two lane urban cross-section and a posted speed limit of 50 km/h. The intersection of Prince Michael

Drive at Dundas Street East will become a four-leg intersection including an auxiliary left-turn lane in the southbound direction.

Eighth Line, north of Dundas Street East, will have a signed bike route as per the Town of Oakville Active Transportation Master Plan.

4.3 Future Background Developments

The following traffic impact studies were reviewed and used to forecast the 2022 corridor traffic and future 2022 and 2027 background development traffic at the study area intersections:

- TIS completed by URS Canada Inc. in November 2013 for the proposed subdivision development on the north side of Dundas Street east between Postridge Drive and Eight Line; and
- TIS completed by Read, Vorhees & Associates in March 2016 for the proposed Joshua's Creek Lands subdivision development located on the north side of Dundas Street East from the eastern limit of the subject Redoak/Capoak development to Ninth Line.
- TIS completed by Paradigm, Transportation Solutions Limited in November 2019 for the proposed residential development located at 1005 Dundas Street East and 3033 Eighth Line in the Town of Oakville.

The projected 2022 future traffic volumes at the study intersections extracted from these traffic studies are included in the appendix.

4.4 Future Traffic Growth

The Halton Region Transportation Master Plan was updated to provide traffic forecasts for 2031 along Dundas Street. The projected traffic volumes include full build-out of the North Oakville East and West Secondary Plan Areas. Projected traffic volumes show that the 2031 p.m. peak hour volumes will be less than the current volumes in each of the peak directions.

As a result, corridor growth on Dundas Street East cannot continue to occur as development traffic will displace long range trips to other roads such as the New North Oakville Transportation Corridor (NOTC) and the future widening of Upper Middle Road. As advised by the Region, a 1.5% annual growth rate was adopted for Dundas Street East during both study peak hours. This rate was applied to the through movements only at each of the regional jurisdiction intersections to account for general corridor growth.

A conservative 2.0% annual growth rate was adopted and applied to all movements all Town jurisdiction corridors. This rate was applied to the through/turning movements at each of the town's jurisdiction intersections to account for general corridor growth.

The aforementioned corridor growth percentages were applied to the 2022 traffic volumes for five year to estimate the background traffic growth to the 2027 horizon year.

4.5 2022 Future Background Traffic Volumes

Future background traffic volumes were derived with the forecasted corridor growth volumes along with added background development traffic volumes within the vicinity of the site. The background traffic volumes at the 2022 build-out year and the 2027 planning horizon during the weekday a.m. and p.m. peak hours, are provided in **Figure 4** and **Figure 5,** respectively.

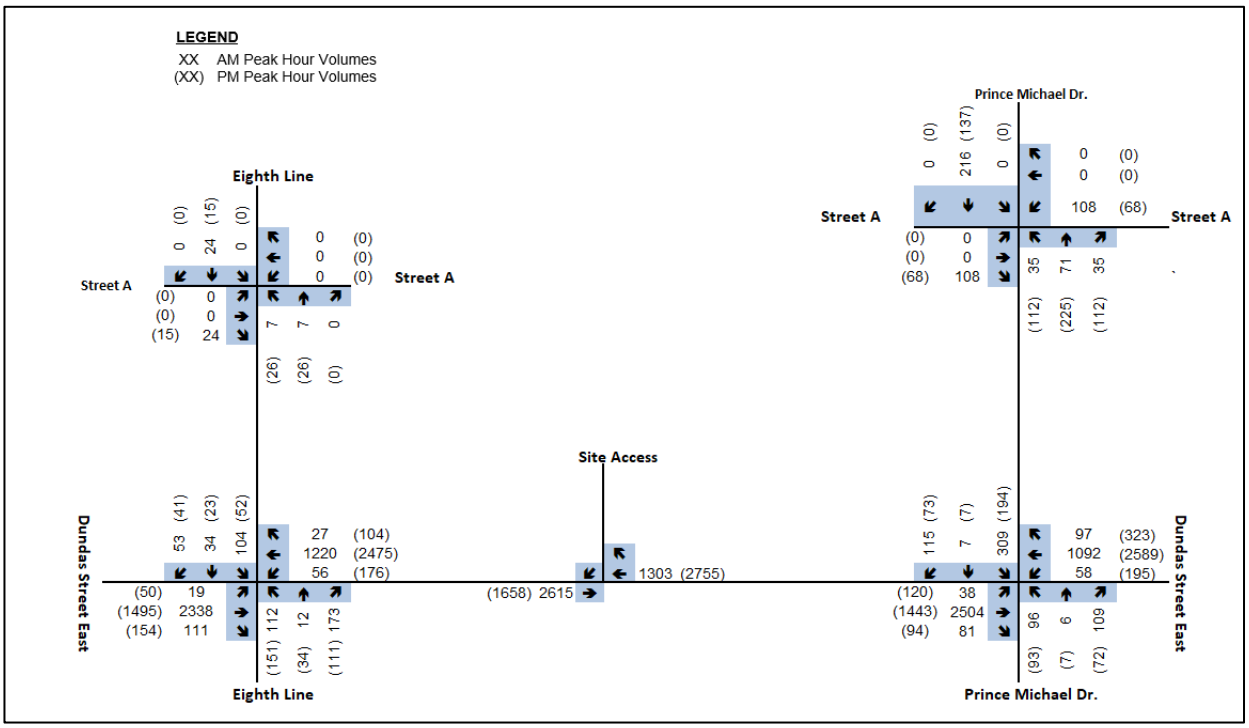


Figure 4 2022 Future Background Traffic Volumes

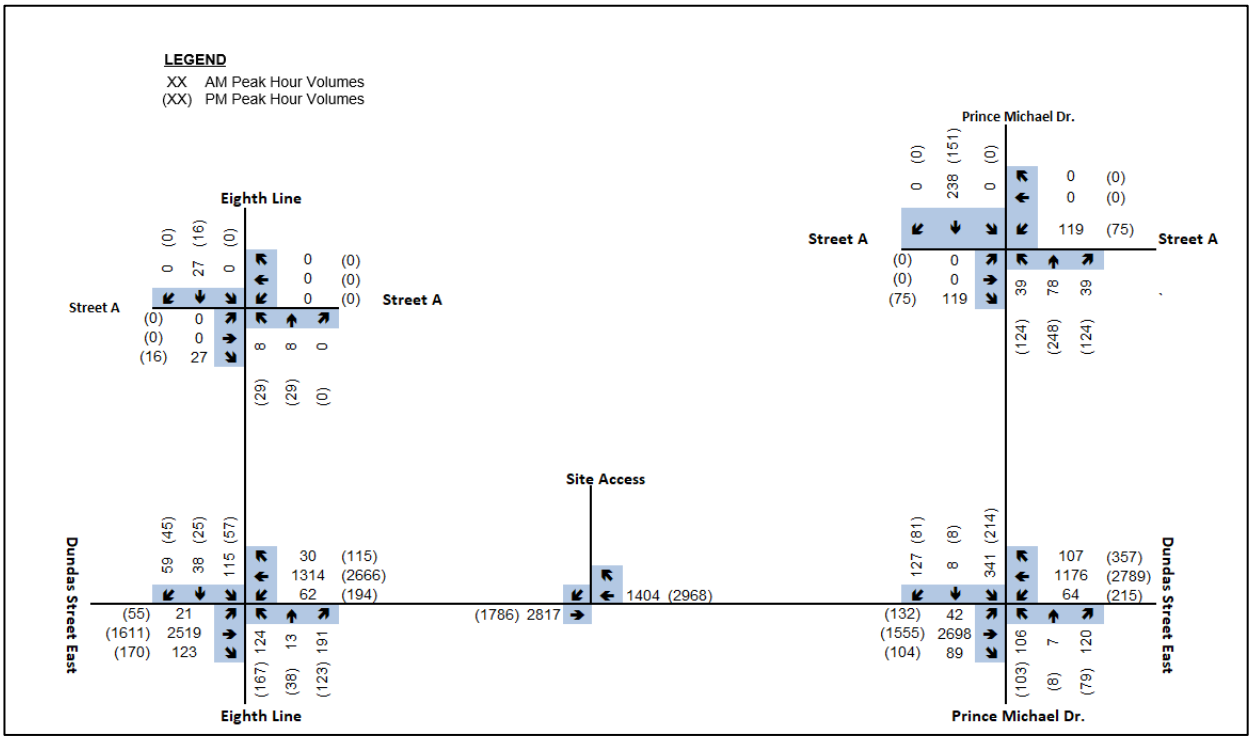


Figure 5 2027 Future Background Traffic Volumes

5. Proposed Development

5.1 Site Trip Generation

The proposed development consists of 116 single family detached units and 459 townhouse units, with up to an additional 35 part or future residential units. It is estimated, based on current concept plans, that there will be approximately an additional 578 condominium apartment and back-to-back townhouse units within the Dundas Street Urban Core blocks.

Utilizing the Institute of Transportation Engineer's (ITE) Trip Generation Manual 10th Edition, trip generation estimates were calculated for the proposed buildings based on ITE Land Use Codes (LUC) for Single-Family Detached Housing (#210) Multifamily Housing (Low-Rise) (#220) and Multifamily Housing (Mid-Rise) (#221). **Table 2** summarizes the trip generation calculations. A comparison of the fitted curve equations and average rates for each individual Land Use Code was completed, therefore whichever calculation resulted in a greater trip generation was applied as a conservative measure.

As requested by the Region, a transit modal split of 10% was utilized to reflect Halton's Transportation Master Plan assumption for the 2022 and 2027 traffic conditions.

The estimated total site trips including the 10% transit modal split is summarized in **Table 1**.

Table 1 Site Trip Generation

Land Use Code	Units/GFA ft^2	Parameters	Peak Hour Trip Generation					
			Weekday a.m.			Weekday p.m.		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing (210)	116 units	Trip Rate	0.190	0.560	0.750	0.638	0.371	1.009
		Trip Ratio	25%	75%	-	63%	37%	-
		Total Trips	22	65	87	74	43	117
		Transit Reduction	2	7	9	8	4	12
		Gross Trips	20	58	78	66	39	105
Multifamily Housing Low-Rise (220)	527 units	Trip Rate	0.104	0.355	0.459	0.353	0.207	0.560
		Trip Ratio	23%	77%	-	63%	37%	-
		Total Trips	55	187	242	186	109	295
		Transit Reduction	6	18	24	19	11	30
		Gross Trips	49	169	218	167	98	265
Multifamily Housing Mid-Rise (221)	542 units	Trip Rate	0.094	0.266	0.360	0.268	0.171	0.439
		Trip Ratio	26%	74%	-	61%	39%	-
		Total Trips	51	144	195	145	93	238
		Transit Reduction	5	15	20	15	9	24

Land Use Code	Units/GFA ft²	Parameters	Peak Hour Trip Generation					
			Weekday a.m.			Weekday p.m.		
			In	Out	Total	In	Out	Total
		Gross Trips	46	129	175	130	84	214
Total New Primary Trips			**115**	**356**	**471**	**363**	**221**	**584**

Based on these assumptions and the proposed land uses, it is estimated that the proposed development will generate approximately 471 new two-way vehicle trips during the a.m. peak hour consisting of 115 inbound and 356 outbound trips. During the p.m. peak hour it is expected to generate 584 new two-way vehicle trips consisting of 363 inbound and 221 outbound trips.

5.2 Site Distribution and Assignment

Trips generated by the proposed development were distributed to the roadway system based on the Transportation Tomorrow Survey (TTS), which is consistent with the directional distribution adopted in the TIS completed by URS Canada Inc. in November 2013 for the proposed subdivision development on the north side of Dundas Street east between Postridge Drive and Eight Line. The directional trip distribution is summarized in **Table 2**.

The Preliminary Development Plan illustrates 1 potential access points to the site from Eighth Line, and 4 potential access points to the site from Prince Michael Drive. However as a conservative measure, GHD has assigned 100% of site trips to either of the Street 'A' accesses on Eighth Line and Prince Michael Drive, or the right-in/right-out access on Dundas Street East. The results of the intersection capacity analysis will therefore represent an overly conservative, worst-case scenario of future 2022 and 2027 intersection operating conditions.

Table 2 Site Trip Distribution

Trip Orientation	Trip Distribution
North	25%
South	10%
East	45%
West	20%
Total	**100%**

5.3 Site Trips Volumes

The estimated site trips generated by the proposed development assigned to the adjacent road network for the weekday a.m. and p.m. peak hours are shown below in **Figure 6**.

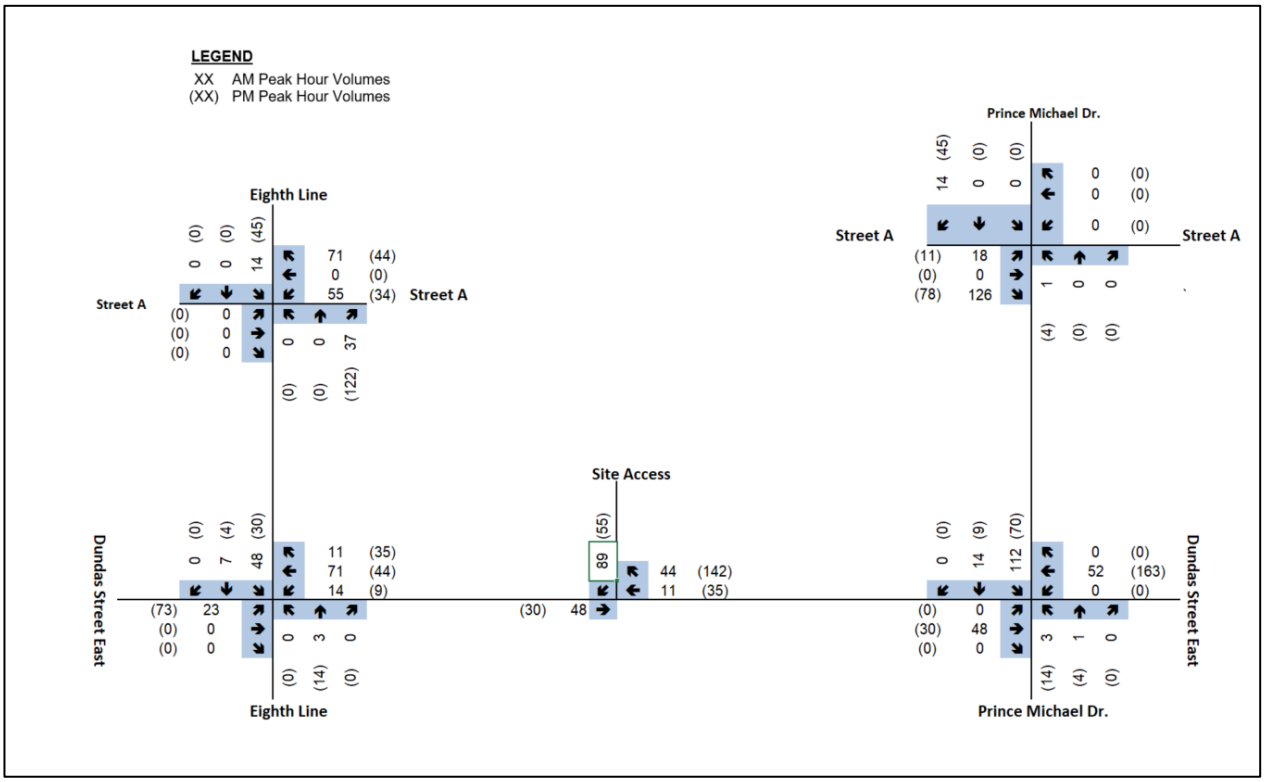


Figure 6 Site Trip Assignment

6. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2022 and 2027 planning horizons was derived by combining the future background traffic volumes with the corresponding estimates of site trips generated by the proposed development. The 2022 and 2027 future total traffic volumes at the study area intersections are summarized in **Figure 7** and **Figure 8**, respectively.

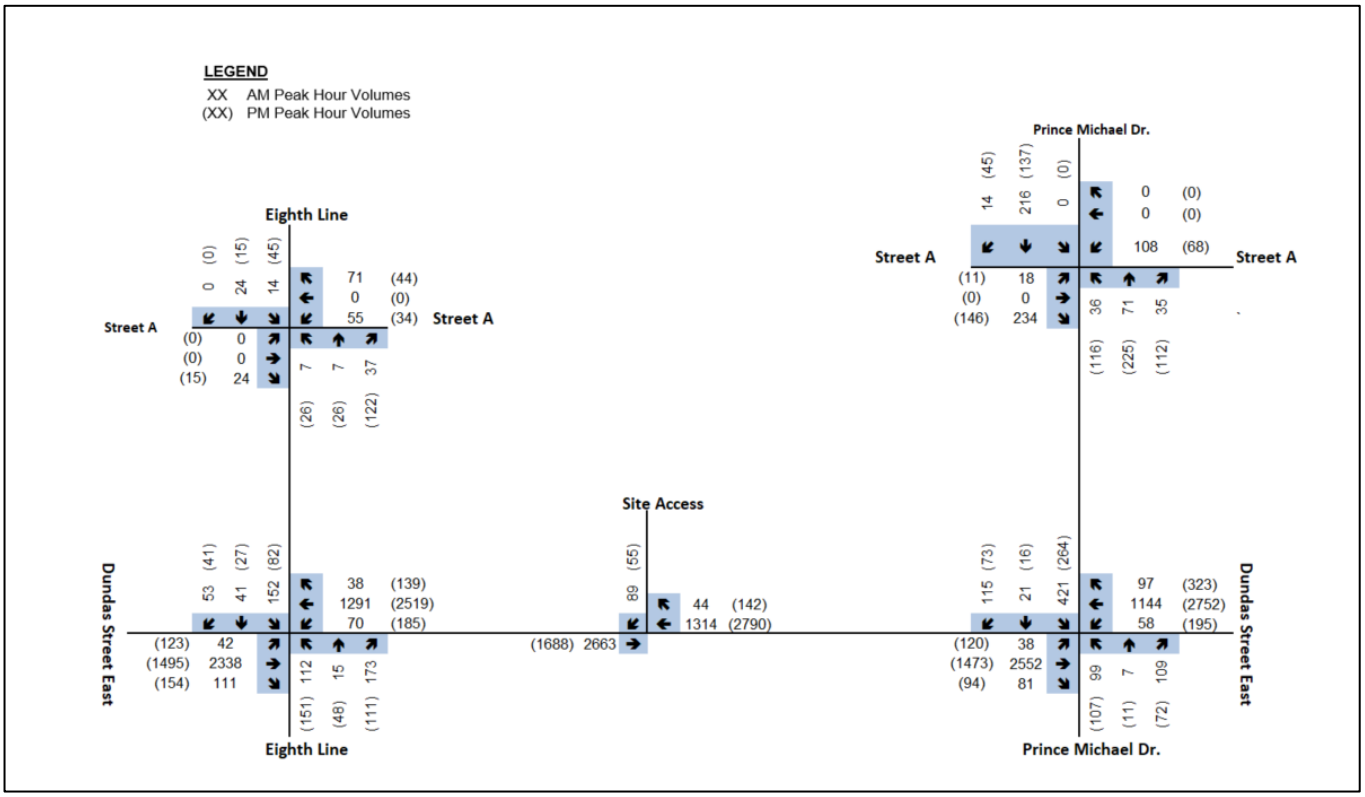


Figure 5 Future Total Traffic Volumes 2022

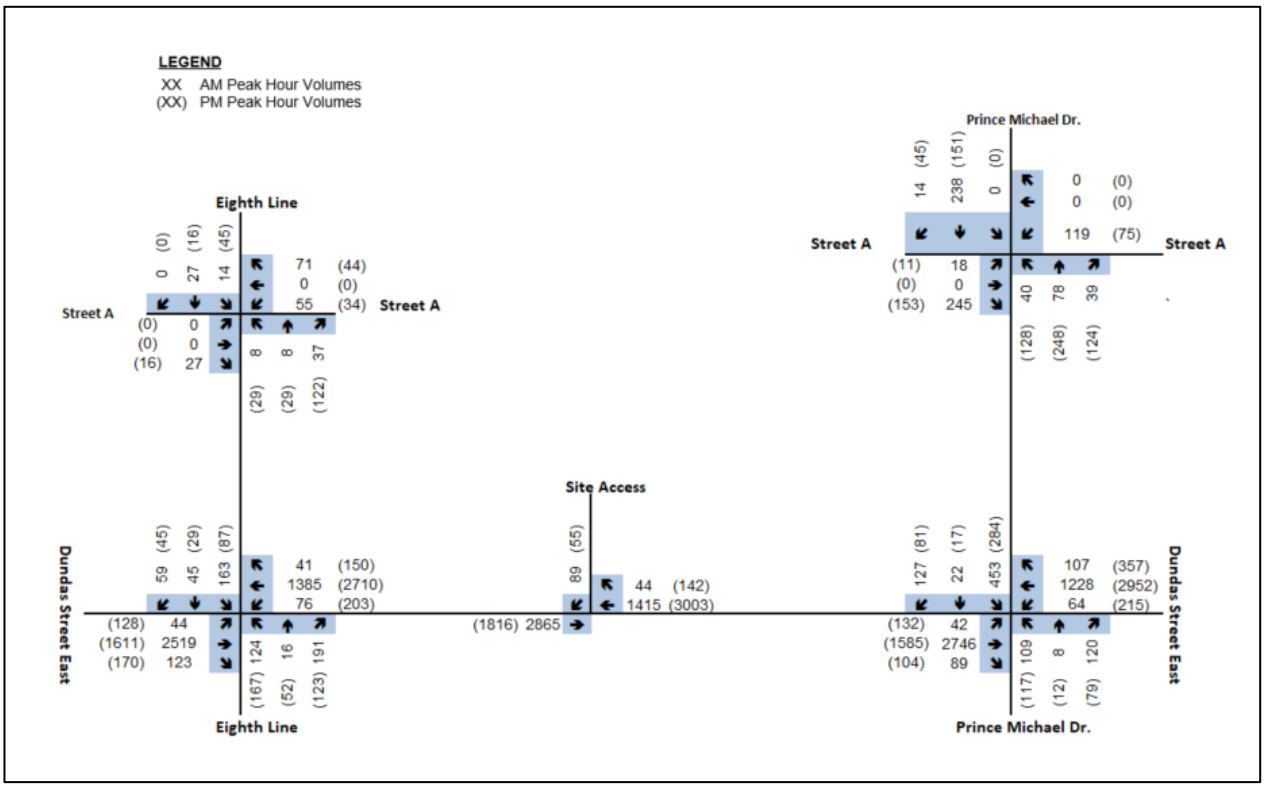


Figure 6 Future Total Traffic Volumes 2027

7. Capacity Analysis

7.1 Intersection Capacity Analysis

The capacity analysis identifies how well study intersections are currently operating and expected to operate in the future planning horizon year. The analysis contained within this report utilizes the Highway Capacity Manual (HCM) 2000 techniques within the Synchro Version 10 software package. The reported intersection volume-to-capacity (v/c) are a measure of the saturation volumes for each turning movement, while the level-of-service (LOS) are a measure of the average delay for each turning movement. Queuing characteristics are reported as the predicted 95th percentile queue for each movement.

To account for the road capacity effect of the proposed HOV lanes along Dundas Street East in the weekday a.m. and p.m. peak hours, we have adopted the established methodology of applying a 0.80 lane utilization factor as requested by the Region, which takes into consideration of the estimated proportion of traffic anticipated to utilize the HOV lanes.

In accordance with the Region of Halton and North Oakville's Transportation Impact Study guidelines, the analysis includes identification for all v/c ratios, LOS indicators and 95th percentile

queue lengths for all movements at all study intersections. Critical intersections and movements are highlighted (in **bold**).

The analysis includes the mitigation of impacts to signalized intersection operations where:

- V/c ratios for overall intersection operations, through movements, or shared through/turning movements increased to 0.85 or above;
- V/C ratios for exclusive movements increased to 0.95 or above; or
- Queues for an individual movement are projected to exceed available turning lane storage.

The analysis also highlights unsignalized intersections where:

- LOS, based on average delay per vehicle, on individual movements exceeds LOS "D"; or
- The estimated 95th percentile queue length for an individual movement exceeds the available queue storage.

The following tables summarize the capacity results for the site related key movements at the study intersections during the weekday a.m. and p.m. peak hours.

7.1.1 Eighth Line at Dundas Street East

Signalized capacity analyses during the weekday a.m. and p.m. peak hours are summarized in **Table 3** from detailed Synchro reports attached in the appendix.

Table 3 Capacity analyses of Eighth Line at Dundas Street East

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delays	95th Percentile Queue	Movement v/c (LOS) Delays	95th Percentile Queue
Background 2022	Overall: 0.72 (B) 18 EBL = 0.09 (A) 8 EBT = 0.74 (B) 15 EBR = 0.08 (A) 7 WBL = 0.41 (B) 16 WBT = 0.38 (B) 12 WBR = 0.02 (B) 13 NBL = 0.64 (E) 62 NBTR = 0.3 (D) 52 SBL = 0.65 (E) 63 SBTR = 0.1 (D) 50	EBL = 5 m EBT = 215 m EBR = 15 m WBL = 15 m WBT = 110 m WBR = 10 m NBL = **45 m** NBTR = 25 m SBL = 45 m SBTR = 15 m	Overall: 0.79 (B) 19 EBL = 0.35 (C) 20 EBT = 0.56 (B) 17 EBR = 0.12 (B) 12 WBL = 0.57 (C) 31 WBT = 0.82 (B) 14 WBR = 0.08 (B) 13 NBL = 0.71 (E) 62 NBTR = 0.1 (D) 47 SBL = 0.26 (D) 49 SBTR = 0.06 (D) 46	EBL = 15 m EBT = 140 m EBR = 20 m WBL = 35 m WBT = 130 m WBR = 10 m NBL = **55 m** NBTR = 15 m SBL = 25 m SBTR = 10 m
Total 2022	Overall: 0.77 (C) 23 EBL = 0.22 (B) 12 EBT = 0.79 (B) 19 EBR = 0.09 (A) 9 WBL = 0.49 (C) 29 WBT = 0.42 (B) 20 WBR = 0.02 (C) 23 NBL = 0.5 (D) 51	EBL = 15 m EBT = 255 m EBR = 15 m WBL = 25 m WBT = 135 m WBR = 10 m NBL = **45 m** NBTR = 25 m	Overall: 0.83 (C) 22 EBL = 0.6 (D) 36 EBT = 0.57 (B) 17 EBR = 0.12 (B) 12 WBL = 0.58 (C) 33 WBT = **0.88** (B) 18 WBR = 0.11 (B) 15 NBL = 0.71 (E) 62	EBL = 35 m EBT = 140 m EBR = 20 m WBL = 35 m WBT = 115 m WBR = 10 m NBL = **55 m** NBTR = 15 m

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delays	95th Percentile Queue	Movement v/c (LOS) Delays	95th Percentile Queue
	NBTR = 0.24 (D) 47 SBL = 0.74 (E) 64 SBTR = 0.09 (D) 46	SBL = 60 m SBTR = 15 m	NBTR = 0.13 (D) 47 SBL = 0.41 (D) 51 SBTR = 0.06 (D) 47	SBL = 35 m SBTR = 10 m
Total 2027	Overall: 0.83 (C) 24 EBL = 0.27 (B) 14 EBT = **0.88** (C) 24 EBR = 0.1 (A) 10 WBL = 0.51 (C) 23 WBT = 0.46 (B) 15 WBR = 0.02 (B) 16 NBL = 0.52 (D) 50 NBTR = 0.26 (D) 46 SBL = 0.75 (E) 65 SBTR = 0.11 (D) 45	EBL = 20 m EBT = 325 m EBR = 20 m WBL = 20 m WBT = 135 m WBR = 10 m NBL = **45 m** NBTR = 25 m SBL = 60 m SBTR = 15 m	Overall: **0.90** (C) 26 EBL = 0.61 (D) 38 EBT = 0.64 (C) 21 EBR = 0.14 (B) 14 WBL = 0.64 (D) 45 WBT = **0.97** (C) 23 WBR = 0.12 (B) 16 NBL = 0.73 (E) 62 NBTR = 0.13 (D) 46 SBL = 0.41 (D) 50 SBTR = 0.07 (D) 45	EBL = 40 m EBT = 165 m EBR = 25 m WBL = 40 m WBT = 130 m WBR = 10 m NBL = **60 m** NBTR = 15 m SBL = 35 m SBTR = 10 m

Under 2022 future background conditions with corridor growth and full build-out of the surrounding developments, the intersection is expected to operate generally satisfactory with acceptable overall reserve capacity. The reported 95th percentile queueing for the northbound left-turn movement exceeds the available storage capacity during the a.m. and p.m. peak hour.

Under 2022 future total conditions with the added site traffic from the subject development at the intersection is expected to continue operating very similarly to the future background conditions. Any reduction in operational performance is nominal, with no new concerns identified as a result of the additional site traffic. The westbound through movement is expected to be nearing capacity during the p.m. peak hour, it is expected any change in operations due to the added site traffic will not be identifiable from a driver's perspective.

Under 2027 future total conditions, the intersection is expected to operate generally well with all movements operating with a reported v/c ratio below 1.0, capacity constraints are expected for the eastbound through movement at a reported v/c ratio of 0.88 in the a.m. peak hour and for the westbound through movement at a reported v/c ratio of 0.97 in the p.m. peak hour. Nevertheless, it is evident that this is due to corridor traffic growth and will improve once the William Halton Parkway extension is completed.

The capacity issues along Dundas Street are prevalent given the proposed continued growth along Dundas Street. It is expected that some of this growth will redistribute to the future William Halton Parkway once it is constructed and delays become excessive for drivers. Therefore, there are no additional required geometric or operational improvements recommended for this intersection

7.1.1 Prince Michael Drive at Dundas Street East

Signalized capacity analyses during the weekday a.m. and p.m. peak hours are summarized in **Table 4** from detailed Synchro reports attached in the appendix.

Table 4 Capacity analyses of Prince Michael Drive at Dundas Street East

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delays	95th Percentile Queue	Movement v/c (LOS) Delays	95th Percentile Queue
Background 2022	Overall: **0.90** (C) 30 EBL = 0.2 (B) 18 EBT = **0.96** (C) 31 EBR = 0.06 (C) 21 **WBL = 0.98 (F) 140** WBT = 0.46 (B) 17 WBR = 0.06 (B) 13 NBL = 0.62 (E) 62 NBTR = 0.11 (D) 51 SBL = 0.69 (D) 40 SBTR = 0.2 (C) 32	EBL = 10 m EBT = 325 m EBR = 10 m WBL = 35 m WBT = 90 m WBR = 10 m NBL = 40 m NBTR = 20 m **SBL = 85 m** SBTR = 30 m	Overall: **0.89** (C) 29 EBL = 0.62 (D) 50 EBT = 0.58 (B) 16 EBR = 0.06 (C) 22 WBL = 0.63 (C) 22 WBT = **0.95** (C) 34 WBR = 0.26 (B) 13 NBL = 0.36 (D) 47 NBTR = 0.07 (D) 43 SBL = 0.77 (E) 64 SBTR = 0.07 (D) 43	EBL = 50 m EBT = 95 m EBR = 10 m WBL = 45 m WBT = 340 m WBR = 40 m NBL = 35 m NBTR = 15 m **SBL = 70 m** SBTR = 15 m
Total 2022	Overall: **0.99** (D) 42 EBL = 0.22 (C) 26 EBT = **0.99** (D) 48 EBR = 0.06 (C) 34 **WBL = 0.98 (F) 140** WBT = 0.49 (B) 18 WBR = 0.06 (B) 13 NBL = 0.63 (E) 62 NBTR = 0.27 (D) 52 SBL = **0.91** (E) 60 SBTR = 0.22 (C) 31	EBL = 15 m EBT = 335 m EBR = 15 m WBL = 35 m WBT = 95 m WBR = 10 m NBL = 45 m NBTR = 30 m **SBL = 120 m** SBTR = 35 m	Overall: **0.99** (D) 49 EBL = 0.69 (E) 57 EBT = 0.63 (B) 19 EBR = 0.06 (C) 26 WBL = 0.7 (C) 34 WBT = **1.07** (E) 69 WBR = 0.28 (B) 16 NBL = 0.34 (D) 42 NBTR = 0.07 (D) 39 SBL = 0.85 (E) 67 SBTR = 0.09 (D) 39	EBL = 55 m EBT = 100 m EBR = 10 m WBL = 55 m WBT = 375 m WBR = 40 m NBL = 40 m NBTR = 15 m **SBL = 95 m** SBTR = 15 m
Total 2027	Overall: **1.08** (E) 57 EBL = 0.29 (C) 25 EBT = **1.08** (E) 73 EBR = 0.07 (C) 29 **WBL = 1.08 (F) 172** WBT = 0.53 (B) 19 WBR = 0.07 (B) 14 NBL = 0.66 (E) 64 NBTR = 0.36 (D) 53 SBL = **0.98** (E) 76 SBTR = 0.25 (C) 31	EBL = 10 m EBT = 385 m EBR = 10 m WBL = 40 m WBT = 110 m WBR = 10 m NBL = 45 m NBTR = 35 m **SBL = 145 m** SBTR = 40 m	Overall: **1.08** (E) 73 EBL = 0.75 (E) 65 EBT = 0.71 (C) 23 EBR = 0.07 (D) 35 WBL = 0.81 (D) 54 **WBT = 1.18 (F) 114** WBR = 0.32 (B) 17 NBL = 0.36 (D) 41 NBTR = 0.08 (D) 38 SBL = 0.87 (E) 69 SBTR = 0.09 (D) 38	EBL = 60 m EBT = 120 m EBR = 15 m WBL = 70 m WBT = 420 m WBR = 50 m NBL = 40 m NBTR = 15 m **SBL = 105 m** SBTR = 20 m

Under 2022 future background conditions with corridor growth and full build-out of the surrounding developments, the intersection is expected to be nearing capacity during the a.m. and p.m. peak hours. The eastbound through movement and westbound left turning movement during the a.m. peak hour and the westbound through movements during the p.m. peak hour are expected to be nearing capacity.

With the addition of site trips under future total 2022 conditions, the overall average delay per vehicle is expected to increase by 12 seconds (42 sec) in the a.m. peak and by 20 seconds (49 sec)

in the p.m. peak hours. The operational impact of the added site traffic is nominal, and again is due to the limited green time available as a result of the heavy Dundas Street volumes. By 2027, the intersection continues to worsen with a couple of movements operating with v/c ratio over 1.0. In addition, the average delay per vehicle is expected to increase by 15 sec (57 sec) for the a.m. peak and 24 seconds (73 sec) in the p.m. peak hour. However, this is due to corridor traffic growth along Dundas Street.

As noted before, the capacity issues along Dundas Street are prevalent given the proposed continued growth along Dundas Street. It is expected that some of this growth will redistribute to the future William Halton Parkway once it is constructed and delays become excessive for drivers. Therefore, there are no additional required geometric or operational improvements recommended for this intersection

7.1.2 Eighth Line at Street 'A'

Unsignalized capacity analyses during the weekday a.m. and p.m. peak hours are summarized in **Table 5** from detailed Synchro reports attached in the appendix.

Table 5 Capacity analyses of Eighth Line at Street 'A'

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delays	95th Percentile Queue	Movement v/c (LOS) Delays	95th Percentile Queue
Total 2022	EBTLR = 0.02 (A) 8 WBTLR = 0.13 (A) 9 NBTL = 0 (A) 5 SBTL = 0.01 (A) 4	EBTLR = 5 m WBTLR = 5 m NBTL = 5 m SBTL = 5 m	EBTLR = 0.01 (A) 8 WBTLR = 0.1 (A) 10 NBTL = 0.02 (A) 5 SBTL = 0.03 (A) 6	EBTLR = 5 m WBTLR = 5 m NBTL = 5 m SBTL = 5 m
Total 2027	EBTLR = 0.03 (A) 8 WBTLR = 0.13 (A) 9 NBTL = 0.01 (A) 5 SBTL = 0.01 (A) 4	EBTLR = 5 m WBTLR = 5 m NBTL = 5 m SBTL = 5 m	EBTLR = 0.01 (A) 8 WBTLR = 0.1 (B) 10 NBTL = 0.02 (A) 5 SBTL = 0.03 (A) 6	EBTLR = 5 m WBTLR = 5 m NBTL = 5 m SBTL = 5 m

Under 2022 and 2027 future total conditions with site traffic from the subject development and adjacent developments, the intersection is expected to operate very well with low levels of delay and no queueing issues.

7.1.3 Prince Michael Drive at Street 'A'

Unsignalized capacity analyses during the weekday a.m. and p.m. peak hours are summarized in **Table 6** from detailed Synchro reports attached in the appendix.

Table 6 Capacity analyses of Prince Michael Drive at Street 'A'

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delays	95th Percentile Queue	Movement v/c (LOS) Delays	95th Percentile Queue
Total 2022	EBTLR = 0.31 (B) 12 WBTLR = 0.38 (D) 25 NBTLR = 0.03 (A) 2	EBTLR = 10 m WBTLR = 15 m NBTLR = 5 m	EBTLR = 0.19 (B) 10 WBTLR = 0.29 (D) 27 NBTLR = 0.08 (A) 3	EBTLR = 5 m WBTLR = 10 m NBTLR = 5 m
Total 2027	EBTLR = 0.34 (B) 12 WBTLR = 0.47 (D) 31 NBTLR = 0.03 (A) 2	EBTLR = 15 m WBTLR = 20 m NBTLR = 5 m	EBTLR = 0.21 (B) 11 WBTLR = 0.37 (D) 33 NBTLR = 0.09 (A) 3	EBTLR = 5 m WBTLR = 15 m NBTLR = 5 m

Under 2022 and 2027 future total conditions with site traffic from the subject development and adjacent developments, the intersection is expected to operate very well with low levels of delay and no queueing issues.

7.1.4 Right-in/Right-out Access at Dundas Street East

Unsignalized capacity analyses during the weekday a.m. and p.m. peak hours are summarized in **Table 7** from detailed Synchro reports attached in the appendix.

Table 7 Capacity analyses of Right-in/Right-out Access at Dundas Street East

Traffic Condition	Movement v/c (LOS) 95th Percentile Queue	
	AM Peak Hour	PM Peak Hour
Total 2022	SBR: 0.09 (A) <1 veh	SBR: 0.11 (B) <13 veh
Total 2027	SBR: 0.10 (A) <1 veh	SBR: 0.11 (B) <13 veh

Under 2022 and 2027 future total conditions with site traffic from the subject development and adjacent developments, the intersection is expected to operate very well with low levels of delay and no queueing issues.

8. Pedestrian Circulation Plan

GHD has produced a Pedestrian Circulation Plan for the subject development, which is presented in Appendix C. The plan illustrates proposed bicycle facilities, signed bike routes, trails, transit corridors, and sidewalks. As shown in the Plan, sidewalks are proposed on both sides of roads internal to the subject development. Street 'A', Eighth Line and Prince Michael Drive are proposed to be signed bike routes, and Dundas Street East is proposed to include multi-use paths. Furthermore Street 'A' is

proposed to be a secondary transit corridor, and a major trail is proposed near the northern limits of the site along the periphery of the existing natural heritage system.

9. Traffic Calming

Traffic calming with the subdivision includes the following measures:

- Grid system network of local roads with extended continuous connections.
- Reduced pavement widths and on-street parking accommodation.
- Sidewalk facilities on both sides of all Connectors and local streets.

The future design of the Avenue Transit Corridor Street 'A' with a 22 meter right-of-way includes narrow lanes, horizontal curves, several intersecting local road intersections and parking permitted on both side of the road. This is expected to be a sufficient deterrent to speeding along this road. No further traffic calming measures are recommended.

10. Parking Management Plan

GHD has produced a preliminary Parking Management Plan for the subject development, which is presented in Appendix C. The plan illustrates an estimate for the availability of on-street parking within the Draft Plan. As per the Town's guidelines, local roads with 17 metre right-of-way widths can accommodate parking on one side of the road where space is available and Avenue/Transit Corridors with a 22 metre right-of-way width can accommodate parking on both sides of the road. Additionally all on-street parking spaces are as per North Oakville Transportation Functional Design Study Guideline. The minimum length requirements are as follows:

- 7.5m in length for one spaces between driveways;
- 5.5m in length for spaces at the end of a row (plus 1.0m to driveway edge); and
- 7.0m in length for internal spaces within a row;

The parking plan shows an estimated 267 on-street parking spaces. These spaces are preliminary and could be changed in the future. Further, additional details will be provided in future submissions when more details become available.

11. Conclusions and Recommendations

The findings of the proposed Development Plan review found no significant road user safety concerns pertaining to horizontal curves in road alignment and/or sightlines at internal site intersections, and it is expected that the proposed road network configuration will provide an acceptable level of road user safety.

With a transit modal split of 10%, it is estimated that the proposed development will generate approximately 471 new two-way vehicle trips during the a.m. peak hour consisting of 115 inbound and 356 outbound trips. During the p.m. peak hour it is expected to generate 584 new two-way vehicle trips consisting of 363 inbound and 221 outbound trips.

The proposed development plan illustrates 4 potential access points to the site from Eighth Line, and 5 potential access points to the site from Prince Michael Drive. However as a conservative measure, GHD has assigned 100% of site trips to either of the Street 'A' accesses on Eighth Line and Prince Michael Drive, or the right-in/right-out access on Dundas Street East. The results of the intersection capacity analysis therefore represent an overly conservative, worst-case scenario of future 2022 and 2027 intersection operating conditions.

Under future 2022 and 2027 conditions, the incremental impact of the site generated traffic is expected to be nominal, with no recommended geometric improvements to the study area intersections in response to the subject development. While several intersections and specific movements are expected to operate with reduced capacity and some operational concerns, these are a direct result of background corridor growth and background development traffic. Any recommended improvements are in response to the background traffic demands.

The intersection of Eighth Line and Dundas Street East is expected to operate well with only the through movements along Dundas Street East and queue lengths at the northbound left turn showing elevated v/c ratios and queuing.

The three site access intersections are all expected to operate very well under future conditions with no significant issues. The intersection of Prince Michael Drive at Dundas Street East is expected to be nearing capacity under 2022 future background conditions as a result of general corridor growth and build-out of nearby background developments, with similar operating characteristics continuing into the 2027 future total conditions with the addition of site generated traffic.

The proposed three site access intersections that were included as study area intersections are all expected to operate very well with acceptable levels of delay and no queueing issues.

It is in GHD's opinion that the expected capacity issues along Dundas Street are prevalent given the assumed continued growth along Dundas Street. It is expected that some of this growth will redistribute to the future William Halton Parkway once it is constructed and delays become excessive for drivers along Dundas Street. Therefore, there are no geometric or operational improvements recommended for these intersections.

Appendix A
Capacity Analysis

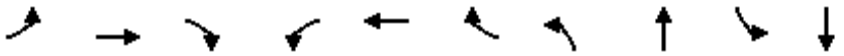
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	2338	111	56	1220	27	112	12	173	104	34	53
Future Volume (vph)	19	2338	111	56	1220	27	112	12	173	104	34	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	26.0		15.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor			0.99					0.99		1.00		
Frt			0.850			0.850		0.860			0.909	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	4565	1585	1825	4230	1633	1825	3034	0	1825	3292	0
Flt Permitted	0.183			0.043			0.698			0.635		
Satd. Flow (perm)	323	4565	1564	83	4230	1633	1341	3034	0	1219	3292	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			34		77			53	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			600.6			206.2			171.5	
Travel Time (s)		33.5			30.9			14.8			12.3	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Adj. Flow (vph)	19	2338	111	56	1220	27	112	12	173	104	34	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	2338	111	56	1220	27	112	185	0	104	87	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	37.7	37.7	37.7	9.5	37.7	37.7	46.0	46.0		46.0	46.0	
Total Split (s)	74.5	74.5	74.5	9.5	84.0	84.0	46.0	46.0		46.0	46.0	
Total Split (%)	57.3%	57.3%	57.3%	7.3%	64.6%	64.6%	35.4%	35.4%		35.4%	35.4%	
Maximum Green (s)	67.8	67.8	67.8	5.0	77.3	77.3	39.0	39.0		39.0	39.0	
Yellow Time (s)	4.2	4.2	4.2	3.5	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	3.7	3.7		3.7	3.7	
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)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	5.5	5.5	5.5	3.0	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	24.0	24.0	24.0		24.0	24.0	32.0	32.0		32.0	32.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)	90.2	90.2	90.2	101.5	99.3	99.3	17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.69	0.69	0.69	0.78	0.76	0.76	0.13	0.13		0.13	0.13	
v/c Ratio	0.08	0.74	0.10	0.37	0.38	0.02	0.64	0.40		0.65	0.18	
Control Delay	10.3	16.0	3.9	31.0	3.5	0.3	68.9	31.1		71.5	22.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	10.3	16.0	3.9	31.0	3.5	0.3	68.9	31.1		71.5	22.1	
LOS	B	B	A	C	A	A	E	C		E	C	
Approach Delay		15.4			4.6			45.4			49.0	
Approach LOS		B			A			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 81.2% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value

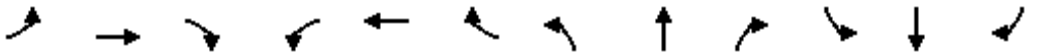
Splits and Phases: 1: Eighth Line & Dundas St E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	2338	111	56	1220	27	112	185	104	87
v/c Ratio	0.08	0.74	0.10	0.37	0.38	0.02	0.64	0.40	0.65	0.18
Control Delay	10.3	16.0	3.9	31.0	3.5	0.3	68.9	31.1	71.5	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	16.0	3.9	31.0	3.5	0.3	68.9	31.1	71.5	22.1
Queue Length 50th (m)	1.5	149.2	3.1	3.0	21.5	0.0	27.7	13.3	25.7	4.1
Queue Length 95th (m)	5.8	214.8	11.3	17.5	25.0	m0.4	44.8	23.2	42.4	11.1
Internal Link Dist (m)		627.2			576.6			182.2		147.5
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0		26.0	
Base Capacity (vph)	224	3168	1107	152	3229	1254	402	964	365	1024
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	0.08	0.74	0.10	0.37	0.38	0.02	0.28	0.19	0.28	0.08

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	2338	111	56	1220	27	112	12	173	104	34	53
Future Volume (vph)	19	2338	111	56	1220	27	112	12	173	104	34	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1674	4565	1564	1825	4230	1633	1825	3033		1824	3291	
Flt Permitted	0.18	1.00	1.00	0.04	1.00	1.00	0.70	1.00		0.64	1.00	
Satd. Flow (perm)	322	4565	1564	82	4230	1633	1340	3033		1219	3291	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	19	2338	111	56	1220	27	112	12	173	104	34	53
RTOR Reduction (vph)	0	0	22	0	0	6	0	67	0	0	46	0
Lane Group Flow (vph)	19	2338	89	56	1220	21	112	118	0	104	41	0
Confl. Peds. (#/hr)			1	1					1	1		
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	89.4	89.4	89.4	99.3	99.3	99.3	17.0	17.0		17.0	17.0	
Effective Green, g (s)	89.4	89.4	89.4	99.3	99.3	99.3	17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.69	0.69	0.69	0.76	0.76	0.76	0.13	0.13		0.13	0.13	
Clearance Time (s)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	5.5	5.5	5.5	3.0	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	221	3139	1075	135	3231	1247	175	396		159	430	
v/s Ratio Prot		c0.51		0.02	c0.29			0.04			0.01	
v/s Ratio Perm	0.06		0.06	0.30		0.01	0.08			c0.09		
v/c Ratio	0.09	0.74	0.08	0.41	0.38	0.02	0.64	0.30		0.65	0.10	
Uniform Delay, d1	6.7	13.0	6.7	16.1	5.1	3.7	53.6	51.1		53.7	49.7	
Progression Factor	1.00	1.00	1.00	2.91	0.57	0.22	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.7	0.2	1.9	0.3	0.0	8.1	0.5		9.7	0.1	
Delay (s)	7.5	14.6	6.9	48.8	3.2	0.8	61.7	51.6		63.4	49.8	
Level of Service	A	B	A	D	A	A	E	D		E	D	
Approach Delay (s)		14.2			5.1			55.4			57.2	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

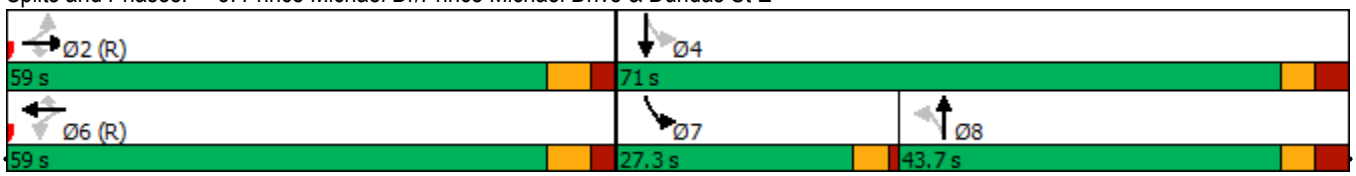
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	2504	81	58	1092	97	96	6	109	309	7	115
Future Volume (vph)	38	2504	81	58	1092	97	96	6	109	309	7	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98				1.00	0.99				
Frt			0.850			0.850		0.858			0.859	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4565	1570	1825	4154	1601	1807	1609	0	1789	1618	0
Flt Permitted	0.178			0.054			0.679			0.495		
Satd. Flow (perm)	335	4565	1536	104	4154	1601	1287	1609	0	932	1618	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			97		106			27	
Link Speed (k/h)		70			70			50			48	
Link Distance (m)		600.6			721.9			203.4			187.8	
Travel Time (s)		30.9			37.1			14.6			14.1	
Confl. Peds. (#/hr)			1	1			2		2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	38	2504	81	58	1092	97	96	6	109	309	7	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	2504	81	58	1092	97	96	115	0	309	122	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

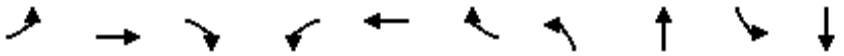
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0		5.0	5.0	
Minimum Split (s)	38.8	38.8	38.8	43.8	43.8	43.8	43.7	43.7		9.5	25.0	
Total Split (s)	59.0	59.0	59.0	59.0	59.0	59.0	43.7	43.7		27.3	71.0	
Total Split (%)	45.4%	45.4%	45.4%	45.4%	45.4%	45.4%	33.6%	33.6%		21.0%	54.6%	
Maximum Green (s)	52.2	52.2	52.2	52.2	52.2	52.2	37.0	37.0		22.8	64.3	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.3	3.3		3.5	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	3.4	3.4		1.0	3.4	
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)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	3.5		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Min	Min		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)	25.0	25.0	25.0	25.0	25.0	25.0	30.0	30.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0			0	
Act Effct Green (s)	74.1	74.1	74.1	74.1	74.1	74.1	15.8	15.8		44.6	42.4	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.12	0.12		0.34	0.33	
v/c Ratio	0.20	0.96	0.09	0.98	0.46	0.10	0.62	0.40		0.66	0.22	
Control Delay	22.1	32.2	7.7	150.3	17.8	3.1	70.3	14.9		40.6	24.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	22.1	32.2	7.7	150.3	17.8	3.1	70.3	14.9		40.6	24.3	
LOS	C	C	A	F	B	A	E	B		D	C	
Approach Delay		31.3			22.8			40.1			36.0	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 29.8		Intersection LOS: C	
Intersection Capacity Utilization 90.3%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 3: Prince Michael Dr/Prince Michael Drive & Dundas St E

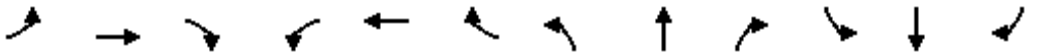




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	2504	81	58	1092	97	96	115	309	122
v/c Ratio	0.20	0.96	0.09	0.98	0.46	0.10	0.62	0.40	0.66	0.22
Control Delay	22.1	32.2	7.7	150.3	17.8	3.1	70.3	14.9	40.6	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	32.2	7.7	150.3	17.8	3.1	70.3	14.9	40.6	24.3
Queue Length 50th (m)	3.9	121.7	0.6	13.9	65.5	0.0	23.8	2.1	62.3	17.3
Queue Length 95th (m)	m8.9	#321.7	m9.0	#32.0	88.6	8.4	40.1	18.3	82.5	29.9
Internal Link Dist (m)		576.6			697.9			179.4		163.8
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		50.0	
Base Capacity (vph)	190	2601	905	59	2366	954	366	533	469	813
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	0.20	0.96	0.09	0.98	0.46	0.10	0.26	0.22	0.66	0.15

Intersection Summary

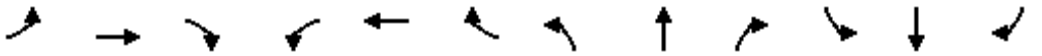
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	2504	81	58	1092	97	96	6	109	309	7	115
Future Volume (vph)	38	2504	81	58	1092	97	96	6	109	309	7	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	4565	1536	1825	4154	1601	1800	1609		1789	1617	
Flt Permitted	0.18	1.00	1.00	0.05	1.00	1.00	0.68	1.00		0.49	1.00	
Satd. Flow (perm)	335	4565	1536	104	4154	1601	1286	1609		932	1617	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	2504	81	58	1092	97	96	6	109	309	7	115
RTOR Reduction (vph)	0	0	30	0	0	42	0	93	0	0	18	0
Lane Group Flow (vph)	38	2504	51	58	1092	55	96	22	0	309	104	0
Confl. Peds. (#/hr)			1	1			2		2			
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	74.0	74.0	74.0	74.0	74.0	74.0	15.8	15.8		42.5	42.5	
Effective Green, g (s)	74.0	74.0	74.0	74.0	74.0	74.0	15.8	15.8		42.5	42.5	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.12	0.12		0.33	0.33	
Clearance Time (s)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Vehicle Extension (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	3.5		3.0	3.0	
Lane Grp Cap (vph)	190	2598	874	59	2364	911	156	195		451	528	
v/s Ratio Prot		0.55			0.26			0.01		c0.12	0.06	
v/s Ratio Perm	0.11		0.03	c0.56		0.03	0.07			c0.11		
v/c Ratio	0.20	0.96	0.06	0.98	0.46	0.06	0.62	0.11		0.69	0.20	
Uniform Delay, d1	13.6	26.7	12.5	27.4	16.4	12.5	54.2	50.9		35.8	31.5	
Progression Factor	1.21	0.84	1.67	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	8.7	0.1	112.4	0.7	0.1	7.4	0.3		4.3	0.2	
Delay (s)	18.2	31.2	20.9	139.8	17.0	12.6	61.6	51.2		40.0	31.7	
Level of Service	B	C	C	F	B	B	E	D		D	C	
Approach Delay (s)		30.7			22.4			55.9			37.7	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



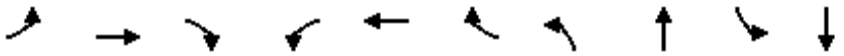
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	2338	111	70	1290	37	112	15	173	151	41	53
Future Volume (vph)	42	2338	111	70	1290	37	112	15	173	151	41	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	26.0		15.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor			0.99					0.99		1.00		
Frt			0.850			0.850		0.862			0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	4565	1585	1825	4230	1633	1825	3041	0	1825	3311	0
Flt Permitted	0.168			0.045			0.693			0.633		
Satd. Flow (perm)	296	4565	1564	86	4230	1633	1331	3041	0	1215	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			37		77			53	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			236.6			206.2			342.9	
Travel Time (s)		33.5			12.2			14.8			24.7	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Adj. Flow (vph)	42	2338	111	70	1290	37	112	15	173	151	41	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	2338	111	70	1290	37	112	188	0	151	94	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	37.7	37.7	37.7	9.5	37.7	37.7	46.0	46.0		46.0	46.0	
Total Split (s)	74.5	74.5	74.5	9.5	84.0	84.0	46.0	46.0		46.0	46.0	
Total Split (%)	57.3%	57.3%	57.3%	7.3%	64.6%	64.6%	35.4%	35.4%		35.4%	35.4%	
Maximum Green (s)	67.8	67.8	67.8	5.0	77.3	77.3	39.0	39.0		39.0	39.0	
Yellow Time (s)	4.2	4.2	4.2	3.5	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	3.7	3.7		3.7	3.7	
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)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	5.5	5.5	5.5	3.0	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	24.0	24.0	24.0		24.0	24.0	32.0	32.0		32.0	32.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)	84.7	84.7	84.7	96.5	94.3	94.3	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.65	0.65	0.65	0.74	0.73	0.73	0.17	0.17		0.17	0.17	
v/c Ratio	0.22	0.79	0.11	0.44	0.42	0.03	0.50	0.33		0.74	0.16	
Control Delay	16.5	20.8	5.1	39.1	2.8	0.1	55.1	27.6		71.0	20.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	16.5	20.8	5.1	39.1	2.8	0.1	55.1	27.6		71.0	20.9	
LOS	B	C	A	D	A	A	E	C		E	C	
Approach Delay		20.1			4.5			37.9			51.8	
Approach LOS		C			A			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 13.5 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 18.1 Intersection LOS: B
Intersection Capacity Utilization 87.8% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value

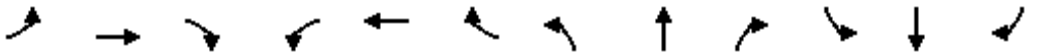
Splits and Phases: 1: Eighth Line & Dundas St E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	2338	111	70	1290	37	112	188	151	94
v/c Ratio	0.22	0.79	0.11	0.44	0.42	0.03	0.50	0.33	0.74	0.16
Control Delay	16.5	20.8	5.1	39.1	2.8	0.1	55.1	27.6	71.0	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	20.8	5.1	39.1	2.8	0.1	55.1	27.6	71.0	20.9
Queue Length 50th (m)	4.2	172.8	3.6	4.2	12.8	0.0	26.4	13.0	37.2	4.7
Queue Length 95th (m)	13.9	251.5	13.3	21.0	21.9	m0.3	42.0	22.1	56.1	11.4
Internal Link Dist (m)		627.2			212.6			182.2		318.9
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0		26.0	
Base Capacity (vph)	192	2974	1043	159	3068	1194	399	966	364	1030
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	0.22	0.79	0.11	0.44	0.42	0.03	0.28	0.19	0.41	0.09

Intersection Summary

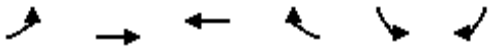
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	2338	111	70	1290	37	112	15	173	151	41	53
Future Volume (vph)	42	2338	111	70	1290	37	112	15	173	151	41	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1674	4565	1564	1825	4230	1633	1825	3041		1824	3313	
Flt Permitted	0.17	1.00	1.00	0.05	1.00	1.00	0.69	1.00		0.63	1.00	
Satd. Flow (perm)	296	4565	1564	87	4230	1633	1331	3041		1216	3313	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	42	2338	111	70	1290	37	112	15	173	151	41	53
RTOR Reduction (vph)	0	0	25	0	0	10	0	64	0	0	44	0
Lane Group Flow (vph)	42	2338	86	70	1290	27	112	124	0	151	50	0
Confl. Peds. (#/hr)			1	1					1	1		
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	83.8	83.8	83.8	94.3	94.3	94.3	22.0	22.0		22.0	22.0	
Effective Green, g (s)	83.8	83.8	83.8	94.3	94.3	94.3	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.64	0.64	0.64	0.73	0.73	0.73	0.17	0.17		0.17	0.17	
Clearance Time (s)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	5.5	5.5	5.5	3.0	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	190	2942	1008	143	3068	1184	225	514		205	560	
v/s Ratio Prot		c0.51		0.02	c0.30			0.04			0.02	
v/s Ratio Perm	0.14		0.05	0.33		0.02	0.08			c0.12		
v/c Ratio	0.22	0.79	0.09	0.49	0.42	0.02	0.50	0.24		0.74	0.09	
Uniform Delay, d1	9.6	16.8	8.7	20.8	7.1	5.0	49.0	46.8		51.2	45.5	
Progression Factor	1.00	1.00	1.00	2.48	0.31	0.05	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	2.3	0.2	2.4	0.4	0.0	2.0	0.3		13.3	0.1	
Delay (s)	12.2	19.1	8.9	53.8	2.6	0.3	51.0	47.1		64.5	45.6	
Level of Service	B	B	A	D	A	A	D	D		E	D	
Approach Delay (s)		18.6			5.1			48.5			57.3	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

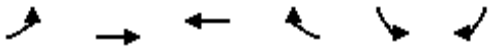
c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Volume (vph)	0	2663	1313	43	0	88
Future Volume (vph)	0	2663	1313	43	0	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			40.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		236.6	364.1		78.6	
Travel Time (s)		12.2	18.7		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2663	1313	43	0	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2663	1313	43	0	88
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Volume (veh/h)	0	2663	1313	43	0	88
Future Volume (Veh/h)	0	2663	1313	43	0	88
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	2663	1313	43	0	88
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		237	364			
pX, platoon unblocked	0.87				0.69	0.87
vC, conflicting volume	1356				2201	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	901				0	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	91
cM capacity (veh/h)	655				702	947

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	888	888	888	438	438	438	43	88
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	43	88
cSH	1700	1700	1700	1700	1700	1700	1700	947
Volume to Capacity	0.52	0.52	0.52	0.26	0.26	0.26	0.03	0.09
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2
Lane LOS								A
Approach Delay (s)	0.0			0.0				9.2
Approach LOS								A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	2552	81	58	1143	97	99	7	109	419	21	115
Future Volume (vph)	38	2552	81	58	1143	97	99	7	109	419	21	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98				1.00	0.99				
Frt			0.850			0.850		0.859			0.873	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4565	1570	1825	4154	1601	1807	1611	0	1789	1644	0
Flt Permitted	0.163			0.055			0.670			0.495		
Satd. Flow (perm)	307	4565	1536	106	4154	1601	1270	1611	0	932	1644	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			96		70			23	
Link Speed (k/h)		70			70			50			48	
Link Distance (m)		364.1			721.9			203.4			375.6	
Travel Time (s)		18.7			37.1			14.6			28.2	
Confl. Peds. (#/hr)			1	1			2		2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	38	2552	81	58	1143	97	99	7	109	419	21	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	2552	81	58	1143	97	99	116	0	419	136	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

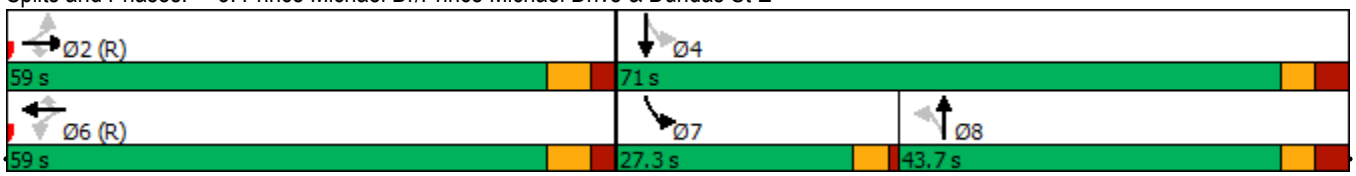
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0		5.0	5.0	
Minimum Split (s)	38.8	38.8	38.8	43.8	43.8	43.8	43.7	43.7		9.5	25.0	
Total Split (s)	59.0	59.0	59.0	59.0	59.0	59.0	43.7	43.7		27.3	71.0	
Total Split (%)	45.4%	45.4%	45.4%	45.4%	45.4%	45.4%	33.6%	33.6%		21.0%	54.6%	
Maximum Green (s)	52.2	52.2	52.2	52.2	52.2	52.2	37.0	37.0		22.8	64.3	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.3	3.3		3.5	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	3.4	3.4		1.0	3.4	
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)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	3.5		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Min	Min		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)	25.0	25.0	25.0	25.0	25.0	25.0	30.0	30.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0			0	
Act Effct Green (s)	73.1	73.1	73.1	73.1	73.1	73.1	16.1	16.1		45.6	43.4	
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56	0.56	0.12	0.12		0.35	0.33	
v/c Ratio	0.22	0.99	0.09	0.98	0.49	0.10	0.63	0.44		0.88	0.24	
Control Delay	30.8	48.1	12.1	148.0	18.7	3.3	70.8	27.3		56.3	25.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	30.8	48.1	12.1	148.0	18.7	3.3	70.8	27.3		56.3	25.9	
LOS	C	D	B	F	B	A	E	C		E	C	
Approach Delay		46.8			23.3			47.3			48.9	
Approach LOS		D			C			D			D	

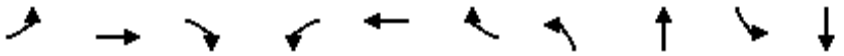
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 40.6 Intersection LOS: D
Intersection Capacity Utilization 97.3% ICU Level of Service F
Analysis Period (min) 15

* User Entered Value

Splits and Phases: 3: Prince Michael Dr/Prince Michael Drive & Dundas St E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	2552	81	58	1143	97	99	116	419	136
v/c Ratio	0.22	0.99	0.09	0.98	0.49	0.10	0.63	0.44	0.88	0.24
Control Delay	30.8	48.1	12.1	148.0	18.7	3.3	70.8	27.3	56.3	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	48.1	12.1	148.0	18.7	3.3	70.8	27.3	56.3	25.9
Queue Length 50th (m)	6.1	201.8	4.2	13.7	70.4	0.1	24.5	10.8	90.7	20.7
Queue Length 95th (m)	m11.5	#333.7	m12.7	#31.7	95.0	8.7	41.1	27.5	#119.8	33.8
Internal Link Dist (m)		340.1			697.9			179.4		351.6
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		50.0	
Base Capacity (vph)	172	2565	893	59	2334	941	361	508	477	824
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	0.22	0.99	0.09	0.98	0.49	0.10	0.27	0.23	0.88	0.17

Intersection Summary

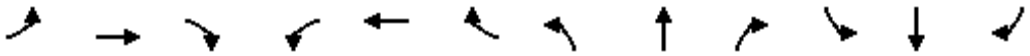
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	2552	81	58	1143	97	99	7	109	419	21	115
Future Volume (vph)	38	2552	81	58	1143	97	99	7	109	419	21	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	4565	1536	1825	4154	1601	1801	1611		1789	1645	
Flt Permitted	0.16	1.00	1.00	0.05	1.00	1.00	0.67	1.00		0.50	1.00	
Satd. Flow (perm)	307	4565	1536	105	4154	1601	1270	1611		933	1645	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	2552	81	58	1143	97	99	7	109	419	21	115
RTOR Reduction (vph)	0	0	30	0	0	42	0	61	0	0	15	0
Lane Group Flow (vph)	38	2552	51	58	1143	55	99	55	0	419	121	0
Confl. Peds. (#/hr)			1	1			2		2			
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	73.1	73.1	73.1	73.1	73.1	73.1	16.1	16.1		43.4	43.4	
Effective Green, g (s)	73.1	73.1	73.1	73.1	73.1	73.1	16.1	16.1		43.4	43.4	
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56	0.56	0.12	0.12		0.33	0.33	
Clearance Time (s)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Vehicle Extension (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	3.5		3.0	3.0	
Lane Grp Cap (vph)	172	2566	863	59	2335	900	157	199		461	549	
v/s Ratio Prot		c0.56			0.28			0.03		c0.16	0.07	
v/s Ratio Perm	0.12		0.03	0.55		0.03	0.08			c0.14		
v/c Ratio	0.22	0.99	0.06	0.98	0.49	0.06	0.63	0.27		0.91	0.22	
Uniform Delay, d1	14.2	28.3	12.9	27.8	17.2	12.9	54.1	51.7		38.7	31.1	
Progression Factor	1.65	1.24	2.60	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	13.4	0.1	112.4	0.7	0.1	8.3	0.9		21.5	0.2	
Delay (s)	25.5	48.4	33.6	140.3	17.9	13.0	62.5	52.5		60.2	31.3	
Level of Service	C	D	C	F	B	B	E	D		E	C	
Approach Delay (s)		47.6			23.0			57.1			53.1	
Approach LOS		D			C			E			D	

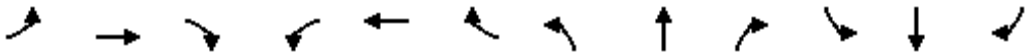
Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	24	55	0	70	7	7	37	14	24	0
Future Volume (vph)	0	0	24	55	0	70	7	7	37	14	24	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.865			0.924			0.891				
Flt Protected					0.978			0.993			0.982	
Satd. Flow (prot)	0	1629	0	0	1702	0	0	3166	0	0	3514	0
Flt Permitted					0.978			0.993			0.982	
Satd. Flow (perm)	0	1629	0	0	1702	0	0	3166	0	0	3514	0
Link Speed (k/h)		48			48			48			50	
Link Distance (m)		87.0			120.9			342.9			62.0	
Travel Time (s)		6.5			9.1			25.7			4.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	24	55	0	70	7	7	37	14	24	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	125	0	0	51	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

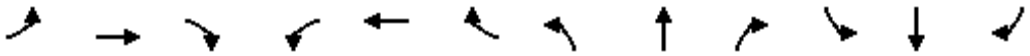
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	24	55	0	70	7	7	37	14	24	0
Future Volume (Veh/h)	0	0	24	55	0	70	7	7	37	14	24	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	24	55	0	70	7	7	37	14	24	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								343				
pX, platoon unblocked												
vC, conflicting volume	140	110	12	104	92	22	24			44		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	140	110	12	104	92	22	24			44		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	93	100	93	100			99		
cM capacity (veh/h)	755	769	1065	838	787	1050	1589			1563		

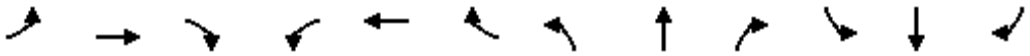
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	24	125	10	40	26	12
Volume Left	0	55	7	0	14	0
Volume Right	24	70	0	37	0	0
cSH	1065	945	1589	1700	1563	1700
Volume to Capacity	0.02	0.13	0.00	0.02	0.01	0.01
Queue Length 95th (m)	0.5	3.5	0.1	0.0	0.2	0.0
Control Delay (s)	8.5	9.4	4.9	0.0	4.0	0.0
Lane LOS	A	A	A		A	
Approach Delay (s)	8.5	9.4	1.0		2.7	
Approach LOS	A	A				

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	28.1%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	0	232	108	0	0	36	71	35	0	215	14
Future Volume (vph)	17	0	232	108	0	0	36	71	35	0	215	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.874						0.967			0.992	
Flt Protected		0.997			0.950			0.987				
Satd. Flow (prot)	0	1641	0	0	1789	0	0	1798	0	0	1868	0
Flt Permitted		0.997			0.950			0.987				
Satd. Flow (perm)	0	1641	0	0	1789	0	0	1798	0	0	1868	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		98.5			119.9			375.6			78.0	
Travel Time (s)		7.4			9.0			28.2			5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	0	232	108	0	0	36	71	35	0	215	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	249	0	0	108	0	0	142	0	0	229	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

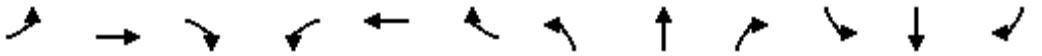
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	0	232	108	0	0	36	71	35	0	215	14
Future Volume (Veh/h)	17	0	232	108	0	0	36	71	35	0	215	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	17	0	232	108	0	0	36	71	35	0	215	14
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								376				
pX, platoon unblocked												
vC, conflicting volume	382	400	222	614	390	88	229			106		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	382	400	222	614	390	88	229			106		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	72	62	100	100	97			100		
cM capacity (veh/h)	564	524	818	283	531	970	1339			1485		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	249	108	142	229
Volume Left	17	108	36	0
Volume Right	232	0	35	14
cSH	793	283	1339	1485
Volume to Capacity	0.31	0.38	0.03	0.00
Queue Length 95th (m)	10.2	13.0	0.6	0.0
Control Delay (s)	11.6	25.3	2.1	0.0
Lane LOS	B	D	A	
Approach Delay (s)	11.6	25.3	2.1	0.0
Approach LOS	B	D		

Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	54.6%	ICU Level of Service	A	
Analysis Period (min)	15			



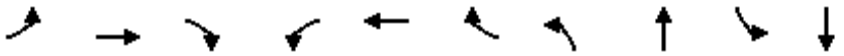
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	2519	123	76	1384	40	124	16	191	162	45	59
Future Volume (vph)	44	2519	123	76	1384	40	124	16	191	162	45	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	26.0		15.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor			0.99					0.99		1.00		
Frt			0.850			0.850		0.862			0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	4565	1585	1825	4230	1633	1825	3041	0	1825	3311	0
Flt Permitted	0.150			0.046			0.686			0.622		
Satd. Flow (perm)	264	4565	1564	88	4230	1633	1318	3041	0	1194	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			40		76			48	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			236.6			206.2			342.9	
Travel Time (s)		33.5			12.2			14.8			24.7	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Adj. Flow (vph)	44	2519	123	76	1384	40	124	16	191	162	45	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	2519	123	76	1384	40	124	207	0	162	104	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	37.7	37.7	37.7	9.5	37.7	37.7	46.0	46.0		46.0	46.0	
Total Split (s)	74.5	74.5	74.5	9.5	84.0	84.0	46.0	46.0		46.0	46.0	
Total Split (%)	57.3%	57.3%	57.3%	7.3%	64.6%	64.6%	35.4%	35.4%		35.4%	35.4%	
Maximum Green (s)	67.8	67.8	67.8	5.0	77.3	77.3	39.0	39.0		39.0	39.0	
Yellow Time (s)	4.2	4.2	4.2	3.5	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	3.7	3.7		3.7	3.7	
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)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	5.5	5.5	5.5	3.0	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	24.0	24.0	24.0		24.0	24.0	32.0	32.0		32.0	32.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)	82.9	82.9	82.9	95.0	92.8	92.8	23.5	23.5		23.5	23.5	
Actuated g/C Ratio	0.64	0.64	0.64	0.73	0.71	0.71	0.18	0.18		0.18	0.18	
v/c Ratio	0.26	0.87	0.12	0.46	0.46	0.03	0.52	0.34		0.75	0.16	
Control Delay	19.7	25.3	6.1	38.6	5.0	0.6	54.7	29.0		70.9	23.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.7	25.3	6.1	38.6	5.0	0.6	54.7	29.0		70.9	23.7	
LOS	B	C	A	D	A	A	D	C		E	C	
Approach Delay		24.4			6.6			38.6			52.4	
Approach LOS		C			A			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 21.3 Intersection LOS: C
Intersection Capacity Utilization 92.0% ICU Level of Service F
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 1: Eighth Line & Dundas St E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	2519	123	76	1384	40	124	207	162	104
v/c Ratio	0.26	0.87	0.12	0.46	0.46	0.03	0.52	0.34	0.75	0.16
Control Delay	19.7	25.3	6.1	38.6	5.0	0.6	54.7	29.0	70.9	23.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	25.3	6.1	38.6	5.0	0.6	54.7	29.0	70.9	23.7
Queue Length 50th (m)	4.8	211.7	4.9	7.6	26.9	0.0	29.0	15.3	39.8	6.3
Queue Length 95th (m)	16.2	#321.5	16.0	23.9	31.3	m0.5	45.0	24.5	59.5	13.1
Internal Link Dist (m)		627.2			212.6			182.2		318.9
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0		26.0	
Base Capacity (vph)	168	2910	1022	164	3020	1177	395	965	358	1026
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	0.26	0.87	0.12	0.46	0.46	0.03	0.31	0.21	0.45	0.10

Intersection Summary

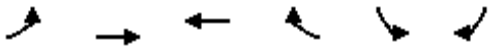
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	2519	123	76	1384	40	124	16	191	162	45	59
Future Volume (vph)	44	2519	123	76	1384	40	124	16	191	162	45	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1674	4565	1564	1825	4230	1633	1825	3039		1824	3311	
Flt Permitted	0.15	1.00	1.00	0.05	1.00	1.00	0.69	1.00		0.62	1.00	
Satd. Flow (perm)	264	4565	1564	89	4230	1633	1319	3039		1194	3311	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	44	2519	123	76	1384	40	124	16	191	162	45	59
RTOR Reduction (vph)	0	0	26	0	0	11	0	62	0	0	39	0
Lane Group Flow (vph)	44	2519	97	76	1384	29	124	145	0	162	65	0
Confl. Peds. (#/hr)			1	1					1	1		
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	81.9	81.9	81.9	92.8	92.8	92.8	23.5	23.5		23.5	23.5	
Effective Green, g (s)	81.9	81.9	81.9	92.8	92.8	92.8	23.5	23.5		23.5	23.5	
Actuated g/C Ratio	0.63	0.63	0.63	0.71	0.71	0.71	0.18	0.18		0.18	0.18	
Clearance Time (s)	6.7	6.7	6.7	4.5	6.7	6.7	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	5.5	5.5	5.5	3.0	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	166	2875	985	148	3019	1165	238	549		215	598	
v/s Ratio Prot		c0.55		0.03	c0.33			0.05			0.02	
v/s Ratio Perm	0.17		0.06	0.34		0.02	0.09			c0.14		
v/c Ratio	0.27	0.88	0.10	0.51	0.46	0.02	0.52	0.26		0.75	0.11	
Uniform Delay, d1	10.7	19.9	9.5	26.2	7.9	5.4	48.2	45.8		50.5	44.5	
Progression Factor	1.00	1.00	1.00	2.17	0.52	0.24	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	4.1	0.2	2.7	0.5	0.0	2.3	0.3		14.3	0.1	
Delay (s)	14.5	24.0	9.7	59.5	4.6	1.3	50.5	46.1		64.8	44.6	
Level of Service	B	C	A	E	A	A	D	D		E	D	
Approach Delay (s)		23.2			7.2			47.8			56.9	
Approach LOS		C			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

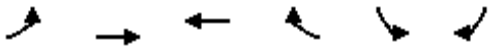
c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Volume (vph)	0	2865	1415	44	0	88
Future Volume (vph)	0	2865	1415	44	0	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			40.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		236.6	364.1		78.6	
Travel Time (s)		12.2	18.7		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2865	1415	44	0	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2865	1415	44	0	88
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.7%		ICU Level of Service B	
Analysis Period (min) 15			

* User Entered Value



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Volume (veh/h)	0	2865	1415	44	0	88
Future Volume (Veh/h)	0	2865	1415	44	0	88
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	2865	1415	44	0	88
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		237	364			
pX, platoon unblocked	0.85				0.61	0.85
vC, conflicting volume	1459				2370	472
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	930				0	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	90
cM capacity (veh/h)	623				622	924

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	955	955	955	472	472	472	44	88
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	44	88
cSH	1700	1700	1700	1700	1700	1700	1700	924
Volume to Capacity	0.56	0.56	0.56	0.28	0.28	0.28	0.03	0.10
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3
Lane LOS								A
Approach Delay (s)	0.0			0.0				9.3
Approach LOS								A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

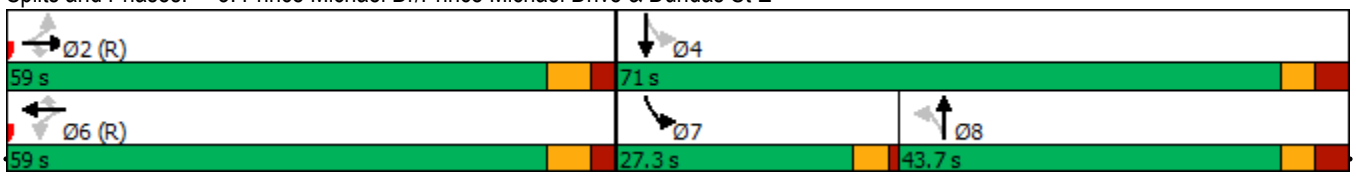
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	2746	89	64	1228	107	109	8	120	452	22	127
Future Volume (vph)	42	2746	89	64	1228	107	109	8	120	452	22	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98				1.00	0.99				
Frt			0.850			0.850		0.859			0.872	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4565	1570	1825	4154	1601	1807	1611	0	1789	1642	0
Flt Permitted	0.140			0.055			0.662			0.474		
Satd. Flow (perm)	264	4565	1536	106	4154	1601	1255	1611	0	893	1642	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			99		59			17	
Link Speed (k/h)		70			70			50			48	
Link Distance (m)		364.1			721.9			203.4			375.6	
Travel Time (s)		18.7			37.1			14.6			28.2	
Confl. Peds. (#/hr)			1	1			2		2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	42	2746	89	64	1228	107	109	8	120	452	22	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	2746	89	64	1228	107	109	128	0	452	149	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

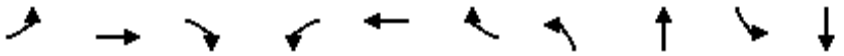
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0		5.0	5.0	
Minimum Split (s)	38.8	38.8	38.8	43.8	43.8	43.8	43.7	43.7		9.5	25.0	
Total Split (s)	59.0	59.0	59.0	59.0	59.0	59.0	43.7	43.7		27.3	71.0	
Total Split (%)	45.4%	45.4%	45.4%	45.4%	45.4%	45.4%	33.6%	33.6%		21.0%	54.6%	
Maximum Green (s)	52.2	52.2	52.2	52.2	52.2	52.2	37.0	37.0		22.8	64.3	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.3	3.3		3.5	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	3.4	3.4		1.0	3.4	
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)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	3.5		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Min	Min		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)	25.0	25.0	25.0	25.0	25.0	25.0	30.0	30.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0			0	
Act Effct Green (s)	72.1	72.1	72.1	72.1	72.1	72.1	17.1	17.1		46.6	44.4	
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.55	0.55	0.13	0.13		0.36	0.34	
v/c Ratio	0.29	1.09	0.10	1.10	0.53	0.11	0.66	0.49		0.95	0.26	
Control Delay	30.7	72.8	11.8	182.4	20.1	4.0	71.4	33.4		66.8	27.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	30.7	72.8	11.8	182.4	20.1	4.0	71.4	33.4		66.8	27.3	
LOS	C	E	B	F	C	A	E	C		E	C	
Approach Delay		70.3			26.3			50.9			57.0	
Approach LOS		E			C			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 55.8		Intersection LOS: E	
Intersection Capacity Utilization 103.0%		ICU Level of Service G	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 3: Prince Michael Dr/Prince Michael Drive & Dundas St E





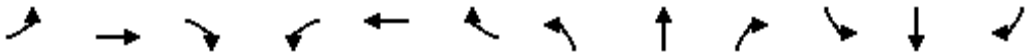
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	2746	89	64	1228	107	109	128	452	149
v/c Ratio	0.29	1.09	0.10	1.10	0.53	0.11	0.66	0.49	0.95	0.26
Control Delay	30.7	72.8	11.8	182.4	20.1	4.0	71.4	33.4	66.8	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	72.8	11.8	182.4	20.1	4.0	71.4	33.4	66.8	27.3
Queue Length 50th (m)	6.2	~323.6	4.3	~18.4	79.5	0.9	26.9	16.3	98.8	24.2
Queue Length 95th (m)	m10.2	#382.2	m10.6	#36.8	107.4	10.3	43.9	33.8	#141.0	37.6
Internal Link Dist (m)		340.1			697.9			179.4		351.6
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		50.0	
Base Capacity (vph)	146	2530	882	58	2302	931	357	500	477	820
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	0.29	1.09	0.10	1.10	0.53	0.11	0.31	0.26	0.95	0.18

Intersection Summary

~ 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.

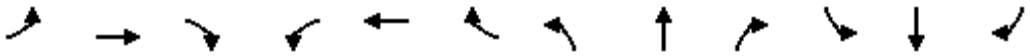
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	2746	89	64	1228	107	109	8	120	452	22	127
Future Volume (vph)	42	2746	89	64	1228	107	109	8	120	452	22	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	4565	1536	1825	4154	1601	1801	1612		1789	1643	
Flt Permitted	0.14	1.00	1.00	0.06	1.00	1.00	0.66	1.00		0.47	1.00	
Satd. Flow (perm)	264	4565	1536	107	4154	1601	1255	1612		892	1643	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	42	2746	89	64	1228	107	109	8	120	452	22	127
RTOR Reduction (vph)	0	0	31	0	0	44	0	51	0	0	11	0
Lane Group Flow (vph)	42	2746	58	64	1228	63	109	77	0	452	138	0
Confl. Peds. (#/hr)			1	1			2		2			
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	72.1	72.1	72.1	72.1	72.1	72.1	17.1	17.1		44.4	44.4	
Effective Green, g (s)	72.1	72.1	72.1	72.1	72.1	72.1	17.1	17.1		44.4	44.4	
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.55	0.55	0.13	0.13		0.34	0.34	
Clearance Time (s)	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.7		4.5	6.7	
Vehicle Extension (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	3.5		3.0	3.0	
Lane Grp Cap (vph)	146	2531	851	59	2303	887	165	212		461	561	
v/s Ratio Prot		c0.60			0.30			0.05		c0.17	0.08	
v/s Ratio Perm	0.16		0.04	0.60		0.04	0.09			c0.16		
v/c Ratio	0.29	1.08	0.07	1.08	0.53	0.07	0.66	0.36		0.98	0.25	
Uniform Delay, d1	15.3	29.0	13.4	29.0	18.3	13.4	53.7	51.5		39.6	30.8	
Progression Factor	1.43	1.03	2.17	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	42.9	0.1	142.6	0.9	0.2	9.9	1.2		36.7	0.2	
Delay (s)	24.7	72.8	29.2	171.5	19.2	13.6	63.6	52.7		76.3	31.0	
Level of Service	C	E	C	F	B	B	E	D		E	C	
Approach Delay (s)		70.7			25.7			57.7			65.1	
Approach LOS		E			C			E			E	

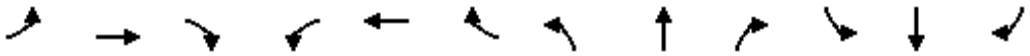
Intersection Summary			
HCM 2000 Control Delay	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	103.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	27	55	0	70	8	8	37	14	27	0
Future Volume (vph)	0	0	27	55	0	70	8	8	37	14	27	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.865			0.924			0.895				
Flt Protected					0.978			0.993			0.983	
Satd. Flow (prot)	0	1629	0	0	1702	0	0	3180	0	0	3518	0
Flt Permitted					0.978			0.993			0.983	
Satd. Flow (perm)	0	1629	0	0	1702	0	0	3180	0	0	3518	0
Link Speed (k/h)		48			48			48			50	
Link Distance (m)		87.0			120.9			342.9			62.0	
Travel Time (s)		6.5			9.1			25.7			4.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	27	55	0	70	8	8	37	14	27	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	125	0	0	53	0	0	41	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

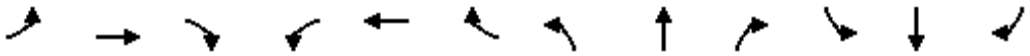
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	27	55	0	70	8	8	37	14	27	0
Future Volume (Veh/h)	0	0	27	55	0	70	8	8	37	14	27	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	27	55	0	70	8	8	37	14	27	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								343				
pX, platoon unblocked												
vC, conflicting volume	145	116	14	111	98	22	27			45		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	145	116	14	111	98	22	27			45		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	93	100	93	99			99		
cM capacity (veh/h)	748	763	1063	825	781	1049	1585			1561		

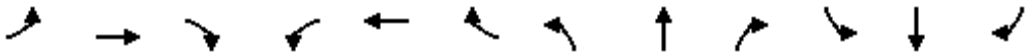
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	27	125	12	41	28	14
Volume Left	0	55	8	0	14	0
Volume Right	27	70	0	37	0	0
cSH	1063	937	1585	1700	1561	1700
Volume to Capacity	0.03	0.13	0.01	0.02	0.01	0.01
Queue Length 95th (m)	0.6	3.5	0.1	0.0	0.2	0.0
Control Delay (s)	8.5	9.4	4.9	0.0	3.8	0.0
Lane LOS	A	A	A		A	
Approach Delay (s)	8.5	9.4	1.1		2.5	
Approach LOS	A	A				

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	28.1%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	0	243	119	0	0	40	78	39	0	238	14
Future Volume (vph)	17	0	243	119	0	0	40	78	39	0	238	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.874						0.966			0.992	
Flt Protected		0.997			0.950			0.987				
Satd. Flow (prot)	0	1641	0	0	1789	0	0	1796	0	0	1868	0
Flt Permitted		0.997			0.950			0.987				
Satd. Flow (perm)	0	1641	0	0	1789	0	0	1796	0	0	1868	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		98.5			119.9			375.6			78.0	
Travel Time (s)		7.4			9.0			28.2			5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	0	243	119	0	0	40	78	39	0	238	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	260	0	0	119	0	0	157	0	0	252	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

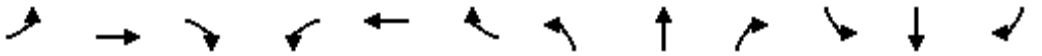
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.0%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	0	243	119	0	0	40	78	39	0	238	14
Future Volume (Veh/h)	17	0	243	119	0	0	40	78	39	0	238	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	17	0	243	119	0	0	40	78	39	0	238	14
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								376				
pX, platoon unblocked												
vC, conflicting volume	422	442	245	666	430	98	252			117		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	422	442	245	666	430	98	252			117		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	69	53	100	100	97			100		
cM capacity (veh/h)	529	494	794	253	502	959	1313			1471		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	260	119	157	252
Volume Left	17	119	40	0
Volume Right	243	0	39	14
cSH	769	253	1313	1471
Volume to Capacity	0.34	0.47	0.03	0.00
Queue Length 95th (m)	11.4	17.8	0.7	0.0
Control Delay (s)	12.1	31.3	2.2	0.0
Lane LOS	B	D	A	
Approach Delay (s)	12.1	31.3	2.2	0.0
Approach LOS	B	D		

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	58.0%	ICU Level of Service	B	
Analysis Period (min)	15			



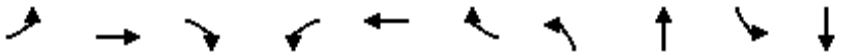
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1495	154	176	2475	104	151	34	111	52	23	41
Future Volume (vph)	50	1495	154	176	2475	104	151	34	111	52	23	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	26.0		15.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor							1.00	0.99		1.00	0.99	
Frt			0.850			0.850		0.885			0.904	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1807	3174	0	1825	3272	0
Flt Permitted	0.052			0.090			0.713			0.660		
Satd. Flow (perm)	100	4476	1601	173	4565	1633	1355	3174	0	1266	3272	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			67		111			41	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			600.6			206.2			185.5	
Travel Time (s)		33.5			30.9			14.8			13.4	
Confl. Peds. (#/hr)							1		2	2		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Adj. Flow (vph)	50	1495	154	176	2475	104	151	34	111	52	23	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	1495	154	176	2475	104	151	145	0	52	64	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	37.7	37.7	11.5	37.7	37.7	46.0	46.0		46.0	46.0	
Total Split (s)	11.7	66.3	66.3	15.6	70.2	70.2	48.1	48.1		48.1	48.1	
Total Split (%)	9.0%	51.0%	51.0%	12.0%	54.0%	54.0%	37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	7.7	59.6	59.6	11.6	63.5	63.5	41.1	41.1		41.1	41.1	
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.7	3.7		3.7	3.7	
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)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0		32.0	32.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	87.4	77.4	77.4	98.4	86.6	86.6	20.6	20.6		20.6	20.6	
Actuated g/C Ratio	0.67	0.60	0.60	0.76	0.67	0.67	0.16	0.16		0.16	0.16	
v/c Ratio	0.31	0.56	0.16	0.56	0.81	0.09	0.71	0.24		0.26	0.12	
Control Delay	16.0	18.6	6.4	30.4	15.8	7.1	68.5	13.8		48.8	19.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	16.0	18.6	6.4	30.4	15.8	7.1	68.5	13.8		48.8	19.8	
LOS	B	B	A	C	B	A	E	B		D	B	
Approach Delay		17.4			16.4			41.7			32.8	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 3 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 92.5%		ICU Level of Service F	
Analysis Period (min) 15			

* User Entered Value

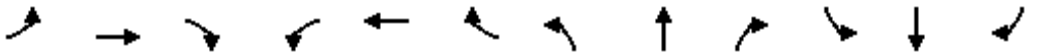
Splits and Phases: 1: Eighth Line & Dundas St E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	1495	154	176	2475	104	151	145	52	64
v/c Ratio	0.31	0.56	0.16	0.56	0.81	0.09	0.71	0.24	0.26	0.12
Control Delay	16.0	18.6	6.4	30.4	15.8	7.1	68.5	13.8	48.8	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	18.6	6.4	30.4	15.8	7.1	68.5	13.8	48.8	19.8
Queue Length 50th (m)	2.8	92.0	5.6	26.9	93.6	4.3	37.2	3.9	11.9	2.6
Queue Length 95th (m)	11.1	139.2	19.1	m35.1	m127.0	m6.4	55.8	12.3	22.5	8.5
Internal Link Dist (m)		627.2			576.6			182.2		161.5
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0		26.0	
Base Capacity (vph)	171	2666	993	321	3042	1110	428	1079	400	1062
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	0.29	0.56	0.16	0.55	0.81	0.09	0.35	0.13	0.13	0.06

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1495	154	176	2475	104	151	34	111	52	23	41
Future Volume (vph)	50	1495	154	176	2475	104	151	34	111	52	23	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1805	3174		1822	3272	
Flt Permitted	0.05	1.00	1.00	0.09	1.00	1.00	0.71	1.00		0.66	1.00	
Satd. Flow (perm)	99	4476	1601	174	4565	1633	1355	3174		1266	3272	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	1495	154	176	2475	104	151	34	111	52	23	41
RTOR Reduction (vph)	0	0	40	0	0	23	0	93	0	0	35	0
Lane Group Flow (vph)	50	1495	114	176	2475	81	151	52	0	52	29	0
Confl. Peds. (#/hr)							1		2	2		1
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	83.3	77.4	77.4	95.7	85.8	85.8	20.6	20.6		20.6	20.6	
Effective Green, g (s)	83.3	77.4	77.4	95.7	85.8	85.8	20.6	20.6		20.6	20.6	
Actuated g/C Ratio	0.64	0.60	0.60	0.74	0.66	0.66	0.16	0.16		0.16	0.16	
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	141	2664	953	309	3012	1077	214	502		200	518	
v/s Ratio Prot	0.02	0.33		c0.06	c0.54			0.02			0.01	
v/s Ratio Perm	0.21		0.07	0.36		0.05	c0.11			0.04		
v/c Ratio	0.35	0.56	0.12	0.57	0.82	0.08	0.71	0.10		0.26	0.06	
Uniform Delay, d1	18.2	16.0	11.5	13.4	16.4	7.9	51.8	46.8		48.0	46.5	
Progression Factor	1.00	1.00	1.00	2.25	0.81	1.59	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.9	0.3	1.1	1.1	0.1	10.5	0.1		0.8	0.1	
Delay (s)	20.0	16.8	11.7	31.3	14.4	12.7	62.3	46.9		48.8	46.5	
Level of Service	C	B	B	C	B	B	E	D		D	D	
Approach Delay (s)		16.5			15.4			54.8			47.5	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

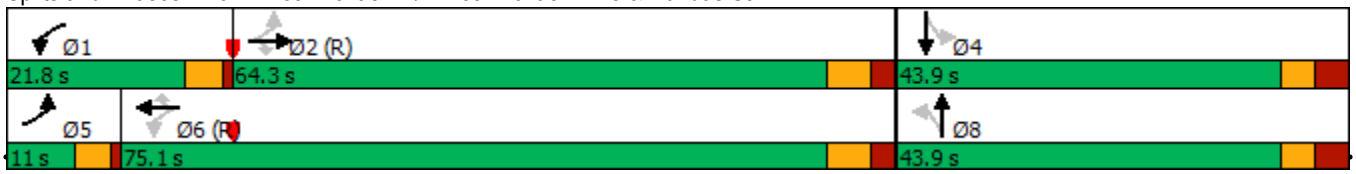
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1443	94	195	2589	323	93	7	72	194	7	73
Future Volume (vph)	120	1443	94	195	2589	323	93	7	72	194	7	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97									
Frt			0.850			0.850		0.863			0.863	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4476	1601	1825	4565	1601	1825	1655	0	1789	1625	0
Flt Permitted	0.055			0.092			0.705			0.706		
Satd. Flow (perm)	104	4476	1553	177	4565	1601	1354	1655	0	1330	1625	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			178		72			73	
Link Speed (k/h)		70			70			50			48	
Link Distance (m)		600.6			721.9			203.4			181.5	
Travel Time (s)		30.9			37.1			14.6			13.6	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	120	1443	94	195	2589	323	93	7	72	194	7	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1443	94	195	2589	323	93	79	0	194	80	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

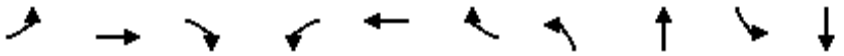
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0		5.0	5.0	
Minimum Split (s)	9.5	38.8	38.8	9.5	38.8	38.8	43.9	43.9		24.7	24.7	
Total Split (s)	11.0	64.3	64.3	21.8	75.1	75.1	43.9	43.9		43.9	43.9	
Total Split (%)	8.5%	49.5%	49.5%	16.8%	57.8%	57.8%	33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	6.5	57.5	57.5	17.3	68.3	68.3	37.2	37.2		37.2	37.2	
Yellow Time (s)	3.5	4.2	4.2	3.5	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	3.4	3.4		3.4	3.4	
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	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		25.0	25.0		25.0	25.0	30.0	30.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	84.8	72.7	72.7	93.0	77.5	77.5	24.7	24.7		24.7	24.7	
Actuated g/C Ratio	0.65	0.56	0.56	0.72	0.60	0.60	0.19	0.19		0.19	0.19	
v/c Ratio	0.62	0.58	0.10	0.63	0.95	0.31	0.36	0.21		0.77	0.22	
Control Delay	47.0	17.9	4.8	24.3	34.8	7.3	47.9	11.7		68.9	11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	47.0	17.9	4.8	24.3	34.8	7.3	47.9	11.7		68.9	11.6	
LOS	D	B	A	C	C	A	D	B		E	B	
Approach Delay		19.3			31.3			31.3			52.2	
Approach LOS		B			C			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 28.6 Intersection LOS: C
Intersection Capacity Utilization 89.1% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 3: Prince Michael Dr/Prince Michael Drive & Dundas St E

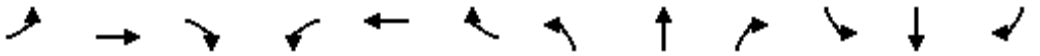




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	1443	94	195	2589	323	93	79	194	80
v/c Ratio	0.62	0.58	0.10	0.63	0.95	0.31	0.36	0.21	0.77	0.22
Control Delay	47.0	17.9	4.8	24.3	34.8	7.3	47.9	11.7	68.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.0	17.9	4.8	24.3	34.8	7.3	47.9	11.7	68.9	11.6
Queue Length 50th (m)	21.1	53.2	0.3	17.2	245.8	15.7	20.9	1.5	47.6	1.5
Queue Length 95th (m)	#47.4	92.5	10.4	44.8	#338.5	37.6	34.2	13.5	68.9	13.6
Internal Link Dist (m)		576.6			697.9			179.4		157.5
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		50.0	
Base Capacity (vph)	194	2503	915	356	2722	1026	387	524	380	517
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	0.62	0.58	0.10	0.55	0.95	0.31	0.24	0.15	0.51	0.15

Intersection Summary

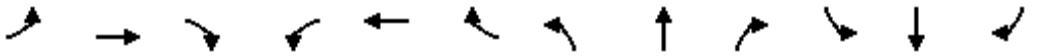
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1443	94	195	2589	323	93	7	72	194	7	73
Future Volume (vph)	120	1443	94	195	2589	323	93	7	72	194	7	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	4476	1553	1825	4565	1601	1825	1656		1789	1626	
Flt Permitted	0.06	1.00	1.00	0.09	1.00	1.00	0.70	1.00		0.71	1.00	
Satd. Flow (perm)	104	4476	1553	176	4565	1601	1354	1656		1329	1626	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	1443	94	195	2589	323	93	7	72	194	7	73
RTOR Reduction (vph)	0	0	41	0	0	72	0	58	0	0	59	0
Lane Group Flow (vph)	120	1443	53	195	2589	251	93	21	0	194	21	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	82.5	72.7	72.7	91.8	77.5	77.5	24.7	24.7		24.7	24.7	
Effective Green, g (s)	82.5	72.7	72.7	91.8	77.5	77.5	24.7	24.7		24.7	24.7	
Actuated g/C Ratio	0.63	0.56	0.56	0.71	0.60	0.60	0.19	0.19		0.19	0.19	
Clearance Time (s)	4.5	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	193	2503	868	309	2721	954	257	314		252	308	
v/s Ratio Prot	0.05	0.32		c0.07	c0.57			0.01			0.01	
v/s Ratio Perm	0.35		0.03	0.37		0.16	0.07			c0.15		
v/c Ratio	0.62	0.58	0.06	0.63	0.95	0.26	0.36	0.07		0.77	0.07	
Uniform Delay, d1	32.1	18.6	13.1	18.1	24.5	12.6	45.8	43.2		50.0	43.2	
Progression Factor	1.40	0.83	1.66	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.6	0.8	0.1	4.3	9.1	0.7	1.0	0.1		13.6	0.1	
Delay (s)	50.5	16.3	21.8	22.4	33.6	13.2	46.8	43.3		63.6	43.3	
Level of Service	D	B	C	C	C	B	D	D		E	D	
Approach Delay (s)		19.0			30.8			45.2			57.6	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



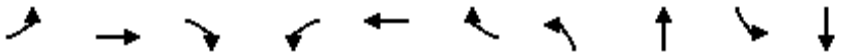
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	1495	154	184	2518	139	151	48	111	81	27	41
Future Volume (vph)	122	1495	154	184	2518	139	151	48	111	81	27	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	26.0		15.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor							1.00	0.99		1.00	0.99	
Frt			0.850			0.850		0.895			0.910	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1807	3206	0	1825	3296	0
Flt Permitted	0.052			0.089			0.710			0.651		
Satd. Flow (perm)	100	4476	1601	171	4565	1633	1349	3206	0	1249	3296	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			78		111			41	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			232.3			206.2			371.1	
Travel Time (s)		33.5			11.9			14.8			26.7	
Confl. Peds. (#/hr)							1		2	2		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Adj. Flow (vph)	122	1495	154	184	2518	139	151	48	111	81	27	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	122	1495	154	184	2518	139	151	159	0	81	68	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	37.7	37.7	11.5	37.7	37.7	46.0	46.0		46.0	46.0	
Total Split (s)	11.7	66.3	66.3	15.6	70.2	70.2	48.1	48.1		48.1	48.1	
Total Split (%)	9.0%	51.0%	51.0%	12.0%	54.0%	54.0%	37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	7.7	59.6	59.6	11.6	63.5	63.5	41.1	41.1		41.1	41.1	
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.7	3.7		3.7	3.7	
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)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0		32.0	32.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	89.5	76.6	76.6	98.0	81.5	81.5	20.6	20.6		20.6	20.6	
Actuated g/C Ratio	0.69	0.59	0.59	0.75	0.63	0.63	0.16	0.16		0.16	0.16	
v/c Ratio	0.60	0.57	0.16	0.57	0.88	0.13	0.71	0.26		0.41	0.12	
Control Delay	36.7	19.1	6.5	28.5	19.7	9.1	68.7	16.2		53.7	21.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.7	19.1	6.5	28.5	19.7	9.1	68.7	16.2		53.7	21.0	
LOS	D	B	A	C	B	A	E	B		D	C	
Approach Delay		19.3			19.8			41.8			38.7	
Approach LOS		B			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 3 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 21.5 Intersection LOS: C
Intersection Capacity Utilization 94.2% ICU Level of Service F
Analysis Period (min) 15
* User Entered Value

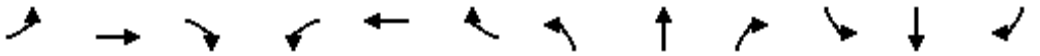
Splits and Phases: 1: Eighth Line & Dundas St E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	1495	154	184	2518	139	151	159	81	68
v/c Ratio	0.60	0.57	0.16	0.57	0.88	0.13	0.71	0.26	0.41	0.12
Control Delay	36.7	19.1	6.5	28.5	19.7	9.1	68.7	16.2	53.7	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	19.1	6.5	28.5	19.7	9.1	68.7	16.2	53.7	21.0
Queue Length 50th (m)	13.8	93.8	5.7	31.7	115.0	7.7	37.2	5.6	19.0	3.1
Queue Length 95th (m)	35.1	140.9	19.3	m31.9	m112.5	m7.7	55.8	14.2	32.3	9.0
Internal Link Dist (m)		627.2			208.3			182.2		347.1
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0		26.0	
Base Capacity (vph)	205	2637	984	327	2863	1053	426	1089	394	1070
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	0.60	0.57	0.16	0.56	0.88	0.13	0.35	0.15	0.21	0.06

Intersection Summary

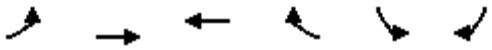
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	1495	154	184	2518	139	151	48	111	81	27	41
Future Volume (vph)	122	1495	154	184	2518	139	151	48	111	81	27	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1805	3207		1822	3294	
Flt Permitted	0.05	1.00	1.00	0.09	1.00	1.00	0.71	1.00		0.65	1.00	
Satd. Flow (perm)	100	4476	1601	172	4565	1633	1350	3207		1249	3294	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	122	1495	154	184	2518	139	151	48	111	81	27	41
RTOR Reduction (vph)	0	0	41	0	0	29	0	93	0	0	35	0
Lane Group Flow (vph)	122	1495	113	184	2518	110	151	66	0	81	33	0
Confl. Peds. (#/hr)							1		2	2		1
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	86.8	76.6	76.6	95.7	81.5	81.5	20.6	20.6		20.6	20.6	
Effective Green, g (s)	86.8	76.6	76.6	95.7	81.5	81.5	20.6	20.6		20.6	20.6	
Actuated g/C Ratio	0.67	0.59	0.59	0.74	0.63	0.63	0.16	0.16		0.16	0.16	
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	202	2637	943	318	2861	1023	213	508		197	521	
v/s Ratio Prot	0.05	0.33		c0.07	c0.55			0.02			0.01	
v/s Ratio Perm	0.35		0.07	0.36		0.07	c0.11			0.06		
v/c Ratio	0.60	0.57	0.12	0.58	0.88	0.11	0.71	0.13		0.41	0.06	
Uniform Delay, d1	30.2	16.5	11.8	15.7	20.2	9.7	51.9	47.0		49.2	46.5	
Progression Factor	1.00	1.00	1.00	2.06	0.87	1.54	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	0.9	0.3	0.3	0.4	0.0	10.7	0.1		1.6	0.1	
Delay (s)	35.5	17.4	12.1	32.6	17.9	14.9	62.5	47.1		50.9	46.6	
Level of Service	D	B	B	C	B	B	E	D		D	D	
Approach Delay (s)		18.1			18.7			54.6			48.9	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

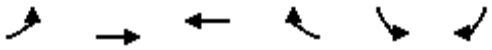
c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Volume (vph)	0	1688	2790	140	0	55
Future Volume (vph)	0	1688	2790	140	0	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			40.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		232.3	368.4		83.2	
Travel Time (s)		11.9	18.9		6.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1688	2790	140	0	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1688	2790	140	0	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

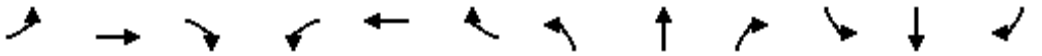
* User Entered Value



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Volume (veh/h)	0	1688	2790	140	0	55
Future Volume (Veh/h)	0	1688	2790	140	0	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1688	2790	140	0	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		232	369			
pX, platoon unblocked	0.46				0.56	0.46
vC, conflicting volume	2930				3353	930
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1121				123	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	89
cM capacity (veh/h)	288				483	504

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	563	563	563	930	930	930	140	55
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	140	55
cSH	1700	1700	1700	1700	1700	1700	1700	504
Volume to Capacity	0.33	0.33	0.33	0.55	0.55	0.55	0.08	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0
Lane LOS								B
Approach Delay (s)	0.0			0.0				13.0
Approach LOS								B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		



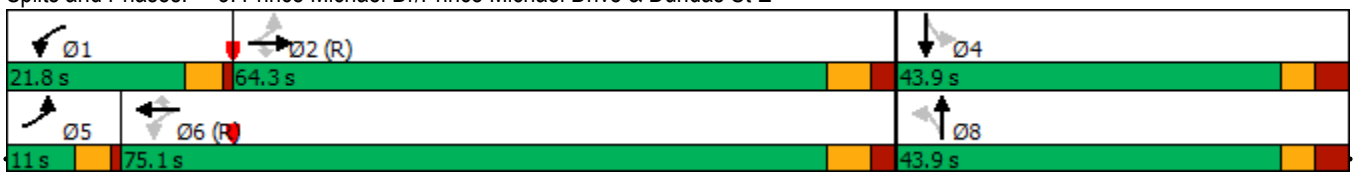
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1473	94	195	2751	323	107	11	72	263	16	73
Future Volume (vph)	120	1473	94	195	2751	323	107	11	72	263	16	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97									
Frt			0.850			0.850		0.870			0.877	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4476	1601	1825	4565	1601	1825	1667	0	1789	1652	0
Flt Permitted	0.059			0.079			0.699			0.703		
Satd. Flow (perm)	111	4476	1553	152	4565	1601	1343	1667	0	1324	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			168		72			73	
Link Speed (k/h)		70			70			50			48	
Link Distance (m)		368.4			721.9			203.4			362.9	
Travel Time (s)		18.9			37.1			14.6			27.2	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	120	1473	94	195	2751	323	107	11	72	263	16	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1473	94	195	2751	323	107	83	0	263	89	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

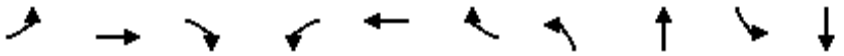
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0		5.0	5.0	
Minimum Split (s)	9.5	38.8	38.8	9.5	38.8	38.8	43.9	43.9		24.7	24.7	
Total Split (s)	11.0	64.3	64.3	21.8	75.1	75.1	43.9	43.9		43.9	43.9	
Total Split (%)	8.5%	49.5%	49.5%	16.8%	57.8%	57.8%	33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	6.5	57.5	57.5	17.3	68.3	68.3	37.2	37.2		37.2	37.2	
Yellow Time (s)	3.5	4.2	4.2	3.5	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	3.4	3.4		3.4	3.4	
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	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		25.0	25.0		25.0	25.0	30.0	30.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	78.3	67.6	67.6	87.1	73.1	73.1	30.5	30.5		30.5	30.5	
Actuated g/C Ratio	0.60	0.52	0.52	0.67	0.56	0.56	0.23	0.23		0.23	0.23	
v/c Ratio	0.69	0.63	0.11	0.69	1.07	0.33	0.34	0.19		0.85	0.20	
Control Delay	54.4	20.3	5.0	34.6	69.3	8.6	42.9	11.0		70.9	12.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.4	20.3	5.0	34.6	69.3	8.6	42.9	11.0		70.9	12.0	
LOS	D	C	A	C	E	A	D	B		E	B	
Approach Delay		21.9			61.3			28.9			56.0	
Approach LOS		C			E			C			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 47.7		Intersection LOS: D	
Intersection Capacity Utilization 96.0%		ICU Level of Service F	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 3: Prince Michael Dr/Prince Michael Drive & Dundas St E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	1473	94	195	2751	323	107	83	263	89
v/c Ratio	0.69	0.63	0.11	0.69	1.07	0.33	0.34	0.19	0.85	0.20
Control Delay	54.4	20.3	5.0	34.6	69.3	8.6	42.9	11.0	70.9	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	20.3	5.0	34.6	69.3	8.6	42.9	11.0	70.9	12.0
Queue Length 50th (m)	21.1	57.1	0.0	24.4	~337.1	19.5	22.7	2.2	64.1	3.2
Queue Length 95th (m)	#53.4	98.0	10.7	51.3	#373.8	39.4	37.4	14.2	91.7	15.6
Internal Link Dist (m)		344.4			697.9			179.4		338.9
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		50.0	
Base Capacity (vph)	175	2326	858	326	2567	973	384	528	378	524
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	0.69	0.63	0.11	0.60	1.07	0.33	0.28	0.16	0.70	0.17

Intersection Summary

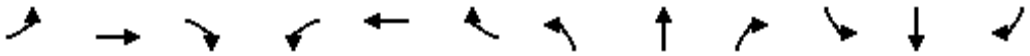
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1473	94	195	2751	323	107	11	72	263	16	73
Future Volume (vph)	120	1473	94	195	2751	323	107	11	72	263	16	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	4476	1553	1825	4565	1601	1825	1667		1789	1652	
Flt Permitted	0.06	1.00	1.00	0.08	1.00	1.00	0.70	1.00		0.70	1.00	
Satd. Flow (perm)	111	4476	1553	151	4565	1601	1343	1667		1324	1652	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	1473	94	195	2751	323	107	11	72	263	16	73
RTOR Reduction (vph)	0	0	45	0	0	74	0	55	0	0	56	0
Lane Group Flow (vph)	120	1473	49	195	2751	249	107	28	0	263	33	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	76.0	67.6	67.6	86.0	73.1	73.1	30.5	30.5		30.5	30.5	
Effective Green, g (s)	76.0	67.6	67.6	86.0	73.1	73.1	30.5	30.5		30.5	30.5	
Actuated g/C Ratio	0.58	0.52	0.52	0.66	0.56	0.56	0.23	0.23		0.23	0.23	
Clearance Time (s)	4.5	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	173	2327	807	278	2566	900	315	391		310	387	
v/s Ratio Prot	0.04	0.33		c0.07	c0.60			0.02			0.02	
v/s Ratio Perm	0.36		0.03	0.39		0.16	0.08			c0.20		
v/c Ratio	0.69	0.63	0.06	0.70	1.07	0.28	0.34	0.07		0.85	0.09	
Uniform Delay, d1	30.8	22.3	15.5	25.6	28.5	14.8	41.4	38.7		47.5	38.9	
Progression Factor	1.53	0.79	1.65	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.3	1.1	0.1	8.0	40.7	0.8	0.8	0.1		19.3	0.1	
Delay (s)	57.4	18.8	25.6	33.6	69.2	15.5	42.1	38.8		66.9	39.0	
Level of Service	E	B	C	C	E	B	D	D		E	D	
Approach Delay (s)		21.9			61.8			40.7			59.8	
Approach LOS		C			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	48.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



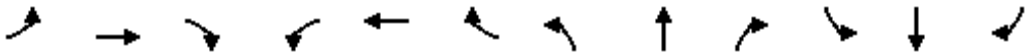
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	15	34	0	44	26	26	121	45	15	0
Future Volume (vph)	0	0	15	34	0	44	26	26	121	45	15	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.865			0.924			0.895				
Flt Protected					0.979			0.993			0.964	
Satd. Flow (prot)	0	1629	0	0	1704	0	0	3180	0	0	3450	0
Flt Permitted					0.979			0.993			0.964	
Satd. Flow (perm)	0	1629	0	0	1704	0	0	3180	0	0	3450	0
Link Speed (k/h)		48			48			48			50	
Link Distance (m)		118.4			147.8			371.1			48.1	
Travel Time (s)		8.9			11.1			27.8			3.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	15	34	0	44	26	26	121	45	15	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	78	0	0	173	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	15	34	0	44	26	26	121	45	15	0
Future Volume (Veh/h)	0	0	15	34	0	44	26	26	121	45	15	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	15	34	0	44	26	26	121	45	15	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								371				
pX, platoon unblocked												
vC, conflicting volume	214	304	8	251	244	74	15			147		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	214	304	8	251	244	74	15			147		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	95	100	95	98			97		
cM capacity (veh/h)	666	579	1072	648	626	973	1601			1432		

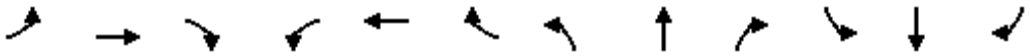
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	15	78	39	134	52	8
Volume Left	0	34	26	0	45	0
Volume Right	15	44	0	121	0	0
cSH	1072	799	1601	1700	1432	1700
Volume to Capacity	0.01	0.10	0.02	0.08	0.03	0.00
Queue Length 95th (m)	0.3	2.5	0.4	0.0	0.7	0.0
Control Delay (s)	8.4	10.0	4.9	0.0	6.5	0.0
Lane LOS	A	A	A		A	
Approach Delay (s)	8.4	10.0	1.1		5.7	
Approach LOS	A	A				

Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	30.0%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	145	68	0	0	116	225	112	0	137	45
Future Volume (vph)	10	0	145	68	0	0	116	225	112	0	137	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.874						0.967			0.967	
Flt Protected		0.997			0.950			0.987				
Satd. Flow (prot)	0	1641	0	0	1789	0	0	1798	0	0	1821	0
Flt Permitted		0.997			0.950			0.987				
Satd. Flow (perm)	0	1641	0	0	1789	0	0	1798	0	0	1821	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		99.1			120.9			362.9			69.5	
Travel Time (s)		7.4			9.1			27.2			5.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	0	145	68	0	0	116	225	112	0	137	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	0	0	68	0	0	453	0	0	182	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

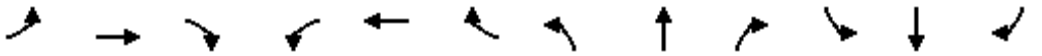
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	145	68	0	0	116	225	112	0	137	45
Future Volume (Veh/h)	10	0	145	68	0	0	116	225	112	0	137	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	0	145	68	0	0	116	225	112	0	137	45
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								363				
pX, platoon unblocked												
vC, conflicting volume	672	728	160	818	695	281	182			337		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	672	728	160	818	695	281	182			337		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	84	71	100	100	92			100		
cM capacity (veh/h)	346	321	886	231	335	758	1393			1222		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	155	68	453	182
Volume Left	10	68	116	0
Volume Right	145	0	112	45
cSH	805	231	1393	1222
Volume to Capacity	0.19	0.29	0.08	0.00
Queue Length 95th (m)	5.4	9.0	2.1	0.0
Control Delay (s)	10.5	27.0	2.6	0.0
Lane LOS	B	D	A	
Approach Delay (s)	10.5	27.0	2.6	0.0
Approach LOS	B	D		

Intersection Summary				
Average Delay	5.4			
Intersection Capacity Utilization	61.7%	ICU Level of Service	B	
Analysis Period (min)	15			



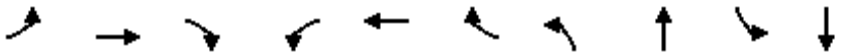
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	1611	170	202	2709	150	167	52	123	86	29	45
Future Volume (vph)	127	1611	170	202	2709	150	167	52	123	86	29	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	26.0		15.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor							1.00	0.99		1.00	0.99	
Frt			0.850			0.850		0.895			0.909	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1807	3206	0	1825	3292	0
Flt Permitted	0.055			0.068			0.706			0.641		
Satd. Flow (perm)	106	4476	1601	131	4565	1633	1342	3206	0	1230	3292	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102			78		123			45	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			232.3			206.2			371.1	
Travel Time (s)		33.5			11.9			14.8			26.7	
Confl. Peds. (#/hr)							1		2	2		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Adj. Flow (vph)	127	1611	170	202	2709	150	167	52	123	86	29	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	1611	170	202	2709	150	167	175	0	86	74	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	37.7	37.7	11.5	37.7	37.7	46.0	46.0		46.0	46.0	
Total Split (s)	11.7	66.3	66.3	15.6	70.2	70.2	48.1	48.1		48.1	48.1	
Total Split (%)	9.0%	51.0%	51.0%	12.0%	54.0%	54.0%	37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	7.7	59.6	59.6	11.6	63.5	63.5	41.1	41.1		41.1	41.1	
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.7	3.7		3.7	3.7	
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)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0		32.0	32.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	86.4	73.0	73.0	96.8	79.4	79.4	22.2	22.2		22.2	22.2	
Actuated g/C Ratio	0.66	0.56	0.56	0.74	0.61	0.61	0.17	0.17		0.17	0.17	
v/c Ratio	0.60	0.64	0.18	0.63	0.97	0.15	0.73	0.27		0.41	0.12	
Control Delay	36.5	22.7	7.8	36.7	24.8	10.1	68.2	15.3		52.1	19.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.5	22.7	7.8	36.7	24.8	10.1	68.2	15.3		52.1	19.8	
LOS	D	C	A	D	C	B	E	B		D	B	
Approach Delay		22.3			24.8			41.1			37.1	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 3 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 25.3 Intersection LOS: C
Intersection Capacity Utilization 98.3% ICU Level of Service F
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 1: Eighth Line & Dundas St E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	1611	170	202	2709	150	167	175	86	74
v/c Ratio	0.60	0.64	0.18	0.63	0.97	0.15	0.73	0.27	0.41	0.12
Control Delay	36.5	22.7	7.8	36.7	24.8	10.1	68.2	15.3	52.1	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	22.7	7.8	36.7	24.8	10.1	68.2	15.3	52.1	19.8
Queue Length 50th (m)	14.8	113.8	7.7	41.5	137.9	9.0	41.1	6.0	19.9	3.3
Queue Length 95th (m)	36.7	164.8	23.3	m36.5	m#130.0	m7.5	60.4	14.8	33.2	9.3
Internal Link Dist (m)		627.2			208.3			182.2		347.1
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0		26.0	
Base Capacity (vph)	213	2514	944	319	2786	1027	424	1097	388	1071
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	0.60	0.64	0.18	0.63	0.97	0.15	0.39	0.16	0.22	0.07

Intersection Summary

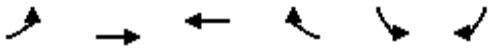
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	1611	170	202	2709	150	167	52	123	86	29	45
Future Volume (vph)	127	1611	170	202	2709	150	167	52	123	86	29	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1805	3205		1822	3291	
Flt Permitted	0.05	1.00	1.00	0.07	1.00	1.00	0.71	1.00		0.64	1.00	
Satd. Flow (perm)	105	4476	1601	130	4565	1633	1342	3205		1230	3291	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	127	1611	170	202	2709	150	167	52	123	86	29	45
RTOR Reduction (vph)	0	0	45	0	0	30	0	102	0	0	37	0
Lane Group Flow (vph)	127	1611	125	202	2709	120	167	73	0	86	37	0
Confl. Peds. (#/hr)							1		2	2		1
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	83.8	73.1	73.1	94.1	79.4	79.4	22.2	22.2		22.2	22.2	
Effective Green, g (s)	83.8	73.1	73.1	94.1	79.4	79.4	22.2	22.2		22.2	22.2	
Actuated g/C Ratio	0.64	0.56	0.56	0.72	0.61	0.61	0.17	0.17		0.17	0.17	
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	209	2516	900	315	2788	997	229	547		210	562	
v/s Ratio Prot	0.05	0.36		c0.08	c0.59			0.02			0.01	
v/s Ratio Perm	0.34		0.08	0.38		0.07	c0.12			0.07		
v/c Ratio	0.61	0.64	0.14	0.64	0.97	0.12	0.73	0.13		0.41	0.07	
Uniform Delay, d1	33.3	19.5	13.5	28.5	24.2	10.6	51.1	45.7		48.1	45.2	
Progression Factor	1.00	1.00	1.00	1.56	0.89	1.47	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.2	1.3	0.3	0.4	1.8	0.0	11.4	0.1		1.5	0.1	
Delay (s)	38.5	20.7	13.8	44.9	23.2	15.7	62.4	45.9		49.6	45.3	
Level of Service	D	C	B	D	C	B	E	D		D	D	
Approach Delay (s)		21.3			24.3			54.0			47.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		

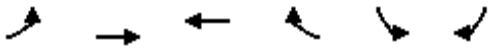
c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Volume (vph)	0	1816	3003	140	0	55
Future Volume (vph)	0	1816	3003	140	0	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			40.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		232.3	368.4		83.2	
Travel Time (s)		11.9	18.9		6.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1816	3003	140	0	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1816	3003	140	0	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

* User Entered Value



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Volume (veh/h)	0	1816	3003	140	0	55
Future Volume (Veh/h)	0	1816	3003	140	0	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1816	3003	140	0	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		232	369			
pX, platoon unblocked	0.48				0.60	0.48
vC, conflicting volume	3143				3608	1001
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1659				335	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	89
cM capacity (veh/h)	184				378	518

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	605	605	605	1001	1001	1001	140	55
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	140	55
cSH	1700	1700	1700	1700	1700	1700	1700	518
Volume to Capacity	0.36	0.36	0.36	0.59	0.59	0.59	0.08	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8
Lane LOS								B
Approach Delay (s)	0.0			0.0				12.8
Approach LOS								B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

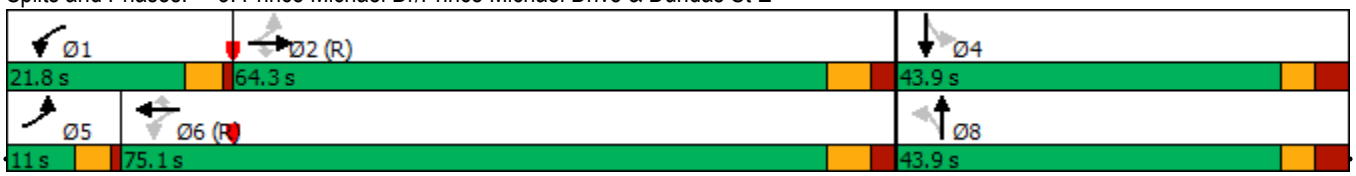
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	1585	104	215	2951	357	117	12	79	282	16	81
Future Volume (vph)	132	1585	104	215	2951	357	117	12	79	282	16	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97									
Frt			0.850			0.850		0.870			0.875	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4476	1601	1825	4565	1601	1825	1667	0	1789	1648	0
Flt Permitted	0.061			0.058			0.694			0.698		
Satd. Flow (perm)	115	4476	1553	111	4565	1601	1333	1667	0	1315	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			173		79			81	
Link Speed (k/h)		70			70			50			48	
Link Distance (m)		368.4			721.9			203.4			362.9	
Travel Time (s)		18.9			37.1			14.6			27.2	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	132	1585	104	215	2951	357	117	12	79	282	16	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	1585	104	215	2951	357	117	91	0	282	97	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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

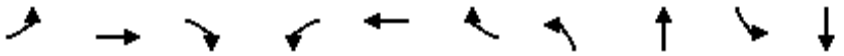
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0		5.0	5.0	
Minimum Split (s)	9.5	38.8	38.8	9.5	38.8	38.8	43.9	43.9		24.7	24.7	
Total Split (s)	11.0	64.3	64.3	21.8	75.1	75.1	43.9	43.9		43.9	43.9	
Total Split (%)	8.5%	49.5%	49.5%	16.8%	57.8%	57.8%	33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	6.5	57.5	57.5	17.3	68.3	68.3	37.2	37.2		37.2	37.2	
Yellow Time (s)	3.5	4.2	4.2	3.5	4.2	4.2	3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	3.4	3.4		3.4	3.4	
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	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		25.0	25.0		25.0	25.0	30.0	30.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	75.9	65.1	65.1	85.5	71.4	71.4	32.1	32.1		32.1	32.1	
Actuated g/C Ratio	0.58	0.50	0.50	0.66	0.55	0.55	0.25	0.25		0.25	0.25	
v/c Ratio	0.75	0.71	0.13	0.81	1.18	0.37	0.36	0.19		0.87	0.21	
Control Delay	59.9	24.7	8.0	54.5	113.3	9.8	42.3	10.5		72.1	11.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	59.9	24.7	8.0	54.5	113.3	9.8	42.3	10.5		72.1	11.1	
LOS	E	C	A	D	F	A	D	B		E	B	
Approach Delay		26.3			99.2			28.4			56.5	
Approach LOS		C			F			C			E	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 71.6 Intersection LOS: E
Intersection Capacity Utilization 101.6% ICU Level of Service G
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 3: Prince Michael Dr/Prince Michael Drive & Dundas St E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	132	1585	104	215	2951	357	117	91	282	97
v/c Ratio	0.75	0.71	0.13	0.81	1.18	0.37	0.36	0.19	0.87	0.21
Control Delay	59.9	24.7	8.0	54.5	113.3	9.8	42.3	10.5	72.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	24.7	8.0	54.5	113.3	9.8	42.3	10.5	72.1	11.1
Queue Length 50th (m)	25.3	61.9	0.0	37.2	~388.5	25.1	24.4	2.3	68.4	3.1
Queue Length 95th (m)	m#59.9	120.9	m14.5	#69.7	#416.8	46.1	40.6	15.0	#104.2	16.0
Internal Link Dist (m)		344.4			697.9			179.4		338.9
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		50.0	
Base Capacity (vph)	176	2242	831	301	2505	956	381	533	376	529
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	0.75	0.71	0.13	0.71	1.18	0.37	0.31	0.17	0.75	0.18

Intersection Summary

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

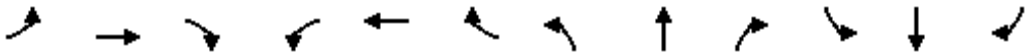
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	1585	104	215	2951	357	117	12	79	282	16	81
Future Volume (vph)	132	1585	104	215	2951	357	117	12	79	282	16	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	4476	1553	1825	4565	1601	1825	1667		1789	1648	
Flt Permitted	0.06	1.00	1.00	0.06	1.00	1.00	0.69	1.00		0.70	1.00	
Satd. Flow (perm)	116	4476	1553	111	4565	1601	1334	1667		1315	1648	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	132	1585	104	215	2951	357	117	12	79	282	16	81
RTOR Reduction (vph)	0	0	52	0	0	78	0	59	0	0	61	0
Lane Group Flow (vph)	132	1585	52	215	2951	279	117	32	0	282	36	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	73.7	65.2	65.2	84.4	71.4	71.4	32.1	32.1		32.1	32.1	
Effective Green, g (s)	73.7	65.2	65.2	84.4	71.4	71.4	32.1	32.1		32.1	32.1	
Actuated g/C Ratio	0.57	0.50	0.50	0.65	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.5	6.8	6.8	4.5	6.8	6.8	6.7	6.7		6.7	6.7	
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	175	2244	778	265	2507	879	329	411		324	406	
v/s Ratio Prot	0.05	0.35		c0.09	c0.65			0.02			0.02	
v/s Ratio Perm	0.38		0.03	0.43		0.17	0.09			c0.21		
v/c Ratio	0.75	0.71	0.07	0.81	1.18	0.32	0.36	0.08		0.87	0.09	
Uniform Delay, d1	32.5	25.0	16.7	36.9	29.3	16.0	40.4	37.6		47.0	37.7	
Progression Factor	1.55	0.86	2.10	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.3	1.6	0.1	17.4	84.2	0.9	0.8	0.1		22.0	0.1	
Delay (s)	64.8	23.1	35.2	54.3	113.5	16.9	41.2	37.7		68.9	37.8	
Level of Service	E	C	D	D	F	B	D	D		E	D	
Approach Delay (s)		26.9			100.1			39.7			61.0	
Approach LOS		C			F			D			E	

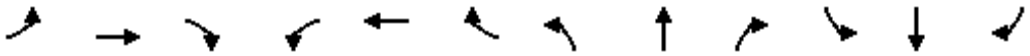
Intersection Summary			
HCM 2000 Control Delay	73.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	16	34	0	44	29	29	121	45	16	0
Future Volume (vph)	0	0	16	34	0	44	29	29	121	45	16	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.865			0.924			0.899				
Flt Protected					0.979			0.992			0.964	
Satd. Flow (prot)	0	1629	0	0	1704	0	0	3191	0	0	3450	0
Flt Permitted					0.979			0.992			0.964	
Satd. Flow (perm)	0	1629	0	0	1704	0	0	3191	0	0	3450	0
Link Speed (k/h)		48			48			48			50	
Link Distance (m)		118.4			147.8			371.1			48.1	
Travel Time (s)		8.9			11.1			27.8			3.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	16	34	0	44	29	29	121	45	16	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	78	0	0	179	0	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

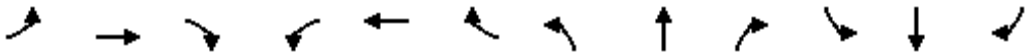
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	16	34	0	44	29	29	121	45	16	0
Future Volume (Veh/h)	0	0	16	34	0	44	29	29	121	45	16	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	16	34	0	44	29	29	121	45	16	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								371				
pX, platoon unblocked												
vC, conflicting volume	222	314	8	262	254	75	16			150		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	222	314	8	262	254	75	16			150		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	95	100	95	98			97		
cM capacity (veh/h)	656	571	1072	636	617	971	1600			1429		

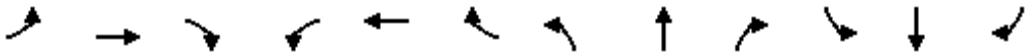
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	16	78	44	136	53	8
Volume Left	0	34	29	0	45	0
Volume Right	16	44	0	121	0	0
cSH	1072	789	1600	1700	1429	1700
Volume to Capacity	0.01	0.10	0.02	0.08	0.03	0.00
Queue Length 95th (m)	0.3	2.5	0.4	0.0	0.7	0.0
Control Delay (s)	8.4	10.1	4.9	0.0	6.5	0.0
Lane LOS	A	B	A		A	
Approach Delay (s)	8.4	10.1	1.2		5.6	
Approach LOS	A	B				

Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	30.1%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	152	75	0	0	128	248	124	0	151	45
Future Volume (vph)	10	0	152	75	0	0	128	248	124	0	151	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.873						0.967			0.969	
Flt Protected		0.997			0.950			0.987				
Satd. Flow (prot)	0	1639	0	0	1789	0	0	1798	0	0	1825	0
Flt Permitted		0.997			0.950			0.987				
Satd. Flow (perm)	0	1639	0	0	1789	0	0	1798	0	0	1825	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		99.1			120.9			362.9			69.5	
Travel Time (s)		7.4			9.1			27.2			5.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	0	152	75	0	0	128	248	124	0	151	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	162	0	0	75	0	0	500	0	0	196	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			

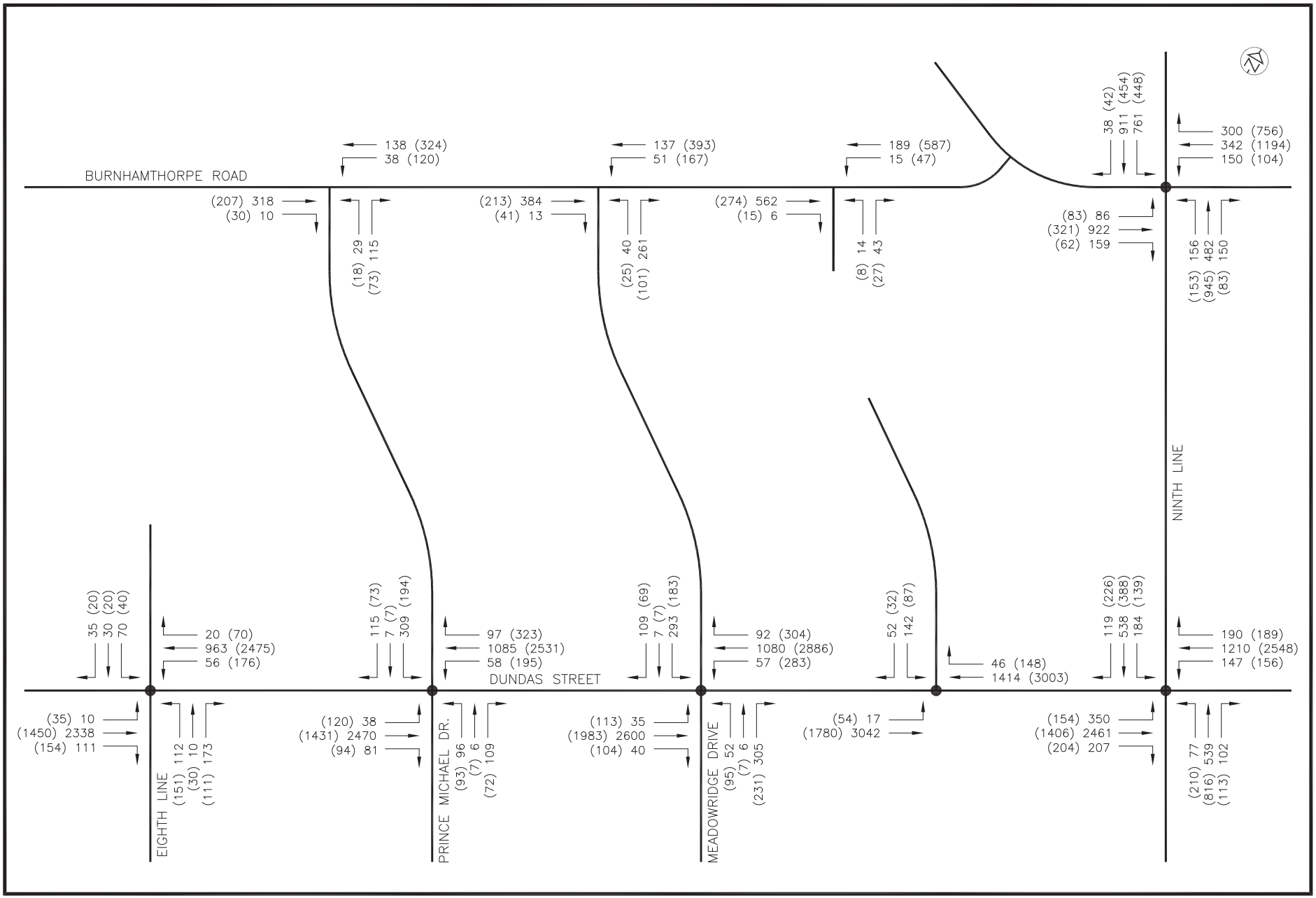


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	152	75	0	0	128	248	124	0	151	45
Future Volume (Veh/h)	10	0	152	75	0	0	128	248	124	0	151	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	0	152	75	0	0	128	248	124	0	151	45
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								363				
pX, platoon unblocked												
vC, conflicting volume	740	802	174	892	762	310	196			372		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	740	802	174	892	762	310	196			372		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	83	63	100	100	91			100		
cM capacity (veh/h)	309	288	870	202	304	730	1377			1186		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	162	75	500	196
Volume Left	10	75	128	0
Volume Right	152	0	124	45
cSH	782	202	1377	1186
Volume to Capacity	0.21	0.37	0.09	0.00
Queue Length 95th (m)	5.9	12.3	2.3	0.0
Control Delay (s)	10.8	33.1	2.7	0.0
Lane LOS	B	D	A	
Approach Delay (s)	10.8	33.1	2.7	0.0
Approach LOS	B	D		

Intersection Summary				
Average Delay	6.0			
Intersection Capacity Utilization	65.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Appendix B
Traffic Data



LEGEND

8 A.M. PEAK HOUR

(40) P.M. PEAK HOUR

● SIGNALIZED INTERSECTION

2022 TOTAL TRAFFIC

FIGURE 8

6.0 TOTAL FUTURE TRAFFIC CONDITIONS

6.1 Future Total Traffic Volumes

Future total traffic on the boundary road network is based on the sum of the future background traffic and the site traffic for the subject development.

Figures 6-1 and **6-2** illustrate the 2022 horizon year future total traffic volumes during the weekday a.m. and p.m. peak hours, respectively.

Figure 6-1: Future Total Traffic Volumes, Weekday AM Peak Hour (Year 2022)

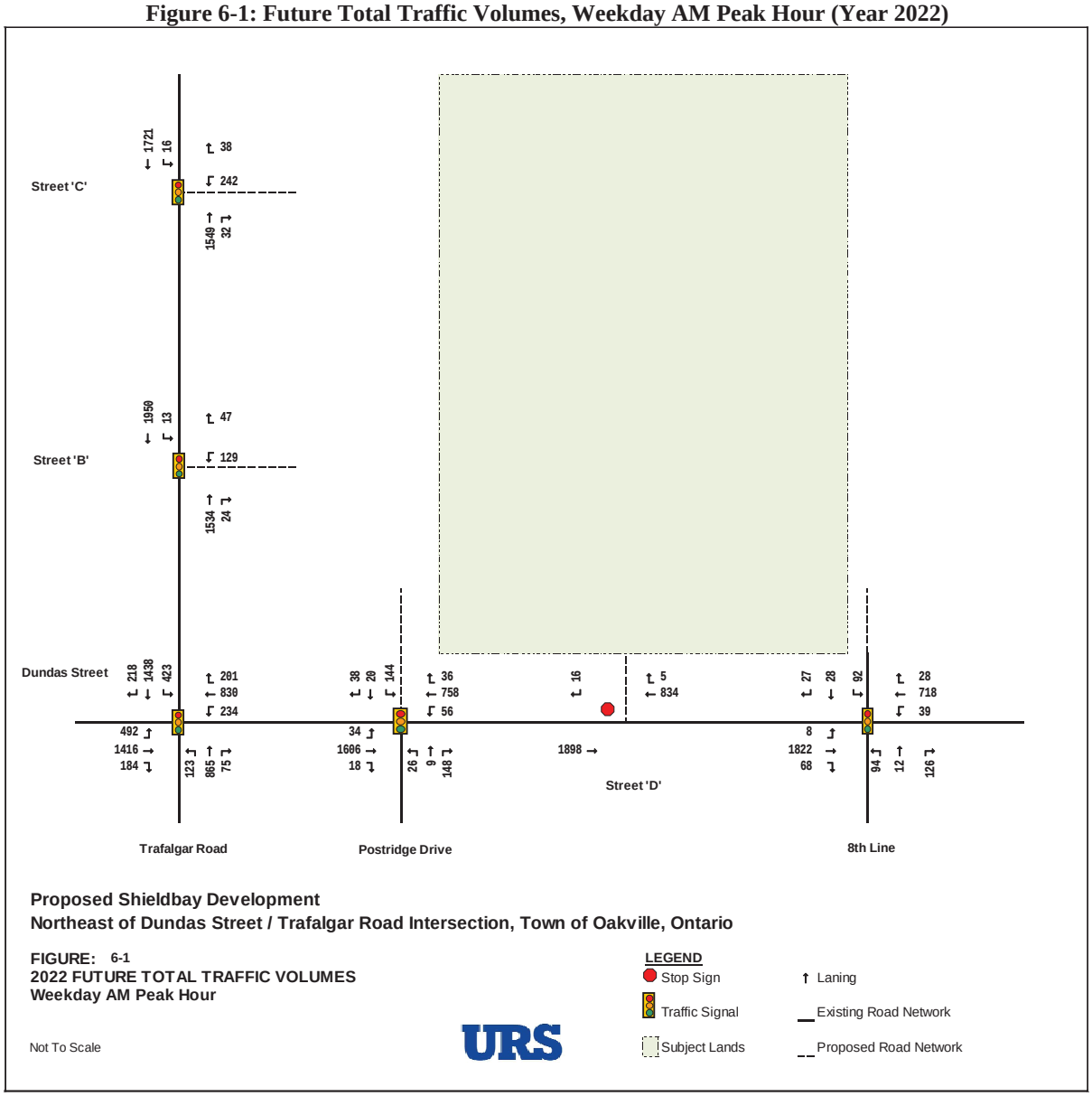
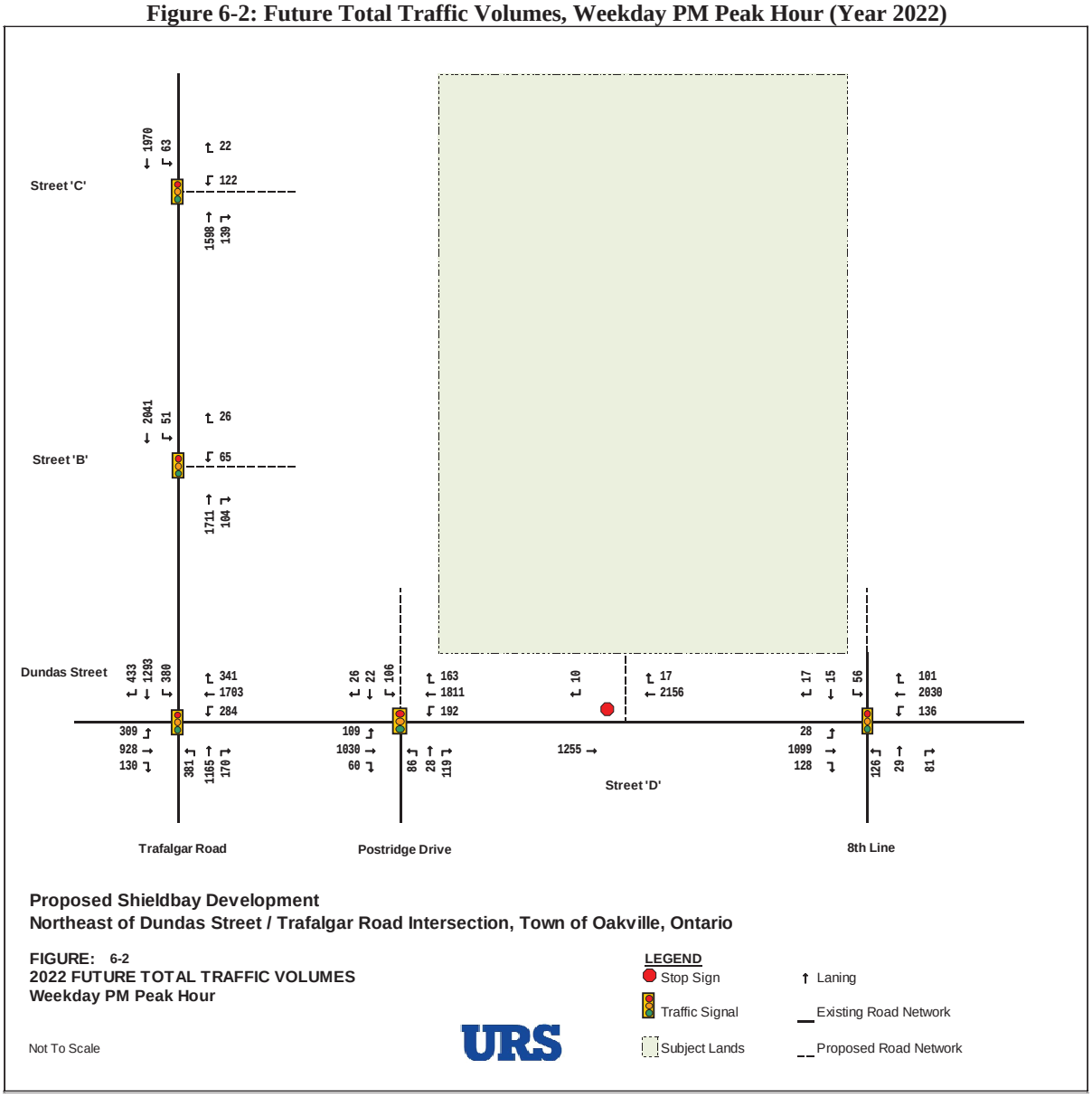


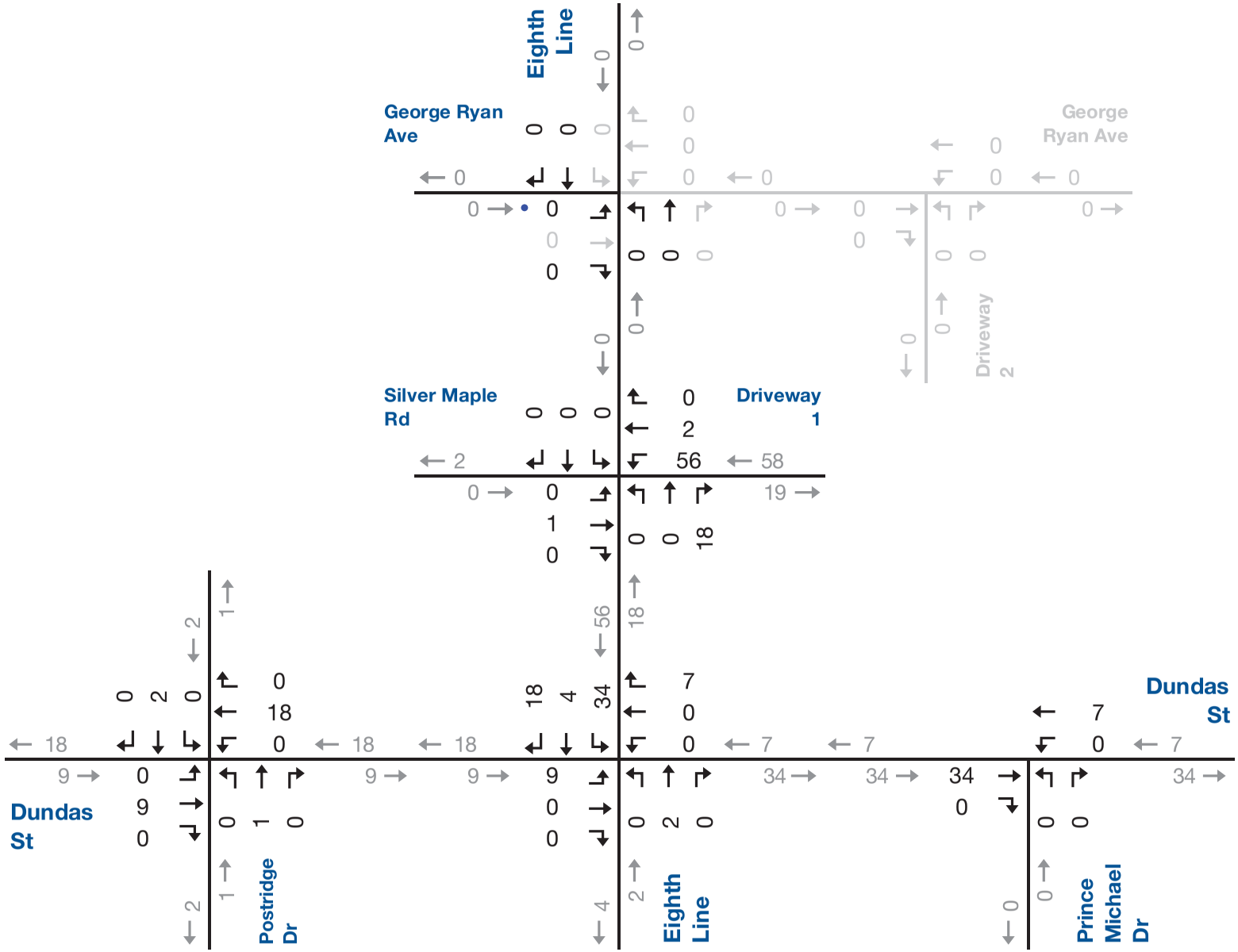
Figure 6-2: Future Total Traffic Volumes, Weekday PM Peak Hour (Year 2022)



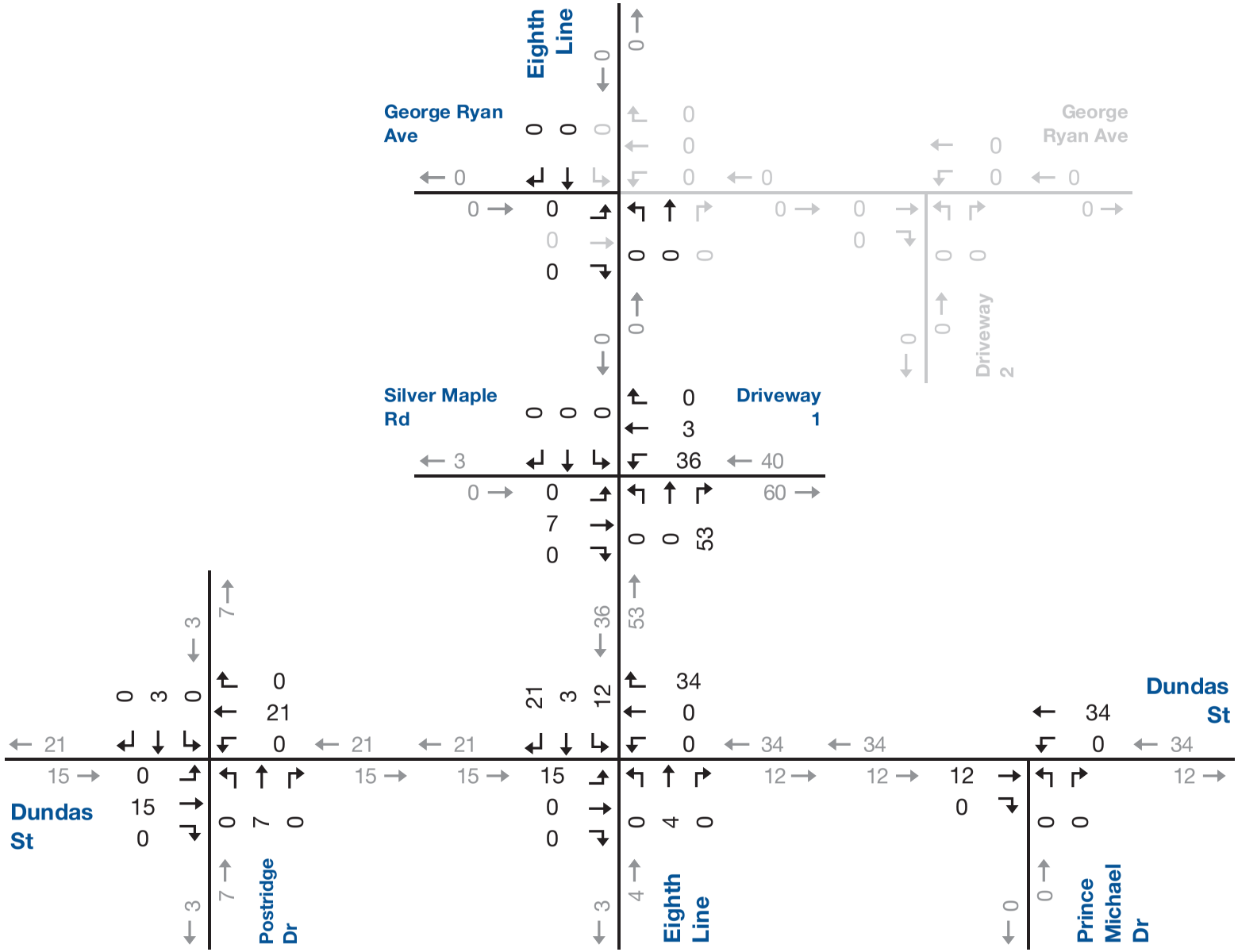
6.2 Signal Warrant Analysis

The requirements for the installation of signalized traffic control was reviewed based on the signal warrant methodology outlined by the Ontario Ministry of Transportation in the *Ontario Traffic Manual (OTM) – Book 12, Traffic Signals* and supplementary policy. It is noted under existing conditions; Dundas Street / Postridge Drive – Street 'A' and Dundas Street / Eighth Line – Street 'C' intersections are signalized. As such, the existing signal traffic controls will be maintained under future conditions.

Given that the Dundas Street / Street 'D' intersection is restricted to right-in/right-out movements due to the future divided centre median, signal traffic controls are not warranted or proposed at this location.

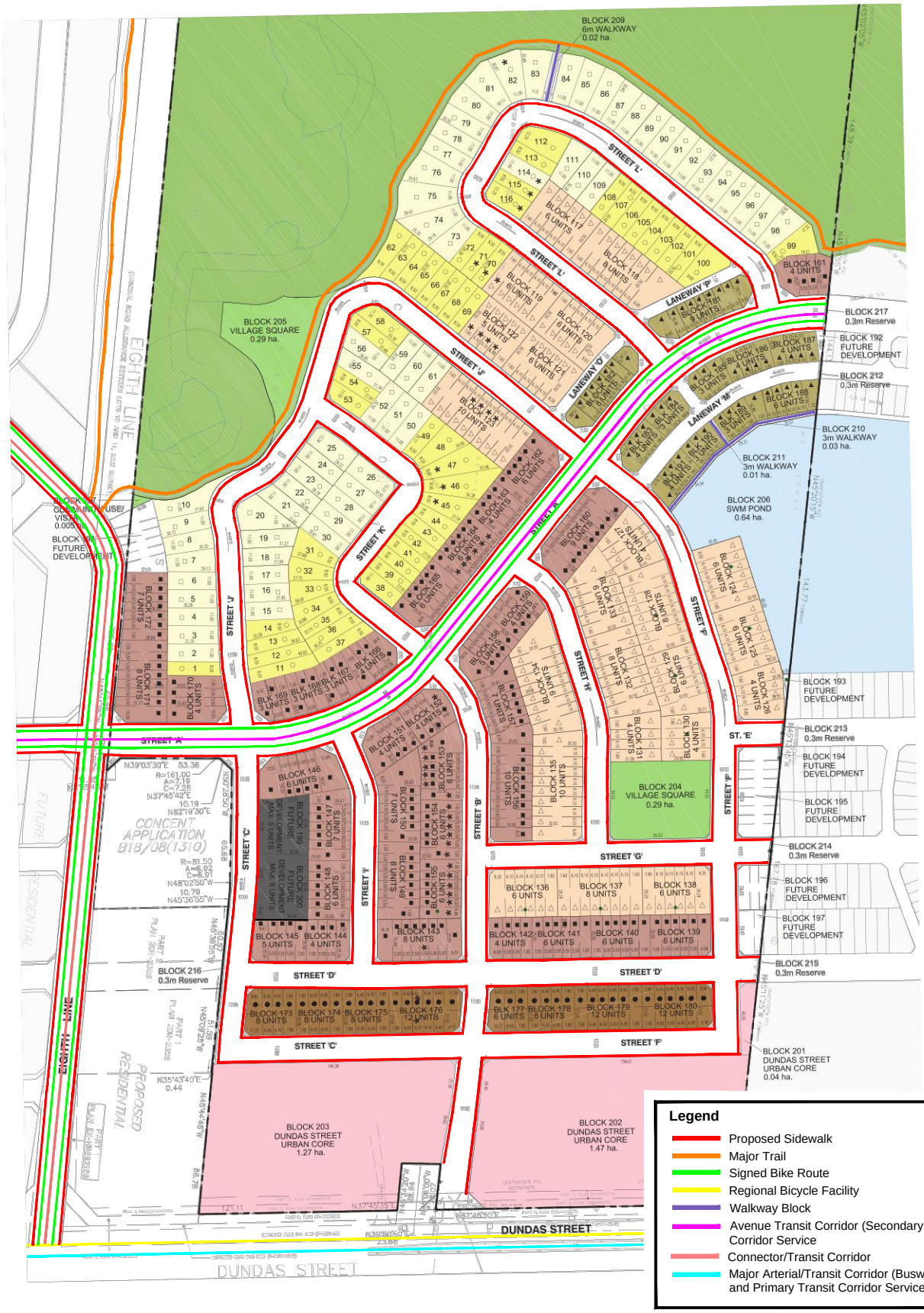


Scenario 2 AM Peak Hour Site Generated Trip Assignment



Scenario 2 PM Peak Hour Site Generated Trip Assignment

Appendix C
Pedestrian Circulation Plan



GHD

Capoak Inc. and Redoak G & A Inc
Redoak Subdivision
Proposed Residential Development

Pedestrian Circulation Plan

Project No. 111148755
Report No. 3
Date July 05, 2020

PCP-101

Filename: Redoak - Ped circulation -2020 - v3.dwg
Plot Date: 5 June 2020 - 11:11 AM

Source: