1995 Dundas LP

TRANSPORTATION IMPACT STUDY

Proposed Mixed-Use Development

1995 Dundas Street East
City of Mississauga

December 2024

24229

Disclaimer

This Report represents the work of LEA Consulting Ltd ("LEA"). This Report may not be relied upon for detailed implementation or any other purpose not specifically identified within this Report. This Document is confidential and prepared solely for the use of 1995 Dundas LP. Neither LEA, its sub-consultants nor their respective employees assume any liability for any reason, including, but not limited to, negligence, to any party other than 1995 Dundas LP for any information or representation herein.

LEA Consulting Ltd.
625 Cochrane Drive, 9th Floor
Markham, ON, L3R 9R9 Canada
T | 905 470 0015 F | 905 470 0030
WWW.LEA.CA

December 5, 2024 **Reference Number:** 24229

1995 Dundas Limited Partnership
Pierce Ji, CEO
Landeal Group
3100 Steeles Avenue East, Suite 318
Markham, ON
L3R 8T3

Dear Mr. Ji:

RE: Transportation Impact Study
Proposed Mixed-Use Development
1995 Dundas Street East, City of Mississauga

LEA Consulting Ltd. is please to present the findings of our Transportation Impact Study for the proposed mixed-use development at 1995 Dundas Street East in the City of Mississauga. This report provides an analysis of the traffic network using available traffic data, review of the parking and loading provisions in comparison to the By-law requirements, internal site circulation review, and a functional road design for the future street to the north of the site.

Should you have any comments with our assumptions or have any concerns, please contact the undersigned.

Yours truly,

LEA CONSULTING LTD.

Kenneth Chan, P.Eng., PTOE, PMP
Senior Vice President, Transportation Engineering & Planning

Andy Bilawejian, B.Eng., EIT
Project Coordinator

Encl.

EXECUTIVE SUMMARY

This Transportation Impact Study has been prepared in support of the proposed development at 1995 Dundas Street East, which will consist of 941 residential units and 667 m^2 of retail GFA to be provided within a high-rise building with 24 and 25-storey towers and a 5-storey podium.

The subject site is located in an area well-serviced by the MiWay Transit network. The subject site is within walkable distance of bus stops along Dundas Street East, as well as the future Dundas BRT corridor.

Intersection capacity analysis was completed for the existing (2024) horizon, as well as a 5-year future horizon (2029) and a 10-year future horizon (2034). A sensitivity analysis was also completed for the 2034 horizon to include the Proposed Future Street to the north of the site.

In total, the subject development is anticipated to generate 267 two-way vehicle trips (74 in; 193 out) during the AM peak hour and 334 two-way vehicle trips (204 in; 130 out) during the PM peak hour. Taking into account the removal of existing trips, the net trip generation is estimated as 206 two-way vehicle trips (36 in; 170 out) during the AM peak hour, and 225 two-way vehicle trips (151 in; 74 out) during the PM peak hour.

The majority of the intersections within the study area are expected to operate well under future conditions following development of the subject site.

A queueing analysis was also conducted for each study area intersection. All queues are anticipated to be acceptable, with the exception of a few movements that are expected to exceed existing storage. However, it should be noted that many of the queue constraints analyzed were present in the existing conditions as well, indicating that the subject site will have minimal impact to intersection queues within the area.

The subject site is located in a Major Transit Station Area and as a result of Bill 185 recently passed by the Ontario legislature, no minimum parking supply requirements apply. The development proposal includes a minimal parking supply, with 0.29 spaces per unit provided for residents and 0.08 spaces per unit for visitors and retail use.

Based on a review of the site's transit and provincial and municipal planning context, a minimal parking supply is an appropriate strategy for the subject site based on the site's location within the Wharton Protected Major Transit Station Area along the future Dundas BRT corridor and within the Dundas Connects Master Plan area, where multi-modal improvements are planned through the introduction of BRT service, cycling facilities, and improvements to the pedestrian environment and public realm. The proposed development will contribute to this evolution by providing a consistent frontage with ground floor retail use oriented towards the public realm and sidewalk along Dundas Street East and relocating vehicular access to the side and rear of the site.

A comprehensive TDM Strategy that can adapt and evolve as the site plan concept and design evolves is also proposed to support the parking reduction. As a result, the proposed parking strategy is considered to be appropriate and supportable for the subject site.

The subject site requires two (2) loading spaces as per the City of Mississauga Zoning By-Law. This requirement will be satisfied.

TABLE OF CONTENTS

1 Introduction 1
1.1 Site Location *1*
1.2 Development Proposal *2*
1.3 Scope of Work *3*
2 Existing Transportation Network 4
2.1 Road Network *4*
2.2 Transit Network *5*
2.3 Cycling Network *7*
2.4 Pedestrian Network *7*
2.5 Traffic Data Collection *8*
2.6 Existing Traffic Volumes *8*
3 Future Background Traffic Conditions 10
3.1 Road and Transit Network Improvements *10*
3.1.1 Dundas Connects Master Plan 10
3.1.2 Future Transit Network 11
3.1.3 Future Active Transportation Network 13
3.1.4 Future Road Network 13
3.2 Traffic Growth *14*
3.3 Background Developments *14*
3.4 Future Background Traffic Volumes *17*
3.4.1 Future Background Traffic Volumes - 2029 17
3.4.2 Future Background Traffic Volumes - 2034 17
4 Site Generated Traffic 20
4.1 Modal Split *20*
4.2 Existing Site Traffic To Be Removed *20*
4.3 New Site-Generated Traffic *21*
4.3.1 Vehicle Trip Generation 21
4.3.2 Multi-Modal Trip Generation 22
4.3.3 Trip Distribution and Assignment 22
5 Future Total Traffic Conditions 25
5.1 Future Road NEtwork *25*

5.2 Future Total Traffic Volumes 26
6 Intersection Capacity Analysis 29
6.1 Intersection Capacity Analysis Results – 2029 29
6.1.1 Dundas Street East & Wharton Way 29
6.1.2 Dundas Street East & Universal Drive / Summerville Court 31
6.1.3 Dundas Street East & Southcreek Road 32
6.2 Intersection Capacity Analysis Results – 2034 33
6.2.1 Dundas Street East & Wharton Way 34
6.2.2 Dundas Street East & Universal Drive / Summerville Court 36
6.2.3 Dundas Street East & Southcreek Road 37
6.3 Sensitivity Analysis Results 39
6.3.1 Dundas Street East & Wharton Way 39
6.3.2 Dundas Street East & Universal Drive / Summerville Court 41
6.3.3 Dundas Street East & Southcreek Road 42
6.4 Summary of Intersection Capacity Analysis 43
7 Multi-Modal Level of Service 44
7.1 Pedestrian Level of Service (PLOS) 44
7.2 Bicycle Level of Service (BLOS) 44
7.3 Transit Level of Service (TLOS) 45
8 Parking Review 46
8.1 Bicycle Parking Review 46
8.2 Vehicle Parking Review 46
8.2.1 Zoning By-law 0225-2007 Review 46
8.2.2 Proposed Parking Supply 47
8.2.3 Parking Policy Review 47
8.2.4 Vehicular Parking Conclusions 51
9 Loading and Functional Design Review 52
9.1 Loading Review 52
9.2 Site Access Review 52
10 Transportation Demand Management 54
10.1 Existing Travel Behaviour 54
10.2 Proposed TDM Scheme 54

10.2.1 Pedestrian Circulation 55
10.2.2 Cycling Orientation 56
10.2.3 Transit Service 56
10.2.4 Motor Vehicle Parking 56
10.2.5 Incentives 58
10.2.6 TDM Monitoring 58
10.3 Summary of TDM Recommendations 58
11 Conclusions & Recommendations 60

LIST OF TABLES

Table 1-1: Proposed Mixed-Use Development Statistics 3
Table 2-1: Data Collection Summary 8
Table 3-1: Horizon Year and Scenario Summary 10
Table 3-2: Corridor Growth Rates 14
Table 3-3: Summary of Background Developments 15
Table 3-4: Sustainable Mode Share Targets for City of Mississauga 18
Table 4-1: Modal Split Summary 20
Table 4-2: Existing Site Vehicle Trips To Be Removed 20
Table 4-3: Subject Site Vehicle Trip Generation 21
Table 4-4: Multi-Modal Site Trip Generation 22
Table 4-5: Trip Distribution 22
Table 6-1: Intersection Capacity Analysis – Dundas St E & Wharton Way (2029) 29
Table 6-2: Queueing Analysis – Dundas St E & Wharton Way (2029) 30
Table 6-3: Intersection Capacity Analysis – Dundas St E & Universal Dr / Summerville Ct (2029) 31
Table 6-4: Queueing Analysis – Dundas St E & Universal Dr / Summerville Ct (2029) 31
Table 6-5: Intersection Capacity Analysis – Dundas St E & Southcreek Rd (2029) 32
Table 6-6: Queueing Analysis – Dundas St E & Southcreek Rd (2029) 33
Table 6-7: Proposed Signal Timing Plan - Dundas St E & Wharton Way (2034) 34
Table 6-8: Intersection Capacity Analysis – Dundas St E & Wharton Way (2034) 34
Table 6-9: Queueing Analysis – Dundas St E & Wharton Way (2034) 35

Table 6-10: Proposed Signal Timing Plan - Dundas St E & Universal Dr / Summerville Ct (2034) 36
Table 6-11: Intersection Capacity Analysis – Dundas St E & Universal Dr / Summerville Ct (2034) 36
Table 6-12: Queueing Analysis – Dundas St E & Universal Dr / Summerville Ct (2034) 37
Table 6-13: Proposed Signal Timing Plan - Dundas St E & Southcreek Rd (2034) 38
Table 6-14: Intersection Capacity Analysis – Dundas St E & Southcreek Rd (2034) 38
Table 6-15: Queueing Analysis – Dundas St E & Southcreek Rd (2034) 38
Table 6-16: Intersection Capacity Analysis – Dundas St E & Wharton Way (2034 Sensitivity Analysis) 39
Table 6-17: Queueing Analysis – Dundas St E & Wharton Way (2034 Sensitivity Analysis) 40
Table 6-18: Intersection Capacity Analysis – Dundas St E & Universal Dr / Summerville Ct (2034 Sensitivity
Table 6-19: Queueing Analysis – Dundas St E & Universal Dr / Summerville Ct (2034 Sensitivity Analysis) 41
Table 6-20: Intersection Capacity Analysis – Dundas St E & Southcreek Rd (2034 Sensitivity Analysis) 42
Table 6-21: Queueing Analysis – Dundas St E & Southcreek Rd (2034 Sensitivity Analysis) 43
Table 7-1: Pedestrian Level of Service 44
Table 7-2: Bicycle Level of Service 45
Table 7-3: Existing Transit Level of Service 45
Table 8-1: Zoning By-law 0225-2007 Bicycle Parking Requirements 46
Table 8-2: Zoning By-law 0225-2007 Parking Review – Precinct 3 46
Table 8-3: Proposed Vehicular Parking Supply 47
Table 9-1: Zoning By-Law Loading Requirements 52
Table 10-1: Modal Split Reductions 54
Table 10-2: Summary of TDM Scheme 55
Table 10-3: Summary of TDM measures 58

LIST OF FIGURES

Figure 1-1: Site Location 1
Figure 1-2: Proposed Site Plan 2
Figure 2-1: Existing Lane Configuration 4
Figure 2-2: Existing Transit Network 6

Figure 2-3: Existing Cycling Network 7
Figure 2-4: Existing Traffic Volumes 8
Figure 2-5: Existing Traffic Volumes (HOV Traffic Removed) 9
Figure 3-1: Recommended Dundas Street Cross-Section 11
Figure 3-2: Proposed Dundas BRT Alignment 12
Figure 3-3: Proposed Dundas BRT Stations in Mississauga 13
Figure 3-4: 2034 Future Background Lane Configuration 14
Figure 3-5: Background Development Locations 15
Figure 3-6: 1565 Dundas Street East Background Development Site Traffic Volumes 16
Figure 3-7: 1580-1650 Dundas Street East Background Development Site Traffic Volumes 16
Figure 3-8: Future Background Traffic Volumes (2029) 17
Figure 3-9: Future Background Traffic Volumes (2034 – Existing Mode Split Assumed) 18
Figure 3-10: Future Background Traffic Volumes (2034 – Future Mode Split Applied) 19
Figure 4-1: Existing Site Trip Removal 21
Figure 4-2: Net Site Generated Traffic Volumes (2029 & 2034 Base Scenarios) 23
Figure 4-3: Net Site Generated Traffic Volumes (2034 Sensitivity Analysis) 24
Figure 5-1: Future Road Network (2029) 25
Figure 5-2: Future Road Network (2034) 26
Figure 5-3: Future Road Network (2034 Sensitivity Analysis) 26
Figure 5-4: Future Total Traffic Volumes (2029) 27
Figure 5-5: Future Total Traffic Volumes (2034) 27
Figure 5-6: Future Total Traffic Volumes (2034 Sensitivity Analysis) 28
Figure 8-1: Major Transit Station Areas 49
Figure 9-1: Proposed Ground Floor Plan 53
Figure 10-1: Cycle of Automobile Dependency and Related Effects 57

APPENDICES

APPENDIX A	**DARC 23-164 W3**
APPENDIX B	**Traffic Data and Signal Timing Plans**
APPENDIX C	**Background Development Trip Details**
APPENDIX D	**TTS Mode Split and Distribution Data**
APPENDIX E	**Intersection Capacity Analysis**
APPENDIX F	**Swept Path Drawings and Sightline Analysis**
APPENDIX G	**Transportation Demand Management Checklist**
APPENDIX H	**Future Proposed Street Functional Road Design**

1 INTRODUCTION

LEA Consulting Ltd. (LEA) has been retained by 1995 Dundas LP to undertake a Transportation Impact Study (TIS) in support of the Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) for the proposed mixed-use development located at 1995 Dundas Street East (hereinafter referred to as the "subject site") in the City of Mississauga.

Preliminary comments have been provided by the City of Mississauga's Development Application Review Committee (DARC) to guide the application process. LEA has reviewed these comments (reference DARC 23-164 W3) during the preparation of this TIS, and they are provided in **Appendix A**.

1.1 SITE LOCATION

The Dundas Street East corridor is primarily commercial in the study area, and industrial uses occupy the area north of the subject site. The subject site is currently occupied by a single-storey commercial plaza and is accessible via two driveways on Universal Drive and one driveway on Dundas Street East. The site location and existing context is shown in **Figure 1-1**.

Figure 1-1: Site Location

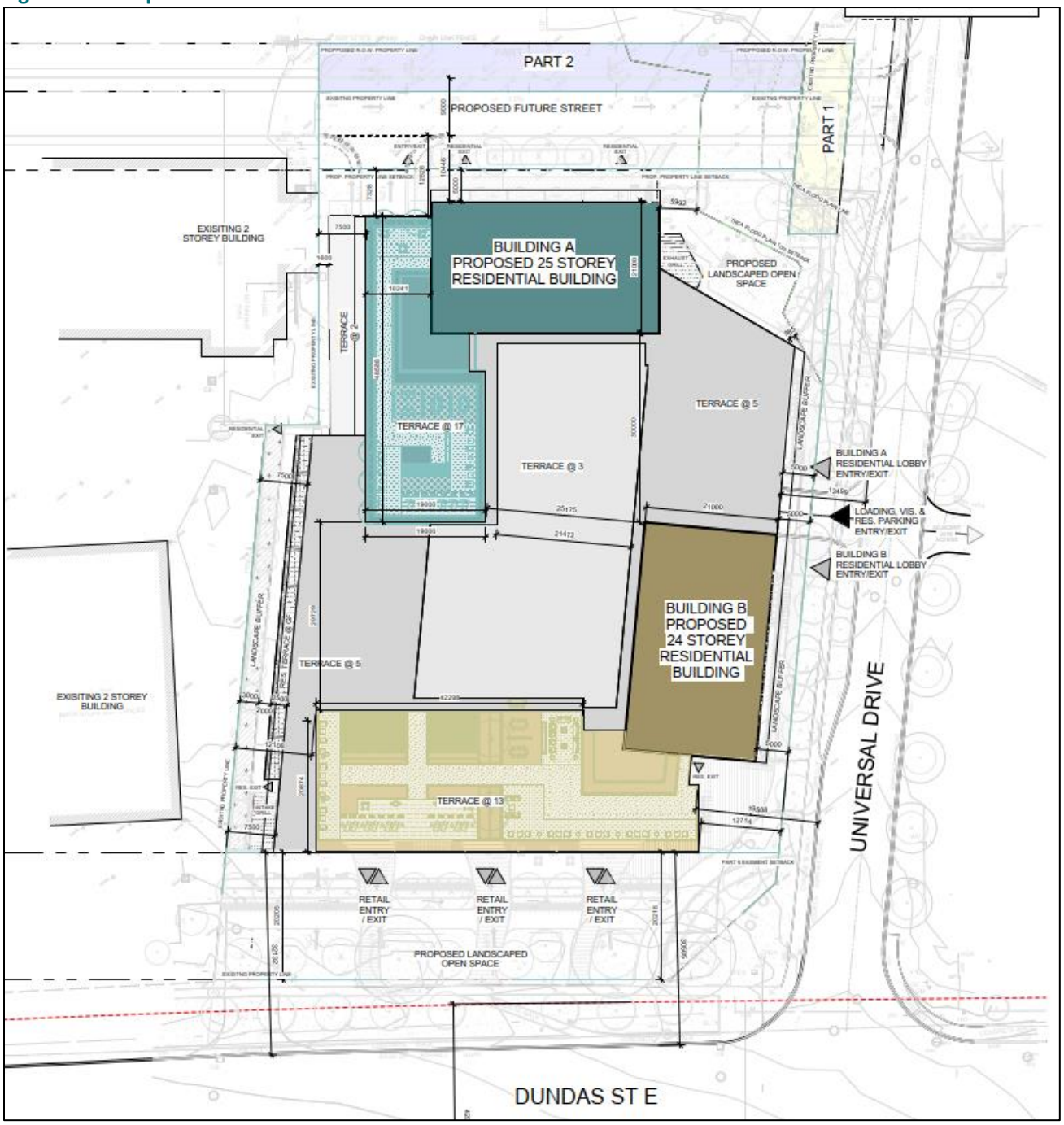
Source: Google Earth, accessed June 2024

The subject site is currently zoned as General Commercial, however, is designated as Mixed Use in the City's Official Plan.

1.2 DEVELOPMENT PROPOSAL

The proposed development at 1995 Dundas Street East consists of a single mixed-use building with a 25-storey tower ("Building A") and a 24-storey tower ("Building B") connected by a 5-storey podium. Retail will be located at-grade fronting Dundas Street East. The proposed site plan is shown in **Figure 1-2**.

Figure 1-2: Proposed Site Plan



Source: RAW Design, November 2024

The proposed development will replace the existing commercial plaza and surface parking entirely. The development will replace the existing accesses with one (1) full-movement driveway on Universal Drive. It is also noted that a new public street is proposed along the northern boundary of the subject site.

The site plan protects for a secondary access from the new public street, however since the future street will not be constructed until the neighbouring properties are redeveloped, the traffic analysis in this report assumes that no access will be provided from the future street. A sensitivity analysis has also been conducted to analyze the impacts of having a secondary access on the future street.

In total, 941 residential units and 667 m^2 of retail GFA are proposed. Parking will be located on one underground level, at-grade, and two (2) levels above-grade, with 351 vehicle parking spaces and 1,129 bicycle parking spaces. Two loading spaces will be provided within the ground floor. The proposed site statistics are presented in **Table 1-1**.

Table 1-1: Proposed Mixed-Use Development Statistics

Land Use	Units/GFA (m^2)
Residential Apartment Units	*926* (98%)
1 Bedroom	495 (53%)
2 Bedroom	371 (39%)
3 Bedroom	60 (6%)
Residential Townhouse Units	*15* (2%)
Total Units	941
Retail GFA	667 m^2

1.3 SCOPE OF WORK

In accordance with Mississauga's *Transportation Impact Study* Guidelines (December 2022), the following study will assess the existing transportation network prior to development, followed by a review of the horizon years for this study. Both 5-year and 10-year horizon scenarios to the years 2029 (pre-Dundas BRT) and to 2034 (post-Dundas BRT) will be assessed. The weekday AM and PM peak hours will be assessed for each horizon.

The existing, future background, and future total traffic conditions for the identified horizon years will be compared to assess the impact of the proposed development on the study area transportation network. This will include an assessment of intersection operations as well as queues in the road network.

This study will also provide an overview of the proposed parking management strategy for the subject development that aims to reflect the evolving transportation context of the area and support the proposed development in leveraging existing and future transit service, promoting active transportation, and supporting sustainable lifestyles. A review of the proposed site design and loading requirements will also be included.

2 EXISTING TRANSPORTATION NETWORK

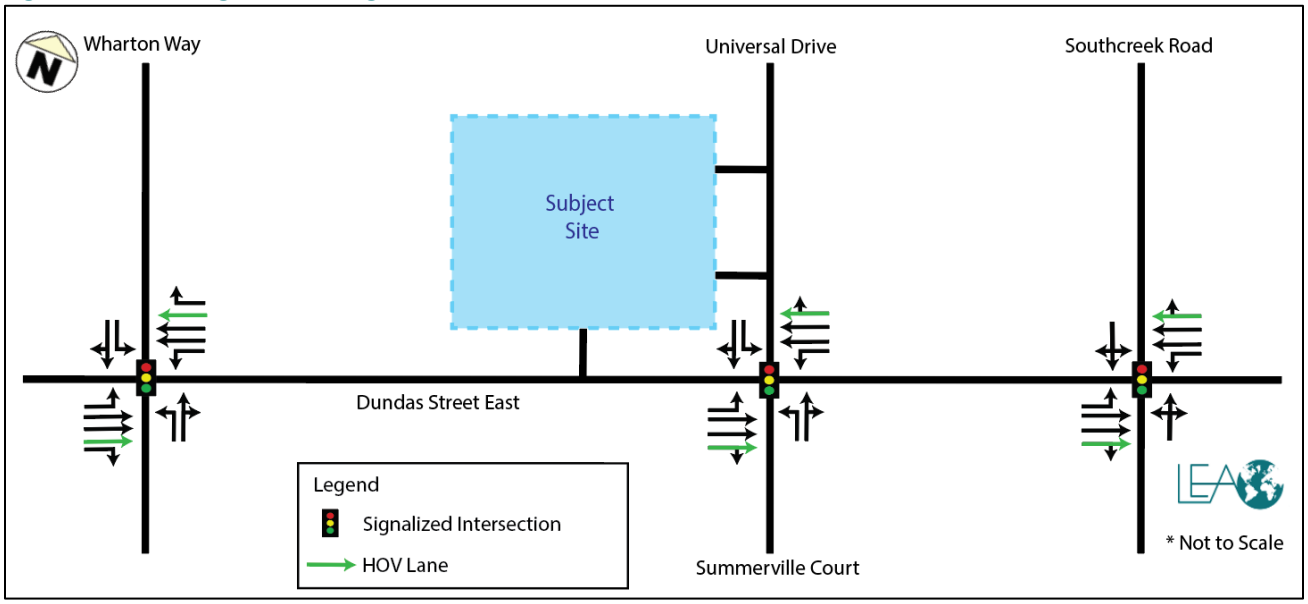
This section identifies and assesses the existing transportation conditions within the study area, including the road, transit, cycling, and pedestrian networks. The study area for this TIS was determined by assessing the size of the proposed development and its anticipated transportation impact. The study area includes the following intersections:

- Dundas Street East and Wharton Way (signalized);
- Dundas Street East and Universal Drive / Summerville Court (signalized); and
- Dundas Street East and Southcreek Road (signalized).

2.1 ROAD NETWORK

The following section provides a description and classification of the roadways within the study area. All roadways within the study area are under the jurisdiction of the City of Mississauga. **Figure 2-1** illustrates the existing lane configuration.

Figure 2-1: Existing Lane Configuration



Dundas Street East is an east-west arterial road that operates with a six-lane cross-section (i.e. three lanes per direction) and has a two-way left-turn lane in the median. In the vicinity of the study area, the outside lane on each side is designated for high-occupancy vehicles (HOV) only during weekday peak periods. The roadway operates with a posted speed limit of 60 km/h within the study area. Sidewalks are provided on both sides of the street. Parking is not permitted on Dundas Street East.

Universal Drive is a local road connecting Dundas Street East and Lenworth Drive. The street operates with a two-lane cross-section (i.e. one lane per direction) and has a sidewalk on one side only. As no speed limit is posted, the roadway operates with an assumed speed limit of 50 km/h within the study area. Parking is permitted on the west/south side of Universal Drive only. It is noted that Universal Drive has several private driveways in close proximately within the vicinity of the subject site, including to 2025 Dundas Street (commercial site east of the subject site) and 3070 Universal Drive (industrial site north of the subject site).

Summerville Court is a local road that provides access to several properties south of Dundas Street East. Summerville Court operates with a two-lane cross-section (i.e. one lane per direction) and has a sidewalk on one side only. As no speed limit is posted, the roadway operates with an assumed speed limit of 50 km/h within the study area.

Southcreek Road is a north-south local road that provides access to several properties north and south of Dundas Street West. Southcreek Road operates with a two-lane cross-section (i.e. one lane per direction). As no speed limit is posted, the roadway operates with an assumed speed limit of 50 km/h within the study area. South of Dundas Street East, sidewalks are provided on both sides of Southcreek Road, however north of Dundas Street East, the sidewalk terminates. Parking is permitted along the west side of the extent of Southcreek Road, and along the east side only south of Dundas Street East. Heavy vehicles are prohibited on Southcreek Road.

Wharton Way is a north-south street that runs between Sharlyn Road and Wharton Glen Avenue. Wharton Way is classified as a minor collector road south of Dundas Street East, and a local road north of Dundas Street East. The street operates with a two-lane cross-section (i.e. one lane per direction) and has a sidewalk on one side only. As no speed limit is posted, the roadway operates with an assumed speed limit of 50 km/h within the study area. Some on-street parking restrictions are in place along Wharton Way.

2.2 TRANSIT NETWORK

The subject site served by MiWay transit, GO Transit, and the Toronto Transit Commission (TTC). The subject site is within walking distance to existing to the nearest local transit stops at Dundas Street East & Universal Drive and Dundas Steet East & Summerville Court and within 7-minute walking distance to the nearest express bus transit stop at Dundas Street East & Wharton Way.

These services operate along Dundas Street within the City of Mississauga and neighbouring City of Toronto to the east and provide connections to the Kipling Transit Hub. The Kipling Transit Hub includes a bus terminal, TTC subway station, and a GO Train station on the Milton Line. The Kipling Transit Hub is currently within an approximate 20-minute bus ride, 15-minute bike ride, or 10-minute drive of the subject site and offers significant regional transit connections.

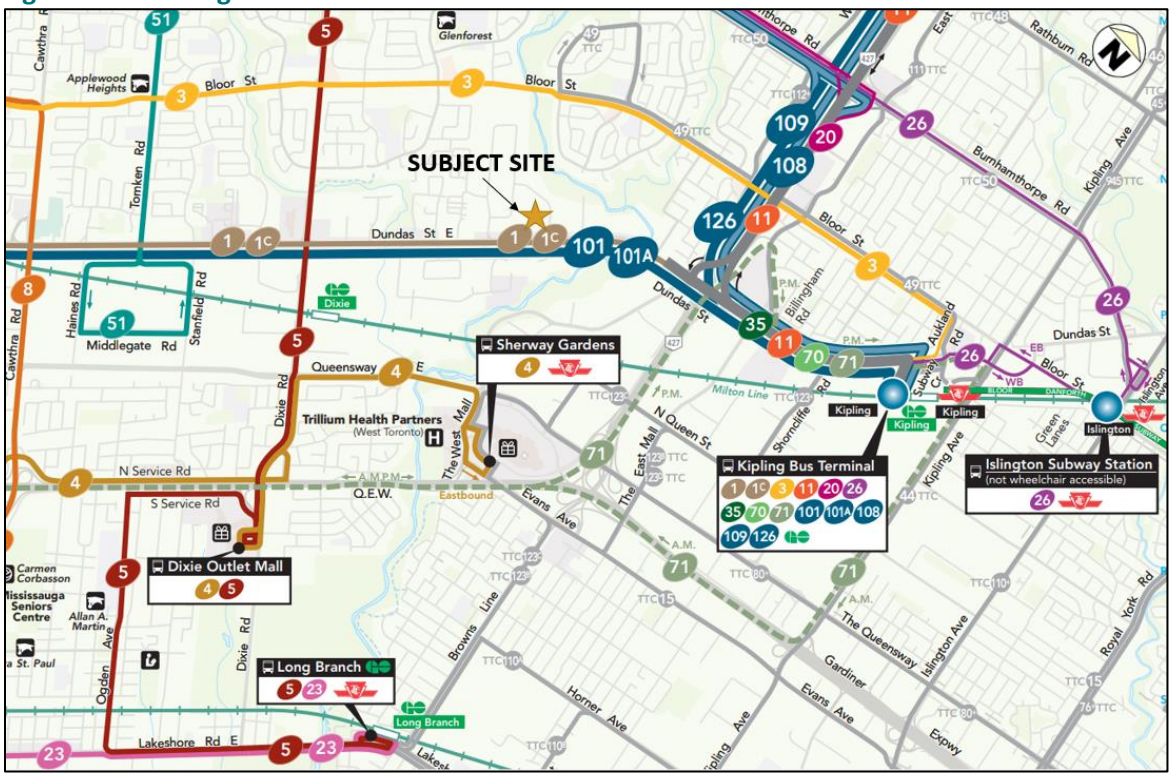
Additionally, the subject site is within an approximate 7-minute drive or 7-minute bike ride to Dixie GO Station on the Milton GO Train Line.

Overall, the subject site receives a Transit Score of 58/100 – “Good Transit” when entered into the WalkScore application.

It is noted that the subject site’s transit accessibility is anticipated to improve over the next few years due to major investments in higher order transit and the overall transportation network in close vicinity to the subject site. This includes Bus Rapid Transit (BRT) service along Dundas Street between Hamilton and Toronto, as well as future expansions to the disconnected road network as the area develops.

The surrounding transit network currently servicing the area is illustrated in **Figure 2-2**.

Figure 2-2: Existing Transit Network



Source: MiWay, effective September 2, 2024

MiWay Route 1/1C – Dundas is a bus route that operates in an east-west direction. The eastern terminus of the route is the Kipling Bus Terminal, providing access to TTC, GO Transit and other MiWay services. The main branch operates along Dundas Street East to the area of Laird Road/Ridgeway Drive. The 1C branch operates along Dundas Street East to the University of Toronto Mississauga campus, terminating at the South Common Centre. The route operates all day, seven days a week. Route 1 operates with headways of 10 to 15 minutes during peak periods and 25 minutes off-peak.

> *Access Location:* Route 1/1C is accessible at the intersection of Dundas Street East & Universal Drive or Dundas Street East & Summerville Court in front of the subject site.

MiWay Route 101/101A – Dundas Express is an express bus route that operates generally in an east-west direction between Kipling Bus Terminal in the City of Toronto and the South Common Centre. The 101A branch extends to the area of Laird Road/Ridgeway Drive after serving the University of Toronto Mississauga, instead of serving the South Common Centre. Route 101 operates Monday to Saturday, and the 101A branch operates during weekday peak periods only. Route 101 and 101A operate with headways of 10 to 20 minutes during peak hours.

> *Access Location:* Route 101/101A is accessible at the intersection of Dundas Street East & Wharton Way, which is approximately 700 m from the subject site (equivalent to a 9-minute walk).

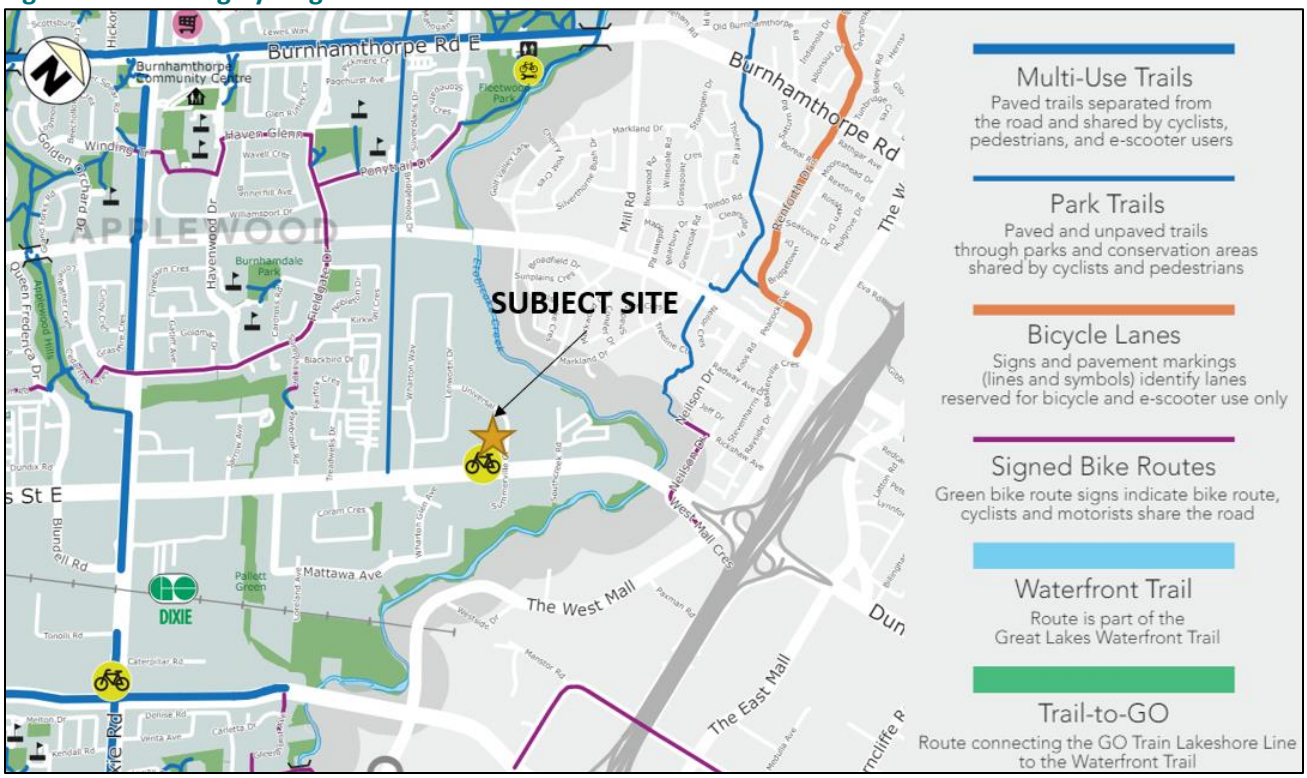
The Milton GO Train Line provides rush hour service every 15 minutes eastbound to Toronto's Union Station in the morning peak period and westbound to Milton in the evening peak period.

> *Access Location:* The Milton GO Train Line is accessible from either Dixie GO Station (2 km from subject site) or Kipling GO Station (3.6 km from subject site).

2.3 CYCLING NETWORK

While no cycling facilities exist in the vicinity of the subject site, several cycling corridors are accessible via Dundas Street, including the multi-use trail through the hydro corridor west of Wharton Way, multi-use trails along Dixie Road, bike lanes on Constitution Boulevard and Stanfield Road, and the signed bike route along West Mall Crescent and Neilson Drive. The existing cycling network surrounding the site is illustrated in **Figure 2-3.** The local cycling network provides connections to local destinations, such as the Dixie GO Station, retail and nearby schools. The subject site receives a Bike Score of 57/100 – "Bikeable" when entered into the WalkScore application.

Figure 2-3: Existing Cycling Network



Source: City of Mississauga, September 2023

It is also noted that there is currently a bike shop located at 1956 Dundas Street East, immediately west of the subject site. The shop also provides repair services for bikes and scooters.

2.4 PEDESTRIAN NETWORK

The subject site receives a Walk Score of 75/100 – "Very Walkable" when entered into the WalkScore application. In the area immediately surrounding the subject site, the existing pedestrian network consists of sidewalks along both sides of Dundas Street East and along the west side of Universal Drive. Pedestrian crosswalks are available on all approaches with protected pedestrian phases at the signalized intersections within the study area. The existing pedestrian network facilitates pedestrian connections to and from the existing commercial uses in the area as well as nearby MiWay transit stops.

It is noted that the existing area surrounding the subject site is primarily commercial and industrial. As the area develops, including the subject site specifically, the public realm will be positively transformed with pedestrian-scaled blocks and upgraded facilities.

2.5 TRAFFIC DATA COLLECTION

Turning movement counts (TMCs) were used as the source of traffic data for the intersection capacity analysis. Traffic counts were conducted by LEA on Thursday, June 22, 2023, and December 5, 2023, during the weekday AM and PM peak periods between 7:00 AM to 9:30 AM and 3:30 PM to 6:30 PM, respectively. Signal timing plans at the signalized intersections were obtained from the City of Mississauga.

A summary of the TMC data collected is provided in **Table 2-1**, with detailed traffic counts and signal timing plans available in **Appendix B**.

Table 2-1: Data Collection Summary

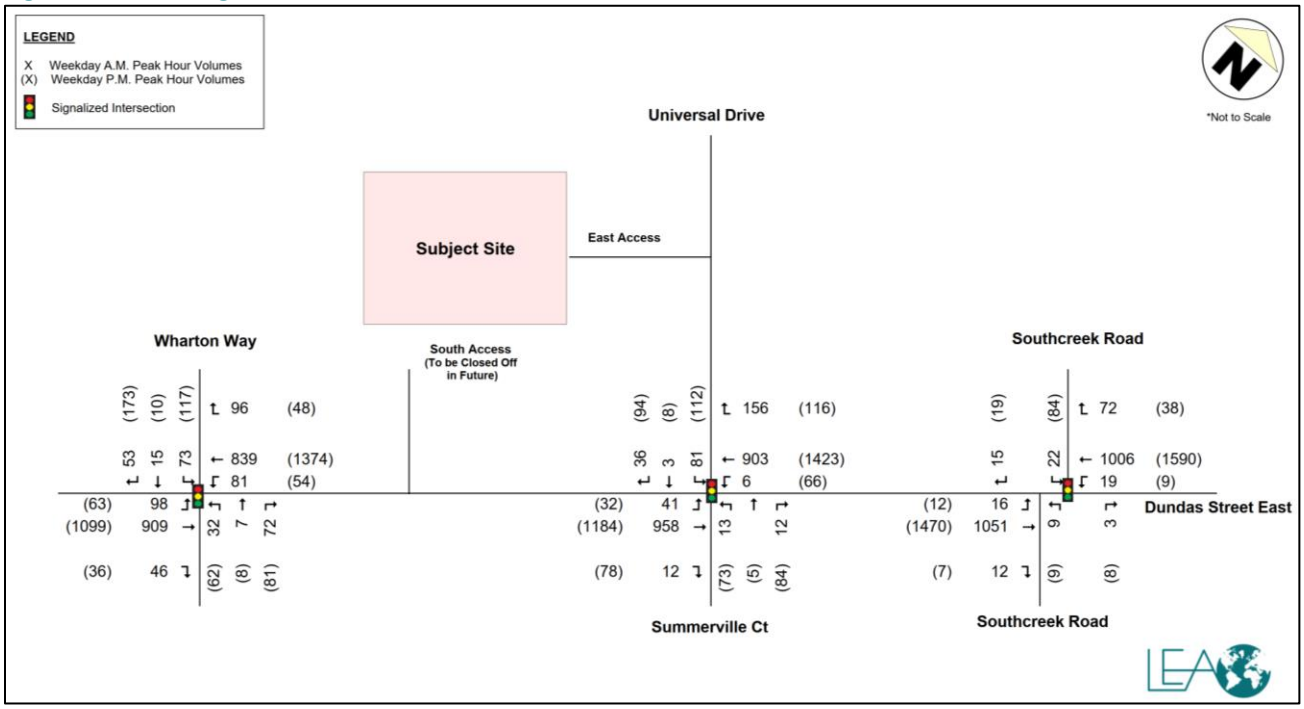
Intersection	TMC Date	Source
Dundas Street East / Wharton Way	Thursday, June 22, 2023	LEA
Dundas Street East / Summerville Ct & Universal Dr	Tuesday, December 5, 2023	
Dundas Street East / Southcreek Rd	Tuesday, December 5, 2023	

Peak Hour Factor (PHF) values have been calculated based on the surveyed counts.

2.6 EXISTING TRAFFIC VOLUMES

The observed traffic volumes along Dundas Street East were balanced for consistency. The existing balanced traffic volumes for the AM and PM peak hours are illustrated in **Figure 2-4**.

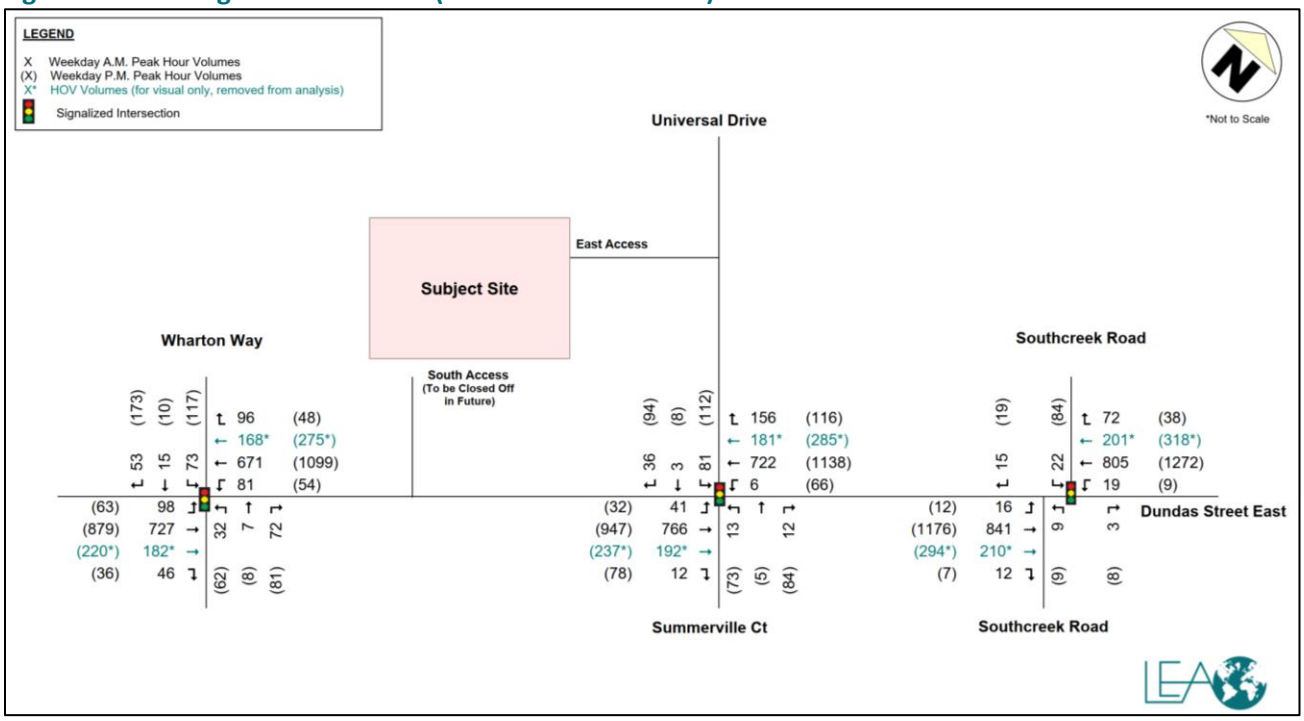
Figure 2-4: Existing Traffic Volumes



It is noted that Dundas Street East operates with three lanes per direction, with one lane being restricted to high-occupancy vehicles (HOV) only. For the purposes of modelling the traffic in Synchro, which cannot explicitly model HOV lanes, Dundas Street East was modelled with two vehicle lanes per direction. To account for the traffic in the HOV lanes, it was assumed that 20% of peak hour traffic travels within the HOV lane, and thus the total east-west traffic observed during data collection was reduced by 20% to account for the removal of the HOV lane within the model. This methodology was recommended by the City of Mississauga's retained peer reviewer for the submission of the Transportation Impact Study prepared by LEA Consulting for the development at 1580-1650 Dundas Street East in July 2022.

Under these assumptions, the modified traffic volumes under existing weekday peak hours, to be used for the Synchro modelling, are shown in **Figure 2-5**.

Figure 2-5: Existing Traffic Volumes (HOV Traffic Removed)



3 FUTURE BACKGROUND TRAFFIC CONDITIONS

For the analysis of future background traffic conditions, the study considers a five-year horizon to 2029 (pre-BRT), along with a ten-year horizon to the year 2034, from the current year of 2024. A sensitivity analysis was also completed for the 2034 horizon to assess the impact of the construction of the Proposed Future Street to the north of the site. **Table 3-1** summarizes the horizon year assumptions applied to each scenario.

Table 3-1: Horizon Year and Scenario Summary

Horizon Year	Scenario	Assumptions
2029	-	- Five-year horizon - No road network changes - Single site access at Universal Drive
2034	-	- Ten-year horizon - Road network improvements from Dundas BRT - 27% reduction in vehicle traffic along Dundas St E based on mode share targets* - Single site access at Universal Drive
	Sensitivity Analysis	- Ten-year horizon - Road network improvements from Dundas BRT - 27% reduction in vehicle traffic along Dundas St E based on mode share targets* - With Proposed Future Street connecting to Lenworth Drive - Two site accesses: one at Universal Street and one at Proposed Future Street

Note (*): Deduction of reduction factor in vehicle traffic are based on mode share targets as presented in Table 3-4

This section will discuss the methodology and assumptions adopted for the development of the future background scenarios, including the corridor growth rates applied, background developments identified, and improvements to the road and transit networks assumed to be in place. It should be noted that the 2029 horizon year is assumed to have the same lane configuration as existing conditions.

3.1 ROAD AND TRANSIT NETWORK IMPROVEMENTS

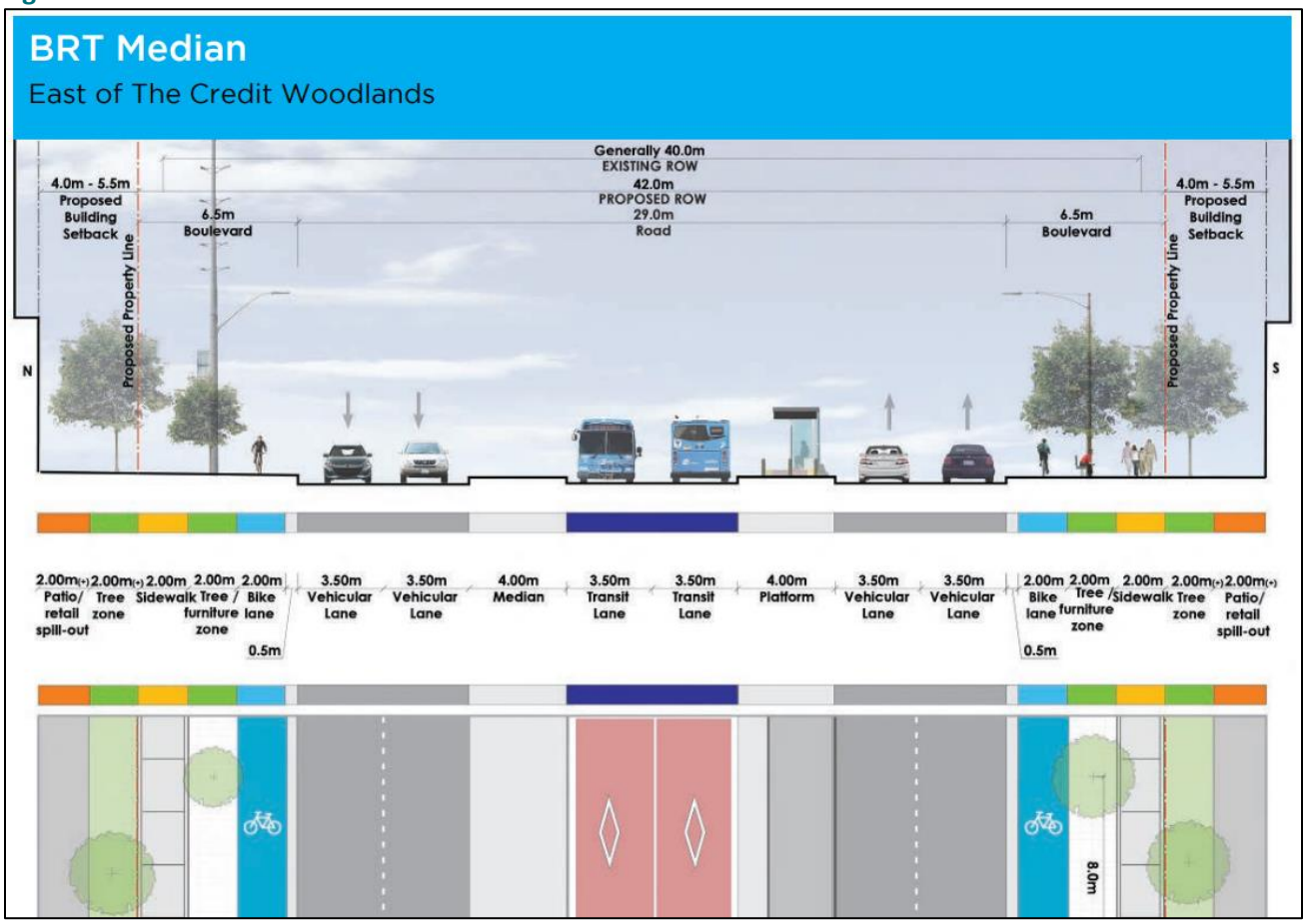
The subject site lies within the Dundas Street Intensification Corridor, and as such, many transportation improvements are planned for the area in the near future. At a high level, the future transportation network has been defined by the Dundas Connects Master Plan.

3.1.1 Dundas Connects Master Plan

A corridor study, the *Dundas Connects Master Plan*, was undertaken by the City of Mississauga and completed in 2018 with an endorsement from City Council. This study set out the overall recommendations for the Dundas Street corridor within Mississauga and included recommendations for the overall planning vision along the corridor, including future BRT service.

As shown in **Figure 3-1**, the recommended cross section for Dundas Street East within the study area includes the future BRT and dedicated bike lanes to support an urban, pedestrian and cycling-friendly public realm along Dundas Street.

Figure 3-1: Recommended Dundas Street Cross-Section



Source: Dundas Connects Master Plan, 2018

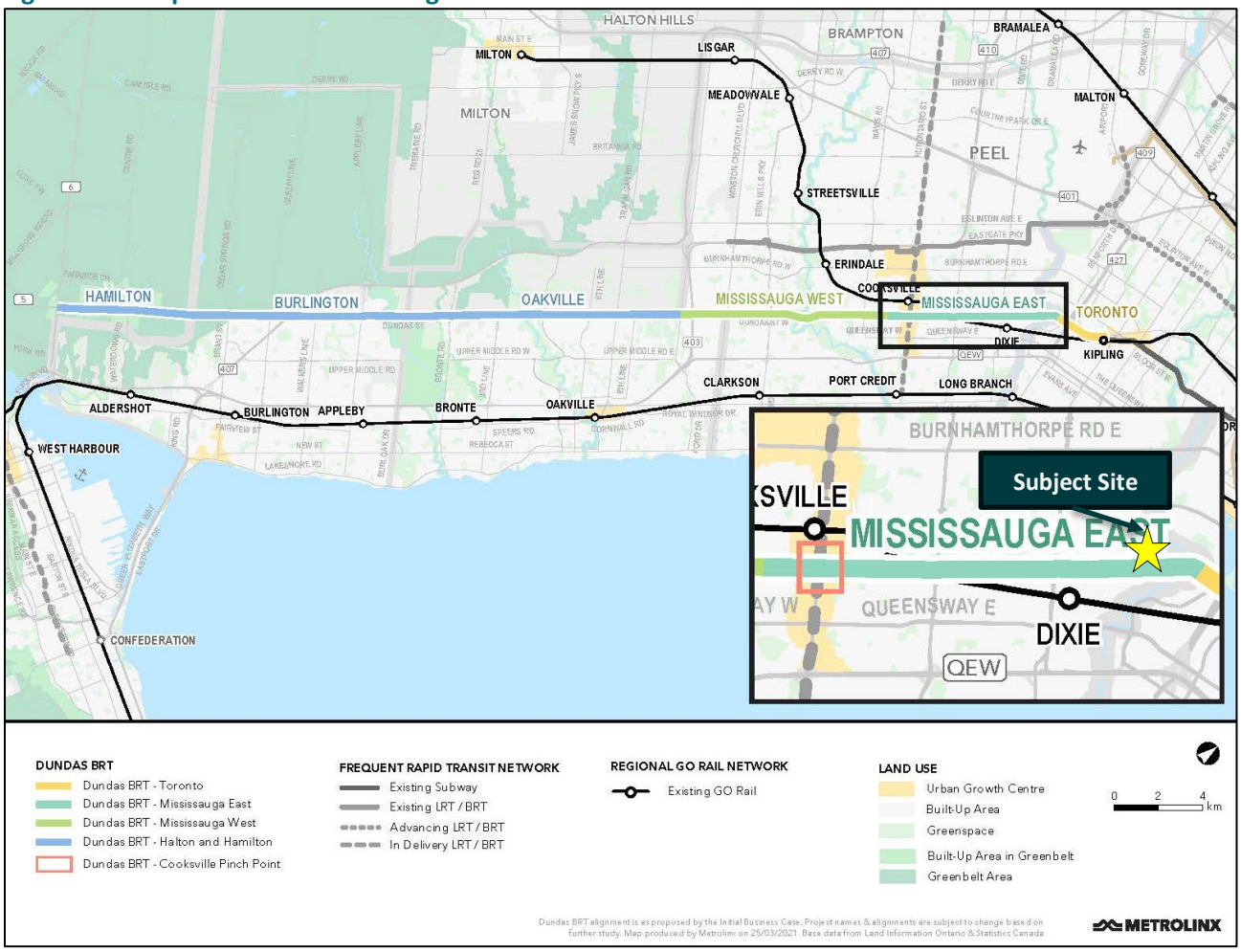
The Dundas BRT and associated corridor improvements are expected to be complete in 2028.

3.1.2 Future Transit Network

The subject site's transit accessibility is anticipated to improve over the next few years due to major investments in higher order transit and the overall transportation network in close vicinity to the subject site. As discussed, the most significant transit investment will be the future BRT service along Dundas Street.

The Dundas BRT project proposes a transit corridor along a 48-km stretch of Dundas Street from Highway 6 in the City of Hamilton to the Kipling Transit Hub in the City of Toronto. The project is currently in the planning process, building upon the Environmental Project Report completed and published by Metrolinx in February 2022 and preparing for construction. It is recognized that the project has received funding from each level of government as of March 2022, which will contribute to the design and construction of the project. **Figure 3-2** illustrates the proposed BRT route.

Figure 3-2: Proposed Dundas BRT Alignment

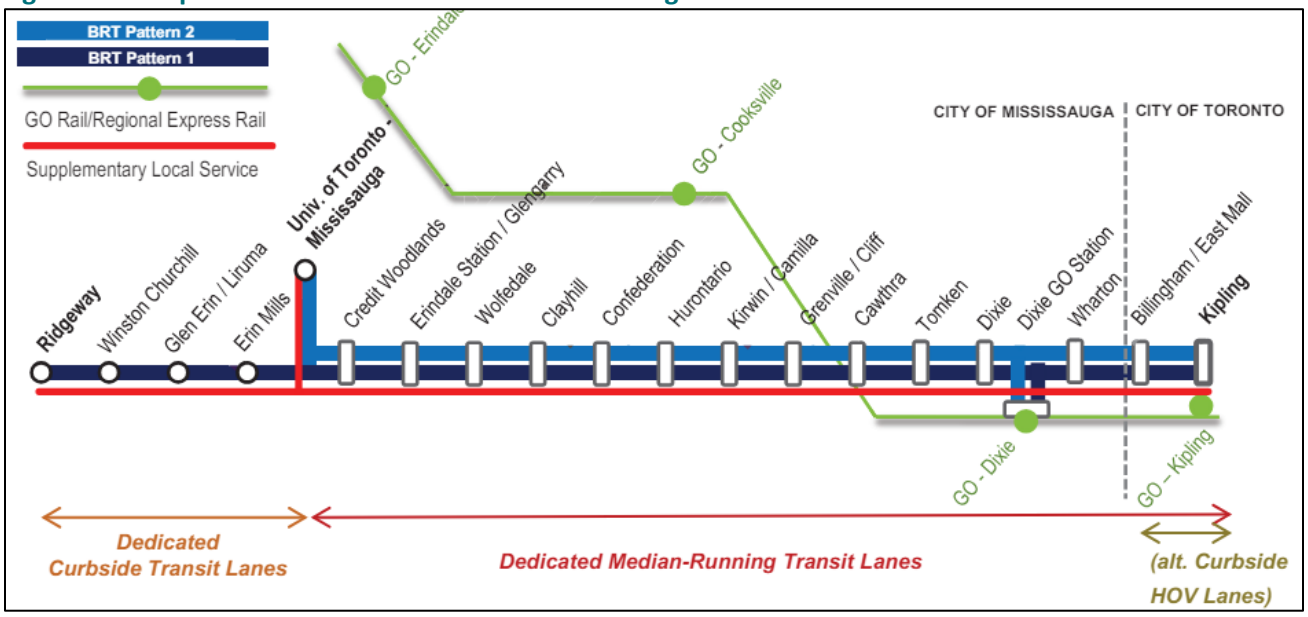


Source: City of Mississauga, 2023

The proposed Dundas BRT will operate in dedicated median transit lanes in the vicinity of the subject site. The BRT will provide access to destinations throughout Mississauga and neighbouring municipalities, including proposed connections to Cooksville GO, Dixie GO and the Kipling Mobility Hub.

It is noted that the proposed Dundas BRT is intended to replace the existing express bus service (101/101A) along Dundas Street. Ultimately, peak headways of 3-minutes and off-peak/weekend headways of 10-minutes are proposed for BRT service. Local bus services will be maintained in the study area to support the BRT. The proposed stations are shown in **Figure 3-3**.

Figure 3-3: Proposed Dundas BRT Stations in Mississauga



Source: Dundas Connects Master Plan, 2018

The Dundas Street BRT is expected to be completed by 2031 and was therefore adopted for the 2034 traffic analysis scenarios only. Road improvements related to the BRT will include a lane reduction from 6 to 4 lanes along Dundas Street and protected eastbound left turn and westbound left turn phases at signalized intersections.

3.1.3 Future Active Transportation Network

The Dundas BRT project will also introduce dedicated cycle tracks both east and westbound along Dundas Steet East, beginning from Confederation Parkway and extending to the City of Toronto border. Approximately 7km of cycle tracks will be added once the project is complete. This will increase cycling connectivity to and from the subject site, which will encourage more future residents to utilize alternative modes of transportation, leading to a reduction in single occupancy vehicle (SOV) trips.

3.1.4 Future Road Network

3.1.4.1 Future Road Network (2029)

The road network under the 2029 horizon is the same as in the existing conditions.

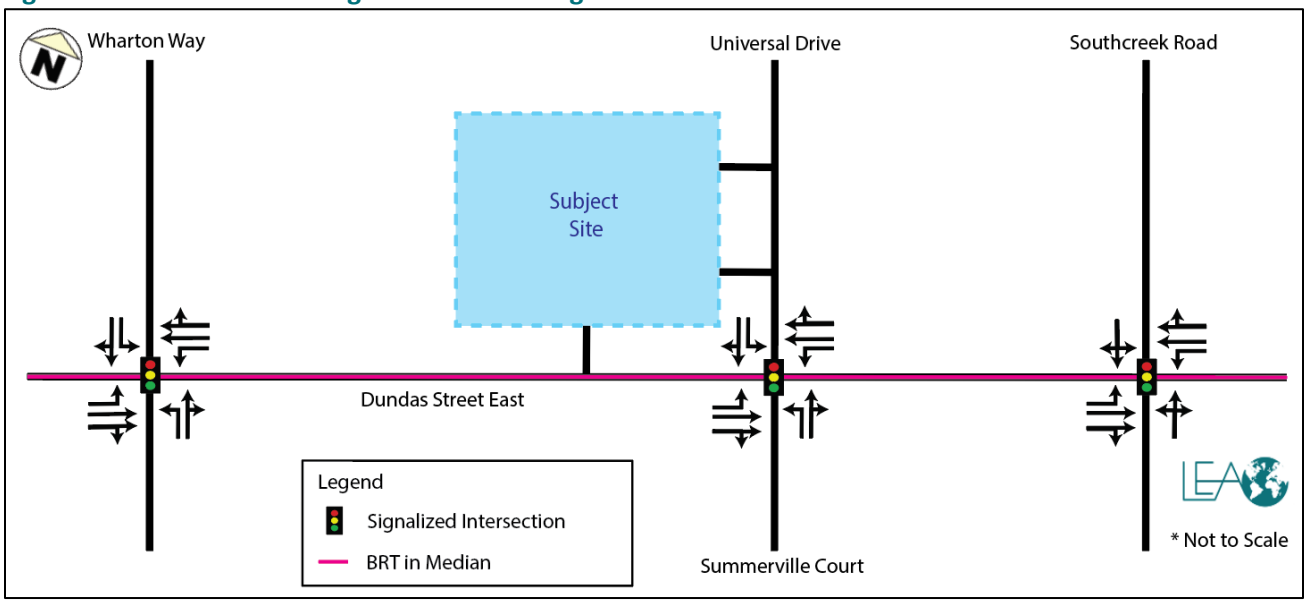
3.1.4.2 Future Road Network (2034)

As shown above in **Figure 3-1**, the 6-lane cross-section on Dundas Street will be reduced to a 4-lane cross-section to accommodate dedicated transit lanes in the median. The ultimate right-of-way width is proposed to be 42 m. This condition is expected to be in place by the 2034 horizon.

A 10% design for the study area road network has been developed for the Environmental Project Report (EPR), completed by Metrolinx in 2022. The future 2034 lane configuration shown in **Figure 3-4** reflects the 10% design included in the EPR.

It should be noted that signal timing plans have been revised in the 2034 horizon analyses to include fully protected left turns across the BRT lanes, as per OTM Book 12.

Figure 3-4: 2034 Future Background Lane Configuration



*Lane configuration based on *Dundas BRT Mississauga East Corridor Design, Draft 10% Roll Plan* (November 2021)

3.2 TRAFFIC GROWTH

Growth rates were provided to LEA by the City of Mississauga for Dundas Street East for the Transportation Impact Study for the nearby development at 1580-1650 Dundas Street East in July 2022. The corridor growth rates applied to the calculation of future background traffic are summarized in **Table 3-2**.

Table 3-2: Corridor Growth Rates

Corridor	Direction	Weekday AM Peak Hour	Weekday PM Peak Hour
Dundas St E	Eastbound	0.5%	1.0%
	Westbound	0.5%	0.5%

The background traffic growth rates were applied to all existing east-west traffic volumes, including the assumed HOV-lane volumes.

3.3 BACKGROUND DEVELOPMENTS

Two (2) background developments were identified within the immediate study area. The site statistics of the background developments are summarized in **Table 3-3**. The locations of the background developments included in the analysis, relative to the subject site, are shown in **Figure 3-5**.

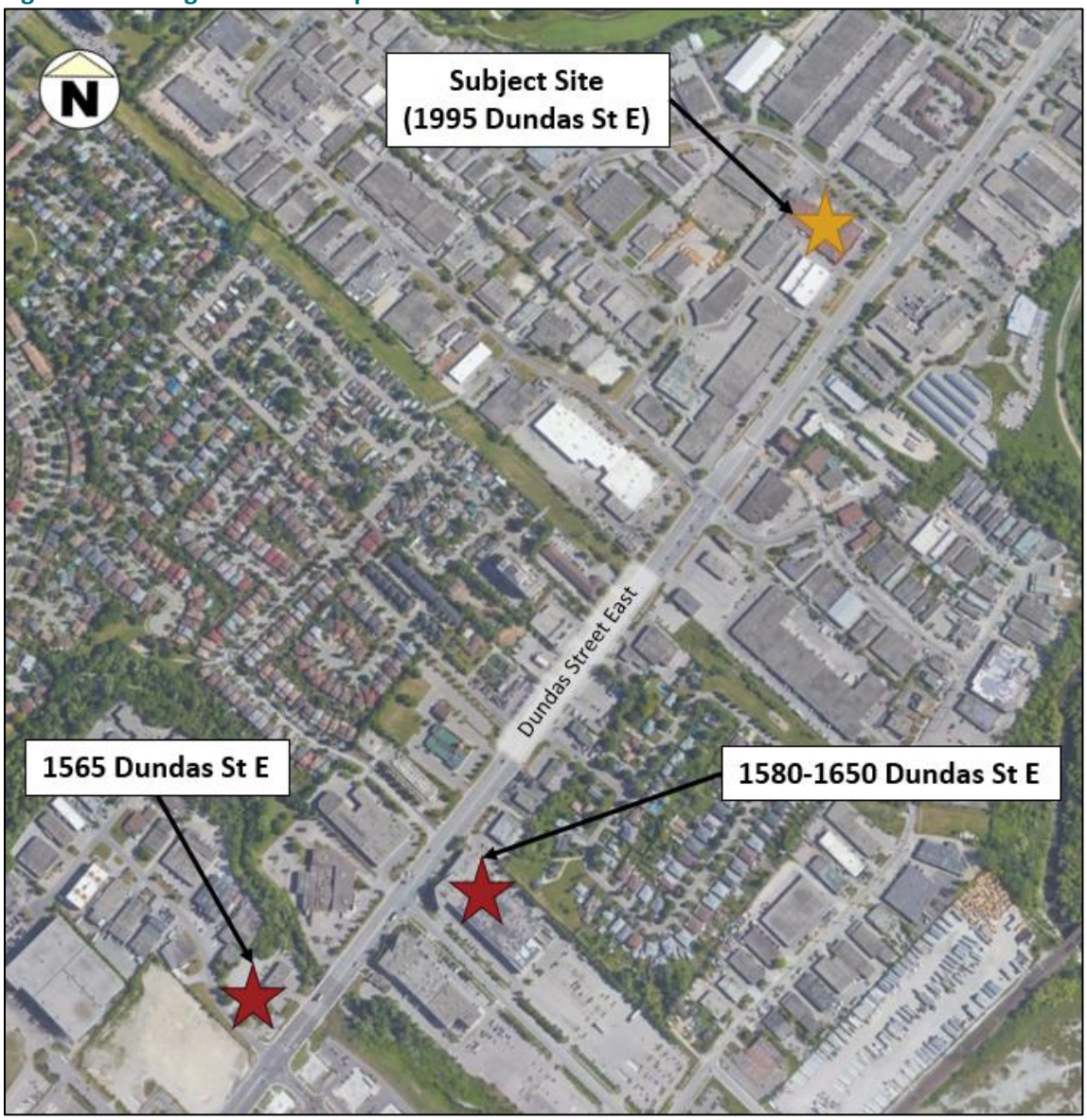
Background development traffic volumes were extracted from their respective TIS where available and otherwise derived using the ITE Trip Generation Manual 11th Edition based on the nature of the uses proposed for the development. Specifically, details regarding the trip generation forecasted for the background development located at 1565 Dundas Street East are provided in **Appendix C**

Site trips generated by 1565 Dundas Street East are shown in **Figure 3-6**, while site trips generated by 1580-1650 Dundas Street East are shown in **Figure 3-7.** For the purposes of analysis, the background development traffic is assumed to use the non-HOV lanes only, to be conservative.

Table 3-3: Summary of Background Developments

Location	Description	Source of Traffic Volumes
1565 Dundas Street East (Mississauga)	2-storey mixed-use building: 11,706 ft^2 ground floor retail, convenience store, restaurant and beverage and food preparation establishment with 9,219 ft^2 supporting second floor office	ITE (see Appendix C)
1580 – 1650 Dundas Street East (Mississauga)	2,877 residential units, 6,094 m^2 (66,000 ft^2) of retail, 366 m^2 (4,000 ft^2) of community space GFA in the form of a recreational community center	TIS, prepared by LEA Consulting, July 2022

Figure 3-5: Background Development Locations



Source: Google Earth, accessed September 2024

Figure 3-6: 1565 Dundas Street East Background Development Site Traffic Volumes

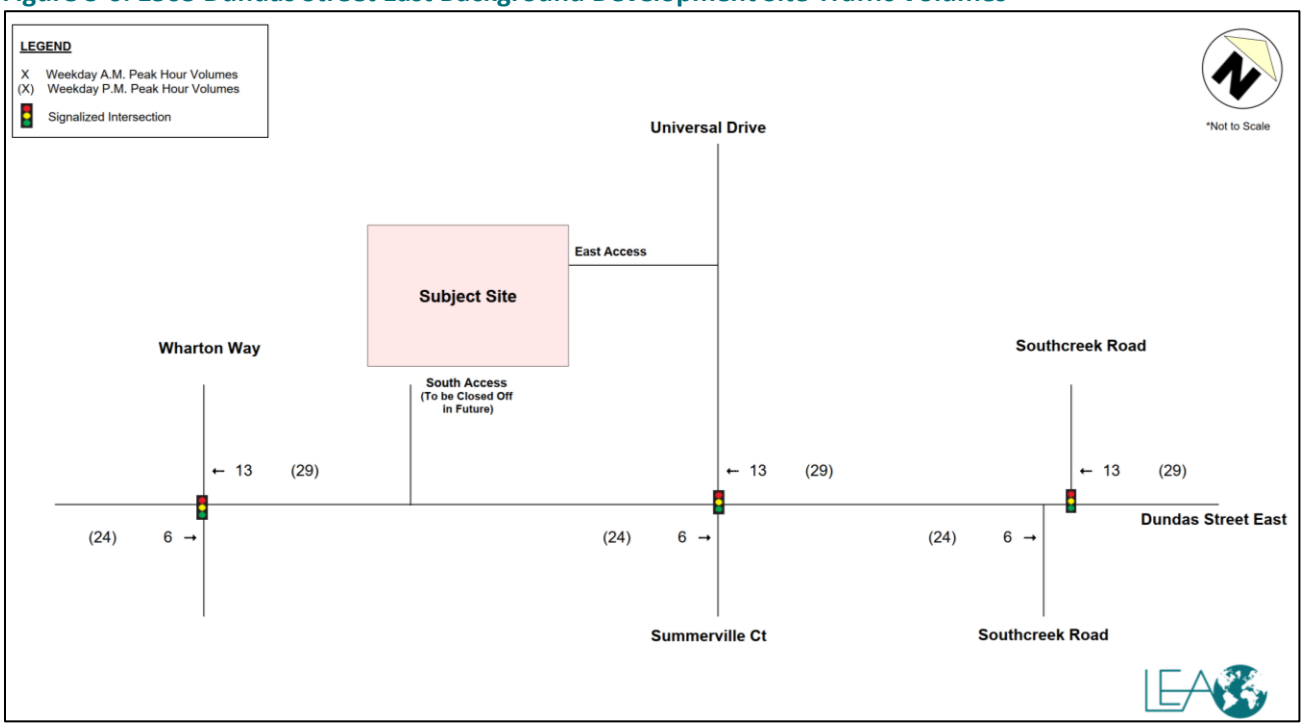
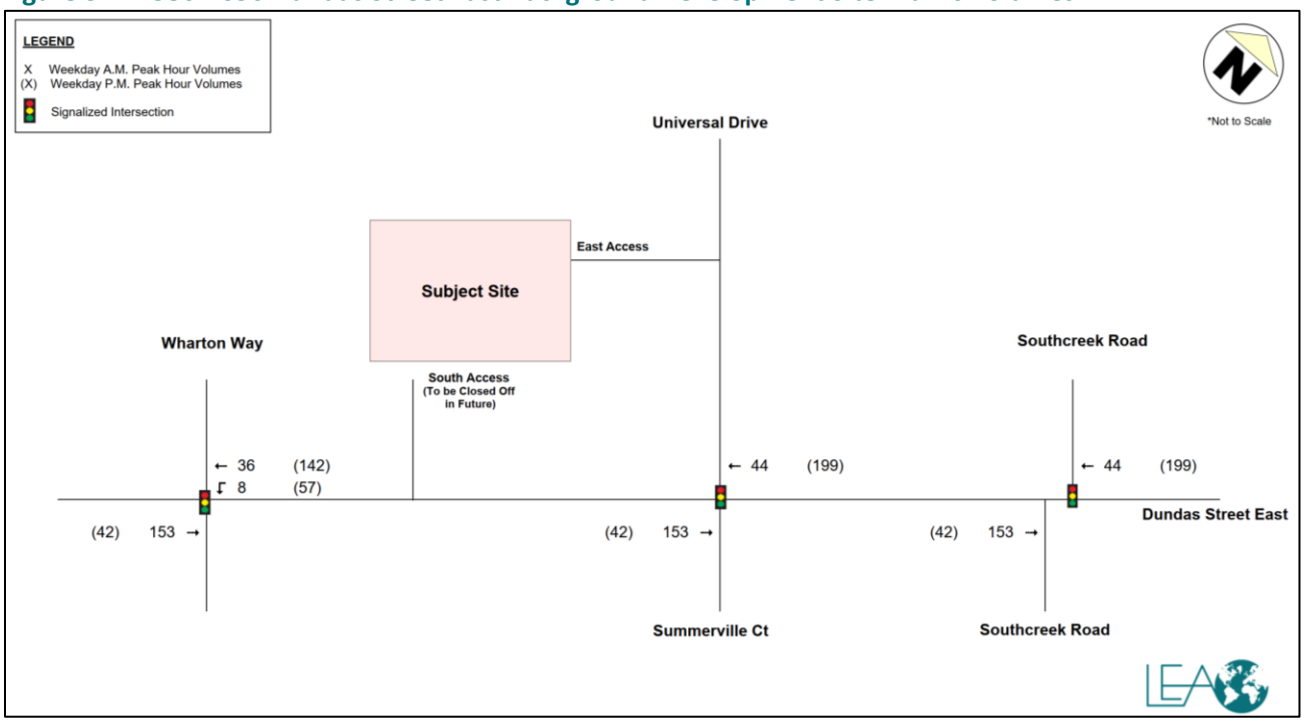


Figure 3-7: 1580-1650 Dundas Street East Background Development Site Traffic Volumes



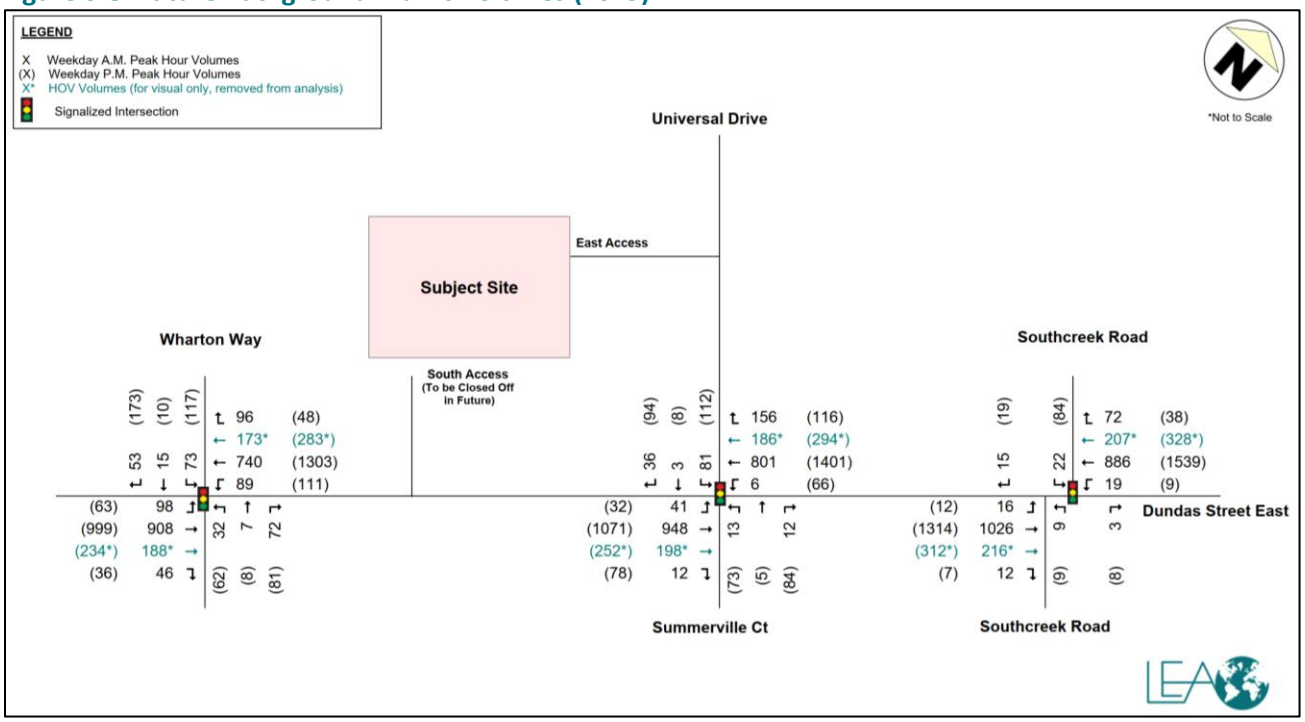
3.4 FUTURE BACKGROUND TRAFFIC VOLUMES

Future background traffic conditions were determined by incorporating the future road network configuration, growth rates for the respective horizon years, and background development traffic along with existing traffic volumes.

3.4.1 Future Background Traffic Volumes - 2029

The future background traffic volumes for the 2029 horizon year are illustrated in **Figure 3-8**.

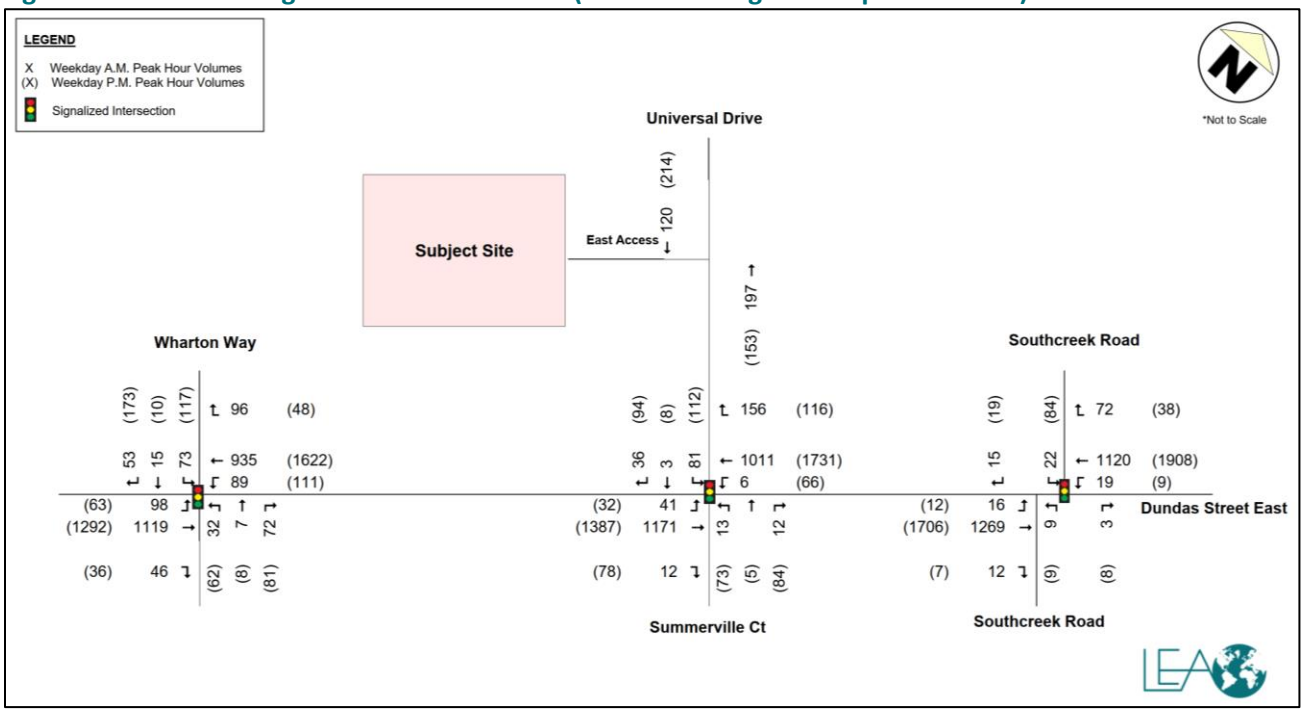
Figure 3-8: Future Background Traffic Volumes (2029)



3.4.2 Future Background Traffic Volumes - 2034

For the 2034 horizon year, HOV lanes will no longer be provided, thus all through traffic volumes in existing conditions (i.e. HOV and non-HOV, as in **Figure 2-4**) are used as the basis for the 2034 future background condition. The growth rates discussed in **Section 3.2** were applied to all east-west traffic, and background development traffic was applied to the network to determine the future background traffic volumes for the 2034 horizon year as illustrated in **Figure 3-9**.

Figure 3-9: Future Background Traffic Volumes (2034 – Existing Mode Split Assumed)



However, it is noted that a significant mode shift is expected due to the introduction of the Dundas BRT. Therefore, a mode split reduction was applied to the 2034 future background volumes, as discussed below.

According to *Let's Move Peel – Long Range Transportation Plan (2019)* (LRTP) published by the Region of Peel, the Region established a sustainable mode share target of 50% by 2041 with various transportation planning approaches and actions. For the local municipality City of Mississauga, the sustainable mode share target is identified as in **Table 3-4**.

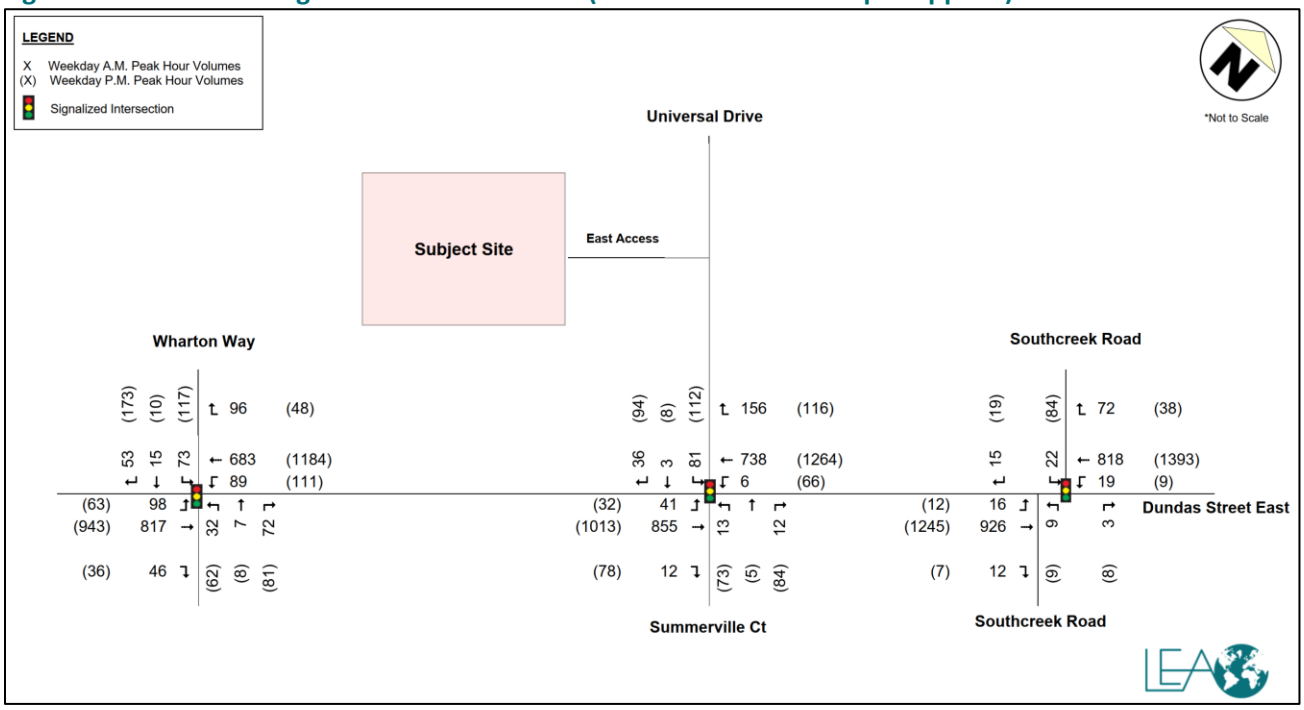
Table 3-4: Sustainable Mode Share Targets for City of Mississauga

Local Municipality	2011 Sustainable Mode Share	2041 Sustainable Mode Share Target
City of Mississauga	38%	55%

The auto-driver mode split is expected to decrease from 62% to 45%, which is equivalent to a 27% reduction. For the purpose of this study, this reduction factor was adopted along the east-west corridor of Dundas Street East under 2034 horizon.

Taking into account the mode shift reduction, the 2034 future background traffic volumes are illustrated in **Figure 3-10**.

Figure 3-10: Future Background Traffic Volumes (2034 – Future Mode Split Applied)



4 SITE GENERATED TRAFFIC

The proposed development consists of a new, mixed-use building to replace the existing commercial plaza and surface parking lot located at the subject site. In total, 941 residential units and 667 m^2 (7,180 ft^2) of retail GFA are proposed. The section below discusses the calculation of existing site traffic to be removed from the road network, as well as the calculation, distribution, and assignment of site-generated vehicle trips to be generated by the proposed development.

4.1 MODAL SPLIT

Data from the 2016 Transportation Tomorrow Survey (TTS) was extracted to identify the modal split for trips inbound and outbound from the subject site location (specifically TAZ 3670 and 3661) and surrounding area during the weekday AM and PM peak hours. The existing modal split is summarized in **Table 4-1**. Detailed TTS calculations are provided in **Appendix D**.

Table 4-1: Modal Split Summary

Mode	Residential	Retail
Auto Driver	41%	63%
Auto Passenger	15%	29%
Transit	24%	6%
Walk	20%	2%
Cycle	0%	0%
Total	100%	100%

4.2 EXISTING SITE TRAFFIC TO BE REMOVED

The subject site is currently occupied by a single-storey retail building with a building area of approximately 6,485 m^2 (69,800 ft^2). The existing trip generation was estimated by assuming the leasable area to be 50% of the building area (i.e. 35,000 ft^2). As the subject site is part of a larger plaza, the ITE trip rates for LUC 821 (shopping Plaza (40-150k), without supermarket) were applied.

The trip generation estimation of existing site traffic to be removed for the analysis is shown in **Table 4-2**.

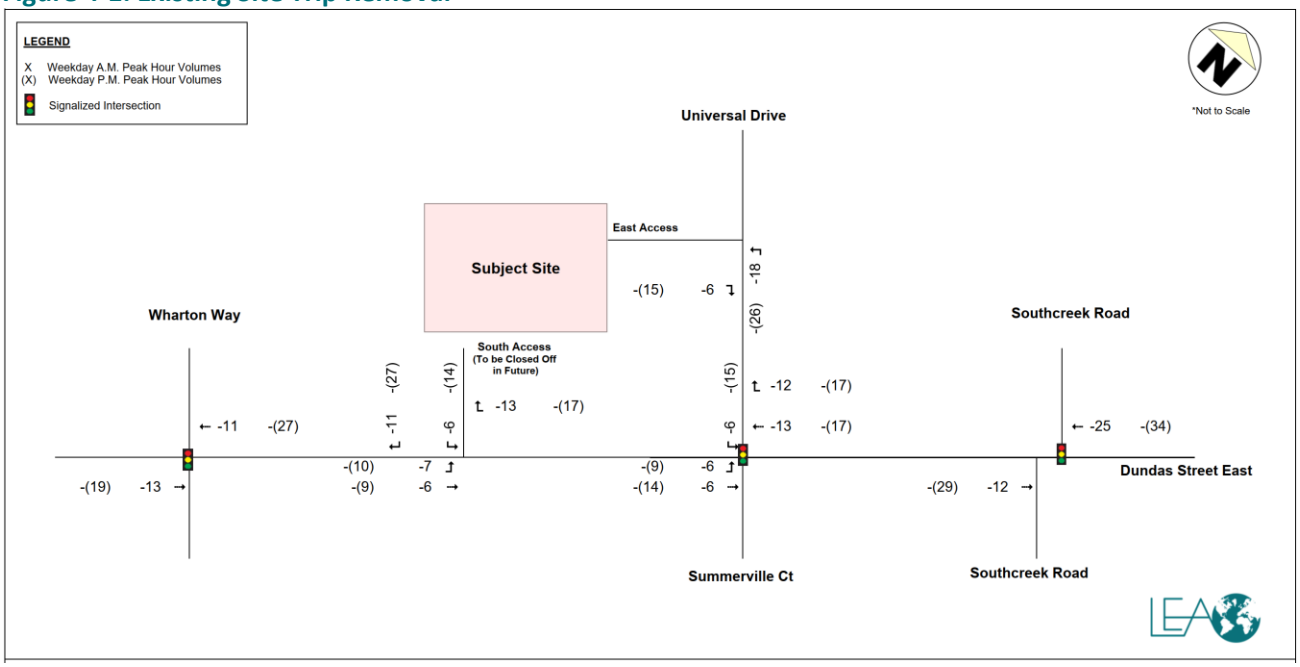
Table 4-2: Existing Site Vehicle Trips To Be Removed

Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
ITE LUC 821 - Strip Retail Plaza (40k-150k)) (35,000 ft^2)(1)	ITE Distribution (Vehicle)	62%	38%	100%	49%	51%	100%
	ITE Trip Rates	1.07	0.66	1.73	2.54	2.65	5.19
	Baseline Auto Trips	38	23	61	89	93	182
	Passby Percentage (2)	0%	0%	-	40%	40%	-
	Passby Trips	0	0	0	36	37	73
	Existing Retail - Primary External Auto Trips	**38**	**23**	**61**	**53**	**56**	**109**

*Note: (1) Assumed the leasable area for the existing building to be 50% of the building area (i.e. 70,000 * 50% = 35,000 sq ft)*
(2) 40% Pass-by Percentage according to LUC 821 was adopted.

TTS 2016 data and existing traffic volume patterns at the site access were used to determine site trip distribution, as discussed further in **Section 4.3.3**. The existing site trips to be removed for are shown in **Figure 4-1**.

Figure 4-1: Existing Site Trip Removal



4.3 NEW SITE-GENERATED TRAFFIC

Based on the latest site statistics, 941 residential units and 667 m^2 (7,180 ft^2) of retail GFA are proposed for the subject site. For the purposes of trip generation, the retail GFA was rounded up to the nearest 1,000 ft^2 to be conservative.

4.3.1 Vehicle Trip Generation

Trip generation was estimated using the ITE Trip Generation Manual 11th Edition. The average trip rates from ITE Land Use Code (LUC) 222 were used for residential trips, and the average trip rates from ITE LUC 822 were used for retail trips. The calculation of site trip generation and external person trips is detailed in **Table 4-3**.

Table 4-3: Subject Site Vehicle Trip Generation

Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
ITE LUC 222 - Multifamily Housing (High-Rise) 941 Units	ITE Distribution (Vehicle)	26%	74%	100%	62%	38%	100%
	ITE Trip Rates	0.07	0.20	0.27	0.20	0.12	0.32
	Baseline Auto Trips	66	188	254	187	114	301
	Interaction Trip Reduction	-1	-2	-3	-7	-3	-10
	Proposed Residential – External Auto Trips	65	186	251	180	111	291
ITE LUC 822 - Strip Retail Plaza (<40k) 8,000 sq. ft GFA	ITE Distribution (Vehicle)	60%	40%	100%	50%	50%	100%
	ITE Trip Rates	1.42	0.94	2.36	3.30	3.30	6.59
	Baseline Auto Trips	11	8	19	27	26	53
	Interaction Trip Reduction	-2	-1	-3	-3	-7	-10
	Proposed Retail – External Auto Trips	9	7	16	24	19	43
Total Proposed Site Auto Trips		**74**	**193**	**267**	**204**	**130**	**334**
Net Site Total (Proposed – Existing to Remove)		**36**	**170**	**206**	**151**	**74**	**225**

Note: Some site stats are rounded up on, as a conservative approach, for trip generation calculation purposes.

In total, the subject development is anticipated to generate 267 two-way vehicle trips (74 in; 193 out) during the AM peak hour and 334 two-way vehicle trips (204 in; 130 out) during the PM peak hour. Taking into account the removal of existing trips, the net trip generation is estimated as 206 two-way vehicle trips (36 in; 170 out) during the AM peak hour, and 225 two-way vehicle trips (151 in; 74 out) during the PM peak hour.

4.3.2 Multi-Modal Trip Generation

The modal split for the area, based on TTS 2016 data as discussed in **Section 4.1**, was used to determine the multi-modal trip generation for the subject development. The anticipated trip generation by mode and use is summarized **Table 4-4**.

Table 4-4: Multi-Modal Site Trip Generation

Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Residential	**External Person Trips (100%)**	**159**	**454**	**613**	**439**	**271**	**710**
	Auto Driver Trips (41%)	65	186	251	180	111	291
	Passenger Trip (15%)	24	68	92	66	41	107
	Transit Trips (24%)	38	109	147	105	65	170
	Pedestrian Trips (20%)	32	91	123	88	54	142
	Cycling Trips (0%)	0	0	0	0	0	0
Retail	**External Person Trips (100%)**	**14**	**11**	**25**	**38**	**30**	**68**
	Auto Driver Trips (63%)	9	7	16	24	19	43
	Passenger Trip (29%)	4	3	7	11	8	19
	Transit Trips (6%)	1	1	2	2	2	4
	Pedestrian Trips (2%)	0	0	0	1	1	2
	Cycling Trips (0%)	0	0	0	0	0	0

4.3.3 Trip Distribution and Assignment

Directional trip distribution of the site traffic was derived using TTS 2016 data for Traffic Analysis Zone (TAZ) 3670. The residential and retail trip distribution is summarized in **Table 4-5**. Detailed TTS calculations are provided in **Appendix D**.

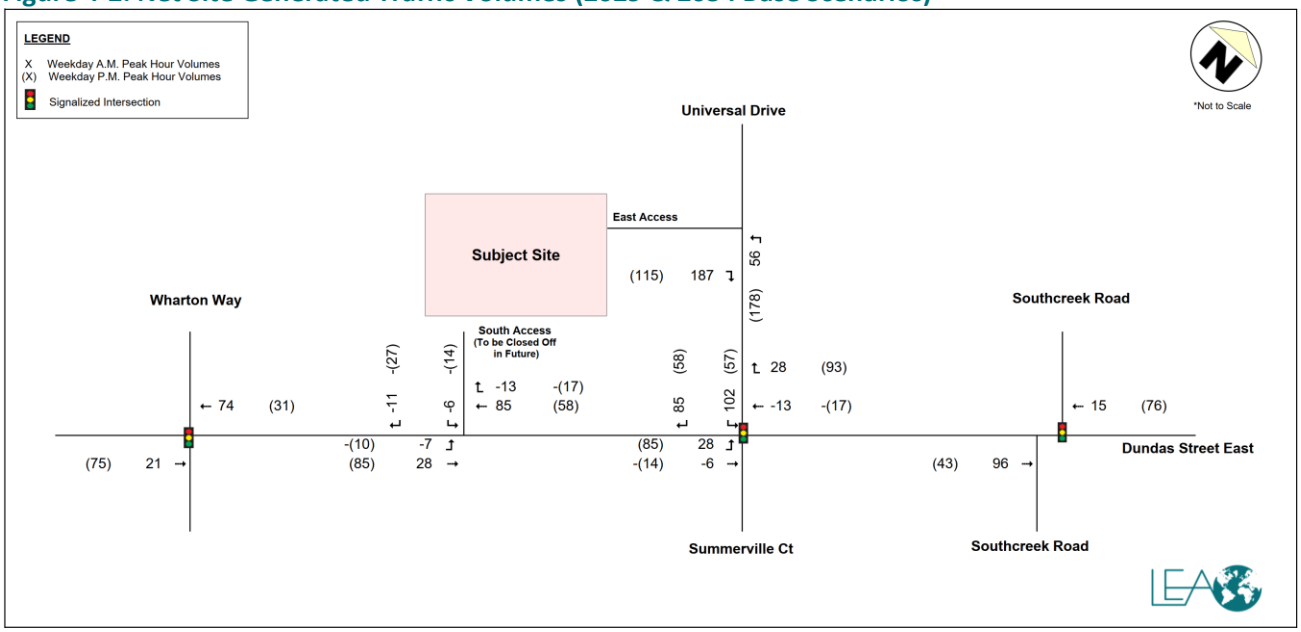
Table 4-5: Trip Distribution

Direction	Residential		Retail	
	In	Out	In	Out
East	57%	56%	35%	48%
West	43%	44%	65%	52%

The site traffic was assigned to the road network based on trip patterns in the study area, changes in the future road network, and logical routing for each of the proposed uses. In the base scenarios (2029 and 2034), only a single site access is proposed, on Universal Drive. Therefore, all site traffic is assigned to this access.

The net site generated traffic volumes for the proposed development during both weekday AM and PM peak hours are shown in **Figure 4-2** for the 2029 and 2034 base scenarios.

Figure 4-2: Net Site Generated Traffic Volumes (2029 & 2034 Base Scenarios)

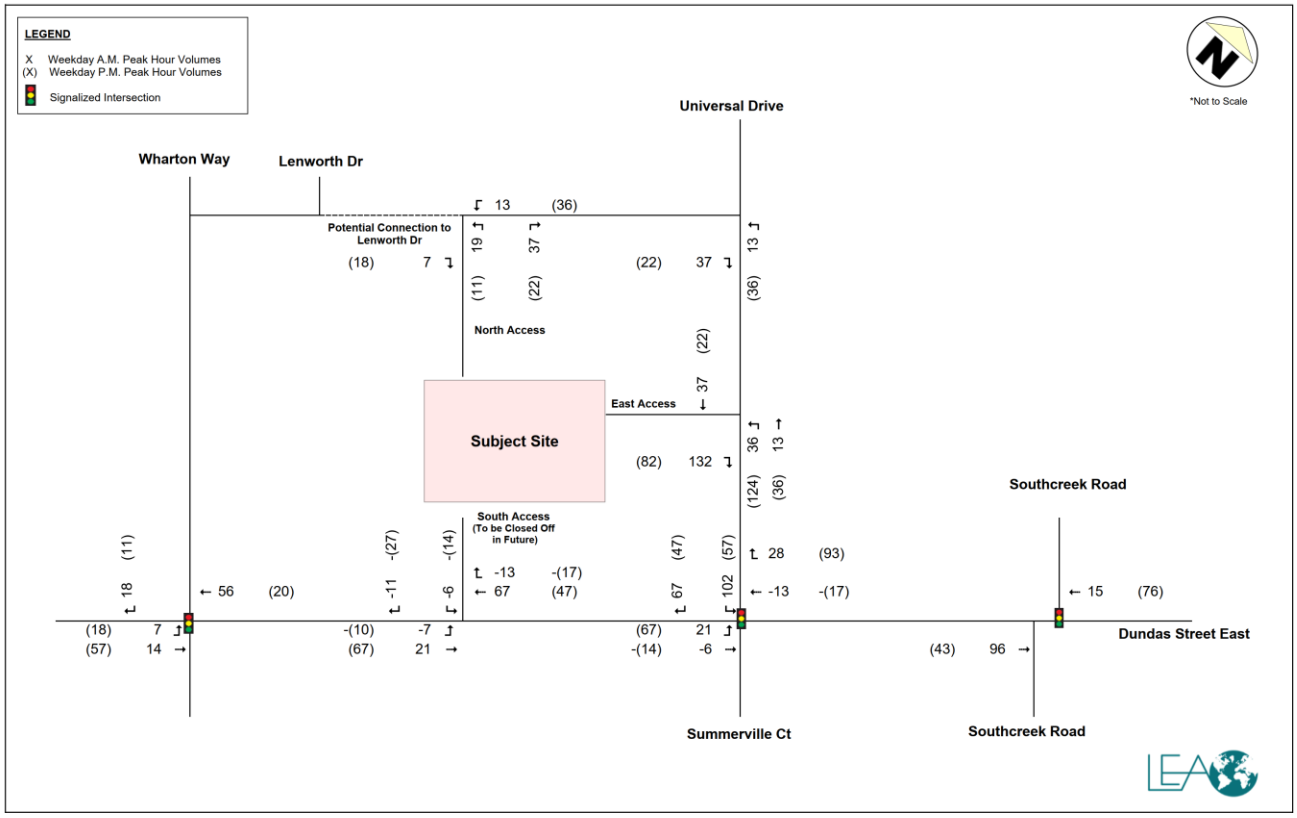


As per the Dundas Connects Master Plan, a Proposed Future Street will be constructed to the north of the subject site. The timeline for its construction is unknown as it depends upon the development of adjacent sites. A sensitivity analysis for the 2034 horizon was completed to demonstrate the impact of a secondary site access at the subject site.

Under the sensitivity analysis (2034), a secondary site access is proposed from the Proposed Future Street. It is assumed that 70% of residential trips would use the east site access on Universal Drive and 30% of residential trips would use the north site access on the Proposed Future Street (20% to travel east to Universal Drive and 10% to travel west to Lenworth Drive). All retail trips are expected to use the east site access on Universal Drive.

The net site generated traffic volumes for the 2034 sensitivity analysis during both weekday AM and PM peak hours are shown in **Figure 4-3.**

Figure 4-3: Net Site Generated Traffic Volumes (2034 Sensitivity Analysis)



5 FUTURE TOTAL TRAFFIC CONDITIONS

Future total traffic conditions include the addition of the net site trips to the future background traffic volumes. The subject site is located in an area planned for intensification with transit-oriented development. This area provides convenient access to existing and future transit service that will facilitate connections to and from key destinations in both Mississauga and adjacent municipalities, such as Brampton and Toronto, including the existing Dixie GO Station and future Dundas BRT currently in development.

As time progresses, the implementation of planned rapid transit improvements and an enhanced road network and public realm within the study area will increase the attractiveness of transit, walking, and cycling to complete regular trips. As daily travel by transit and active modes increases, vehicular volumes on Dundas Street are expected to decrease, and traffic operations at the study area intersections are expected to improve.

5.1 FUTURE ROAD NETWORK

As previously mentioned, the existing access arrangement will be altered in the future. **Figure 5-1** and **Figure 5-2** illustrate the future road network with the development's site access under the 2029 and 2034 horizons, respectively. **Figure 5-3** illustrates the road network under the 2034 sensitivity analysis, with a secondary site access on the Proposed Future Street.

Figure 5-1: Future Road Network (2029)

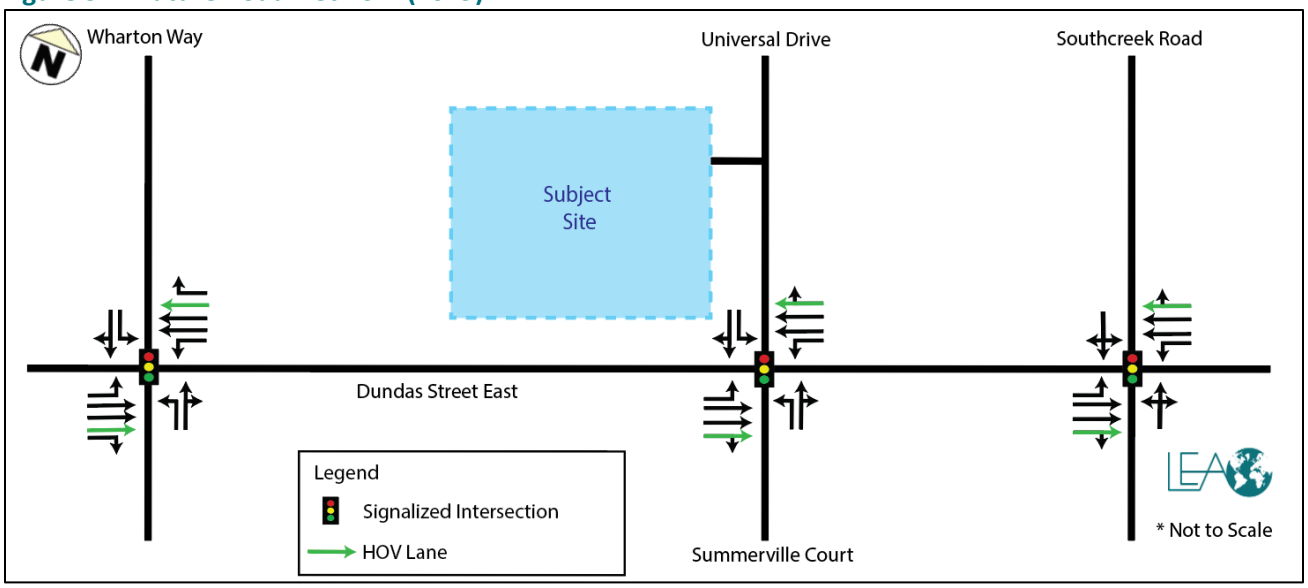


Figure 5-2: Future Road Network (2034)

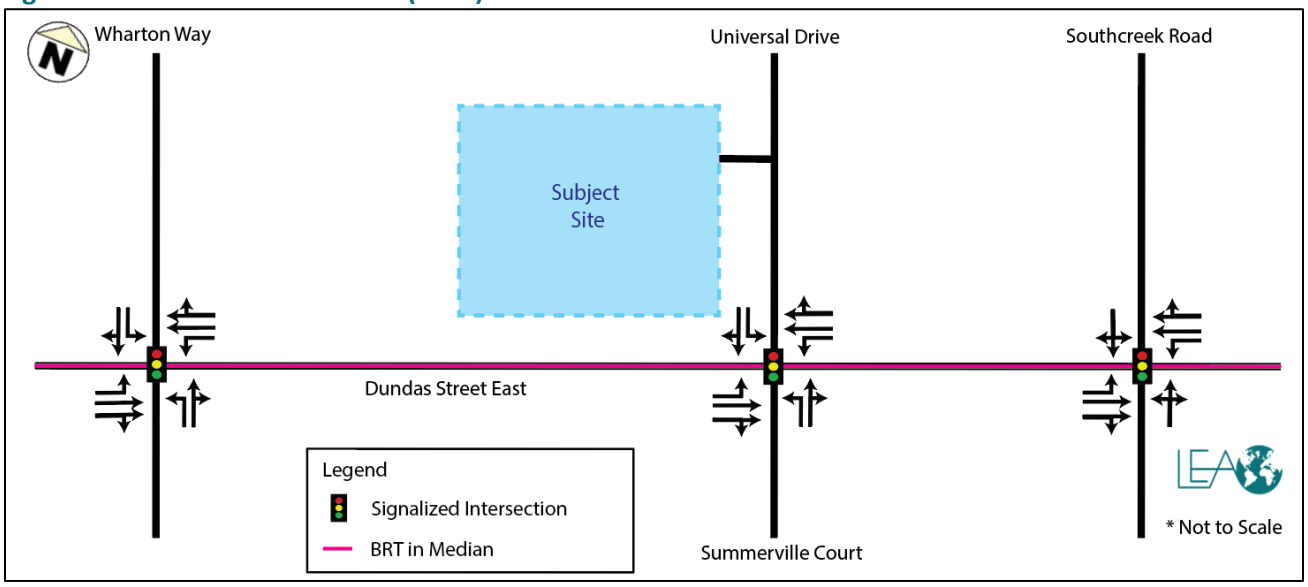
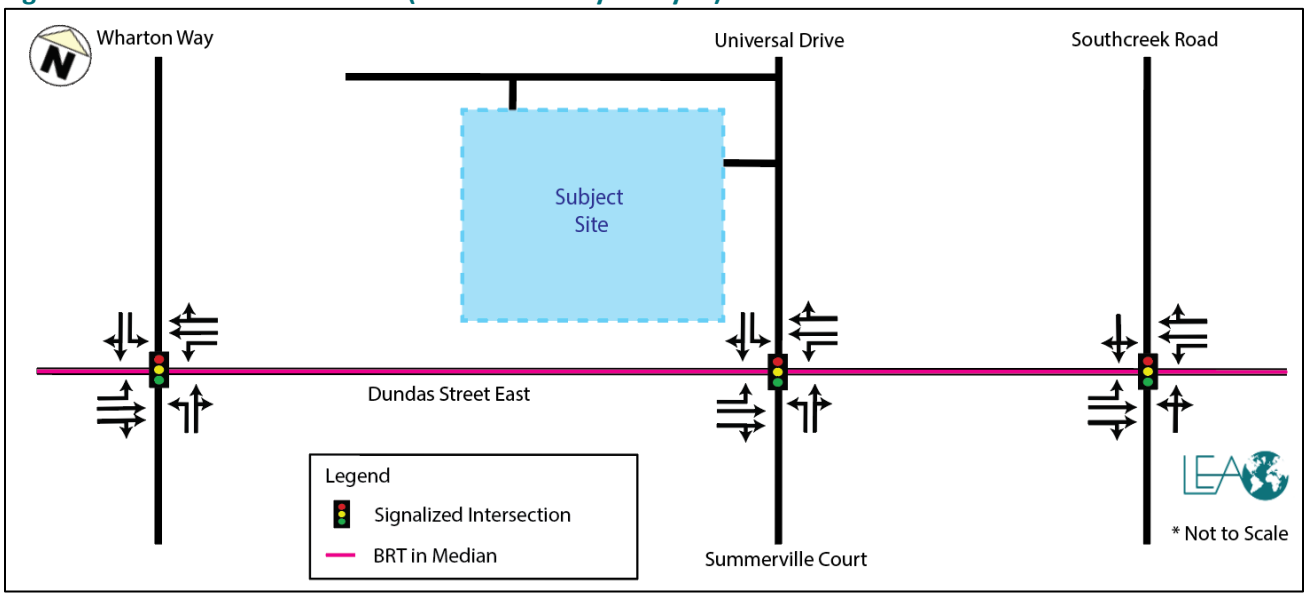


Figure 5-3: Future Road Network (2034 Sensitivity Analysis)



5.2 FUTURE TOTAL TRAFFIC VOLUMES

The future total traffic volumes for the weekday AM and PM peak hours in 2029, 2034, and the 2034 sensitivity analysis, as detailed in **Table 3-1**, are illustrated in **Figure 5-4, Figure 5-5,** and, **Figure 5-6,** respectively.

Figure 5-4: Future Total Traffic Volumes (2029)

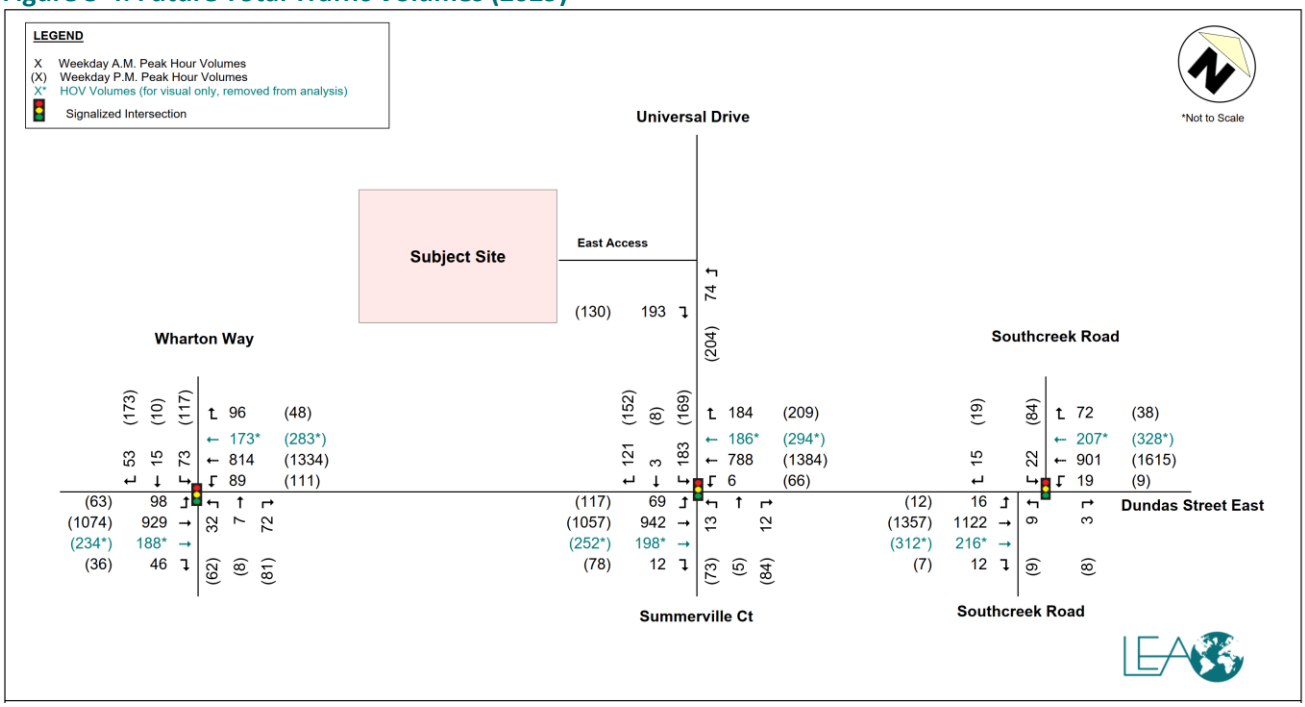


Figure 5-5: Future Total Traffic Volumes (2034)

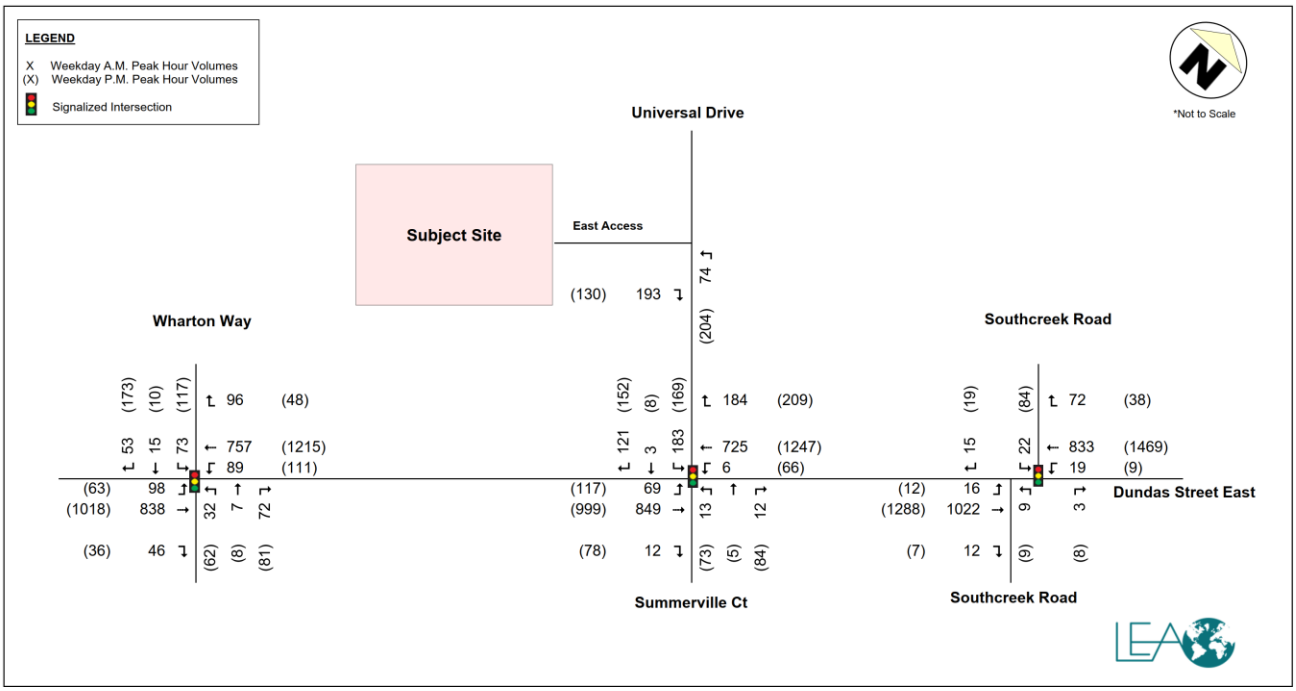
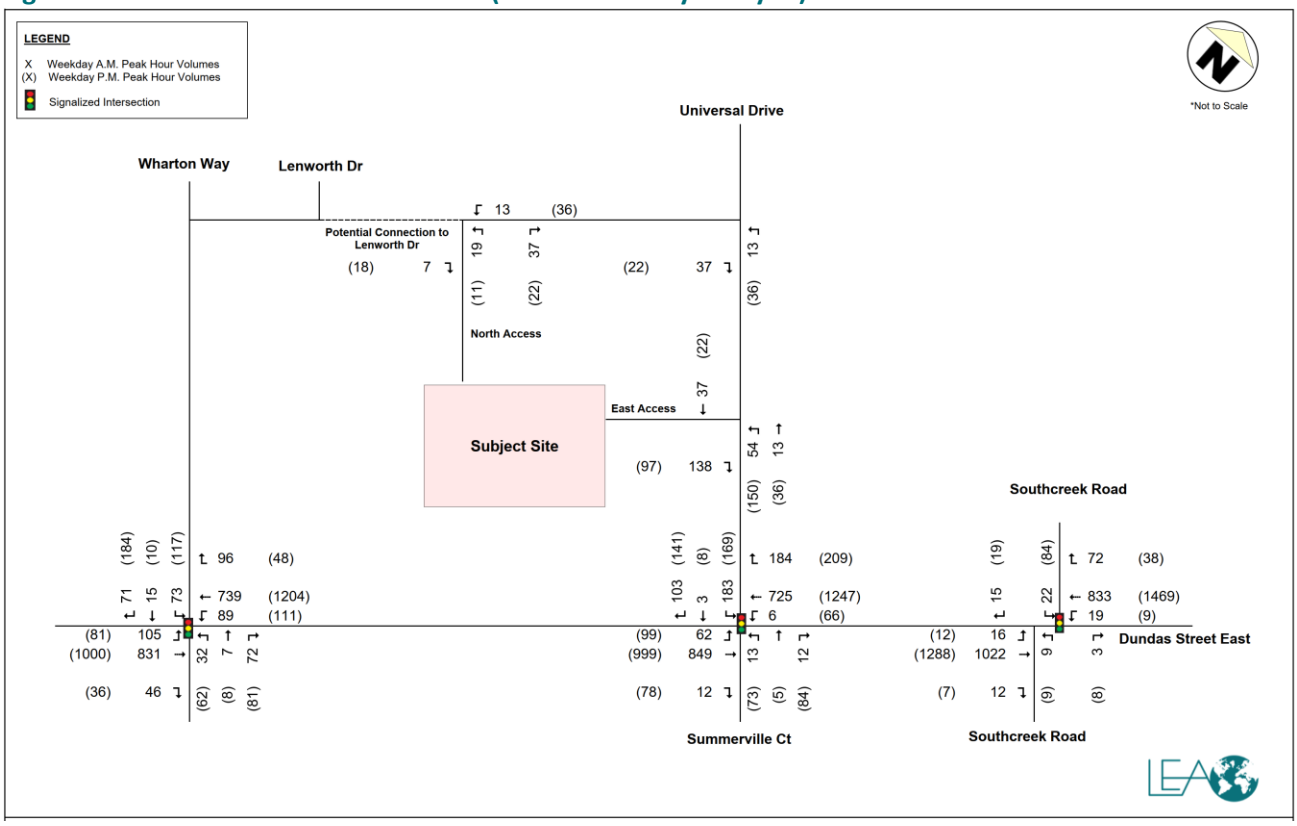


Figure 5-6: Future Total Traffic Volumes (2034 Sensitivity Analysis)



6 INTERSECTION CAPACITY ANALYSIS

The intersection capacity analyses and operations assessments for the study area intersections were undertaken using Synchro version 12, based on the Highway Capacity Manual 6th Edition methodology and adhering to the Region of Peel's *Regional Guidelines for Using Synchro Version 7.73 Rev 8* (December 2010) and the City of Mississauga's *Transportation Impact Study Guidelines* (December 2022). A queueing analysis was also conducted for the signalized intersections within the study area.

The intersection capacity analysis was conducted during the weekday AM and PM peak hours during each horizon year. Mississauga's *Transportation Impact Study Guidelines* (December 2022) outline the following threshold criteria to be identified in the analysis for signalized intersections:

- Overall intersections with volume to capacity (V/C) ratio reaching/exceeding than 0.85;
- Individual movements with volume to capacity (V/C) ratios reaching/exceeding 1.00;
- Estimated 95th percentile queue lengths greater than available storage, or blocking other lanes;

The following sections discuss the results and recommendations of the intersection capacity analysis. Detailed Synchro reports are provided in **Appendix E**.

6.1 INTERSECTION CAPACITY ANALYSIS RESULTS – 2029

The following sections will analyse the performance of signalized intersections under the 2029 horizon.

6.1.1 Dundas Street East & Wharton Way

The results of the intersection capacity analysis for Dundas Street East & Wharton Way under the 2029 horizon are summarized in **Table 6-1**.

Table 6-1: Intersection Capacity Analysis – Dundas St E & Wharton Way (2029)

AM	Existing Condition				2029 Future Background Condition				2029 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	19	B	-	-	19	B	-	-	19	B
EBL	98	0.22	10	A	98	0.23	10	A	98	0.25	10	B
EBT	727	0.35	13	B	908	0.44	14	B	929	0.45	15	B
EBR	46	0.00	0	-	46	0.00	0	-	46	0.00	0	
WBL	81	0.19	10	A	89	0.26	11	B	89	0.26	11	B
WBT	671	0.32	13	B	740	0.36	13	B	814	0.39	14	B
WBR	96	0.00	0	-	96	0.00	0	-	96	0.00	0	
NBL	32	0.14	56	E	32	0.14	56	E	32	0.14	56	E
NBTR	79	0.32	54	D	79	0.32	54	D	79	0.32	54	D
SBL	73	0.35	62	E	73	0.35	62	E	73	0.35	62	E
SBTR	68	0.21	52	D	68	0.21	52	D	68	0.21	52	D
PM	Existing Condition				2029 Future Background Condition				2029 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	23	C	-	-	23	C	-	-	23	C
EBL	63	0.20	12	B	63	0.25	14	B	63	0.26	15	B
EBT	879	0.40	14	B	999	0.46	16	B	1074	0.49	16	B
EBR	36	0.00	0	-	36	0.00	0	-	36	0.00	0	-
WBL	54	0.14	10	B	111	0.32	12	B	111	0.34	13	B

PM	Existing Condition				2029 Future Background Condition				2029 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
WBT	1099	0.50	16	B	1303	0.59	18	B	1334	0.61	18	B
WBR	48	0.00	0	-	48	0.00	0	-	48	0.00	0	-
NBL	62	0.35	67	E	62	0.35	67	E	62	0.35	67	E
NBTR	89	0.26	52	D	89	0.26	52	D	89	0.26	52	D
SBL	117	0.46	62	E	117	0.46	62	E	117	0.46	62	E
SBTR	183	0.53	56	E	183	0.53	56	E	183	0.53	56	E

The results for the queueing analysis at Dundas Street East & Wharton Way under the 2029 horizon are summarized in **Table 6-2**.

Table 6-2: Queueing Analysis – Dundas St E & Wharton Way (2029)

AM	Existing Condition			2029 Future Background Condition			2029 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	37	5	18	37	5	18	37	5	18
EBT	340	38	85	340	52	113	340	54	117
EBR	70	0	6	70	0	6	70	0	6
WBL	95	6	22	95	7	26	95	7	24
WBT	420	53	110	420	61	126	420	66	134
WBR	44	5	20	44	6	22	44	6	22
NBL	28	10	18	28	10	18	28	10	18
NBTR	56	2	16	56	2	16	56	2	16
SBL	34	24	36	34	24	36	34	24	36
SBTR	145	5	17	145	5	17	145	5	17
PM	**Existing Condition**			**2029 Future Background Condition**			**2029 Future Total Condition**		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	37	4	12	37	4	12	37	4	12
EBT	340	52	98	340	64	121	340	72	134
EBR	70	0	4	70	0	4	70	0	4
WBL	95	3	11	95	5	17	95	5	15
WBT	420	105	163	420	134	209	420	133	209
WBR	44	1	10	44	1	6	44	1	5
NBL	28	20	32	28	20	32	28	20	32
NBTR	56	2	17	56	2	17	56	2	17
SBL	**34**	**38**	**52**	**34**	**38**	**52**	**34**	**38**	**52**
SBTR	145	3	23	145	9	30	145	10	31

Existing Conditions: Under existing conditions, the intersection of Dundas Street East and Wharton Way operates well during both weekday peak hours. All movements operate with residual capacity (i.e. V/C<0.85) and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes, except for the southbound left movement during the PM peak hour. The 95th traffic queue for the southbound left (SBL) movement exceeds the existing storage and is anticipated to spill onto the adjacent southbound through traffic lane. No critical movements have been identified.

2029 Future Background Conditions: Under 2029 future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

2029 Future Total Conditions: Under 2029 future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions (i.e. V/C<0.85).

It should be noted that the SBL queue is an existing condition, and no site traffic is being added to this movement (i.e. no change in queues between existing and future conditions). No intersection modifications are recommended.

6.1.2 Dundas Street East & Universal Drive / Summerville Court

The results of the intersection capacity analysis for Dundas Street East & Universal Drive / Summerville Court under the 2029 horizon are summarized in **Table 6-3**.

Table 6-3: Intersection Capacity Analysis – Dundas St E & Universal Dr / Summerville Ct (2029)

AM	Existing Condition				2029 Future Background Condition				2029 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	10	B	-	-	10	A	-	-	18	B
EBL	41	0.10	8	A	41	0.10	8	A	69	0.20	16	B
EBTR	778	0.30	5	A	960	0.37	6	A	954	0.41	9	A
WBL	6	0.01	6	A	6	0.02	7	A	6	0.02	12	B
WBTR	878	0.36	5	A	957	0.39	6	A	972	0.44	10	A
NBL	13	0.09	67	E	13	0.09	67	E	13	0.08	65	E
NBTR	12	0.07	63	E	12	0.07	63	E	12	0.04	54	D
SBL	81	0.48	70	E	81	0.48	70	E	183	0.70	68	E
SBTR	39	0.23	65	E	39	0.23	65	E	124	0.45	59	E
PM	**Existing Condition**				**2029 Future Background Condition**				**2029 Future Total Condition**			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	18	B	-	-	18	B	-	-	25	C
EBL	32	0.13	18	B	32	0.18	26	C	**117**	**0.79**	**83**	**F**
EBTR	1025	0.43	10	A	1149	0.48	11	B	1135	0.49	13	B
WBL	66	0.21	16	B	66	0.24	19	B	66	0.25	22	C
WBTR	1254	0.53	11	B	1517	0.64	13	B	1593	0.71	17	B
NBL	73	0.39	67	E	73	0.39	67	E	73	0.43	69	E
NBTR	89	0.32	57	E	89	0.32	57	E	89	0.28	53	D
SBL	112	0.54	68	E	112	0.54	68	E	169	0.69	71	E
SBTR	102	0.40	58	E	102	0.40	58	E	160	0.55	57	E

The results for the queueing analysis at Dundas Street East & Universal Drive / Summerville Court under the 2029 horizon are summarized in **Table 6-4**.

Table 6-4: Queueing Analysis – Dundas St E & Universal Dr / Summerville Ct (2029)

AM	Existing Condition			2029 Future Background Condition			2029 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	28	5	16	28	5	17	28	12	29
EBTR	420	59	109	420	84	146	420	102	146
WBL	45	0	2	45	0	1	45	1	1
WBTR	210	36	44	210	40	47	210	41	47
NBL	36	4	10	36	4	10	36	4	10
NBTR	200	0	0	200	0	0	200	0	0
SBL	**23**	**27**	**40**	**23**	**27**	**40**	**23**	**61**	**86**
SBTR	540	1	11	540	1	11	540	1	18

PM	Existing Condition			2029 Future Background Condition			2029 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	28	2	13	28	2	17	**28**	**29**	**86**
EBTR	420	43	135	420	51	180	420	65	181
WBL	45	3	6	45	3	6	45	4	6
WBTR	210	36	40	210	43	47	210	45	48
NBL	36	24	37	36	24	37	36	23	38
NBTR	200	1	16	200	1	16	200	1	16
SBL	**23**	**38**	**53**	**23**	**38**	**53**	**23**	**57**	**79**
SBTR	540	5	20	540	17	33	540	34	55

Existing Conditions: Under existing conditions, the intersection of Dundas Street East and Universal Drive/ Summerville Court operates well during both weekday peak hours. All movements operate with residual capacity (i.e. V/C<0.85) and acceptable delays. For the southbound left movement, the existing storage length is approximately 25 m while the estimated 95th queue is 40 m in the AM peak hour and 53 m in the PM peak hour. The southbound left traffic queue is anticipated to spill into the southbound through-right traffic lane on occasion.

2029 Future Background Conditions: Under 2029 future background conditions, the intersection is generally expected to operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

2029 Future Total Conditions: Under 2029 future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions (i.e. V/C<0.85). With the relocated site access to approximately 75 m from Dundas Street East, the southbound left 95th traffic queue is anticipated to block the site access only rarely, with the 95th percentile queue expected to be 86 m. It is also noted that the eastbound left movement is expected to have a 95th percentile queue length of 86 m in the PM peak hour, surpassing the available storage of 28 m, however the queue will spillback into the two-way left-turn lane, so it is not a concern. No intersection modifications are recommended in the 2029 horizon.

6.1.3 Dundas Street East & Southcreek Road

The results of the intersection capacity analysis for Dundas Street East & Southcreek Road under the 2029 horizon are summarized in **Table 6-5**.

Table 6-5: Intersection Capacity Analysis – Dundas St E & Southcreek Rd (2029)

AM	Existing Condition				2029 Future Background Condition				2029 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	4	A	-	-	5	A	-	-	5	A
EBL	16	0.04	1	A	16	0.04	4	A	16	0.04	4	A
EBTR	853	0.32	1	A	1038	0.39	3	A	1134	0.42	4	A
WBL	19	0.06	2	A	19	0.10	5	A	19	0.08	5	A
WBTR	877	0.33	3	A	958	0.36	3	A	973	0.36	3	A
NBLTR	12	0.10	72	E	12	0.10	72	E	12	0.10	72	E
SBLTR	37	0.32	76	E	37	0.32	76	E	37	0.32	76	E

PM	Existing Condition				2029 Future Background Condition				2029 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	14	B	-	-	9	A	-	-	10	A
EBL	12	0.04	18	B	12	0.06	12	B	12	0.06	13	B
EBTR	1183	0.45	16	B	1321	0.50	6	A	1364	0.52	6	A
WBL	9	0.03	14	B	9	0.03	8	A	9	0.04	9	A
WBTR	1310	0.50	6	A	1577	0.61	7	A	1653	0.63	8	A
NBLTR	17	0.10	67	E	17	0.10	67	E	17	0.10	67	E
SBLTR	103	0.63	79	E	103	0.63	79	E	103	0.63	79	E

The results for the queueing analysis at Dundas Street East & Southcreek Road under the 2029 horizon are summarized in **Table 6-6**.

Table 6-6: Queueing Analysis – Dundas St E & Southcreek Rd (2029)

AM	Existing Condition			2029 Future Background Condition			2029 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	24	1	1	24	1	1	24	1	1
EBTR	210	16	17	210	17	17	210	36	34
WBL	27	1	3	27	1	3	27	1	3
WBTR	550	28	38	550	32	43	550	33	44
NBLTR	135	0	2	135	0	2	135	0	2
SBLTR	240	3	15	240	3	15	240	3	15
PM	Existing Condition			2029 Future Background Condition			2029 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	24	1	3	24	1	2	24	1	2
EBTR	210	37	64	210	39	66	210	39	66
WBL	27	1	3	27	1	3	27	1	3
WBTR	550	72	108	550	102	151	550	102	151
NBLTR	135	0	5	135	0	5	135	0	5
SBLTR	240	26	45	240	26	45	240	26	45

Existing Conditions: Under existing conditions, the intersection of Dundas Street East and Southcreek Road operates well during both weekday peak hours. All movements operate with residual capacity (i.e. V/C<0.85) and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

2029 Future Background Conditions: Under 2029 future background conditions, the intersection is generally expected to operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

2029 Future Total Conditions: Under 2029 future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions (i.e. V/C<0.85). No intersection modifications are recommended.

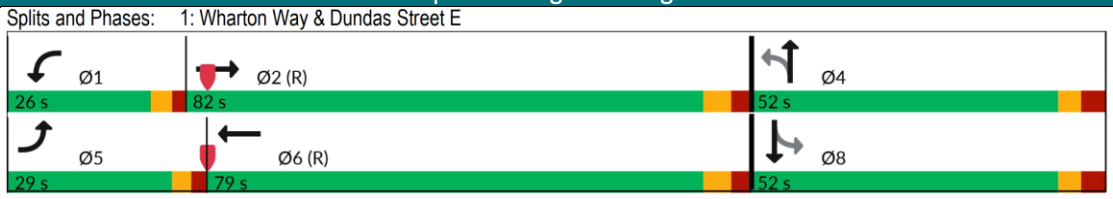
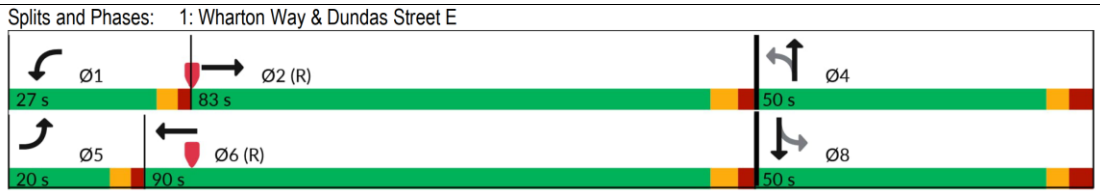
6.2 INTERSECTION CAPACITY ANALYSIS RESULTS – 2034

The following sections will analyse the performance of signalized intersections under the 2034 horizon.

6.2.1 Dundas Street East & Wharton Way

The proposed signal timing plans for Dundas Street East & Wharton Way under the 2034 weekday peak periods are presented in **Table 6-7**. As discussed, the eastbound and westbound left turns are assumed to be fully protected movements due to the BRT corridor.

Table 6-7: Proposed Signal Timing Plan - Dundas St E & Wharton Way (2034)

Period	Optimized Signal Timing Plan
AM Peak Period	
PM Peak Period	

The results of the intersection capacity analysis for Dundas Street East & Wharton Way under the 2034 horizon are summarized in **Table 6-8**.

Table 6-8: Intersection Capacity Analysis – Dundas St E & Wharton Way (2034)

AM	Existing Condition				2034 Future Background Condition				2034 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	19	B	-	-	29	C	-	-	29	C
EBL	98	0.22	10	A	98	0.83	86	F	98	0.83	86	F
EBT	727	0.35	13	B	-	-	-	-	-	-	-	-
EBR	46	0.00	0	-	-	-	-	-	-	-	-	-
EBTR	-	-	-	-	863	0.45	19	B	884	0.46	19	B
WBL	81	0.19	10	A	89	0.82	87	F	89	0.82	87	F
WBT	671	0.32	13	B	-	-	-	-	-	-	-	-
WBR	96	0.00	0	-	-	-	-	-	-	-	-	-
WBTR	-	-	-	-	779	0.41	18	B	853	0.44	19	B
NBL	32	0.14	56	E	32	0.14	56	E	32	0.14	56	E
NBTR	79	0.32	54	D	79	0.33	54	D	79	0.33	54	D
SBL	73	0.35	62	E	73	0.35	62	E	73	0.35	62	E
SBTR	68	0.21	52	D	68	0.21	52	D	68	0.21	52	D
PM	**Existing Condition**				**2034 Future Background Condition**				**2034 Future Total Condition**			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	23	C	-	-	31	C	-	-	31	C
EBL	63	0.20	12	B	63	0.79	91	F	63	0.79	91	F
EBT	879	0.40	14	B	-	-	-	-	-	-	-	-
EBR	36	0.00	0	-	-	-	-	-	-	-	-	-
EBTR	-	-	-	-	979	0.48	21	C	1054	0.52	22	C
WBL	54	0.14	10	B	111	0.84	85	F	111	0.84	85	F
WBT	1099	0.50	16	B	-	-	-	-	-	-	-	-
WBR	48	0.00	0	-	-	-	-	-	-	-	-	-
WBTR	-	-	-	-	1232	0.58	21	C	1263	0.59	21	C

PM	Existing Condition				2034 Future Background Condition				2034 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
NBL	62	0.35	67	E	62	0.35	67	E	62	0.35	67	E
NBTR	89	0.26	52	D	89	0.26	52	D	89	0.26	52	D
SBL	117	0.46	62	E	117	0.47	62	E	117	0.47	62	E
SBTR	183	0.53	56	E	183	0.53	56	E	183	0.53	56	E

The results for the queueing analysis at Dundas Street East & Wharton Way under the 2034 horizon are summarized in **Table 6-9**.

Table 6-9: Queueing Analysis – Dundas St E & Wharton Way (2034)

AM	Existing Condition			2034 Future Background Condition			2034 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	37	5	18	84	33	52	84	33	52
EBT	340	38	85	340	62	126	340	64	129
EBR	70	0	6	-	-	-	-	-	-
WBL	95	6	22	84	30	51	84	30	52
WBT	420	53	110	420	47	62	420	54	88
WBR	44	5	20	-	-	-	-	-	-
NBL	28	10	18	28	10	18	28	10	18
NBTR	56	2	16	56	2	16	56	2	16
SBL	34	24	36	34	24	36	34	24	36
SBTR	145	5	17	145	5	17	145	5	17
PM	Existing Condition			2034 Future Background Condition			2034 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	37	4	12	84	20	36	84	20	36
EBT	340	52	98	340	79	142	340	87	155
EBR	70	0	4	-	-	-	-	-	-
WBL	95	3	11	84	36	57	84	36	50
WBT	420	105	163	420	86	169	420	128	194
WBR	44	1	10	-	-	-	-	-	-
NBL	28	20	32	28	20	32	28	20	32
NBTR	56	2	17	56	2	17	56	2	17
SBL	**34**	**38**	**52**	**34**	**38**	**52**	**34**	**38**	**52**
SBTR	145	3	23	145	3	23	145	3	23

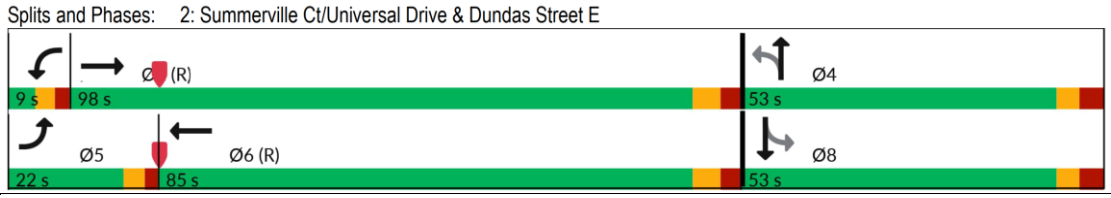
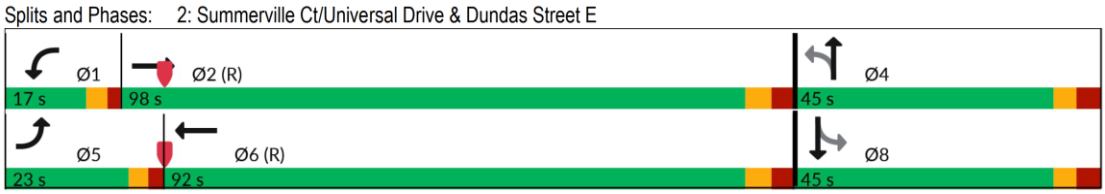
2034 Future Background Conditions: Under 2034 future background conditions, the future lane configurations and protected eastbound and westbound left-turn phases are adopted. The intersection is generally expected to operate with residual capacity. It is noted that the eastbound and westbound left-turn movements are anticipated to operate with LOS F due to high delays between protected phases. Nevertheless, the delay times are less than the cycle time of 160 seconds, indicating that the left-turn traffic could be cleared within one cycle, in addition to the V/C ratios being less than 0.85, indicating acceptable movements. It is also noted that the southbound left movement queue is expected to continue to block the southbound through lane, as in existing conditions.

2034 Future Total Conditions: Under 2034 future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions (i.e. V/C<0.85). Similar to the 2029 conditions, the SBL queue is an existing condition, and no site traffic is being added to this movement. No intersection modifications are recommended.

6.2.2 Dundas Street East & Universal Drive / Summerville Court

The proposed signal timing plans for Dundas Street East & Universal Drive/ Summerville Court under the 2034 weekday peak periods are presented in **Table 6-10**. As discussed, the eastbound and westbound left turns are assumed to be fully protected movements due to the BRT corridor.

Table 6-10: Proposed Signal Timing Plan - Dundas St E & Universal Dr / Summerville Ct (2034)

Period	Optimized Signal Timing Plan
AM Peak Period	
PM Peak Period	

The results of the intersection capacity analysis for Dundas Street East & Universal Drive / Summerville Court under the 2034 horizon are summarized in **Table 6-11**.

Table 6-11: Intersection Capacity Analysis – Dundas St E & Universal Dr / Summerville Ct (2034)

AM	Existing Condition				2034 Future Background Condition				2034 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	10	B	-	-	15	B	-	-	24	C
EBL	41	0.10	8	A	41	0.77	96	F	69	0.79	89	F
EBTR	778	0.30	5	A	867	0.35	7	A	861	0.39	12	B
WBL	6	0.01	6	A	6	0.76	163	F	6	0.76	163	F
WBTR	878	0.36	5	A	894	0.40	9	A	909	0.47	16	B
NBL	13	0.09	67	E	13	0.09	67	E	13	0.08	64	E
NBTR	12	0.07	63	E	12	0.07	63	E	12	0.04	54	D
SBL	81	0.48	70	E	81	0.48	70	E	183	0.69	66	E
SBTR	39	0.23	65	E	39	0.22	65	E	124	0.45	59	E
PM	**Existing Condition**				**2034 Future Background Condition**				**2034 Future Total Condition**			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	18	B	-	-	24	C	-	-	34	C
EBL	32	0.13	18	B	32	0.62	87	F	117	0.79	85	F
EBTR	1025	0.43	10	A	1091	0.51	16	B	1077	0.53	19	B
WBL	66	0.21	16	B	66	0.72	82	F	66	0.72	82	F
WBTR	1254	0.53	11	B	1380	0.62	17	B	1456	0.77	29	C
NBL	73	0.39	67	E	73	0.37	66	E	73	0.42	68	E
NBTR	89	0.32	57	E	89	0.31	56	E	89	0.27	52	D
SBL	112	0.54	68	E	112	0.52	67	E	169	0.67	69	E
SBTR	102	0.40	58	E	102	0.39	58	E	160	0.54	57	E

The results for the queueing analysis at Dundas Street East & Universal Drive / Summerville Court under the 2034 horizon are summarized in **Table 6-12**.

Table 6-12: Queueing Analysis – Dundas St E & Universal Dr / Summerville Ct (2034)

AM	Existing Condition			2034 Future Background Condition			2034 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	28	5	16	80	15	28	80	25	42
EBTR	420	59	109	420	22	30	420	22	30
WBL	45	0	2	55	2	6	55	2	6
WBTR	210	36	44	210	28	116	210	84	128
NBL	36	4	10	36	4	10	36	4	10
NBTR	200	0	0	200	0	0	200	0	0
SBL	**23**	**27**	**40**	**23**	**27**	**40**	**23**	**61**	**84**
SBTR	540	1	11	540	1	11	540	1	18
PM	**Existing Condition**			**2034 Future Background Condition**			**2034 Future Total Condition**		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	28	2	13	80	11	24	80	34	66
EBTR	420	43	135	420	114	33	420	124	30
WBL	45	3	6	55	24	41	55	24	40
WBTR	210	36	40	210	42	47	**210**	183	**240**
NBL	36	24	37	36	23	36	36	23	38
NBTR	200	1	16	200	1	16	200	1	16
SBL	**23**	**38**	**53**	**23**	**37**	**53**	**23**	**56**	**79**
SBTR	540	5	20	540	3	18	540	2	22

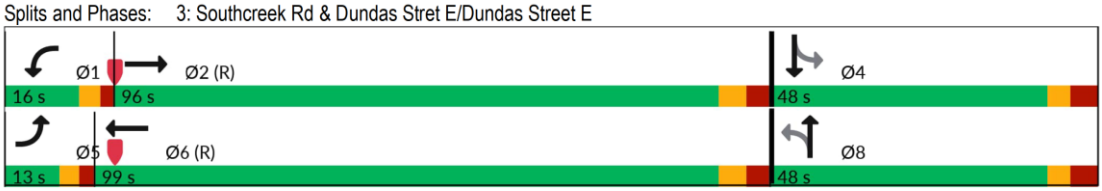
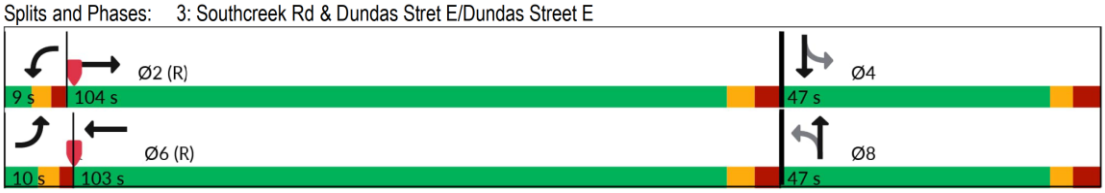
2034 Future Background Conditions: Under 2034 future background conditions, the future lane configurations and protected eastbound and westbound left-turn phases are adopted. The intersection is generally expected to operate with residual capacity (i.e. V/C<0.85). It is noted that the eastbound and westbound left-turn movements are anticipated to operate with LOS F due to high delays between protected phases. The average delay for the westbound left movement is 163 seconds (AM peak) which is slightly more than the cycle length of 160 seconds, indicating that westbound left traffic is anticipated to experience some delay during AM peak hour. Eastbound traffic will clear the queue within a cycle.

2034 Future Total Conditions: Under 2034 future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions (i.e. V/C<0.85). Similar to the 2029 future total condition, the 95th percentile queue of the southbound left movement would minorly block the southbound through-right lane and will extend past the site access on occasion. It is also noted that during the PM peak hour, the westbound through-right queue is expected to exceed the available capacity for the 95th queue; however, the 50th queue, which better represents the average queue, doesn't exceed the available storage. No intersection modifications are recommended.

6.2.3 Dundas Street East & Southcreek Road

The proposed signal timing plans for Dundas Street East & Southcreek Road under the 2034 weekday peak periods are presented in **Table 6-13**. As discussed, the eastbound and westbound left turns are assumed to be fully protected movements due to the BRT corridor.

Table 6-13: Proposed Signal Timing Plan - Dundas St E & Southcreek Rd (2034)

Period	Optimized Signal Timing Plan
AM Peak Period	Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E 
PM Peak Period	Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E 

The results of the intersection capacity analysis for Dundas Street East & Southcreek Road under the 2034 horizon are summarized in **Table 6-14**.

Table 6-14: Intersection Capacity Analysis – Dundas St E & Southcreek Rd (2034)

AM	Existing Condition				2034 Future Background Condition				2034 Future Total Condition			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	4	A	-	-	10	A	-	-	9	A
EBL	16	0.04	1	A	16	0.80	123	F	16	0.80	121	F
EBTR	853	0.32	1	A	938	0.37	5	A	1034	0.41	6	A
WBL	**19**	**0.06**	**2**	**A**	**19**	**0.99**	**167**	**F**	**19**	**0.99**	**167**	**F**
WBTR	877	0.33	3	A	890	0.35	5	A	905	0.36	5	A
NBLTR	12	0.10	72	E	12	0.10	72	E	12	0.10	72	E
SBLTR	37	0.32	76	E	37	0.32	76	E	37	0.32	76	E
PM	**Existing Condition**				**2034 Future Background Condition**				**2034 Future Total Condition**			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	14	B	-	-	9	A	-	-	10	A
EBL	12	0.04	18	B	12	0.65	105	F	12	0.65	104	F
EBTR	1183	0.45	16	B	1252	0.50	1	A	1295	0.52	1	A
WBL	9	0.03	14	B	9	0.62	111	F	9	0.62	111	F
WBTR	1310	0.50	6	A	1431	0.58	9	A	1507	0.61	10	A
NBLTR	17	0.10	67	E	17	0.10	67	E	17	0.10	67	E
SBLTR	103	0.63	79	E	103	0.63	79	E	103	0.63	79	E

The results for the queueing analysis at Dundas Street East & Southcreek Road under the 2034 horizon are summarized in **Table 6-15**.

Table 6-15: Queueing Analysis – Dundas St E & Southcreek Rd (2034)

AM	Existing Condition			2034 Future Background Condition			2034 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	24	1	1	90	6	15	90	5	14
EBTR	210	16	17	210	43	23	210	41	45
WBL	27	1	3	80	7	16	80	7	16
WBTR	550	28	38	550	47	61	550	48	62
NBLTR	135	0	2	135	0	0	135	0	0
SBLTR	240	3	15	240	0	5	240	0	5

PM	Existing Condition			2034 Future Background Condition			2034 Future Total Condition		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	24	1	3	90	4	9	90	4	9
EBTR	210	37	64	210	32	45	210	39	57
WBL	27	1	3	80	3	10	80	3	10
WBTR	550	72	108	550	73	163	550	79	178
NBLTR	135	0	5	135	0	0	135	0	0
SBLTR	240	26	45	240	15	35	240	15	35

2034 Future Background Conditions: Under 2034 future background conditions, the future lane configurations and protected eastbound and westbound left-turn phases are adopted. The intersection is generally expected to operate with residual capacity (i.e. V/C<0.85), except for the westbound left movement which is expected to operate with a V/C ratio of 0.99 during AM peak hour. According to the HCM 6th edition methodology applied in the analysis, the critical V/C ratio for this movement is majorly contributed by the high heavy vehicle percentage (15 out of 19 vehicles in existing traffic volume data). Based on the existing cycle time of 160s (22 cycles in an hour), the intersection is realistically expected to be able to handle at least 1 vehicle during each cycle on average (i.e. at least 22 vehicles per hour), which will sufficiently meet the forecasted demand.

As demonstrated through the queueing analysis, a 95th percentile queue of 16m is expected. Therefore, with the storage length planned for the westbound left movement, the critical V/C ratio for the westbound left movement is not anticipated to adversely affect the overall operation of the intersection. Nevertheless, it is recommended the city to monitor the traffic conditions upon completion of Dundas BRT to ensure smooth operation.

2034 Future Total Conditions: Under 2034 future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No changes are expected to the critical WBL movement between future background and future total conditions. No intersection modifications are recommended.

6.3 SENSITIVITY ANALYSIS RESULTS

The following sections will analyse the performance of signalized intersections under the 2034 horizon in the sensitivity analysis, where the subject site has two driveways, and the Proposed Future Street is constructed.

6.3.1 Dundas Street East & Wharton Way

The results of the intersection capacity analysis for Dundas Street East & Wharton Way under the 2034 sensitivity analysis compared to the base conditions are summarized in **Table 6-16.**

Table 6-16: Intersection Capacity Analysis – Dundas St E & Wharton Way (2034 Sensitivity Analysis)

AM	2034 Future Background Condition				2034 Future Total Condition (Base)				2034 Future Total Condition (Sensitivity)			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	29	C	-	-	29	C	-	-	30	C
EBL	98	0.83	86	F	98	0.83	86	F	105	0.83	85	F
EBTR	863	0.45	19	B	884	0.46	19	B	877	0.45	19	B
WBL	89	0.82	87	F	89	0.82	87	F	89	0.82	87	F
WBTR	779	0.41	18	B	853	0.44	19	B	835	0.44	19	B

AM	2034 Future Background Condition				2034 Future Total Condition (Base)				2034 Future Total Condition (Sensitivity)			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
NBL	32	0.14	56	E	32	0.14	56	E	32	0.15	58	E
NBTR	79	0.33	54	D	79	0.33	54	D	79	0.32	54	D
SBL	73	0.35	62	E	73	0.35	62	E	73	0.35	62	E
SBTR	68	0.21	52	D	68	0.21	52	D	86	0.27	53	D
PM	2034 Future Background Condition				2034 Future Total Condition (Base)				2034 Future Total Condition (Sensitivity)			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	31	C	-	-	31	C	-	-	32	C
EBL	63	0.79	91	F	63	0.79	91	F	81	0.81	90	F
EBTR	979	0.48	21	C	1054	0.52	22	C	1036	0.51	22	C
WBL	111	0.84	85	F	111	0.84	85	F	111	0.84	85	F
WBTR	1232	0.58	21	C	1263	0.59	21	C	1252	0.60	23	C
NBL	62	0.35	67	E	62	0.35	67	E	62	0.36	68	E
NBTR	89	0.26	52	D	89	0.26	52	D	89	0.26	51	D
SBL	117	0.47	62	E	117	0.47	62	E	117	0.46	61	E
SBTR	183	0.53	56	E	183	0.53	56	E	194	0.56	56	E

The results for the queueing analysis at Dundas Street East & Wharton Way under the 2034 sensitivity analysis compared to the base conditions are summarized in **Table 6-17**.

Table 6-17: Queueing Analysis – Dundas St E & Wharton Way (2034 Sensitivity Analysis)

AM	2034 Future Background Condition			2034 Future Total Condition (Base)			2034 Future Total Condition (Sensitivity)		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	84	33	52	84	33	52	84	35	55
EBTR	340	62	126	340	64	129	340	63	128
WBL	84	30	51	84	30	52	84	30	52
WBTR	420	47	62	420	54	88	420	53	84
NBL	28	10	18	28	10	18	28	10	18
NBTR	56	2	16	56	2	16	56	2	16
SBL	34	24	36	34	24	36	34	24	36
SBTR	145	5	17	145	5	17	145	5	19
PM	2034 Future Background Condition			2034 Future Total Condition (Base)			2034 Future Total Condition (Sensitivity)		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	84	20	36	84	20	36	84	26	44
EBTR	340	79	142	340	87	155	340	85	152
WBL	84	36	57	84	36	50	84	36	51
WBTR	420	86	169	420	128	194	420	123	193
NBL	28	20	32	28	20	32	28	20	32
NBTR	56	2	17	56	2	17	56	2	17
SBL	**34**	**38**	**52**	**34**	**38**	**52**	**34**	**38**	**52**
SBTR	145	3	23	145	3	23	145	3	23

2034 Future Total Conditions (Sensitivity Analysis): Under the 2034 sensitivity analysis, the difference in site traffic assignment is minor compared to the base 2034 future total condition. All movements are anticipated to operate similar to base future total conditions. No intersection modifications are recommended.

6.3.2 Dundas Street East & Universal Drive / Summerville Court

The results of the intersection capacity analysis for Dundas Street East & Universal Drive / Summerville Court under the 2034 sensitivity analysis compared to the base conditions are summarized in **Table 6-18**.

Table 6-18: Intersection Capacity Analysis – Dundas St E & Universal Dr / Summerville Ct (2034 Sensitivity Analysis)

AM	2034 Future Background Condition				2034 Future Total Condition (Base)				2034 Future Total Condition (Sensitivity)			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	15	B	-	-	24	C	-	-	23	C
EBL	41	0.77	96	F	69	0.79	89	F	62	0.78	90	F
EBTR	867	0.35	7	A	861	0.39	12	B	861	0.39	11	B
WBL	6	0.76	163	F	6	0.76	163	F	6	0.76	163	F
WBTR	894	0.40	9	A	909	0.47	16	B	909	0.46	16	B
NBL	13	0.09	67	E	13	0.08	64	E	13	0.08	63	E
NBTR	12	0.07	63	E	12	0.04	54	D	12	0.04	54	D
SBL	81	0.48	70	E	183	0.69	66	E	183	0.70	67	E
SBTR	39	0.22	65	E	124	0.45	59	E	106	0.38	58	E
PM	2034 Future Background Condition				2034 Future Total Condition (Base)				2034 Future Total Condition (Sensitivity)			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	24	C	-	-	34	C	-	-	32	C
EBL	32	0.62	87	F	117	0.79	85	F	99	0.76	81	F
EBTR	1091	0.51	16	B	1077	0.53	19	B	1077	0.52	19	B
WBL	66	0.72	82	F	66	0.72	82	F	66	0.72	82	F
WBTR	1380	0.62	17	B	1456	0.77	29	C	1456	0.75	27	C
NBL	73	0.37	66	E	73	0.42	68	E	73	0.39	67	E
NBTR	89	0.31	56	E	89	0.27	52	D	89	0.27	52	D
SBL	112	0.52	67	E	169	0.67	69	E	169	0.68	69	E
SBTR	102	0.39	58	E	160	0.54	57	E	149	0.50	56	E

The results for the queueing analysis at Dundas Street East & Universal Drive / Summerville Court under the 2034 sensitivity analysis compared to the base conditions are summarized in **Table 6-19**.

Table 6-19: Queueing Analysis – Dundas St E & Universal Dr / Summerville Ct (2034 Sensitivity Analysis)

AM	2034 Future Background Condition			2034 Future Total Condition (Base)			2034 Future Total Condition (Sensitivity)		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	80	15	28	80	25	42	80	23	40
EBTR	420	22	30	420	22	30	420	22	30
WBL	55	2	6	55	2	6	55	2	6
WBTR	210	28	116	210	84	128	210	29	127
NBL	36	4	10	36	4	10	36	4	10
NBTR	200	0	0	200	0	0	200	0	0
SBL	**23**	**27**	**40**	**23**	**61**	**84**	**23**	**61**	**84**
SBTR	540	1	11	540	1	18	540	1	17

PM	2034 Future Background Condition			2034 Future Total Condition (Base)			2034 Future Total Condition (Sensitivity)		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	80	11	24	80	34	66	80	30	56
EBTR	420	114	33	420	124	30	420	124	31
WBL	45	24	41	45	24	40	45	24	40
WBTR	210	42	47	210	183	240	210	177	240
NBL	36	23	36	36	23	38	36	22	37
NBTR	200	1	16	200	1	16	200	1	16
SBL	**23**	**37**	**53**	**23**	**56**	**79**	**23**	**56**	**79**
SBTR	540	3	18	540	2	22	540	2	21

2034 Future Total Conditions (Sensitivity Analysis): Under 2034 future total conditions (sensitivity analysis), 10% of site traffic heading to/from the west was diverted to the intersection of Dundas Street East & Wharton Way via Proposed Future Street and Lenworth Drive. Thus, the southbound through-right traffic is reduced at the intersection of Dundas Street East & Universal Drive under the sensitivity analysis. Overall, the differences between the base case and the sensitivity analysis scenario are minor, and all movements are anticipated to operate similar to future total conditions.

6.3.3 Dundas Street East & Southcreek Road

The results of the intersection capacity analysis for Dundas Street East & Southcreek Road under the 2034 sensitivity analysis compared to the base conditions are summarized in **Table 6-20**.

Table 6-20: Intersection Capacity Analysis – Dundas St E & Southcreek Rd (2034 Sensitivity Analysis)

AM	2034 Future Background Condition				2034 Future Total Condition (Base)				2034 Future Total Condition (Sensitivity)			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	10	A	-	-	9	A	-	-	9	A
EBL	16	0.80	123	F	16	0.80	121	F	16	0.80	121	F
EBTR	938	0.37	5	A	1034	0.41	6	A	1034	0.41	6	A
WBL	**19**	**0.99**	**167**	**F**	**19**	**0.99**	**167**	**F**	**19**	**0.99**	**167**	**F**
WBTR	890	0.35	5	A	905	0.36	5	A	905	0.36	5	A
NBLTR	12	0.10	72	E	12	0.10	72	E	12	0.10	72	E
SBLTR	37	0.32	76	E	37	0.32	76	E	37	0.32	76	E
PM	**2034 Future Background Condition**				**2034 Future Total Condition (Base)**				**2034 Future Total Condition (Sensitivity)**			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	-	9	A	-	-	10	A	-	-	10	A
EBL	12	0.65	105	F	12	0.65	104	F	12	0.65	104	F
EBTR	1252	0.50	1	A	1295	0.52	1	A	1295	0.52	1	A
WBL	9	0.62	111	F	9	0.62	111	F	9	0.62	111	F
WBTR	1431	0.58	9	A	1507	0.61	10	A	1507	0.61	10	A
NBLTR	17	0.10	67	E	17	0.10	67	E	17	0.10	67	E
SBLTR	103	0.63	79	E	103	0.63	79	E	103	0.63	79	E

The results for the queueing analysis at Dundas Street East & Southcreek Road under the 2034 sensitivity analysis compared to the base conditions are summarized in **Table 6-21**.

Table 6-21: Queueing Analysis – Dundas St E & Southcreek Rd (2034 Sensitivity Analysis)

AM	2034 Future Background Condition			2034 Future Total Condition (Base)			2034 Future Total Condition (Sensitivity)		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	90	6	15	90	5	14	90	5	14
EBTR	210	43	23	210	41	45	210	41	45
WBL	80	7	16	80	7	16	80	7	16
WBTR	550	47	61	550	48	62	550	48	62
NBLTR	135	0	0	135	0	0	135	0	0
SBLTR	240	0	5	240	0	5	240	0	5
PM	**2034 Future Background Condition**			**2034 Future Total Condition (Base)**			**2034 Future Total Condition (Sensitivity)**		
Mvmt	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue	Storage	50th Queue	95th Queue
EBL	90	4	9	90	4	9	90	4	9
EBTR	210	32	45	210	39	57	210	39	57
WBL	80	3	10	80	3	10	80	3	10
WBTR	550	73	163	550	79	178	550	79	178
NBLTR	135	0	0	135	0	0	135	0	0
SBLTR	240	15	35	240	15	35	240	15	35

2034 Future Total Conditions (Sensitivity Analysis): Under 2034 future total conditions (sensitivity analysis), the site trip assignment to the east is the same as the future total condition. Hence, the sensitivity analysis is identical to the base case future total condition for this intersection.

6.4 SUMMARY OF INTERSECTION CAPACITY ANALYSIS

In conclusion, for the three study area intersections, only one critical movement was identified due to having a V/C ratio greater than 0.85, and that was the westbound left movement at Dundas Street East and Southcreek Road, which was identified as a constraint due to background development, and not the proposed development's trips. However, it is expected that this result is due to the effect of a high heavy vehicle percentage on the analysis methodology employed by Synchro. Therefore, it is not a concern for the operations of the network.

Some critical queues were identified, although most of them are present in the existing conditions. Critical queues were found to occur for the southbound left movement at Dundas Street East & Wharton Way, and the southbound left, eastbound left and westbound through-right movements at Dundas Street East & Universal Drive / Summerville Court. However, the queues are expected to be manageable, and thus no road geometry modifications are recommended.

A sensitivity analysis was completed to assess the future road network operations with a new Proposed Future Street in place to the north of the site. It was found that the new street would have a minimal impact on the overall operations under 2034 future total conditions.

7 MULTI-MODAL LEVEL OF SERVICE

Multi-modal level of service (MMLOS) was evaluated based on the City of Ottawa's Multimodal Level of Service Guidelines (2015), as discussed in the following sections.

7.1 PEDESTRIAN LEVEL OF SERVICE (PLOS)

At the intersection of Dundas Street East and Universal Drive / Summerville Court, pedestrians will experience a high delay due to the signal cycle length of 160 seconds. Therefore, the PLOS evaluation is F.

Currently, 2 m wide sidewalks are provided on both sides of Dundas Street East, although the south side has a segment with no boulevard to separate the sidewalk from the vehicle lanes. With a posted speed limit of 60 km/h, Dundas Street East has a PLOS of E. For Universal Drive, a sidewalk is only provided to the western side; no sidewalk is provided to the eastern side. As the street has a lower traffic volume and a speed limit of 50 km/h, the west side of the street has a PLOS of B. The segment with no sidewalk has a PLOS of F.

According to the planned cross-section of future Dundas Street, 3 m wide sidewalks and 2 m wide boulevards will be provided on both sides of roadway. The Pedestrian LOS for the section of Dundas Street East is assessed to be LOS C under future layout. The pedestrian environment on Universal Drive is not expected to be improved in the future.

The Pedestrian Level of Service (PLOS) evaluation is summarized in **Table 7-1**.

Table 7-1: Pedestrian Level of Service

Context	Criteria	Existing PLOS	Future PLOS
Intersection: Dundas Street East & Universal Drive/ Summerville Ct	• Delay	F	F
Segment: Dundas Street East (between Wharton Way and Universal Drive / Summerville Court)	• Vehicular operating speed • Sidewalk width • Boulevard width • Motor vehicle volume (AADT/lane) • Presence of on-street parking	E	C
Segment: Universal Drive (north of Dundas Street East)	• Vehicular operating speed • Sidewalk width • Boulevard width • Motor vehicle volume (AADT/lane) • Presence of on-street parking	East side: F West side: B	East side: F West side: B

7.2 BICYCLE LEVEL OF SERVICE (BLOS)

Cyclists must operate in mixed traffic in the study area. The BLOS evaluation is B for Universal Drive due to its two-lane cross-section and speed limit of 50 km/h, and F for Dundas Street East due to it having a speed limit of 60 km/h.

The BLOS at the signalized intersection of Dundas Street East & Universal Drive / Summerville Court is assessed as level of service F as the vehicular operating speed is 60 km/h along Dundas Street East and cyclists need to cross multiple lanes to make the left turns.

With bike lanes provided under the future layout, the section of Dundas Street East in the study area will have a BLOS of C.

Since the future bike infrastructure, such as bike boxes and cross-rides, are to be determined during the detailed design of the Dundas BRT corridor, the future BLOS is to be determined. However, it is likely to be significantly improved.

The existing Bicycle Level of Service (BLOS) evaluation is summarized in **Table 7-2**.

Table 7-2: Bicycle Level of Service

Context	Criteria	Existing BLOS	Future BLOS
Intersection: Dundas Street East & Universal Drive/ Summerville Ct	• Vehicular operating speed • Left turn accommodation (presence of bike box, number of left turn lanes, number of lanes crossed)	F	TBD
Segment: Dundas Street East (between Wharton Way and Universal Drive / Summerville Court)	• Type of bikeway • Street width • Vehicular operating speed	F	C
Segment: Universal Drive (north of Dundas Street East)	• Type of bikeway • Street width • Vehicular operating speed	B	B

7.3 TRANSIT LEVEL OF SERVICE (TLOS)

Currently, high-occupancy vehicle (HOV) lanes (effective during AM and PM peak hours) and bus stops are provided on both sides of Dundas Street East near the intersection with Universal Drive / Summerville Court. The existing TLOS of the intersection is assessed to be D.

Upon completion of the Dundas BRT project adjacent to the subject site, the overall transit services in the area are expected to be more comprehensive. Dundas Street itself will have rapid, frequent bus service operating in a segregated right-of-way, resulting in a TLOS of A.

The TLOS evaluation is summarized in **Table 7-3**.

Table 7-3: Existing Transit Level of Service

Intersection	Criteria	Existing TLOS	Future TLOS
Dundas Street East & Universal Drive/ Summerville Ct	Delay	D	A

8 PARKING REVIEW

The following sections will provide a review of the vehicle and bicycle parking policies applicable to the subject site. A review will also be undertaken of the proposed parking strategy to assess whether the proposed strategy is appropriate for the site.

Given the subject site's location, planning context, and future transportation context, it is recommended that a limited parking supply be provided for this development. A minimal parking strategy, alongside a comprehensive TDM Plan and thoughtful site design, will enable the subject site to contribute to the evolution of the Dundas Street Corridor in a manner that reduces automobile dependency, supports daily travel by transit and active transportation modes, and encourages a dynamic, mixed-use community for the study area.

8.1 BICYCLE PARKING REVIEW

The City of Mississauga Zoning By-law 0225-2007 as amended by By-law 0118-2022 outlines the City's bicycle parking requirements. The required rates and supply are shown in **Table 8-1.** It should be noted that bicycle parking is not required for non-residential uses with a gross floor area below 1,000 m^2.

Table 8-1: Zoning By-law 0225-2007 Bicycle Parking Requirements

Use	Scale	Minimum Bicycle Parking Rate		Required Bicycle Parking Spaces		Proposed Bicycle Parking Spaces	
		Long-Term	Short-Term	Long-Term	Short-Term	Long-Term	Short-Term
Residential	941 units	0.60 sp./unit	0.05 sp./unit	565	47	941	188
Retail	667 m^2	None	None	0	0	(1 sp./unit)	(0.2 sp./unit)
			Total	**565**	**47**	**941**	**188**

In total, 47 short-term and 565 long-term bicycle parking spaces are required for the subject development. This requirement will be satisfied and exceeded.

The proposed bicycle parking supply corresponds to a rate of 1 space per residential unit for long-term spaces and 0.2 spaces per residential unit for short-term spaces, which far exceeds the City's by-law requirements. This surplus will support the overall parking and TDM strategy for the subject development.

8.2 VEHICLE PARKING REVIEW

8.2.1 Zoning By-law 0225-2007 Review

Under the City of Mississauga Zoning By-law 0225-2007, the subject site would be located within Precinct 3 with respect to parking rates. A review of the City's zoning by-law parking rates for Precinct 3 has therefore been undertaken for the subject development and is provided in **Table 8-2**.

Table 8-2: Zoning By-law 0225-2007 Parking Review – Precinct 3

Use	Scale	Proposed Vehicular Parking Supply	
		Proposed Rate	Proposed Spaces
Residential – Residents	941 units	1.0 sp./unit	941
Residential – Visitors	941 units	0.2 sp./unit	188
Retail	667 m^2		
	Total	**1.2 sp./unit**	**1,129 spaces**

A total of 1,129 vehicle parking spaces would be required for the subject development based on By-law 0225-2007 rates for Precinct 3, resulting in an overall parking rate of 1.2 spaces per unit.

8.2.2 Proposed Parking Supply

The development is proposed to supply parking at a rate of 0.37 spaces per unit. Approximately 0.29 spaces per unit will be available for residential parking, and 0.08 spaces per unit will be provided for visitors and retail use. The proposed vehicular parking supply is summarized in **Table 8-3**.

Table 8-3: Proposed Vehicular Parking Supply

Use	Scale	Proposed Vehicular Parking Supply	
		Proposed Rate	Proposed Spaces
Residential – Residents	941 units	0.29 sp./unit	273
Residential – Visitors	941 units	0.08 sp./unit	78
Retail	667 m^2		
Total		**0.37 sp./unit**	**351**

A total of 21 accessible parking spaces are proposed for the development, equivalent to approximately 6% of the proposed total parking supply.

It is also noted that the City of Mississauga requires 20% of residential parking (i.e. 55 spaces) and 10% of non-residential parking (i.e. 8 spaces) to be Electric Vehicle Ready as per Zoning By-law 0225-2007. The proposed development will meet these requirements, with 55 residential spaces and 8 visitor spaces being provided with electric vehicle charging infrastructure.

The proposed parking supply is justified through applicable policy direction aimed at encouraging transit-supportive development, particularly within MTSAs and along existing and planned future transit corridors such as the subject site, as detailed in the following section.

8.2.3 Parking Policy Review

The following planning policies and documents were reviewed to establish an understanding of the current planning and transportation context and objectives applicable to the subject site:

- Provincial Planning Statement, 2024
- Bill 185 - “Cutting Red Tape to Build More Homes Act”
- Peel Region Official Plan and MTSA Study
- City of Mississauga Official Plan
- City of Mississauga Transportation Master Plan

Based on a review of the above-noted planning policies, the proposed development is subject to several planning goals that seek to support intensification along major corridors and within the GTA, and support transit infrastructure investment and ridership while avoiding an oversupply of parking. Key planning policies and goals applicable to the subject site are summarized below.

8.2.3.1 Provincial Planning Statement (2024)

The *Provincial Planning Statement* (PPS 2024) is a streamlined province-wide land use policy framework that replaces both the *Provincial Policy Statement* (2020) and *A Place to Grow: Growth Plan for the Greater Golden Horseshoe* (2019). The new PPS provides policy direction on matters of provincial interest related to land use planning and development. Some of the key changes introduced through the PPS 2024 are changes to growth targets, settlement area expansions, strategic growth areas and major transit station areas, intensification, municipal comprehensive reviews, employment land conversions, and protection of employment uses

amongst other changes. Chapter 2 of the PPS 2024 outlines the direction for building homes, sustaining strong and competitive communities and includes guidance on the achievement of creating complete communities by accommodating an appropriate range and mix of land uses, housing options, transportation options with multi modal access, employment, public service facilities and other institutional uses. Section 2.9 of the PPS 2024 states that planning authorities shall plan to reduce greenhouse gas emissions and prepare for the impacts of a changing climate through approaches that support the achievement of compact, transit-supportive and complete communities and promote green infrastructure, low impact development and active transportation. Sections 3.2 and 3.3 provide policy direction on transportation systems and transportation infrastructure corridors to ensure the safe, energy efficient movement of people and goods.

The parking supply on a site should be designed with careful attention to the needs of the site, taking into account the multi modal transportation connectivity, auto ownership trends, and transportation needs of the area. Complete communities with a variety of transportation options available are able to have a reduced environmental impact due to the reduced need for vehicle trips and automobile ownership in general. The proposed development will be able to **take advantage of the existing and planned transportation context to support future resident's transportation needs while encouraging the use of sustainable travel modes**.

8.2.3.2 Bill 185 – Cutting Red Tape to Build More Homes Act

Vehicular parking requirements are typically outlined through municipal zoning by-laws. In the case of the subject site, Zoning By-law 0225-2007 defines the parking requirements throughout Mississauga. However, as of June 6, 2024, the Ontario provincial government amended the Planning Act through Bill 185, the "Cutting Red Tape to Build More Homes Act", to effectively remove any vehicular parking requirements in key intensification areas such as in Protected Major Transit Station Areas (PMTSAs). The policy limits the ability of official plans and zoning by-laws to require the provision and maintenance of off-street vehicular parking facilities within PMTSAs.

As discussed further in **Section 8.2.3.3**, the subject site is located within the Wharton PMTSA along the future Dundas BRT corridor, and as such, the amendment would apply to the proposed development. With this in mind, the goal of the proposed development is to **provide an appropriate vehicle parking supply to support the existing and proposed uses while avoiding an oversupply** given the site's location along a future BRT corridor and accessible to the surrounding cycling, pedestrian and local transit networks.

This amendment is intended to reduce the burden on developers building housing in an effort to get homes built faster, and to create more affordable homes as an end-product. The cost of parking can be significant in new housing projects, and in MTSAs where **future residents will be able to take advantage of high-quality transit and active transportation infrastructure**, there is an opportunity to reduce this cost.

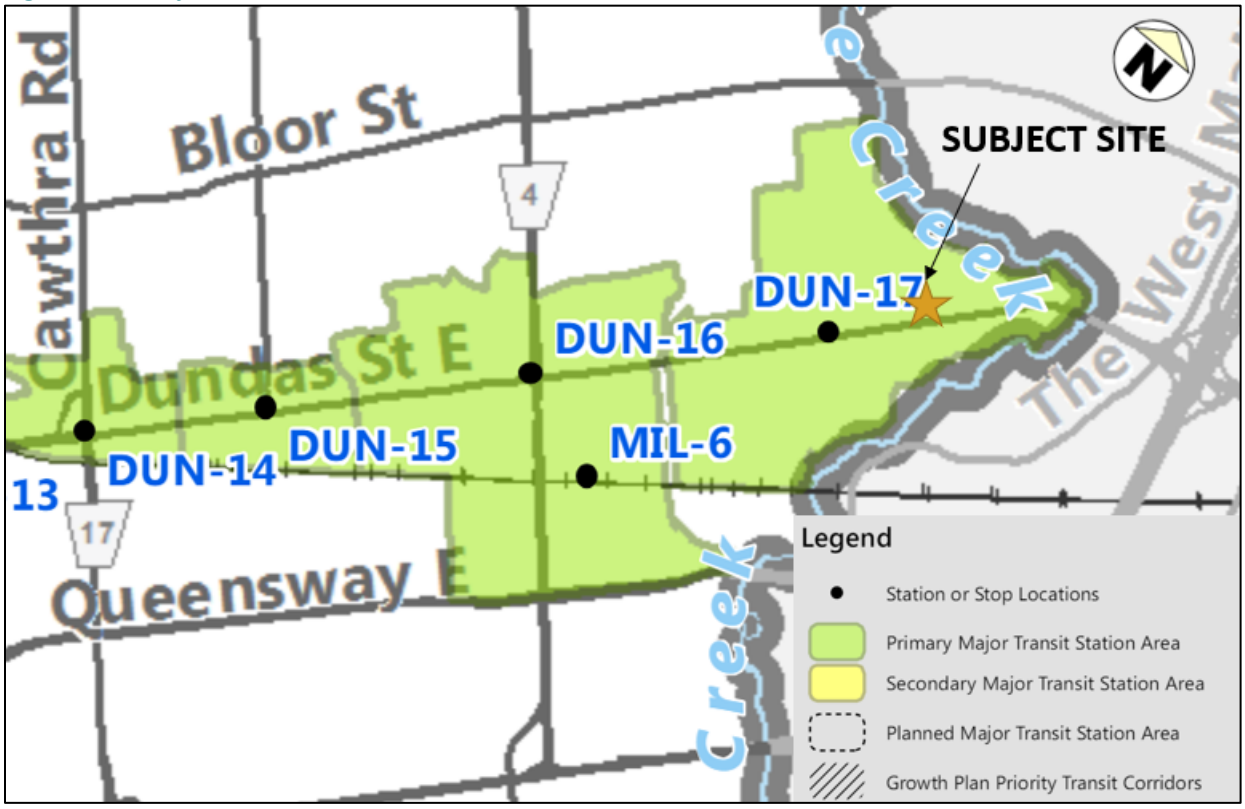
8.2.3.3 Peel Region MTSA Study and Official Plan (2022)

In response to the Provincial Growth Plan, the Region of Peel has developed a strategic plan and policy framework to guide growth within Major Transit Station Areas (MTSAs) as part of the *Peel 2051 Official Plan and Municipal Comprehensive Review* and resulting Region of Peel Official Plan (2022).

The Region's MTSA Study acknowledges that MTSAs are intended to develop in a manner that **supports higher densities and mixed-use growth within proximity to existing or planned higher-order transit**, such as LRT and BRT stations. MTSAs are specifically intended to be **developed as high-density, mixed-use, transit-supportive neighbourhoods** that provide **access to local amenities, jobs, housing, and recreation** opportunities. They are generally defined as the area within an approximate 500-800 m radius of a transit station or stop, representing about a 10-minute walk.

As part of the Region's MTSA Study, several priority MTSAs were identified. As shown in **Figure 8-1**, the subject site is located within the **primary MTSA, DUN-17 (Wharton) along the Dundas BRT** route. As discussed in **Section 3.1**, the subject site is a 7-minute walk from the future Wharton BRT Station.

Figure 8-1: Major Transit Station Areas



Source: Peel Region Official Plan Schedule E-5: Major Transit Station Areas (updated November 2022)

MTSA policies are important as they promote transit-supportive neighbourhoods that achieve community benefits such as shortened commutes, reduced congestion and pollution, and increased opportunity to walk and cycle as part of a healthy community. The Wharton PMTSA is projected to have a minimum density of 160 people and jobs per hectare, according to the Peel Region Official Plan.

The subject site's location within a primary MTSA will support the site as a multi-use development comprising part of a larger, transit-supportive neighbourhood that facilitates access to key destinations and amenities by modes other than the single-occupant vehicle, thus supporting further parking reductions for the non-residential uses proposed on-site.

8.2.3.4 City of Mississauga Official Plan (2023 Office Consolidation)

The City's Official Plan sets out a framework for how the municipality will grow to the year 2031. *The City of Mississauga Official Plan* aims to direct growth in a sustainable manner that protects and enhances its natural and cultural heritage resources, as well as the urban form. The Official Plan's approach to land use planning focuses on strategic management of growth and integration of land use, transportation, and design.

The City plans to direct growth within locations supported by existing and planned higher order transit through high density and pedestrian-oriented development. In particular, one of the Plan's seven (7) guiding principles includes "Create a Multi-Modal City", which speaks to prioritizing transit and implementing an efficient active

transportation network for cyclists and pedestrians. Section 8.4 addresses parking specifically and recognizes it as a tool to help influence travel behaviour and choice of transportation modes.

Specifically, Policy 8.4.3 states that **"Consideration will be given to reducing off-street parking requirements for developments to reflect levels of vehicle ownership and usage, and as a means of encouraging the greater use of transit, cycling and walking…"**

The limited parking supply sought for the subject development is supportive of the City's Official Plan as it leverages its proximity to the existing Dixie GO Train Station and planned higher order transit service along Dundas Street East. The proposed development will encourage future residents to utilize alternative transportation modes as opposed to vehicular travel.

8.2.3.5 City of Mississauga Transportation Master Plan

The City of Mississauga Transportation Master Plan (TMP) was approved by City Council in May 2019 and sets the foundation for transportation policies, plans, and initiatives to guide the City's transportation system through to 2041. The TMP aims to provide a transportation network that is safe and accessible and provides options for travel within, to, and from the City.

Based on data from 2016, approximately 85% of all trips in Mississauga are made by vehicle. The TMP indicates that reliance on personal vehicles is expected to decrease in the future as other transportation options become increasingly viable, particularly along key corridors such as Dundas Street.

Within the Vision of the TMP, it is recognized that a transportation system that is heavily reliant on the single-occupant vehicle is subject to significant challenges and risks ranging from congestion, economic burden, declining air quality, accelerating climate change, negative physical and mental health impacts, and the risk of isolation for those who cannot drive or access a vehicle. To avoid this outcome, infrastructure supporting non-automobile transportation modes must be prioritized in order to create a more equitable transportation system.

Significant investment is planned for the study area with the forthcoming Dundas Street BRT and Dundas Connects streetscape improvements. **Residents of the proposed development will be encouraged to take advantage of these investments** through the implementation of TDM measures such as a reduced parking supply. Residents will be encouraged to limit single-occupant vehicle trips and reduce their auto-dependency, thereby **reducing the risks and challenges that arise in an auto-dependent society**.

8.2.3.6 Planning Policy Summary

The proposed development is subject to several planning objectives that seek to support intensification along major corridors and within the GTA, and support transit infrastructure investment and ridership while avoiding an oversupply of parking.

Based on the review of policy and planning goals towards supporting non-single occupant vehicle travel, it is evident that the City generally supports a reduction in parking supply for transit-oriented development, and this is further supported by the province's removal of parking requirements in MTSAs.

As such, the development's proposed parking supply will support a mix of land uses, encourage complete communities, and provide future residents and visitors with opportunities to utilize the existing and planned transportation options surrounding the site. This will further support broader planning and city-buildings goals at the municipal, regional, and provincial levels towards creating healthier, complete communities in areas that can accommodate intensification by leveraging existing and planned infrastructure and reducing impacts to the natural environment.

8.2.4 Vehicular Parking Conclusions

The proposed parking supply has been developed acknowledging that the future transportation context of the subject site will facilitate access to multi-modal travel and reduce the number of single-occupant vehicle trips generated by the site.

Local and regional policies support the notion of reduced parking requirements for transit-oriented areas due to the increased accessibility of non-auto modes of travel. Based on recent provincial policy changes, vehicular parking requirements in MTSAs have been removed entirely, allowing developers to determine an appropriate parking supply specific to the site and development context.

In order to inform an appropriate parking supply for the proposed development, historical parking demand surveys from similar sites were reviewed, in addition to current approved or proposed development applications with similar contexts.

Based on previous survey observations, the residential parking demand rate for residential development near higher-order transit services is between 0.6 and 0.75 spaces per unit. As indicated by the City of Mississauga's Transportation Master Plan (2019), vehicle ownership and parking demand is expected to decrease in the future, so a residential parking rate at the lower end of the previous observations is recommended. Therefore, the proposed development will provide a residential parking supply rate of 0.58 spaces per unit.

Based on a review of current development applications, the proposed parking supply is consistent with other developments seeking approval for reduced parking supplies.

Based on the review of contemporary policy direction, proxy demand survey results, and recently pursued development applications, it is our opinion that the proposed parking supply of 0.67 spaces per unit is sufficient to meet the needs of the proposed development. Approximately 0.58 spaces per unit will be available for residential parking, and 0.09 spaces per unit will be provided for visitors and retail.

To support the proposed parking supply, a Transportation Demand Management (TDM) Plan is provided in **Section 10**. TDM measures will be essential to support multi-modal travel options to and from the subject site.

9 LOADING AND FUNCTIONAL DESIGN REVIEW

9.1 LOADING REVIEW

The loading space requirements of the subject site are governed by the City's Zoning By-law 0225-2007. **Table 9-1** summarizes the loading requirements for the proposed uses on-site.

Table 9-1: Zoning By-Law Loading Requirements

Proposed Use	Description and Size	Zoning By-Law 0225-2007		Proposed Spaces
		Loading Rate	Required Spaces	
Residential	- 926 apartment units	> 30 units	1	2
	- 15 townhouse units	n/a	0	
Retail	- 667 m^2 GFA	250 to 2,350 m^2	1	
		Total	2	2

A total of 2 loading spaces are proposed for the subject site, satisfying the requirements of By-law 0225-2007 It should be noted that the property management will ensure that the loading spaces are operated in an efficient manner, where the loading spaces will be reserved for waste collection vehicles during dedicated times.

The loading spaces will be located within the ground floor of the building, accessed via Universal Drive. Swept path drawings and sightline analysis for loading vehicles are available in **Appendix F**.

9.2 SITE ACCESS REVIEW

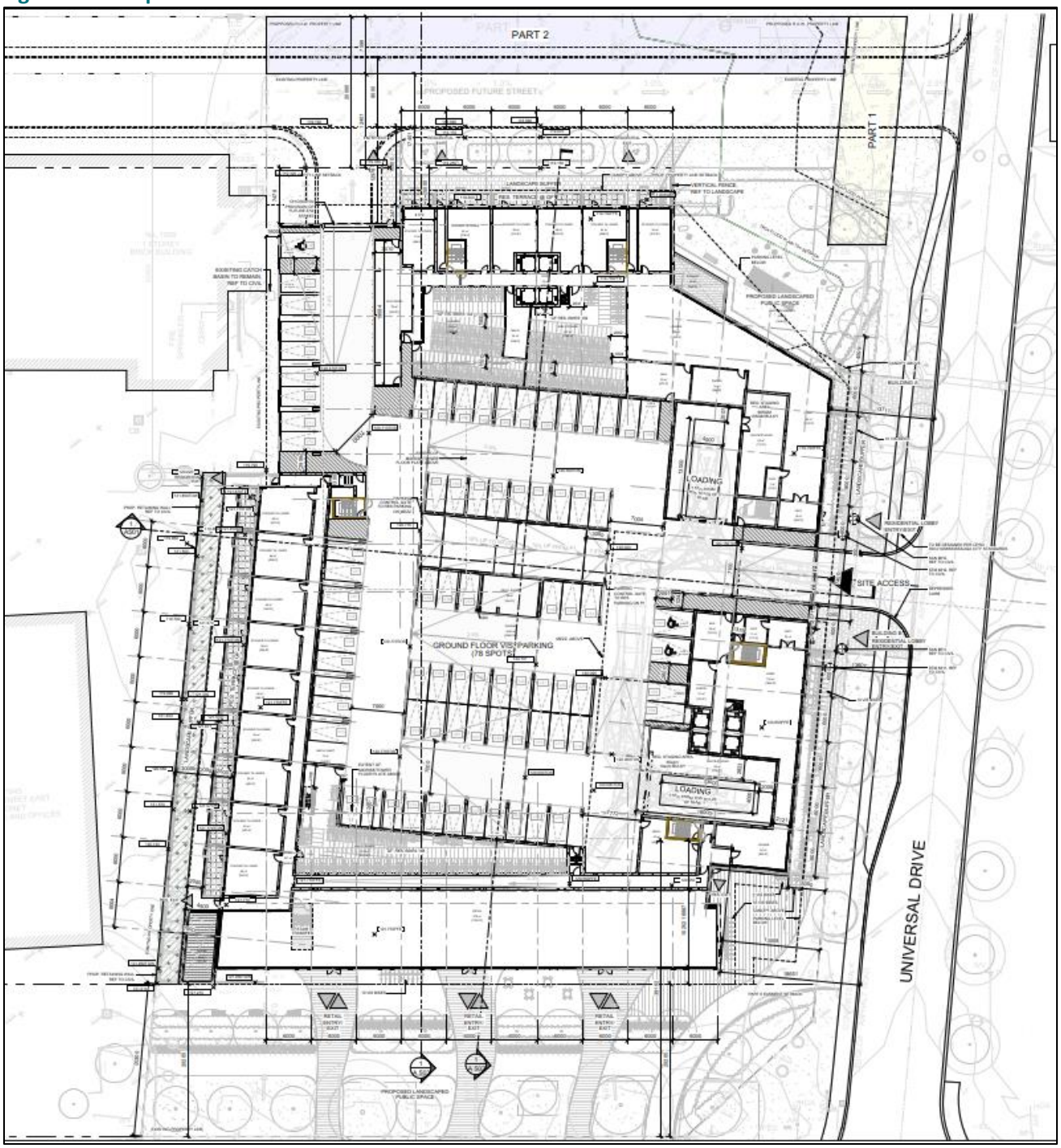
The two existing site accesses on Universal Drive will be consolidated into a single driveway located approximately 75 m north of Dundas Street East. The existing driveway on Dundas Street East will no longer serve the site. There is an opportunity for a future secondary access from the Proposed Future Street, beyond the horizon of this study. Both site accesses will serve the integrated parking garage. The proposed ground floor plan is shown in **Figure 9-1**.

A functional design review with swept path drawings and a sightline analysis are available in **Appendix F**. As part of this review, a fire route has been identified along Universal Drive and loading vehicle paths for waste collection vehicles and MSU vehicles have been reviewed.

As for pedestrian circulation, the residential lobbies can be accessed via Universal Drive. Retail entrances are proposed off of Dundas Street East. Sidewalks are provided along both Dundas Street East and Universal Drive fronting the subject site. The public sidewalk network also provides connections to the nearby transit stops.

In addition to the functional design review, LEA has prepared a Functional Road Design for the Future Proposed Street to the north of the subject site, provided in **Appendix H**.

Figure 9-1: Proposed Ground Floor Plan



Source: RAW Design, November 2024

10 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a set of strategies which strive towards a more efficient transportation network by influencing travel behaviour. Effective TDM measures can reduce vehicle usage and encourage people to engage in more sustainable modes of transportation. There are several opportunities to incorporate TDM measures to promote alternate modes of transportation and support existing and future planned transit infrastructure.

10.1 EXISTING TRAVEL BEHAVIOUR

Transportation Tomorrow Survey (TTS) 2016 data was reviewed to determine the existing travel behaviour of the subject site and surrounding area. A breakdown of the travel mode split is provided in **Table 10-1**.

Table 10-1: Modal Split Reductions

Mode	Residential	Retail
Auto Driver	41%	63%
Auto Passenger	15%	29%
Transit	24%	6%
Walk	20%	2%
Cycle	0%	0%
Total	100%	100%

Currently, 56% of residential trips and 92% of retail trips are made by vehicles. The following sections discuss TDM measures that will encourage an increase in more sustainable travel modes to further increase the non-auto driver mode split for trips generated by the subject development.

10.2 PROPOSED TDM SCHEME

The following subsections discuss the proposed TDM initiatives for the redevelopment, with focus on reducing single-occupant vehicle (SOV) trips. These include a number of multi-modal travel and parking-based strategies, which collectively will support the reduction in vehicle parking proposed and will ultimately impact the vehicle trip generation of the subject site on a regular basis.

The main objectives of this TDM Scheme include:

- Reduce vehicle dependence and the attractiveness of SOV trips;
- Increase the feasibility and attractiveness of walking, cycling, and transit modes of travel;
- Promote transit and carpooling programs that reduce SOV travel; and
- Ensure that all measures can be reasonably implemented and support the proposed development.

The proposed TDM Scheme to be implemented on the subject site is outlined in **Table 10-2**, and is discussed in the following sections. In addition, a Transportation Demand Management and Pedestrian Circulation Checklist, as required by the City of Mississauga, is provided in **Appendix G**.

Table 10-2: Summary of TDM Scheme

TDM Measures	Benefits
Pedestrian Circulation	
▶ Located within walking distance of amenities and destinations ▶ Building entrances provide direct access to public streets, sidewalks and nearby transit ▶ Sidewalks adjacent to and within the site will be continuous and accessible ▶ Vehicular accesses consolidated and relocated from arterial street to side streets; all parking provided within structure ▶ Loading areas consolidated within ground floor, away from pedestrian entrances ▶ Enhanced landscaping	▶ Provides amenities on-site, reducing the need to travel far ▶ Encourages people to conduct activity within walking distance ▶ Encourages travel by existing surface transit network ▶ Creates a safe and comfortable environment for active travel modes
Cyclist Orientation	
▶ Long-term and short-term bicycle parking provided in accordance with Zoning By-law minimum requirements ▶ Bicycle repair station provided for residents ▶ Provide information packages about cycling opportunities	▶ Supports the existing and future cycling network in study area ▶ Facilitates basic repairs / maintenance ▶ Encourages cycling as a travel mode
Transit Service	
▶ Located within local and express bus services, with shelters and benches at nearby transit stops ▶ Provide information about public transit routes, schedules and fares in building lobbies	▶ Improves knowledge about available multi-modal travel options ▶ Capitalizes on planned transit improvements
Motor Vehicle Parking	
▶ Provide a minimal parking supply ▶ Share parking between non-residential uses ▶ Provide car-share service on-site ▶ All parking will be located underground, screened from pedestrians	▶ Avoids oversupplying parking where travel demand can be accommodated by alternative travel modes ▶ Supports residents who live car-free ▶ Reduces visual impact of parking
Incentives	
▶ TDM measures will reduce peak hour vehicle trips by >10% ▶ Parking cost will be unbundled from unit cost	▶ Avoids oversupply of parking where travel demand can be accommodated by alternative travel modes

10.2.1 Pedestrian Circulation

The proposed development will replace a traditional auto-dependent commercial plaza and surface parking lot with a new, mixed-use community that will support the development and intensification of the Dundas Street corridor, as identified under the Dundas Connects Planning Study.

TDM elements for the subject site have been planned in such a way that residents can access key destinations and run daily errands within walking distance, or by accessing the local transit network. The land use strategy and development form are crucial elements that directly affect the amount of travel, length of trips, and choice of travel mode. The goal for the development is to make non-SOV trips more viable.

Connectivity to nearby amenities: The subject site is situated within an area that offers various retail, services, restaurants and employment. The development itself will provide at-grade retail uses to benefit the larger community. The subject development is also within convenient walking distance from existing transit stops as well as the future Dundas BRT corridor. This will help to reduce the need for a personal vehicle to accomplish regular trips.

Development form: The proposed development will have retail entrances along Dundas Street East, and multiple residential entrances along Universal Drive, providing convenient access for pedestrians, cyclists, and transit users. New sidewalks to building entrances will be accessible and continuous.

In addition, the proposed site plan will consolidate the number of driveways compared to the existing condition, with vehicular access proposed via Universal Drive and eventually via the Proposed Future Street instead of from Dundas Street East. Similarly, loading activities will take place within the parking garage, away from pedestrian activity.

Enhanced landscaping: Enhanced landscaping will be provided to improve the public realm and 'eyes of the street', which will support a safe and attractive pedestrian environment at all times of day.

10.2.2 Cycling Orientation

Bicycle parking: Provision of bicycle parking facilities will support and encourage active transportation, while taking advantage of the planned cycling network improvements along Dundas Street. Short-term bicycle parking facilities should be located at-grade in a highly visible and convenient area close to building entrances and parks/gardens for residents and visitors. Long-term bicycle parking should be provided in secured and weather-protected locations, such as storage rooms and bicycle locker rooms. Bike parking will be provided in accordance with Zoning By-law 0225-2007 to encourage bicycle ownership as an alternative to vehicle ownership, to support cycling as a viable travel mode for regular trips, as well as to facilitate first and last-mile trips such as to the Dixie GO Train Station.

Bicycle repair station: The provision of a bicycle repair station increases the accessibility of cycling for residents and visitors as common tools will be available in the building. Therefore, residents won't need to worry about buying or keeping tools to maintain their bicycle. A bicycle repair station will be located in the ground floor long-term bicycle parking area.

Promote and increase cycling awareness & multi-modal transportation: It is recommended that information packages be provided to residents to help encourage active transportation and increase awareness of different travel alternatives. The package should include information regarding the environmental and health benefits of cycling, rules of the road, and maps of active transportation infrastructure available in the surrounding area.

10.2.3 Transit Service

Support existing and future transit connections: The subject site is located in an area with accessibility to surface transit provided by MiWay bus routes that connect to local destinations, other MiWay routes, and to TTC and GO Transit services in the City of Toronto.

Provide public transit information to residents: Public transit information should be made available to residents and employees, such as MiWay route maps and seven-day schedule timetables for nearby stops. This will increase the likelihood of new residents incorporating alternatives in their travel patterns when residing at the development. It is recommended that the owner coordinate an information session with the City of Mississauga to deliver and promote transit incentives to residents that work in the City.

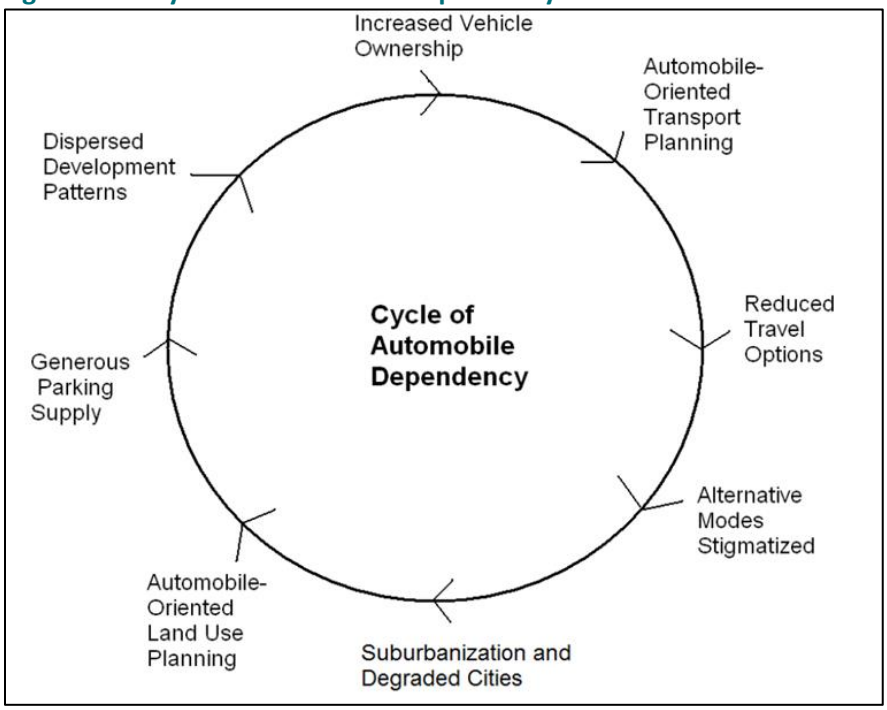
10.2.4 Motor Vehicle Parking

A parking strategy is proposed for the subject site that includes a reduction from the typical zoning by-law parking requirements to maximize the efficiency of the parking supply. The following strategies with respect

to managing parking demand on-site are recommended for consideration as the development concept continues to develop through the application process.

Parking reduction from Zoning By-law requirements: Parking policies can either encourage households to choose transit, or to purchase a vehicle. **Figure 10-1** illustrates the self-reinforcing cycle of increased automobile dependency and urban sprawl, with has been reinforced by many transportation and land use planning practices observed during the last century. This was generally unintended, reflecting a lack of consideration of the consequences behind these decisions. For example, when determining the parking requirements for a particular type of land use, traffic engineers generally determine minimum parking rates disregarding the additional sprawl that may result from these supply rates.

Figure 10-1: Cycle of Automobile Dependency and Related Effects



Source: Evaluating Transportation Land Use Impacts Considering the Impacts, Benefits and Costs of Different Land Use Development Patterns 27 (February 2017).

As displayed by the figure, it has been recognized that an oversupply of parking is becoming problematic in areas with strong transit access and active transportation networks, wherein the availability of parking greatly reduces transit ridership, along with walking and cycling trips. Parking policies should be based on location, transit availability, context of the development, and strategic plans for the area outlined by the City.

As discussed in **Section 8.2**, the subject site is not subject to the parking requirements outlined in the local zoning by-law due to its location along a future higher-order transit corridor. As such, the proposed parking supply represents a reduction from what would be required by the zoning by-law. A reduced parking supply will be a key measure in supporting existing transit services, avoiding oversupply of parking, discouraging automobile use, and supporting the City's long-term transportation goals.

Shared Parking Strategy: A shared parking strategy will be adopted for the non-residential uses on-site, namely the retail and residential visitor components. This will ensure that parking is being provided appropriately to accommodate demand without oversupplying parking to accommodate a 'worst-case scenario'.

On-Site Car Share Spaces: Car share programs are recommended for consideration to encourage car sharing activities and to reduce the need for automobile ownership. Car share can be provided through an external partner that manages and maintains the logistics of the car share space. Car share spaces are expected to reduce vehicle ownership of residential developments and the overall parking demand that is generated. Additionally, the effectiveness of car share spaces is anticipated to increase as the density of the proposed development increases. As the proposed development is anticipated to be built out as a compact, walkable community, car share will be a viable strategy for future residents of the subject site.

10.2.5 Incentives

Unbundled Parking: It is recommended that parking be provided unbundled from the lease of rental units and/or sale of apartment units to support zero-car households and tie the cost of vehicle ownership to units requiring parking only.

Reduction of single-occupant vehicle trips: The TDM Scheme discussed above is intended to support the development in reducing the number of single-occupant vehicle trips generated by increasing the attractiveness of other travel modes.

10.2.6 TDM Monitoring

It is recommended that ongoing monitoring and evaluation be undertaken to collect data and information regarding TDM performance measures. The key goal of performance measuring is to provide useful information on identifying successful program activities, improvements to existing programming as well as the potential development of future programs. The owner should perform periodic evaluation to assess how well the TDM Program is achieving the goal of reducing the number of single-occupant vehicle trips generated by the site. A baseline travel survey followed by a follow-up survey two years later and annual monitoring five years onward is recommended to ensure effective monitoring.

10.3 SUMMARY OF TDM RECOMMENDATIONS

Table 10-3 summarizes the recommended TDM measures and benefits for the subject site.

Table 10-3: Summary of TDM measures

Category	TDM Measure	Estimated Cost	Impact (% Reduction in SOV Trips)
Pedestrian Circulation	Connectivity to nearby amenities	N/A	1%
	Development form – building entrances fronting public streets	N/A	
	Development form – sidewalk connectivity	Design Cost	
	Development form – consolidated driveways, parking and loading	N/A	
	Enhanced landscaping	Design Cost	
Cyclist Orientation	Bicycle parking	Design Cost	3%
	Bicycle repair station	$2,500 per station	

Category	TDM Measure	Estimated Cost	Impact (% Reduction in SOV Trips)
	Cycling information packages	**$1,000**	
Transit Service	Connectivity to nearby transit	N/A	1%
	Transit information packages	**$1,000**	
Vehicle Parking	Reduced parking supply	N/A	10%
	Shared non-residential parking supply	N/A	
	Car-share vehicle parking	TBD	
Incentives	Unbundled parking cost	N/A	5%
Monitoring	Monitoring	**$5,000**	-
	Estimated Total	**Approx. $9,500 + Design Costs + Car-Share Arrangement**	**20%**

11 CONCLUSIONS & RECOMMENDATIONS

- The proposed development consists of 941 residential units and 667 m^2 of retail GFA to be provided within a high-rise building with 24 and 25-storey towers and a 5-storey podium.
- The subject site is located in an area well-serviced by the MiWay Transit network. The subject site is within walkable distance of bus stops along Dundas Street East, as well as the future Dundas BRT corridor.
- Intersection capacity analysis was completed for the existing (2024) horizon, as well as a 5-year future horizon (2029) and a 10-year future horizon (2034). A sensitivity analysis was also completed for the 2034 horizon to include the Proposed Future Street to the north of the site.
- In total, the subject development is anticipated to generate 267 two-way vehicle trips (74 in; 193 out) during the AM peak hour and 334 two-way vehicle trips (204 in; 130 out) during the PM peak hour. Taking into account the removal of existing trips, the net trip generation is estimated as 206 two-way vehicle trips (36 in; 170 out) during the AM peak hour, and 225 two-way vehicle trips (151 in; 74 out) during the PM peak hour.
- The majority of the intersections within the study area are expected to operate well under future conditions following development of the subject site.
- A queueing analysis was also conducted for each study area intersection. All queues are anticipated to be acceptable, with the exception of a few movements that are expected to be over capacity. However, it should be noted that many of the queue constraints analyzed were present in the existing conditions as well, indicating that the subject site will have minimal impact to intersection queues within the area.
- The subject site is located in a Major Transit Station Area and as a result of Bill 185, no minimum parking requirements apply. The development proposal includes a minimal parking supply, with 0.29 spaces per unit provided for residents and 0.08 spaces per unit for visitors and retail.
- A surplus of bicycle parking is proposed for the subject development at an overall rate of 1.2 spaces per unit, exceeding by-law requirements, to support the overall parking strategy for the subject site.
- Based on a review of the site's transit and provincial and municipal planning context, a parking reduction is an appropriate strategy for the subject site. Additionally, a review of recent parking demand surveys and other development applications demonstrates that a low parking demand exists for developments such as this one. The parking review has indicated that the proposed parking supply for both residential and non-residential uses is appropriate, as the rate are within the range of rates of comparable developments, is situated in similar urban contexts, and can accommodate typical parking demand on-site.
- A comprehensive TDM Strategy that can adapt and evolve as the site plan concept and design evolves is also proposed to support the parking reduction. As a result, the proposed parking strategy is considered to be appropriate and supportable for the subject site.
- The subject site requires two (2) loading spaces as per the City of Mississauga Zoning By-Law. This requirement will be satisfied.

APPENDIX A

DARC 23-164 W3

Project Status Report

PROJECT NUMBER	**DARC 23-164 W3**
ADDRESS	**1995 Dundas St E**
DESCRIPTION	**a 29, 31 and 33 storeys residential building with townhomes and retail at grade**
CURRENT PROJECT STATUS	**In Review**

Please refrain from contacting plan reviewers until they have completed their review and you have received comments. Contacting plan reviewers prior to their review adds delays to the review process.

REVIEW CYCLE	REVIEW GROUP	STATUS	REVIEWER NAME	CONTACT INFORMATION
1	ARBORIST - CITY PROPERTY	Comments Provided	Ryan Cormier	ryan.cormier@mississauga.ca 905-615-3200 x4580
	ARBORIST - PRIVATE PROPERTY	Comments Provided	Ryan Cormier	ryan.cormier@mississauga.ca 905-615-3200 x4580
	BUS RAPID TRANSIT	Comments Provided	Max (Junfeng) Li	max.Li@mississauga.ca 9056153200 x5403
	CANADA POST CORPORATION	Comments Provided	Tigist Yage	tigist.yage@canadapost.ca 416-606-8372
	CPS - HOUSING	Comments Provided	Anthony Cicchi	Anthony.Cicchi@mississauga.ca 905-615-3200
	CS VIAMONDE	No Comments	Planification Viamonde	planification@csviamonde.ca 4166145910
	DEVELOPMENT ENGINEERING REVIEW	Comments Provided	Erich Lopez	Erich.Lopez@mississauga.ca 905-615-3200
	DUFFERIN PEEL CD SCHOOL BOARD	Comments Provided	Joanne Rogers	joanne.rogers@dpcdsb.org 9058900708 x24299
	ENBRIDGE PIPELINE INC	No Comments	Enbridge Pipelines Inc	notifications@enbridge.com 780-392-4765 ?
	ENVIRONMENTAL ENG REV STORM	Comments Provided	Walter Copping	Walter.Copping@mississauga.ca 9056153200 x5831
	ENVIRONMENTAL ENG REVIEWER	Comments Provided	Jessica Yong	Jessica.Yong@mississauga.ca 905-615-3200 x3174
	FIRE PREV PLAN EXAMINATION	Comments Provided	Don Casey	don.casey@mississauga.ca 905-615-3200 x4267
	HERITAGE PLANNER	No Comments	Andrew Douglas	andrew.douglas@mississauga.ca 9056153200 x4061
	LANDSCAPE ARCH - COMM SERVICES	No Comments	Simon Latam	simon.latam@mississauga.ca 905-615-3200 x5360
	LANDSCAPE ARCH - DEV DESIGN	Comments Provided	Kate Allan	kate.allan@mississauga.ca 905-615-3200 x5728
	PARKING	Comments Provided	Evan Pu	Evan.Pu@mississauga.ca 9056153200 x4705

Project Status Report

1	PEEL DIST SCHOOL BOARD	Comments Provided	Zach Tessaro	zach.tessaro@peelsb.com 905-890-1010
	PLANNER - COMM SERVICES	Comments Provided	Sangita Manandhar	sangita.manandhar@mississauga.ca 905-615-3200 x4426
	PLANNER - DEV DESIGN	Comments Provided	Andrea Dear	Andrea.Dear@mississauga.ca 9056153200 x8615
	PUBLIC ART COORDINATOR	Comments Provided	Michael Tunney	michael.tunney@mississauga.ca 905-615-3200 x4602
	REGION OF PEEL	Comments Provided	Rosha Budathoki	rosha.budathoki@peelregion.ca 7783216631
	TORONTO CONSERVATION AUTHORITY		Peel TRCA	peelplan@trca.ca 416-661-6600
	TRAFFIC REVIEW	Comments Provided	Michael Turco	michael.turco@mississauga.ca 905-615-3200 x3597
	URBAN DESIGNER	Comments Provided	Erinma Chibututu	erinma.chibututu@mississauga.ca 905-615-3200 x5546

REVIEW STATUS LEGEND	
APPROVED	Review Group has completed the review and has no outstanding conditions.
COMMENTS PROVIDED	Review Group has completed the review and has provided comments.
IN-REVIEW	Reviewer in the Review Group has accepted the task and is in the process of reviewing the project.
NO COMMENTS	Review Group has completed the review and has no comments.
NO REVIEW REQUIRED	Review Group has determined that no review is required for the project.
NOT REVIEWED THIS CYCLE	Review Group did not review the project for the applicable review cycle.
WITHHELD	Review Group has completed the applicable review cycle and the project has outstanding conditions that need to be addressed.

Outstanding Comments

Please be advised that the information noted below is subject to change until all the required review groups have completed the applicable review cycle. You will not be able to respond to any outstanding comments until you have been assigned a Prescreen Corrections or an Applicant Resubmit task. If you require assistance with your task, please visit: https://www.mississauga.ca/eplanshelp

If you require an explanation or would like to discuss the comments found in this report, please contact the reviewer directly.

Please note that further comments may be forthcoming subject to review of new information.

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
85	1	ARBORIST - CITY PROPERTY Ryan Cormier 10/4/23 4:08 PM	CITY TREE INVENTORY - The following trees are located within the municipal right of way: 1. Thirteen (13) Crabapples 4-31cm DBH F 2. Two (2) Austrian pines 31 & 32cm DBH F-P 3. Maple -dead				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
86	1	ARBORIST - CITY PROPERTY Ryan Cormier 10/4/23 4:08 PM	PUBLIC TREE INJURY/REMOVAL PERMISSION - The Applicant is advised that permission is required to injure above and below ground/remove any tree within the municipal right of way. The Applicant is to submit an application for the injury or destruction of trees on public property per the Public Tree Protection By-Law (0020-2022). If applicable, the Applicant is to submit a completed Tree Removal Application, Arborist Report, Site Plan and Base Fee to the Forestry Dept. for the proposed tree removal. The application will be reviewed in conjunction with the Site Plan Application. The approval of the application is required prior to the earliest of the Demolition Permit/ the Erosion and Settlement Control Permit / Site Plan / Building Permit approval. The application is to be submitted to the Urban Forestry Section, and will be issued when the drawings are approved, associated fees have been paid, and the protective tree hoarding has been installed, inspected and approved by Urban Forestry. Further information is available at: https://www.mississauga.ca/publication/application-to-permit-the-injury-or-destruction-of-trees-on-public-and-private-property/				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
87	1	ARBORIST - CITY PROPERTY Ryan Cormier 10/4/23 4:08 PM	CITY TREE REMOVAL - Removal costs to be paid in 2023: The applicant is advised that removal costs in accordance with the current Fees and Charges By-Law is required prior to site plan approval. Urban Forestry will permit the removal located on the municipal road allowance. This tree removal will be completed by the City of Mississaugas Urban Forestry Section, or an authorized contractor, at the applicant's expense. All Forestry Section Fees are payable to the City of Mississauga. The 2023 hourly removal rates follow: Tree up to 40 CM - $466.17 / Tree between 41-80 CM - $820.59 / Tree greater than 80 CM - $875.87. For the current fees and charges, please refer to the following link: https://www.mississauga.ca/wp-content/uploads/2023/01/Schedule-D-Parks-Forestry-and-Environment-Fees-and-Charges.pdf				Unresolved
88	1	ARBORIST - CITY PROPERTY Ryan Cormier 10/4/23 4:08 PM	MUNICIPAL TREE PROTECTION DEPOSIT - A Municipal Tree Protection Deposit in the amount of $7,3000.00 is required prior to site plan approval. The Municipal Tree Protection Deposit/Securities must be paid by using a separate certified cheque, bank draft, money order, or debit. All Forestry Section fees are payable to the City of Mississauga. Failure to preserve/protect the municipal tree(s) will result in the holdback of this deposit for a number of years following the completion of the project or the forfeit this deposit.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
89	1	ARBORIST - CITY PROPERTY Ryan Cormier 10/4/23 4:08 PM	FRAMED HOARDING - Framed hoarding that encompasses the entire dripline area is to be INSTALLED and inspected to the satisfaction of the Urban Forestry section. The owner is responsible for ensuring the constructed hoarding remains in its approved condition throughout all major construction and grading activities. No construction activity is permitted within the tree preservation zones (TPZ). Should you need to remove or alter the hoarding at any time during construction, please advise Forestry prior to doing so. Failure to meet the above noted requirements may result in the holdback of the municipal tree protection deposit for a number of years following full completion of the project and/or the forfeit of the deposit. For a City Tree hoarding inspection, please contact _____ at 905-615-3200 x_____				Unresolved
90	1	ARBORIST - CITY PROPERTY Ryan Cormier 10/4/23 4:08 PM	TREE PRESERVATION & PROTECTION STANDARDS - For information on protecting trees during development/construction, including arborist report and tree inventory requirements, tree protection methods and tree protection zones as well as hoarding guidelines, visit the following link: https://www.mississauga.ca/publication/tree-preservation-and-protection-standards/				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
81	1	ARBORIST - PRIVATE PROPERTY Ryan Cormier 10/4/23 4:01 PM	PRIVATE TREE REMOVAL PERMISSION - The Applicant is advised that Tree Removal Permission is required as per the Private Tree Protection By-law (0021-2022) to remove one (1) or more trees 15cm DBH or greater per lot per calendar year. If applicable, the Applicant is to submit a completed Tree Removal Application, Arborist Report, Site Plan and Base Fee to the Forestry Dept. for the proposed tree removal. The application will be reviewed in conjunction with the Site Plan Application. The approval of the application is required prior to the earliest of the Demolition Permit/ the Erosion and Settlement Control Permit / Site Plan / Building Permit approval. The application is to be submitted to the Urban Forestry Section, and will be issued when the drawings are approved, associated fees have been paid, and the protective tree hoarding has been installed, inspected and approved by Urban Forestry. Further information is available at: https://www.mississauga.ca/publication/application-to-permit-the-injury-or-destruction-of-trees-on-public-and-private-property/				Unresolved

82	1	ARBORIST - PRIVATE PROPERTY Ryan Cormier 10/4/23 4:01 PM	SOLID HOARDING - Solid hoarding is to be INSTALLED on private property as indicated on the Site Plan Drawing and must be inspected prior to the approval of the tree removal permission/ permit. The owner is responsible for ensuring the constructed hoarding remains in its approved condition throughout all major construction and grading activities. No construction activity is permitted within the tree preservation zones (TPZ). Should you need to remove or alter the hoarding at any time during construction, please advise Forestry prior to doing so. Failure to meet the above noted requirements may result in charges under the Private Tree Protection By-Law (0021-22). For the solid hoarding inspection, please contact _____ at 905-615-3200 x_____				Unresolved
83	1	ARBORIST - PRIVATE PROPERTY Ryan Cormier 10/4/23 4:01 PM	TREE PRESERVATION & PROTECTION STANDARDS - For information on protecting trees during development/construction, including arborist report and tree inventory requirements, tree protection methods and tree protection zones as well as hoarding guidelines, visit the following link: https://www.mississauga.ca/publication/tree-preservation-and-protection-standards/				Info Only
142	1	BUS RAPID TRANSIT Max (Junfeng) Li 10/23/23 11:35 AM	**DUNDAS STREET RIGHT-OF-WAY DEDICATION** - Please be advised that higher order transit is planned for Dundas Street in the form of bus rapid transit (BRT) operating between Ninth Line and Etobicoke Creek. Proposed developments within the Dundas BRT corridor that have a lot line fronting the Dundas Street are subject to the designated right-of-way widths as per the City of Mississauga Official Plan Amendment By-law No.106 (OPA 106). Land dedications required to achieve the designated right-of-way widths are determined based on the Environmental Project Report (EPR) completed in 2022. Illustrations of the ultimate right-of-				Unresolved

			way can be found in the Appendix C: Dundas Bus Rapid Transit - Mississauga East Design of the EPR. Link to the Environmental Project Report: https://www.metrolinx.com/en/projects-and-programs/dundas-brt/studies Link to the Appendix C: Dundas Bus Rapid Transit - Mississauga East Design: https://assets.metrolinx.com/image/upload/v1663152525/Documents/Metrolinx/2021-11-05-dundas_brt-mississauga_east_roll_plans-60645291_lahnid.pdf The ultimate right-of-way in CAD file format can be provided upon request to the City's Rapid Transit Office. For inquiries, please contact Max Li via email at max.li@mississauga.ca. Please plot the ultimate R.O.W line on all plan drawings.				

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
143	1	BUS RAPID TRANSIT Max (Junfeng) Li 10/23/23 11:35 AM	**DUNDAS STREET STREETSCAPE DESIGN** - Proposed landscape treatments for the frontage along Dundas Street shall coordinate with the Dundas BRT design, ensuring a seamless integration and a unified aesthetic. The proposed landscape treatments should aim to promote a vibrant public realm, with an emphasis on safe, convenient, and accessible circulation for all users. Dundas BRT 30% design drawings as they relate to the subject property can be made available upon request to the City's Rapid Transit Office. For inquiries, please contact Max Li via email at max.li@mississauga.ca.				Unresolved
144	1	BUS RAPID TRANSIT Max (Junfeng) Li 10/23/23 11:41 AM	**DUNDAS BRT PROPERTY COORDINATION** – The applicant shall contact the Rapid Transit Office's Realty team to obtain related design requirements at the subject property. Contact information are as follows: Bill Moffat; email: Moffatt@mississauga.ca; phone: 905-615-3200 ext. 4295 Kevin Nutley; email: Nutley2@mississauga.ca; phone: 905-615-3200 ext. 4694				Unresolved

116	1	CPS - HOUSING Anthony Cicchi 10/12/23 9:48 AM	COMMENT • -Located within IZ area 2. -Proposal is subject to IZ -Applicant to confirm proposed tenure for the development. -IZ legal agreement must be in place prior to Building Permit issuance.				Info Only
117	1	CPS - HOUSING Anthony Cicchi 10/12/23 9:49 AM	SUBMISSION REQUIREMENT • - Inclusionary Zoning (IZ) came into full force and effect on January 1, 2023 on all lots within IZ Areas, as identified by the IZ Overlay in Mississauga Zoning By-law 0225-2007 (ZBL).				Unresolved

Pursuant to Subsection 2.1.34 of the ZBL, the application associated with this proposal is subject to IZ as follows:

- The subject lands fall within IZ Area 2. The property is subject to Inclusionary Zoning.
- The minimum required percentage of gross floor area – inclusionary zoning to be provided as affordable housing in an ownership tenure building is currently as follows:
  - 3% if the affordable housing is provided as ownership tenure; or
  - 5% if the affordable housing is provided as rental tenure.
  - Rates will increase in subsequent years.

			A Building Permit cannot be issued for the subject lands if the IZ requirements are not satisfied as they form part of the City's ZBL and therefore constitute applicable law. In order to satisfy the IZ requirements, for the purposes of Building Permit issuance, an IZ legal agreement must be enacted and registered on title. **SUBMISSION REQUIREMENT: IZ contribution and Housing Report. - - Housing Report terms of reference can be found here: https://www7.mississauga.ca/documents/Business/Housing_Report_Terms_of_Reference.pdf				

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
62	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 10/3/23 3:18 PM	COMMENT: [FURTHER COMMENTS] - The applicant is advised that further comments may be forthcoming, depending on the the requested, and additional, information and materials submitted for review.				Info Only
63	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 10/3/23 3:20 PM	COMMENT: [CONDO ROADS] - Should these lands be developed as a multi-family or any condominium, the applicant is advised that internal roads and services are to be constructed to meet the City's minimum condominium standards in accordance with Section 6 of the Development Requirements Manual, Transportation and Works Department, City of Mississauga. http://www.mississauga.ca/portal/business/developmentrequirements				Info Only
64	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 10/3/23 3:20 PM	COMMENT: [SHORING TIEBACKS HOARDING] - In the event that placement of any shoring and tiebacks systems are proposed the owner is to contact the Building Division to apply for a permit for the required shoring on site. The owner is further advised that an encroachment agreement may be required and that only tiebacks encroachments (below a certain depth) will be accepted if any. No other underground encroachments are permitted in the municipal right-of-way. Shoring and associated works are to be wholly within private lands including excavation support such as 'soldier piles and lagging'.				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
65	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 10/3/23 3:23 PM	COMMENT: [BENCHMARK] - Ensure the Civil Drawings (Survey, Grading, Servicing Plans) reference an existing (not destroyed) Mississauga Vertical Benchmark number, elevation, and location/description used to establish the elevations on the plan as follows: "Elevations are referred to the City of Mississauga Benchmark No. ____ located (insert description from benchmark sheet), having a published elevation of _____ metres." The established benchmark elevation can be found at: http://www.mississauga.ca/portal/services/maps				Unresolved
66	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 10/3/23 3:23 PM	COMMENT: [SHOW EASEMENTS] - The Site Plan, Grading Plan, and Servicing Plan are to be revised to indicate any easements within the site, purpose of the same and who they are in favour of, which also includes public and private easements accompanied by their associated reference plan number(s) and instrument number(s).				Unresolved
67	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 10/3/23 3:24 PM	COMMENT: [RETAINING WALLS] - Show any existing/proposed retaining walls on the Civil Drawings. Label top and bottom of wall elevations at each end, at the middle, at increments of 10m, and where height change occurs on the Grading Plan. If areas of the existing/proposed retaining walls exceed 0.6m in height, details and sections for the structural design of the retaining wall must be signed and stamped by the responsible Professional Engineer. For more information, see Section 2 of the Transportation and Works Development Requirements Manual at https://www.mississauga.ca/publication/transportation-and-works-development-requirements-manual/.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
50	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 9/27/23 8:15 PM	SUBMISSION REQUIREMENT: Acoustical Feasibility Study that includes the following:(i) A technical assessment of the existing and predicted future noise and vibration levels from all transportation (road rail aircraft) and stationary noise sources on the indoor and outdoor environment. Please contact the City's Transportation and Infrastructure Management section at (905) 615-3200 ext 3016 to obtain the ultimate traffic data for municipal roads; (ii) Description of impacts of noise generated by a proposed development on the surrounding environment the impact of noise from the surrounding environment on the proposed development and the impact of noise from the proposed development on itself;(iii) Recommendation of mitigative measures and features (e.g. building materials ventilation requirements noise barrier (berm/fence) design and height building orientation warning clauses) required to meet indoor and outdoor sound level limits in accordance with the applicable Ministry of the Environment and Climate Change and City/Region of Peel Guidelines. See the "Noise Study Terms of Reference" uploaded to the 'Documents' folder.				Unresolved
51	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 9/27/23 8:15 PM	SUBMISSION REQUIREMENT: (i) Grading Plan (ii) Servicing Plan (iii) Phasing Plan (iv) Draft Plan of Subdivision (v) Cross sections Plan Refer the "Grading Plan Terms of Reference" Uploaded to the 'Documents' folder.				Unresolved
52	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 9/27/23 8:19 PM	SUBMISSION REQUIREMENT: Indicate the tenure for the proposed condominium development as described by the Condominium Act.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
60	1	DEVELOPMENT ENGINEERING REVIEW Erich Lopez 9/28/23 12:01 PM	COMMENT: [NOTE] - Municipal works and subdivision agreement will be required in the form of an engineering submission, supporting the future subdivision application.				Info Only
115	1	DUFFERIN PEEL CD SCHOOL BOARD Joanne Rogers 10/10/23 11:26 AM	The Dufferin-Peel Catholic District School Board has reviewed the subject application pursuant to its School Accommodation Criteria. With respect to the schools currently accommodating students from this area, this application is located in the elementary catchment area of St. Alfred Catholic Elementary School, and proposes a total of 1060 additional units, yielding approximately 43 Junior Kindergarten to Grade 8 separate school students. St. Alfred Catholic Elementary School has a capacity of 444 pupil places with a current enrolment of 389 students and 6 portables/temporary classrooms on site. The application will yield approximately 22 Grade 9 to 12 separate school students. This application is located in the secondary catchment area of Philip Pocock Catholic Secondary School, which has a capacity of 1257 pupil places with a current enrolment of 1152 students, and portables/temporary classrooms on site. Based on the Dufferin-Peel Catholic District School Board's School Accommodation Criteria, the Board is satisfied with the current provision of educational facilities for the catchment area in which the subject application is located. The City of Mississauga school accommodation condition need not be applied.				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
55	1	ENVIRONMENTAL ENG REV STORM Walter Copping 9/28/23 11:14 AM	COMMENT: The applicant is required to implement low impact development measure such as permeable pavement, green roofs, landscape irrigation with stormwater re-use, etc.				Info Only
56	1	ENVIRONMENTAL ENG REV STORM Walter Copping 9/28/23 11:14 AM	COMMENT: Please be advised that the Stormwater Charge has come into effect as of January 2016. Credits of up to 50% are available for on-site stormwater management on non-residentil and multi-residential properties. Learn more at www.stormwatercharge.ca				Info Only
57	1	ENVIRONMENTAL ENG REV STORM Walter Copping 9/28/23 11:14 AM	SUBMISSION REQUIREMENT: A Functional Servicing Report with Stormwater Management is required. The site is within the Etobicoke Creek (main branch) watershed where no stormwater quantity control is required; however, it will be necessary to implement on-site stormwater management techniques into the design to limit the post-development stormwater discharge to the capacity of the storm sewer (10-year storm). To meet the City's water balance and water quality requirements, the first 5mm of runoff shall be retained on site, and 80% TSS removal (enhanced protection) in accordance with MECP guidelines must be achieved on site prior to discharge into the municipal storm sewer system. Note that the TRCA's criteria must be accommodated for within the report as well as their review and approval of this development will be required. Lastly, the City's Storm Drainage Design requirements can be found here: https://www.mississauga.ca/wp-content/uploads/2020/08/26144147/Section-8-Storm-Drainage-Design-Requirements-1.pdf				Unresolved

58	1	ENVIRONMENTAL ENG REV STORM Walter Copping 9/28/23 11:14 AM	COMMENT: The available storm sewer outlets for the subject site are the existing 750mm diameter storm sewer on Universal Dr and the existing 450mm diameter storm sewer on Dundas St E. The intended storm sewer outlet should be identified through the submission material.				Info Only
59	1	ENVIRONMENTAL ENG REV STORM Walter Copping 9/28/23 11:14 AM	SUBMISSION REQUIREMENT: Due to the proposed underground parking for this development, a Hydrogeological Report that establishes the seasonally high groundwater level on the property is to be provided for review. If groundwater is to be discharged to the storm sewer it must meet the City's requirements for quantity (combined groundwater and storm releases are not to exceed the Etobicoke Creek (main branch) watershed criteria) and quality (City of Mississauga Storm Sewer By-Law 0046-2022).				Unresolved
44	1	ENVIRONMENTAL ENG REVIEWER Jessica Yong 9/26/23 1:03 PM	NOTE RSC REQUIRED PRIOR TO BL ENACTMENT: As the proposed land use is changing from a less sensitive (commercial) use to a more sensitive (residential) use, in accordance with Ontario Regulation 153/04 as amended, the applicant is required to submit a complete Record of Site Condition (RSC), including all supporting documents to the Transportation and Works Department. The RSC must also be posted to the Environmental Site Registry (ESR).				Info Only
45	1	ENVIRONMENTAL ENG REVIEWER Jessica Yong 9/26/23 1:04 PM	SUBMISSION REQUIREMENT: Please be advised that as lands are to be dedicated to the City, they must be in a condition acceptable to the City in its sole and unfettered discretion that such land is environmentally suitable for the proposed use, as determined by the City, and shall be certified as such by a Qualified Person, as defined in Ontario Regulation 153/04 (as amended). All environmental reports submitted to the City must: a) include a specific reference of all lands to be dedicated to the City (provide a written legal description in the				Unresolved

			letter and as a separate attachment, include an overlay on a plan of survey drawn to scale and signed by a licensed Ontario Land Surveyor that clearly outlines the legal boundaries of the conveyance lands); be completed in accordance with O. Reg. 153/04; b) be signed and dated by a Qualified Person (as defined by section 5 and 6 under O. Reg. 153/04, as applicable); c) include a clear statement that these lands meet the applicable full depth generic site condition standards in accordance with O. Reg. 153/04 and are suitable for the intended land use; d) include confirmation that there are no well(s) (monitoring/domestic) or include proof of decommissioning of all well(s) on the conveyance lands. The document must reference all applicable guidelines and regulations respecting water wells, including Ontario Regulation 903, RRO 1990, made under the Ontario Water Resources Act, and must provide details of the well(s) decommissioning; e) include confirmation that there is no debris (including buried debris or waste, as defined by Reg. 347) on the lands to be dedicated to the City. If the removal of demolition or buried debris has occurred, the certification letter must include a statement that indicates all demolition debris has been removed in accordance with applicable guidelines and regulations and attach copies of waste manifests and other supporting documentation; f) be accompanied by a letter signed by the author of the report or a Principal of the Consulting Firm, which allows the City of Mississauga to make reliance on the findings and conclusions presented in the reports to the same extent as to the property owner. The wording of the reliance must meet the City's sole and unfettered satisfaction. The template is provided on the last page of the following document: https://www.mississauga.ca/wp-content/uploads/2020/08/03151729/Section-5-Environmental-Requirements.pdf.				

			Please note if a Record of Site Condition (RSC) is required to be filed for the property or for the lands to be dedicated, the RSC filing must occur prior to land dedication.				
46	1	ENVIRONMENTAL ENG REVIEWER Jessica Yong 9/26/23 1:04 PM	SUBMISSION REQUIREMENT: The proposed development may require the discharge of groundwater or accumulated rainwater/snowmelt to the City's storm sewer system. Therefore, please provide the Storm Sewer Use By-law Acknowledgement form to ensure compliance with the City's Storm Sewer Use By-law. A copy of this form can be acquired from the following link: https://www.mississauga.ca/wp-content/uploads/2023/05/Storm-Sewer-Use-ByLaw-Acknowledgement.pdf. If/when the Stormwater Temporary Discharge Approval is required, please visit the following website for more information on the process: https://www.mississauga.ca/services-and-programs/home-and-yard/stormwater/stormwater-temporary-discharge-approval/				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
47	1	ENVIRONMENTAL ENG REVIEWER Jessica Yong 9/26/23 1:05 PM	COMMENT: As indicated by Planning staff, the zoning by-law in effect requires that the applicant submit a Land-Use Compatibility Study that demonstrates whether the current surrounding employment uses may or may not pose a potential negative air quality and odour impact upon sensitive receptors on the proposed future land use at the property. As the City currently does not have staff who have the required expertise to review such studies, a peer review consultant needs to be retained by the City to perform such review for this application. The applicant is required to submit a deposit via Electronic Funds Transfer to the City of Mississauga to pay for the peer review of air quality and odour impact studies. An initial deposit in the amount of $5,000.00 is to be submitted. Any unused funds will be returned to the applicant. The peer review consultant will be overseen by Environmental Services staff on behalf of Planning. Please contact the Environmental Engineering Reviewer (Jessica.Yong@mississauga.ca) for more information on the payment details.				Info Only
48	1	ENVIRONMENTAL ENG REVIEWER Jessica Yong 9/26/23 1:05 PM	COMMENT: Please be advised that it is the Owners responsibility to comply with the obligations and requirements of Ontario Regulation 406/19, as amended, which applies to the management of on-site and excess soil during development (e.g., assessment, management, excavation, removal, temporary storage, transportation and reuse or disposal of excess soil), as applicable.				Info Only
42	1	ENVIRONMENTAL ENG REVIEWER Jessica Yong 9/26/23 12:57 PM	SUBMISSION REQUIREMENT: A completed Environmental Site Screening Questionnaire and Declaration (ESSQD) form, signed by the Owner and a Commissioner of Oaths, must be submitted to the Transportation and Works Department for review.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
43	1	ENVIRONMENTAL ENG REVIEWER Jessica Yong 9/26/23 12:58 PM	SUBMISSION REQUIREMENT: A current Phase One Environmental Site Assessment (ESA) must be submitted to the Transportation and Works Department for review. The report must be prepared in accordance with O. Reg 153/04. If there are land dedications to the City, the Phase One ESA report must show the boundaries of the land dedication(s) within the figures of the report and the location of any identified PCAs and APECs. If the Phase One ESA indicates potential contamination, a Phase Two ESA must be submitted with figures showing the boundaries of the land dedication(s), if any, and the sampling location. All reports must be prepared in accordance with O. Reg. 153/04, signed and dated by a Qualified Person (as defined by section 5 and 6 under Ontario Regulation 153/04, as applicable) and be accompanied by a letter signed by the author of the reports or a Principal of the Consulting Firm, which allows the City of Mississauga to make reliance on the findings and conclusions presented in the reports. The wording of the reliance must meet the City's sole and unfettered satisfaction. The template is provided on the last page of the following document: https://www.mississauga.ca/wp-content/uploads/2020/08/03151729/Section-5-Environmental-Requirements.pdf. Environmental reports that are not accompanied with reliance to the City shall be deemed as an incomplete application.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
61	1	ENVIRONMENTAL ENG REVIEWER Jessica Yong 9/28/23 1:03 PM	COMMENT: Further comments may be provided upon receipt and review of the requested materials.				Info Only
49	1	FIRE PREV PLAN EXAMINATION Don Casey 9/26/23 4:12 PM	Will there be any areas that are fully cut off from the building? If this were the case, the entrances to those units would need to be located within a 45m unobstructed travel distance of a street (or fire access route).				Unresolved
68	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:14 PM	SUBMISSION REQUIREMENT: CONCEPT PLAN - Provide a detailed Concept Plan illustrating the building location and setbacks, building entrances, amenity areas, extent of parking structure(s), exhaust vents / air shafts, landscaped areas, landscaped buffers driveways / site accesses, surface parking areas, walkways, utility locations, including the location of any transformer vaults, and garbage storage and loading areas.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
69	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:14 PM	SUBMISSION REQUIREMENT: TREE SURVEY/INVENTORY, TREE PRESERVATION PLAN, AND ARBORIST REPORT - A Tree Survey/Inventory, Tree Preservation Plan and an Arborist Report are required to evaluate the potential effects of the proposed development on existing trees and ensure the proposal conforms to relevant policies, standards and guidelines. The plans and documents must identify existing trees that are proposed to be preserved, removed, and/or transplanted and shall be prepared in accordance with the Terms of Reference document available on the City's website at: https://www.mississauga.ca/publication/development-application-terms-of-reference/. All information within the plans and documents are to be coordinated and consistent with the completed Tree Injury or Destruction Questionnaire (Schedule D) and shall conform to the criteria in the Terms of Reference to the satisfaction of the Development & Design Division.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
70	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:14 PM	SUBMISSION REQUIREMENT: AMENITY AREA CALCULATIONS - The Concept Plan is required to illustrate the location and size (sq.m) of all proposed amenity areas with the formal submission. The Project Site Statistics must include comprehensive amenity area statistics, including but not limited to, proposed Amenity Area per unit, total proposed indoor amenity area per block, total proposed outdoor amenity area per block, etc. The Concept Plan is required to illustrate the location and size (sq.m) of all proposed amenity areas with the formal submission. The Project Site Statistics must include comprehensive amenity area statistics, including but not limited to, proposed Amenity Area per unit, total proposed indoor amenity area per block, total proposed outdoor amenity area per block, etc.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
71	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:14 PM	SUBMISSION REQUIREMENT: GRADING PLAN - A Grading Plan is required to assess the proposed grading and grading relationship(s) between the proposed development and adjacent land uses including along the municipal frontage(s). The Grading Plan, at a minimum, is required to illustrate the following information: A) finished floor elevation of the ground floor and entrances of all buildings; B) existing and proposed spot elevations within the project site boundaries and along the property lines; C) existing spot elevations on adjacent properties; D) retaining walls (top and bottom of wall spot elevations); E) underground garage roof slab elevations; F) stair and ramp elevations; G) spot elevations at the base of all existing trees to be preserved adjacent to the construction zone.				Unresolved
72	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:14 PM	SUBMISSION REQUIREMENT: PARCEL REGISTER / EASEMENT INFORMATION - Upload the Parcel Register (available from Service Ontario) and any detailed Easement Agreement(s) to confirm the location, dimensions, and type of any easements, covenants, agreements, and restrictions on the Land Title. The Concept Plan is required to illustrate the extent of all restrictive easement(s) on the subject site.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
73	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:15 PM	COMMENT: LANDSCAPED BUFFERS - Dimension and label the required Landscaped Buffers on the Concept Plan. The proposed development is to provide Landscaped Buffers that conform to the Zoning By-law. All Landscaped Buffers are reserved and intended for the long term growth and maintenance of landscaping, including high branching deciduous trees, coniferous trees, and shrubs and are to be unencumbered from any utilities, obstructions, including underground parking structures, and restrictive easements, etc.				Unresolved
74	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:15 PM	COMMENT: AIR SHAFTS / EXHAUST VENTS - The location of all proposed air shafts / exhaust vents are required to be illustrated on the Concept Plan with the formal submission. All proposed air shafts / exhaust vents are not permitted within any required Landscaped Buffers on the subject site and must be incorporated into the buildings elevation design or located in an area that is not readily visible to the municipal boulevard or prominent areas of the proposed development (amenity areas, pedestrian circulation networks, etc.).				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
75	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:15 PM	COMMENT: GARBAGE STAGING / HANDLING - All proposed garbage staging / handling locations and servicing routes are required to be illustrated on the Concept Plan with the formal submission. All proposed garbage staging / handling areas and servicing routes must be internalized within the proposed built form to mitigate any impact of the proposed development or public realm. Refer to the Region of Peels Waste Collection Design Standards Manual available at: https://www.peelregion.ca/public-works/design-standards/pdf/waste-collection-design-standards-manual.pdf for additional information.				Unresolved
76	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:15 PM	COMMENT: UTILITIES / TRANSFORMERS - All proposed utilities, including transformer vaults, and servicing routes are required to be illustrated on the Concept Plan with the formal submission. The required [pad mounted] transformer vault(s) and associated switch gear (if applicable) must be internalized within the proposed built form and will not be permitted to be [located at grade in or near the municipal boulevard].				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
77	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 12:16 PM	COMMENT: DUNDAS STREET STREETSCAPE CASH CONTRIBUTION - The City of Mississauga is undertaking the design and construction of the Dundas Street Bus Rapid Transit Corridor, which has an estimated substantial completion date of 2028. In lieu of the completion of the detailed design and associated installation of the Dundas Street streetscape component, it has been determined the most expeditious way to advance the streetscape component along Dundas Street is to provide a monetary contribution that will be utilized for boulevard improvements along the Dundas Street Bus Rapid Transit Corridor. The Dundas Street Streetscape Cash Contribution will be calculated at $3,650.00 per linear metre of street frontage along Dundas Street, and must be submitted to the Planning & Building Department prior to Site Plan Approval.				Unresolved
92	1	LANDSCAPE ARCH - DEV DESIGN Kate Allan 10/4/23 4:09 PM	SUBMISSION REQUIREMENT: STREETSCAPE FEASIBILITY STUDY - An Amended Boulevard Treatment is required within the municipal boulevard along Universal Dr . A Streetscape Feasibility Study prepared in accordance with the Terms of Reference document, including an Engineer Certified Utility Plan based on physical locates, is required to ensure the required Amended Boulevard Treatment can be accommodated within the municipal boulevard. The Terms of Reference document available on the City's website at: https://mississauga.ca/publication/development-application-terms-of-reference/.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
80	1	PARKING Evan Pu 10/4/23 3:59 PM	COMMENT: • Per Section 3.1.2.1.1 of Zoning By-law, the minimum required parking rates for Condominium Apartment in Parking Precinct 3 are 1.0 resident spaces per unit and 0.2 visitor space per unit; • Based on the Site Plan provided by the applicant, The minimum parking requirements for the subject site are 1,060 resident spaces and 212 visitor spaces, which comes to a total of 1,272 parking spaces.				Info Only
84	1	PARKING Evan Pu 10/4/23 4:04 PM	COMMENT: •The applicant proposes 726 resident spaces and 84 visitor spaces, however the total parking number shows 774 on the site plan, which is inconsistent with the numbers shown in the table. Please clarify the total number of parking spaces proposed.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
91	1	PARKING Evan Pu 10/4/23 4:08 PM	SUBMISSION REQUIREMENT: •Assuming the total number of parking spaces is 774, the parking deficiency of the development would be 498 parking spaces, or 39%. •As the parking deficiency exceeds 10%, a Parking Utilization Study (PUS) will be required as per the City's parking Terms of Reference. Should the Applicant wish to pursue a reduction in parking spaces, the submission of a satisfactory Parking Utilization Study (PUS) will be required. The consultant should confirm the survey methodology with staff prior to conducting parking surveys. Details can be reviewed in the City's Parking Terms of Reference for parking justification requirements. •A copy of the parking Terms of Reference can be found in the link below: https://www.mississauga.ca/wp-content/uploads/2020/07/15084526/COM-Parking-Studies-ToR-2021-09.pdf				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
53	1	PEEL DIST SCHOOL BOARD Zach Tessaro 9/28/23 11:00 AM	The Peel District School Board has reviewed the above-noted application and notes that the proposal is for the development of three residential towers with 1060 units. Conditions of approval will be provided following formal submission/circulation of the application. The Board wishes to be notified of future submissions. Please be advised that this development is located along the future Dundas Street BRT corridor. PDSB is aware of the increased development within the area which may result in capacity issues for nearby schools. PDSB actively reviews new residential growth in this area and seeks viable student accommodation solutions where possible.				Unresolved
54	1	PEEL DIST SCHOOL BOARD Zach Tessaro 9/28/23 11:07 AM	The Board also requests information regarding the area surrounding this development. Are there plans for more development similar to this application in this area?				Unresolved
78	1	PLANNER - COMM SERVICES Sangita Manandhar 10/4/23 3:37 PM	SUBMISSION REQUIREMENT: A development master plan as noted by the Urban Designer identifying public open space to service future residents in keeping with the Dundas Connects Master Plan for the Etobicoke Creek Focus Area.				Unresolved
79	1	PLANNER - COMM SERVICES Sangita Manandhar 10/4/23 3:37 PM	COMMENT: Please be advised that prior to the issuance of building permit, for each lot or block cash-in-lieu for park or other public recreational purposes is required pursuant to Section 42(6) of the Planning Act (R.S.O.1990, c.P. 13, as amended) and in accordance with the City's Policies and By-laws.				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
4	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:06 AM	SUBMISSION REQUIREMENT: Planning Justification Report prepared and signed by a Registered Professional Planner (RPP) is required.				Unresolved
5	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:06 AM	SUBMISSION REQUIREMENT: Prior to formally submitting the applications, the concept plan must be screened by the Zoning Services section of the Planning & Building Department to identify all zoning deficiencies. The concept plan will be evaluated against a parent zone to be determined by the Development Planner after DARC 2 (or DARC 3).				Unresolved
6	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:06 AM	SUBMISSION REQUIREMENT: A Draft Official Plan Amendment.				Unresolved
7	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:06 AM	SUBMISSION REQUIREMENT: Provide a chart summarizing the existing versus proposed Zoning By-law regulations (general regulations and zone specific). This will be used for staff to prepare the implementing By-law document. No further staff review or identification of by-law deficiencies will occur through the processing of the application.				Unresolved
9	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	IMPORTANT NOTICE: The City is currently undertaking a pilot project as a result of process changes made to adhere to Bill 109 application processing timelines. Our process is subject to change as we continue to navigate the changing legislation. Please contact the Planner at anytime should you have any questions about our processes.				Unresolved
10	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	IMPORTANT NOTICE: The applicant will be required to submit all materials identified on the Submission Requirements Checklist and satisfy the Terms of Reference for the plan or study in order for a DARC 2 meeting to be scheduled with staff.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
11	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	INDEPENDENT ZONING REVIEW: An independent zoning review must be completed and where required minor variances must be obtained prior to the Site Plan Application submission. Please submit the Independent Zoning Review report with the Site Plan Application submission. The Independent Zoning Review request will be submitted separately through ePlans to be reviewed by the City's Zoning Staff.				Unresolved
12	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	APPLICANT RESPONSE: Please provide a detailed explanation in the "RESPONSE" column indicating how each comment has been addressed and reference the drawing/study/document for the PAM 2 or DARC 2 submission.				Unresolved
13	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	EXTERNAL AGENCY COMMENTS: Please refer to the External Agency Comments folder for comments from the (MTO, Alectra, etc.) and other external agencies.				Unresolved
14	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	ADDITIONAL COMMENTS: Additional comments may be provided upon review of this and any new information.				Unresolved
15	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	DEVELOPMENT AGREEMENT: Please confirm if an existing Subdivision or Development Agreement is applicable to the property. If so, please confirm that any matters to be addressed via site plan approval are addressed in the proposed development. (ie., warning clauses, on-site/off-site works, etc)				Unresolved
16	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	PRE-SUBMISSION COMMUNITY MEETING: Prior to attending DARC 2, a pre-submission community meeting may be required. Please coordinate with the Ward Councillor to arrange the meeting.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
17	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	URBAN DESIGN ADVISORY PANEL: Prior to attending DARC 2, the applicant is required to attend the Mississauga Urban Design Panel. Please contact the assigned Urban Designer to coordinate attending the Panel.				Unresolved
18	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	PARKING STUDY: Upon obtaining your independent zoning review, should you have a parking deficiency please contact municipal parking and transportation (EMAIL) to determine if a Parking Utilization Study or Parking Justification Letter is required to be submitted prior to PAM 2 / DARC 2.				Unresolved
19	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	TERMS OF REFERENCE: Please refer to the City's website (https://mississauga.ca/publication/development-application-terms-of-reference) for a list of Terms of References for the required studies and documents. If required, contact the specific reviewer requesting the study to scope the Terms of Reference.				Unresolved
20	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	SHOW ACCESS POINTS: Show access points of properties adjacent to and abutting the subject site.				Unresolved
21	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	EXISTING CONDITIONS: Identify all existing conditions on the site plan.				Unresolved
22	1	PLANNER - DEV DESIGN Andrea Dear 9/25/23 11:09 AM	SUBMISSION REQUIREMENT: Should a community meeting be requested by the Councillor, a community meeting report is required to be submitted with the DARC 2. The Terms of Reference have been uploaded to the documents folder.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
23	1	PUBLIC ART COORDINATOR Michael Tunney 9/25/23 12:12 PM	COMMENTS: The City of Mississauga strongly encourages the inclusion of public art in developments that are greater than 10,000m2 (100,000 sq. ft.) in gross floor area, with the exception of non-profit organizations and social housing. Developers are encouraged to include public art as part of their development and/or contribute an agreed upon amount of their gross construction costs to the City's Public Art Reserve Fund for the inclusion of public art near the subject site. The dollar value of the public art contribution should be determined by the City's Planning and Building Department, together with the Public Art Program when calculating the value of construction for building permit fees on relevant projects.				Info Only
93	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:05 PM	SERVICING COMMENT: There is an existing 300 mm diameter water main is located on Dundas St E. There is an existing 300mm diameter water main is located on Universal Dr. There is an existing 250 mm diameter sanitary sewer is located in an easement on Dundas St E. There is an existing 250mm diameter sanitary sewer is located on Universal Drive. There is capital project (18-1310) underway on Dundas St E. to replace the older 300mm. If applicant is interested in connecting to this main (size TBD) substantial completion of this capital project will be required prior to applicant connecting to this water main.				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
94	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:06 PM	SERVICING COMMENT - This proposal requires connection to a minimum municipal watermain size of 300mm (Watermain Design Criteria 2.1). Servicing of this site may require municipal and/or private easements and the construction, extension, twinning and/or upgrading of municipal services. All unutilized water and sanitary services shall be disconnected and/or abandoned in accordance with Region of Peel standards and specifications. All works associated with the servicing of this site will be at the applicants expense. The applicant will also be responsible for the payment of applicable fees, DC charges, legal costs and all other costs associated with the development of this site.				Info Only
95	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:09 PM	SERVICING COMMENT - This proposal may require a secondary fire line in compliance with the Ontario Building Code, which is administered by the Local Municipality. We require confirmation that this has been addressed with the Local Municipality. We recommend a system looped to municipal water including a secondary domestic water supply where possible.				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
96	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:11 PM	SUBMISSION REQUIREMENT - Prior to OZ/RZ approval, a satisfactory Functional Servicing Report is required for the Region to review water and wastewater capacity and to determine the adequacy of the existing services for the proposed development. Please refer to the Regions Functional Servicing Report requirements found on-line. Consultant is required to complete and submit the Demand table for the Region to fulfil our modelling requirements and determine the proposals impact to the existing system. This table will be required prior to RZ/OZ Approval. Please find the latest demand table form on-line at https://peelregion.ca/public-works/design-standards/pdf/water-wastewater-modelling-demand-table.pdf. Prior to OZ/RZ approval, the non-refundable Functional Servicing Report/Demand Table Review Fee of $1000 is required as per the current Fees By-law.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
97	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:15 PM	SERVICING COMMENT - There is a Regional sanitary sewer easement on the subject property. Please be advised that unauthorized encroachments on Regional easements will not be permitted. Certain restrictions apply with respect to Regional easements as per the documents registered on title. Existing easements dedicated to the Region of Peel for the purpose of sanitary sewer and/or watermain, must be maintained or the existing infrastructure relocated to the satisfaction to the Region of Peel, at the owners cost. Lines of influence of proposed underground permanent structure shall not encroach onto the existing Sanitary sewer. infrastructure located within the Region of Peel easement (as per Region of Peel Sanitary Sewer Design Criteria 6.4). The applicant shall notify the Region of any proposed encroachments on the easement, including structures, signs, landscaping, walkways, parking and servicing.				Info Only
98	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:16 PM	SUBMISSION REQUIREMENT - To determine if there are encroachments on the Regions easement, prior to site plan approval, the Region will require drawings for review, which include but are not limited to, site plan, landscaping, site grading and foundation drawings, each of which shall show: all existing easements and their limits; the purpose of each of the easements (e.g. water / sanitary sewer), the easement instrument number, parts and reference plan number and the benefitting party (e.g. the Region / City). All Servicing and Grading drawings shall reflect the Local Municipalitys road widening requirements.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
99	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:20 PM	SUBMISSION REQUIREMENT - The existing municipal sanitary sewer may be located within the municipal boulevard. To determine the impact to the sanitary sewer, please submit the following drawings: Landscaping, Grading, Streetscaping. The drawings must show the curbs, the sidewalk and the Region's infrastructure.				Unresolved
100	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:26 PM	SUBMISSION REQUIREMENT - Through the servicing review, we will require cross sections to be provided to verify whether there is a conflict with the tie backs and servicing connections. The Region shall be satisfied with the cross sections prior to servicing approval.				Unresolved
101	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:28 PM	SUBMISSION REQUIREMENT - To identify conflicts with Region of Peel Infrastructure and the municipal corridor/easement, shoring drawings shall be submitted for review and approval. Shoring Drawings are required to be submitted with the Site Plan application first submission. If shoring drawings are unavailable at this stage, the applicant shall acknowledge through written confirmation that they will adhere to the Regions current shoring standards. The Region of Peel shall be satisfied with the shoring proposal prior PUCC approval and may require the applicant to enter into a Tie-back Agreement with the Region prior to commencement of work.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
102	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:29 PM	SUBMISSION REQUIREMENT - A satisfactory site servicing submission and the 1st submission fee as per the latest fee by-law are required prior to site plan approval. Included with the servicing submission and prior to site plan approval, please submit a SUE (Subsurface Utility Engineering) investigation so that conflicts within the municipal ROW can be identified as early as possible. Please refer to the latest Fees Bylaw for the updated fees. All fees may be subject to change on annual basis pending Council approval.				Unresolved
103	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:39 PM	SITE SERVICING COMMENTS - 1) Please confirm tenure prior to RZ/OZ approval. 2) Municipal addresses, confirmed by the Local Municipality, are required prior to issuance of the Region of Peel's Site Servicing Connection approval. The approved addresses are entered into the Region's system and included on the receipt once the final payment has been made. 3) The Region will not accept property line chambers and maintenance holes within foundation walls and in the road allowance. These appurtenances shall be to Region standards, accessible, separated from the foundation and accommodated with a notch out in the foundation wall. 4) Fire protection approval from the City of Mississauga is required prior to Region of Peel site servicing connection approval. It is the applicant's responsibility to provide the Region with the Building Division's final approved drawing. 5) Regional site servicing connection approvals will not be issued until substantial completion is granted by the Region of Peel for project 18-1310				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
104	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:40 PM	SUBMISSION REQUIREMENT - To accompany the servicing review, the supporting Mechanical Drawings are required for review by Servicing Connections prior to issuing Region of Peel Site Servicing Connection approval.				Unresolved
105	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:43 PM	GENERAL SERVICING COMMENTS - 1) All our design criteria, standards, specifications, procedures and report and submission requirements are found on-line at https://www.peelregion.ca/public-works/design-standards/#procedures 2) Please refer to Section 3 of our Site Plan Procedure document found on-line. 3) Please refer and adhere to the Regional by-laws that are applicable to your proposal, such as but not limited to the Water, Wastewater and Backflow Prevention by-laws https://www.peelregion.ca/council/bylaws/archive.asp 4) Please refer to our Standard Drawings on-line to determine which standards are applicable to your project. 5) Public and private services, appurtenances, materials, and construction methods must comply with the most current Region of Peel standards and specifications, the Local Municipality's requirements for the Ontario Building Code and Ontario Provincial Standards. All works shall adhere to all applicable legislation, including Regional by-laws. 6) Should the tenure change to condominium, please notify us if the servicing drawings are revised to reflect the Local Municipality's Requirements for the Ontario Building Code. We may have additional comments and requirements				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
106	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:47 PM	LEGAL REQUIREMENTS - 1) The applicant is required to provide to the Region with copies of the most current PINS prior to HOZ/RZ/OZ Approval PINS submitted to Peel shall be dated/prepared within 3 months of submission to Peel. Further comments/requirements will be provided once the PINS are reviewed by a Regional Law Clerk. The applicant is required to submit copies of PINS following the completion of transfers and/or subdivision registration. 2) The Region requires review of the Declaration and Description prior to registration of the Condominium to confirm registration of required private easements. 3) Condominium Water Servicing Agreement may be required prior to Condominium Registration. 4) The applicant is required to provide to the Region copies of all registered easements affecting the subject lands prior to OZ/RZ approval. 5) All drawings shall be revised to show all existing easements and their limits; the purpose of each of the easements, the easement instrument numbers, parts and reference plan numbers and indicate whether they are private or municipal				Info Only
107	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:48 PM	WASTE - The Region of Peel will provide Front-End collection of Garbage and Recyclable Materials subject to Section 2.0, 4.0 and 5.0 of the Waste Collection Design Standards Manual requirements being met and labelled on the Waste Management Site Plan.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
108	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:50 PM	HOUSING - For planning applications of approximately 50 units or more, RPOP policies require applicants to submit a housing assessment that is consistent with local and Peel housing objectives and demonstrates contributions towards the housing targets. The required housing assessment can be included as part of a planning justification report or housing report, or as its own report.				Unresolved
109	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:51 PM	PUBLIC HEALTH - 1) Recommend short term visitor bicycle spaces near building entrance and long-term bike parking for residents 2) Consider a reduction in the parking ratio due to the proximity of the future Dundas Transit Corridor 3) Give consideration for unbundled parking from residential units by selling or leasing spaces separately 4) Recommend direct pedestrian walkway from entrance to Dundas Street to promote pedestrian activity 5) Explore Age Friendly Development Design Guidelines when designing spaces for multi generational use				Info Only
110	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:57 PM	PLANNING - Under the Regional OP, the subject property is located within key policy areas in the approved April 2022 Region of Peel Official Plan (RPOP) including the Wharton Primary Major Transit Station Area on Schedule E-5. MTSAs are a critical element in the Regions growth management strategy, with the potential to achieve higher densities and compact mixed-use development oriented to higher order transit. The minimum overall density of the Wharton MTSA is 160 people and jobs (ppj)/ha. Please provide statistics about the proposal's specific contribution towards the minimum density (i.e., please provide the ppj/ha for the proposal).				Unresolved

111	1	REGION OF PEEL Rosha Budathoki 10/4/23 5:59 PM	EASEMENT - There is a Region of Peel easement on the subject property. No encroachments shall be permitted.				Info Only
112	1	REGION OF PEEL Rosha Budathoki 10/5/23 4:13 PM	PAYMENT PROCESS - Please be advised the FSR and 1st Submission Fee remains outstanding. Please also be advised that the 2023 Fees by-law update included an increase to some Engineering Fees. Servicing Connections will only accept Electronic Fund Transfers (EFT) at this time. Please complete the information below in table format and email eftadvice@peelregion.ca and alexandra.maria@peelregion.ca to arrange payment; reference Regional Servicing File Number C603774. Please contact Alexandra Maria (alexandra.maria@peelregion.ca) with any questions about payment processes for Servicing Fees. Payers Name (Individual or Company) Payers Phone Number Payers Address (Where the securities will be returned to) Payers Email Address Company name representing the Payer Contact person name from company representing the Payer Contact person representing the Payer - email address Dollar Amount of Payment: $1,420.25 ($1,000 FSR Fee & $420.25 1st Submission Fee)				Unresolved

			Region of Peel File Number (C######): C603774 Credit Card if Under $1,000.00 (Yes/No) For Credit Card Person to Call For Credit Card Phone Number for the Above Person Owner name Owner contact person Owner address Owner contact person phone number Owner contact person email				
113	1	REGION OF PEEL Rosha Budathoki 10/5/23 4:14 PM	The Region's current development application review fee for a combined Official Plan Amendment and Zoning By-law Amendment is $9,225.00, and a Full Site Plan application is $3,177.50 (please see further information on development application fees https://www.peelregion.ca/planning/development-services/resources.asp). Please note that the Fees By-law is amended from time to time and fees must be paid in accordance with the in-effect by-law at the time of payment, which may be different. Development application review fees are now required to be paid in advance of the application being deemed complete. The Region of Peel is currently accepting all payments in the form of Electronic Funds Transfer (EFT) through the following process:				Info Only

1. When preparing the formal development application submission, the applicant forwards the City-issued DARC/PAM checklist to the Region's Development Services manager (Althaf.farouque@peelregion.ca) and zzg-planninginfo@peelregion.ca with a request to initiate the Regional application fee payment. Copy the City of Mississauga planner for reference.

1. The Region responds with the confirmed fee amounts and EFT payment instructions (filed under the DARC/PAM # in the interim).

1. Once the payment is received, the Region will issue a payment receipt to the applicant and copy the following City of Mississauga contacts for reference.

    - Lauren Eramo-Russo Lauren.EramoRusso@mississauga.ca
    - Mila Yeung Mila.Yeung@mississauga.ca
    - Michael Pebesma Michael.Pebesma@mississauga.ca

			1. The payment receipt shall be submitted by the applicant with the development application materials on ePlans so it can be recorded with the formal development application file number.				
114	1	REGION OF PEEL Rosha Budathoki 10/5/23 4:17 PM	This development is not within the vicinity of a landfill site. The owner/proponent acknowledges that the records of the Regional Municipality of Peel concerning the location and nature of waste disposal sites or hazardous wastes are incomplete and that the Regional Municipality of Peel makes no representation that records may be relied upon in determining whether or not lands have been used for the disposal of waste or hazardous wastes. However, should there be any doubt about the integrity of the listed application with respect to the possibility of a waste disposal site or hazardous wastes on or adjacent to the property, we recommend that the applicant carry out a detailed soil investigation by a qualified Geotechnical Engineer. If it is found that the subject lands have been used for the disposal of waste or hazardous waste, then approval of the Minister, for the proposed use, as per Section 46 of the Environmental Protection Act (Ontario), may be required.				Info Only
3		Review Coordinator Mila Yeung 8/23/23 1:59 PM	Please note as of January 1, 2023, the City is no longer accepting cheques for planning application fees. Payment options include Electronic Funds Transfer (EFT), Interac e-transfer or Credit Card (through ePlans).				Info Only
41	1	TRAFFIC REVIEW Michael Turco 9/26/23 12:20 PM	[ADDITIONAL COMMENTS] Further Traffic comments may be provided subject to the receipt of new or revised information.				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
24	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:04 AM	COMMENT: [SITE ACCESS] (a) The proposed Universal Drive access shall align centreline to centreline with the opposing access. This must be demonstrated on the Site/Grading Plan(s).; (b) The Owner shall ensure the proposed accesses provide sufficient sight lines such that views are not obstructed at the intersection (street trees, structures, etc.).; (c) The Owner shall provide for a sufficient clear throat lengths within the driveway accesses to ensure the roadway and internal driveway can operate efficiently. The Street 'A' access is deficient in this regard. Please ensure that there are no parking/loading spaces or intersecting drive aisles within the appropriate clear throat length, per TAC Guidelines.				Unresolved
25	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:04 AM	SUBMISSION REQUIREMENT: [INTERNAL SITE CIRCULATION] (a) Turning movement diagrams will be required to depict the internal site circulation.; (b) Additional provisions to aid in the safety and operation of these features may be required.; (c) Detailed turning movements are to be provided for ingress and egress through the access point(s) for the site.; (d) Confirmation from Fire and Emergency Services that the internal road is acceptable from an emergency response perspective.; (e) Confirmation from the Region of Peel that the internal road is acceptable from a waste collection perspective.; (f) A turn around facility may be required as a result of the above in addition to providing sufficient snow storage for the proposed development.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
26	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:04 AM	COMMENT: [PROPER TURNAROUND FACILITY] - The applicant will be required to provide a proper temporary turnaround facility for all dead end roads (e.g. Street 'A') within the proposed development to ensure waste collection, fire, emergency services, snow clearance, maintenance, and passenger vehicles can be accommodated.				Unresolved
27	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:04 AM	COMMENT: [TRAFFIC NOTES] (i) All damaged or disturbed areas within the municipal right-of-way are to be reinstated at the Owner's expense.; (ii) All landscaping and grading within close proximity to the proposed access points is to be designed to ensure that adequate sight distances are available for all approaching and exiting motorists and pedestrians.; (iii) The portion of the driveway within the municipal boulevard is to be paved by the Owner.; (iv) Driveway accesses shall maintain a 1.5m setback from aboveground features such as utilities and trees.; (v) Any above ground utilities located within 1.5m of a proposed access are to be relocated at the Owner's expense.; (vi) The cost for any/all road improvements required in support of this development application will be borne by the Owner.; (vii) The Owner shall make satisfactory arrangements with the Transportation and Works Department for the design, construction and payment of all costs associated with works necessary to support access to this site.; (viii) Any access to internal servicing shall be provided internally through the site.				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
28	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:04 AM	COMMENT: [CYCLING FACILITIES] The Owner will be required to provide accessible and secure short term (Class B - outdoor) and long term (Class A - indoor) bicycle storage facilities on site. The Site Plan shall be revised to identify the cycling facility locations and to specify the facility detail(s), including quantity of spaces proposed for each. The following rates are to be used: (a) Apartment Mississauga - A minimum of 0.60 long term spaces and 0.05 (6 spaces min.) short term spaces per residential unit. (b) Retail (Per 100 sq.m. GFA of retail area) A minimum of 0.15 long term spaces and 0.20 short term spaces. Bicycle parking spaces shall be 1.8m x 0.6m and have appropriate aisle widths (1.5m) clearances, etc. as per the City's Zoning By-law.				Unresolved
29	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:04 AM	COMMENT: [DUNDAS CONNECTS]: The Owner is advised that Dundas Street is a major east-west arterial road in Mississauga and is identified in the City's Official Plan as an intensification corridor. The City of Mississauga has completed a master plan study of Dundas Street through the Dundas Connects project. This study explores ways to incorporate higher order transit on Dundas Street and investigate opportunities for associated transit-orientated development. The Owner is also advised to review project details as there will be impacts to this site, such as future right-of-way widening and restricted access. Project details can be found at: https://www.mississauga.ca/projects-and-strategies/city-projects/dundas-connects/				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
30	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:08 AM	COMMENT: [LAND DEDICATIONS] The Owner will be required to gratuitously dedicate the following to the City of Mississauga: (A) MUNICIPAL ROADS (i) Street 'A' with a minimum right of way of 20m for the creation of a Local road (east-west road connecting Universal Drive and Lenworth Drive); (B) RIGHT OF WAY WIDENINGS (i) A right of way widening towards the ultimate 42 metre right-of-way of Dundas Street East as identified in the Official Plan.; (C) SIGHT TRIANGLES (i) 7.5 metre sight triangles at the (north-west & south-west) corner of Universal Drive & Street 'A'. ***[NOTE]*** This condition will require confirmation from: (i) City Surveyor regarding dimensions; (ii) Environmental Site Management and Compliance regarding environmental conflicts; and (iii) Legal Services identifying that the Subdivision/Development Agreement is in registrable form.				Info Only
31	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:08 AM	COMMENT: [EXISTING 0.3m RESERVES] The Owner is advised that there is a 0.3 metre reserve across the Dundas Street East frontage of the subject site.				Info Only
32	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:09 AM	SUBMISSION REQUIREMENT: [TRANSPORTATION IMPACT STUDY REQUIRED] A Transportation Impact Study representative of the proposed land use and gross floor area is required. The study is to include a Transportation Demand Management component. The traffic consultant must provide a terms of reference (filled out Pre-Study Consultation Checklist - Appendix B of the City's TIS Guidelines) to the City's Traffic Planning Section for review and receive confirmation prior to commencing of the study. The terms of reference should be addressed to Trans.Projects@mississauga.ca				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
33	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:09 AM	SUBMISSION REQUIREMENT: [RIGHT OF WAY PACKAGE] - The developer shall provide a right-of-way package for all proposed roads within the development. The right-of-way package is to include reference to the relevant City of Mississauga standard drawings with detailed cross-sections that are applicable for each road. The developer should be advised that further comments on the development concept may be provided after the ROW package is submitted and therefore, revisions to the overall draft plan may be required. ***NOTE: Any deviation from a City of Mississauga standard is subject to a comprehensive review and approval process by City staff and all affected external agencies. If non-standard cross sections are proposed, the following information will also be required, but not limited to: An extensive right-of-way package that includes details of all design elements within a proposed right-of-way for each proposed street. The right-of-way package is to be prepared in two parts: (A) The right-of-way package shall include plan views and a description for each of the following considerations: (i) Public Transit Facilities; (ii) Pedestrian Facilities; (iii) Cycling Facilities; (iv) On-Street Parking and Curbside Management; and (v) Traffic Calming. (B) The right-of-way package shall also include typical cross-section details of each street that include the following information: (i) Street Name; (ii) Road Classification; (iii) Right-of-way widths; (iv) Pavement widths and lane widths; (v) Boulevard widths; (vi) Sidewalks, curbs, splash pads, grades; and (vii) All above and below ground utilities.				Unresolved
34	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:09 AM	SUBMISSION REQUIREMENT: [DRAFT PLAN OF SUBDIVISION] The Owner shall provide a Draft Plan of Subdivision.				Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
35	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:09 AM	COMMENT: [ROAD NETWORK] As per the Official Plan (OP), the City strives to create a fine-grained system of roads that seeks to increase the number of intersections and overall connectivity throughout Mississauga. The OP also notes that additional roads, above what is noted in the OP, may be identified through the review of development applications. The City may require the completion of road connections and where appropriate, the creation of a denser road pattern through the construction of new roads. Lastly, the OP states that Future additions to the road network should be public roads. Based on the aforementioned, the Traffic Section requests the following to assist the City in creating a multi-modal transportation network for the movement of people and goods which supports the creation of a more sustainable community: (i) Street 'A' with a minimum ultimate right of way of 20m for the creation of a Local road (east-west road connecting Universal Drive and Lenworth Drive). Interim Street 'A' design/ROW width must be sufficient to accommodate a functional public roadway that meets the City's objectives (e.g. complete streets, streetscape, etc.), to the satisfaction of the City.				Unresolved
36	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:09 AM	COMMENT: [PEDESTRIAN CONNECTIVITY] Significant consideration must be given to pedestrian circulation and safety. Evaluate pedestrian desire lines and minimize vehicular and pedestrian conflicts as much as possible. Provide multiple direct, convenient pedestrian connections to/from the building entrances from/to municipal sidewalks which minimize walking distance. Pedestrian connections to/from all adjacent roads should be provided. Pedestrian routes must be AODA compliant and be generously wide to reflect a dense, urban context.				Info Only

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
37	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:34 AM	COMMENT: [LAND CONVEYANCES - EASEMENTS] The Owner will be required to gratuitously convey the following to the City of Mississauga: (i) TEMPORARY TURNAROUND EASEMENT - The Owner will be required to provide a Temporary Turnaround Facility Easement at the terminus of Street 'A' as an interim condition to ensure vehicles, garbage collection, fire & emergency services can be accommodated. ***[NOTE]*** This condition will require confirmation from: (i) City Surveyor regarding dimensions; (ii) Legal Services identifying that the Subdivision/Development Agreement is in registrable form.				Info Only
38	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:35 AM	SUBMISSION REQUIREMENT: [DRAFT REFERENCE PLAN] Prior to any Land Dedications & Conveyances, the Owner shall prepare and submit a draft reference plan detailing the required public easements pertaining to this section for review and approval (See Traffic Comment #37). NOTE: The Owner/Applicant is advised to also confirm conveyance requirements with other agencies for efficiencies and to avoid multiple reference plans.				Unresolved
39	1	TRAFFIC REVIEW Michael Turco 9/26/23 7:35 AM	COMMENT: [EXISTING EASEMENTS] The applicant is required to provide to the satisfaction of this department and the Office of the City Solicitor, the existing right of way agreements/easements for the existing mutual accesses between these lands and the adjacent lands municipally known as 1945 Dundas Street East and 1989 Dundas Street East. The applicant is to confirm and ensure their proposal considers any impacts to the adjacent sites.				Unresolved

118	1	URBAN DESIGNER Erinma Chibututu 10/16/23 10:44 PM	01) EXTENT AND ALLIGNMENT OF REQUIRED ROAD WIDENING i) Please confirm from the City of Mississauga BRT Office, the extent and alignment of the road widening required to achieve the 42 m Dundas Street Ultimate Right Of Way. ii) The limits of the 42 m Dundas Street Right Of Way will determine the new property line along the Dundas street frontage. All building setbacks along the Dundas Street frontage and the Dundas Connects Master Plan Angular Plane criteria for the Dundas frontage shall be measured relative to the new property line. iii) Please see Transportation and Works Department comments regarding any required site triangle as tthis will impact the extent of developable area.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved
119	1	URBAN DESIGNER Erinma Chibututu 10/16/23 10:48 PM	02) DUNDAS FRONTAGE i) MINIMUM BUILDING SETBACK The minimum building setback from the new Dundas Street property line based on a 42 m ultimate Dundas Street right Of Way, shall be 4 m. ii) DESIGN OF SPILL- OUT ZONE - The minimum building set back of 4 m shall accommodate an unencumbered tree corridor of 2 m minimum width, and a pedestrian spill out zone for patios, outdoor spaces etc. that will support the ground floor retail/commercial activity, appropriately interact with the BRT and anticipated additional pedestrian traffic, complement the public boulevard and result in a green pedestrian priority frontage with appropriate sun access.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved

			- In order to properly accommodate the trees and support the retail frontage, there shall be no encroachment of balconies and canopies within the 4 m minimum building setback. The buildings shall be designed to accommodate balconies and canopies above the first storey without interfering with the 4 m minimum building setback. iii) ANGULAR PLANR CRITERIA The following Angular Plane criteria shall apply to the building along the Dundas Street frontage: - Establish the new property line based on the limit and alignment of the 42 m ultimate Dundas street Right Of Way as confirmed by the BRT Office - Measure at the new property line, a vertical height equivalent to 80% of the ultimate Dundas Right Of Way width (80% of 42 m = 33.6 m) - Apply a 45 degree Angular Plane at the 33.6 m vertical height - The building shall be contained within the Angular Plane described above, with a maximum height that does not exceed the 42 m Right Of Way width (12 storeys). This is consistent with the vision for the Dundas Corridor as a predominantly middle rise corridor.				

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
120	1	URBAN DESIGNER Erinma Chibututu 10/17/23 10:09 AM	03) CONTINUATION OF SPILL-OUT ZONE AND RETAIL/COMMERCIAL FRONTAGE i) The Spill Out Zone and minimum building setback of 4 m along the Dundas Street frontage shall continue onto the section of the proposed ground floor of the building with retail/commercial uses facing Universal Drive. ii) The proposed minimum building setback of 800 mm is not acceptable.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved
121	1	URBAN DESIGNER Erinma Chibututu 10/17/23 10:12 AM	04) GROUND FLOOR RESIDENTIAL UNITS FACING UNIVERSAL DRIVE i) Grade related residential units facing Universal Drive shall have a minimum building setback of 7.5 m to accommodate a minimum landscape buffer of 4.5 m and a defined semi-private outdoor space/patio.Please see our Landscape Archiest's comments.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
122	1	URBAN DESIGNER Erinma Chibututu 10/17/23 10:48 AM	05) MINIMUM BUILDING SETBACK FROM WEST PROPERTY LINE i) There shall be a minimum building setback of 7.5 m from the ground floor/grade related residential units. The minimum building setback of 7.5 m is required to create an appropriate ground floor/podium interface with the adjoining property to the west if it is redevoloped as a future park or in a similar manner to the subject property. ii) Subject to grading conditions, the minimum ground floor building setback of 7.5 m shall accommodate a 2 m minimum width continuous pedestrian sidewalk, a 3 m minimum landscape buffer and a 2.5 m minimum depth defined semi-private outdoor space /patio for each grade related/ground floor residential unit. iii) The 2 m minimum pedestrian sidewalk described above shall connect to the municipal sidewalk on Dundas street and to the sidewalk associated with the proposed east/west future street to the north.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
123	1	URBAN DESIGNER Erinma Chibututu 10/17/23 10:48 AM	05) EXPOSED ABOVE GRADE PARKING STRUCTURE i) The strong preference is for above grade parking structures to be lined with other perimetre uses such as, continuing the grade related/ground floor residential units facing the west property line with a minimum ground floor building setback of 7.5 m to ccommodate the same components as described in UD Change Mark #04 and to achieve a minimum podium building separation distance of 15 m should the adjoining property develop in like manner. ii) The minimum building setback for an above grade parking structure to the west property line shall be 6 m, and shall accommodate the continuous 2 m north/south pedestrian sidewalk and the 3 m minimum landscape buffer described in UD Change Mark #04, provided that the above grade parking structure does not exceed the equivalent height of a three storey podium structure. ii) Where the height of the above grade parking structure exceeds the height of a 3 storey podium structure, the minimum building setback shall be increased in order to achieve the appropriate building separation distance should the adjoining property to the west redevelop in like manner.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved
124	1	URBAN DESIGNER Erinma Chibututu 10/17/23 11:38 AM	06) MINIMUM BUILDING SETBACK FROM GROUND FLOOR/GRADE RELATED RESIDENTIAL UNITS i) Grade related residential units facing the proposed future street shall have a minimum building setback of 7.5 m to accommodate a minimum landscape buffer of 4.5 m and a defined semi-private outdoor space/patio. Please see our Landscape Archiest's comments.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved

Project Status Report

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
125	1	URBAN DESIGNER Erinma Chibututu 10/17/23 11:48 AM	07) TRCA FLOOD PLAIN SETBACKS AND MINIMUM BUILDING SETBACK i) Additional information is required to confirm the TRCA Flood Plain setbacks, the restrictions on what can be accommodated within the setbacks etc. ii) Based on this information, together with our Landscape Architect, the Urban Design Team will determine the appropriate building setback to accommodate the components of the appropriate interface which will include a landscape buffer and a pedestrian zone. The 800 mm building setback currently proposed by the applicant is inadequate.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved
126	1	URBAN DESIGNER Erinma Chibututu 10/17/23 11:54 AM	08) PROPOSED FUTURE STREET i) The cross section of the proposed future street shall include the following components: - pedestrian sidewalks on both sides of the street - a treed boulevard on both sides of the street - on street /lay-by parking The above components and any other required components shall determine the width of the Right Of Way and the new property line from which building setbacks and landscape buffers will be measured.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved
127	1	URBAN DESIGNER Erinma Chibututu 10/17/23 11:57 AM	09) UNDERGROUND PARKING STRUCTURE i) The underground parking structure shall be set back a minimum of 3 m from all property lines including the future property lines along the Dundas Street frontage and the proposed east/west future street frontage.	A100 - CONCEPTUAL SITE PLAN.pdf			Unresolved

128	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:07 PM	10) UD COMMENTS i) Please refer to UD Change Marks on the Conceptual Site Plan.	A201 - CONCEPTUAL GROUND FLOOR PLAN.pdf			Unresolved
129	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	SUBMISSION REQUIREMENT: DEVELOPMENT MASTER PLAN AND PLAN OF SUBDIVISION i) The subject site is located within the Etobicoke Creek Focus Area of the Dundas Connects Master Plan (DCMP). DCMP includes a conceptual Etobicoke Creek Focus Area Framework Plan that illustrates additional public and private road network, an active transportation network and a network of additional open spaces that will be required to improve connectivity and support a new mixed use and residential population in the Etobicoke Creek Focus Area. Any development application for the subject lands will be required to demonstrate with a Development Master Plan, a street and block pattern that shows, how the proposal fits into the vision for the larger context as illustrated in the DCMP Etobicoke Creek Focus Area Framework Plan, and in a manner that enhances connectivity within an active mixed use community, supports the general well being of a new residential population, locates public parks and open spaces, establishes views, provides physical and visual linkages from the communal outdoor amenity spaces to the surrounding public open space, natural heritage resources, the City's trail system and ensures proper alignment with existing public and private roads to be extended through the site or that continue from or into other properties. The street and block pattern will include, - an east/west public road centred along the north				Unresolved

property boundary, extending westwards from Universal Drive to beyond Wharton Way
- a north/south road centred along the west property line of the adjoining property to the west and connecting Dundas Street to the future east/west public road described above
- other north/south and east/west roads that break the focus area into appropriately sized walkable blocks
- public and private open space blocks

ii) Establishing the appropriate road network, active transportation network and public open space network and outdoor amenity areas within the Development Master Plan provides an important framework for determining how proposed buildings respond to each road and connection route, with regard to building setbacks, ground floor uses and the appropriate location of service areas and back of house functions of each building.

iii) Active ground floor spaces and functional building entrances and lobbies should address the streets. Ground floor retail and commercial uses that generate pedestrian activity and active street frontages and other non-residential uses within the upper podium levels should be concentrated along the Dundas Street frontage and the southern half of Universal Drive and other appropriately located north/south future roads, since this is where retail and commercial uses are more likely to thrive.

iv) The Development Master Plan shall identify the appropriate road Right Of Way widths required to accommodate the components that support a walkable street including a row of trees within the boulevards, sidewalks on both sides of a street, street furniture and where appropriate, cycling infrastructure.

			v) The Development Master Plan will also illustrate the distribution of building heights, building setbacks that accomplish the vision described in the Council endorsed DCMP. vi) The Development Master Plan will form the basis for a Plan of Subdivision.				
130	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	SUBMISSION REQUIREMENT: DRAWINGS DETAILED CONCEPT PLAN AND CONTEXT PLAN, CONCEPTUAL BUILDING ELEVATIONS AND 3D DRAWINGS INCLUDING PERSPECTIVES, SECTIONS AND GRADING INFORMATION 1) DETAILED CONCEPT PLAN AND CONTEXT PLAN i) A detailed Concept Plan is required for the development proposal. The Detailed Concept plan shall show the surrounding and proposed vehicular, pedestrian and active transportation access routes, including existing and future public and private roads, the site layout, building locations, building setbacks, building separation distances, loading and service areas, vehicular and pedestrian circulation, vehicular and pedestrian access routes and connectivity to the surrounding context, location and access to underground parking ramps and parking levels, any proposed surface parking, pedestrian connections to proposed buildings and open spaces from the municipal sidewalk, at grade common outdoor amenity areas, landscape buffers, curb cuts, site statistics and				Unresolved

any other features required to evaluate the development proposal relative to the surrounding context.

ii) Included in the Detailed Concept Plan shall be, a context Plan that illustrates the location and limits of the development proposal relative to the surrounding context.

2) CONCEPTUAL BUILDING ELEVATIONS, 3D DRAWINGS SUCH AS PERSPECTIVES

i) Conceptual building elevations and 3D drawings such as perspectives that illustrate the scale, form and massing of the buildings and the exterior design features necessary to properly evaluate the development proposal and its impact on the surrounding context and the exterior design features necessary to evaluate and define the proposed and the appropriate Zoning requirements/provisions and regulations.

3) FLOOR PLANS
i) Floor plans that identify the interior layout and circulation for each floor, coordinated with the design of the exterior building elevations and location and design of building entrances, exits, service areas etc.

3) ANGULAR PLANE STUDY

i) Angular Plane Study using the Angular Plane Criteria described in the Dundas Connects Master Plan, and illustrating how these together with the Shadow Studies and Wind studies have been applied to the site design

			and building elevations to determine appropriate building heights, building setbacks, building form etc. 3) SECTIONS AND GRADING INFORMATION i) Building sections and grading information necessary to evaluate, determine and define the appropriate building setbacks and Zoning regulations/provisions.				
131	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	SUBMISSION REQUIREMENT: SHADOW STUDIES 1) Shadow Studies are required in support of a development application for the subject lands. 2) The Shadow studies shall be done in accordance with the City of Mississauga document entitled, Urban Design Terms of Reference, Standards for Shadow Studies. The Terms of Reference are available at the following link: https://www.mississauga.ca/wp-content/uploads/2023/03/Standards-for-Shadow-Studies-1.pdf 3) In accordance with the Terms of Reference for Shadow Studies, Shadow drawings must be submitted with a written analysis which shall include the following information: Confirmation of site latitude and longitude used in shadow drawings A statement describing how astronomic north was				Unresolved

			determined Origin/source of base plan Description of all locations/uses of areas not meeting the shadow impact criteria (include a key plan for reference) Quantification and assessment of the impact in the areas that do not meet the shadow impact criteria Summary outlining how the shadow impact criteria have been met and describing any mitigation features that have been incorporated into the site and building design 4) All mitigation features shall be incorporated into the detailed concept plan, site plan, building elevations, landscape plans and all applicable drawings. 5) Please refer to Section 4 of the Terms of Reference, entitled, Required Information, for a list of the required information to be submitted with Shadow Studies in support of a Development Application.				
132	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	SUBMISSION REQUIREMENT: QUANTITATIVE PEDESTRIAN WIND COMFORT AND SAFETY STUDY 1) A Quantitative Wind Tunnel Study will be required in support of a development application for the subject lands. 2) The Quantitative Wind Tunnel Study shall be done in accordance with the City of Mississauga document entitled, Urban Design Terms of Reference, Pedestrian Wind Comfort and Safety Studies, available at the following link: https://www.mississauga.ca/wp-				Unresolved

			content/uploads/2023/03/Pedesterian-Level-Wind-Comfort-and-Safety-Studies.pdf 3) Please pay attention to Chapter 2 of the document, entitled, Triggers for Wind Studies and Chapter 3 entitled Study Methodology. 4) Please note that we will not accept Landscaping as appropriate mitigation for uncomfortable wind comfort conditions and where the safety criterion has been exceeded. This is because landscaping as wind mitigation generally relies on mature vegetation in good health, and such vegetation is unlikely to thrive under certain adverse wind conditions. 5) In accordance with the City of Mississauga's Terms of Reference for Pedestrian Wind Comfort and Safety Studies, where mitigation is required to achieve acceptable pedestrian wind comfort and safety levels, the wind study shall state the mitigation plan with all the recommended mitigation measures. 6) The proposed and future configurations shall be evaluated/tested with all recommended mitigation measures in order to demonstrate the benefits of the mitigation strategy. 7) All recommended mitigation measures/features shall be incorporated into the detailed concept plan, site plan, landscape plan, building elevations and all applicable drawings.				
134	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	SUBMISSION REQUIREMENT: URBAN DESIGN STUDY i) In support of a Development Application for the				Unresolved

subject property, an Urban Design Study is required.

ii) The Urban Design Study will demonstrate the compatibility of the development proposal with the surrounding context and how it successfully supports and addresses the City's Planning and Urban Design objectives as outlined in Mississauga Strategic Plan, Mississauga Official Plan, Dundas Connects Master Plan, the City's Urban Design Guidelines and Standards

iii) The Quantitative Pedestrian Wind Comfort and Safety Study, the Shadow Studies, the Dundas Connects Master Plan Angular Plane (DCMP) criteria, The DCMP Dixie Focus Area Framework Plan and the Development Master Plan will feed into the Urban Design Study in order to determine the appropriate site layout, building layout, scale, proportions, heights and height distribution and form of the buildings, pedestrian and vehicular connectivity, appropriate location and connection of open spaces in a manner that enhances walkability within the site, the street frontages, the public realm and the surrounding context.

iv) The Urban Design Study will also show that the site design, building and open space designs and locations, demonstrate an appropriate transition in scale and support the vision expressed in the Dundas Connects Master Plan. It will include proposed road cross sections that allow for trees within the public boulevard and within the building setbacks, as well as other pedestrian amenity including sidewalks on both sides of a street and appropriate street furniture

v) The Terms of reference for the Urban Design Study are available at the following link:

https://www7

			.mississauga.ca/documents/Business/Urban_Design_Study_-_Terms_of_Reference.pdf				
135	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	SUBMISSION REQUIREMENT: MISSISSAUGA URBAN DESIGN ADVISORY PANEL (MUDAP) i) The applicant is required to present the Development Proposal including the Development Master Plan before the Mississauga Urban Design Advisory Panel prior to the submission of a development application. ii) Important information related Urban Design Advisory Panel and the Terms of Reference for the Mississauga Urban Design Advisory Panel are available at the following link: http://www.mississauga.ca/portal/residents/urbandesignadvisorypanel iii) The Mississauga Urban Design Advisory Panel (Panel) acts as an independent urban design advisory body to the Planning and Building Department. The Panel is strictly an advisory body and makes recommendations to staff only. It does not have the authority to approve or refuse projects or make policy decisions.				Unresolved

136	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	SUBMISSION REQUIREMENT: SERVICE AREAS: LOADING, WASTE STORAGE AND REMOVAL, TRANSFORMER LOCATIONS i)The ground floor of multiple storey buildings should be designed to accommodate any required transformer Vault and associated electrical room. The Transformer vault locations will satisfy the Alectra requirements including the requirement for vehicular access. Please indicate where the transformer vault/pad will be located on the detailed concept plan and building elevation(s). ii) Waste storage, loading and waste removal shall be designed to occur within the building enclosures, and shall be identified on the detailed concept plan, floor plans, building elevations and all relevant drawings				Unresolved
137	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	COMMENT: BUILT FORM CRITERIA AND ANGULAR PLANE CRITERIA OF THE DUNDAS CONNECTS MASTER PLAN A) ANGULAR PLANE AND DUNDAS CONNECTS MASTER PLAN 1) Please refer to Section V Dundas Connects Master Plan Recommendations: Built Form Criteria (Pages V-138 140), for the Angular Plane criteria relative to the Dundas Corridor. i) In order to achieve the appropriate scale of buildings relative to the width of the Dundas Street Right Of Way, the following angular plane provisions will apply relative to the Dundas Street Right Of Way:				Unresolved

a) Measure vertical height at Dundas Street-facing property line equivalent to 80% of Right-of-Way width and apply 45 degree angular plane;

b) No element of a building may penetrate this angular plane up to the maximum height of 12 storeys;

2) The Built Form Criteria on Pages V-138 to V- 140 and Page V-107 also include Angular Plane critera for transition to adjoining low height and low density developments. These should be applied together with the sun access and shadow criteria contained in the City of Mississauga's Standards for Shadow Studies, towards achieving appropriate transition for intensification that is adjacent to the existing and proposed low rise and low density development.

3) Fig. 5-31: Built form Concept Plan in the Dundas Connects Master Plan illustrates the recommended building height distribution along the Dundas Corridor

B) PODIUM HEIGHT RANGE AND BUILDING SEPARATION DISTANCES

1) The podium height range for each building should be 3 to 6 storeys.

2) The minimum building separation distance for buildings 12 storeys in height or greater shall be 30m.

3) In order to achieve the minimum building separation distance of 30m for a building that is 12 storeys in height or greater, the minimum building setback for such a building from a shared property line with an

			adjoining property, shall be 15m. C) BUILDING SETBACKS: UNDERGROUND PARKING GARAGE i) There shall be a minimum unencumbered setback of 3m from the underground parking garage to all property lines.				
138	1	URBAN DESIGNER Erinma Chibututu 10/17/23 12:09 PM	COMMENT: CITY STRUCTURE, URBAN HIERARCHY, BUILDING HEIGHTS AND VISION FOR DUNDAS CORRIDOR 1) Mississauga Official Plan defines the City structure with an urban hierarchy, the first three components of which are described below: a) the Downtown is to contain the highest densities, the tallest buildings and the greatest mix of uses, followed by, b) the Major Nodes which are to provide for a mix of population and employment uses at densities and heights less than the downtown but greater than elsewhere in the City. This is then followed by, c) the Community Nodes which are to provide for a similar mix of uses as the Major Nodes, but with lower densities and heights 2) A Community Node is envisioned around the Dixie-Dundas Intersection and Downtown Cooksville is located around the Dundas/Hurontario intersection.				Unresolved

			3) The vision for the Dundas Corridor expressed in the Council approved Dundas Connects Master Plan is for a predominantly middle rise corridor with a maximum height of 12 storeys at the Focus Areas, , except at the Cooksville Focus Area and within a 250 m radius of the Dixie/Dundas intersection and 250 m radius of the Dixie GO Station where heights up to 25 storeys are recommended. 4) The subject property is located within the Etobicoke Creek Focus Area where the maximum height recommendation is 12 storeys. The heights and density proposed by the applicant for the subject property are more consistent with the heights and densities that are seen in the Downtown Core and in one of the Major Nodes. The applicant should propose a range of heights and densities that reinforce the City Structure and Urban hierarchy and is consistent with the 12 storey maximum specified in DCMP for the subject site. Fig. 5-31: Built form Concept Plan in the Dundas Connects Master Plan illustrates the recommended building height distribution along the Dundas Corridor.				
139	1	URBAN DESIGNER Erinma Chibututu 10/17/23 4:01 PM	COMMENT DUNDAS STREET FRONTAGE AND OTHER STREETS 1) The Transportation and Works Department will confirm any required road widening associated with Dundas Street and the other public roads. Updated Property lines will reflect any required road widenings and building set backs will be relative to the updated property lines that reflect the ultimate Right Of Way width for Dundas Street. 2) The Dundas Connects Master Plan specifies a building set back range of 4m to 5.5m relative to the property line along the Dundas Street frontage.				Unresolved

3) The 4m to 5.5m setback range allows for a ground level spill out zone between the retail/commercial store fronts and the public boulevard to accommodate a minimum 2 m wide tree corridor and a minimum 3m wide space measured from the centre line of the tree corridor to the store front which should allow sufficient space for the high branching trees to thrive without interfering with the visibility of the store fronts from the street.

4) The spill out zone will accommodate patios and seating areas to support the retail/commercial uses and promote pedestrian activity.

5) The maximum setback of 5.5 m allows for the flexibility to incorporate projections and recesses on the exterior building wall for articulation of the street facing building elevation.

6) Street facing Ground floor uses along the Dundas Street frontage and the southern half of Universal Drive should be those that promote active frontages such as restaurants and retail/commercial units that spill out into the building setback as patios and sitting areas. This section of the Dundas Corridor is described in DCMP as Mixed Use Active Frontages where the ground floor of the buildings facing the street should have active retail/commercial uses such as restaurants, retail stores and personal service establishments that promote active use of the building setbacks as spill out areas in form of patios and sitting areas;

7) The Main access and functional front entrance doors to the ground floor retail/commercial units of buildings along the street frontage as well as the main entrance doors to lobbies that provide access to the upper floors

			of buildings should face the street with direct access from the sidewalk and public boulevard and the adjacent spill out zone within the building setback. 8) The minimum floor to ceiling height for the ground floor of a mixed-use building should be 4.5 m with the built in flexibility to accommodate viable retail/commercial uses and also allow for conversion and transition of use over time based on prevailing market conditions.				
140	1	URBAN DESIGNER Erinma Chibututu 10/17/23 4:16 PM	COMMENT OUTDOOR AMENITY AREAS i) In addition to any above grade outdoor amenity areas, there should be a usable outdoor amenity area at grade. ii) Above grade outdoor amenity areas should be designed to support trees and other components that are typical of well designed outdoor spaces at grade. Please refer to our Landscape architect's comments.				Unresolved
141	1	URBAN DESIGNER Erinma Chibututu 10/17/23 4:37 PM	SUBMISSION REQUIREMENT: SITE GRADING - Submit the grading plan for information purposes in order to justify your proposed revision to the zoning by-law. (COORDINATE WITH LANDSCAPE ARCHITECT)				Unresolved

Project History

CYCLE	TASK	TASK STATUS	REVIEW STATUS	ASSIGNED	ACCEPTED	COMPLETED	GROUP	USER
0	Applicant Upload Task	Completed		8/15/2023 5:10:12 PM	8/15/2023 5:11:57 PM	8/15/2023 5:14:43 PM	Applicant	Suleman Khan
	Prescreen Review Task	Completed		8/15/2023 5:14:44 PM	8/18/2023 4:47:24 PM	8/23/2023 2:07:57 PM	Review Coordinator	Mila Yeung
	Prescreen Corrections Task	Completed		8/23/2023 2:08:00 PM	8/23/2023 2:08:37 PM	8/25/2023 10:31:04 AM	Applicant	Suleman Khan
	Prescreen Review Task	Completed		8/25/2023 10:31:05 AM	8/25/2023 2:14:19 PM	8/31/2023 10:36:01 AM	Review Coordinator	Mila Yeung
	Fee Payment	Reassigned		8/31/2023 10:36:03 AM	9/7/2023 4:56:00 PM	9/18/2023 10:29:16 AM	Applicant	Suleman Khan
	Fee Payment (Reassigned from Suleman Khan)	Completed		9/18/2023 10:29:16 AM	9/18/2023 10:29:56 AM	9/18/2023 10:30:26 AM	Applicant	Oma Dial
	Create Application	Completed		9/18/2023 10:30:27 AM	9/18/2023 10:41:38 AM	9/18/2023 3:57:54 PM	Review Coordinator	Mila Yeung
	Begin Review	Completed		9/18/2023 3:57:55 PM	9/18/2023 3:58:03 PM	9/19/2023 11:48:22 AM	Review Coordinator	Mila Yeung
1	CANADA POST CORPORATION Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:23 AM	3/28/2024 12:37:50 PM	3/28/2024 12:48:52 PM	CANADA POST CORPORATION	Tigist Yage
	PEEL DIST SCHOOL BOARD Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:23 AM	9/28/2023 10:54:57 AM	9/28/2023 11:23:18 AM	PEEL DIST SCHOOL BOARD	Zach Tessaro
	TORONTO CONSERVATION AUTHORITY Department Review cycle #1	Accepted		9/19/2023 11:48:23 AM	10/24/2023 1:01:40 PM		TORONTO CONSERVATION AUTHORITY	Peel TRCA
	URBAN DESIGNER Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:23 AM	10/17/2023 4:32:53 PM	10/17/2023 4:42:32 PM	URBAN DESIGNER	Erinma Chibututu
	ENVIRONMENTAL ENG REV STORM Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:23 AM	9/21/2023 10:06:10 AM	9/28/2023 12:03:02 PM	ENVIRONMENTAL ENG REV STORM	Walter Copping
	LANDSCAPE ARCH - DEV DESIGN Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:24 AM	10/4/2023 12:09:48 PM	10/4/2023 4:11:38 PM	LANDSCAPE ARCH - DEV DESIGN	Kate Allan
	PLANNER - DEV DESIGN Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:24 AM	6/3/2024 1:44:51 PM	6/3/2024 1:48:06 PM	PLANNER - DEV DESIGN	Andrea Dear

Project Status Report

CYCLE	TASK	TASK STATUS	REVIEW STATUS	ASSIGNED	ACCEPTED	COMPLETED	GROUP	USER
1	CS VIAMONDE Department Review cycle #1	Completed	No Comments	9/19/2023 11:48:24 AM	9/19/2023 1:23:59 PM	10/12/2023 1:46:18 PM	CS VIAMONDE	Planification Viamonde
	ENBRIDGE PIPELINE INC Department Review cycle #1	Completed	No Comments	9/19/2023 11:48:24 AM	9/27/2023 1:55:31 PM	9/27/2023 1:58:35 PM	ENBRIDGE PIPELINE INC	Enbridge Pipelines Inc
	LANDSCAPE ARCH - COMM SERVICES Department Review cycle #1	Completed	No Comments	9/19/2023 11:48:24 AM	9/20/2023 8:37:46 AM	10/4/2023 3:14:50 PM	LANDSCAPE ARCH - COMM SERVICES	Simon Latam
	ARBORIST - PRIVATE PROPERTY Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:24 AM	10/4/2023 4:00:43 PM	10/4/2023 4:01:57 PM	ARBORIST - PRIVATE PROPERTY	Ryan Cormier
	DUFFERIN PEEL CD SCHOOL BOARD Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:24 AM	10/10/2023 11:25:45 AM	10/10/2023 11:26:46 AM	DUFFERIN PEEL CD SCHOOL BOARD	Joanne Rogers
	PLANNER - COMM SERVICES Department Review cycle #1	Reassigned		9/19/2023 11:48:25 AM	9/19/2023 12:32:50 PM	9/28/2023 10:49:18 AM	PLANNER - COMM SERVICES	Jim Greenfield
	BUS RAPID TRANSIT Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:25 AM	10/23/2023 11:40:31 AM	10/23/2023 11:41:31 AM	BUS RAPID TRANSIT	Max (Junfeng) Li
	DEVELOPMENT ENGINEERING REVIEW Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:25 AM	9/20/2023 8:22:44 PM	10/6/2023 10:10:56 AM	DEVELOPMENT ENGINEERING REVIEW	Erich Lopez
	REGION OF PEEL Department Review cycle #1	Reassigned		9/19/2023 11:48:25 AM	9/19/2023 12:06:28 PM	9/25/2023 11:12:34 AM	REGION OF PEEL	Joy Simms
	TRAFFIC REVIEW Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:25 AM	9/21/2023 3:10:11 PM	10/4/2023 5:57:38 PM	TRAFFIC REVIEW	Michael Turco
	PUBLIC ART COORDINATOR Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:26 AM	9/25/2023 12:09:53 PM	9/25/2023 12:12:39 PM	PUBLIC ART COORDINATOR	Michael Tunney
	CPS - HOUSING Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:26 AM	9/26/2023 1:19:48 PM	10/12/2023 9:49:42 AM	CPS - HOUSING	Anthony Cicchi
	ARBORIST - CITY PROPERTY Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:26 AM	10/4/2023 4:02:09 PM	10/4/2023 4:18:38 PM	ARBORIST - CITY PROPERTY	Ryan Cormier
	HERITAGE PLANNER Department Review cycle #1	Completed	No Comments	9/19/2023 11:48:26 AM	9/26/2023 11:30:50 AM	9/26/2023 11:31:26 AM	HERITAGE PLANNER	Andrew Douglas
	FIRE PREV PLAN EXAMINATION Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:26 AM	9/26/2023 2:42:50 PM	9/26/2023 4:22:49 PM	FIRE PREV PLAN EXAMINATION	Don Casey
	ENVIRONMENTAL ENG REVIEWER Department Review cycle #1	Completed	Comments Provided	9/19/2023 11:48:26 AM	9/26/2023 10:24:01 AM	9/28/2023 1:05:02 PM	ENVIRONMENTAL ENG REVIEWER	Jessica Yong
	REGION OF PEEL Department Review cycle #1 (Reassigned from Joy Simms)	Completed	Comments Provided	9/25/2023 11:12:34 AM	10/6/2023 1:35:15 PM	10/6/2023 1:38:15 PM	REGION OF PEEL	Rosha Budathoki
	Assign Requested Reviews for Department Review for review cycle #1	Completed		9/27/2023 3:41:48 PM	9/27/2023 3:42:56 PM	9/27/2023 3:43:32 PM	Review Coordinator	Mila Yeung

Project Status Report

CYCLE	TASK	TASK STATUS	REVIEW STATUS	ASSIGNED	ACCEPTED	COMPLETED	GROUP	USER
1	PARKING Department Review cycle #1	Completed	Comments Provided	9/27/2023 3:43:24 PM	9/28/2023 12:17:51 PM	10/4/2023 4:09:05 PM	PARKING	Evan Pu
	PLANNER - COMM SERVICES Department Review cycle #1 (Reassigned from Jim Greenfield)	Completed	Comments Provided	9/28/2023 10:49:18 AM	10/4/2023 1:48:22 PM	10/4/2023 3:41:45 PM	PLANNER - COMM SERVICES	Sangita Manandhar

APPENDIX B

Traffic Data and Signal Timing Plans

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Universal Drive & Dundas Street East
Survey Date : December 5, 2023
Project No. : 24226
Count ID : 23114

Turning Movement Count - Universal Drive & Dundas Street East

	Universal Drive Southbound						Dundas Street East Westbound						Summerville Court Northbound						Dundas Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	14	1	8	3	23	0	5	135	25	0	165	0	1	0	6	0	7	0	4	199	4	0	207	402
7:15	0	7	0	3	1	10	0	3	154	25	1	182	0	2	0	2	2	4	0	6	226	1	0	233	429
7:30	0	33	0	2	1	35	0	5	189	29	1	223	0	2	0	1	2	3	0	8	241	5	0	254	515
7:45	0	21	0	14	2	35	0	1	230	37	0	268	0	4	0	8	2	12	0	13	262	4	0	279	594
Hourly Total	0	75	1	27	7	103	0	14	708	116	2	838	0	9	0	17	6	26	0	31	928	14	0	973	1940
8:00	0	27	1	2	2	30	0	0	240	35	0	275	0	3	0	2	1	5	0	11	258	3	0	272	582
8:15	0	22	1	9	1	32	0	2	186	41	1	229	0	3	0	0	1	3	0	7	201	3	1	211	475
8:30	0	11	1	11	5	23	0	3	247	43	3	293	0	3	0	2	0	5	1	9	237	2	1	249	570
8:45	0	18	0	8	2	26	0	0	253	36	0	289	0	8	1	3	2	12	0	14	214	7	2	235	562
Hourly Total	0	78	3	30	10	111	0	5	926	155	4	1086	0	17	1	7	4	25	1	41	910	15	4	967	2189
9:00	0	39	0	4	1	43	0	3	234	36	1	273	0	6	0	3	1	9	0	17	194	9	1	220	545
9:15	0	15	1	6	2	22	0	4	232	37	0	273	0	3	0	4	0	7	0	5	222	11	2	238	540
9:30	0	18	0	5	0	23	0	6	252	29	1	287	0	9	0	7	4	16	0	2	202	20	0	224	550
9:45	0	11	0	7	0	18	0	10	239	18	0	267	0	10	0	4	2	14	1	9	167	5	2	182	481
Hourly Total	0	83	1	22	3	106	0	23	957	120	2	1100	0	28	0	18	7	46	1	33	785	45	5	864	2116
* Break *																									
16:00	0	39	1	10	1	50	0	14	297	25	1	336	0	14	1	18	1	33	0	2	347	17	0	366	785
16:15	0	22	0	4	1	26	0	26	352	31	1	409	0	17	1	17	1	35	0	6	299	21	0	326	796
16:30	0	26	3	13	0	42	0	15	320	16	1	351	0	19	0	19	2	38	0	8	346	22	0	376	807
16:45	0	27	0	9	3	36	0	16	275	23	2	314	0	25	1	10	3	36	1	12	275	16	1	304	690
Hourly Total	0	114	4	36	5	154	0	71	1244	95	5	1410	0	75	3	64	7	142	1	28	1267	76	1	1372	3078
17:00	0	33	5	28	4	66	0	12	392	28	4	432	0	8	2	19	1	29	1	7	321	23	3	352	879
17:15	0	31	1	13	3	45	0	19	350	27	4	396	0	24	2	22	0	48	0	14	297	20	1	331	820
17:30	0	34	2	37	2	73	0	19	335	27	2	381	0	24	0	21	1	45	0	7	275	16	0	298	797
17:45	0	14	0	16	2	30	2	14	346	34	0	396	2	15	1	22	0	40	0	3	291	19	0	313	779
Hourly Total	0	112	8	94	11	214	2	64	1423	116	10	1605	2	71	5	84	2	162	1	31	1184	78	4	1294	3275
18:00	0	31	0	15	8	46	1	17	330	15	0	363	1	26	1	15	1	43	1	7	321	17	1	346	798
18:15	0	39	1	16	10	56	0	16	300	25	0	341	0	22	1	15	1	38	2	10	266	22	2	300	735
18:30	0	20	1	16	1	37	0	17	304	21	2	342	0	20	0	21	1	41	0	7	288	21	0	316	736
18:45	0	14	3	9	2	26	0	13	267	17	0	297	0	20	0	21	0	41	1	6	249	20	1	276	640
Hourly Total	0	104	5	56	21	165	1	63	1201	78	2	1343	1	88	2	72	3	163	4	30	1124	80	4	1238	2909
Grand Total	0	566	22	265	57	853	3	240	6459	680	25	7382	3	288	11	262	29	564	8	194	6198	308	18	6708	15507
Approach %	0.0%	66.4%	2.6%	31.1%	-	-	0.0%	3.3%	87.5%	9.2%	-	-	0.5%	51.1%	2.0%	46.5%	-	-	0.1%	2.9%	92.4%	4.6%	-	-	-
Total %	0.0%	3.6%	0.1%	1.7%	-	5.5%	0.0%	1.5%	41.7%	4.4%	-	47.6%	0.0%	1.9%	0.1%	1.7%	-	3.6%	0.1%	1.3%	40.0%	2.0%	-	43.3%	-
Lights	0	496	20	255	-	771	3	212	6013	578	-	6806	0	281	11	252	-	544	7	183	5844	302	-	6336	14457
% Lights	-	87.6%	90.9%	96.2%	-	90.4%	100.0%	88.3%	93.1%	85.0%	-	92.2%	0.0%	97.6%	100.0%	96.2%	-	96.5%	87.5%	94.3%	94.3%	98.1%	-	94.5%	93.2%
Buses	-	20	0	0	-	20	-	0	123	42	-	165	-	0	0	0	-	0	-	4	88	0	-	92	277
% Buses	-	3.5%	0.0%	0.0%	-	2.3%	-	0.0%	1.9%	6.2%	-	2.2%	-	0.0%	0.0%	0.0%	-	0.0%	-	2.1%	1.4%	0.0%	-	1.4%	1.8%
Trucks	-	50	2	10	-	62	-	28	323	60	-	411	-	7	0	10	-	17	-	7	266	6	-	279	769
% Trucks	-	8.8%	9.1%	-	-	7.3%	-	11.7%	5.0%	8.8%	-	5.6%	-	2.4%	0.0%	3.8%	-	3.0%	-	3.6%	4.3%	1.9%	-	4.2%	5.0%
Bicycles	-	-	-	-	1	1	-	-	-	-	6	6	-	-	-	-	1	1	-	-	-	-	5	5	13
Pedestrians	-	-	-	-	57	-	-	-	-	-	25	-	-	-	-	-	29	-	-	-	-	-	18	-	129

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Universal Drive & Dundas Street East
Survey Date : December 5, 2023
Project No. : 24226
Count ID : 23114

AM Peak Hour - Universal Drive & Dundas Street East

	Universal Drive Southbound						Dundas Street East Westbound						Summerville Court Northbound						Dundas Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:45	0	21	0	14	2	35	0	1	230	37	0	268	0	4	0	8	2	12	0	13	262	4	0	279	594
8:00	0	27	1	2	2	30	0	0	240	35	0	275	0	3	0	2	1	5	0	11	258	3	0	272	582
8:15	0	22	1	9	1	32	0	2	186	41	1	229	0	3	0	0	1	3	0	7	201	3	1	211	475
8:30	0	11	1	11	5	23	0	3	247	43	3	293	0	3	0	2	0	5	1	9	237	2	1	249	570
Hourly Total	0	81	3	36	10	120	0	6	903	156	4	1065	0	13	0	12	4	25	1	40	958	12	2	1011	2221
Approach %	0.0%	67.5%	2.5%	30.0%	-	-	0.0%	0.6%	84.8%	14.6%	-	-	0.0%	52.0%	0.0%	1200.0%	-	-	0.1%	4.0%	94.8%	1.2%	-	-	-
Total %	0.0%	3.6%	0.1%	1.6%	-	5.4%	0.0%	0.3%	40.7%	7.0%	-	48.0%	0.0%	0.6%	0.0%	0.5%	-	1.1%	0.0%	1.8%	43.1%	0.5%	-	45.5%	-
PHF	0	0.75	0.75	0.64	-	0.86	0	0.5	0.91	0.91	-	0.91	0	0.81	0	0.38	-	0.52	0.25	0.77	0.91	0.75	-	0.91	0.93
Lights	0	69	3	33	-	105	0	4	801	128	-	933	0	11	0	9	-	20	1	38	886	12	-	937	1995
% Lights	-	85.2%	100.0%	91.7%	-	87.5%	-	66.7%	88.7%	82.1%	-	87.6%	-	84.6%	-	75.0%	-	80.0%	-	95.0%	92.5%	100.0%	-	92.7%	89.8%
Buses	-	2	0	0	-	2	-	0	27	18	-	45	-	0	0	0	-	0	-	1	18	0	-	19	66
% Buses	-	2.5%	0.0%	0.0%	-	1.7%	-	0.0%	3.0%	11.5%	-	4.2%	-	0.0%	-	0.0%	-	0.0%	-	2.5%	1.9%	0.0%	-	1.9%	3.0%
Trucks	-	10	0	3	-	13	-	2	75	10	-	87	-	2	0	3	-	5	-	1	54	0	-	55	160
% Trucks	-	12.3%	0.0%	8.3%	-	10.8%	-	33.3%	8.3%	6.4%	-	8.2%	-	15.4%	-	25.0%	-	20.0%	#VALUE!	2.5%	5.6%	0.0%	-	5.4%	7.2%
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	1	1	1
Pedestrians	-	-	-	-	10	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	2	-	16

PM Peak Hour - Universal Drive & Dundas Street East

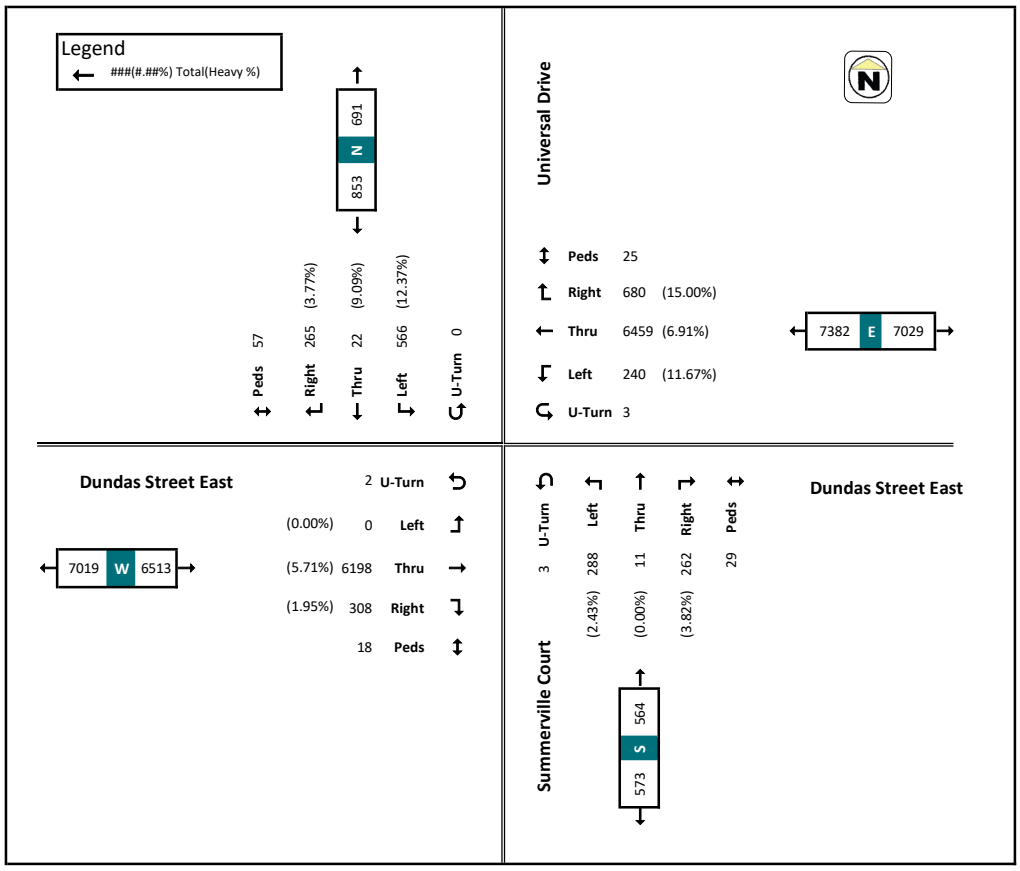
	Universal Drive Southbound						Dundas Street East Westbound						Summerville Court Northbound						Dundas Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
17:00	0	33	5	28	4	66	0	12	392	28	4	432	0	8	2	19	1	29	1	7	321	23	3	352	879
17:15	0	31	1	13	3	45	0	19	350	27	4	396	0	24	2	22	0	48	0	14	297	20	1	331	820
17:30	0	34	2	37	2	73	0	19	335	27	2	381	0	24	0	21	1	45	0	7	275	16	0	298	797
17:45	0	14	0	16	2	30	2	14	346	34	0	396	2	15	1	22	0	40	0	3	291	19	0	313	779
Hourly Total	0	112	8	94	11	214	2	64	1423	116	10	1605	2	71	5	84	2	162	1	31	1184	78	4	1294	3275
Approach %	0.0%	52.3%	3.7%	43.9%	-	-	0.1%	4.0%	88.7%	7.2%	-	-	1.2%	43.8%	3.1%	8400.0%	-	-	0.1%	2.4%	91.5%	6.0%	-	-	-
Total %	0.0%	3.4%	0.2%	2.9%	-	6.5%	0.1%	2.9%	64.1%	3.5%	-	49.0%	0.1%	3.2%	0.2%	3.8%	-	4.9%	0.0%	1.4%	53.3%	3.5%	-	39.5%	-
PHF	0	0.82	0.4	0.64	-	0.73	0.25	0.84	0.91	0.85	-	0.93	0.25	0.74	0.63	0.95	-	0.84	0.25	0.55	0.92	0.85	-	0.92	0.93
Lights	0	110	7	94	-	211	2	60	1378	103	-	1543	0	70	5	84	-	159	1	30	1151	78	-	1260	3173
% Lights	-	98.2%	87.5%	100.0%	-	98.6%	-	93.8%	96.8%	88.8%	-	96.1%	-	98.6%	100.0%	100.0%	-	98.1%	-	96.8%	97.2%	100.0%	-	97.4%	96.9%
Buses	-	2	0	0	-	2	-	0	10	0	-	10	-	0	0	0	-	0	-	0	9	0	-	9	21
% Buses	-	1.8%	0.0%	0.0%	-	0.9%	-	0.0%	0.7%	0.0%	-	0.6%	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	0.8%	0.0%	-	0.7%	0.6%
Trucks	-	2	1	0	-	3	-	4	35	13	-	52	-	1	0	0	-	1	-	1	24	0	-	25	81
% Trucks	-	1.8%	12.5%	0.0%	-	1.4%	-	6.3%	2.5%	11.2%	-	3.2%	-	1.4%	0.0%	0.0%	-	0.6%	-	3.2%	2.0%	0.0%	-	1.9%	2.5%
Bicycles	-	-	-	-	0	0	-	-	-	-	2	2	-	-	-	-	1	1	-	-	-	-	2	2	5
Pedestrians	-	-	-	-	11	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	14

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Universal Drive & Dundas Street East
Survey Date : 2023-12-05
Project No. : 24226
Count ID : 23114

Turning Movement Count Plot - Total

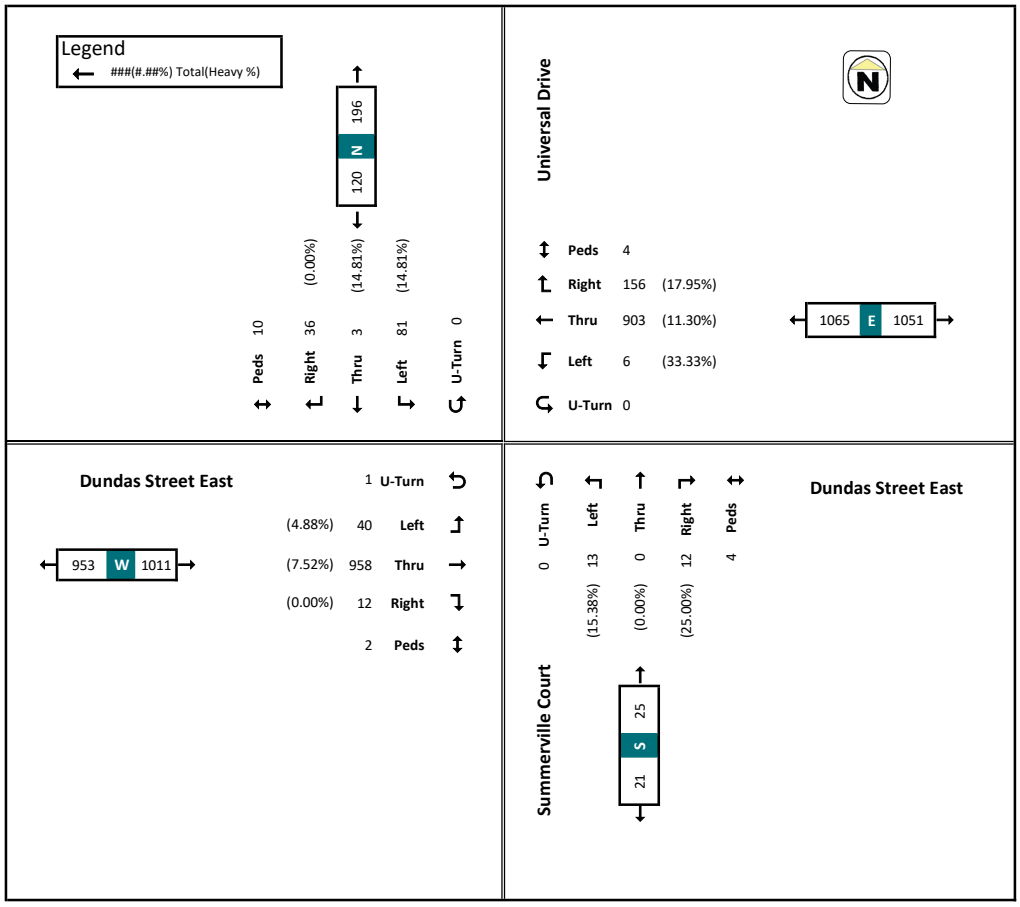


LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Universal Drive & Dundas Street East
Survey Date : December 5, 2023
Project No. : 24226
Surveyor(s) : 23114

Turning Movement Count Plot - AM Peak Hour - 07:45-08:45

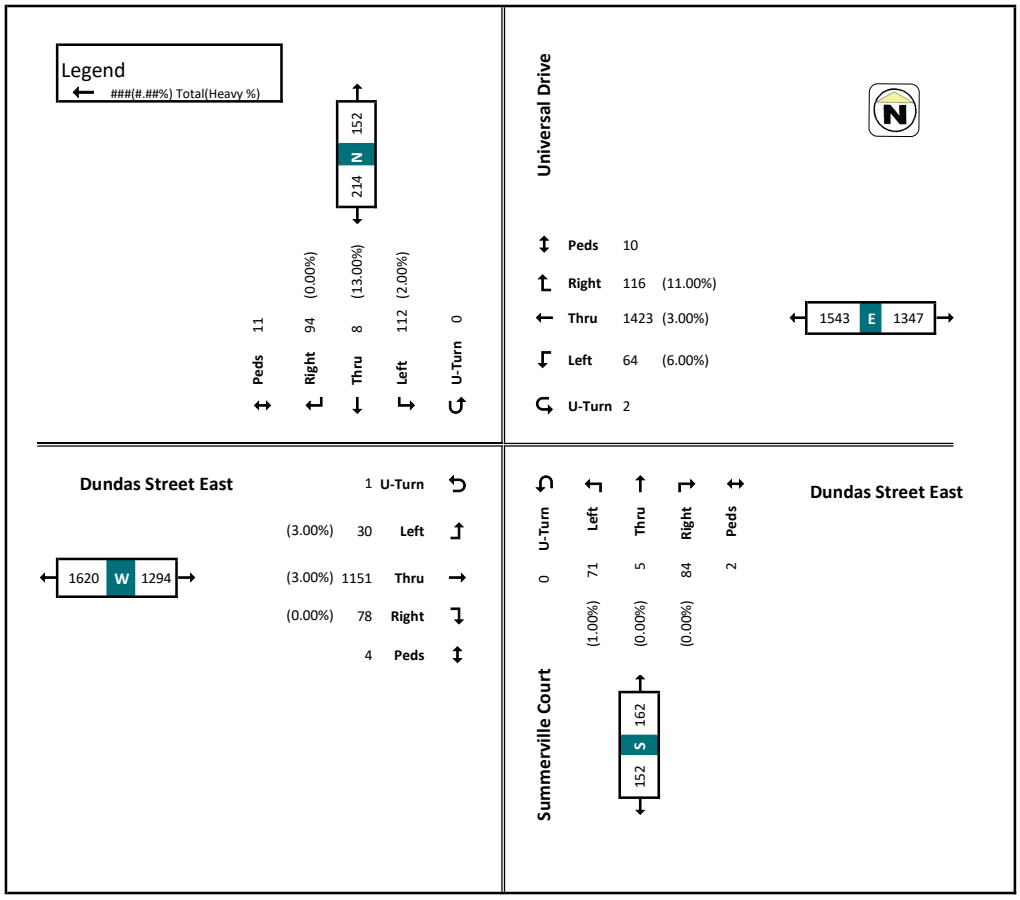


LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Universal Drive & Dundas Street East
Survey Date : 2023-12-05
Project No. : 24226
Surveyor(s) : 23114

Turning Movement Count Plot - PM Peak Hour - 17:00-18:00



LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Southcreek Drive & Dundas Street East
Survey Date : December 5, 2023
Project No. : 24229
Count ID : 23115

Turning Movement Count - Southcreek Drive & Dundas Street East

	Southcreek Drive Southbound						Dundas Street East Westbound						Southcreek Drive Northbound						Dundas Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	4	0	1	0	5	0	4	171	6	0	181	0	0	0	1	0	1	0	1	220	6	0	227	414
7:15	0	1	0	2	1	3	0	6	183	13	0	202	0	0	0	0	0	0	0	2	242	3	0	247	452
7:30	0	2	0	2	0	4	0	1	212	6	0	219	0	0	0	1	0	1	0	1	245	2	0	248	472
7:45	0	3	0	1	2	4	0	4	268	22	0	294	0	1	0	0	0	1	0	6	299	6	0	311	610
Hourly Total	0	10	0	6	3	16	0	15	834	47	0	896	0	1	0	2	0	3	0	10	1006	17	0	1033	1948
8:00	0	7	0	7	1	14	0	2	235	22	0	259	0	5	0	0	1	5	0	4	270	3	0	277	555
8:15	0	4	0	2	0	6	0	6	237	10	0	253	0	1	0	3	2	4	0	2	236	3	0	241	504
8:30	0	8	0	5	1	13	0	7	266	18	0	291	0	2	0	0	0	2	0	4	246	0	0	250	556
8:45	0	6	0	2	2	8	0	4	292	22	0	318	0	0	0	1	0	1	2	9	200	8	0	219	546
Hourly Total	0	25	0	16	4	41	0	19	1030	72	0	1121	0	8	0	4	3	12	2	19	952	14	0	987	2161
9:00	0	15	0	4	3	19	0	9	276	23	0	308	0	2	0	3	0	5	0	5	221	5	0	231	563
9:15	0	4	0	6	3	10	0	5	252	9	0	266	0	1	0	0	0	1	0	3	245	4	0	252	529
9:30	0	2	1	4	1	7	0	6	293	6	0	305	0	0	0	0	0	0	0	5	213	0	0	218	530
9:45	0	4	0	4	0	8	0	4	288	20	0	312	0	4	0	4	0	8	0	0	222	1	0	223	551
Hourly Total	0	25	1	18	7	44	0	24	1109	58	0	1191	0	7	0	7	0	14	0	13	901	10	0	924	2173
* Break *																									
16:00	0	22	0	7	0	29	0	1	328	9	0	338	0	2	0	1	0	3	0	2	393	6	0	401	771
16:15	0	13	0	6	0	19	1	1	417	4	0	423	0	0	0	3	0	3	0	3	368	2	0	373	818
16:30	0	14	0	6	0	20	0	2	344	7	0	353	0	2	0	4	0	6	0	0	405	5	0	410	789
16:45	0	15	0	7	0	22	0	3	303	4	0	310	0	5	1	7	0	13	0	3	297	0	0	300	645
Hourly Total	0	64	0	26	0	90	1	7	1392	24	0	1424	0	9	1	15	0	25	0	8	1463	13	0	1484	3023
17:00	0	30	0	7	0	37	0	1	418	6	0	425	0	4	0	2	0	6	0	5	430	1	0	436	904
17:15	0	17	0	7	0	24	0	4	400	8	0	412	0	2	0	2	0	4	0	4	365	2	0	371	811
17:30	0	27	0	2	0	29	1	2	391	11	0	405	0	2	0	3	0	5	0	1	342	3	0	346	785
17:45	0	10	0	3	0	13	0	1	381	13	0	395	0	1	0	1	0	2	0	2	333	1	0	336	746
Hourly Total	0	84	0	19	0	103	1	8	1590	38	0	1637	0	9	0	8	0	17	0	12	1470	7	0	1489	3246
18:00	0	16	0	4	0	20	0	5	351	7	0	363	0	1	0	2	0	3	0	2	337	2	0	341	727
18:15	0	9	0	1	0	10	0	1	372	10	0	383	0	2	0	1	0	3	0	2	344	2	0	348	744
18:30	0	11	0	4	0	15	1	1	346	7	0	355	0	1	0	0	0	1	0	4	329	1	0	334	705
18:45	0	5	0	3	0	8	0	1	271	7	0	279	0	2	0	5	0	7	0	3	267	0	0	270	564
Hourly Total	0	41	0	12	0	53	1	8	1340	31	0	1380	0	6	0	8	0	14	0	11	1277	5	0	1293	2740
Grand Total	0	249	1	97	14	347	3	81	7295	270	0	7649	0	40	1	44	3	85	2	73	7069	66	0	7210	15291
Approach %	0.0%	71.8%	0.3%	28.0%	-	-	0.0%	1.1%	95.4%	3.5%	-	-	0.0%	47.1%	1.2%	51.8%	-	-	0.0%	1.0%	98.0%	0.9%	-	-	-
Total %	0.0%	1.6%	0.0%	0.6%	-	2.3%	0.0%	0.5%	47.7%	1.8%	-	50.0%	0.0%	0.3%	0.0%	0.3%	-	0.6%	0.0%	0.5%	46.2%	0.4%	-	47.2%	-
Lights	0	246	1	92	-	339	3	38	6925	257	-	7223	0	39	1	41	-	81	2	70	6628	56	-	6756	14399
% Lights	-	98.8%	100.0%	94.8%	-	97.7%	100.0%	46.9%	94.9%	95.2%	-	94.4%	-	97.5%	100.0%	93.2%	-	95.3%	100.0%	95.9%	93.8%	84.8%	-	93.7%	94.2%
Buses	-	0	0	0	-	0	-	1	128	0	-	129	-	0	0	0	-	0	-	0	100	0	-	100	229
% Buses	-	0.0%	0.0%	0.0%	-	0.0%	-	1.2%	1.8%	0.0%	-	1.7%	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	1.4%	0.0%	-	1.4%	1.5%
Trucks	-	4	0	5	-	9	-	42	263	14	-	319	-	1	0	3	-	4	-	3	350	10	-	363	695
% Trucks	-	1.6%	0.0%	5.2%	-	2.6%	-	51.9%	3.6%	5.2%	-	4.2%	-	2.5%	0.0%	6.8%	-	4.7%	-	4.1%	5.0%	15.2%	-	5.0%	4.5%
Bicycles	-	-	-	-	15	15	-	-	-	-	68	68	-	-	-	-	12	12	-	-	-	-	55	55	150
Pedestrians	-	-	-	-	14	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	17

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Southcreek Drive & Dundas Street East
Survey Date : December 5, 2023
Project No. : 24229
Count ID : 23115

AM Peak Hour - Southcreek Drive & Dundas Street East

	Southcreek Drive Southbound						Dundas Street East Westbound						Southcreek Drive Northbound						Dundas Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:45	0	3	0	1	2	4	0	4	268	22	0	294	0	1	0	0	0	1	0	6	299	6	0	311	610
8:00	0	7	0	7	1	14	0	2	235	22	0	259	0	5	0	0	1	5	0	4	270	3	0	277	555
8:15	0	4	0	2	0	6	0	6	237	10	0	253	0	1	0	3	2	4	0	2	236	3	0	241	504
8:30	0	8	0	5	1	13	0	7	266	18	0	291	0	2	0	0	0	2	0	4	246	0	0	250	556
Hourly Total	0	22	0	15	4	37	0	19	1006	72	0	1097	0	9	0	3	3	12	0	16	1051	12	0	1079	2225
Approach %	0.0%	59.5%	0.0%	40.5%	-	-	0.0%	1.7%	91.7%	6.6%	-	-	0.0%	75.0%	0.0%	-	-	-	0.0%	1.5%	97.4%	1.1%	-	-	-
Total %	0.0%	1.0%	0.0%	0.7%	-	1.7%	0.0%	0.9%	45.2%	3.2%	-	49.3%	0.0%	0.4%	0.0%	0.1%	-	0.5%	0.0%	0.7%	47.2%	0.5%	-	48.5%	-
PHF	0	0.69	0	0.54	-	0.66	0	0.68	0.94	0.82	-	0.93	0	0.45	0	0.25	-	0.6	0	0.67	0.88	0.5	-	0.87	0.91
Lights	0	21	0	14	-	35	0	5	936	71	-	1012	0	9	0	3	-	12	0	14	963	11	-	988	2047
% Lights	-	95.5%	-	93.3%	-	94.6%	-	26.3%	93.0%	98.6%	-	92.3%	-	100.0%	-	100.0%	-	100.0%	-	87.5%	91.6%	91.7%	-	91.6%	92.0%
Buses	-	0	0	0	-	0	-	1	24	0	-	25	-	0	0	0	-	0	-	0	18	0	-	18	43
% Buses	-	0.0%	-	0.0%	-	0.0%	-	5.3%	2.4%	0.0%	-	2.3%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1.7%	0.0%	-	1.7%	1.9%
Trucks	-	1	0	1	-	2	-	13	46	1	-	60	-	0	0	0	-	0	-	2	70	1	-	73	135
% Trucks	-	4.5%	-	6.7%	-	5.4%	-	68.4%	4.6%	1.4%	-	5.5%	-	0.0%	-	0.0%	-	0.0%	-	12.5%	6.7%	8.3%	-	6.8%	6.1%
Bicycles	-	-	-	-	0	0	-	-	-	-	3	3	-	-	-	-	0	0	-	-	-	-	4	4	7
Pedestrians	-	-	-	-	4	-	-	-	-	-	5	-	-	-	-	-	10	-	-	-	-	-	0	-	19

PM Peak Hour - Southcreek Drive & Dundas Street East

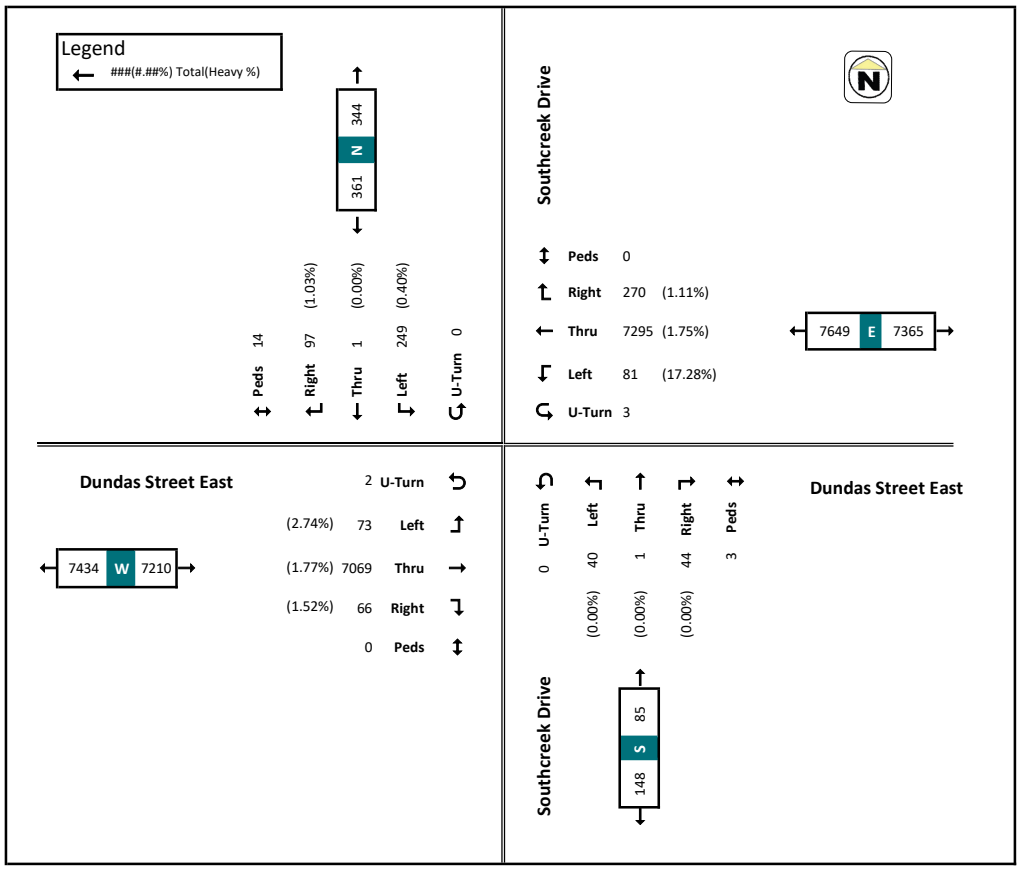
	Southcreek Drive Southbound						Dundas Street East Westbound						Southcreek Drive Northbound						Dundas Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
17:00	0	30	0	7	0	37	0	1	418	6	0	425	0	4	0	2	0	6	0	5	430	1	0	436	904
17:15	0	17	0	7	0	24	0	4	400	8	0	412	0	2	0	2	0	4	0	4	365	2	0	371	811
17:30	0	27	0	2	0	29	1	2	391	11	0	405	0	2	0	3	0	5	0	1	342	3	0	346	785
17:45	0	10	0	3	0	13	0	1	381	13	0	395	0	1	0	1	0	2	0	2	333	1	0	336	746
Hourly Total	0	84	0	19	0	103	1	8	1590	38	0	1637	0	9	0	8	0	17	0	12	1470	7	0	1489	3246
Approach %	0.0%	81.6%	0.0%	18.4%	-	-	0.1%	0.5%	97.1%	2.3%	-	-	0.0%	52.9%	0.0%	-	-	-	0.0%	0.8%	98.7%	0.5%	-	-	-
Total %	0.0%	2.6%	0.0%	0.6%	-	3.2%	0.0%	0.4%	71.5%	1.2%	-	50.4%	0.0%	0.4%	0.0%	0.4%	-	0.5%	0.0%	0.5%	66.1%	0.3%	-	45.9%	-
PHF	0	0.7	0	0.68	-	0.7	0.25	0.5	0.95	0.73	-	0.96	0	0.56	0	0.67	-	0.71	0	0.6	0.85	0.58	-	0.85	0.9
Lights	0	84	0	19	-	103	1	8	1534	37	-	1580	0	9	0	8	-	17	0	12	1435	7	-	1454	3154
% Lights	-	100.0%	-	100.0%	-	100.0%	-	100.0%	96.5%	97.4%	-	96.5%	-	100.0%	-	100.0%	-	100.0%	-	100.0%	97.6%	100.0%	-	97.6%	97.2%
Buses	-	0	0	0	-	0	-	0	13	0	-	13	-	0	0	0	-	0	-	0	10	0	-	10	23
% Buses	-	0.0%	-	0.0%	-	0.0%	-	0.0%	0.8%	0.0%	-	0.8%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	0.7%	0.0%	-	0.7%	0.7%
Trucks	-	0	0	0	-	0	-	0	45	2	-	47	-	0	0	0	-	0	-	0	27	0	-	27	74
% Trucks	-	0.0%	-	0.0%	-	0.0%	-	0.0%	2.8%	5.3%	-	2.9%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1.8%	0.0%	-	1.8%	2.3%
Bicycles	-	-	-	-	9	9	-	-	-	-	17	17	-	-	-	-	3	3	-	-	-	-	4	4	33
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Southcreek Drive & Dundas Street East
Survey Date : 2023-12-05
Project No. : 24229
Count ID : 23115

Turning Movement Count Plot - Total

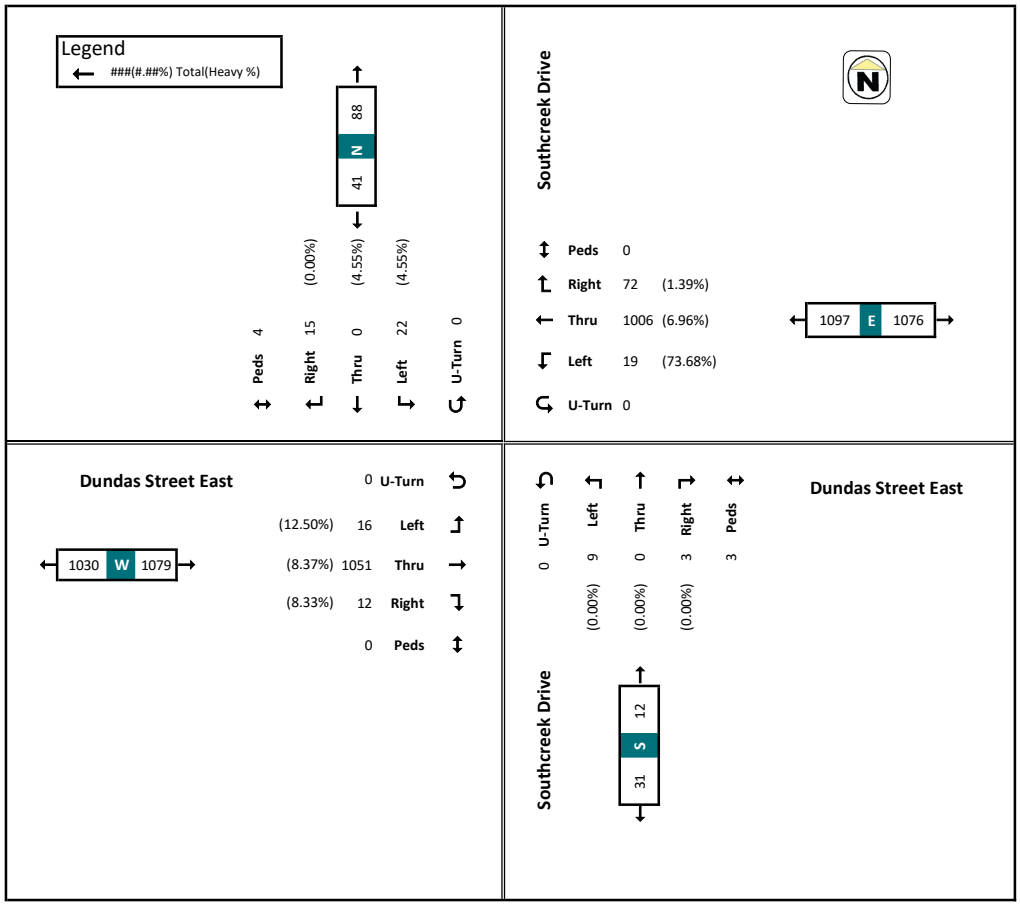


LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Southcreek Drive & Dundas Street East
Survey Date : 2023-12-05
Project No. : 24229
Count ID : 23115

Turning Movement Count Plot - AM Peak Hour - 07:45-08:45

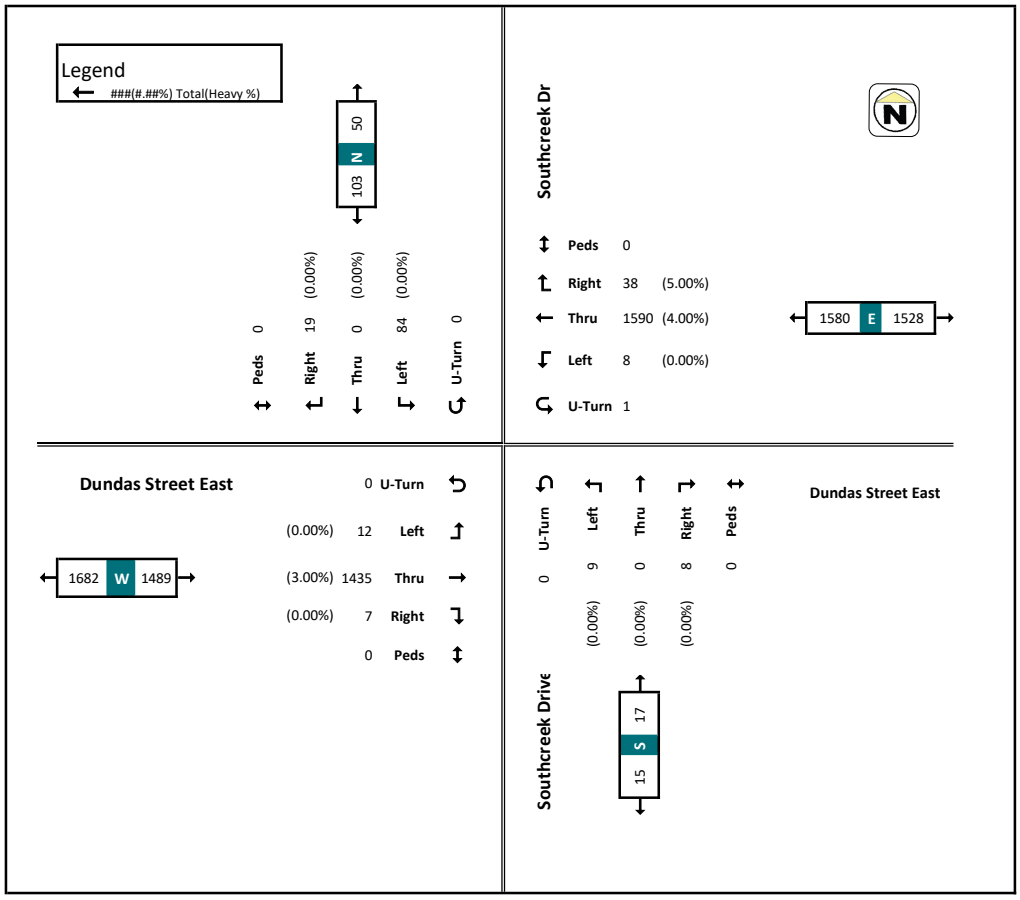


LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Southcreek Drive & Dundas Street East
Survey Date : 2023-12-05
Project No. : 24229
Count ID : 23115

Turning Movement Count Plot - PM Peak Hour - 17:00-18:00



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 21224_Wharton Way & Dundas St E-AM
Site Code: 21224
Start Date: 06/22/2023

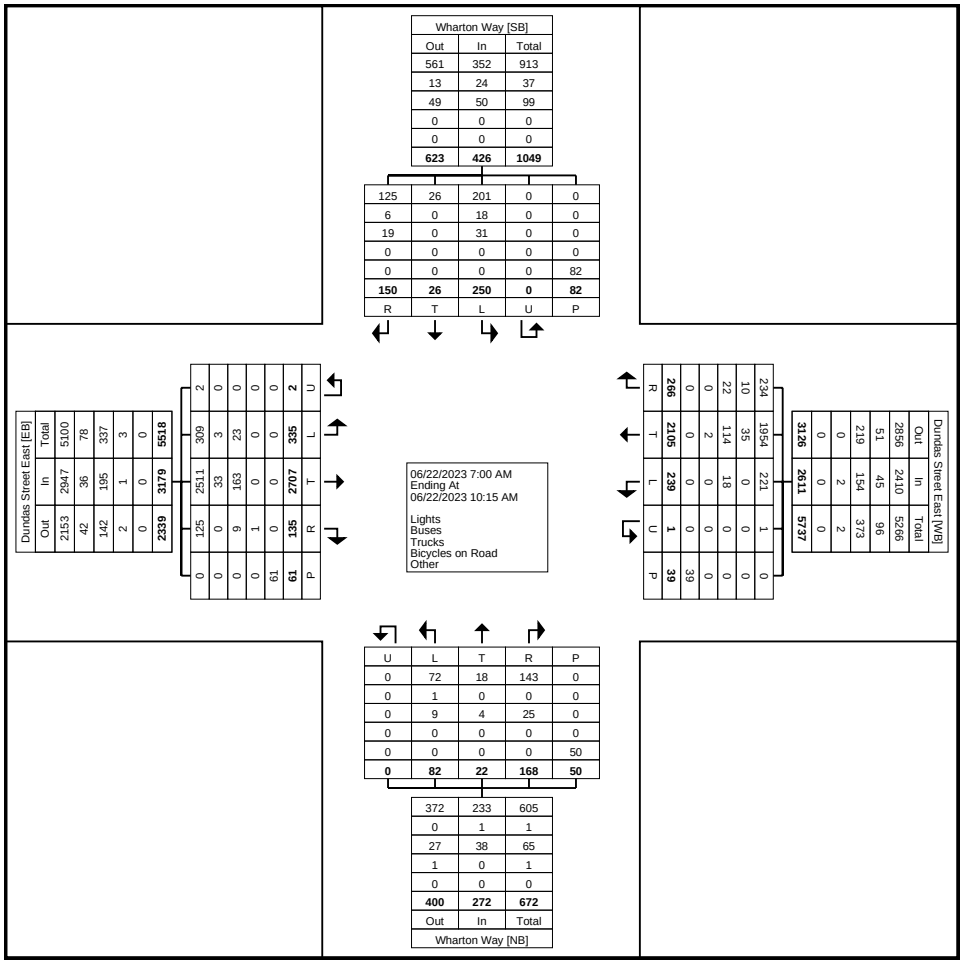
Turning Movement Data

Start Time	Wharton Way Southbound						Dundas Street East Westbound						Wharton Way Northbound						Dundas Street East Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:00 AM	9	0	17	0	4	26	25	95	20	0	7	140	14	1	5	0	6	20	7	196	24	0	5	227	413
7:15 AM	8	0	21	0	9	29	18	120	12	1	4	151	12	1	7	0	9	20	11	201	31	0	8	243	443
7:30 AM	10	0	18	0	3	28	13	153	15	0	5	181	8	4	8	0	6	20	11	237	31	0	8	279	508
7:45 AM	9	1	25	0	11	35	27	157	24	0	8	208	10	0	4	0	9	14	10	269	50	0	7	329	586
Hourly Total	36	1	81	0	27	118	83	525	71	1	24	680	44	6	24	0	30	74	39	903	136	0	28	1078	1950
8:00 AM	17	0	18	0	6	35	31	176	24	0	0	231	12	3	3	0	2	18	15	255	28	0	2	298	582
8:15 AM	11	5	27	0	9	43	19	188	16	0	2	223	13	2	7	0	3	22	12	242	30	0	2	284	572
8:30 AM	12	3	24	0	6	39	17	173	18	0	4	208	10	1	6	0	4	17	9	205	18	0	2	232	496
8:45 AM	9	1	12	0	9	22	23	237	23	0	0	283	15	2	8	0	1	25	9	233	26	1	10	269	599
Hourly Total	49	9	81	0	30	139	90	774	81	0	6	945	50	8	24	0	10	82	45	935	102	1	16	1083	2249
9:00 AM	18	3	19	0	6	40	27	203	15	0	6	245	18	2	13	0	4	33	13	212	23	1	2	249	567
9:15 AM	15	6	19	0	5	40	21	181	21	0	0	223	14	2	6	0	3	22	10	214	32	0	6	256	541
9:30 AM	11	5	23	0	7	39	25	218	22	0	1	265	25	1	5	0	0	31	14	250	17	0	4	281	616
9:45 AM	21	2	27	0	7	50	20	203	29	0	2	252	17	3	10	0	3	30	14	192	25	0	5	231	563
Hourly Total	65	16	88	0	25	169	93	805	87	0	9	985	74	8	34	0	10	116	51	868	97	1	17	1017	2287
10:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	2
Grand Total	150	26	250	0	82	426	266	2105	239	1	39	2611	168	22	82	0	50	272	135	2707	335	2	61	3179	6488
Approach %	35.2	6.1	58.7	0.0	-	-	10.2	80.6	9.2	0.0	-	-	61.8	8.1	30.1	0.0	-	-	4.2	85.2	10.5	0.1	-	-	-
Total %	2.3	0.4	3.9	0.0	-	6.6	4.1	32.4	3.7	0.0	-	40.2	2.6	0.3	1.3	0.0	-	4.2	2.1	41.7	5.2	0.0	-	49.0	-
Lights	125	26	201	0	-	352	234	1954	221	1	-	2410	143	18	72	0	-	233	125	2511	309	2	-	2947	5942
% Lights	83.3	100.0	80.4	-	-	82.6	88.0	92.8	92.5	100.0	-	92.3	85.1	81.8	87.8	-	-	85.7	92.6	92.8	92.2	100.0	-	92.7	91.6
Buses	6	0	18	0	-	24	10	35	0	0	-	45	0	0	1	0	-	1	0	33	3	0	-	36	106
% Buses	4.0	0.0	7.2	-	-	5.6	3.8	1.7	0.0	0.0	-	1.7	0.0	0.0	1.2	-	-	0.4	0.0	1.2	0.9	0.0	-	1.1	1.6
Trucks	19	0	31	0	-	50	22	114	18	0	-	154	25	4	9	0	-	38	9	163	23	0	-	195	437
% Trucks	12.7	0.0	12.4	-	-	11.7	8.3	5.4	7.5	0.0	-	5.9	14.9	18.2	11.0	-	-	14.0	6.7	6.0	6.9	0.0	-	6.1	6.7
Bicycles on Road	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	1	0	0	0	-	1	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	0.0	-	0.1	0.0	0.0	0.0	-	-	0.0	0.7	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	4.9	-	-	-	-	-	0.0	-	-	-	-	-	4.0	-	-	-	-	-	1.6	-	-
Pedestrians	-	-	-	-	78	-	-	-	-	-	39	-	-	-	-	-	48	-	-	-	-	-	60	-	-
% Pedestrians	-	-	-	-	95.1	-	-	-	-	-	100.0	-	-	-	-	-	96.0	-	-	-	-	-	98.4	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 21224_Wharton Way & Dundas St E-AM
Site Code: 21224
Start Date: 06/22/2023



Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 21224_Wharton Way & Dundas St E-AM
Site Code: 21224
Start Date: 06/22/2023

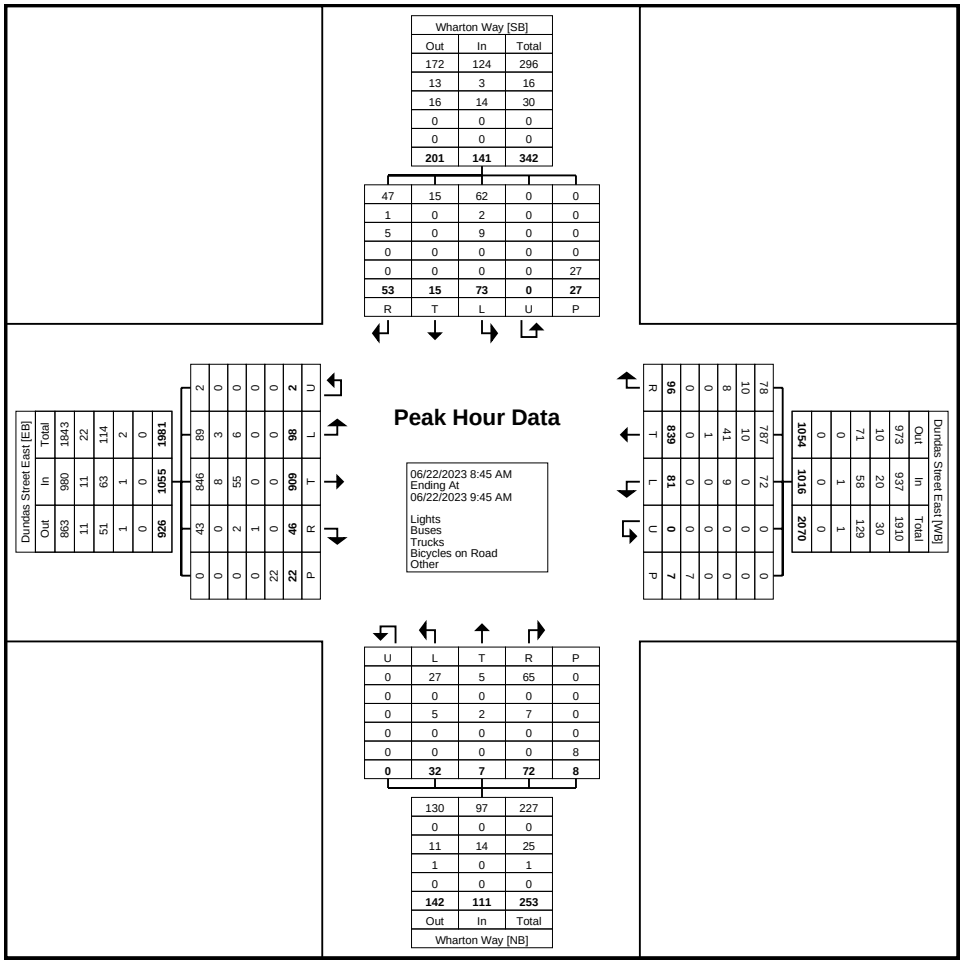
Turning Movement Peak Hour Data (8:45 AM)

Start Time	Wharton Way Southbound						Dundas Street East Westbound						Wharton Way Northbound						Dundas Street East Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
8:45 AM	9	1	12	0	9	22	23	237	23	0	0	283	15	2	8	0	1	25	9	233	26	1	10	269	599
9:00 AM	18	3	19	0	6	40	27	203	15	0	6	245	18	2	13	0	4	33	13	212	23	1	2	249	567
9:15 AM	15	6	19	0	5	40	21	181	21	0	0	223	14	2	6	0	3	22	10	214	32	0	6	256	541
9:30 AM	11	5	23	0	7	39	25	218	22	0	1	265	25	1	5	0	0	31	14	250	17	0	4	281	616
Total	53	15	73	0	27	141	96	839	81	0	7	1016	72	7	32	0	8	111	46	909	98	2	22	1055	2323
Approach %	37.6	10.6	51.8	0.0	-	-	9.4	82.6	8.0	0.0	-	-	64.9	6.3	28.8	0.0	-	-	4.4	86.2	9.3	0.2	-	-	-
Total %	2.3	0.6	3.1	0.0	-	6.1	4.1	36.1	3.5	0.0	-	43.7	3.1	0.3	1.4	0.0	-	4.8	2.0	39.1	4.2	0.1	-	45.4	-
PHF	0.736	0.625	0.793	0.000	-	0.881	0.889	0.885	0.880	0.000	-	0.898	0.720	0.875	0.615	0.000	-	0.841	0.821	0.909	0.766	0.500	-	0.939	0.943
Lights	47	15	62	0	-	124	78	787	72	0	-	937	65	5	27	0	-	97	43	846	89	2	-	980	2138
% Lights	88.7	100.0	84.9	-	-	87.9	81.3	93.8	88.9	-	-	92.2	90.3	71.4	84.4	-	-	87.4	93.5	93.1	90.8	100.0	-	92.9	92.0
Buses	1	0	2	0	-	3	10	10	0	0	-	20	0	0	0	0	-	0	0	8	3	0	-	11	34
% Buses	1.9	0.0	2.7	-	-	2.1	10.4	1.2	0.0	-	-	2.0	0.0	0.0	0.0	-	-	0.0	0.0	0.9	3.1	0.0	-	1.0	1.5
Trucks	5	0	9	0	-	14	8	41	9	0	-	58	7	2	5	0	-	14	2	55	6	0	-	63	149
% Trucks	9.4	0.0	12.3	-	-	9.9	8.3	4.9	11.1	-	-	5.7	9.7	28.6	15.6	-	-	12.6	4.3	6.1	6.1	0.0	-	6.0	6.4
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	2.2	0.0	0.0	0.0	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	3.7	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	26	-	-	-	-	-	7	-	-	-	-	-	8	-	-	-	-	-	22	-	-
% Pedestrians	-	-	-	-	96.3	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 21224_Wharton Way & Dundas St E-AM
Site Code: 21224
Start Date: 06/22/2023



Turning Movement Peak Hour Data Plot (8:45 AM)

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 21224_Wharton Way & Dundas St E-PM
Site Code: 21224
Start Date: 06/22/2023

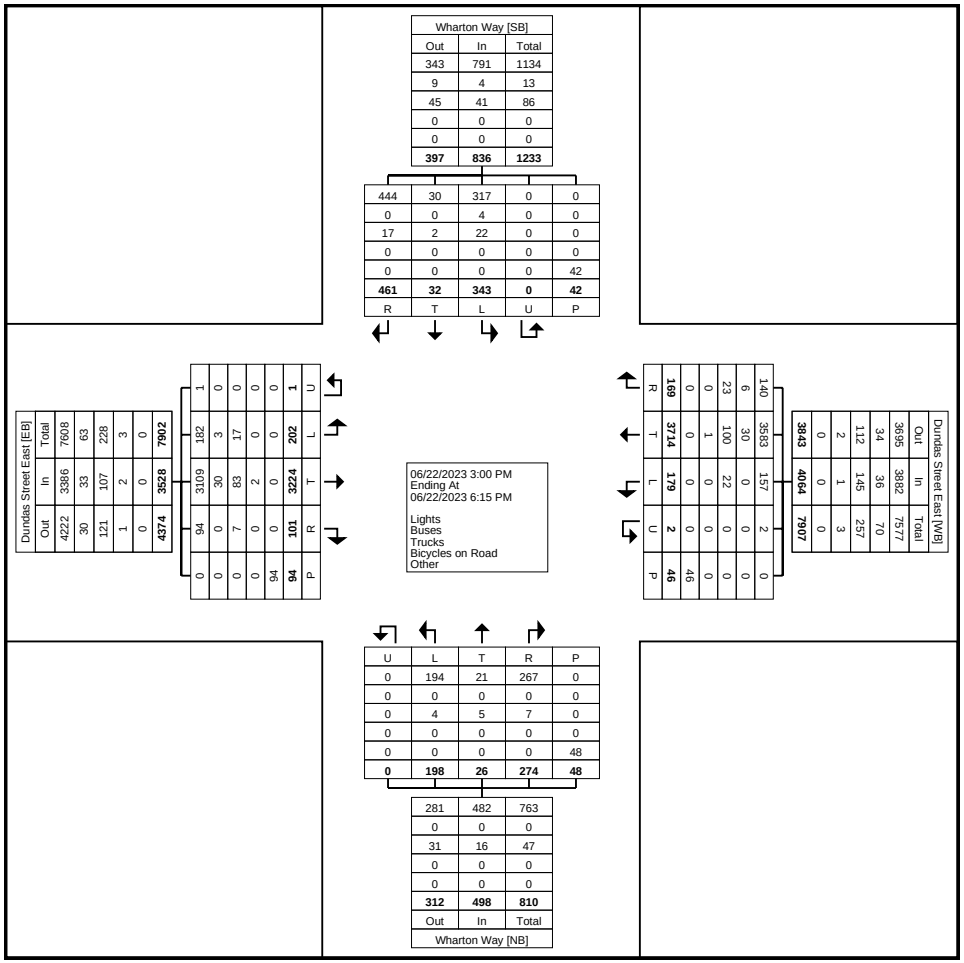
Turning Movement Data

Start Time	Wharton Way Southbound						Dundas Street East Westbound						Wharton Way Northbound						Dundas Street East Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
3:00 PM	30	2	33	0	2	65	22	266	17	1	5	306	30	2	15	0	7	47	10	256	16	0	3	282	700
3:15 PM	20	2	32	0	3	54	16	270	19	0	7	305	27	5	20	0	2	52	10	248	19	0	10	277	688
3:30 PM	35	3	27	0	4	65	17	303	11	0	13	331	25	2	10	0	1	37	6	267	14	0	5	287	720
3:45 PM	28	2	20	0	2	50	22	289	15	0	6	326	20	3	15	0	5	38	11	233	25	0	10	269	683
Hourly Total	113	9	112	0	11	234	77	1128	62	1	31	1268	102	12	60	0	15	174	37	1004	74	0	28	1115	2791
4:00 PM	55	1	29	0	1	85	14	304	18	0	3	336	21	2	27	0	2	50	9	290	26	0	1	325	796
4:15 PM	48	3	40	0	6	91	12	318	18	0	2	348	19	1	19	0	3	39	5	269	11	0	23	285	763
4:30 PM	52	4	27	0	3	83	12	289	19	1	3	321	29	1	17	0	6	47	9	272	15	0	9	296	747
4:45 PM	41	4	28	0	4	73	14	345	16	0	1	375	18	3	9	0	4	30	8	286	17	0	7	311	789
Hourly Total	196	12	124	0	14	332	52	1256	71	1	9	1380	87	7	72	0	15	166	31	1117	69	0	40	1217	3095
5:00 PM	64	3	31	0	3	98	8	328	14	0	4	350	25	0	26	0	3	51	9	254	25	0	5	288	787
5:15 PM	38	1	34	0	3	73	17	331	14	0	1	362	20	3	17	0	6	40	11	268	14	1	6	294	769
5:30 PM	30	2	24	0	5	56	9	370	10	0	0	389	18	2	10	0	5	30	8	291	7	0	2	306	781
5:45 PM	20	5	18	0	6	43	6	299	8	0	1	313	22	2	13	0	4	37	5	290	13	0	13	308	701
Hourly Total	152	11	107	0	17	270	40	1328	46	0	6	1414	85	7	66	0	18	158	33	1103	59	1	26	1196	3038
6:00 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	461	32	343	0	42	836	169	3714	179	2	46	4064	274	26	198	0	48	498	101	3224	202	1	94	3528	8926
Approach %	55.1	3.8	41.0	0.0	-	-	4.2	91.4	4.4	0.0	-	-	55.0	5.2	39.8	0.0	-	-	2.9	91.4	5.7	0.0	-	-	-
Total %	5.2	0.4	3.8	0.0	-	9.4	1.9	41.6	2.0	0.0	-	45.5	3.1	0.3	2.2	0.0	-	5.6	1.1	36.1	2.3	0.0	-	39.5	-
Lights	444	30	317	0	-	791	140	3583	157	2	-	3882	267	21	194	0	-	482	94	3109	182	1	-	3386	8541
% Lights	96.3	93.8	92.4	-	-	94.6	82.8	96.5	87.7	100.0	-	95.5	97.4	80.8	98.0	-	-	96.8	93.1	96.4	90.1	100.0	-	96.0	95.7
Buses	0	0	4	0	-	4	6	30	0	0	-	36	0	0	0	0	-	0	0	30	3	0	-	33	73
% Buses	0.0	0.0	1.2	-	-	0.5	3.6	0.8	0.0	0.0	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	0.9	1.5	0.0	-	0.9	0.8
Trucks	17	2	22	0	-	41	23	100	22	0	-	145	7	5	4	0	-	16	7	83	17	0	-	107	309
% Trucks	3.7	6.3	6.4	-	-	4.9	13.6	2.7	12.3	0.0	-	3.6	2.6	19.2	2.0	-	-	3.2	6.9	2.6	8.4	0.0	-	3.0	3.5
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	2	0	0	-	2	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	0.0	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	10	-	-	-	-	-	5	-	-
% Bicycles on Crosswalk	-	-	-	-	2.4	-	-	-	-	-	4.3	-	-	-	-	-	20.8	-	-	-	-	-	5.3	-	-
Pedestrians	-	-	-	-	41	-	-	-	-	-	44	-	-	-	-	-	38	-	-	-	-	-	89	-	-
% Pedestrians	-	-	-	-	97.6	-	-	-	-	-	95.7	-	-	-	-	-	79.2	-	-	-	-	-	94.7	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 21224_Wharton Way & Dundas St E-PM
Site Code: 21224
Start Date: 06/22/2023



Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 21224_Wharton Way & Dundas St E-PM
Site Code: 21224
Start Date: 06/22/2023

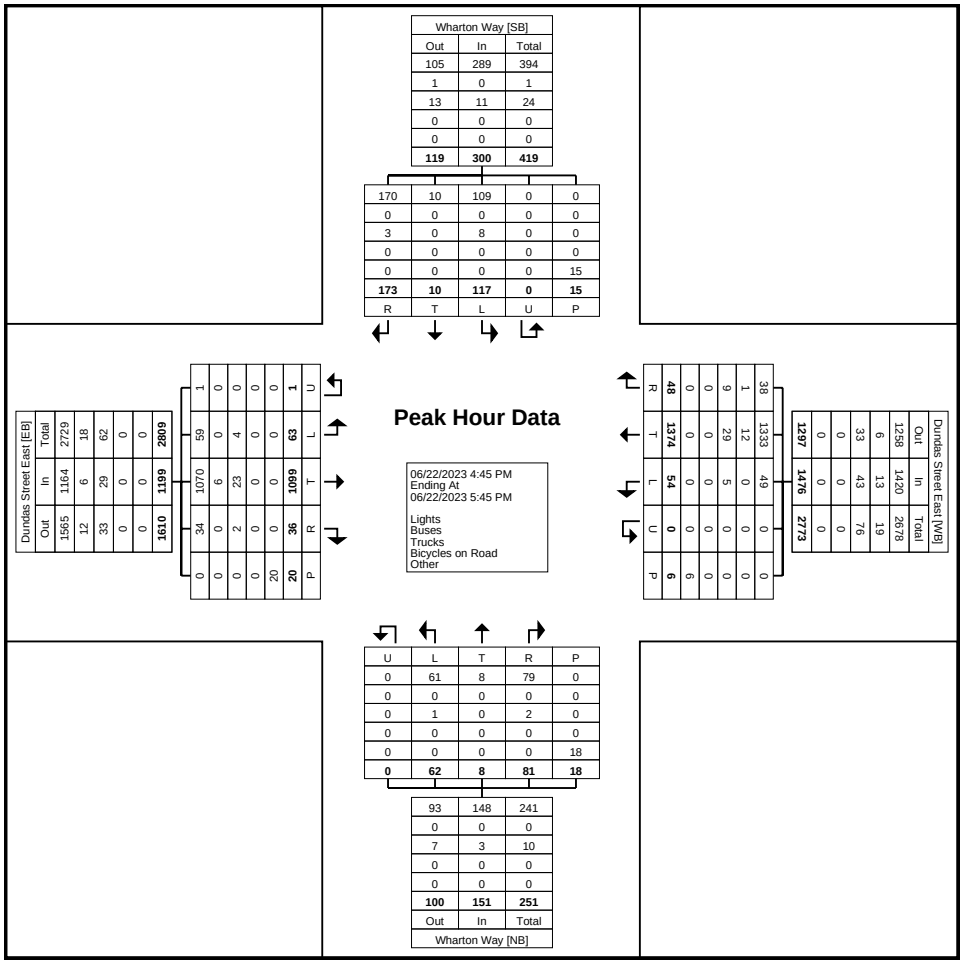
Turning Movement Peak Hour Data (4:45 PM)

Start Time	Wharton Way Southbound						Dundas Street East Westbound						Wharton Way Northbound						Dundas Street East Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
4:45 PM	41	4	28	0	4	73	14	345	16	0	1	375	18	3	9	0	4	30	8	286	17	0	7	311	789
5:00 PM	64	3	31	0	3	98	8	328	14	0	4	350	25	0	26	0	3	51	9	254	25	0	5	288	787
5:15 PM	38	1	34	0	3	73	17	331	14	0	1	362	20	3	17	0	6	40	11	268	14	1	6	294	769
5:30 PM	30	2	24	0	5	56	9	370	10	0	0	389	18	2	10	0	5	30	8	291	7	0	2	306	781
Total	173	10	117	0	15	300	48	1374	54	0	6	1476	81	8	62	0	18	151	36	1099	63	1	20	1199	3126
Approach %	57.7	3.3	39.0	0.0	-	-	3.3	93.1	3.7	0.0	-	-	53.6	5.3	41.1	0.0	-	-	3.0	91.7	5.3	0.1	-	-	-
Total %	5.5	0.3	3.7	0.0	-	9.6	1.5	44.0	1.7	0.0	-	47.2	2.6	0.3	2.0	0.0	-	4.8	1.2	35.2	2.0	0.0	-	38.4	-
PHF	0.676	0.625	0.860	0.000	-	0.765	0.706	0.928	0.844	0.000	-	0.949	0.810	0.667	0.596	0.000	-	0.740	0.818	0.944	0.630	0.250	-	0.964	0.990
Lights	170	10	109	0	-	289	38	1333	49	0	-	1420	79	8	61	0	-	148	34	1070	59	1	-	1164	3021
% Lights	98.3	100.0	93.2	-	-	96.3	79.2	97.0	90.7	-	-	96.2	97.5	100.0	98.4	-	-	98.0	94.4	97.4	93.7	100.0	-	97.1	96.6
Buses	0	0	0	0	-	0	1	12	0	0	-	13	0	0	0	0	-	0	0	6	0	0	-	6	19
% Buses	0.0	0.0	0.0	-	-	0.0	2.1	0.9	0.0	-	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	0.0	-	0.5	0.6
Trucks	3	0	8	0	-	11	9	29	5	0	-	43	2	0	1	0	-	3	2	23	4	0	-	29	86
% Trucks	1.7	0.0	6.8	-	-	3.7	18.8	2.1	9.3	-	-	2.9	2.5	0.0	1.6	-	-	2.0	5.6	2.1	6.3	0.0	-	2.4	2.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	6.7	-	-	-	-	-	0.0	-	-	-	-	-	11.1	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	14	-	-	-	-	-	6	-	-	-	-	-	16	-	-	-	-	-	20	-	-
% Pedestrians	-	-	-	-	93.3	-	-	-	-	-	100.0	-	-	-	-	-	88.9	-	-	-	-	-	100.0	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 21224_Wharton Way & Dundas St
E-PM
Site Code: 21224
Start Date: 06/22/2023



Turning Movement Peak Hour Data Plot (4:45 PM)

Location	DUNDAS STREET EAST E @ Wharton Way
Phase 1	WBLT
Phase 2	EB
Phase 4	NB
Phase 5	EBLT
Phase 6	WB
Phase 8	SB

Intelight 1205 DUNDAS STREET EAST E @ Wharton Way

Phase - Parameter 1-16	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Phase Description*	String								
Walk	Sec	0	10	0	10	0	10	0	10
Ped Clear	Sec	0	22	0	31	0	22	0	31
Min Green	Sec	5	8	0	8	5	8	0	8
Passage	Sec	2.0	3.0	0.0	3.0	2.0	3.0	0.0	3.0
Maximum 1	Sec	10	43	0	25	10	43	0	25
Maximum 2	Sec	10	43	0	25	10	43	0	25
Yellow Change	Sec	3.0	4.0	3.0	3.5	3.0	4.0	3.0	3.5
Red Clearance	Sec	0.0	2.5	0.0	3.5	0.0	2.5	0.0	3.5
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before Reduction	Sec	0	0	0	0	0	0	0	0
Cars Before Reduction	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	other	phaseNotOn	phaseNotOn	redClear	other	phaseNotOn
[P2] Options	Bit	0:Enabled Phase 5:Non Lock Detector Memory	0:Enabled Phase 3:Non-Actuated 1 7:Max Vehicle Recall 8:Ped. Recall 10:Dual Entry Phase 13:Actuated Rest In Walk		0:Enabled Phase 5:Non Lock Detector Memory 10:Dual Entry Phase	0:Enabled Phase 5:Non Lock Detector Memory	0:Enabled Phase 3:Non-Actuated 1 7:Max Vehicle Recall 8:Ped. Recall 10:Dual Entry Phase 13:Actuated Rest In Walk		0:Enabled Phase 5:Non Lock Detector Memory 10:Dual Entry Phase
[P2] Ring	Ring	1	1	0	1	2	2	0	2
[P2] Concurrency	Phase (,)	(5,6)	(5,6)	()	(8)	(1,2)	(1,2)	()	(4)
Delayed Green*	Sec	0	0	0	0	0	0	0	0
Delayed Ped*	Sec	0	0	0	0	0	0	0	0
Alternate Walk*	Sec	0	0	0	0	0	0	0	0
Alternate Ped Clear*	Sec	0	0	0	0	0	0	0	0
Pre Green*	Sec	0	0	0	0	0	0	0	0
Pre Clearance*	Sec	0	0	0	0	0	0	0	0
Alternate Walk 2*	Sec	0	0	0	0	0	0	0	0
Alt Ped Clear 2*	Sec	0	0	0	0	0	0	0	0
Coordination - Pattern 1-32	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	144	141	133	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Phase Parameter Table*	Number	1	1	1	1	1	1	1	1
Coord Phase Reference Point*	Enum	green	green	green	green	green	green	green	green
Coord Mode*	Enum	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive
Coordination - Splits	**Units**	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Phase 5**	**Phase 6**	**Phase 7**	**Phase 8**
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	14	95	0	51	14	95	0	51
Split 1 - Coord	Enum	False	True	False	False	False	True	False	False
Split 1 - Coord Phase Options*	Bit		0: Reference Point				0: Reference Point		
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	14	87	0	59	19	82	0	59
Split 2 - Coord	Enum	False	True	False	False	False	True	False	False
Split 2 - Coord Phase Options*	Bit						0: Reference Point		
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	14	95	0	51	14	95	0	51
Split 3 - Coord	Enum	False	True	False	False	False	True	False	False
Split 3 - Coord Phase Options*	Bit		0: Reference Point				0: Reference Point		

Split 4 - Mode	Enum	none	none	none	none	none	none	none	none
Split 4 - Time	Sec	0	0	0	0	0	0	0	0
Split 4 - Coord	Enum	False	False	False	False	False	False	False	False

Intelight		1205				DUNDAS STREET EAST E @ Wharton Way	

Time Base - Day Plans	**Units**	**Evt 1**	**Evt 2**	**Evt 3**	**Evt 4**	**Evt 5**	**Evt 6**
Plan 1 Hour	Hour	0	6	9	15	19	3
Plan 1 Minute	Min	0	0	30	0	30	0
Plan 1 Action	Number	8	1	2	3	2	7

Intelight		1205				DUNDAS STREET EAST E @ Wharton Way	

Time Base - Day Plans	**Units**	**Evt 1**	**Evt 2**	**Evt 3**	**Evt 4**	**Evt 5**	**Evt 6**
Plan 2 Hour	Hour	0	7	3	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0
Plan 3 Minute	Min	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0

Time Base - Action 1-32	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								
Spec. Functions	Bit								

Time Base - Action 1-32	**Units**	**9**	**10**
Pattern	Enum	Pattern 9	Pattern 10
Aux. Functions	Bit		
Spec. Functions	Bit		

Location	DUNDAS SREET E @ Universal Drive/ Summerville Road
Phase 2	EB
Phase 4	NB
Phase 6	WB
Phase 8	SB

Intelight 1206 DUNDAS SREET E @ Universal Drive/ Summerville Road

Phase - Parameter 1-16	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Phase Description*	String								
Walk	Sec	0	10	0	10	0	10	0	10
Ped Clear	Sec	0	24	0	28	0	24	0	28
Min Green	Sec	0	10	0	10	0	10	0	10
Passage	Sec	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
Maximum 1	Sec	0	37	0	25	0	37	0	25
Maximum 2	Sec	0	37	0	25	0	37	0	25
Yellow Change	Sec	0.0	4.0	0.0	3.5	0.0	4.0	0.0	3.5
Red Clearance	Sec	0.0	3.0	0.0	3.5	0.0	3.0	0.0	3.5
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before Reduction	Sec	0	0	0	0	0	0	0	0
Cars Before Reduction	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	redClear	other	phaseNotOn
[P2] Options	Bit		0:Enabled Phase 3:Non-Actuated 1 7:Max Vehicle Recall 8:Ped. Recall 10:Dual Entry Phase 13:Actuated Rest In Walk		0:Enabled Phase 5:Non Lock Detector Memory 10:Dual Entry Phase		0:Enabled Phase 3:Non-Actuated 1 7:Max Vehicle Recall 8:Ped. Recall 10:Dual Entry Phase 13:Actuated Rest In Walk		0:Enabled Phase 5:Non Lock Detector Memory 10:Dual Entry Phase
[P2] Ring	Ring	0	1	0	1	0	2	0	2
[P2] Concurrency	Phase (,)	()	(6)	()	(8)	()	(2)	()	(4)

Coordination - Pattern 1-32	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	35	5	61	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Phase Parameter Table*	Number	1	1	1	1	1	1	1	1
Coord Phase Reference Point*	Enum	green	green	green	green	green	green	green	green
Coord Mode*	Enum	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive

Coordination - Splits	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	115	0	45	0	115	0	45
Split 1 - Coord	Enum	False	True	False	False	False	True	False	False
Split 1 - Coord Phase Options*	Bit		0: Reference Point				0: Reference Point		
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	109	0	51	0	109	0	51
Split 2 - Coord	Enum	False	True	False	False	False	True	False	False
Split 2 - Coord Phase Options*	Bit		0: Reference Point				0: Reference Point		
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	115	0	45	0	115	0	45
Split 3 - Coord	Enum	False	True	False	False	False	True	False	False
Split 3 - Coord Phase Options*	Bit		0: Reference Point				0: Reference Point		

Time Base - Schedule 1-16	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	--M--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	---W---	-M-----	-----F-	-M-----	-M-----
Day of Month	Bit	12345678901234567890123456789012	12345678901234567890123456789012	12345678901234567890123456789012	1----------	----------9----------	----------9-	----------0---------	1----------
Day Plan	Number	1	3	2	3	3	3	3	3

Time Base - Schedule 1-16	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	--------S---	----------
Day of Week	Bit	-M-----	-M-----	-M-----	---W---	----T--	--T----	-M-----	SMTWTFS
Day of Month	Bit	----5----------	-2----------	----------4----------	----------5----------	----------6----------	----------4----------	----------	----------
Day Plan	Number	3	3	3	3	3	3	0-3	0

Time Base - Day Plans	Units	Evt 1	Evt 2	Evt 3	Evt 4	Evt 5	Evt 6

Plan 1 Hour	Hour	0	6	9	15	19	3		
Plan 1 Minute	Min	0	0	30	0	30	0		
Plan 1 Action	Number	8	1	2	3	2	7		
Plan 2 Hour	Hour	0	7	3	0	0	0		
Plan 2 Minute	Min	0	0	0	0	0	0		
Plan 2 Action	Number	8	2	7	0	0	0		
Plan 3 Hour	Hour	0	8	23	3	0	0		
Plan 3 Minute	Min	0	0	0	0	0	0		
Plan 3 Action	Number	8	2	8	7	0	0		
Time Base - Action 1-32	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								
Spec. Functions	Bit								
Time Base - Action 1-32	**Units**	**9**	**10**						
Pattern	Enum	Pattern 9	Pattern 10						
Aux. Functions	Bit								
Spec. Functions	Bit								

Location	DUNDAS STREET E @ Southcreek Drive/ Southcreek Road
Phase 2	E/W
Phase 4	N/S

Intelight 1207 DUNDAS STREET E @ Southcreek Drive/ Southcreek Road

Phase - Parameter 1-16	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Phase Description*	String								
Walk	Sec	0	10	0	10	0	0	0	0
Ped Clear	Sec	0	20	0	29	0	0	0	0
Min Green	Sec	0	10	0	10	0	0	0	0
Passage	Sec	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	0	36	0	25	0	0	0	0
Maximum 2	Sec	0	36	0	25	0	0	0	0
Yellow Change	Sec	3.0	4.0	4.0	3.5	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.5	0.0	4.0	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before Reduction	Sec	0	0	0	0	0	0	0	0
Cars Before Reduction	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit		0:Enabled Phase 3:Non-Actuated 1 7:Max Vehicle Recall 8:Ped. Recall 13:Actuated Rest In Walk		0:Enabled Phase 5:Non Lock Detector Memory				
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

Coordination - Pattern 1-32	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	59	75	72	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Phase Parameter Table*	Number								
Coord Phase Reference Point*	Enum								
Coord Mode*	Enum								

Coordination - Splits	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	112	0	48	0	0	0	0
Split 1 - Coord	Enum	False	True	False	False	False	False	False	False
Split 1 - Coord Phase Options*	Bit								
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	107	0	53	0	0	0	0
Split 2 - Coord	Enum	False	True	False	False	False	False	False	False
Split 2 - Coord Phase Options*	Bit								
Split 3 - Mode	Enum	none	none	none	maximumVehicleAndPedestrianRecall	none	none	none	none
Split 3 - Time	Sec	0	112	0	48	0	0	0	0
Split 3 - Coord	Enum	False	True	False	False	False	False	False	False
Split 3 - Coord Phase Options*	Bit								

Time Base - Schedule 1-16	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	--M--------	----M------	-----J-----
Day of Week	Bit	-MTWTF-	S------	------S	---W---	-M-----	-----F-	-M-----	-M-----
Day of Month	Bit	12345678901234567890123456789012	12345678901234567890123456789012	12345678901234567890123456789012	1----------	----------9---------	----------9----------	----------0---------	1----------
Day Plan	Number	1	3	2	3	3	3	3	3

Time Base - Schedule 1-16	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	--------S---	----------
Day of Week	Bit	-M-----	-M-----	-M-----	---W---	----T--	--T----	-M-----	SMTWTFS
Day of Month	Bit	----5----------	-2----------	----------4----------	----------5-----	----------6----	----------4------	----------	----------
Day Plan	Number	3	3	3	3	3	3	0- 3	0

Time Base - Day Plans	Units	Evt 1	Evt 2	Evt 3	Evt 4	Evt 5	Evt 6

Plan 1 Hour	Hour	0	6	9	15	19	3		
Plan 1 Minute	Min	0	0	30	0	30	0		
Plan 1 Action	Number	8	1	2	3	2	7		
Plan 2 Hour	Hour	0	7	3	0	0	0		
Plan 2 Minute	Min	0	0	0	0	0	0		
Plan 2 Action	Number	8	2	7	0	0	0		
Plan 3 Hour	Hour	0	8	23	3	0	0		
Plan 3 Minute	Min	0	0	0	0	0	0		
Plan 3 Action	Number	8	2	8	7	0	0		
Time Base - Action 1-32	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								
Spec. Functions	Bit								
Time Base - Action 1-32	**Units**	**9**	**10**						
Pattern	Enum	Pattern 9	Pattern 10						
Aux. Functions	Bit								
Spec. Functions	Bit								

APPENDIX C

Background Development Trip Details

Table 4-3: Summary of Background Developments

Location	Description	Source of Traffic Volumes
3085 Queen Frederica Drive (Mississauga)	Conversion of apartment units to condominium units; no new trips generated	Terms of Reference (TOR) from City of Mississauga
1565 Dundas Street East (Mississauga)	2-storey mixed-use building: 11,706 ft^2 ground floor retail, convenience store, restaurant and beverage and food preparation establishment with 9,219 ft^2 supporting second floor office	ITE (see **Table 4-4**)
1333 Tonolli Road (Mississauga)	37,803 ft^2 storage building	ITE (see **Table 4-5**)
2360 Dixie Road (Mississauga)	516,360 ft^2 industrial warehousing building	TIS By GHD (Ch. 5, Table 1) (see **Table 4-6**)

Table 4-4: 1565 Dundas Street East Trip Generation

Land Use		Weekday AM Peak			Weekday PM Peak		
		In	Out	Total	In	Out	Total
Retail [LUC 822 – Strip Retail Plaza (<40k GFA)] 11,706 ft^2	Percentage Split	60%	40%	100%	50%	50%	100%
	ITE Vehicle Trip Rate	1.42	0.94	2.36	3.30	3.30	6.59
	ITE Vehicle Trips	17	11	28	39	39	78
	ITE Vehicle Share	100.0%	100.0%		100.0%	99.8%	
	Vehicle Occupancy	1.17	1.16		1.21	1.18	
	Person Trips	20	13	33	47	46	93
	Internal Reduction	1	1		3	1	
	Net Person Trips	19	12	31	44	45	89
	TTS Vehicle Share	66%	66%		66%	66%	
	Vehicle Trips	**13**	**8**	**21**	**29**	**30**	**59**
	Pass-By	0	0	0	0	0	0
	Primary	**13**	**8**	**21**	**29**	**30**	**59**
Office [LUC 712 – Small Office Building] 9,219 ft^2	Percentage Split	82%	18%	100%	34%	66%	100%
	Vehicle Trip Rate	1.37	0.30	1.67	0.73	1.43	2.16
	Vehicle Trips	13	3	16	7	13	20
	ITE Vehicle Share	97%	90%		96%	98%	
	Vehicle Occupancy	1.06	1.06		1.11	1.07	
	Person Trips	14	4	18	8	14	22
	Internal Reduction	1	1		1	3	
	Net Person Trips	13	3	16	7	11	18
	TTS Vehicle Share	76%	76%		76%	76%	
	Vehicle Trips	**10**	**2**	**12**	**5**	**8**	**13**
	Pass-By	0	0	0	0	0	0
	Primary	**10**	**2**	**12**	**5**	**8**	**13**
Total Trips		**23**	**10**	**33**	**34**	**38**	**72**

APPENDIX D

TTS Mode Split and Distribution Data

TTS Mode Split

Residential Use

Fri Jul 05 2024 12:29:15 GMT-0400 (Eastern Daylight Time) - Run Time: 3073ms

Cross Tabulation Query Form - Trip - 2016

Row: Type of dwelling unit - dwell_type
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of household - gta06_hhld In 3670
and
Trip purpose - trip_purp In 1,2

Trip 2016
ROW : dwell_type
COLUMN : mode_prime

dwell_type	mode_prir	total	Dwelling Unit	Mode
1	B	259	House	Transit excluding GO rail
1	C	53	House	Cycle
1	D	1315	House	Auto driver
1	G	101	House	GO rail only
1	P	213	House	Auto passenger
1	S	252	House	School bus
1	T	11	House	Taxi passenger
1	W	96	House	Walk
2	B	914	Apartment	Transit excluding GO rail
2	D	1561	Apartment	Auto driver
2	P	292	Apartment	Auto passenger
2	S	218	Apartment	School bus
2	T	62	Apartment	Taxi passenger
2	W	755	Apartment	Walk
3	B	101	Townhouse (Starting From 1996)	Transit excluding GO rail
3	D	346	Townhouse (Starting From 1996)	Auto driver
3	P	86	Townhouse (Starting From 1996)	Auto passenger
3	T	18	Townhouse (Starting From 1996)	Taxi passenger
3	W	163	Townhouse (Starting From 1996)	Walk

Dwelling Unit	Apartment

Row Labels	Sum of total	Sum of total2
Auto driver	1561	41.06%
Auto passenger	292	7.68%
School bus	218	5.73%
Taxi passenger	62	1.63%
Transit excluding GO rail	914	24.04%
Walk	755	19.86%
Grand Total	3802	100.00%

Mode	Residential
Auto Driver	41%
Auto Passenge	15%
Transit	24%
Walk	20%
Cycle	0%
Total	100%

Retail Use

Fri Jul 05 2024 13:39:43 GMT-0400 (Eastern Daylight Time) - Run Time: 3113ms

Cross Tabulation Query Form - Trip - 2016

Row: Trip purpose of destination - purp_dest
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of destination - gta06_dest In 3670, 3661
and
Trip purpose - trip_purp In 3

Trip 2016
ROW : purp_dest
COLUMN : mode_prime

purp_dest	mode_prir	total	Trip Purpose of Destination	Mode
9	D	23	Unknown	Auto driver
D	D	176	Daycare (Starting From 1991)	Auto driver
D	W	17	Daycare (Starting From 1991)	Walk
F	B	35	Facilitate passenger	Transit excluding GO rail
F	D	468	Facilitate passenger	Auto driver
F	P	10	Facilitate passenger	Auto passenger
F	W	135	Facilitate passenger	Walk
H	B	176	Home	Transit excluding GO rail
H	D	2026	Home	Auto driver
H	P	474	Home	Auto passenger
H	T	22	Home	Taxi passenger
H	U	48	Home	Paid rideshare (2016)
H	W	382	Home	Walk
M	B	72	Market/Shop (Not in years 1991)	Transit excluding GO rail
M	D	799	Market/Shop (Not in years 1991)	Auto driver
M	P	96	Market/Shop (Not in years 1991)	Auto passenger
O	B	85	Other	Transit excluding GO rail
O	D	836	Other	Auto driver
O	P	383	Other	Auto passenger
O	W	24	Other	Walk
R	D	68	Subsequent Work	Auto driver
R	P	8	Subsequent Work	Auto passenger
R	W	5	Subsequent Work	Walk

Trip Purpose of Destination	Other

Row Labels	Sum of total	Sum of total2
Auto driver	836	62.95%
Auto passenger	383	28.84%
Transit excluding GO rail	85	6.40%
Walk	24	1.81%
Grand Total	1328	100.00%

Mode	Retail
Auto Driver	63%
Auto Passenge	29%
Transit	6%
Walk	2%
Cycle	0%
Total	100%

Type of Dwelling Unit

Code	Description
1	House
2	Apartment
3	Townhouse (Starting F
9	Unknown

Primary Mode of Travel

Code	Description
B	Transit excluding GO rail
C	Cycle
D	Auto driver
E	E-scooter (2022)
G	GO rail only
J	Joint GO rail and local transit
M	Motorcycle
O	Other
P	Auto passenger
S	School bus
T	Taxi passenger
U	Paid rideshare (2016)
W	Walk
9	Unknown

Trip Purpose of Destination

Code	Description
C	Subsequent School
D	Daycare (Starting From 1991)
E	Entertainment (1986)
F	Facilitate passenger
H	Home
L	Linked trip (1991)
M	Market/Shop (Not in years 1991)
O	Other
P	Personal (1986)
R	Subsequent Work
S	School
W	Work
9	Unknown
10	Usual Work (2022)
11	Other Work-related (2022)
12	Working on the road (2022)
20	Attend school (2022)
30	Daycare pickup/dropoff (2022)
40	Pick up a package/online purchase (2022)
41	Shopping (2022)
42	Services (2022)
43	Health and personal care (2022)
44	Restaurant/food (2022)
45	Visiting friends/family (2022)
46	Recreation/sports/leisure/arts
47	Religious activity (2022)
51	Pick up a passenger (2022)
52	Drop off a passenger (2022)
77	Other (2022)
80	Home (2022)
777	Voting in election (2022)
999	Unknown (2022)
D	Daycare (1991-2016)
F	Facilitate passenger (<2022)
H	Home (<2022)
M	Market/Shop (!1991)
O	Other (<2022)
S	School (<2022)

Directional Split for Residential AM Out

Mon Jun 24 2024 16:20:29 GMT-0400 (Eastern Daylight Time) - Run Time: 2651ms

Cross Tabulation Query Form - Trip - 2016

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

Filters:
Start time of trip - start_time In 0600-1000
and
Trip purpose of origin - purp_orig In H,
and
Primary travel mode of trip - mode_prime In D, M, P, T
and
2006 GTA zone of origin - gta06_orig In 3670

Trip 2016
ROW : pd_dest
COLUMN : gta06_orig

pd_dest	gta06_orig	total	Direction
1	3670	65	East
3	3670	19	East
4	3670	18	East
5	3670	76	East
7	3670	74	East
8	3670	291	East
9	3670	66	East
13	3670	12	East
29	3670	11	East
31	3670	11	East
33	3670	46	East
35	3670	143	East
36	3670	1163	Internal
38	3670	53	East
39	3670	96	East
40	3670	41	East
54	3670	20	East
69	3670	32	East
		2237	

Row Labels	Sum of total	Sum of total2
East	1260	56.35%
West	976	43.65%
Grand Total	2236	100.00%

Mon Jun 24 2024 16:22:54 GMT-0400 (Eastern Daylight Time) - Run Time: 2911ms

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
Start time of trip - start_time In 0600-1000
and
Trip purpose of origin - purp_orig In H,
and
Primary travel mode of trip - mode_prime In D, M, P, T
and
2006 GTA zone of origin - gta06_orig In 3670
and
Planning district of destination - pd_dest In 36,

Trip 2016
ROW : gta06_dest
COLUMN : gta06_orig

gta06_dest	gta06_orig	total	Direction
3605	3670	61	East
3608	3670	18	West
3610	3670	19	West
3618	3670	18	East
3620	3670	20	West
3622	3670	23	West
3634	3670	31	West
3649	3670	17	West
3655	3670	52	West
3659	3670	18	West
3660	3670	30	West
3661	3670	15	West
3669	3670	18	West
3670	3670	199	West
3671	3670	42	West
3674	3670	17	west
3675	3670	64	West
3682	3670	13	East
3696	3670	60	West
3699	3670	23	West
3700	3670	25	West
3701	3670	61	West
3702	3670	19	East
3710	3670	37	East
3711	3670	18	East
3713	3670	26	West
3717	3670	25	West
3721	3670	26	West
3815	3670	16	West
3823	3670	20	East
3825	3670	18	West
3861	3670	10	West
3874	3670	77	West
3878	3670	26	West
		1162	

Planning District of Trip Destination

Code	Description	Direction		gta06_dest	Direction	
1	PD 1 of Toronto	East		3605	East	
2	PD 2 of Toronto			3608	West	
3	PD 3 of Toronto	East		3610	West	
4	PD 4 of Toronto	East		3618	East	
5	PD 5 of Toronto	East		3620	West	
6	PD 6 of Toronto	East		3622	West	
7	PD 7 of Toronto	East		3634	West	
8	PD 8 of Toronto	East		3649	West	
9	PD 9 of Toronto	East		3655	West	
10	PD 10 of Toronto			3659	West	
11	PD 11 of Toronto			3660	West	
12	PD 12 of Toronto			3661	West	
13	PD 13 of Toronto	East		3669	West	
14	PD 14 of Toronto			3670	West	
15	PD 15 of Toronto			3671	West	
16	PD 16 of Toronto			3674	west	
17	Brock			3675	West	
18	Uxbridge			3682	East	
19	Scugog			3696	West	
20	Pickering			3699	West	
21	Ajax			3700	West	
22	Whitby			3701	West	
23	Oshawa			3702	East	
24	Clarington			3710	East	
25	Georgina			3711	East	
26	East Gwillimbury			3713	West	
27	Newmarket			3717	West	
28	Aurora			3721	West	
29	Richmond Hill	East		3815	West	
30	Whitchurch-Stouffville			3823	East	Highway
31	Markham	East		3825	West	
32	King			3861	West	
33	Vaughan	East		3874	West	
34	Caledon			3878	West	
35	Brampton	East				
36	Mississauga	Internal				
37	Halton Hills					
38	Milton	East	(Highway)			
39	Oakville	East	(Highway)			
40	Burlington	East	(Highway)			
41	Flamborough					
42	Dundas					
43	Ancaster					
44	Glanbrook					
45	Stoney Creek					
46	Hamilton					
47	Durham Fringe (1991)					
48	York/Peel/Halton Fringe (1991)					
49	Hamilton Fringe (1991)					
51	Grimsby					
52	Lincoln					
53	Pelham					
54	Niagara-on-the-Lake	East	(Highway)			
55	St. Catharines					
56	Thorold					
57	Niagara Falls					
58	Welland					
59	Port Colborne					
60	Fort Erie					
61	West Lincoln					
62	Wainfleet					
63	Waterloo					
64	Kitchener					
65	Cambridge					
66	North Dumfries					
67	Wilmot					
68	Wellesley					
69	Woolwich	East	(Highway)			
70	City of Guelph					
71	Puslinch					
72	Guelph/Eramosa (Starting From 2006) Or Guelph Twp (Prior To 2001)					
73	Centre Wellington (Starting From 2006) Or Pilkington (Prior To 2001)					
74	Elora (Prior To 2006)					
75	Nichol (Prior To 2006)					
76	Fergus (Prior To 2006)					
77	West Garafraxa (Prior To 2006)					
78	Eramosa (Prior To 2006)					
79	Erin					
80	Orangeville					
81	Barrie					
82	Innisfil					
83	Bradford-West Gwillimbury					
84	New Tecumseth					
85	Adjala-Tosorontio					
86	Essa					
87	Clearview					
88	Springwater					
89	Kawartha Lakes (Starting From 2001) Or Lindsay (1996)					
90	OPS (1996)					
91	Manvers (1996)					
92	Mariposa (1996)					
93	Eldon (1996)					
94	Carden (1996)					
95	Dalton (1996)					
96	L-O-L (1996)					
97	Somerville (1996)					
98	Bexley (1996)					
99	Fenelon (1996)					
100	Verulam (1996)					
101	Bobcageon (1996)					
102	Emily (1996)					
103	Peterborough					
104	Cavan Monaghan (Starting From 2001) Or Cavan (1996)					
105	North Monaghan (1996)					
106	Otonabee-South Monaghan (Starting From 2001) Or South Monaghan (1996)					
107	Otonabee (1996)					
108	Asphodel-Norwood (Starting From 2001) Or Asphodel (1996)					
109	Dummer-Douro (Starting From 2001) Or Dummer (1996)					
110	Douro (1996)					
111	Selwyn (2016) Or Lakefield-Smith-Ennismore (2001,2006,2011) | Smith (1996)					
112	Ennismore (1996)					
113	Northumberland					
114	Rest of Peterborough					
115	Hastings					
116	Haliburton					
117	Muskoka					
118	Rest of Simcoe (1996)					
119	Dufferin (1996,2001)					
120	Grey					
121	Rest of Wellington					
122	Perth					
123	Oxford					
124	Brant					
125	Haldimand-Norfolk					
127	Collingwood					
128	Wasaga Beach					
129	Tiny					
130	Penetanguishene					
131	Midland					
132	Tay					
133	Oro-Medonte					
134	Severn					
135	Ramara					
136	Orillia					
140	Mulmur (Starting From 2006)					
141	Shelburne (Starting From 2006)					
142	Amaranth (Starting From 2006)					
143	Melancthon (Starting From 2006)					
144	Mono (Starting From 2006)					
145	Grand Valley (Starting From 2006)					
146	East Garafraxa (Starting From 2006)					
147	Brantford (Starting From 2006)					
148	Brighton (Starting From 2022)					
149	Cramahe (Starting From 2022)					
150	Hamilton Twp(Starting From 2022)					
151	Port Hope (Starting From 2022)					
152	Cobourg (Starting From 2022)					
153	Alnwick/Haldimand (Starting From 2022)					
154	Alderville First Nation (Starting From 2022)					
155	Trent Hills (Starting From 2022)					
156	Blue Mountains (Starting From 2022)					
157	West Grey (Starting From 2022)					
158	Southgate (Starting From 2022)					
159	Grey Highlands (Starting From 2022)					
160	Hanover (Starting From 2022)					
161	Chatsworth (Starting From 2022)					
162	Meaford (Starting From 2022)					
163	Georgian Bluffs (Starting From 2022)					
164	Owen Sound (Starting From 2022)					
888	No Usual Place					
997	External undefined					
998	External					
999	Unknown					

Directional Split for Residential PM In

Mon Jun 24 2024 17:22:27 GMT-0400 (Eastern Daylight Time) - Run Time: 2536ms

Cross Tabulation Query Form - Trip - 2016

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

Filters:
Start time of trip - start_time In 1500-1900
and
Trip purpose of destination - purp_dest In H,
and
Primary travel mode of trip - mode_prime In D, M, P, T
and
2006 GTA zone of destination - gta06_dest In 3670

Trip 2016
ROW : pd_orig
COLUMN : gta06_dest

pd_orig	gta06_dest	total	Direction
1	3670	67	East
2	3670	17	East
3	3670	36	East
4	3670	16	East
5	3670	76	East
7	3670	74	East
8	3670	252	East
9	3670	66	East
11	3670	15	East
13	3670	12	East
33	3670	60	East
35	3670	142	East
36	3670	1004	Internal
39	3670	42	East
40	3670	75	East
54	3670	20	East
121	3670	10	East
		1984	

Row Labels	Sum of total	Sum of total2
East	1130	56.93%
West	855	43.07%
Grand Total	1985	100.00%

Mon Jun 24 2024 17:23:51 GMT-0400 (Eastern Daylight Time) - Run Time: 2718ms

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
Start time of trip - start_time In 1500-1900
and
Trip purpose of destination - purp_dest In H,
and
Primary travel mode of trip - mode_prime In D, M, P, T
and
2006 GTA zone of destination - gta06_dest In 3670
and
Planning district of origin - pd_orig In 36,

Trip 2016
ROW : gta06_orig
COLUMN : gta06_dest

gta06_orig	gta06_dest	total	Direction
3613	3670	34	West
3618	3670	18	East
3620	3670	20	West
3627	3670	8	East
3634	3670	31	West
3655	3670	31	West
3659	3670	18	West
3660	3670	12	West
3661	3670	8	West
3670	3670	156	West
3674	3670	42	west
3675	3670	79	West
3682	3670	30	East
3696	3670	48	West
3698	3670	19	West
3700	3670	25	West
3701	3670	61	West
3702	3670	19	East
3710	3670	37	East
3711	3670	18	East
3713	3670	26	West
3721	3670	26	West
3823	3670	20	East
3825	3670	18	West
3851	3670	22	West
3857	3670	15	West
3860	3670	69	West
3874	3670	69	West
3878	3670	26	West
		1005	

Planning District of Trip Destination

Code	Description	Direction		gta06_dest	Direction	
1	PD 1 of Toronto	East		3605	East	
2	PD 2 of Toronto	East		3608	West	
3	PD 3 of Toronto	East		3610	West	
4	PD 4 of Toronto	East		3618	East	
5	PD 5 of Toronto	East		3620	West	
6	PD 6 of Toronto	East		3622	West	
7	PD 7 of Toronto	East		3634	West	
8	PD 8 of Toronto	East		3649	West	
9	PD 9 of Toronto	East		3655	West	
10	PD 10 of Toronto			3659	West	
11	PD 11 of Toronto	East		3660	West	
12	PD 12 of Toronto			3661	West	
13	PD 13 of Toronto	East		3669	West	
14	PD 14 of Toronto			3670	West	
15	PD 15 of Toronto			3671	West	
16	PD 16 of Toronto			3674	west	
17	Brock			3675	West	
18	Uxbridge			3682	East	
19	Scugog			3696	West	
20	Pickering			3699	West	
21	Ajax			3700	West	
22	Whitby			3701	West	
23	Oshawa			3702	East	
24	Clarington			3710	East	
25	Georgina			3711	East	
26	East Gwillimbury			3713	West	
27	Newmarket			3717	West	
28	Aurora			3721	West	
29	Richmond Hill	East		3815	West	
30	Whitchurch-Stouffville			3823	East	Highway
31	Markham	East		3825	West	
32	King			3861	West	
33	Vaughan	East		3874	West	
34	Caledon			3878	West	
35	Brampton	East		3613	West	
36	Mississauga	Internal		3627	East	
37	Halton Hills			3698	West	
38	Milton	East	(Highway)	3851	West	
39	Oakville	East	(Highway)	3857	West	
40	Burlington	East	(Highway)	3860	West	
41	Flamborough					
42	Dundas					
43	Ancaster					
44	Glanbrook					
45	Stoney Creek					
46	Hamilton					
47	Durham Fringe (1991)					
48	York/Peel/Halton Fringe (1991)					
49	Hamilton Fringe (1991)					
51	Grimsby					
52	Lincoln					
53	Pelham					
54	Niagara-on-the-Lake	East	(Highway)			
55	St. Catharines					
56	Thorold					
57	Niagara Falls					
58	Welland					
59	Port Colborne					
60	Fort Erie					
61	West Lincoln					
62	Wainfleet					
63	Waterloo					
64	Kitchener					
65	Cambridge					
66	North Dumfries					
67	Wilmot					
68	Wellesley					
69	Woolwich	East	(Highway)			
70	City of Guelph					
71	Puslinch					
72	Guelph/Eramosa (Starting From 2006) Or Guelph Twp (Prior To 2001)					
73	Centre-Wellington (Starting From 2006) Or Pilkington (Prior To 2001)					
74	Elora (Prior To 2006)					
75	Nichol (Prior To 2006)					
76	Fergus (Prior To 2006)					
77	West Garafraxa (Prior To 2006)					
78	Eramosa (Prior To 2006)					
79	Erin					
80	Orangeville					
81	Barrie					
82	Innisfil					
83	Bradford-West Gwillimbury					
84	New Tecumseth					
85	Adjala-Tosorontio					
86	Essa					
87	Clearview					
88	Springwater					
89	Kawartha Lakes (Starting From 2001) Or Lindsay (1996)					
90	OPS (1996)					
91	Manvers (1996)					
92	Mariposa (1996)					
93	Eldon (1996)					
94	Carden (1996)					
95	Dalton (1996)					
96	L-D-L (1996)					
97	Somerville (1996)					
98	Bexley (1996)					
99	Fenelon (1996)					
100	Verulam (1996)					
101	Bobcageon (1996)					
102	Emily (1996)					
103	Peterborough					
104	Cavan Monaghan (Starting From 2001) Or Cavan (1996)					
105	North Monaghan (1996)					
106	Otonabee-South Monaghan (Starting From 2001) Or South Monaghan (1996)					
107	Otonabee (1996)					
108	Asphodel-Norwood (Starting From 2001) Or Asphodel (1996)					
109	Dummer-Douro (Starting From 2001) Or Dummer (1996)					
110	Douro (1996)					
111	Selwyn (2016) Or Lakefield-Smith-Ennismore (2001,2006,2011) | Smith (1996)					
112	Ennismore (1996)					
113	Northumberland					
114	Rest of Peterborough					
115	Hastings					
116	Haliburton					
117	Muskoka					
118	Rest of Simcoe (1996)					
119	Dufferin (1996,2001)					
120	Grey					
121	Rest of Wellington	East				
122	Perth					
123	Oxford					
124	Brant					
125	Haldimand-Norfolk					
127	Collingwood					
128	Wasaga Beach					
129	Tiny					
130	Penetanguishene					
131	Midland					
132	Tay					
133	Oro-Medonte					
134	Severn					
135	Ramara					
136	Orillia					
140	Mulmur (Starting From 2006)					
141	Shelburne (Starting From 2006)					
142	Amaranth (Starting From 2006)					
143	Melancthon (Starting From 2006)					
144	Mono (Starting From 2006)					
145	Grand Valley (Starting From 2006)					
146	East Garafraxa (Starting From 2006)					
147	Brantford (Starting From 2006)					
148	Brighton (Starting From 2022)					
149	Cramahe (Starting From 2022)					
150	Hamilton Twp(Starting From 2022)					
151	Port Hope (Starting From 2022)					
152	Cobourg (Starting From 2022)					
153	Alnwick/Haldimand (Starting From 2022)					
154	Alderville First Nation (Starting From 2022)					
155	Trent Hills (Starting From 2022)					
156	Blue Mountains (Starting From 2022)					
157	West Grey (Starting From 2022)					
158	Southgate (Starting From 2022)					
159	Grey Highlands (Starting From 2022)					
160	Hanover (Starting From 2022)					
161	Chatsworth (Starting From 2022)					
162	Meaford (Starting From 2022)					
163	Georgian Bluffs (Starting From 2022)					
164	Owen Sound (Starting From 2022)					
888	No Usual Place					
997	External undefined					
998	External					
999	Unknown					

Directional Split for Retail PM IN

Mon Jun 24 2024 17:42:56 GMT-0400 (Eastern Daylight Time) - Run Time: 2514ms

Cross Tabulation Query Form - Trip - 2016

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

Filters:
Start time of trip - start_time In 1500-1900
and
Trip purpose - trip_purp In 3,4
and
Primary travel mode of trip - mode_prime In D, M, P, T
and
2006 GTA zone of origin - gta06_orig In 3670

Trip 2016
ROW : pd_dest
COLUMN : gta06_orig

pd_dest	gta06_orig	total	Direction
2	3670	16	East
6	3670	38	East
7	3670	57	East
8	3670	281	East
13	3670	26	East
22	3670	22	East
29	3670	8	East
31	3670	8	East
33	3670	29	East
35	3670	11	East
36	3670	1113	Internal
39	3670	30	East
40	3670	56	East
998	3670	5	External

Row Labels	Sum of total	Sum of total2
East	593	34.99%
west	1102	65.01%
Grand Total	1695	100.00%

Mon Jun 24 2024 17:43:52 GMT-0400 (Eastern Daylight Time) - Run Time: 2645ms

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
Start time of trip - start_time In 1500-1900
and
Trip purpose - trip_purp In 3,4
and
Primary travel mode of trip - mode_prime In D, M, P, T
and
2006 GTA zone of origin - gta06_orig In 3670
and
Planning district of destination - pd_dest In 36

Trip 2016
ROW : gta06_dest
COLUMN : gta06_orig

gta06_dest	gta06_orig	total	Direction
3601	3670	26	west
3604	3670	14	west
3610	3670	17	West
3623	3670	35	west
3649	3670	51	West
3653	3670	42	west
3657	3670	17	west
3660	3670	34	West
3668	3670	56	west
3670	3670	206	West
3674	3670	25	west
3675	3670	169	West
3687	3670	34	west
3719	3670	11	East
3721	3670	4	West
3812	3670	28	west
3851	3670	9	West
3857	3670	33	West
3858	3670	8	West
3859	3670	42	West
3872	3670	30	West
3874	3670	222	West
		1113	

Planning District of Trip Destination

Code	Description	Direction		gta06_dest	Direction	
1	PD 1 of Toronto	East		3601	west	
2	PD 2 of Toronto	East		3604	west	
3	PD 3 of Toronto	East		3605	East	
4	PD 4 of Toronto	East		3608	West	
5	PD 5 of Toronto	East		3610	West	
6	PD 6 of Toronto	East		3613	West	
7	PD 7 of Toronto	East		3618	East	
8	PD 8 of Toronto	East		3620	West	
9	PD 9 of Toronto	East		3622	West	
10	PD 10 of Toronto			3623	west	
11	PD 11 of Toronto	East		3627	East	
12	PD 12 of Toronto			3634	West	
13	PD 13 of Toronto	East		3649	West	
14	PD 14 of Toronto			3653	west	
15	PD 15 of Toronto			3655	West	
16	PD 16 of Toronto			3657	west	
17	Brock			3659	West	
18	Uxbridge			3660	West	
19	Scugog			3661	West	
20	Pickering			3668	west	
21	Ajax			3669	West	
22	Whitby	East		3670	West	
23	Oshawa			3671	West	
24	Clarington			3674	west	
25	Georgina			3675	West	
26	East Gwillimbury			3682	East	
27	Newmarket			3687	west	
28	Aurora			3696	West	
29	Richmond Hill	East		3698	West	
30	Whitchurch-Stouffville			3699	West	
31	Markham	East		3700	West	
32	King			3701	West	
33	Vaughan	East		3702	East	
34	Caledon			3710	East	
35	Brampton	East		3711	East	
36	Mississauga	Internal		3713	West	
37	Halton Hills			3717	West	
38	Milton	East	(Highway)	3719	East	
39	Oakville	East	(Highway)	3721	West	
40	Burlington	East	(Highway)	3812	west	
41	Flamborough			3815	West	
42	Dundas			3823	East	Highway
43	Ancaster			3825	West	
44	Glanbrook			3851	West	
45	Stoney Creek			3857	West	
46	Hamilton			3858	West	
47	Durham Fringe (1991)			3859	West	
48	York/Peel /Halton Fringe (1991)			3860	West	
49	Hamilton Fringe (1991)			3861	West	
51	Grimsby			3872	West	
52	Lincoln			3874	West	
53	Pelham			3878	West	
54	Niagara-on-the-Lake	East	(Highway)			
55	St. Catharines					
56	Thorold					
57	Niagara Falls					
58	Welland					
59	Port Colborne					
60	Fort Erie					
61	West Lincoln					
62	Wainfleet					
63	Waterloo					
64	Kitchener					
65	Cambridge					
66	North Dumfries					
67	Wilmot					
68	Wellesley					
69	Woolwich	East	(Highway)			
70	City of Guelph					
71	Puslinch					
72	Guelph/Eramosa (Starting From 2006) Or Guelph Twp (Prior To 2001)					
73	Centre Wellington (Starting From 2006) Or Pilkington (Prior To 2001)					
74	Elora (Prior To 2006)					
75	Nichol (Prior To 2006)					
76	Fergus (Prior To 2006)					
77	West Garafraxa (Prior To 2006)					
78	Eramosa (Prior To 2006)					
79	Erin					
80	Orangeville					
81	Barrie					
82	Innisfil					
83	Bradford-West Gwillimbury					
84	New Tecumseth					
85	Adjala-Tosorontio					
86	Essa					
87	Clearview					
88	Springwater					
89	Kawartha Lakes (Starting From 2001) Or Lindsay (1996)					
90	OPS (1996)					
91	Manvers (1996)					
92	Mariposa (1996)					
93	Eldon (1996)					
94	Carden (1996)					
95	Dalton (1996)					
96	L-D-L (1996)					
97	Somerville (1996)					
98	Bexley (1996)					
99	Fenelon (1996)					
100	Verulam (1996)					
101	Bobcageon (1996)					
102	Emily (1996)					
103	Peterborough					
104	Cavan Monaghan (Starting From 2001) Or Cavan (1996)					
105	North Monaghan (1996)					
106	Otonabee-South Monaghan (Starting From 2001) Or South Monaghan (1996)					
107	Otonabee (1996)					
108	Asphodel-Norwood (Starting From 2001) Or Asphodel (1996)					
109	Dummer-Douro (Starting From 2001) Or Dummer (1996)					
110	Douro (1996)					
111	Selwyn (2016) Or Lakefield-Smith-Ennismore (2001,2006,2011)] Smith (1996)					
112	Ennismore (1996)					
113	Northumberland					
114	Rest of Peterborough					
115	Hastings					
116	Haliburton					
117	Muskoka					
118	Rest of Simcoe (1996)					
119	Dufferin (1996,2001)					
120	Grey					
121	Rest of Wellington	East				
122	Perth					
123	Oxford					
124	Brant					
125	Haldimand-Norfolk					
127	Collingwood					
128	Wasaga Beach					
129	Tiny					
130	Penetanguishene					
131	Midland					
132	Tay					
133	Oro-Medonte					
134	Severn					
135	Ramara					
136	Orillia					
140	Mulmur (Starting From 2006)					
141	Shelburne (Starting From 2006)					
142	Amaranth (Starting From 2006)					
143	Melancthon (Starting From 2006)					
144	Mono (Starting From 2006)					
145	Grand Valley (Starting From 2006)					
146	East Garafraxa (Starting From 2006)					
147	Brantford (Starting From 2006)					
148	Brighton (Starting From 2022)					
149	Cramahe (Starting From 2022)					
150	Hamilton Twp(Starting From 2022)					
151	Port Hope (Starting From 2022)					
152	Cobourg (Starting From 2022)					
153	Alnwick/Haldimand (Starting From 2022)					
154	Alderville First Nation (Starting From 2022)					
155	Trent Hills (Starting From 2022)					
156	Blue Mountains (Starting From 2022)					
157	West Grey (Starting From 2022)					
158	Southgate (Starting From 2022)					
159	Grey Highlands (Starting From 2022)					
160	Hanover (Starting From 2022)					
161	Chatsworth (Starting From 2022)					
162	Meaford (Starting From 2022)					
163	Georgian Bluffs (Starting From 2022)					
164	Owen Sound (Starting From 2022)					
888	No Usual Place					
997	External undefined					
998	External					
999	Unknown					

Directional Split for Retail PM OUT

Mon Jun 24 2024 17:41:18 GMT-0400 (Eastern Daylight Time) - Run Time: 4987ms

Cross Tabulation Query Form - Trip - 2016

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

Filters:
Start time of trip - start_time In 1500-1900
and
Trip purpose - trip_purp In 3,4
and
Primary travel mode of trip - mode_prime In D, M, P, T
and
2006 GTA zone of destination - gta06_dest In 3670

Trip 2016
ROW : pd_orig
COLUMN : gta06_dest

pd_orig	gta06_des	total	Direction
1	3670	46	East
5	3670	10	East
7	3670	71	East
8	3670	275	East
9	3670	36	East
29	3670	8	East
34	3670	6	East
35	3670	270	East
36	3670	1021	Internal
39	3670	28	East
121	3670	10	East
		1781	

Row Labels	Sum of total	Sum of total2
East	863	48.46%
West	918	51.54%
Grand Total	1781	100.00%

Mon Jun 24 2024 17:42:02 GMT-0400 (Eastern Daylight Time) - Run Time: 2727ms

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
Start time of trip - start_time In 1500-1900

and
Trip purpose - trip_purp In 3,4
and
Primary travel mode of trip - mode_prime In D, M, P, T
and
2006 GTA zone of destination - gta06_dest In 3670
and
Planning district of origin - pd_orig In 36

Trip 2016
ROW : gta06_orig
COLUMN : gta06_dest

gta06_orig	gta06_des	total	Direction
3605	3670	61	East
3613	3670	34	West
3627	3670	8	East
3653	3670	126	west
3655	3670	31	West
3660	3670	12	West
3668	3670	48	west
3670	3670	206	West
3671	3670	18	West
3674	3670	95	west
3675	3670	79	West
3679	3670	56	West
3682	3670	17	East
3687	3670	18	west
3698	3670	19	West
3710	3670	13	East
3714	3670	4	East
3838	3670	5	West
3847	3670	30	West
3851	3670	22	West
3857	3670	15	West
3860	3670	69	West
3874	3670	35	West
		1021	

Planning District of Trip Destination

Code	Description	Direction	
1	PD 1 of Toronto	East	
2	PD 2 of Toronto	East	
3	PD 3 of Toronto	East	
4	PD 4 of Toronto	East	
5	PD 5 of Toronto	East	
6	PD 6 of Toronto	East	
7	PD 7 of Toronto	East	
8	PD 8 of Toronto	East	
9	PD 9 of Toronto	East	
10	PD 10 of Toronto		
11	PD 11 of Toronto	East	
12	PD 12 of Toronto		
13	PD 13 of Toronto	East	
14	PD 14 of Toronto		
15	PD 15 of Toronto		
16	PD 16 of Toronto		
17	Brock		
18	Uxbridge		
19	Scugog		
20	Pickering		
21	Ajax		
22	Whitby		
23	Oshawa		
24	Clarington		
25	Georgina		
26	East Gwillimbury		
27	Newmarket		
28	Aurora		
29	Richmond Hill	East	
30	Whitchurch-Stouffville		
31	Markham	East	
32	King		
33	Vaughan	East	
34	Caledon	East	
35	Brampton	East	
36	Mississauga	Internal	
37	Halton Hills		
38	Milton	East	(Highway)
39	Oakville	East	(Highway)
40	Burlington	East	(Highway)
41	Flamborough		
42	Dundas		
43	Ancaster		
44	Glanbrook		

45	Stoney Creek		
46	Hamilton		
47	Durham Fringe (1991)		
48	York/Peel/Halton Fringe (1991)		
49	Hamilton Fringe (1991)		
51	Grimsby		
52	Lincoln		
53	Pelham		
54	Niagara-on-the-Lake	East	(Highway)
55	St. Catharines		
56	Thorold		
57	Niagara Falls		
58	Welland		
59	Port Colborne		
60	Fort Erie		
61	West Lincoln		
62	Wainfleet		
63	Waterloo		
64	Kitchener		
65	Cambridge		
66	North Dumfries		
67	Wilmot		
68	Wellesley		
69	Woolwich	East	(Highway)
70	City of Guelph		
71	Puslinch		
72	Guelph/Eramosa (Starting From 2006) Or Guelph Twp (I		
73	Centre Wellington (Starting From 2006) Or Pilkington (F		
74	Elora (Prior To 2006)		
75	Nichol (Prior To 2006)		
76	Fergus (Prior To 2006)		
77	West Garafraxa (Prior To 2006)		
78	Eramosa (Prior To 2006)		
79	Erin		
80	Orangeville		
81	Barrie		
82	Innisfil		
83	Bradford-West Gwillimbury		
84	New Tecumseth		
85	Adjala-Tosorontio		
86	Essa		
87	Clearview		
88	Springwater		
89	Kawartha Lakes (Starting From 2001) Or Lindsay (1996)		
90	OPS (1996)		
91	Manvers (1996)		
92	Mariposa (1996)		

93	Eldon (1996)
94	Carden (1996)
95	Dalton (1996)
96	L-D-L (1996)
97	Somerville (1996)
98	Bexley (1996)
99	Fenelon (1996)
100	Verulam (1996)
101	Bobcageon (1996)
102	Emily (1996)
103	Peterborough
104	Cavan Monaghan (Starting From 2001) Or Cavan (1996)
105	North Monaghan (1996)
106	Otonabee-South Monaghan (Starting From 2001) Or Sou
107	Otonabee (1996)
108	Asphodel-Norwood (Starting From 2001) Or Asphodel (1
109	Dummer-Douro (Starting From 2001) Or Dummer (1996
110	Douro (1996)
111	Selwyn (2016) Or Lakefield-Smith-Ennismore (2001,200
112	Ennismore (1996)
113	Northumberland
114	Rest of Peterborough
115	Hastings
116	Haliburton
117	Muskoka
118	Rest of Simcoe (1996)
119	Dufferin (1996,2001)
120	Grey
121	Rest of Wellington East
122	Perth
123	Oxford
124	Brant
125	Haldimand-Norfolk
127	Collingwood
128	Wasaga Beach
129	Tiny
130	Penetanguishene
131	Midland
132	Tay
133	Oro-Medonte
134	Severn
135	Ramara
136	Orillia
140	Mulmur (Starting From 2006)
141	Shelburne (Starting From 2006)
142	Amaranth (Starting From 2006)
143	Melancthon (Starting From 2006)

144 Mono (Starting From 2006)
145 Grand Valley (Starting From 2006)
146 East Garafraxa (Starting From 2006)
147 Brantford (Starting From 2006)
148 Brighton (Starting From 2022)
149 Cramahe (Starting From 2022)
150 Hamilton Twp(Starting From 2022)
151 Port Hope (Starting From 2022)
152 Cobourg (Starting From 2022)
153 Alnwick/Haldimand (Starting From 2022)
154 Alderville First Nation (Starting From 2022)
155 Trent Hills (Starting From 2022)
156 Blue Mountains (Starting From 2022)
157 West Grey (Starting From 2022)
158 Southgate (Starting From 2022)
159 Grey Highlands (Starting From 2022)
160 Hanover (Starting From 2022)
161 Chatsworth (Starting From 2022)
162 Meaford (Starting From 2022)
163 Georgian Bluffs (Starting From 2022)
164 Owen Sound (Starting From 2022)
888 No Usual Place
997 External undefined
998 External
999 Unknown

gta06_des	Direction	
3601	west	
3604	west	
3605	East	
3608	West	
3610	West	
3613	West	
3618	East	
3620	West	
3622	West	
3623	west	
3627	East	
3634	West	
3649	West	
3653	west	
3655	West	
3657	west	
3659	West	
3660	West	
3661	West	
3668	west	
3669	West	
3670	West	
3671	West	
3674	west	
3675	West	
3682	East	
3687	west	
3696	West	
3698	West	
3699	West	
3700	West	
3701	West	
3702	East	
3710	East	
3711	East	
3713	West	
3717	West	
3719	East	
3721	West	
3812	west	
3815	West	
3823	East	Highway
3825	West	
3851	West	
3857	West	

3858	West	
3859	West	
3860	West	
3861	West	
3872	West	
3874	West	
3878	West	
3679	West	
3714	East	Highway
3838	West	
3847	West	

Prior To 2001)
Prior To 2001)

uth Monaghan (1996)

1996)
)

6,2011) | Smith (1996)

APPENDIX E

Intersection Capacity Analysis

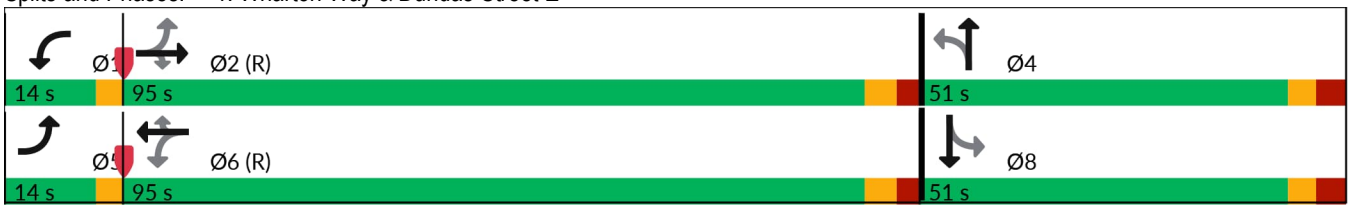
Existing Conditions

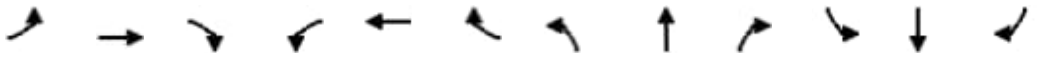
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	98	727	46	81	671	96	32	7	73	15
Future Volume (vph)	98	727	46	81	671	96	32	7	73	15
Lane Group Flow (vph)	105	782	49	87	722	103	34	85	78	73
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			4		8
Permitted Phases	2		2	6		6	4		8	
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.0	38.5	38.5	9.0	38.5	38.5	48.0	48.0	48.0	48.0
Total Split (s)	14.0	95.0	95.0	14.0	95.0	95.0	51.0	51.0	51.0	51.0
Total Split (%)	8.8%	59.4%	59.4%	8.8%	59.4%	59.4%	31.9%	31.9%	31.9%	31.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	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				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.20	0.33	0.05	0.18	0.31	0.11	0.20	0.30	0.46	0.26
Control Delay (s/veh)	6.8	12.2	3.7	10.7	19.6	10.2	55.8	14.2	66.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.8	12.2	3.7	10.7	19.6	10.2	55.8	14.2	66.4	18.4
Queue Length 50th (m)	4.9	38.4	0.0	6.2	52.6	4.5	10.2	2.4	24.3	4.7
Queue Length 95th (m)	17.6	84.7	6.1	22.4	109.5	20.2	18.1	16.0	35.6	17.3
Internal Link Dist (m)		169.3			444.1			44.4		148.5
Turn Bay Length (m)	37.0		70.0	95.0		44.0	28.0		34.0	
Base Capacity (vph)	543	2341	1060	509	2354	913	308	456	313	458
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	0.19	0.33	0.05	0.17	0.31	0.11	0.11	0.19	0.25	0.16

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 144 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	727	46	81	671	96	32	7	72	73	15	53
Future Volume (veh/h)	98	727	46	81	671	96	32	7	72	73	15	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.97		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1796	1841	1737	1811	1618	1663	1470	1752	1678	1900	1737
Adj Flow Rate, veh/h	105	782	0	87	722	0	34	8	77	78	16	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	7	4	11	6	19	16	29	10	15	0	11
Cap, veh/h	485	2227		447	2232		248	25	238	224	76	271
Arrive On Green	0.03	0.65	0.00	0.03	0.65	0.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1682	3413	1560	1654	3441	1372	1150	116	1113	1150	356	1268
Grp Volume(v), veh/h	105	782	0	87	722	0	34	0	85	78	0	73
Grp Sat Flow(s),veh/h/ln	1682	1706	1560	1654	1721	1372	1150	0	1228	1150	0	1624
Q Serve(g_s), s	3.4	16.5	0.0	2.8	14.9	0.0	4.0	0.0	9.4	9.8	0.0	5.9
Cycle Q Clear(g_c), s	3.4	16.5	0.0	2.8	14.9	0.0	9.9	0.0	9.4	19.2	0.0	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.78
Lane Grp Cap(c), veh/h	485	2227		447	2232		248	0	263	224	0	347
V/C Ratio(X)	0.22	0.35		0.19	0.32		0.14	0.00	0.32	0.35	0.00	0.21
Avail Cap(c_a), veh/h	543	2227		511	2232		319	0	338	294	0	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.4	12.5	0.0	9.6	12.5	0.0	55.9	0.0	53.1	61.2	0.0	51.8
Incr Delay (d2), s/veh	0.2	0.4	0.0	0.2	0.4	0.0	0.2	0.0	0.7	0.9	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	0.0	0.3	2.1	0.0	0.9	0.0	2.2	2.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.6	13.0	0.0	9.8	12.9	0.0	56.1	0.0	53.8	62.2	0.0	52.1
LnGrp LOS	A	B		A	B		E		D	E		D
Approach Vol, veh/h		887			809			119			151	
Approach Delay, s/veh		12.6			12.6			54.5			57.3	
Approach LOS		B			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	110.9		41.2	8.5	110.3		41.2				
Change Period (Y+Rc), s	3.0	6.5		7.0	3.0	6.5		7.0				
Max Green Setting (Gmax), s	11.0	88.5		44.0	11.0	88.5		44.0				
Max Q Clear Time (g_c+I1), s	4.8	18.5		11.9	5.4	16.9		21.2				
Green Ext Time (p_c), s	0.1	21.1		1.6	0.2	18.8		1.4				

Intersection Summary			
HCM 6th Ctrl Delay, s/veh		18.5	
HCM 6th LOS		B	

Notes

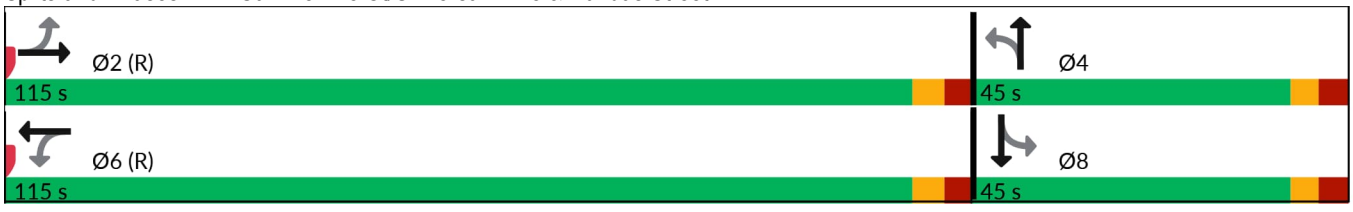
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

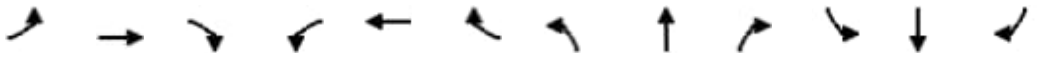
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	41	766	6	722	13	0	81	3
Future Volume (vph)	41	766	6	722	13	0	81	3
Lane Group Flow (vph)	44	837	6	944	14	13	87	42
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	115.0	115.0	115.0	115.0	45.0	45.0	45.0	45.0
Total Split (%)	71.9%	71.9%	71.9%	71.9%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.11	0.32	0.02	0.38	0.10	0.04	0.58	0.19
Control Delay (s/veh)	7.4	8.4	6.2	5.5	57.7	0.2	79.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.4	8.4	6.2	5.5	57.7	0.2	79.0	18.0
Queue Length 50th (m)	5.0	59.1	0.3	35.6	4.1	0.0	27.1	0.9
Queue Length 95th (m)	16.3	108.7	m1.5	43.9	9.9	0.0	40.0	11.4
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	28.0		45.0		36.0		23.0	
Base Capacity (vph)	405	2637	362	2460	282	471	289	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.32	0.02	0.38	0.05	0.03	0.30	0.11

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 35 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	766	12	6	722	156	13	0	12	81	3	36
Future Volume (veh/h)	41	766	12	6	722	156	13	0	12	81	3	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1900	1411	1737	1633	1678	1900	1530	1678	1900	1781
Adj Flow Rate, veh/h	44	824	13	6	776	168	14	0	13	87	3	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	8	0	33	11	18	15	0	25	15	0	8
Cap, veh/h	459	2716	43	407	2147	465	157	0	184	180	13	173
Arrive On Green	0.80	0.80	0.80	0.80	0.80	0.80	0.12	0.00	0.12	0.12	0.12	0.12
Sat Flow, veh/h	579	3409	54	495	2694	583	1213	0	1593	1244	115	1497
Grp Volume(v), veh/h	44	409	428	6	475	469	14	0	13	87	0	42
Grp Sat Flow(s),veh/h/ln	579	1692	1770	495	1650	1628	1213	0	1593	1244	0	1612
Q Serve(g_s), s	3.8	10.4	10.4	0.5	13.2	13.2	1.7	0.0	1.2	10.7	0.0	3.8
Cycle Q Clear(g_c), s	16.9	10.4	10.4	10.9	13.2	13.2	5.5	0.0	1.2	11.9	0.0	3.8
Prop In Lane	1.00		0.03	1.00		0.36	1.00		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	459	1348	1410	407	1315	1297	157	0	184	180	0	187
V/C Ratio(X)	0.10	0.30	0.30	0.01	0.36	0.36	0.09	0.00	0.07	0.48	0.00	0.23
Avail Cap(c_a), veh/h	459	1348	1410	407	1315	1297	304	0	378	331	0	383
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.1	4.4	4.4	5.8	4.6	4.6	66.7	0.0	63.1	68.4	0.0	64.2
Incr Delay (d2), s/veh	0.4	0.6	0.6	0.1	0.7	0.7	0.2	0.0	0.2	2.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.0	0.3	0.3	0.4	0.0	0.4	2.8	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.5	4.9	4.9	5.9	5.4	5.4	67.0	0.0	63.2	70.4	0.0	64.8
LnGrp LOS	A	A	A	A	A	A	E		E	E		E
Approach Vol, veh/h		881			950			27			129	
Approach Delay, s/veh		5.1			5.4			65.2			68.6	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		134.5		25.5		134.5		25.5				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		108.0		38.0		108.0		38.0				
Max Q Clear Time (g_c+I1), s		0.0		7.5		0.0		13.9				
Green Ext Time (p_c), s		0.0		0.1		0.0		0.8				

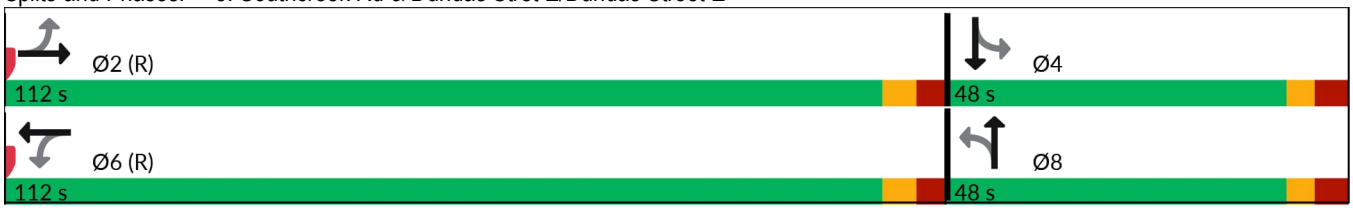
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			10.2									
HCM 6th LOS			B									

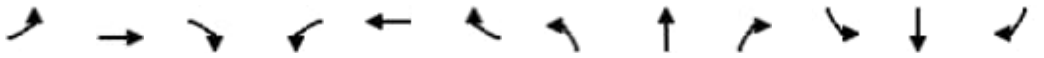
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	16	841	19	805	9	0	22	0
Future Volume (vph)	16	841	19	805	9	0	22	0
Lane Group Flow (vph)	18	937	21	964	0	13	0	40
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	37.5	37.5	37.5	37.5	46.5	46.5	46.5	46.5
Total Split (s)	112.0	112.0	112.0	112.0	48.0	48.0	48.0	48.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5		7.5		7.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.04	0.32	0.06	0.33		0.11		0.33
Control Delay (s/veh)	1.9	2.5	2.7	2.8		5.5		35.9
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	1.9	2.5	2.7	2.8		5.5		35.9
Queue Length 50th (m)	0.6	16.4	0.9	28.2		0.0		2.8
Queue Length 95th (m)	1.4	17.1	2.7	38.0		1.8		15.2
Internal Link Dist (m)		230.7		265.7		110.1		126.3
Turn Bay Length (m)	24.0		27.0					
Base Capacity (vph)	423	2939	329	2915		376		374
Starvation Cap Reductn	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.04	0.32	0.06	0.33		0.03		0.11

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 59 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	841	12	19	805	72	9	0	3	22	0	15
Future Volume (veh/h)	16	841	12	19	805	72	9	0	3	22	0	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1781	1781	1159	1796	1885	1900	1900	1900	1826	1900	1796
Adj Flow Rate, veh/h	18	924	13	21	885	79	10	0	3	24	0	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	13	8	8	50	7	1	0	0	0	5	0	7
Cap, veh/h	466	2902	41	360	2686	240	105	5	21	80	9	35
Arrive On Green	1.00	1.00	1.00	0.85	0.85	0.85	0.06	0.00	0.06	0.06	0.00	0.06
Sat Flow, veh/h	532	3416	48	370	3162	282	1152	93	373	770	154	616
Grp Volume(v), veh/h	18	458	479	21	478	486	13	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	532	1692	1771	370	1706	1737	1618	0	0	1540	0	0
Q Serve(g_s), s	0.4	0.0	0.0	1.4	9.3	9.3	0.0	0.0	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	0.0	1.4	9.3	9.3	1.1	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.16	0.77		0.23	0.60		0.40
Lane Grp Cap(c), veh/h	466	1438	1505	360	1450	1476	131	0	0	123	0	0
V/C Ratio(X)	0.04	0.32	0.32	0.06	0.33	0.33	0.10	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	466	1438	1505	360	1450	1476	418	0	0	418	0	0
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.3	0.0	0.0	1.9	2.5	2.5	71.7	0.0	0.0	73.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.5	0.3	0.6	0.6	0.7	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	0.0	0.2	0.2	0.4	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.5	0.6	0.5	2.2	3.1	3.1	72.4	0.0	0.0	76.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			E		
Approach Vol, veh/h		955			985			13			40	
Approach Delay, s/veh		0.5			3.1			72.4			76.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		143.4		16.6		143.4		16.6				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		104.5		40.5		104.5		40.5				
Max Q Clear Time (g_c+I1), s		0.0		5.9		0.0		3.1				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.1				

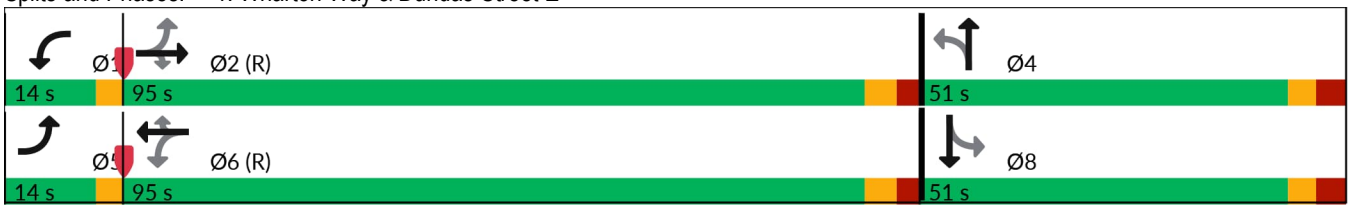
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			3.8									
HCM 6th LOS			A									

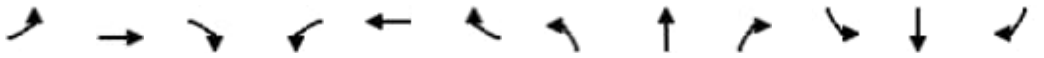
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	63	879	36	54	1099	48	62	8	117	10
Future Volume (vph)	63	879	36	54	1099	48	62	8	117	10
Lane Group Flow (vph)	65	906	37	56	1133	49	64	92	121	188
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			4		8
Permitted Phases	2		2	6		6	4		8	
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.0	38.5	38.5	9.0	38.5	38.5	48.0	48.0	48.0	48.0
Total Split (s)	14.0	95.0	95.0	14.0	95.0	95.0	51.0	51.0	51.0	51.0
Total Split (%)	8.8%	59.4%	59.4%	8.8%	59.4%	59.4%	31.9%	31.9%	31.9%	31.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	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				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.19	0.37	0.04	0.13	0.47	0.05	0.49	0.27	0.60	0.46
Control Delay (s/veh)	7.6	12.6	2.3	6.2	16.1	5.3	69.2	12.8	71.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.6	12.6	2.3	6.2	16.1	5.3	69.2	12.8	71.5	11.2
Queue Length 50th (m)	3.7	52.4	0.0	2.7	104.7	1.2	19.5	2.3	37.6	2.8
Queue Length 95th (m)	11.7	97.5	3.6	10.6	163.2	10.1	31.5	16.5	52.4	22.6
Internal Link Dist (m)		169.3			444.1			44.4		148.5
Turn Bay Length (m)	37.0		70.0	95.0		44.0	28.0		34.0	
Base Capacity (vph)	375	2429	1024	452	2425	901	216	500	332	559
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	0.17	0.37	0.04	0.12	0.47	0.05	0.30	0.18	0.36	0.34

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 133 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	879	36	54	1099	48	62	8	81	117	10	173
Future Volume (veh/h)	63	879	36	54	1099	48	62	8	81	117	10	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1856	1811	1767	1856	1589	1870	1900	1870	1796	1900	1870
Adj Flow Rate, veh/h	65	906	0	56	1133	0	64	8	84	121	10	178
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	3	6	9	3	21	2	0	2	7	0	2
Cap, veh/h	324	2271		396	2268		185	31	325	261	19	335
Arrive On Green	0.03	0.64	0.00	0.03	0.64	0.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1725	3526	1535	1682	3526	1346	1177	138	1453	1226	84	1498
Grp Volume(v), veh/h	65	906	0	56	1133	0	64	0	92	121	0	188
Grp Sat Flow(s),veh/h/ln	1725	1763	1535	1682	1763	1346	1177	0	1591	1226	0	1582
Q Serve(g_s), s	2.0	19.7	0.0	1.8	27.0	0.0	8.1	0.0	7.6	14.4	0.0	16.7
Cycle Q Clear(g_c), s	2.0	19.7	0.0	1.8	27.0	0.0	24.9	0.0	7.6	22.0	0.0	16.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.95
Lane Grp Cap(c), veh/h	324	2271		396	2268		185	0	356	261	0	354
V/C Ratio(X)	0.20	0.40		0.14	0.50		0.35	0.00	0.26	0.46	0.00	0.53
Avail Cap(c_a), veh/h	392	2271		463	2268		245	0	438	324	0	435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.5	13.6	0.0	10.2	15.0	0.0	65.6	0.0	51.1	60.2	0.0	54.7
Incr Delay (d2), s/veh	0.3	0.5	0.0	0.2	0.8	0.0	1.1	0.0	0.4	1.3	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	0.0	0.2	4.1	0.0	1.9	0.0	2.3	3.5	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.8	14.2	0.0	10.4	15.8	0.0	66.7	0.0	51.5	61.5	0.0	55.9
LnGrp LOS	B	B		B	B		E		D	E		E
Approach Vol, veh/h		971			1189			156			309	
Approach Delay, s/veh		14.0			15.5			57.8			58.1	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	109.6		42.8	7.7	109.4		42.8				
Change Period (Y+Rc), s	3.0	6.5		7.0	3.0	6.5		7.0				
Max Green Setting (Gmax), s	11.0	88.5		44.0	11.0	88.5		44.0				
Max Q Clear Time (g_c+I1), s	3.8	21.7		26.9	4.0	29.0		24.0				
Green Ext Time (p_c), s	0.1	25.6		1.4	0.1	33.2		3.4				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			22.5									
HCM 6th LOS			C									

Notes

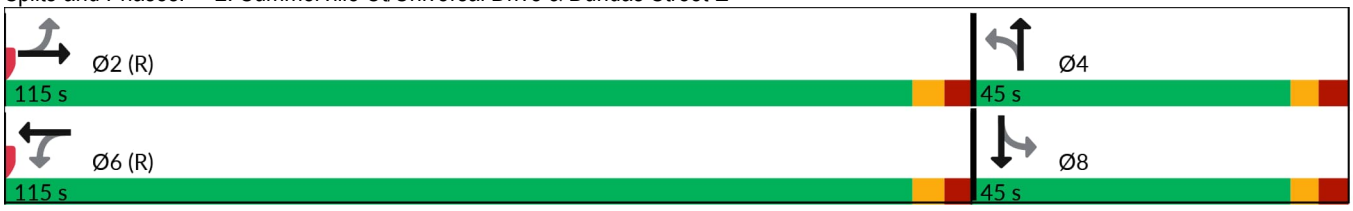
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

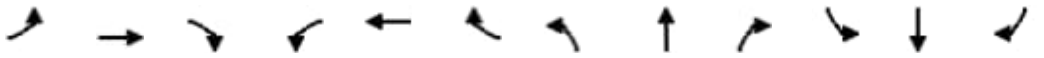
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	32	947	66	1138	73	5	112	8
Future Volume (vph)	32	947	66	1138	73	5	112	8
Lane Group Flow (vph)	34	1102	71	1349	78	95	120	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	115.0	115.0	115.0	115.0	45.0	45.0	45.0	45.0
Total Split (%)	71.9%	71.9%	71.9%	71.9%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.14	0.41	0.22	0.51	0.48	0.31	0.70	0.36
Control Delay (s/veh)	13.4	11.2	6.0	5.0	70.8	13.5	84.6	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.4	11.2	6.0	5.0	70.8	13.5	84.6	16.7
Queue Length 50th (m)	2.0	42.7	3.4	35.5	23.6	1.4	37.5	4.6
Queue Length 95th (m)	13.2	134.5	6.4	39.7	36.5	16.3	53.3	20.3
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	28.0		45.0		36.0		23.0	
Base Capacity (vph)	245	2683	324	2645	275	450	292	454
Starvation Cap Reductn	0	0	0	93	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.41	0.22	0.53	0.28	0.21	0.41	0.24

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 61 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	947	78	66	1138	116	73	5	84	112	8	94
Future Volume (veh/h)	32	947	78	66	1138	116	73	5	84	112	8	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.97	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1900	1811	1856	1737	1885	1900	1900	1870	1707	1900
Adj Flow Rate, veh/h	34	1018	84	71	1224	125	78	5	90	120	9	101
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	0	6	3	11	1	0	0	2	13	0
Cap, veh/h	267	2381	196	342	2331	237	201	16	282	221	22	250
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.72	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	401	3289	271	495	3220	328	1279	83	1496	1285	118	1325
Grp Volume(v), veh/h	34	545	557	71	668	681	78	0	95	120	0	110
Grp Sat Flow(s),veh/h/ln	401	1763	1797	495	1763	1785	1279	0	1579	1285	0	1443
Q Serve(g_s), s	6.6	19.8	19.8	10.7	27.0	27.2	9.1	0.0	8.3	14.2	0.0	10.7
Cycle Q Clear(g_c), s	33.8	19.8	19.8	30.5	27.0	27.2	19.8	0.0	8.3	22.5	0.0	10.7
Prop In Lane	1.00		0.15	1.00		0.18	1.00		0.95	1.00		0.92
Lane Grp Cap(c), veh/h	267	1276	1301	342	1276	1292	201	0	298	221	0	272
V/C Ratio(X)	0.13	0.43	0.43	0.21	0.52	0.53	0.39	0.00	0.32	0.54	0.00	0.40
Avail Cap(c_a), veh/h	267	1276	1301	342	1276	1292	263	0	375	283	0	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	8.8	8.8	14.9	9.8	9.9	65.7	0.0	56.0	65.8	0.0	57.0
Incr Delay (d2), s/veh	1.0	1.0	1.0	1.2	1.3	1.3	1.2	0.0	0.6	2.1	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.1	1.2	0.6	1.5	1.5	2.4	0.0	2.6	3.8	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.4	9.9	9.9	16.1	11.1	11.1	67.0	0.0	56.7	67.9	0.0	58.0
LnGrp LOS	B	A	A	B	B	B	E		E	E		E
Approach Vol, veh/h		1136			1420			173			230	
Approach Delay, s/veh		10.1			11.4			61.3			63.1	
Approach LOS		B			B			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		122.8		37.2		122.8		37.2				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		108.0		38.0		108.0		38.0				
Max Q Clear Time (g_c+I1), s		0.0		21.8		0.0		24.5				
Green Ext Time (p_c), s		0.0		0.9		0.0		1.1				

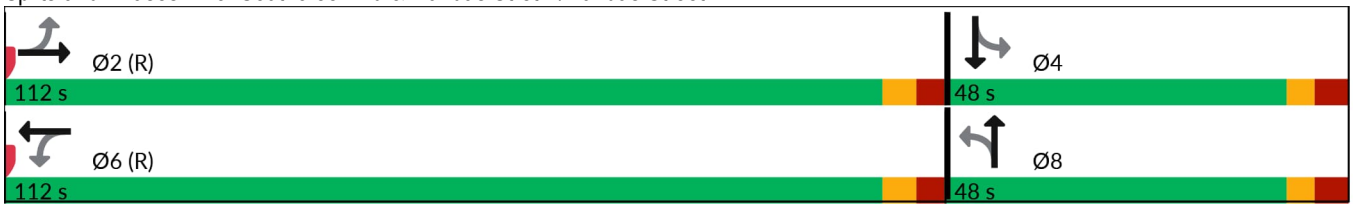
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			17.8									
HCM 6th LOS			B									

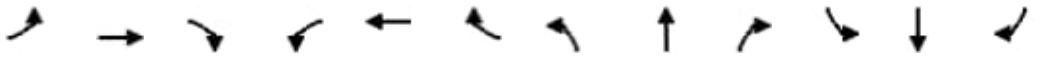
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	1176	9	1272	9	0	84	0
Future Volume (vph)	12	1176	9	1272	9	0	84	0
Lane Group Flow (vph)	13	1315	10	1455	0	19	0	114
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	37.5	37.5	37.5	37.5	46.5	46.5	46.5	46.5
Total Split (s)	112.0	112.0	112.0	112.0	48.0	48.0	48.0	48.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5		7.5		7.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.05	0.46	0.04	0.53		0.10		0.65
Control Delay (s/veh)	5.7	5.7	4.7	6.8		9.5		65.4
Queue Delay	0.0	0.1	0.0	0.0		0.0		0.0
Total Delay (s/veh)	5.7	5.8	4.7	6.8		9.5		65.4
Queue Length 50th (m)	0.6	37.3	0.6	72.2		0.0		25.7
Queue Length 95th (m)	m2.5	64.3	2.5	107.5		4.7		45.3
Internal Link Dist (m)		230.7		265.7		116.3		126.3
Turn Bay Length (m)	24.0		27.0					
Base Capacity (vph)	239	2831	284	2765		405		378
Starvation Cap Reductn	0	283	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.05	0.52	0.04	0.53		0.05		0.30

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 72 (45%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1176	7	9	1272	38	9	0	8	84	0	19
Future Volume (veh/h)	12	1176	7	9	1272	38	9	0	8	84	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1841	1826	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	1307	8	10	1413	42	10	0	9	93	0	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	3	0	0	4	5	0	0	0	0	0	0
Cap, veh/h	299	2919	18	297	2815	84	106	10	74	155	0	26
Arrive On Green	0.54	0.54	0.54	0.81	0.81	0.81	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	371	3592	22	424	3465	103	767	109	789	1216	0	275
Grp Volume(v), veh/h	13	641	674	10	712	743	19	0	0	114	0	0
Grp Sat Flow(s),veh/h/ln	371	1763	1851	424	1749	1819	1665	0	0	1491	0	0
Q Serve(g_s), s	3.1	35.1	35.1	1.6	20.6	20.7	0.0	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	23.8	35.1	35.1	36.7	20.6	20.7	1.6	0.0	0.0	11.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.53		0.47	0.82		0.18
Lane Grp Cap(c), veh/h	299	1432	1504	297	1421	1478	190	0	0	180	0	0
V/C Ratio(X)	0.04	0.45	0.45	0.03	0.50	0.50	0.10	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	299	1432	1504	297	1421	1478	427	0	0	412	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.0	14.8	14.8	13.5	4.7	4.7	66.5	0.0	0.0	71.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.9	0.9	0.2	1.3	1.2	0.5	0.0	0.0	7.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.4	0.1	0.5	0.5	0.6	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.2	15.7	15.7	13.8	6.0	6.0	66.9	0.0	0.0	78.5	0.0	0.0
LnGrp LOS	B	B	B	B	A	A	E			E		
Approach Vol, veh/h		1328			1465			19			114	
Approach Delay, s/veh		15.7			6.0			66.9			78.5	
Approach LOS		B			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		137.5		22.5		137.5		22.5				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		104.5		40.5		104.5		40.5				
Max Q Clear Time (g_c+I1), s		0.0		13.9		0.0		3.6				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			13.7									
HCM 6th LOS			B									

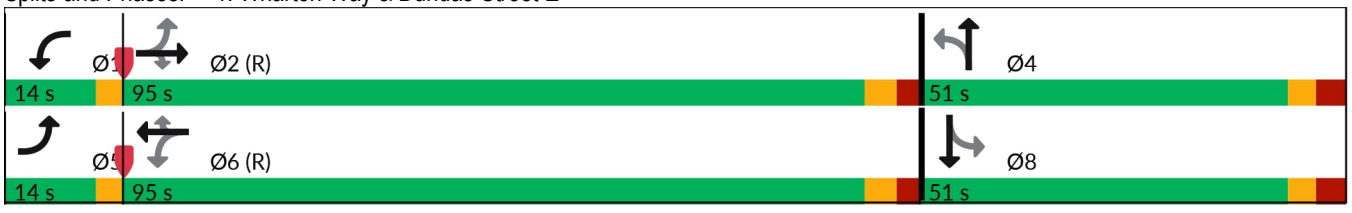
Future Background 2029 Conditions

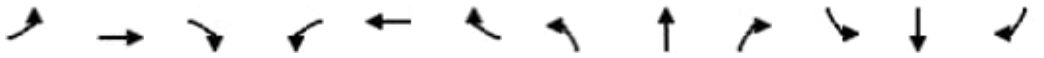
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	98	908	46	89	740	96	32	7	73	15
Future Volume (vph)	98	908	46	89	740	96	32	7	73	15
Lane Group Flow (vph)	105	976	49	96	796	103	34	85	78	73
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			4		8
Permitted Phases	2		2	6		6	4		8	
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.0	38.5	38.5	9.0	38.5	38.5	48.0	48.0	48.0	48.0
Total Split (s)	14.0	95.0	95.0	14.0	95.0	95.0	51.0	51.0	51.0	51.0
Total Split (%)	8.8%	59.4%	59.4%	8.8%	59.4%	59.4%	31.9%	31.9%	31.9%	31.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	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				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.22	0.42	0.05	0.24	0.34	0.11	0.20	0.30	0.46	0.26
Control Delay (s/veh)	7.0	13.4	3.7	11.5	20.6	11.2	55.8	14.2	66.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.0	13.4	3.7	11.5	20.6	11.2	55.8	14.2	66.4	18.4
Queue Length 50th (m)	4.9	52.0	0.0	7.1	60.5	5.5	10.2	2.4	24.3	4.7
Queue Length 95th (m)	17.6	113.1	6.1	25.5	126.0	22.2	18.1	16.0	35.6	17.3
Internal Link Dist (m)		169.3			444.1			44.4		148.5
Turn Bay Length (m)	37.0		70.0	95.0		44.0	28.0		34.0	
Base Capacity (vph)	507	2337	1058	422	2354	910	308	456	313	458
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	0.21	0.42	0.05	0.23	0.34	0.11	0.11	0.19	0.25	0.16

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 144 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	908	46	89	740	96	32	7	72	73	15	53
Future Volume (veh/h)	98	908	46	89	740	96	32	7	72	73	15	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.97		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1796	1841	1737	1811	1618	1663	1470	1752	1678	1900	1737
Adj Flow Rate, veh/h	105	976	0	96	796	0	34	8	77	78	16	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	7	4	11	6	19	16	29	10	15	0	11
Cap, veh/h	452	2220		372	2232		248	25	238	224	76	271
Arrive On Green	0.03	0.65	0.00	0.03	0.65	0.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1682	3413	1560	1654	3441	1372	1150	116	1113	1150	356	1268
Grp Volume(v), veh/h	105	976	0	96	796	0	34	0	85	78	0	73
Grp Sat Flow(s),veh/h/ln	1682	1706	1560	1654	1721	1372	1150	0	1228	1150	0	1624
Q Serve(g_s), s	3.4	22.4	0.0	3.1	16.9	0.0	4.0	0.0	9.4	9.8	0.0	5.9
Cycle Q Clear(g_c), s	3.4	22.4	0.0	3.1	16.9	0.0	9.9	0.0	9.4	19.2	0.0	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.78
Lane Grp Cap(c), veh/h	452	2220		372	2232		248	0	263	224	0	347
V/C Ratio(X)	0.23	0.44		0.26	0.36		0.14	0.00	0.32	0.35	0.00	0.21
Avail Cap(c_a), veh/h	510	2220		432	2232		319	0	338	294	0	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	13.7	0.0	10.5	12.8	0.0	55.9	0.0	53.1	61.2	0.0	51.8
Incr Delay (d2), s/veh	0.3	0.6	0.0	0.4	0.4	0.0	0.2	0.0	0.7	0.9	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.1	0.0	0.3	2.4	0.0	0.9	0.0	2.2	2.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.9	14.3	0.0	10.9	13.3	0.0	56.1	0.0	53.8	62.2	0.0	52.1
LnGrp LOS	A	B		B	B		E		D	E		D
Approach Vol, veh/h		1081			892			119			151	
Approach Delay, s/veh		13.9			13.0			54.5			57.3	
Approach LOS		B			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	110.6		41.2	8.5	110.3		41.2				
Change Period (Y+Rc), s	3.0	6.5		7.0	3.0	6.5		7.0				
Max Green Setting (Gmax), s	11.0	88.5		44.0	11.0	88.5		44.0				
Max Q Clear Time (g_c+I1), s	5.1	24.4		11.9	5.4	18.9		21.2				
Green Ext Time (p_c), s	0.2	28.3		1.6	0.2	21.6		1.4				

Intersection Summary			
HCM 6th Ctrl Delay, s/veh		18.6	
HCM 6th LOS		B	

Notes

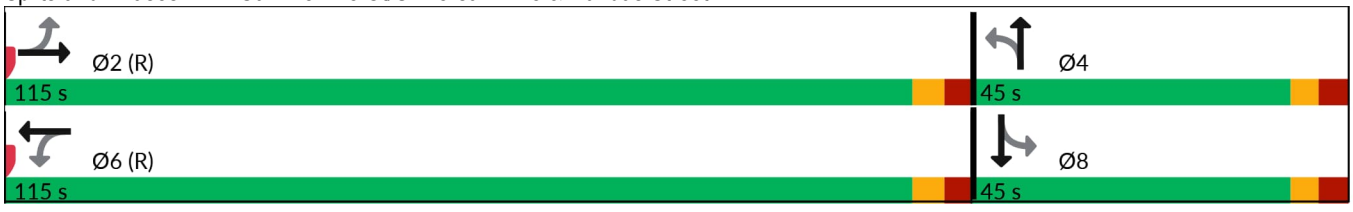
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

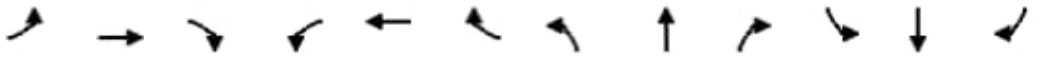
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	41	948	6	801	13	0	81	3
Future Volume (vph)	41	948	6	801	13	0	81	3
Lane Group Flow (vph)	44	1032	6	1029	14	13	87	42
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	115.0	115.0	115.0	115.0	45.0	45.0	45.0	45.0
Total Split (%)	71.9%	71.9%	71.9%	71.9%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.12	0.39	0.02	0.42	0.10	0.05	0.58	0.19
Control Delay (s/veh)	7.2	9.6	6.2	5.7	57.7	0.3	79.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.2	9.6	6.2	5.7	57.7	0.3	79.0	18.0
Queue Length 50th (m)	5.4	84.1	0.3	39.7	4.1	0.0	27.1	0.9
Queue Length 95th (m)	17.1	146.4	m1.4	47.2	9.9	0.0	40.0	11.4
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	28.0		45.0		36.0		23.0	
Base Capacity (vph)	368	2636	290	2470	282	417	289	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.39	0.02	0.42	0.05	0.03	0.30	0.11

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 35 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	948	12	6	801	156	13	0	12	81	3	36
Future Volume (veh/h)	41	948	12	6	801	156	13	0	12	81	3	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1900	1411	1737	1633	1678	1900	1530	1678	1900	1781
Adj Flow Rate, veh/h	44	1019	13	6	861	168	14	0	13	87	3	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	8	0	33	11	18	15	0	25	15	0	8
Cap, veh/h	422	2726	35	338	2191	427	157	0	184	180	13	173
Arrive On Green	0.80	0.80	0.80	0.80	0.80	0.80	0.12	0.00	0.12	0.12	0.12	0.12
Sat Flow, veh/h	535	3421	44	412	2750	537	1213	0	1593	1244	115	1497
Grp Volume(v), veh/h	44	504	528	6	517	512	14	0	13	87	0	42
Grp Sat Flow(s),veh/h/ln	535	1692	1772	412	1650	1636	1213	0	1593	1244	0	1612
Q Serve(g_s), s	4.2	13.8	13.8	0.7	14.8	14.8	1.7	0.0	1.2	10.7	0.0	3.8
Cycle Q Clear(g_c), s	19.1	13.8	13.8	14.5	14.8	14.8	5.5	0.0	1.2	11.9	0.0	3.8
Prop In Lane	1.00		0.02	1.00		0.33	1.00		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	422	1348	1412	338	1315	1304	157	0	184	180	0	187
V/C Ratio(X)	0.10	0.37	0.37	0.02	0.39	0.39	0.09	0.00	0.07	0.48	0.00	0.23
Avail Cap(c_a), veh/h	422	1348	1412	338	1315	1304	304	0	378	331	0	383
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.6	4.7	4.7	6.8	4.8	4.8	66.7	0.0	63.1	68.4	0.0	64.2
Incr Delay (d2), s/veh	0.5	0.8	0.8	0.1	0.8	0.8	0.2	0.0	0.2	2.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.3	0.0	0.3	0.3	0.4	0.0	0.4	2.8	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.1	5.5	5.5	6.9	5.6	5.6	67.0	0.0	63.2	70.4	0.0	64.8
LnGrp LOS	A	A	A	A	A	A	E		E	E		E
Approach Vol, veh/h		1076			1035			27			129	
Approach Delay, s/veh		5.6			5.7			65.2			68.6	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		134.5		25.5		134.5		25.5				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		108.0		38.0		108.0		38.0				
Max Q Clear Time (g_c+I1), s		0.0		7.5		0.0		13.9				
Green Ext Time (p_c), s		0.0		0.1		0.0		0.8				

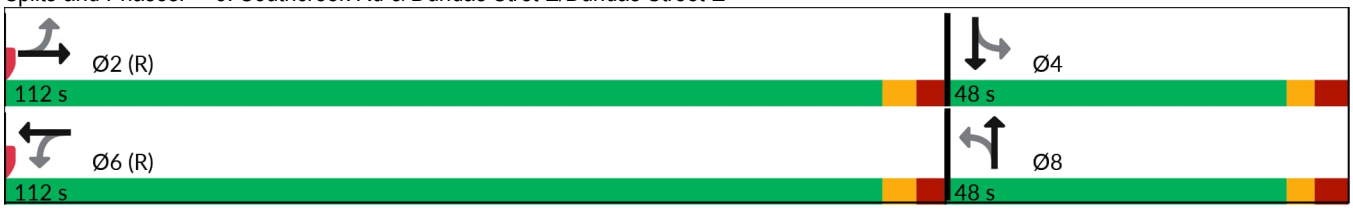
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			9.9									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	16	1026	19	886	9	0	22	0
Future Volume (vph)	16	1026	19	886	9	0	22	0
Lane Group Flow (vph)	18	1140	21	1053	0	13	0	40
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	37.5	37.5	37.5	37.5	46.5	46.5	46.5	46.5
Total Split (s)	112.0	112.0	112.0	112.0	48.0	48.0	48.0	48.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5		7.5		7.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.05	0.39	0.09	0.36		0.11		0.33
Control Delay (s/veh)	1.6	2.5	3.3	2.9		5.5		35.9
Queue Delay	0.0	0.1	0.0	0.0		0.0		0.0
Total Delay (s/veh)	1.6	2.6	3.3	2.9		5.5		35.9
Queue Length 50th (m)	0.5	16.7	0.9	32.0		0.0		2.8
Queue Length 95th (m)	1.2	17.2	2.9	42.9		1.8		15.2
Internal Link Dist (m)		230.7		265.7		112.5		126.3
Turn Bay Length (m)	24.0		27.0					
Base Capacity (vph)	385	2939	226	2917		376		374
Starvation Cap Reductn	0	385	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.05	0.45	0.09	0.36		0.03		0.11

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 59 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1026	12	19	886	72	9	0	3	22	0	15
Future Volume (veh/h)	16	1026	12	19	886	72	9	0	3	22	0	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1781	1781	803	1796	1885	1900	1900	1900	1826	1900	1796
Adj Flow Rate, veh/h	18	1127	13	21	974	79	10	0	3	24	0	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	13	8	8	74	7	1	0	0	0	5	0	7
Cap, veh/h	428	2911	34	209	2711	220	105	5	21	80	9	35
Arrive On Green	0.85	0.85	0.85	0.85	0.85	0.85	0.06	0.00	0.06	0.06	0.00	0.06
Sat Flow, veh/h	489	3426	40	212	3190	259	1152	93	373	770	154	616
Grp Volume(v), veh/h	18	557	583	21	521	532	13	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	489	1692	1773	212	1706	1742	1618	0	0	1540	0	0
Q Serve(g_s), s	1.3	11.8	11.8	3.9	10.6	10.6	0.0	0.0	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	11.9	11.8	11.8	15.7	10.6	10.6	1.1	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.15	0.77		0.23	0.60		0.40
Lane Grp Cap(c), veh/h	428	1438	1507	209	1450	1480	131	0	0	123	0	0
V/C Ratio(X)	0.04	0.39	0.39	0.10	0.36	0.36	0.10	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	428	1438	1507	209	1450	1480	418	0	0	418	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	2.7	2.7	4.5	2.6	2.6	71.7	0.0	0.0	73.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.7	1.0	0.7	0.7	0.7	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3	0.1	0.3	0.3	0.4	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.1	3.4	3.4	5.4	3.3	3.3	72.4	0.0	0.0	76.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			E		
Approach Vol, veh/h		1158			1074			13			40	
Approach Delay, s/veh		3.4			3.3			72.4			76.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		143.4		16.6		143.4		16.6				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		104.5		40.5		104.5		40.5				
Max Q Clear Time (g_c+I1), s		0.0		5.9		0.0		3.1				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.1				

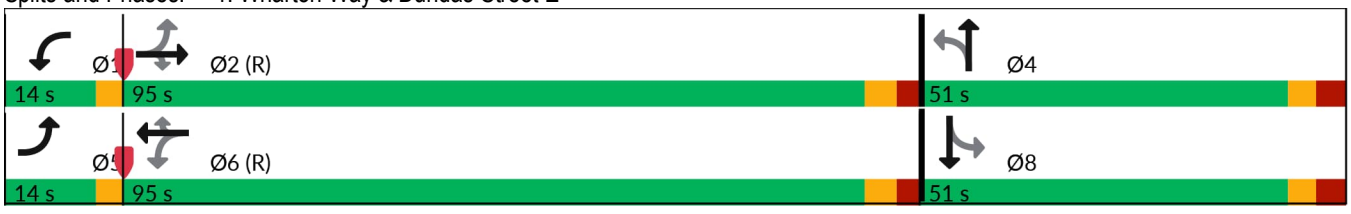
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			5.0									
HCM 6th LOS			A									

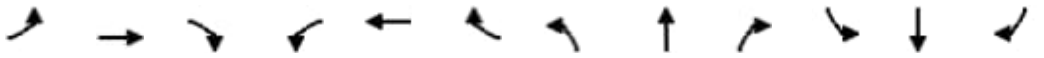
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	63	999	36	111	1303	48	62	8	117	10
Future Volume (vph)	63	999	36	111	1303	48	62	8	117	10
Lane Group Flow (vph)	65	1030	37	114	1343	49	64	92	121	188
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			4		8
Permitted Phases	2		2	6		6	4		8	
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.0	38.5	38.5	9.0	38.5	38.5	48.0	48.0	48.0	48.0
Total Split (s)	14.0	95.0	95.0	14.0	95.0	95.0	51.0	51.0	51.0	51.0
Total Split (%)	8.8%	59.4%	59.4%	8.8%	59.4%	59.4%	31.9%	31.9%	31.9%	31.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	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				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.24	0.44	0.04	0.31	0.55	0.05	0.49	0.27	0.60	0.48
Control Delay (s/veh)	8.5	14.6	2.5	6.7	17.2	4.3	69.2	12.8	71.5	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.5	14.6	2.5	6.7	17.2	4.3	69.2	12.8	71.5	15.6
Queue Length 50th (m)	3.7	64.4	0.0	5.4	134.1	0.8	19.5	2.3	37.6	9.4
Queue Length 95th (m)	11.7	120.8	3.8	16.7	208.7	m6.4	31.5	16.5	52.4	29.5
Internal Link Dist (m)		169.3			444.1			44.4		148.5
Turn Bay Length (m)	37.0		70.0	95.0		44.0	28.0		34.0	
Base Capacity (vph)	312	2357	995	392	2425	901	216	500	332	542
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	0.21	0.44	0.04	0.29	0.55	0.05	0.30	0.18	0.36	0.35

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 133 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	999	36	111	1303	48	62	8	81	117	10	173
Future Volume (veh/h)	63	999	36	111	1303	48	62	8	81	117	10	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1856	1811	1767	1856	1589	1870	1900	1870	1796	1900	1870
Adj Flow Rate, veh/h	65	1030	0	114	1343	0	64	8	84	121	10	178
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	3	6	9	3	21	2	0	2	7	0	2
Cap, veh/h	263	2241		358	2268		185	31	325	261	19	335
Arrive On Green	0.03	0.64	0.00	0.04	0.64	0.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1725	3526	1535	1682	3526	1346	1177	138	1453	1226	84	1498
Grp Volume(v), veh/h	65	1030	0	114	1343	0	64	0	92	121	0	188
Grp Sat Flow(s),veh/h/ln	1725	1763	1535	1682	1763	1346	1177	0	1591	1226	0	1582
Q Serve(g_s), s	2.1	24.1	0.0	3.8	35.1	0.0	8.1	0.0	7.6	14.4	0.0	16.7
Cycle Q Clear(g_c), s	2.1	24.1	0.0	3.8	35.1	0.0	24.9	0.0	7.6	22.0	0.0	16.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.95
Lane Grp Cap(c), veh/h	263	2241		358	2268		185	0	356	261	0	354
V/C Ratio(X)	0.25	0.46		0.32	0.59		0.35	0.00	0.26	0.46	0.00	0.53
Avail Cap(c_a), veh/h	331	2241		412	2268		245	0	438	324	0	435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	15.0	0.0	11.5	16.4	0.0	65.6	0.0	51.1	60.2	0.0	54.7
Incr Delay (d2), s/veh	0.5	0.7	0.0	0.5	1.1	0.0	1.1	0.0	0.4	1.3	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.8	0.0	0.4	5.3	0.0	1.9	0.0	2.3	3.5	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.1	15.7	0.0	12.0	17.6	0.0	66.7	0.0	51.5	61.5	0.0	55.9
LnGrp LOS	B	B		B	B		E		D	E		E
Approach Vol, veh/h		1095			1457			156			309	
Approach Delay, s/veh		15.6			17.1			57.8			58.1	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	108.2		42.8	7.7	109.4		42.8				
Change Period (Y+Rc), s	3.0	6.5		7.0	3.0	6.5		7.0				
Max Green Setting (Gmax), s	11.0	88.5		44.0	11.0	88.5		44.0				
Max Q Clear Time (g_c+I1), s	5.8	26.1		26.9	4.1	37.1		24.0				
Green Ext Time (p_c), s	0.2	30.0		1.4	0.1	36.8		3.4				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			22.9									
HCM 6th LOS			C									

Notes

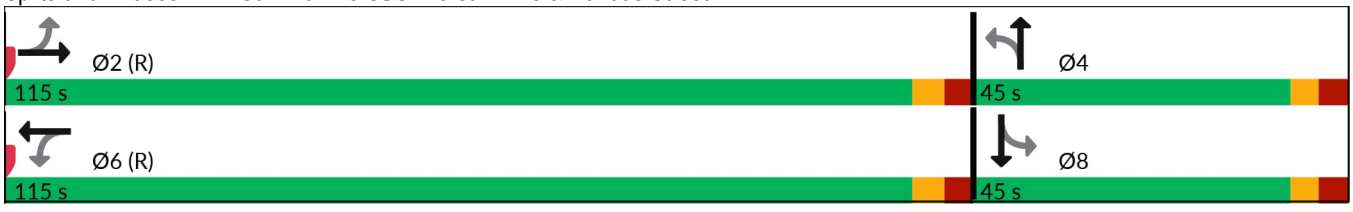
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

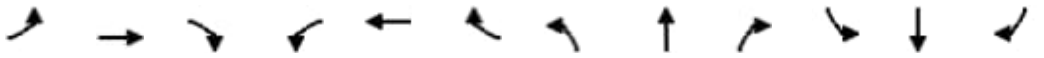
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	32	1071	66	1401	73	5	112	8
Future Volume (vph)	32	1071	66	1401	73	5	112	8
Lane Group Flow (vph)	34	1236	71	1631	78	95	120	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	115.0	115.0	115.0	115.0	45.0	45.0	45.0	45.0
Total Split (%)	71.9%	71.9%	71.9%	71.9%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.20	0.46	0.26	0.61	0.48	0.31	0.70	0.41
Control Delay (s/veh)	18.8	14.1	6.4	5.5	70.8	13.5	84.6	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.8	14.1	6.4	5.5	70.8	13.5	84.6	35.5
Queue Length 50th (m)	2.2	51.4	3.4	43.2	23.6	1.4	37.5	16.9
Queue Length 95th (m)	16.9	179.7	m5.8	47.0	36.5	16.3	53.3	32.5
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	28.0		45.0		36.0		23.0	
Base Capacity (vph)	169	2685	275	2657	275	450	292	422
Starvation Cap Reductn	0	0	0	91	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.46	0.26	0.64	0.28	0.21	0.41	0.26

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 61 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





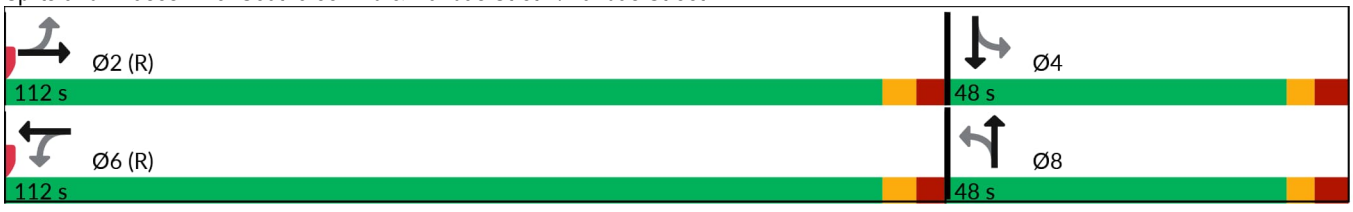
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1071	78	66	1401	116	73	5	84	112	8	94
Future Volume (veh/h)	32	1071	78	66	1401	116	73	5	84	112	8	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.97	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1900	1811	1856	1737	1885	1900	1900	1870	1707	1900
Adj Flow Rate, veh/h	34	1152	84	71	1506	125	78	5	90	120	9	101
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	0	6	3	11	1	0	0	2	13	0
Cap, veh/h	194	2406	175	297	2381	196	201	16	282	221	22	250
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.72	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	306	3324	242	436	3289	271	1279	83	1496	1285	118	1325
Grp Volume(v), veh/h	34	610	626	71	802	829	78	0	95	120	0	110
Grp Sat Flow(s),veh/h/ln	306	1763	1804	436	1763	1797	1279	0	1579	1285	0	1443
Q Serve(g_s), s	10.3	23.4	23.5	13.2	36.8	37.8	9.1	0.0	8.3	14.2	0.0	10.7
Cycle Q Clear(g_c), s	48.1	23.4	23.5	36.6	36.8	37.8	19.8	0.0	8.3	22.5	0.0	10.7
Prop In Lane	1.00		0.13	1.00		0.15	1.00		0.95	1.00		0.92
Lane Grp Cap(c), veh/h	194	1276	1306	297	1276	1301	201	0	298	221	0	272
V/C Ratio(X)	0.18	0.48	0.48	0.24	0.63	0.64	0.39	0.00	0.32	0.54	0.00	0.40
Avail Cap(c_a), veh/h	194	1276	1306	297	1276	1301	263	0	375	283	0	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	9.3	9.3	17.1	11.2	11.3	65.7	0.0	56.0	65.8	0.0	57.0
Incr Delay (d2), s/veh	2.0	1.3	1.3	1.4	1.7	1.8	1.2	0.0	0.6	2.1	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.4	1.4	0.7	2.1	2.2	2.4	0.0	2.6	3.8	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.6	10.6	10.6	18.5	12.9	13.1	67.0	0.0	56.7	67.9	0.0	58.0
LnGrp LOS	C	B	B	B	B	B	E		E	E		E
Approach Vol, veh/h		1270			1702			173			230	
Approach Delay, s/veh		11.0			13.2			61.3			63.1	
Approach LOS		B			B			E			E	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		122.8		37.2		122.8		37.2				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		108.0		38.0		108.0		38.0				
Max Q Clear Time (g_c+I1), s		0.0		21.8		0.0		24.5				
Green Ext Time (p_c), s		0.0		0.9		0.0		1.1				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			18.3									
HCM 6th LOS			B									

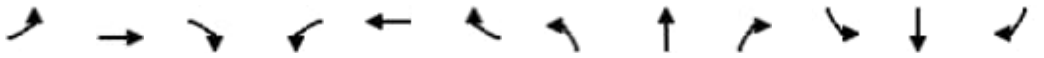
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	1314	9	1539	9	0	84	0
Future Volume (vph)	12	1314	9	1539	9	0	84	0
Lane Group Flow (vph)	13	1468	10	1752	0	19	0	114
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	37.5	37.5	37.5	37.5	46.5	46.5	46.5	46.5
Total Split (s)	112.0	112.0	112.0	112.0	48.0	48.0	48.0	48.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5		7.5		7.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.08	0.52	0.04	0.63		0.10		0.65
Control Delay (s/veh)	5.9	5.7	4.9	8.3		9.5		65.4
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	5.9	5.7	4.9	8.3		9.5		65.4
Queue Length 50th (m)	0.6	39.2	0.6	102.2		0.0		25.7
Queue Length 95th (m)	m2.1	65.7	2.5	151.1		4.7		45.3
Internal Link Dist (m)		230.7		265.7		108.1		126.3
Turn Bay Length (m)	24.0		27.0					
Base Capacity (vph)	160	2831	234	2765		405		378
Starvation Cap Reductn	0	152	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.08	0.55	0.04	0.63		0.05		0.30

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 72 (45%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1314	7	9	1539	38	9	0	8	84	0	19
Future Volume (veh/h)	12	1314	7	9	1539	38	9	0	8	84	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1841	1826	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	1460	8	10	1710	42	10	0	9	93	0	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	3	0	0	4	5	0	0	0	0	0	0
Cap, veh/h	221	2921	16	296	2833	69	106	10	74	155	0	26
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	279	3595	20	367	3486	85	767	109	789	1216	0	275
Grp Volume(v), veh/h	13	716	752	10	855	897	19	0	0	114	0	0
Grp Sat Flow(s),veh/h/ln	279	1763	1851	367	1749	1822	1665	0	0	1491	0	0
Q Serve(g_s), s	2.9	20.5	20.5	1.4	28.7	29.1	0.0	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	31.9	20.5	20.5	21.9	28.7	29.1	1.6	0.0	0.0	11.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.05	0.53		0.47	0.82		0.18
Lane Grp Cap(c), veh/h	221	1432	1505	296	1421	1481	190	0	0	180	0	0
V/C Ratio(X)	0.06	0.50	0.50	0.03	0.60	0.61	0.10	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	221	1432	1505	296	1421	1481	427	0	0	412	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.4	4.7	4.7	8.2	5.5	5.5	66.5	0.0	0.0	71.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	1.1	1.0	0.2	1.9	1.8	0.5	0.0	0.0	7.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.4	0.0	0.7	0.8	0.6	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.9	5.8	5.8	8.4	7.4	7.4	66.9	0.0	0.0	78.5	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	E			E		
Approach Vol, veh/h		1481			1762			19			114	
Approach Delay, s/veh		5.8			7.4			66.9			78.5	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		137.5		22.5		137.5		22.5				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		104.5		40.5		104.5		40.5				
Max Q Clear Time (g_c+I1), s		0.0		13.9		0.0		3.6				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			9.4									
HCM 6th LOS			A									

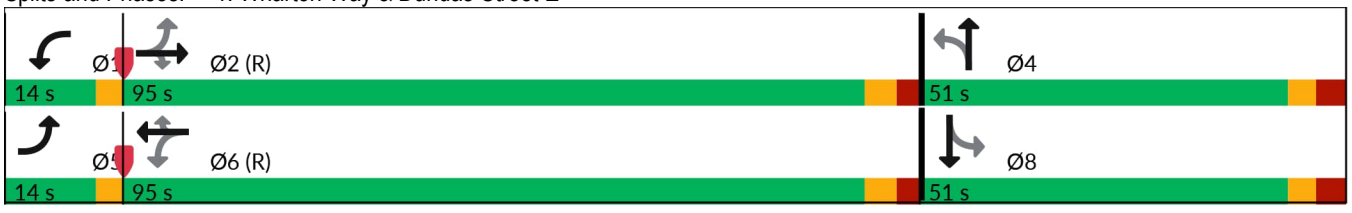
Future Total 2029 Conditions

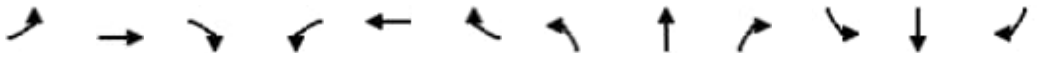
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	98	929	46	89	814	96	32	7	73	15
Future Volume (vph)	98	929	46	89	814	96	32	7	73	15
Lane Group Flow (vph)	105	999	49	96	875	103	34	85	78	73
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			4		8
Permitted Phases	2		2	6		6	4		8	
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.0	38.5	38.5	9.0	38.5	38.5	48.0	48.0	48.0	48.0
Total Split (s)	14.0	95.0	95.0	14.0	95.0	95.0	51.0	51.0	51.0	51.0
Total Split (%)	8.8%	59.4%	59.4%	8.8%	59.4%	59.4%	31.9%	31.9%	31.9%	31.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	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				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.24	0.43	0.05	0.25	0.37	0.11	0.20	0.30	0.46	0.26
Control Delay (s/veh)	7.2	13.6	3.8	11.2	20.1	11.1	55.8	14.2	66.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.2	13.6	3.8	11.2	20.1	11.1	55.8	14.2	66.4	18.4
Queue Length 50th (m)	4.9	53.7	0.1	6.9	66.3	5.7	10.2	2.4	24.3	4.7
Queue Length 95th (m)	17.6	116.6	6.3	24.2	133.6	22.2	18.1	16.0	35.6	17.3
Internal Link Dist (m)		169.3			444.1			44.4		148.5
Turn Bay Length (m)	37.0		70.0	95.0		44.0	28.0		34.0	
Base Capacity (vph)	470	2337	1058	413	2377	907	308	456	313	458
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	0.43	0.05	0.23	0.37	0.11	0.11	0.19	0.25	0.16

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 144 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	929	46	89	814	96	32	7	72	73	15	53
Future Volume (veh/h)	98	929	46	89	814	96	32	7	72	73	15	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.97		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1796	1841	1737	1826	1618	1663	1470	1752	1678	1900	1737
Adj Flow Rate, veh/h	105	999	0	96	875	0	34	8	77	78	16	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	7	4	11	5	19	16	29	10	15	0	11
Cap, veh/h	420	2220		364	2250		248	25	238	224	76	271
Arrive On Green	0.03	0.65	0.00	0.03	0.65	0.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1682	3413	1560	1654	3469	1372	1150	116	1113	1150	356	1268
Grp Volume(v), veh/h	105	999	0	96	875	0	34	0	85	78	0	73
Grp Sat Flow(s),veh/h/ln	1682	1706	1560	1654	1735	1372	1150	0	1228	1150	0	1624
Q Serve(g_s), s	3.4	23.2	0.0	3.1	19.0	0.0	4.0	0.0	9.4	9.8	0.0	5.9
Cycle Q Clear(g_c), s	3.4	23.2	0.0	3.1	19.0	0.0	9.9	0.0	9.4	19.2	0.0	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.78
Lane Grp Cap(c), veh/h	420	2220		364	2250		248	0	263	224	0	347
V/C Ratio(X)	0.25	0.45		0.26	0.39		0.14	0.00	0.32	0.35	0.00	0.21
Avail Cap(c_a), veh/h	478	2220		423	2250		319	0	338	294	0	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.9	13.8	0.0	10.6	13.2	0.0	55.9	0.0	53.1	61.2	0.0	51.8
Incr Delay (d2), s/veh	0.3	0.7	0.0	0.4	0.5	0.0	0.2	0.0	0.7	0.9	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.2	0.0	0.3	2.7	0.0	0.9	0.0	2.2	2.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.2	14.5	0.0	11.0	13.7	0.0	56.1	0.0	53.8	62.2	0.0	52.1
LnGrp LOS	B	B		B	B		E		D	E		D
Approach Vol, veh/h		1104			971			119			151	
Approach Delay, s/veh		14.1			13.4			54.5			57.3	
Approach LOS		B			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	110.6		41.2	8.5	110.3		41.2				
Change Period (Y+Rc), s	3.0	6.5		7.0	3.0	6.5		7.0				
Max Green Setting (Gmax), s	11.0	88.5		44.0	11.0	88.5		44.0				
Max Q Clear Time (g_c+I1), s	5.1	25.2		11.9	5.4	21.0		21.2				
Green Ext Time (p_c), s	0.2	29.1		1.6	0.2	24.5		1.4				

Intersection Summary			
HCM 6th Ctrl Delay, s/veh		18.7	
HCM 6th LOS		B	

Notes

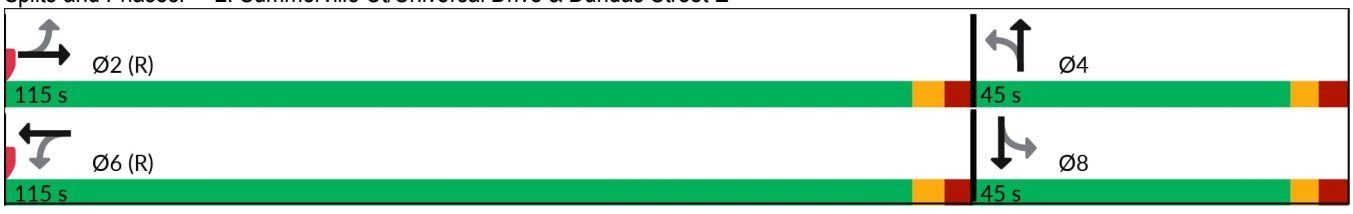
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

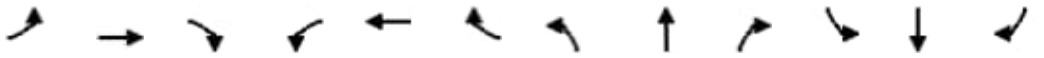
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	69	942	6	788	13	0	183	3
Future Volume (vph)	69	942	6	788	13	0	183	3
Lane Group Flow (vph)	74	1026	6	1045	14	13	197	133
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	115.0	115.0	115.0	115.0	45.0	45.0	45.0	45.0
Total Split (%)	71.9%	71.9%	71.9%	71.9%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.23	0.42	0.02	0.46	0.08	0.04	0.83	0.34
Control Delay (s/veh)	13.2	14.1	7.7	7.9	51.6	0.2	89.5	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.2	14.1	7.7	7.9	51.6	0.2	89.5	10.4
Queue Length 50th (m)	11.9	102.4	0.5	41.2	3.7	0.0	61.0	0.8
Queue Length 95th (m)	28.5	145.6	m1.3	47.4	10.0	0.0	85.6	18.2
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	28.0		45.0		36.0		23.0	
Base Capacity (vph)	326	2442	259	2288	229	418	310	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.42	0.02	0.46	0.06	0.03	0.64	0.28

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 35 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	942	12	6	788	184	13	0	12	183	3	121
Future Volume (veh/h)	69	942	12	6	788	184	13	0	12	183	3	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1781	1900	1411	1737	1678	1678	1900	1530	1796	1900	1870
Adj Flow Rate, veh/h	74	1013	13	6	847	198	14	0	13	197	3	130
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	8	0	33	11	15	15	0	25	7	0	2
Cap, veh/h	368	2496	32	300	1935	452	167	0	292	280	7	287
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.18	0.00	0.18	0.18	0.18	0.18
Sat Flow, veh/h	535	3421	44	414	2651	620	1122	0	1600	1337	36	1569
Grp Volume(v), veh/h	74	501	525	6	527	518	14	0	13	197	0	133
Grp Sat Flow(s),veh/h/ln	535	1692	1772	414	1650	1620	1122	0	1600	1337	0	1605
Q Serve(g_s), s	10.2	18.2	18.2	0.9	20.3	20.3	1.8	0.0	1.1	22.8	0.0	11.8
Cycle Q Clear(g_c), s	30.5	18.2	18.2	19.1	20.3	20.3	13.6	0.0	1.1	23.9	0.0	11.8
Prop In Lane	1.00		0.02	1.00		0.38	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	368	1235	1293	300	1204	1183	167	0	292	280	0	293
V/C Ratio(X)	0.20	0.41	0.41	0.02	0.44	0.44	0.08	0.00	0.04	0.70	0.00	0.45
Avail Cap(c_a), veh/h	368	1235	1293	300	1204	1183	229	0	380	354	0	381
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	8.3	8.3	12.0	8.6	8.6	64.3	0.0	53.9	63.7	0.0	58.3
Incr Delay (d2), s/veh	1.2	1.0	0.9	0.1	1.1	1.1	0.2	0.0	0.1	4.5	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.9	0.0	0.9	0.9	0.4	0.0	0.3	6.4	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.9	9.3	9.2	12.1	9.7	9.7	64.6	0.0	53.9	68.2	0.0	59.4
LnGrp LOS	B	A	A	B	A	A	E		D	E		E
Approach Vol, veh/h		1100			1051			27			330	
Approach Delay, s/veh		9.7			9.7			59.4			64.6	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		123.8		36.2		123.8		36.2				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		108.0		38.0		108.0		38.0				
Max Q Clear Time (g_c+I1), s		0.0		15.6		0.0		25.9				
Green Ext Time (p_c), s		0.0		0.1		0.0		1.6				

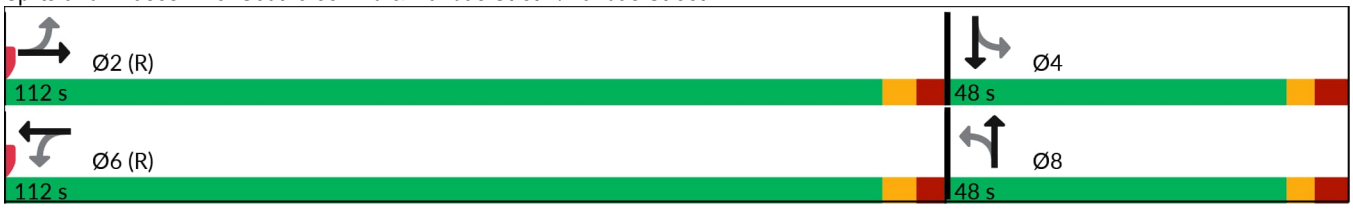
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			17.5									
HCM 6th LOS			B									

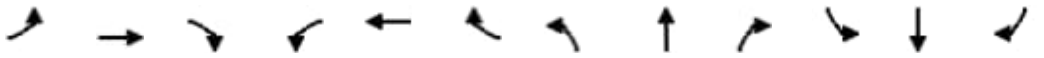
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	16	1122	19	901	9	0	22	0
Future Volume (vph)	16	1122	19	901	9	0	22	0
Lane Group Flow (vph)	18	1246	21	1069	0	13	0	40
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	37.5	37.5	37.5	37.5	46.5	46.5	46.5	46.5
Total Split (s)	112.0	112.0	112.0	112.0	48.0	48.0	48.0	48.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5		7.5		7.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.05	0.42	0.09	0.37		0.11		0.33
Control Delay (s/veh)	2.1	2.5	3.3	3.0		5.5		35.9
Queue Delay	0.0	0.1	0.0	0.0		0.0		0.0
Total Delay (s/veh)	2.1	2.6	3.3	3.0		5.5		35.9
Queue Length 50th (m)	0.8	35.7	0.9	32.7		0.0		2.8
Queue Length 95th (m)	m1.3	33.7	2.9	43.9		1.8		15.2
Internal Link Dist (m)		230.7		265.7		101.6		126.3
Turn Bay Length (m)	24.0		27.0					
Base Capacity (vph)	377	2966	233	2917		376		374
Starvation Cap Reductn	0	335	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.05	0.47	0.09	0.37		0.03		0.11

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 59 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1122	12	19	901	72	9	0	3	22	0	15
Future Volume (veh/h)	16	1122	12	19	901	72	9	0	3	22	0	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1796	1781	1159	1796	1885	1900	1900	1900	1826	1900	1796
Adj Flow Rate, veh/h	18	1233	13	21	990	79	10	0	3	24	0	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	13	7	8	50	7	1	0	0	0	5	0	7
Cap, veh/h	422	2939	31	257	2714	217	105	5	21	80	9	35
Arrive On Green	0.85	0.85	0.85	0.85	0.85	0.85	0.06	0.00	0.06	0.06	0.00	0.06
Sat Flow, veh/h	482	3459	36	276	3195	255	1152	93	373	770	154	616
Grp Volume(v), veh/h	18	608	638	21	529	540	13	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	482	1706	1789	276	1706	1743	1618	0	0	1540	0	0
Q Serve(g_s), s	1.4	13.3	13.3	3.1	10.8	10.8	0.0	0.0	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	12.2	13.3	13.3	16.4	10.8	10.8	1.1	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.15	0.77		0.23	0.60		0.40
Lane Grp Cap(c), veh/h	422	1450	1520	257	1450	1481	131	0	0	123	0	0
V/C Ratio(X)	0.04	0.42	0.42	0.08	0.36	0.36	0.10	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	422	1450	1520	257	1450	1481	418	0	0	418	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	2.8	2.8	4.7	2.6	2.6	71.7	0.0	0.0	73.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.8	0.7	0.6	0.7	0.7	0.7	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3	0.0	0.3	0.3	0.4	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.1	3.6	3.6	5.3	3.3	3.3	72.4	0.0	0.0	76.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			E		
Approach Vol, veh/h		1264			1090			13			40	
Approach Delay, s/veh		3.6			3.4			72.4			76.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		143.4		16.6		143.4		16.6				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		104.5		40.5		104.5		40.5				
Max Q Clear Time (g_c+I1), s		0.0		5.9		0.0		3.1				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.1				

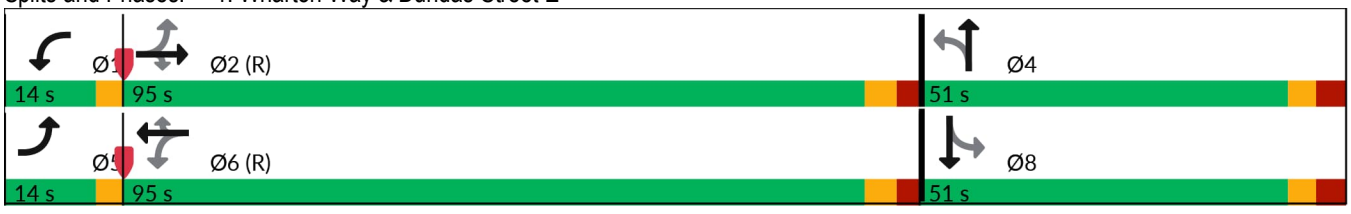
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			5.1									
HCM 6th LOS			A									

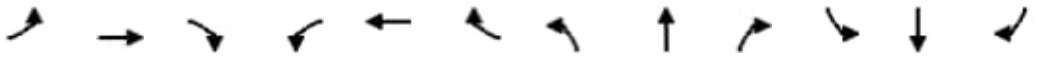
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	63	1074	36	111	1334	48	62	8	117	10
Future Volume (vph)	63	1074	36	111	1334	48	62	8	117	10
Lane Group Flow (vph)	65	1107	37	114	1375	49	64	92	121	188
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			4		8
Permitted Phases	2		2	6		6	4		8	
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.0	38.5	38.5	9.0	38.5	38.5	48.0	48.0	48.0	48.0
Total Split (s)	14.0	95.0	95.0	14.0	95.0	95.0	51.0	51.0	51.0	51.0
Total Split (%)	8.8%	59.4%	59.4%	8.8%	59.4%	59.4%	31.9%	31.9%	31.9%	31.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	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				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.25	0.47	0.04	0.33	0.57	0.05	0.49	0.27	0.60	0.49
Control Delay (s/veh)	8.7	15.2	2.5	6.1	15.8	3.9	69.2	12.8	71.5	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.7	15.2	2.5	6.1	15.8	3.9	69.2	12.8	71.5	16.4
Queue Length 50th (m)	3.7	71.6	0.0	5.4	133.4	1.1	19.5	2.3	37.6	10.3
Queue Length 95th (m)	11.7	133.5	3.8	m14.6	208.6	m4.9	31.5	16.5	52.4	30.5
Internal Link Dist (m)		169.3			444.1			44.4		148.5
Turn Bay Length (m)	37.0		70.0	95.0		44.0	28.0		34.0	
Base Capacity (vph)	303	2357	995	365	2425	901	216	500	332	540
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	0.21	0.47	0.04	0.31	0.57	0.05	0.30	0.18	0.36	0.35

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 133 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	1074	36	111	1334	48	62	8	81	117	10	173
Future Volume (veh/h)	63	1074	36	111	1334	48	62	8	81	117	10	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1856	1811	1767	1856	1589	1870	1900	1870	1796	1900	1870
Adj Flow Rate, veh/h	65	1107	0	114	1375	0	64	8	84	121	10	178
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	3	6	9	3	21	2	0	2	7	0	2
Cap, veh/h	255	2241		333	2268		185	31	325	261	19	335
Arrive On Green	0.03	0.64	0.00	0.04	0.64	0.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1725	3526	1535	1682	3526	1346	1177	138	1453	1226	84	1498
Grp Volume(v), veh/h	65	1107	0	114	1375	0	64	0	92	121	0	188
Grp Sat Flow(s),veh/h/ln	1725	1763	1535	1682	1763	1346	1177	0	1591	1226	0	1582
Q Serve(g_s), s	2.1	26.7	0.0	3.8	36.5	0.0	8.1	0.0	7.6	14.4	0.0	16.7
Cycle Q Clear(g_c), s	2.1	26.7	0.0	3.8	36.5	0.0	24.9	0.0	7.6	22.0	0.0	16.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.95
Lane Grp Cap(c), veh/h	255	2241		333	2268		185	0	356	261	0	354
V/C Ratio(X)	0.26	0.49		0.34	0.61		0.35	0.00	0.26	0.46	0.00	0.53
Avail Cap(c_a), veh/h	322	2241		386	2268		245	0	438	324	0	435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	15.5	0.0	12.1	16.7	0.0	65.6	0.0	51.1	60.2	0.0	54.7
Incr Delay (d2), s/veh	0.5	0.8	0.0	0.6	1.2	0.0	1.1	0.0	0.4	1.3	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.2	0.0	0.4	5.5	0.0	1.9	0.0	2.3	3.5	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.5	16.3	0.0	12.7	17.9	0.0	66.7	0.0	51.5	61.5	0.0	55.9
LnGrp LOS	B	B		B	B		E		D	E		E
Approach Vol, veh/h		1172			1489			156			309	
Approach Delay, s/veh		16.2			17.5			57.8			58.1	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	108.2		42.8	7.7	109.4		42.8				
Change Period (Y+Rc), s	3.0	6.5		7.0	3.0	6.5		7.0				
Max Green Setting (Gmax), s	11.0	88.5		44.0	11.0	88.5		44.0				
Max Q Clear Time (g_c+I1), s	5.8	28.7		26.9	4.1	38.5		24.0				
Green Ext Time (p_c), s	0.2	32.3		1.4	0.1	37.0		3.4				

Intersection Summary			
HCM 6th Ctrl Delay, s/veh		23.0	
HCM 6th LOS		C	

Notes

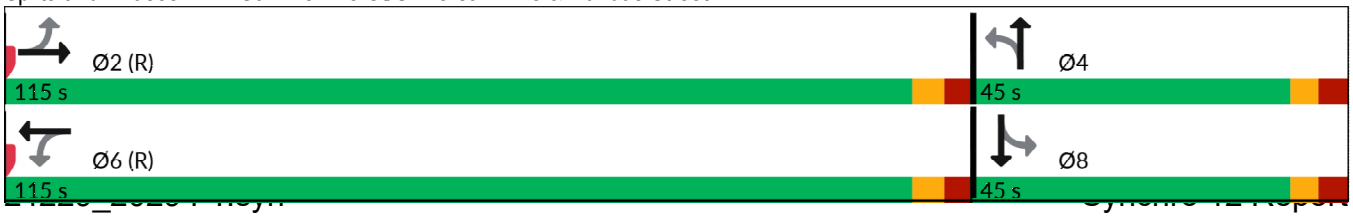
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

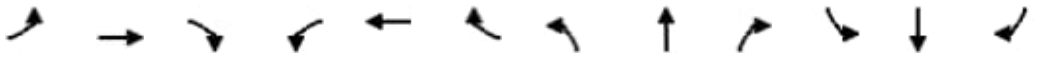
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	117	1057	66	1384	73	5	169	8
Future Volume (vph)	117	1057	66	1384	73	5	169	8
Lane Group Flow (vph)	126	1221	71	1713	78	95	182	172
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	115.0	115.0	115.0	115.0	45.0	45.0	45.0	45.0
Total Split (%)	71.9%	71.9%	71.9%	71.9%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.95	0.48	0.28	0.68	0.49	0.27	0.82	0.53
Control Delay (s/veh)	99.8	16.6	7.4	6.7	68.4	12.1	90.2	45.1
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay (s/veh)	99.8	16.6	7.4	6.8	68.4	12.1	90.2	45.1
Queue Length 50th (m)	29.2	64.6	3.6	45.0	22.7	1.3	56.5	34.3
Queue Length 95th (m)	#85.5	181.3	m5.5	48.4	37.9	16.3	79.4	55.0
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	28.0		45.0		36.0		23.0	
Base Capacity (vph)	133	2562	258	2514	214	450	300	423
Starvation Cap Reductn	0	0	0	68	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.48	0.28	0.70	0.36	0.21	0.61	0.41

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 61 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	1057	78	66	1384	209	73	5	84	169	8	152
Future Volume (veh/h)	117	1057	78	66	1384	209	73	5	84	169	8	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1856	1900	1811	1856	1811	1885	1900	1900	1885	1707	1900
Adj Flow Rate, veh/h	126	1137	84	71	1488	225	78	5	90	182	9	163
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	0	6	3	6	1	0	0	1	13	0
Cap, veh/h	159	2308	170	282	2131	317	180	18	326	262	16	296
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	287	3321	245	442	3065	455	1213	83	1499	1297	75	1364
Grp Volume(v), veh/h	126	603	618	71	844	869	78	0	95	182	0	172
Grp Sat Flow(s),veh/h/ln	287	1763	1803	442	1763	1758	1213	0	1582	1297	0	1439
Q Serve(g_s), s	63.6	25.4	25.4	14.2	44.8	47.6	9.8	0.0	8.0	21.7	0.0	17.0
Cycle Q Clear(g_c), s	111.2	25.4	25.4	39.6	44.8	47.6	26.8	0.0	8.0	29.7	0.0	17.0
Prop In Lane	1.00		0.14	1.00		0.26	1.00		0.95	1.00		0.95
Lane Grp Cap(c), veh/h	159	1225	1253	282	1225	1222	180	0	344	262	0	313
V/C Ratio(X)	0.79	0.49	0.49	0.25	0.69	0.71	0.43	0.00	0.28	0.69	0.00	0.55
Avail Cap(c_a), veh/h	159	1225	1253	282	1225	1222	204	0	376	288	0	342
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	11.3	11.3	20.5	14.3	14.7	67.6	0.0	52.1	64.5	0.0	55.7
Incr Delay (d2), s/veh	32.1	1.4	1.4	1.5	2.2	2.5	1.6	0.0	0.4	6.3	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	2.6	2.6	0.9	4.4	4.7	2.5	0.0	2.5	6.1	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	83.3	12.7	12.7	22.0	16.5	17.2	69.2	0.0	52.6	70.8	0.0	57.2
LnGrp LOS	F	B	B	C	B	B	E		D	E		E
Approach Vol, veh/h		1347			1784			173			354	
Approach Delay, s/veh		19.3			17.1			60.1			64.2	
Approach LOS		B			B			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		118.2		41.8		118.2		41.8				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		108.0		38.0		108.0		38.0				
Max Q Clear Time (g_c+I1), s		0.0		28.8		0.0		31.7				
Green Ext Time (p_c), s		0.0		0.6		0.0		1.2				

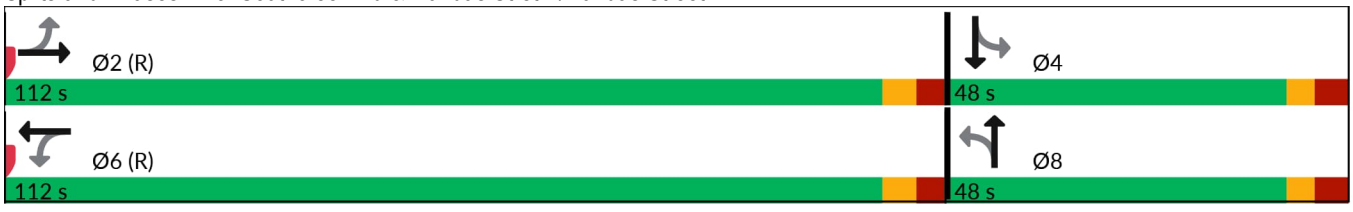
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			24.5									
HCM 6th LOS			C									

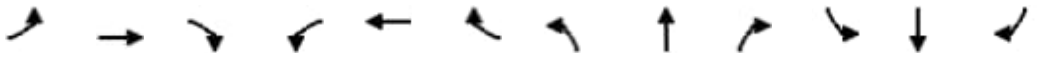
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	1357	9	1615	9	0	84	0
Future Volume (vph)	12	1357	9	1615	9	0	84	0
Lane Group Flow (vph)	13	1516	10	1836	0	19	0	114
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	37.5	37.5	37.5	37.5	46.5	46.5	46.5	46.5
Total Split (s)	112.0	112.0	112.0	112.0	48.0	48.0	48.0	48.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5		7.5		7.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.09	0.54	0.05	0.66		0.10		0.65
Control Delay (s/veh)	6.0	5.4	5.0	8.8		9.5		65.4
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	6.0	5.5	5.0	8.9		9.5		65.4
Queue Length 50th (m)	0.6	49.9	0.6	112.2		0.0		25.7
Queue Length 95th (m)	m2.1	77.0	2.6	166.2		4.7		45.3
Internal Link Dist (m)		230.7		265.7		110.6		126.3
Turn Bay Length (m)	24.0		27.0					
Base Capacity (vph)	142	2831	220	2768		405		378
Starvation Cap Reductn	0	114	0	0		0		0
Spillback Cap Reductn	0	0	0	2		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.09	0.56	0.05	0.66		0.05		0.30

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 72 (45%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1357	7	9	1615	38	9	0	8	84	0	19
Future Volume (veh/h)	12	1357	7	9	1615	38	9	0	8	84	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1841	1826	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	1508	8	10	1794	42	10	0	9	93	0	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	3	0	0	4	5	0	0	0	0	0	0
Cap, veh/h	202	2922	15	282	2837	66	106	10	74	155	0	26
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	257	3595	19	350	3491	81	767	109	789	1216	0	275
Grp Volume(v), veh/h	13	739	777	10	895	941	19	0	0	114	0	0
Grp Sat Flow(s),veh/h/ln	257	1763	1852	350	1749	1823	1665	0	0	1491	0	0
Q Serve(g_s), s	3.3	21.6	21.7	1.5	31.5	31.9	0.0	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	35.2	21.6	21.7	23.2	31.5	31.9	1.6	0.0	0.0	11.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.04	0.53		0.47	0.82		0.18
Lane Grp Cap(c), veh/h	202	1432	1505	282	1421	1482	190	0	0	180	0	0
V/C Ratio(X)	0.06	0.52	0.52	0.04	0.63	0.63	0.10	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	202	1432	1505	282	1421	1482	427	0	0	412	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.6	4.8	4.8	8.6	5.8	5.8	66.5	0.0	0.0	71.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	1.1	1.1	0.2	2.1	2.1	0.5	0.0	0.0	7.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.4	0.1	0.8	0.9	0.6	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.1	6.0	5.9	8.8	7.9	7.9	66.9	0.0	0.0	78.5	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	E			E		
Approach Vol, veh/h		1529			1846			19			114	
Approach Delay, s/veh		6.0			7.9			66.9			78.5	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		137.5		22.5		137.5		22.5				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		104.5		40.5		104.5		40.5				
Max Q Clear Time (g_c+I1), s		0.0		13.9		0.0		3.6				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			9.7									
HCM 6th LOS			A									

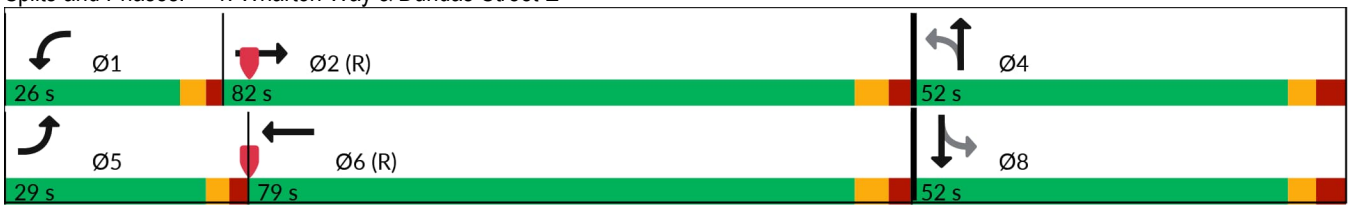
Future Background 2034 Conditions

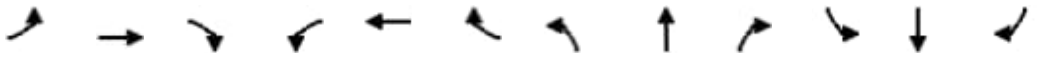
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	98	817	89	683	32	7	73	15
Future Volume (vph)	98	817	89	683	32	7	73	15
Lane Group Flow (vph)	105	927	96	837	34	85	78	73
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	38.5	10.0	38.5	48.0	48.0	48.0	48.0
Total Split (s)	29.0	82.0	26.0	79.0	52.0	52.0	52.0	52.0
Total Split (%)	18.1%	51.3%	16.3%	49.4%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.5	2.0	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	5.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.66	0.43	0.64	0.40	0.20	0.30	0.46	0.26
Control Delay (s/veh)	88.2	18.0	86.8	14.0	55.8	14.2	66.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	88.2	18.0	86.8	14.0	55.8	14.2	66.4	18.4
Queue Length 50th (m)	32.8	62.2	30.2	47.4	10.2	2.4	24.3	4.7
Queue Length 95th (m)	52.0	125.7	51.4	61.8	18.1	16.0	35.6	17.3
Internal Link Dist (m)		169.3		444.1		44.4		148.5
Turn Bay Length (m)	84.0		84.0		28.0		34.0	
Base Capacity (vph)	245	2134	211	2068	315	465	320	467
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.43	0.45	0.40	0.11	0.18	0.24	0.16

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 144 (90%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	817	46	89	683	96	32	7	72	73	15	53
Future Volume (veh/h)	98	817	46	89	683	96	32	7	72	73	15	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.97		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1796	1841	1737	1811	1618	1663	1470	1752	1678	1900	1737
Adj Flow Rate, veh/h	105	878	49	96	734	103	34	8	77	78	16	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	7	4	11	6	19	16	29	10	15	0	11
Cap, veh/h	127	1973	110	117	1800	253	247	25	237	222	76	270
Arrive On Green	0.08	0.60	0.60	0.07	0.60	0.60	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1682	3282	183	1654	3020	424	1150	116	1112	1149	356	1268
Grp Volume(v), veh/h	105	457	470	96	418	419	34	0	85	78	0	73
Grp Sat Flow(s),veh/h/ln	1682	1706	1758	1654	1721	1723	1150	0	1228	1149	0	1624
Q Serve(g_s), s	9.8	23.3	23.3	9.2	20.7	20.8	4.0	0.0	9.4	9.9	0.0	5.9
Cycle Q Clear(g_c), s	9.8	23.3	23.3	9.2	20.7	20.8	9.9	0.0	9.4	19.2	0.0	5.9
Prop In Lane	1.00		0.10	1.00		0.25	1.00		0.91	1.00		0.78
Lane Grp Cap(c), veh/h	127	1026	1057	117	1026	1027	247	0	261	222	0	345
V/C Ratio(X)	0.83	0.45	0.45	0.82	0.41	0.41	0.14	0.00	0.33	0.35	0.00	0.21
Avail Cap(c_a), veh/h	252	1026	1057	217	1026	1027	326	0	345	301	0	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.9	17.4	17.4	73.4	17.2	17.2	56.0	0.0	53.3	61.4	0.0	51.9
Incr Delay (d2), s/veh	12.6	1.4	1.4	13.4	1.2	1.2	0.3	0.0	0.7	0.9	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.4	4.5	3.5	4.0	4.0	0.9	0.0	2.2	2.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	85.5	18.8	18.7	86.8	18.4	18.4	56.3	0.0	54.0	62.3	0.0	52.2
LnGrp LOS	F	B	B	F	B	B	E		D	E		D
Approach Vol, veh/h		1032			933			119			151	
Approach Delay, s/veh		25.5			25.5			54.6			57.4	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	102.7		41.0	17.1	101.9		41.0				
Change Period (Y+Rc), s	5.0	6.5		7.0	5.0	6.5		7.0				
Max Green Setting (Gmax), s	21.0	75.5		45.0	24.0	72.5		45.0				
Max Q Clear Time (g_c+I1), s	11.2	0.0		11.9	11.8	0.0		21.2				
Green Ext Time (p_c), s	0.3	0.0		0.8	0.4	0.0		0.9				

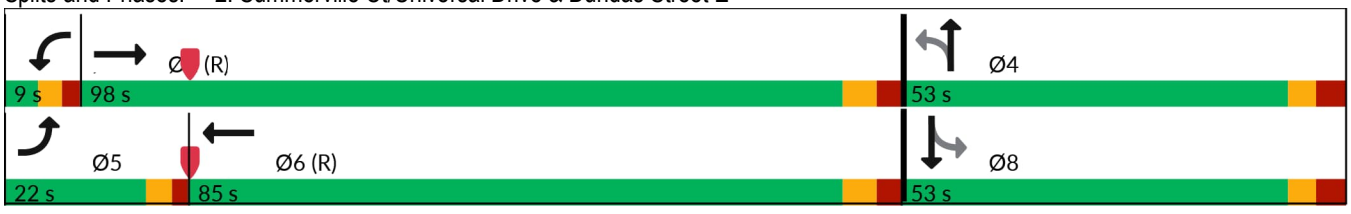
Intersection Summary			
HCM 6th Ctrl Delay, s/veh		29.2	
HCM 6th LOS		C	

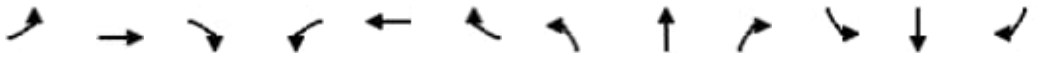
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	41	855	6	738	13	0	81	3
Future Volume (vph)	41	855	6	738	13	0	81	3
Lane Group Flow (vph)	44	932	6	962	14	13	87	42
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	41.0	9.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	22.0	98.0	9.0	85.0	53.0	53.0	53.0	53.0
Total Split (%)	13.8%	61.3%	5.6%	53.1%	33.1%	33.1%	33.1%	33.1%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.0	2.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.44	0.36	0.11	0.43	0.10	0.04	0.58	0.19
Control Delay (s/veh)	99.7	4.2	100.7	8.6	57.6	0.3	78.7	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	99.7	4.2	100.7	8.6	57.6	0.3	78.7	18.0
Queue Length 50th (m)	14.7	21.7	2.0	28.4	4.1	0.0	27.1	0.9
Queue Length 95th (m)	28.4	30.4	m5.7	116.4	9.9	0.0	40.0	11.4
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	80.0		55.0		36.0		23.0	
Base Capacity (vph)	180	2581	53	2221	342	490	350	464
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.36	0.11	0.43	0.04	0.03	0.25	0.09

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	855	12	6	738	156	13	0	12	81	3	36
Future Volume (veh/h)	41	855	12	6	738	156	13	0	12	81	3	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1900	1411	1737	1633	1678	1900	1530	1678	1900	1781
Adj Flow Rate, veh/h	44	919	13	6	794	168	14	0	13	87	3	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	8	0	33	11	18	15	0	25	15	0	8
Cap, veh/h	57	2592	37	8	1981	419	158	0	186	181	13	174
Arrive On Green	0.03	0.76	0.76	0.01	0.73	0.73	0.12	0.00	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1739	3415	48	1344	2707	573	1213	0	1594	1244	115	1497
Grp Volume(v), veh/h	44	455	477	6	484	478	14	0	13	87	0	42
Grp Sat Flow(s),veh/h/ln	1739	1692	1771	1344	1650	1629	1213	0	1594	1244	0	1612
Q Serve(g_s), s	4.0	14.2	14.2	0.7	17.8	17.8	1.7	0.0	1.2	10.7	0.0	3.8
Cycle Q Clear(g_c), s	4.0	14.2	14.2	0.7	17.8	17.8	5.5	0.0	1.2	11.9	0.0	3.8
Prop In Lane	1.00		0.03	1.00		0.35	1.00		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	57	1284	1344	8	1208	1193	158	0	186	181	0	188
V/C Ratio(X)	0.77	0.35	0.35	0.76	0.40	0.40	0.09	0.00	0.07	0.48	0.00	0.22
Avail Cap(c_a), veh/h	185	1284	1344	34	1208	1193	365	0	458	394	0	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.8	6.4	6.4	79.4	8.1	8.1	66.6	0.0	63.0	68.3	0.0	64.1
Incr Delay (d2), s/veh	19.5	0.8	0.7	83.8	0.9	0.9	0.2	0.0	0.2	2.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.3	0.3	0.4	0.7	0.7	0.4	0.0	0.4	2.9	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	96.2	7.1	7.1	163.2	9.1	9.1	66.9	0.0	63.1	70.2	0.0	64.7
LnGrp LOS	F	A	A	F	A	A	E		E	E		E
Approach Vol, veh/h		976			968			27			129	
Approach Delay, s/veh		11.1			10.0			65.1			68.4	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	128.4		25.6	10.2	124.1		25.6				
Change Period (Y+Rc), s	5.0	7.0		7.0	5.0	7.0		7.0				
Max Green Setting (Gmax), s	4.0	91.0		46.0	17.0	78.0		46.0				
Max Q Clear Time (g_c+I1), s	2.7	0.0		7.5	6.0	0.0		13.9				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.1	0.0		0.9				

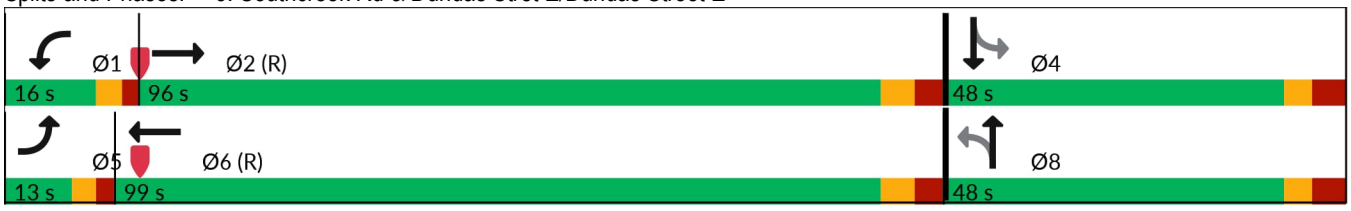
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			14.8									
HCM 6th LOS			B									

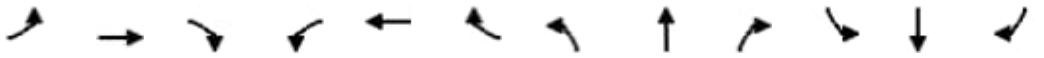
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	16	926	19	818	9	0	22	0
Future Volume (vph)	16	926	19	818	9	0	22	0
Lane Group Flow (vph)	18	1031	21	978	0	13	0	40
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	37.5	9.0	37.5	46.5	46.5	46.5	46.5
Total Split (s)	13.0	96.0	16.0	99.0	48.0	48.0	48.0	48.0
Total Split (%)	8.1%	60.0%	10.0%	61.9%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.5	2.0	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	7.5	5.0	7.5		7.5		7.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.25	0.37	0.34	0.35		0.09		0.27
Control Delay (s/veh)	85.9	3.1	86.5	5.3		1.2		9.1
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	85.9	3.1	86.5	5.3		1.2		9.1
Queue Length 50th (m)	6.0	43.3	6.6	47.4		0.0		0.0
Queue Length 95th (m)	15.1	23.2	16.0	61.0		0.0		4.6
Internal Link Dist (m)		230.7		265.7		103.4		126.3
Turn Bay Length (m)	85.0		85.0					
Base Capacity (vph)	83	2762	82	2755		401		400
Starvation Cap Reductn	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.22	0.37	0.26	0.35		0.03		0.10

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	926	12	19	818	72	9	0	3	22	0	15
Future Volume (veh/h)	16	926	12	19	818	72	9	0	3	22	0	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1781	1781	1159	1796	1885	1900	1900	1900	1826	1900	1796
Adj Flow Rate, veh/h	18	1018	13	21	899	79	10	0	3	24	0	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	13	8	8	50	7	1	0	0	0	5	0	7
Cap, veh/h	22	2734	35	21	2548	224	105	5	21	80	9	35
Arrive On Green	0.01	0.80	0.80	0.02	0.80	0.80	0.06	0.00	0.06	0.06	0.00	0.06
Sat Flow, veh/h	1626	3421	44	1104	3166	278	1152	93	373	770	154	616
Grp Volume(v), veh/h	18	504	527	21	484	494	13	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	1626	1692	1772	1104	1706	1738	1618	0	0	1540	0	0
Q Serve(g_s), s	1.8	13.6	13.6	3.0	12.4	12.4	0.0	0.0	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	1.8	13.6	13.6	3.0	12.4	12.4	1.1	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.16	0.77		0.23	0.60		0.40
Lane Grp Cap(c), veh/h	22	1353	1416	21	1373	1399	131	0	0	123	0	0
V/C Ratio(X)	0.80	0.37	0.37	0.99	0.35	0.35	0.10	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	81	1353	1416	76	1373	1399	418	0	0	418	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	78.7	4.6	4.6	78.5	4.3	4.3	71.7	0.0	0.0	73.0	0.0	0.0
Incr Delay (d2), s/veh	44.2	0.7	0.7	88.5	0.7	0.7	0.7	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.3	1.2	0.3	0.3	0.4	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	122.9	5.3	5.3	167.0	5.0	5.0	72.4	0.0	0.0	76.2	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	E			E		
Approach Vol, veh/h		1049			999			13			40	
Approach Delay, s/veh		7.3			8.4			72.4			76.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	135.4		16.6	7.2	136.2		16.6				
Change Period (Y+Rc), s	5.0	7.5		7.5	5.0	7.5		7.5				
Max Green Setting (Gmax), s	11.0	88.5		40.5	8.0	91.5		40.5				
Max Q Clear Time (g_c+I1), s	5.0	0.0		5.9	3.8	0.0		3.1				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	0.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			9.5									
HCM 6th LOS			A									

Notes

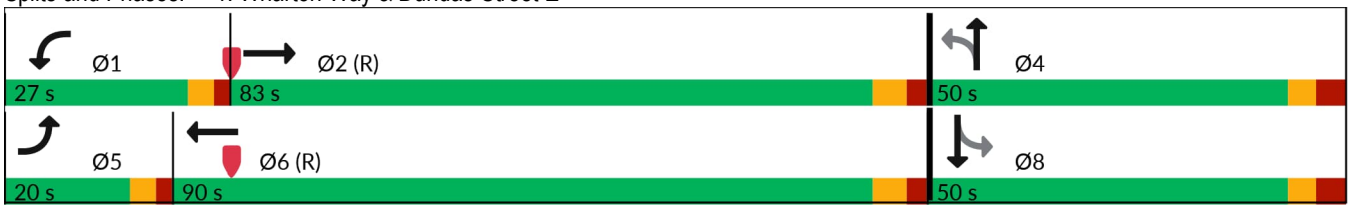
User approved pedestrian interval to be less than phase max green.

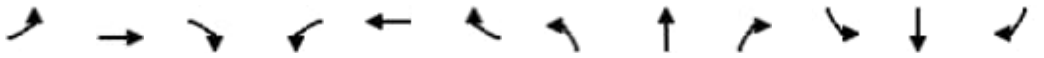
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	63	943	111	1184	62	8	117	10
Future Volume (vph)	63	943	111	1184	62	8	117	10
Lane Group Flow (vph)	65	1009	114	1270	64	92	121	188
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	38.5	10.0	38.5	48.0	48.0	48.0	48.0
Total Split (s)	20.0	83.0	27.0	90.0	50.0	50.0	50.0	50.0
Total Split (%)	12.5%	51.9%	16.9%	56.3%	31.3%	31.3%	31.3%	31.3%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.5	2.0	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	5.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.54	0.48	0.68	0.56	0.49	0.27	0.60	0.46
Control Delay (s/veh)	86.9	20.3	76.7	21.9	69.3	12.8	71.6	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	86.9	20.3	76.7	21.9	69.3	12.8	71.6	11.2
Queue Length 50th (m)	20.4	79.3	35.9	85.7	19.5	2.3	37.7	2.8
Queue Length 95th (m)	35.9	141.7	57.3	169.1	31.5	16.5	52.4	22.6
Internal Link Dist (m)		169.3		444.1		44.4		148.5
Turn Bay Length (m)	84.0		84.0		28.0		34.0	
Base Capacity (vph)	159	2124	226	2269	211	491	324	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.48	0.50	0.56	0.30	0.19	0.37	0.34

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 133 (83%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	943	36	111	1184	48	62	8	81	117	10	173
Future Volume (veh/h)	63	943	36	111	1184	48	62	8	81	117	10	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1856	1811	1767	1856	1589	1870	1900	1870	1796	1900	1870
Adj Flow Rate, veh/h	65	972	37	114	1221	49	64	8	84	121	10	178
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	3	6	9	3	21	2	0	2	7	0	2
Cap, veh/h	82	2010	77	136	2120	85	183	31	323	259	19	333
Arrive On Green	0.05	0.58	0.58	0.08	0.61	0.61	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1725	3460	132	1682	3452	138	1176	138	1453	1226	84	1497
Grp Volume(v), veh/h	65	495	514	114	623	647	64	0	92	121	0	188
Grp Sat Flow(s),veh/h/ln	1725	1763	1829	1682	1763	1828	1176	0	1591	1226	0	1582
Q Serve(g_s), s	6.0	26.2	26.2	10.7	33.7	33.8	8.1	0.0	7.6	14.5	0.0	16.8
Cycle Q Clear(g_c), s	6.0	26.2	26.2	10.7	33.7	33.8	24.9	0.0	7.6	22.1	0.0	16.8
Prop In Lane	1.00		0.07	1.00		0.08	1.00		0.91	1.00		0.95
Lane Grp Cap(c), veh/h	82	1024	1063	136	1083	1123	183	0	354	259	0	352
V/C Ratio(X)	0.79	0.48	0.48	0.84	0.58	0.58	0.35	0.00	0.26	0.47	0.00	0.53
Avail Cap(c_a), veh/h	162	1024	1063	231	1083	1123	238	0	428	316	0	425
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.4	19.5	19.5	72.5	18.4	18.4	65.9	0.0	51.3	60.4	0.0	54.9
Incr Delay (d2), s/veh	15.3	1.6	1.6	12.6	2.2	2.2	1.1	0.0	0.4	1.3	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.5	5.7	4.1	6.3	6.6	1.9	0.0	2.3	3.5	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	90.7	21.2	21.1	85.1	20.7	20.6	67.0	0.0	51.7	61.7	0.0	56.1
LnGrp LOS	F	C	C	F	C	C	E		D	E		E
Approach Vol, veh/h		1074			1384			156			309	
Approach Delay, s/veh		25.4			25.9			58.0			58.3	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.9	99.5		42.6	12.6	104.8		42.6				
Change Period (Y+Rc), s	5.0	6.5		7.0	5.0	6.5		7.0				
Max Green Setting (Gmax), s	22.0	76.5		43.0	15.0	83.5		43.0				
Max Q Clear Time (g_c+I1), s	12.7	0.0		26.9	8.0	0.0		24.1				
Green Ext Time (p_c), s	0.3	0.0		0.8	0.1	0.0		1.9				

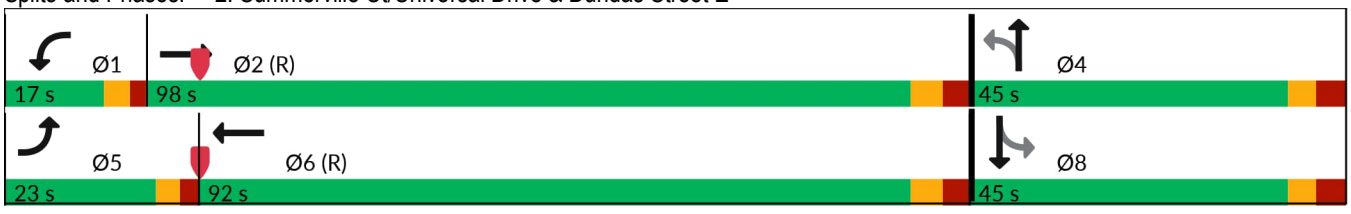
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			30.9									
HCM 6th LOS			C									

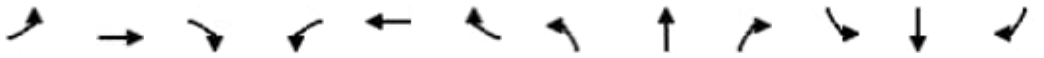
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	32	1013	66	1264	73	5	112	8
Future Volume (vph)	32	1013	66	1264	73	5	112	8
Lane Group Flow (vph)	34	1173	71	1484	78	95	120	110
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	41.0	9.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	23.0	98.0	17.0	92.0	45.0	45.0	45.0	45.0
Total Split (%)	14.4%	61.3%	10.6%	57.5%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.0	2.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.33	0.50	0.56	0.61	0.47	0.30	0.69	0.34
Control Delay (s/veh)	105.0	8.4	102.8	8.7	69.4	13.0	82.7	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	105.0	8.4	102.8	8.8	69.4	13.0	82.7	13.9
Queue Length 50th (m)	11.3	114.0	23.9	42.4	23.4	1.4	37.2	2.5
Queue Length 95th (m)	23.9	32.7	m41.4	46.7	36.4	16.2	53.3	18.3
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	80.0		55.0		36.0		23.0	
Base Capacity (vph)	205	2350	140	2419	272	460	288	469
Starvation Cap Reductn	0	0	0	64	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.50	0.51	0.63	0.29	0.21	0.42	0.23

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1013	78	66	1264	116	73	5	84	112	8	94
Future Volume (veh/h)	32	1013	78	66	1264	116	73	5	84	112	8	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.97	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1900	1811	1856	1737	1885	1900	1900	1870	1707	1900
Adj Flow Rate, veh/h	34	1089	84	71	1359	125	78	5	90	120	9	101
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	0	6	3	11	1	0	0	2	13	0
Cap, veh/h	55	2144	165	99	2195	201	209	16	291	229	23	258
Arrive On Green	0.03	0.65	0.64	0.06	0.67	0.67	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1767	3308	255	1725	3256	298	1279	83	1495	1286	118	1325
Grp Volume(v), veh/h	34	580	593	71	732	752	78	0	95	120	0	110
Grp Sat Flow(s),veh/h/ln	1767	1763	1800	1725	1763	1791	1279	0	1579	1286	0	1443
Q Serve(g_s), s	3.0	27.6	27.7	6.5	37.1	37.8	9.1	0.0	8.3	14.1	0.0	10.7
Cycle Q Clear(g_c), s	3.0	27.6	27.7	6.5	37.1	37.8	19.7	0.0	8.3	22.4	0.0	10.7
Prop In Lane	1.00		0.14	1.00		0.17	1.00		0.95	1.00		0.92
Lane Grp Cap(c), veh/h	55	1142	1167	99	1188	1208	209	0	307	229	0	281
V/C Ratio(X)	0.62	0.51	0.51	0.72	0.62	0.62	0.37	0.00	0.31	0.52	0.00	0.39
Avail Cap(c_a), veh/h	210	1142	1167	140	1188	1208	271	0	385	292	0	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.6	14.8	14.8	74.1	14.5	14.7	64.8	0.0	55.6	64.8	0.0	56.6
Incr Delay (d2), s/veh	10.8	1.6	1.6	7.7	1.9	1.9	1.1	0.0	0.6	1.9	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.3	4.4	2.5	4.6	4.8	2.5	0.0	2.7	3.9	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	87.3	16.4	16.4	81.8	16.4	16.6	65.9	0.0	56.2	66.7	0.0	57.5
LnGrp LOS	F	B	B	F	B	B	E		E	E		E
Approach Vol, veh/h		1207			1555			173			230	
Approach Delay, s/veh		18.4			19.5			60.6			62.3	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.2	109.7		37.1	9.0	113.9		37.1				
Change Period (Y+Rc), s	5.0	7.0		7.0	5.0	7.0		7.0				
Max Green Setting (Gmax), s	12.0	91.0		38.0	18.0	85.0		38.0				
Max Q Clear Time (g_c+I1), s	8.5	0.0		21.7	5.0	0.0		24.4				
Green Ext Time (p_c), s	0.1	0.0		0.9	0.1	0.0		1.2				

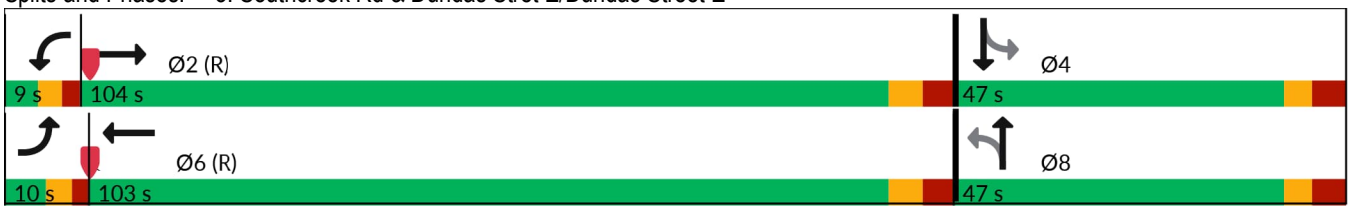
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			24.4									
HCM 6th LOS			C									

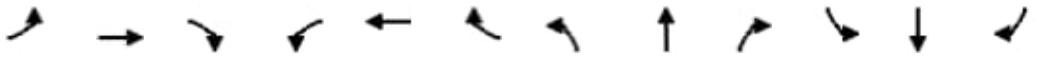
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	1245	9	1393	9	0	84	0
Future Volume (vph)	12	1245	9	1393	9	0	84	0
Lane Group Flow (vph)	13	1391	10	1590	0	19	0	114
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	37.5	9.0	37.5	46.5	46.5	46.5	46.5
Total Split (s)	10.0	104.0	9.0	103.0	47.0	47.0	47.0	47.0
Total Split (%)	6.3%	65.0%	5.6%	64.4%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.5	2.0	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	7.5	5.0	7.5		7.5		7.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.17	0.50	0.14	0.59		0.10		0.63
Control Delay (s/veh)	86.5	3.9	77.7	9.2		1.0		46.3
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	86.5	3.9	77.7	9.2		1.0		46.3
Queue Length 50th (m)	4.3	31.8	3.2	72.5		0.0		15.1
Queue Length 95th (m)	m9.2	44.6	10.0	162.8		0.0		35.1
Internal Link Dist (m)		230.7		265.7		100.6		126.3
Turn Bay Length (m)	85.0		85.0					
Base Capacity (vph)	75	2786	72	2717		423		395
Starvation Cap Reductn	0	88	0	0		0		0
Spillback Cap Reductn	0	0	0	23		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.17	0.52	0.14	0.59		0.04		0.29

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1245	7	9	1393	38	9	0	8	84	0	19
Future Volume (veh/h)	12	1245	7	9	1393	38	9	0	8	84	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1841	1826	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	1383	8	10	1548	42	10	0	9	93	0	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	3	0	0	4	5	0	0	0	0	0	0
Cap, veh/h	20	2776	16	16	2678	72	106	10	74	155	0	26
Arrive On Green	0.02	1.00	1.00	0.01	0.77	0.77	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1810	3593	21	1810	3475	94	767	109	789	1216	0	275
Grp Volume(v), veh/h	13	678	713	10	777	813	19	0	0	114	0	0
Grp Sat Flow(s),veh/h/ln	1810	1763	1851	1810	1749	1821	1665	0	0	1491	0	0
Q Serve(g_s), s	1.1	0.0	0.0	0.9	29.4	29.6	0.0	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.9	29.4	29.6	1.6	0.0	0.0	11.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.05	0.53		0.47	0.82		0.18
Lane Grp Cap(c), veh/h	20	1362	1430	16	1347	1403	190	0	0	180	0	0
V/C Ratio(X)	0.65	0.50	0.50	0.62	0.58	0.58	0.10	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	57	1362	1430	45	1347	1403	418	0	0	403	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	77.9	0.0	0.0	79.0	7.6	7.6	66.5	0.0	0.0	71.0	0.0	0.0
Incr Delay (d2), s/veh	26.6	1.1	1.0	32.4	1.8	1.8	0.5	0.0	0.0	7.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.4	0.4	0.5	0.7	0.7	0.6	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	104.6	1.1	1.0	111.4	9.4	9.4	67.0	0.0	0.0	78.6	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	E			E		
Approach Vol, veh/h		1404			1600			19			114	
Approach Delay, s/veh		2.0			10.0			67.0			78.6	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	131.1		22.5	6.8	130.8		22.5				
Change Period (Y+Rc), s	5.0	7.5		7.5	5.0	7.5		7.5				
Max Green Setting (Gmax), s	4.0	96.5		39.5	5.0	95.5		39.5				
Max Q Clear Time (g_c+I1), s	2.9	0.0		13.9	3.1	0.0		3.6				
Green Ext Time (p_c), s	0.0	0.0		1.1	0.0	0.0		0.1				

Intersection Summary			
HCM 6th Ctrl Delay, s/veh		9.3	
HCM 6th LOS		A	

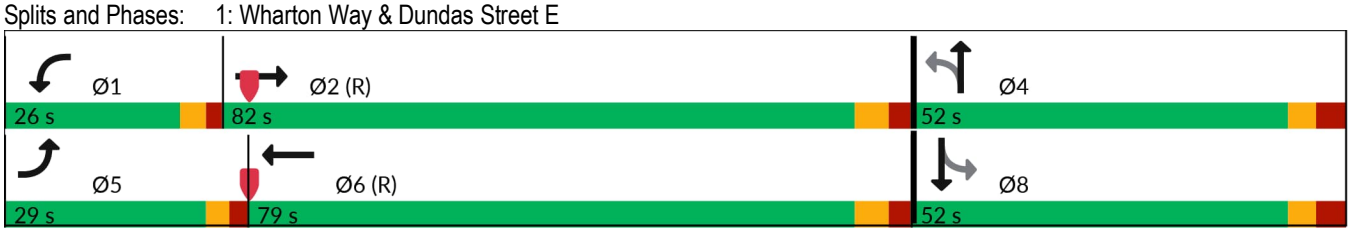
Future Total 2034 Conditions

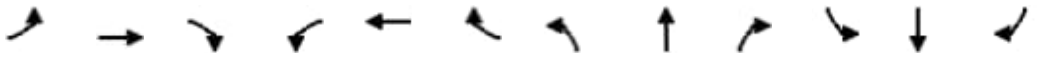
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	98	838	89	757	32	7	73	15
Future Volume (vph)	98	838	89	757	32	7	73	15
Lane Group Flow (vph)	105	950	96	917	34	85	78	73
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	38.5	10.0	38.5	48.0	48.0	48.0	48.0
Total Split (s)	29.0	82.0	26.0	79.0	52.0	52.0	52.0	52.0
Total Split (%)	18.1%	51.3%	16.3%	49.4%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.5	2.0	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	5.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.66	0.44	0.64	0.43	0.20	0.30	0.46	0.26
Control Delay (s/veh)	88.2	18.0	81.8	16.3	55.8	14.2	66.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	88.2	18.0	81.8	16.3	55.8	14.2	66.4	18.4
Queue Length 50th (m)	32.8	63.9	29.8	53.8	10.2	2.4	24.3	4.7
Queue Length 95th (m)	52.0	128.8	51.7	88.2	18.1	16.0	35.6	17.3
Internal Link Dist (m)		169.3		444.1		44.4		148.5
Turn Bay Length (m)	84.0		84.0		28.0		34.0	
Base Capacity (vph)	245	2169	211	2125	315	465	320	467
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.44	0.45	0.43	0.11	0.18	0.24	0.16

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 144 (90%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	838	46	89	757	96	32	7	72	73	15	53
Future Volume (veh/h)	98	838	46	89	757	96	32	7	72	73	15	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.97		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1796	1841	1737	1826	1618	1663	1470	1752	1678	1900	1737
Adj Flow Rate, veh/h	105	901	49	96	814	103	34	8	77	78	16	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	7	4	11	5	19	16	29	10	15	0	11
Cap, veh/h	127	1976	107	117	1841	233	247	25	237	222	76	270
Arrive On Green	0.08	0.60	0.60	0.07	0.60	0.60	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1682	3287	179	1654	3089	391	1150	116	1112	1149	356	1268
Grp Volume(v), veh/h	105	468	482	96	457	460	34	0	85	78	0	73
Grp Sat Flow(s),veh/h/ln	1682	1706	1759	1654	1735	1745	1150	0	1228	1149	0	1624
Q Serve(g_s), s	9.8	24.1	24.1	9.2	23.1	23.1	4.0	0.0	9.4	9.9	0.0	5.9
Cycle Q Clear(g_c), s	9.8	24.1	24.1	9.2	23.1	23.1	9.9	0.0	9.4	19.2	0.0	5.9
Prop In Lane	1.00		0.10	1.00		0.22	1.00		0.91	1.00		0.78
Lane Grp Cap(c), veh/h	127	1026	1058	117	1034	1040	247	0	261	222	0	345
V/C Ratio(X)	0.83	0.46	0.46	0.82	0.44	0.44	0.14	0.00	0.33	0.35	0.00	0.21
Avail Cap(c_a), veh/h	252	1026	1058	217	1034	1040	326	0	345	301	0	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.9	17.5	17.5	73.4	17.7	17.7	56.0	0.0	53.3	61.4	0.0	51.9
Incr Delay (d2), s/veh	12.6	1.5	1.4	13.4	1.4	1.4	0.3	0.0	0.7	0.9	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.6	4.7	3.5	4.5	4.6	0.9	0.0	2.2	2.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	85.5	19.0	18.9	86.8	19.1	19.1	56.3	0.0	54.0	62.3	0.0	52.2
LnGrp LOS	F	B	B	F	B	B	E		D	E		D
Approach Vol, veh/h		1055			1013			119			151	
Approach Delay, s/veh		25.6			25.5			54.6			57.4	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	102.7		41.0	17.1	101.9		41.0				
Change Period (Y+Rc), s	5.0	6.5		7.0	5.0	6.5		7.0				
Max Green Setting (Gmax), s	21.0	75.5		45.0	24.0	72.5		45.0				
Max Q Clear Time (g_c+I1), s	11.2	0.0		11.9	11.8	0.0		21.2				
Green Ext Time (p_c), s	0.3	0.0		0.8	0.4	0.0		0.9				

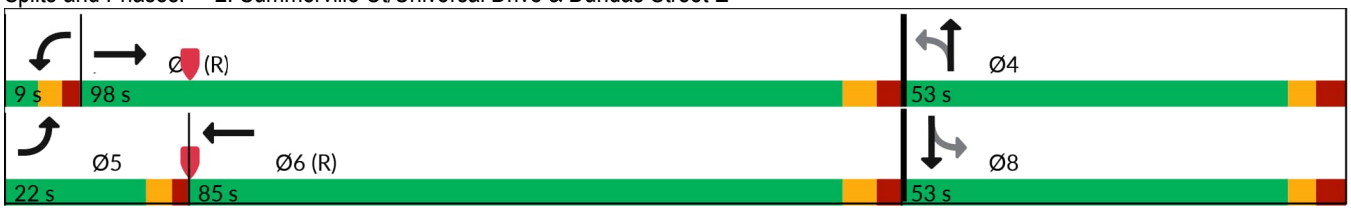
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			29.1									
HCM 6th LOS			C									

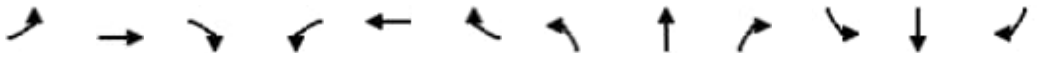
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	69	849	6	725	13	0	183	3
Future Volume (vph)	69	849	6	725	13	0	183	3
Lane Group Flow (vph)	74	926	6	978	14	13	197	133
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	41.0	9.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	22.0	98.0	9.0	85.0	53.0	53.0	53.0	53.0
Total Split (%)	13.8%	61.3%	5.6%	53.1%	33.1%	33.1%	33.1%	33.1%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.0	2.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.56	0.39	0.11	0.50	0.08	0.03	0.81	0.33
Control Delay (s/veh)	111.6	5.5	105.5	14.3	50.7	0.2	86.4	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	111.6	5.5	105.5	14.3	50.7	0.2	86.4	10.1
Queue Length 50th (m)	24.9	22.2	2.0	84.2	3.7	0.0	60.8	0.8
Queue Length 95th (m)	42.4	29.8	m5.7	128.0	9.8	0.0	84.3	17.9
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	80.0		55.0		36.0		23.0	
Base Capacity (vph)	184	2399	53	1955	278	490	376	548
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.39	0.11	0.50	0.05	0.03	0.52	0.24

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	849	12	6	725	184	13	0	12	183	3	121
Future Volume (veh/h)	69	849	12	6	725	184	13	0	12	183	3	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1781	1900	1411	1737	1678	1678	1900	1530	1796	1900	1870
Adj Flow Rate, veh/h	74	913	13	6	780	198	14	0	13	197	3	130
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	8	0	33	11	15	15	0	25	7	0	2
Cap, veh/h	93	2357	34	8	1673	425	170	0	296	284	7	291
Arrive On Green	0.05	0.69	0.69	0.01	0.64	0.64	0.19	0.00	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1767	3415	49	1344	2602	660	1122	0	1600	1337	36	1569
Grp Volume(v), veh/h	74	452	474	6	495	483	14	0	13	197	0	133
Grp Sat Flow(s),veh/h/ln	1767	1692	1771	1344	1650	1612	1122	0	1600	1337	0	1605
Q Serve(g_s), s	6.6	18.1	18.1	0.7	24.4	24.4	1.8	0.0	1.1	22.7	0.0	11.8
Cycle Q Clear(g_c), s	6.6	18.1	18.1	0.7	24.4	24.4	13.6	0.0	1.1	23.8	0.0	11.8
Prop In Lane	1.00		0.03	1.00		0.41	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	93	1168	1222	8	1061	1037	170	0	296	284	0	297
V/C Ratio(X)	0.79	0.39	0.39	0.76	0.47	0.47	0.08	0.00	0.04	0.69	0.00	0.45
Avail Cap(c_a), veh/h	188	1168	1222	34	1061	1037	285	0	460	420	0	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	74.9	10.5	10.5	79.4	14.5	14.5	63.9	0.0	53.5	63.3	0.0	57.9
Incr Delay (d2), s/veh	13.9	1.0	0.9	83.8	1.4	1.4	0.2	0.0	0.1	3.0	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	1.8	1.9	0.4	3.6	3.5	0.4	0.0	0.4	6.5	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	88.8	11.5	11.4	163.2	15.9	16.0	64.1	0.0	53.6	66.4	0.0	59.0
LnGrp LOS	F	B	B	F	B	B	E		D	E		E
Approach Vol, veh/h		1000			984			27			330	
Approach Delay, s/veh		17.2			16.8			59.1			63.4	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	117.4		36.6	13.5	109.9		36.6				
Change Period (Y+Rc), s	5.0	7.0		7.0	5.0	7.0		7.0				
Max Green Setting (Gmax), s	4.0	91.0		46.0	17.0	78.0		46.0				
Max Q Clear Time (g_c+I1), s	2.7	0.0		15.6	8.6	0.0		25.8				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.2	0.0		2.2				

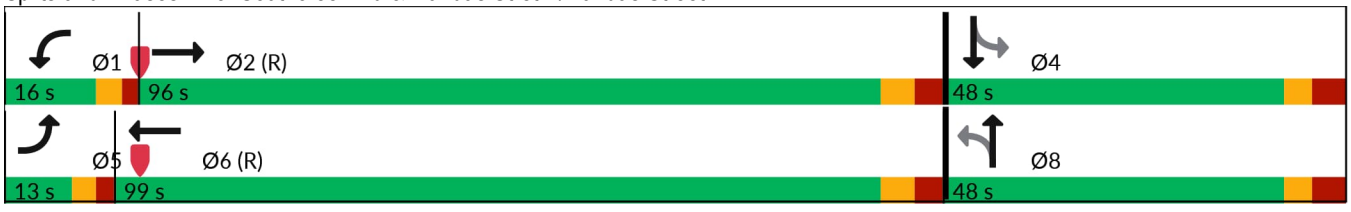
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			24.0									
HCM 6th LOS			C									

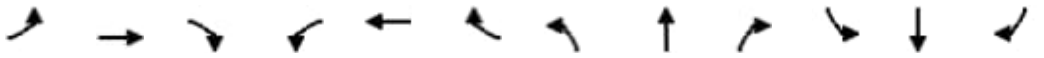
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	16	1022	19	833	9	0	22	0
Future Volume (vph)	16	1022	19	833	9	0	22	0
Lane Group Flow (vph)	18	1136	21	994	0	13	0	40
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	37.5	9.0	37.5	46.5	46.5	46.5	46.5
Total Split (s)	13.0	96.0	16.0	99.0	48.0	48.0	48.0	48.0
Total Split (%)	8.1%	60.0%	10.0%	61.9%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.5	2.0	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	7.5	5.0	7.5		7.5		7.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.25	0.41	0.34	0.36		0.09		0.27
Control Delay (s/veh)	82.9	3.8	86.5	5.3		1.2		9.1
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	82.9	3.8	86.5	5.3		1.2		9.1
Queue Length 50th (m)	5.3	41.1	6.6	48.4		0.0		0.0
Queue Length 95th (m)	m13.8	44.7	16.0	62.1		0.0		4.6
Internal Link Dist (m)		230.7		265.7		103.4		126.3
Turn Bay Length (m)	85.0		85.0					
Base Capacity (vph)	83	2787	82	2783		401		400
Starvation Cap Reductn	0	253	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.22	0.45	0.26	0.36		0.03		0.10

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1022	12	19	833	72	9	0	3	22	0	15
Future Volume (veh/h)	16	1022	12	19	833	72	9	0	3	22	0	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1796	1781	1159	1796	1885	1900	1900	1900	1826	1900	1796
Adj Flow Rate, veh/h	18	1123	13	21	915	79	10	0	3	24	0	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	13	7	8	50	7	1	0	0	0	5	0	7
Cap, veh/h	22	2761	32	21	2552	220	105	5	21	80	9	35
Arrive On Green	0.01	0.80	0.80	0.02	0.80	0.80	0.06	0.00	0.06	0.06	0.00	0.06
Sat Flow, veh/h	1626	3454	40	1104	3172	274	1152	93	373	770	154	616
Grp Volume(v), veh/h	18	555	581	21	492	502	13	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	1626	1706	1788	1104	1706	1739	1618	0	0	1540	0	0
Q Serve(g_s), s	1.8	15.5	15.5	3.0	12.7	12.7	0.0	0.0	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	1.8	15.5	15.5	3.0	12.7	12.7	1.1	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.16	0.77		0.23	0.60		0.40
Lane Grp Cap(c), veh/h	22	1364	1429	21	1373	1399	131	0	0	123	0	0
V/C Ratio(X)	0.80	0.41	0.41	0.99	0.36	0.36	0.10	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	81	1364	1429	76	1373	1399	418	0	0	418	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	78.7	4.8	4.8	78.5	4.3	4.3	71.7	0.0	0.0	73.0	0.0	0.0
Incr Delay (d2), s/veh	42.7	0.8	0.8	88.5	0.7	0.7	0.7	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.3	1.2	0.3	0.3	0.4	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	121.4	5.6	5.5	167.0	5.0	5.0	72.4	0.0	0.0	76.2	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	E			E		
Approach Vol, veh/h		1154			1015			13			40	
Approach Delay, s/veh		7.4			8.4			72.4			76.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	135.4		16.6	7.2	136.2		16.6				
Change Period (Y+Rc), s	5.0	7.5		7.5	5.0	7.5		7.5				
Max Green Setting (Gmax), s	11.0	88.5		40.5	8.0	91.5		40.5				
Max Q Clear Time (g_c+I1), s	5.0	0.0		5.9	3.8	0.0		3.1				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	0.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			9.4									
HCM 6th LOS			A									

Notes

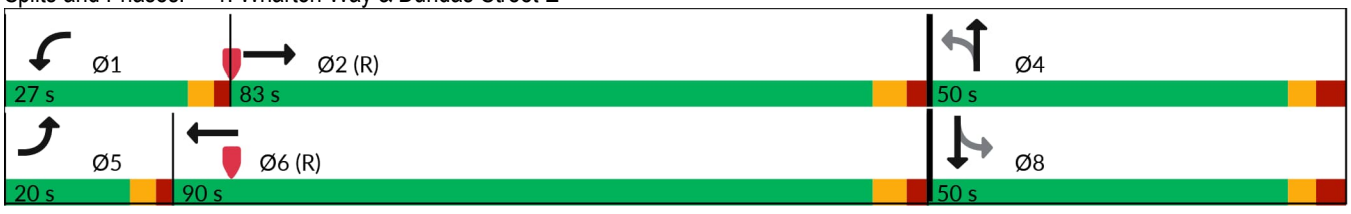
User approved pedestrian interval to be less than phase max green.

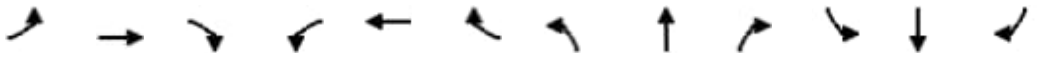
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	63	1018	111	1215	62	8	117	10
Future Volume (vph)	63	1018	111	1215	62	8	117	10
Lane Group Flow (vph)	65	1086	114	1302	64	92	121	188
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	38.5	10.0	38.5	48.0	48.0	48.0	48.0
Total Split (s)	20.0	83.0	27.0	90.0	50.0	50.0	50.0	50.0
Total Split (%)	12.5%	51.9%	16.9%	56.3%	31.3%	31.3%	31.3%	31.3%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.5	2.0	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	5.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.54	0.50	0.68	0.56	0.49	0.27	0.60	0.46
Control Delay (s/veh)	86.9	20.9	68.0	27.6	69.3	12.8	71.6	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	86.9	20.9	68.0	27.6	69.3	12.8	71.6	11.2
Queue Length 50th (m)	20.4	87.4	35.8	127.8	19.5	2.3	37.7	2.8
Queue Length 95th (m)	35.9	155.4	m50.4	194.2	31.5	16.5	52.4	22.6
Internal Link Dist (m)		169.3		444.1		44.4		148.5
Turn Bay Length (m)	84.0		84.0		28.0		34.0	
Base Capacity (vph)	159	2162	226	2306	211	491	324	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.50	0.50	0.56	0.30	0.19	0.37	0.34

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 133 (83%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	1018	36	111	1215	48	62	8	81	117	10	173
Future Volume (veh/h)	63	1018	36	111	1215	48	62	8	81	117	10	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1856	1811	1767	1856	1589	1870	1900	1870	1796	1900	1870
Adj Flow Rate, veh/h	65	1049	37	114	1253	49	64	8	84	121	10	178
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	3	6	9	3	21	2	0	2	7	0	2
Cap, veh/h	82	2017	71	136	2123	83	183	31	323	259	19	333
Arrive On Green	0.05	0.58	0.58	0.08	0.61	0.61	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1725	3472	122	1682	3457	135	1176	138	1453	1226	84	1497
Grp Volume(v), veh/h	65	533	553	114	638	664	64	0	92	121	0	188
Grp Sat Flow(s),veh/h/ln	1725	1763	1831	1682	1763	1829	1176	0	1591	1226	0	1582
Q Serve(g_s), s	6.0	29.0	29.0	10.7	35.1	35.2	8.1	0.0	7.6	14.5	0.0	16.8
Cycle Q Clear(g_c), s	6.0	29.0	29.0	10.7	35.1	35.2	24.9	0.0	7.6	22.1	0.0	16.8
Prop In Lane	1.00		0.07	1.00		0.07	1.00		0.91	1.00		0.95
Lane Grp Cap(c), veh/h	82	1024	1064	136	1083	1123	183	0	354	259	0	352
V/C Ratio(X)	0.79	0.52	0.52	0.84	0.59	0.59	0.35	0.00	0.26	0.47	0.00	0.53
Avail Cap(c_a), veh/h	162	1024	1064	231	1083	1123	238	0	428	316	0	425
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.4	20.1	20.1	72.5	18.7	18.7	65.9	0.0	51.3	60.4	0.0	54.9
Incr Delay (d2), s/veh	15.3	1.9	1.8	12.6	2.4	2.3	1.1	0.0	0.4	1.3	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	6.1	6.3	4.1	6.6	6.8	1.9	0.0	2.3	3.5	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	90.7	22.0	22.0	85.1	21.0	21.0	67.0	0.0	51.7	61.7	0.0	56.1
LnGrp LOS	F	C	C	F	C	C	E		D	E		E
Approach Vol, veh/h		1151			1416			156			309	
Approach Delay, s/veh		25.9			26.2			58.0			58.3	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.9	99.5		42.6	12.6	104.8		42.6				
Change Period (Y+Rc), s	5.0	6.5		7.0	5.0	6.5		7.0				
Max Green Setting (Gmax), s	22.0	76.5		43.0	15.0	83.5		43.0				
Max Q Clear Time (g_c+I1), s	12.7	0.0		26.9	8.0	0.0		24.1				
Green Ext Time (p_c), s	0.3	0.0		0.8	0.1	0.0		1.9				

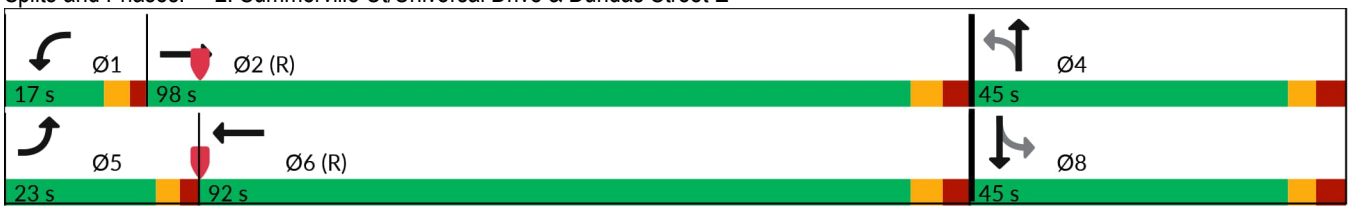
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			31.0									
HCM 6th LOS			C									

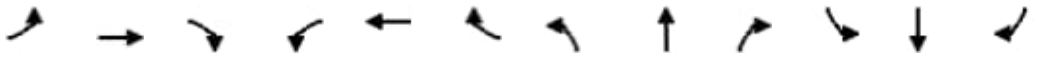
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	117	999	66	1247	73	5	169	8
Future Volume (vph)	117	999	66	1247	73	5	169	8
Lane Group Flow (vph)	126	1158	71	1566	78	95	182	172
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	41.0	9.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	23.0	98.0	17.0	92.0	45.0	45.0	45.0	45.0
Total Split (%)	14.4%	61.3%	10.6%	57.5%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.0	2.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.68	0.52	0.56	0.75	0.48	0.26	0.81	0.40
Control Delay (s/veh)	108.5	10.0	106.4	17.8	66.6	11.8	87.6	10.9
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay (s/veh)	108.5	10.0	106.4	17.9	66.6	11.8	87.6	10.9
Queue Length 50th (m)	34.2	123.6	23.5	182.5	22.5	1.3	56.1	2.4
Queue Length 95th (m)	65.5	30.2	m39.8	239.5	37.7	16.2	79.3	21.6
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	80.0		55.0		36.0		23.0	
Base Capacity (vph)	211	2247	140	2102	215	460	298	515
Starvation Cap Reductn	0	0	0	38	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.52	0.51	0.76	0.36	0.21	0.61	0.33

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	999	78	66	1247	209	73	5	84	169	8	152
Future Volume (veh/h)	117	999	78	66	1247	209	73	5	84	169	8	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1856	1900	1811	1856	1811	1885	1900	1900	1885	1707	1900
Adj Flow Rate, veh/h	126	1074	84	71	1341	225	78	5	90	182	9	163
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	0	6	3	6	1	0	0	1	13	0
Cap, veh/h	159	2047	160	99	1771	293	187	19	335	270	17	304
Arrive On Green	0.09	0.62	0.61	0.06	0.59	0.58	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1795	3304	258	1725	3011	499	1213	83	1499	1297	75	1364
Grp Volume(v), veh/h	126	573	585	71	778	788	78	0	95	182	0	172
Grp Sat Flow(s),veh/h/ln	1795	1763	1800	1725	1763	1747	1213	0	1582	1297	0	1439
Q Serve(g_s), s	11.0	29.3	29.4	6.5	52.0	54.2	9.7	0.0	8.0	21.6	0.0	16.9
Cycle Q Clear(g_c), s	11.0	29.3	29.4	6.5	52.0	54.2	26.6	0.0	8.0	29.6	0.0	16.9
Prop In Lane	1.00		0.14	1.00		0.29	1.00		0.95	1.00		0.95
Lane Grp Cap(c), veh/h	159	1092	1115	99	1037	1028	187	0	353	270	0	321
V/C Ratio(X)	0.79	0.52	0.53	0.72	0.75	0.77	0.42	0.00	0.27	0.67	0.00	0.54
Avail Cap(c_a), veh/h	213	1092	1115	140	1037	1028	212	0	386	296	0	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.5	17.2	17.2	74.1	24.3	24.8	66.6	0.0	51.8	63.6	0.0	55.3
Incr Delay (d2), s/veh	13.5	1.8	1.8	7.5	3.8	4.2	1.5	0.0	0.4	5.3	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	5.3	5.5	2.5	10.9	11.3	2.6	0.0	2.6	6.2	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	85.0	19.0	19.0	81.6	28.1	29.1	68.1	0.0	52.2	68.9	0.0	56.7
LnGrp LOS	F	B	B	F	C	C	E		D	E		E
Approach Vol, veh/h		1284			1637			173			354	
Approach Delay, s/veh		25.5			30.9			59.3			62.9	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.2	105.1		41.7	18.2	100.1		41.7				
Change Period (Y+Rc), s	5.0	7.0		7.0	5.0	7.0		7.0				
Max Green Setting (Gmax), s	12.0	91.0		38.0	18.0	85.0		38.0				
Max Q Clear Time (g_c+I1), s	8.5	0.0		28.6	13.0	0.0		31.6				
Green Ext Time (p_c), s	0.1	0.0		0.7	0.2	0.0		1.3				

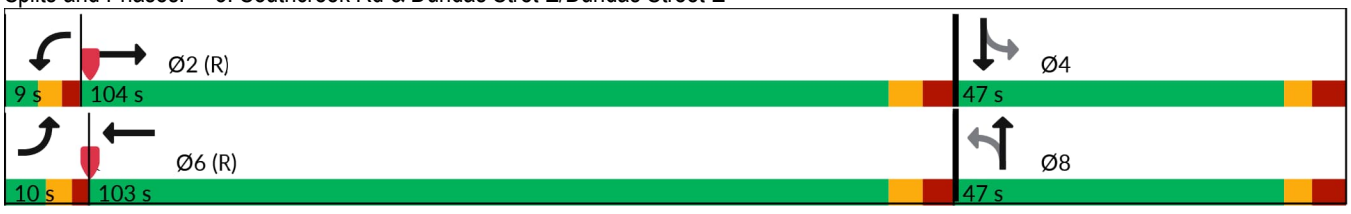
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			33.6									
HCM 6th LOS			C									

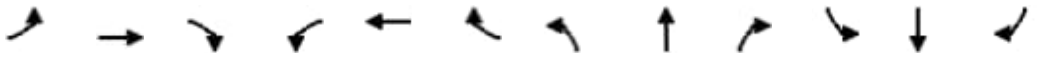
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	1288	9	1469	9	0	84	0
Future Volume (vph)	12	1288	9	1469	9	0	84	0
Lane Group Flow (vph)	13	1439	10	1674	0	19	0	114
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	37.5	9.0	37.5	46.5	46.5	46.5	46.5
Total Split (s)	10.0	104.0	9.0	103.0	47.0	47.0	47.0	47.0
Total Split (%)	6.3%	65.0%	5.6%	64.4%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.5	2.0	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	7.5	5.0	7.5		7.5		7.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.17	0.52	0.14	0.61		0.10		0.63
Control Delay (s/veh)	82.8	4.4	77.7	9.6		1.0		46.3
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	82.8	4.4	77.7	9.7		1.0		46.3
Queue Length 50th (m)	4.2	38.7	3.2	79.4		0.0		15.1
Queue Length 95th (m)	m8.7	56.8	10.0	177.5		0.0		35.1
Internal Link Dist (m)		230.7		265.7		100.6		126.3
Turn Bay Length (m)	85.0		85.0					
Base Capacity (vph)	75	2786	72	2745		423		395
Starvation Cap Reductn	0	73	0	0		0		0
Spillback Cap Reductn	0	0	0	77		0		1
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.17	0.53	0.14	0.63		0.04		0.29

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1288	7	9	1469	38	9	0	8	84	0	19
Future Volume (veh/h)	12	1288	7	9	1469	38	9	0	8	84	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1841	1826	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	1431	8	10	1632	42	10	0	9	93	0	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	3	0	0	4	5	0	0	0	0	0	0
Cap, veh/h	20	2776	16	16	2682	69	106	10	74	155	0	26
Arrive On Green	0.02	1.00	1.00	0.01	0.77	0.77	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1810	3594	20	1810	3481	89	767	109	789	1216	0	275
Grp Volume(v), veh/h	13	702	737	10	818	856	19	0	0	114	0	0
Grp Sat Flow(s),veh/h/ln	1810	1763	1851	1810	1749	1822	1665	0	0	1491	0	0
Q Serve(g_s), s	1.1	0.0	0.0	0.9	32.2	32.6	0.0	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.9	32.2	32.6	1.6	0.0	0.0	11.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.05	0.53		0.47	0.82		0.18
Lane Grp Cap(c), veh/h	20	1362	1430	16	1347	1404	190	0	0	180	0	0
V/C Ratio(X)	0.65	0.52	0.52	0.62	0.61	0.61	0.10	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	57	1362	1430	45	1347	1404	418	0	0	403	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	77.9	0.0	0.0	79.0	7.9	8.0	66.5	0.0	0.0	71.0	0.0	0.0
Incr Delay (d2), s/veh	25.8	1.1	1.1	32.4	2.0	2.0	0.5	0.0	0.0	7.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.4	0.4	0.5	0.8	0.8	0.6	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	103.8	1.1	1.1	111.4	10.0	9.9	67.0	0.0	0.0	78.6	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	E			E		
Approach Vol, veh/h		1452			1684			19			114	
Approach Delay, s/veh		2.0			10.5			67.0			78.6	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	131.1		22.5	6.8	130.8		22.5				
Change Period (Y+Rc), s	5.0	7.5		7.5	5.0	7.5		7.5				
Max Green Setting (Gmax), s	4.0	96.5		39.5	5.0	95.5		39.5				
Max Q Clear Time (g_c+I1), s	2.9	0.0		13.9	3.1	0.0		3.6				
Green Ext Time (p_c), s	0.0	0.0		1.1	0.0	0.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			9.5									
HCM 6th LOS			A									

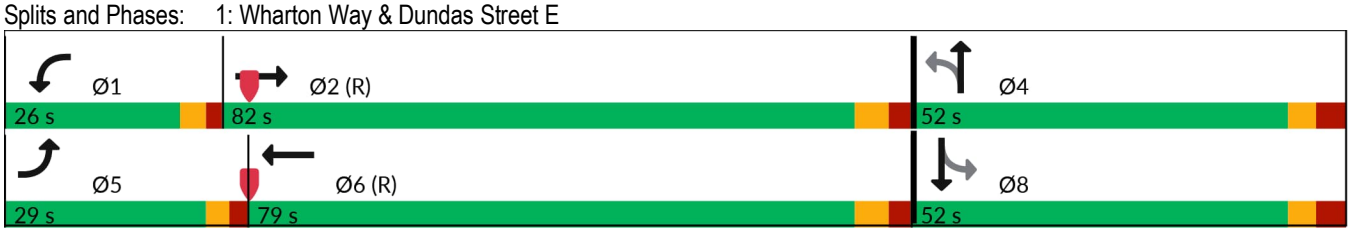
Future Total 2034 Conditions (Sensitivity)

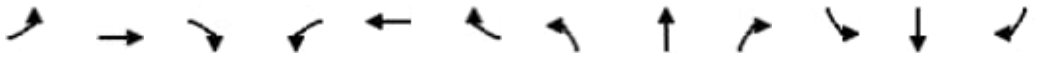
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	831	89	739	32	7	73	15
Future Volume (vph)	105	831	89	739	32	7	73	15
Lane Group Flow (vph)	113	943	96	898	34	85	78	92
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	38.5	10.0	38.5	48.0	48.0	48.0	48.0
Total Split (s)	29.0	82.0	26.0	79.0	52.0	52.0	52.0	52.0
Total Split (%)	18.1%	51.3%	16.3%	49.4%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.5	2.0	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	5.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.68	0.43	0.64	0.43	0.21	0.30	0.46	0.31
Control Delay (s/veh)	88.3	18.0	82.1	16.3	56.0	14.2	66.4	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	88.3	18.0	82.1	16.3	56.0	14.2	66.4	16.5
Queue Length 50th (m)	35.3	63.2	30.2	52.5	10.2	2.4	24.3	4.7
Queue Length 95th (m)	54.7	127.5	51.7	83.9	18.1	16.0	35.6	18.6
Internal Link Dist (m)		169.3		444.1		44.4		148.5
Turn Bay Length (m)	84.0		84.0		28.0		34.0	
Base Capacity (vph)	247	2169	211	2094	306	465	320	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.43	0.45	0.43	0.11	0.18	0.24	0.19

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 144 (90%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	831	46	89	739	96	32	7	72	73	15	71
Future Volume (veh/h)	105	831	46	89	739	96	32	7	72	73	15	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1796	1841	1737	1811	1618	1663	1470	1752	1678	1900	1781
Adj Flow Rate, veh/h	113	894	49	96	795	103	34	8	77	78	16	76
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	8	7	4	11	6	19	16	29	10	15	0	8
Cap, veh/h	136	1974	108	117	1806	234	232	25	237	223	60	283
Arrive On Green	0.08	0.60	0.60	0.07	0.59	0.59	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1697	3285	180	1654	3054	396	1132	116	1112	1149	280	1330
Grp Volume(v), veh/h	113	464	479	96	448	450	34	0	85	78	0	92
Grp Sat Flow(s),veh/h/ln	1697	1706	1759	1654	1721	1729	1132	0	1228	1149	0	1610
Q Serve(g_s), s	10.5	23.9	23.9	9.2	23.0	23.0	4.1	0.0	9.4	9.8	0.0	7.6
Cycle Q Clear(g_c), s	10.5	23.9	23.9	9.2	23.0	23.0	11.8	0.0	9.4	19.2	0.0	7.6
Prop In Lane	1.00		0.10	1.00		0.23	1.00		0.91	1.00		0.83
Lane Grp Cap(c), veh/h	136	1025	1057	117	1017	1022	232	0	262	223	0	343
V/C Ratio(X)	0.83	0.45	0.45	0.82	0.44	0.44	0.15	0.00	0.32	0.35	0.00	0.27
Avail Cap(c_a), veh/h	254	1025	1057	217	1017	1022	309	0	345	301	0	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.6	17.5	17.5	73.4	18.1	18.1	57.5	0.0	53.2	61.3	0.0	52.5
Incr Delay (d2), s/veh	12.3	1.4	1.4	13.4	1.4	1.4	0.3	0.0	0.7	0.9	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	4.5	4.7	3.5	4.5	4.6	0.9	0.0	2.2	2.3	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	84.8	19.0	18.9	86.8	19.4	19.4	57.7	0.0	53.9	62.3	0.0	53.0
LnGrp LOS	F	B	B	F	B	B	E		D	E		D
Approach Vol, veh/h		1056			994			119			170	
Approach Delay, s/veh		26.0			25.9			55.0			57.2	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	102.6		41.1	17.8	101.1		41.1				
Change Period (Y+Rc), s	5.0	6.5		7.0	5.0	6.5		7.0				
Max Green Setting (Gmax), s	21.0	75.5		45.0	24.0	72.5		45.0				
Max Q Clear Time (g_c+I1), s	11.2	0.0		13.8	12.5	0.0		21.2				
Green Ext Time (p_c), s	0.3	0.0		0.8	0.4	0.0		1.0				

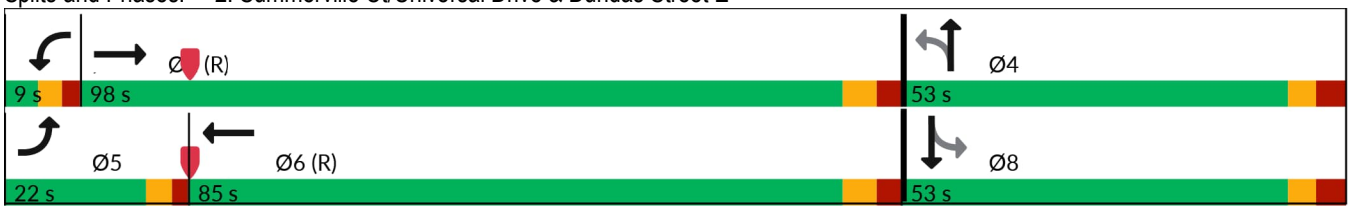
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			29.7									
HCM 6th LOS			C									

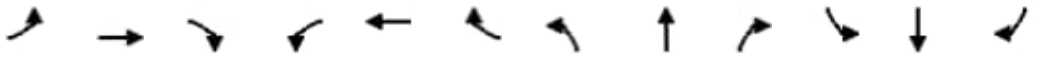
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	62	849	6	725	13	0	183	3
Future Volume (vph)	62	849	6	725	13	0	183	3
Lane Group Flow (vph)	67	926	6	978	14	13	197	114
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	41.0	9.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	22.0	98.0	9.0	85.0	53.0	53.0	53.0	53.0
Total Split (%)	13.8%	61.3%	5.6%	53.1%	33.1%	33.1%	33.1%	33.1%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.0	2.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.54	0.39	0.11	0.50	0.07	0.03	0.81	0.30
Control Delay (s/veh)	110.1	5.5	105.5	13.9	50.5	0.2	86.4	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	110.1	5.5	105.5	13.9	50.5	0.2	86.4	10.6
Queue Length 50th (m)	22.7	22.3	2.0	29.4	3.7	0.0	60.8	0.8
Queue Length 95th (m)	40.2	30.0	m5.7	126.6	9.8	0.0	84.3	16.6
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	80.0		55.0		36.0		23.0	
Base Capacity (vph)	184	2399	53	1968	301	490	376	531
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.39	0.11	0.50	0.05	0.03	0.52	0.21

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	849	12	6	725	184	13	0	12	183	3	103
Future Volume (veh/h)	62	849	12	6	725	184	13	0	12	183	3	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1781	1900	1411	1737	1678	1678	1900	1530	1796	1900	1856
Adj Flow Rate, veh/h	67	913	13	6	780	198	14	0	13	197	3	111
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	8	0	33	11	15	15	0	25	7	0	3
Cap, veh/h	85	2359	34	8	1687	428	185	0	295	283	8	289
Arrive On Green	0.05	0.69	0.69	0.01	0.65	0.65	0.18	0.00	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1767	3415	49	1344	2602	660	1142	0	1600	1337	42	1564
Grp Volume(v), veh/h	67	452	474	6	495	483	14	0	13	197	0	114
Grp Sat Flow(s),veh/h/ln	1767	1692	1771	1344	1650	1612	1142	0	1600	1337	0	1606
Q Serve(g_s), s	6.0	18.1	18.1	0.7	24.1	24.1	1.7	0.0	1.1	22.7	0.0	10.0
Cycle Q Clear(g_c), s	6.0	18.1	18.1	0.7	24.1	24.1	11.7	0.0	1.1	23.8	0.0	10.0
Prop In Lane	1.00		0.03	1.00		0.41	1.00		1.00	1.00		0.97
Lane Grp Cap(c), veh/h	85	1169	1224	8	1070	1045	185	0	295	283	0	296
V/C Ratio(X)	0.78	0.39	0.39	0.76	0.46	0.46	0.08	0.00	0.04	0.70	0.00	0.38
Avail Cap(c_a), veh/h	188	1169	1224	34	1070	1045	302	0	460	420	0	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.3	10.4	10.4	79.4	14.1	14.1	62.4	0.0	53.6	63.4	0.0	57.3
Incr Delay (d2), s/veh	14.5	1.0	0.9	83.8	1.4	1.4	0.2	0.0	0.1	3.1	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.8	1.9	0.4	3.5	3.4	0.4	0.0	0.4	6.5	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	89.8	11.4	11.4	163.2	15.5	15.5	62.6	0.0	53.7	66.5	0.0	58.1
LnGrp LOS	F	B	B	F	B	B	E		D	E		E
Approach Vol, veh/h		993			984			27			311	
Approach Delay, s/veh		16.7			16.4			58.3			63.4	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	117.5		36.5	12.7	110.7		36.5				
Change Period (Y+Rc), s	5.0	7.0		7.0	5.0	7.0		7.0				
Max Green Setting (Gmax), s	4.0	91.0		46.0	17.0	78.0		46.0				
Max Q Clear Time (g_c+I1), s	2.7	0.0		13.7	8.0	0.0		25.8				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.1	0.0		2.0				

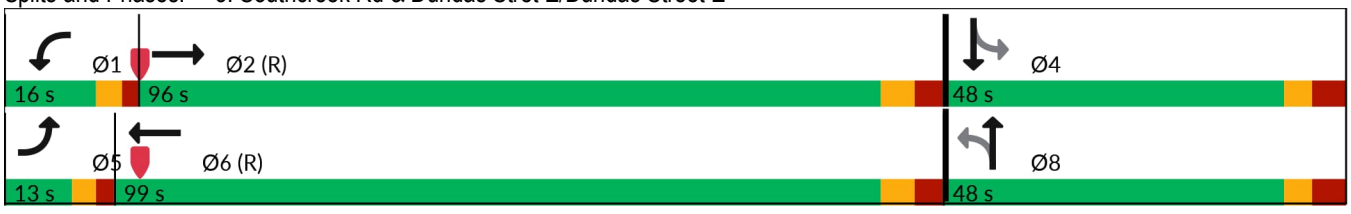
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			23.3									
HCM 6th LOS			C									

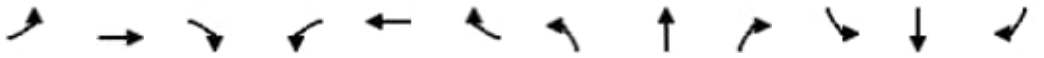
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	16	1022	19	833	9	0	22	0
Future Volume (vph)	16	1022	19	833	9	0	22	0
Lane Group Flow (vph)	18	1136	21	994	0	13	0	40
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	37.5	9.0	37.5	46.5	46.5	46.5	46.5
Total Split (s)	13.0	96.0	16.0	99.0	48.0	48.0	48.0	48.0
Total Split (%)	8.1%	60.0%	10.0%	61.9%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.5	2.0	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	7.5	5.0	7.5		7.5		7.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.25	0.41	0.34	0.36		0.09		0.27
Control Delay (s/veh)	82.9	3.8	86.5	5.3		1.2		9.1
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	82.9	3.8	86.5	5.3		1.2		9.1
Queue Length 50th (m)	5.4	41.1	6.6	48.4		0.0		0.0
Queue Length 95th (m)	m13.7	44.7	16.0	62.1		0.0		4.6
Internal Link Dist (m)		230.7		265.7		103.4		126.3
Turn Bay Length (m)	85.0		85.0					
Base Capacity (vph)	83	2787	82	2783		401		400
Starvation Cap Reductn	0	253	0	0		0		0
Spillback Cap Reductn	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.22	0.45	0.26	0.36		0.03		0.10

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1022	12	19	833	72	9	0	3	22	0	15
Future Volume (veh/h)	16	1022	12	19	833	72	9	0	3	22	0	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1796	1781	1159	1796	1885	1900	1900	1900	1826	1900	1796
Adj Flow Rate, veh/h	18	1123	13	21	915	79	10	0	3	24	0	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	13	7	8	50	7	1	0	0	0	5	0	7
Cap, veh/h	22	2761	32	21	2552	220	105	5	21	80	9	35
Arrive On Green	0.01	0.80	0.80	0.02	0.80	0.80	0.06	0.00	0.06	0.06	0.00	0.06
Sat Flow, veh/h	1626	3454	40	1104	3172	274	1152	93	373	770	154	616
Grp Volume(v), veh/h	18	555	581	21	492	502	13	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	1626	1706	1788	1104	1706	1739	1618	0	0	1540	0	0
Q Serve(g_s), s	1.8	15.5	15.5	3.0	12.7	12.7	0.0	0.0	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	1.8	15.5	15.5	3.0	12.7	12.7	1.1	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.16	0.77		0.23	0.60		0.40
Lane Grp Cap(c), veh/h	22	1364	1429	21	1373	1399	131	0	0	123	0	0
V/C Ratio(X)	0.80	0.41	0.41	0.99	0.36	0.36	0.10	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	81	1364	1429	76	1373	1399	418	0	0	418	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	78.7	4.8	4.8	78.5	4.3	4.3	71.7	0.0	0.0	73.0	0.0	0.0
Incr Delay (d2), s/veh	42.7	0.8	0.8	88.5	0.7	0.7	0.7	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.3	1.2	0.3	0.3	0.4	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	121.4	5.6	5.5	167.0	5.0	5.0	72.4	0.0	0.0	76.2	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	E			E		
Approach Vol, veh/h		1154			1015			13			40	
Approach Delay, s/veh		7.4			8.4			72.4			76.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	135.4		16.6	7.2	136.2		16.6				
Change Period (Y+Rc), s	5.0	7.5		7.5	5.0	7.5		7.5				
Max Green Setting (Gmax), s	11.0	88.5		40.5	8.0	91.5		40.5				
Max Q Clear Time (g_c+I1), s	5.0	0.0		5.9	3.8	0.0		3.1				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	0.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			9.4									
HCM 6th LOS			A									

Notes

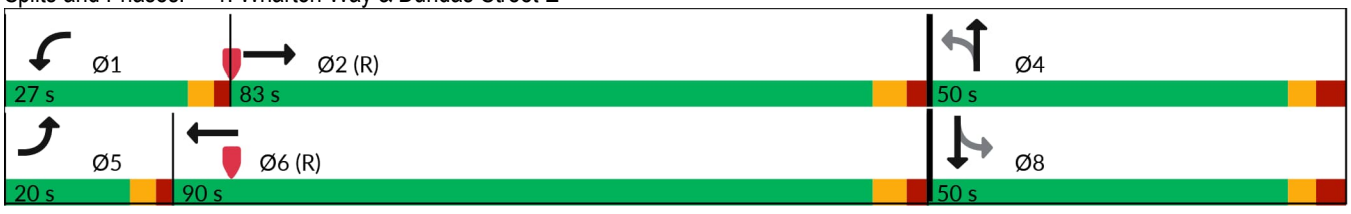
User approved pedestrian interval to be less than phase max green.

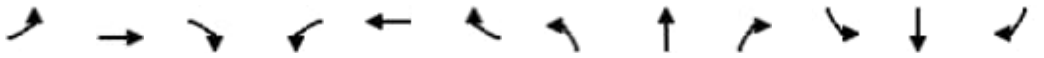
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	81	1000	111	1204	62	8	117	10
Future Volume (vph)	81	1000	111	1204	62	8	117	10
Lane Group Flow (vph)	84	1068	114	1290	64	92	121	200
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	38.5	10.0	38.5	48.0	48.0	48.0	48.0
Total Split (s)	20.0	83.0	27.0	90.0	50.0	50.0	50.0	50.0
Total Split (%)	12.5%	51.9%	16.9%	56.3%	31.3%	31.3%	31.3%	31.3%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.5	2.0	2.5	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	5.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.61	0.49	0.68	0.58	0.52	0.27	0.60	0.48
Control Delay (s/veh)	89.4	20.7	68.7	28.1	72.5	12.8	71.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	89.4	20.7	68.7	28.1	72.5	12.8	71.6	11.1
Queue Length 50th (m)	26.3	85.3	35.7	122.7	19.7	2.3	37.7	2.8
Queue Length 95th (m)	44.1	152.0	m50.6	192.5	31.9	16.5	52.4	22.9
Internal Link Dist (m)		169.3		444.1		44.4		148.5
Turn Bay Length (m)	84.0		84.0		28.0		34.0	
Base Capacity (vph)	164	2162	226	2224	196	491	324	558
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.49	0.50	0.58	0.33	0.19	0.37	0.36

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 133 (83%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Wharton Way & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1000	36	111	1204	48	62	8	81	117	10	184
Future Volume (veh/h)	81	1000	36	111	1204	48	62	8	81	117	10	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1856	1811	1767	1856	1589	1870	1900	1870	1796	1900	1870
Adj Flow Rate, veh/h	84	1031	37	114	1241	49	64	8	84	121	10	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	3	6	9	3	21	2	0	2	7	0	2
Cap, veh/h	104	2004	72	136	2070	82	177	31	328	264	18	339
Arrive On Green	0.06	0.58	0.58	0.08	0.60	0.60	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1739	3469	124	1682	3455	136	1165	138	1453	1226	79	1502
Grp Volume(v), veh/h	84	524	544	114	633	657	64	0	92	121	0	200
Grp Sat Flow(s),veh/h/ln	1739	1763	1831	1682	1763	1829	1165	0	1592	1226	0	1581
Q Serve(g_s), s	7.6	28.6	28.6	10.7	35.9	36.0	8.2	0.0	7.6	14.4	0.0	17.9
Cycle Q Clear(g_c), s	7.6	28.6	28.6	10.7	35.9	36.0	26.2	0.0	7.6	22.0	0.0	17.9
Prop In Lane	1.00		0.07	1.00		0.07	1.00		0.91	1.00		0.95
Lane Grp Cap(c), veh/h	104	1019	1058	136	1056	1095	177	0	359	264	0	357
V/C Ratio(X)	0.81	0.51	0.51	0.84	0.60	0.60	0.36	0.00	0.26	0.46	0.00	0.56
Avail Cap(c_a), veh/h	163	1019	1058	231	1056	1095	227	0	428	316	0	425
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	74.3	20.3	20.3	72.5	20.1	20.1	66.5	0.0	50.9	59.9	0.0	54.9
Incr Delay (d2), s/veh	15.1	1.9	1.8	12.6	2.5	2.4	1.2	0.0	0.4	1.2	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	6.1	6.3	4.1	7.2	7.5	2.0	0.0	2.3	3.5	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	89.5	22.1	22.1	85.1	22.6	22.5	67.7	0.0	51.3	61.2	0.0	56.3
LnGrp LOS	F	C	C	F	C	C	E		D	E		E
Approach Vol, veh/h		1152			1404			156			321	
Approach Delay, s/veh		27.0			27.6			58.0			58.1	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.9	98.9		43.1	14.5	102.3		43.1				
Change Period (Y+Rc), s	5.0	6.5		7.0	5.0	6.5		7.0				
Max Green Setting (Gmax), s	22.0	76.5		43.0	15.0	83.5		43.0				
Max Q Clear Time (g_c+I1), s	12.7	0.0		28.2	9.6	0.0		24.0				
Green Ext Time (p_c), s	0.3	0.0		0.7	0.1	0.0		2.0				

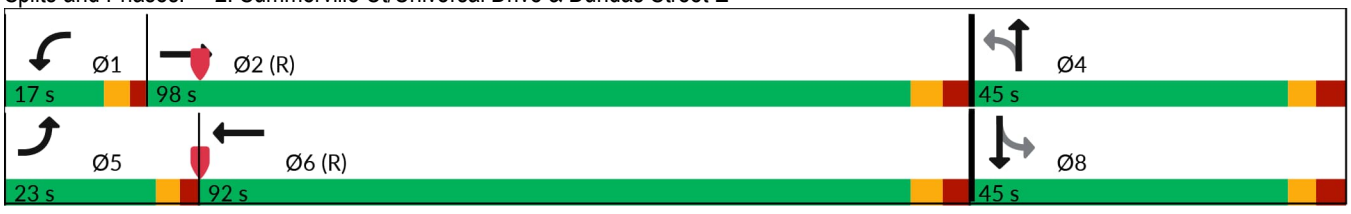
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			32.2									
HCM 6th LOS			C									

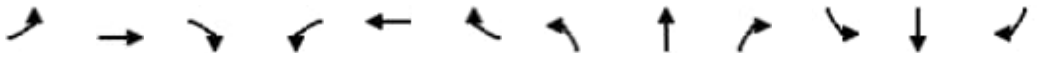
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	99	999	66	1247	73	5	169	8
Future Volume (vph)	99	999	66	1247	73	5	169	8
Lane Group Flow (vph)	106	1158	71	1566	78	95	182	161
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		4		8
Permitted Phases					4		8	
Detector Phase	5	2	1	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	41.0	9.0	41.0	45.0	45.0	45.0	45.0
Total Split (s)	23.0	98.0	17.0	92.0	45.0	45.0	45.0	45.0
Total Split (%)	14.4%	61.3%	10.6%	57.5%	28.1%	28.1%	28.1%	28.1%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.0	2.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.63	0.52	0.56	0.74	0.46	0.26	0.81	0.38
Control Delay (s/veh)	107.7	10.1	106.4	16.8	64.9	11.8	87.6	11.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay (s/veh)	107.7	10.1	106.4	16.9	64.9	11.8	87.6	11.0
Queue Length 50th (m)	29.8	123.6	23.5	176.8	22.3	1.3	56.1	2.4
Queue Length 95th (m)	56.2	30.5	m39.8	239.5	37.3	16.2	79.3	21.1
Internal Link Dist (m)		444.1		230.7		115.7		116.6
Turn Bay Length (m)	80.0		55.0		36.0		23.0	
Base Capacity (vph)	209	2247	140	2130	227	460	298	507
Starvation Cap Reductn	0	0	0	39	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.52	0.51	0.75	0.34	0.21	0.61	0.32

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Summerville Ct/Universal Drive & Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	999	78	66	1247	209	73	5	84	169	8	141
Future Volume (veh/h)	99	999	78	66	1247	209	73	5	84	169	8	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1856	1900	1811	1856	1811	1885	1900	1900	1885	1707	1900
Adj Flow Rate, veh/h	106	1074	84	71	1341	225	78	5	90	182	9	152
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	0	6	3	6	1	0	0	1	13	0
Cap, veh/h	139	2047	160	99	1805	299	198	19	334	270	18	303
Arrive On Green	0.08	0.62	0.61	0.06	0.60	0.59	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1795	3304	258	1725	3011	499	1224	83	1499	1297	81	1360
Grp Volume(v), veh/h	106	573	585	71	778	788	78	0	95	182	0	161
Grp Sat Flow(s),veh/h/ln	1795	1763	1800	1725	1763	1747	1224	0	1582	1297	0	1440
Q Serve(g_s), s	9.3	29.3	29.4	6.5	50.6	52.7	9.5	0.0	8.0	21.6	0.0	15.7
Cycle Q Clear(g_c), s	9.3	29.3	29.4	6.5	50.6	52.7	25.2	0.0	8.0	29.6	0.0	15.7
Prop In Lane	1.00		0.14	1.00		0.29	1.00		0.95	1.00		0.94
Lane Grp Cap(c), veh/h	139	1092	1115	99	1057	1048	198	0	353	270	0	321
V/C Ratio(X)	0.76	0.52	0.52	0.72	0.74	0.75	0.39	0.00	0.27	0.68	0.00	0.50
Avail Cap(c_a), veh/h	213	1092	1115	140	1057	1048	223	0	386	296	0	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.4	17.2	17.2	74.1	23.0	23.5	65.4	0.0	51.8	63.6	0.0	54.8
Incr Delay (d2), s/veh	8.4	1.8	1.8	7.5	3.5	3.8	1.3	0.0	0.4	5.3	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.3	5.5	2.5	10.1	10.5	2.5	0.0	2.6	6.2	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	80.7	19.0	19.0	81.6	26.5	27.3	66.7	0.0	52.2	68.9	0.0	56.0
LnGrp LOS	F	B	B	F	C	C	E		D	E		E
Approach Vol, veh/h		1264			1637			173			343	
Approach Delay, s/veh		24.1			29.3			58.7			62.9	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.2	105.1		41.7	16.4	101.9		41.7				
Change Period (Y+Rc), s	5.0	7.0		7.0	5.0	7.0		7.0				
Max Green Setting (Gmax), s	12.0	91.0		38.0	18.0	85.0		38.0				
Max Q Clear Time (g_c+I1), s	8.5	0.0		27.2	11.3	0.0		31.6				
Green Ext Time (p_c), s	0.1	0.0		0.7	0.2	0.0		1.2				

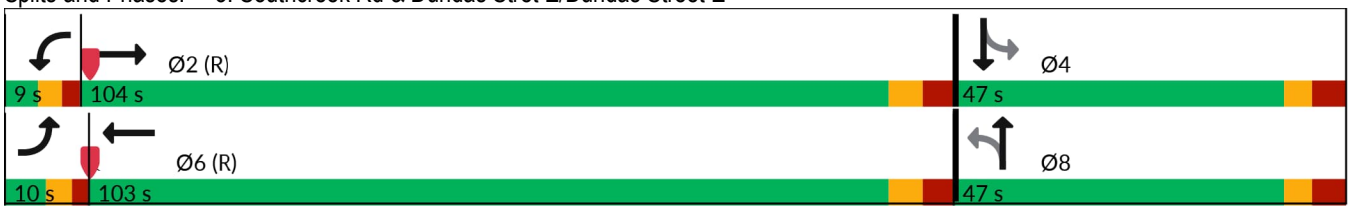
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			32.2									
HCM 6th LOS			C									

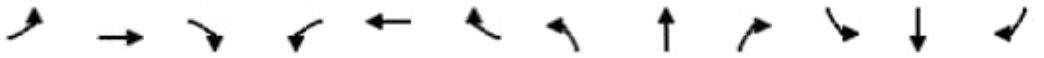
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	1288	9	1469	9	0	84	0
Future Volume (vph)	12	1288	9	1469	9	0	84	0
Lane Group Flow (vph)	13	1439	10	1674	0	19	0	114
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	37.5	9.0	37.5	46.5	46.5	46.5	46.5
Total Split (s)	10.0	104.0	9.0	103.0	47.0	47.0	47.0	47.0
Total Split (%)	6.3%	65.0%	5.6%	64.4%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	3.5	2.0	3.5	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	7.5	5.0	7.5		7.5		7.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.17	0.52	0.14	0.61		0.10		0.63
Control Delay (s/veh)	82.9	4.4	77.7	9.6		1.0		46.3
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	82.9	4.4	77.7	9.7		1.0		46.3
Queue Length 50th (m)	4.2	39.0	3.2	79.4		0.0		15.1
Queue Length 95th (m)	m8.6	56.8	10.0	177.5		0.0		35.1
Internal Link Dist (m)		230.7		265.7		100.6		126.3
Turn Bay Length (m)	85.0		85.0					
Base Capacity (vph)	75	2786	72	2745		423		395
Starvation Cap Reductn	0	73	0	0		0		0
Spillback Cap Reductn	0	0	0	77		0		1
Storage Cap Reductn	0	0	0	0		0		0
Reduced v/c Ratio	0.17	0.53	0.14	0.63		0.04		0.29

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Southcreek Rd & Dundas Stret E/Dundas Street E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1288	7	9	1469	38	9	0	8	84	0	19
Future Volume (veh/h)	12	1288	7	9	1469	38	9	0	8	84	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1841	1826	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	1431	8	10	1632	42	10	0	9	93	0	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	3	0	0	4	5	0	0	0	0	0	0
Cap, veh/h	20	2776	16	16	2682	69	106	10	74	155	0	26
Arrive On Green	0.02	1.00	1.00	0.01	0.77	0.77	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1810	3594	20	1810	3481	89	767	109	789	1216	0	275
Grp Volume(v), veh/h	13	702	737	10	818	856	19	0	0	114	0	0
Grp Sat Flow(s),veh/h/ln	1810	1763	1851	1810	1749	1822	1665	0	0	1491	0	0
Q Serve(g_s), s	1.1	0.0	0.0	0.9	32.2	32.6	0.0	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.9	32.2	32.6	1.6	0.0	0.0	11.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.05	0.53		0.47	0.82		0.18
Lane Grp Cap(c), veh/h	20	1362	1430	16	1347	1404	190	0	0	180	0	0
V/C Ratio(X)	0.65	0.52	0.52	0.62	0.61	0.61	0.10	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	57	1362	1430	45	1347	1404	418	0	0	403	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	77.9	0.0	0.0	79.0	7.9	8.0	66.5	0.0	0.0	71.0	0.0	0.0
Incr Delay (d2), s/veh	25.8	1.1	1.1	32.4	2.0	2.0	0.5	0.0	0.0	7.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.4	0.4	0.5	0.8	0.8	0.6	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	103.8	1.1	1.1	111.4	10.0	9.9	67.0	0.0	0.0	78.6	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	E			E		
Approach Vol, veh/h		1452			1684			19			114	
Approach Delay, s/veh		2.0			10.5			67.0			78.6	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	131.1		22.5	6.8	130.8		22.5				
Change Period (Y+Rc), s	5.0	7.5		7.5	5.0	7.5		7.5				
Max Green Setting (Gmax), s	4.0	96.5		39.5	5.0	95.5		39.5				
Max Q Clear Time (g_c+I1), s	2.9	0.0		13.9	3.1	0.0		3.6				
Green Ext Time (p_c), s	0.0	0.0		1.1	0.0	0.0		0.1				

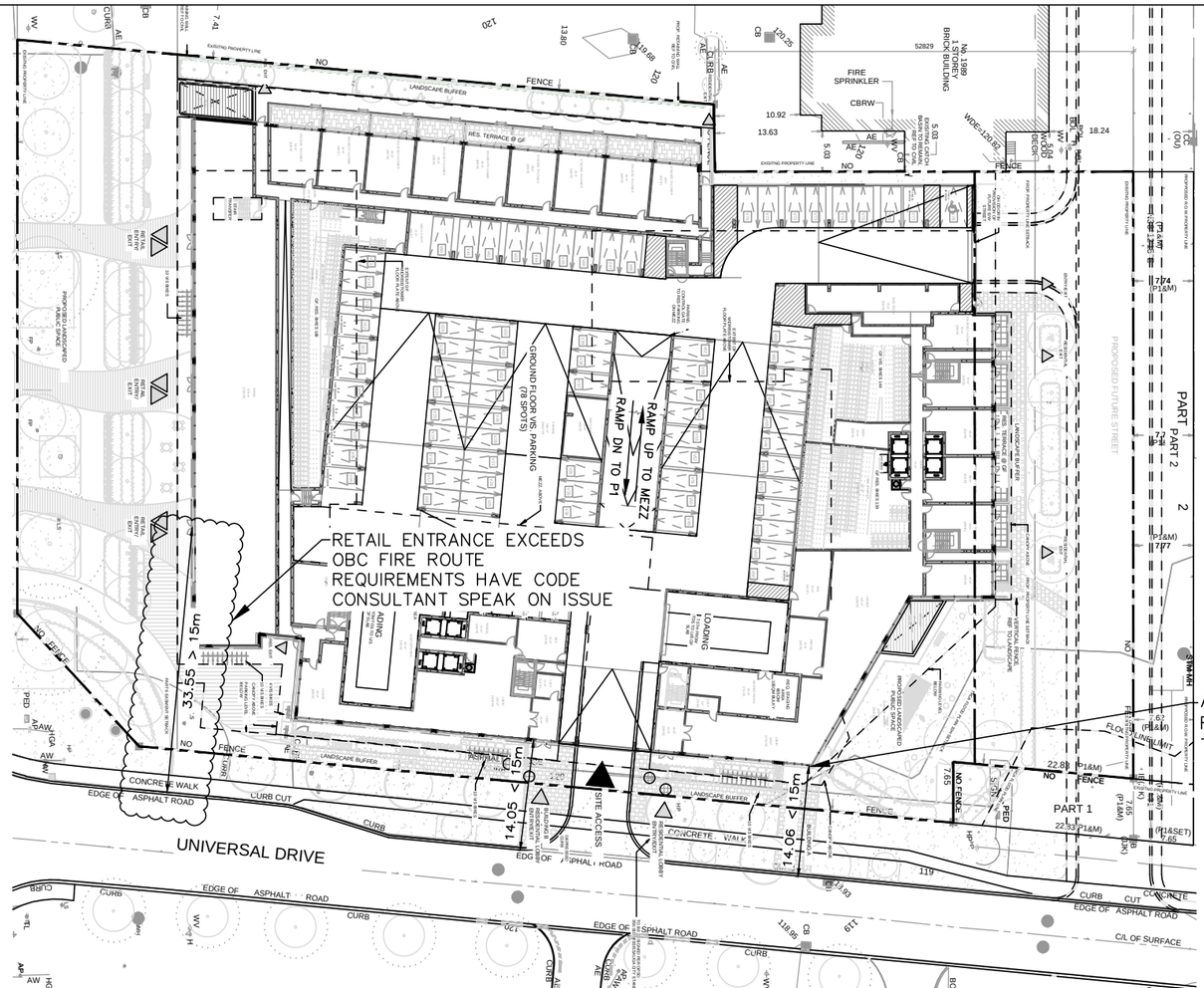
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			9.5									
HCM 6th LOS			A									

APPENDIX F

Swept Path Drawings and Sightline Analysis

NOTES:
– ARCHITECT TO CONFIRM LOCATION OF PRINCIPLE ENTRANCES

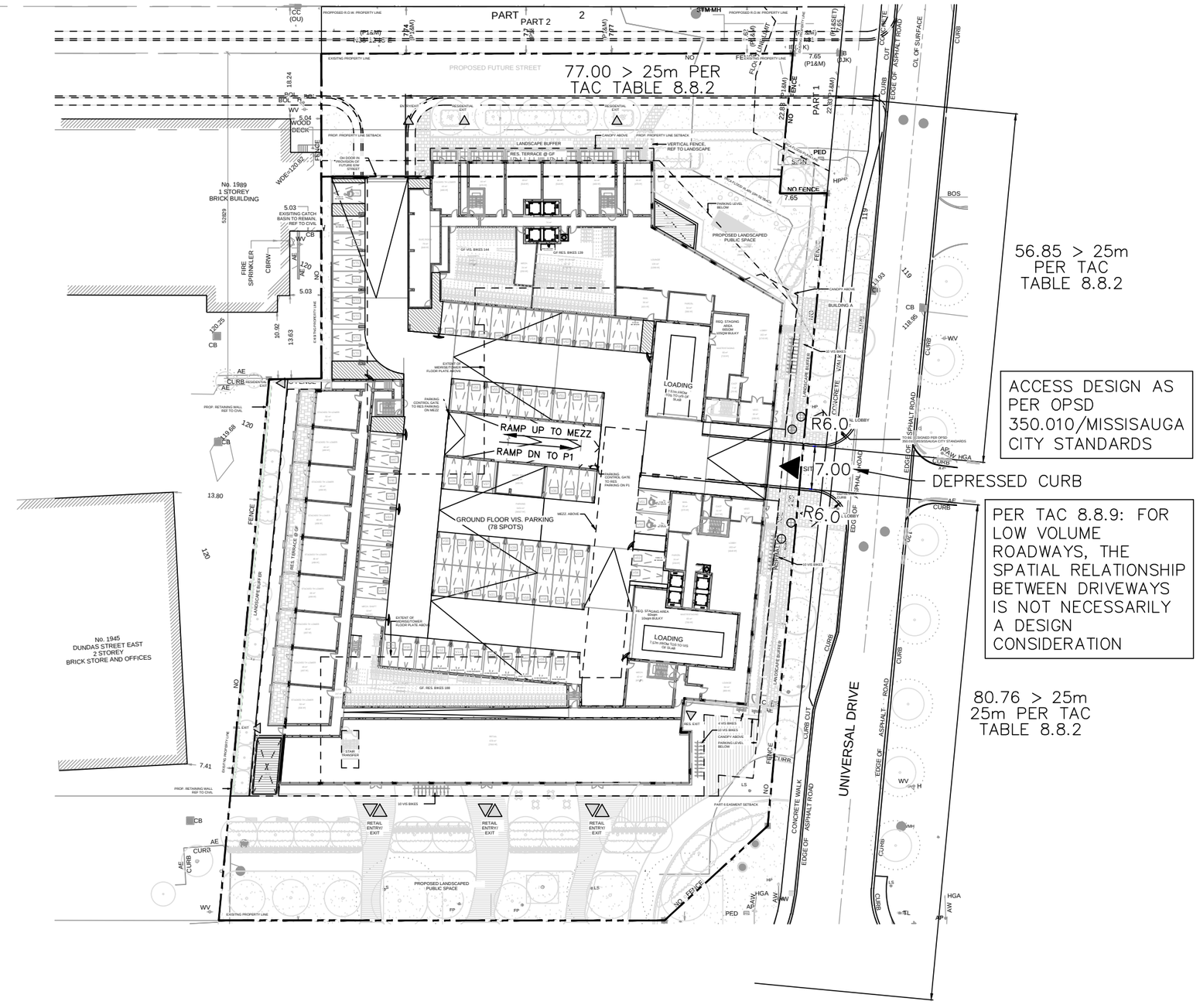
– ONTARIO BUILDING CODE – FIRE ACCESS ROUTE:
PER ONTARIO BUILDING CODE SECTION 3.2.5.5:
1. ACCESS ROUTES REQUIRE THAT THE PRINCIPAL ENTRANCES ARE LOCATED NOT LESS THAN 3m AND NOT MORE THAN 15m FROM THE CLOSEST PORTION OF THE ACCESS ROUTE REQUIRED FOR FIRE DEPARTMENT USE, MEASURED HORIZONTALLY FROM THE FACE OF THE BUILDING. THUS, FIRE TRUCKS MAY ACCESS THE PHASE A ASSUMED PRINCIPLE ENTRANCE VIA UNIVERSAL DRIVE
2. FIRE HYDRANTS TO BE LOCATED AS SPECIFIED.
PER ONTARIO BUILDING CODE SECTION 3.2.5.6
3. A PORTION OF A ROADWAY OR YARD PROVIDED AS A REQUIRED ACCESS ROUTE FOR FIRE DEPARTMENT USE SHALL:
a. HAVE A CLEAR WIDTH NOT LESS THAN 6m, UNLESS IT CAN BE SHOWN THAT LESSER WIDTHS ARE SATISFACTORY;
b. HAVE A CENTRELINE RADIUS NOT LESS THAN 12m;
c. HAVE AN OVERHEAD CLEARANCE NOT LESS THAN 5m;
d. HAVE A CHANGE OF GRADIENT NOT MORE THAN 1 IN 12.5 OVER A MINIMUM DISTANCE OF 15m;
e. BE DESIGNED TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIREFIGHTING EQUIPMENT AND BE SURFACED WITH CONCRETE, ASPHALT OR OTHER MATERIAL DESIGNED TO PERMIT ACCESSIBILITY UNDER ALL CLIMATIC CONDITIONS;
f. HAVE TURNAROUND FACILITIES FOR ANY DEAD–END PORTION OF THE ACCESS ROUTE MORE THAN 90m LONG AND;
g. BE CONNECTED WITH A PUBLIC THROUGHFARE.



LEA Consulting Ltd. Consulting Engineers and Planners www.LEA.ca	N	Project No. 24229 Date DEC 03, 2024		1995 DUNDAS STREET EAST MISSISSAUGA ONTARIO 7.5 0 7.5 15 22.5m 1:750	GROUND FLOOR FIRE ROUTE REVIEW	Drawing No. 001

DRAWN BY: C.N. PLOT DATE: December 03, 2024

DRAWING NAME: F:\24229\Drafting\24229WF016 – FDR.dwg



PLOT DATE: December 03, 2024

DRAWN BY: A.B.

LEA Consulting Ltd. Consulting Engineers and Planners www.LEA.ca	N	Project No. 24229 Date DEC 03, 2024		1995 DUNDAS STREET EAST MISSISSAUGA ONTARIO 7.5 0 7.5 15 22.5m 1:750	GROUND FLOOR ACCESS REVIEW Drawing No. 002

DRAWING NAME: F:\24229\Drafting\24229WF016 – FDR.dwg

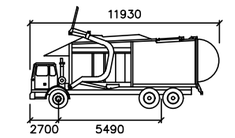
NOTE:

AS PER CITY OF MISSISSAUAGA ZONING BY–LAW LOADING REGULATIONS:

1. LOADING SPACES SHALL HAVE AN UNOBSTRUCTED AREA WITH A MIN. WIDTH OF 3.5m AND MIN. LENGTH OF 9.0m

PER REGION OF PEEL WASTE COLLECTION DESIGN STANDARDS MANUAL (2020)

2. ACCESS ROAD
   - 2.1. TURNS MUST HAVE A MIN. OF 13M CENTERLINE TURNING RADIUS FOR WASTE COLLECTION VEHICLES.
   - 2.2. ALL ACCESS ROADS MUST HAVE A MIN. 6M WIDTH AND MAX. 8% GRADING.
   - 2.3. WASTE COLLECTION VEHICLES SHALL NOT REVERSE IN EXCESS OF 15m
   - 2.4. OUTSIDE THE COLLECTION POINT, A CLEARANCE HEIGHT OF 4.4M FROM TOP OF ACCESS ROAD MUST BE PROVIDED ALONG THE WASTE COLLECTION VEHICLE ACCESS.
3. COLLECTION POINT
   - 3.1. MIN. 18m STRAIGHT HEAD–ON APPROACH TO THE COLLECTION POINT.
   - 3.2. A MIN. CLEARANCE HEIGHT OF 7.5m FROM THE CONCRETE PAD AT COLLECTION POINT
   - 3.3. MIN. 6m WIDTH AND MAX. 2% SLOPE AT CONCRETE PAD AND 18m APPROACH.
   - 3.4. $10m^2$ BULK STORAGE TO BE PROVIDED
4. NUMBER OF RECYCLE BINS SHOWN IN STAGING AREA IS MEANT TO DENOTE THAT THE SPACE CAN ACCOMMODATE THE NECESSARY NUMBER OF RESIDENTIAL COLLECTION BINS AS PER SECTION 4.
   - **RECYCLE COLLECTION GOVERNS THE STAGING AREA REQUIREMENT**
   - **FOR PHASE A (469 UNITS), $\frac{469}{45}$ = 11 3–YD^3 BINS ARE REQUIRED.**
   - **EACH 3–YD^3 BIN RESERVES 2mx3m SPACE, TOTAL STAGING AREA = $66m^2$.**
   - **FOR PHASE B (439 UNITS), $\frac{439}{45}$ = 10 3–YD^3 BINS ARE REQUIRED.**
   - **EACH 3–YD^3 BIN RESERVES 2mx3m SPACE, TOTAL STAGING AREA = $60m^2$.**
3. GARBAGE STAGING AREA CONFIGURATION SUBJECTED TO THE APPROVAL OF REGION OF PEEL'S WASTE MANAGEMENT DEPARTMENT.
4. A TRAINED ON–SITE STAFF MEMBER WILL BE AVAILABLE TO MANEUVER THE GARBAGE BINS FOR THE COLLECTION DRIVER AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT THE ON–SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME, THE CITY COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
5. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE. THE SYSTEM TO REMAIN ACTIVATED DURING THE CITY GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE.
6. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT
7. THE BINS SHOULD BE PROPERLY POSITIONED IN THE COLLECTION AREA ON THE DAY OF COLLECTION BEFORE 7 AM
8. THE DRIVER IS NOT REQUIRED TO EXIT THE COLLECTION VEHICLE TO FACILITATE COLLECTION
9. PROPERTY MANAGEMENT IS RESPONSIBLE FOR MOVING BINS DURING COLLECTION
10. THE REGION WILL NOT BE RESPONSIBLE FOR EMPTYING BINS THAT ARE INACCESSIBLE TO THE COLLECTION VEHICLE
11. PROPERTY MANAGEMENT MUST BE VISIBLE TO WASTE COLLECTION VEHICLE ON APPROACH TO SITE, OTHERWISE THE COLLECTION VEHICLE WILL NOT ENTER SITE
12. PROPERTY MANAGEMENT WILL BE RESPONSIBLE FOR SAFELY MANEUVERING WASTE COLLECTION VEHICLES INTO AND/OR OUT OF, AS WELL AS AROUND THE SITE



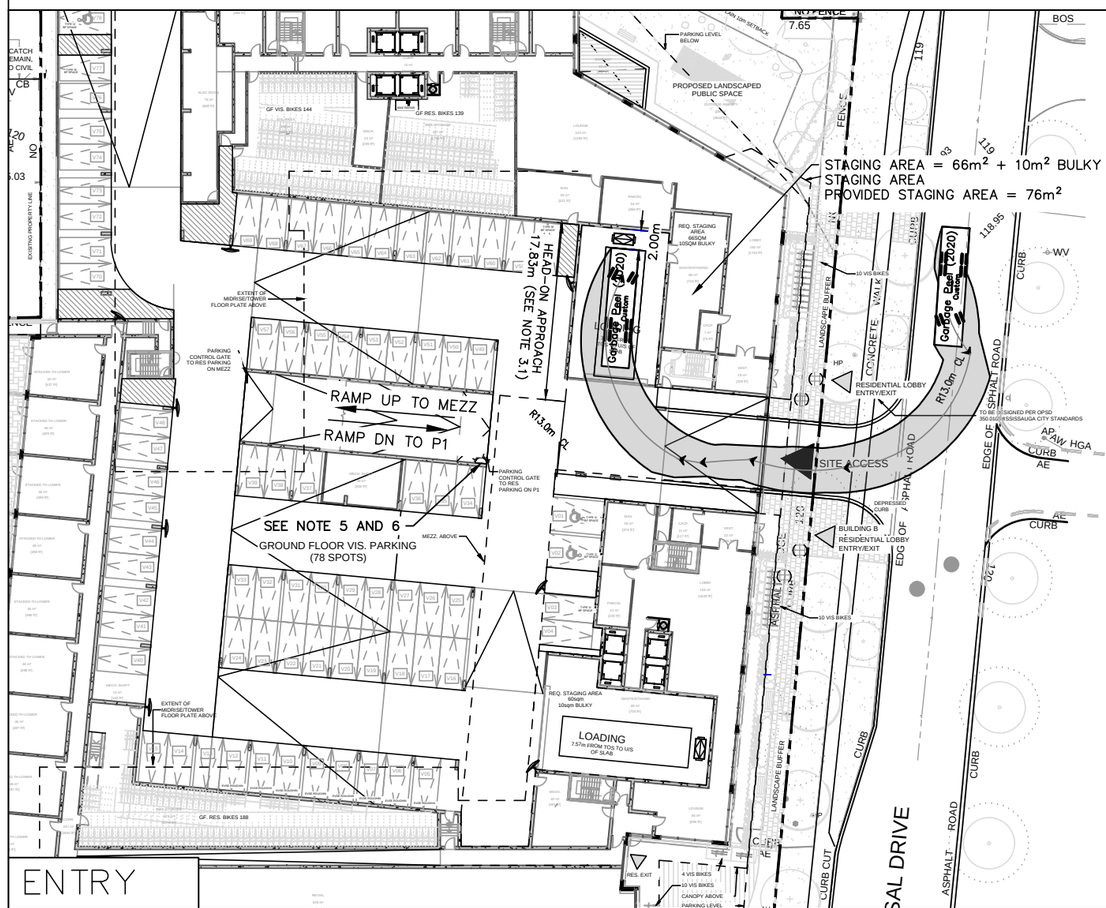
Garbage Peel (2020)

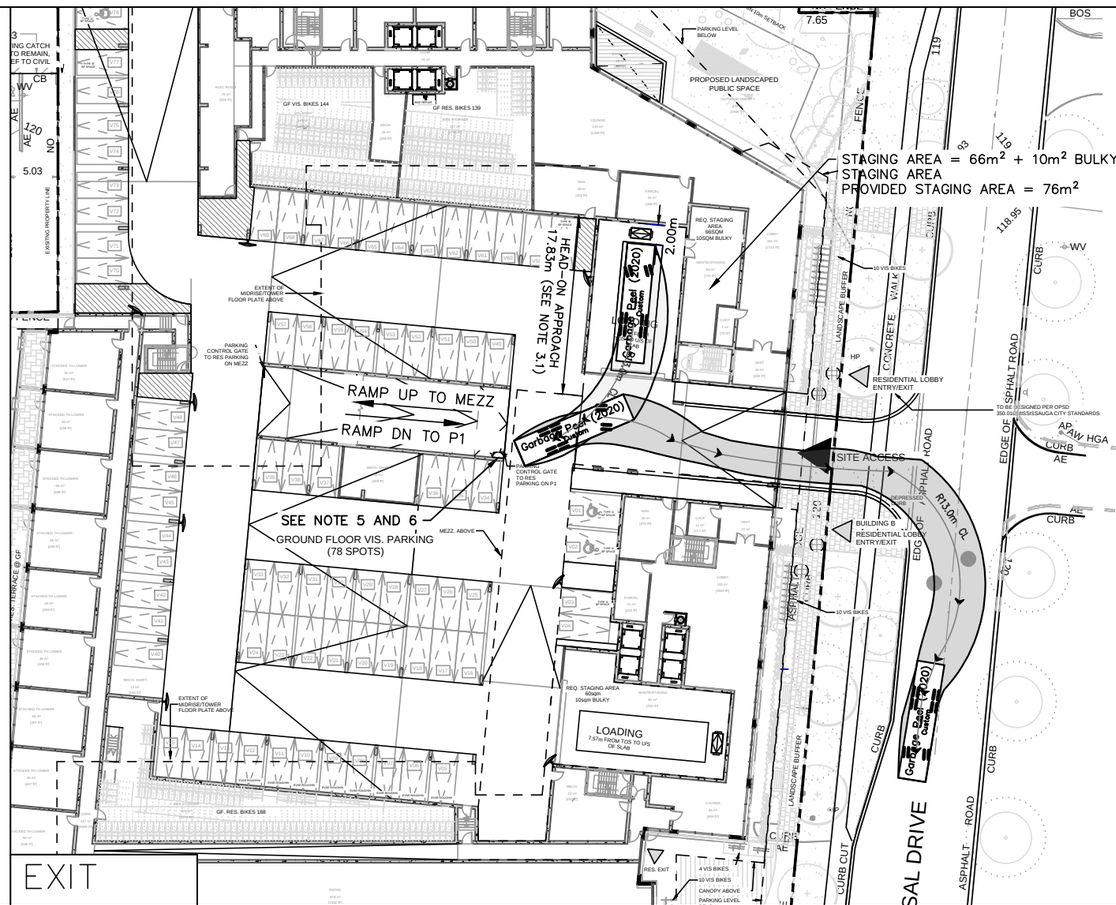
mm

Width	: 2770
Track	: 2770
Lock to Lock Time	: 6.0
Steering Angle	: 25.0

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.





PLOT DATE: December 03, 2024

DRAWN BY: A.B.

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24229

Date DEC 03, 2024

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

6 0 6 12 18m
1:600

LOADING REVIEW
WASTE COLLECTION TRUCK
ENTRY AND EXIT PATHS
TOWER 1

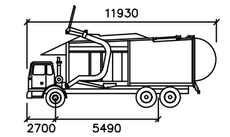
Drawing No. 003A

DRAWING NAME: F:\24229\Drafting\24229WF016 – FDR.dwg

NOTE:

AS PER CITY OF MISSISSAUAGA ZONING BY–LAW LOADING REGULATIONS:

1. LOADING SPACES SHALL HAVE AN UNOBSTRUCTED AREA WITH A MIN. WIDTH OF 3.5m AND MIN. LENGTH OF 9.0m PER REGION OF PEEL WASTE COLLECTION DESIGN STANDARDS MANUAL (2020)
2. ACCESS ROAD
   - 2.1. TURNS MUST HAVE A MIN. OF 13M CENTERLINE TURNING RADIUS FOR WASTE COLLECTION VEHICLES.
   - 2.2. ALL ACCESS ROADS MUST HAVE A MIN. 6M WIDTH AND MAX. 8% GRADING.
   - 2.3. WASTE COLLECTION VEHICLES SHALL NOT REVERSE IN EXCESS OF 15m
   - 2.4. OUTSIDE THE COLLECTION POINT, A CLEARANCE HEIGHT OF 4.4M FROM TOP OF ACCESS ROAD MUST BE PROVIDED ALONG THE WASTE COLLECTION VEHICLE ACCESS.
3. COLLECTION POINT
   - 3.1. MIN. 18m STRAIGHT HEAD–ON APPROACH TO THE COLLECTION POINT.
   - 3.2. A MIN. CLEARANCE HEIGHT OF 7.5m FROM THE CONCRETE PAD AT COLLECTION POINT
   - 3.3. MIN. 6m WIDTH AND MAX. 2% SLOPE AT CONCRETE PAD AND 18m APPROACH.
   - 3.4. $10m^2$ BULK STORAGE TO BE PROVIDED
4. NUMBER OF RECYCLE BINS SHOWN IN STAGING AREA IS MEANT TO DENOTE THAT THE SPACE CAN ACCOMMODATE THE NECESSARY NUMBER OF RESIDENTIAL COLLECTION BINS AS PER SECTION 4.
   - **RECYCLE COLLECTION GOVERNS THE STAGING AREA REQUIREMENT**
   - **FOR TOWER 1 (469 UNITS), $\frac{469}{45}$ = 11 3–YD^3 BINS ARE REQUIRED.**
   - **EACH 3–YD^3 BIN RESERVES 2mx3m SPACE, TOTAL STAGING AREA = $66m^2$.**
   - **FOR TOWER 2 (439 UNITS), $\frac{439}{45}$ = 10 3–YD^3 BINS ARE REQUIRED.**
   - **EACH 3–YD^3 BIN RESERVES 2mx3m SPACE, TOTAL STAGING AREA = $60m^2$.**
3. GARBAGE STAGING AREA CONFIGURATION SUBJECTED TO THE APPROVAL OF REGION OF PEEL'S WASTE MANAGEMENT DEPARTMENT.
4. A TRAINED ON–SITE STAFF MEMBER WILL BE AVAILABLE TO MANEUVER THE GARBAGE BINS FOR THE COLLECTION DRIVER AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT THE ON–SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME, THE CITY COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
5. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE. THE SYSTEM TO REMAIN ACTIVATED DURING THE CITY GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE.
6. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT
7. THE BINS SHOULD BE PROPERLY POSITIONED IN THE COLLECTION AREA ON THE DAY OF COLLECTION BEFORE 7 AM
8. THE DRIVER IS NOT REQUIRED TO EXIT THE COLLECTION VEHICLE TO FACILITATE COLLECTION
9. PROPERTY MANAGEMENT IS RESPONSIBLE FOR MOVING BINS DURING COLLECTION
10. THE REGION WILL NOT BE RESPONSIBLE FOR EMPTYING BINS THAT ARE INACCESSIBLE TO THE COLLECTION VEHICLE
11. PROPERTY MANAGEMENT MUST BE VISIBLE TO WASTE COLLECTION VEHICLE ON APPROACH TO SITE, OTHERWISE THE COLLECTION VEHICLE WILL NOT ENTER SITE
12. PROPERTY MANAGEMENT WILL BE RESPONSIBLE FOR SAFELY MANEUVERING WASTE COLLECTION VEHICLES INTO AND/OR OUT OF, AS WELL AS AROUND THE SITE



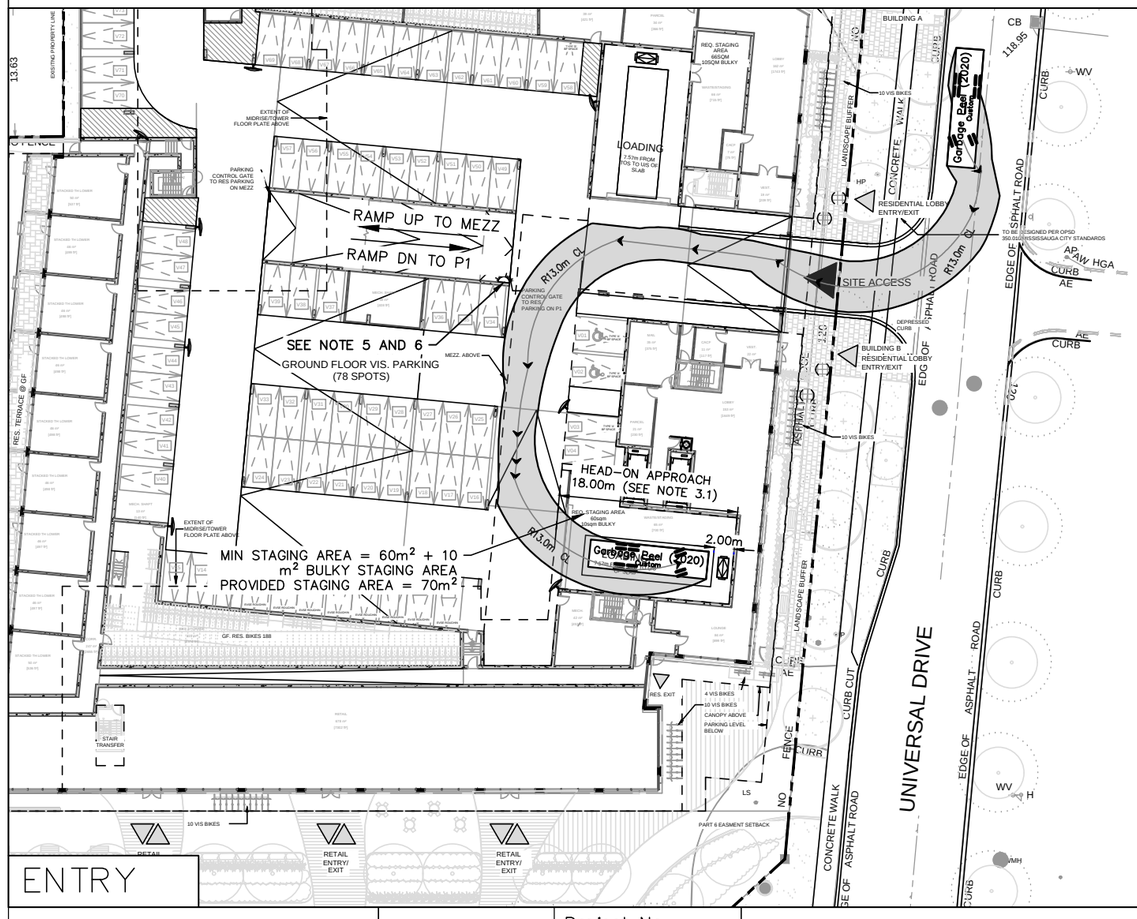
Garbage Peel (2020)

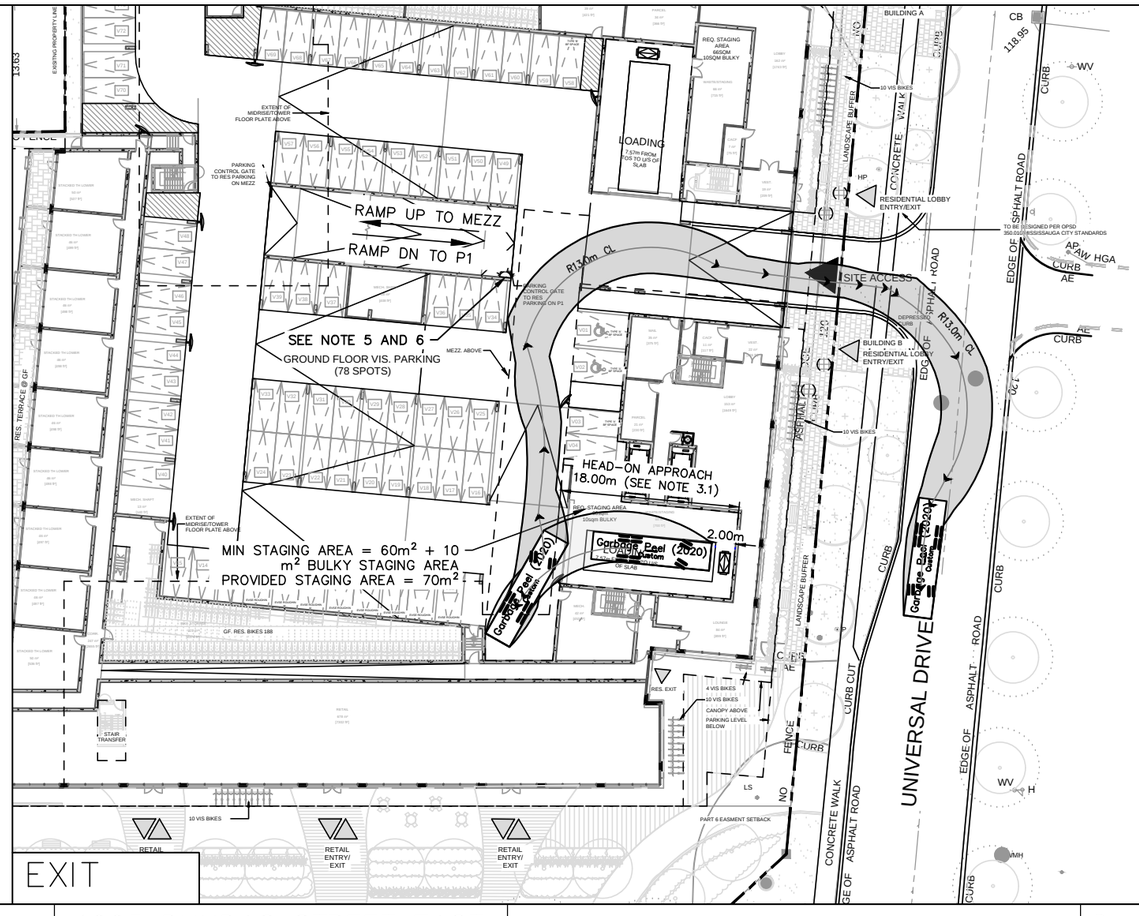
mm

Width	: 2770
Track	: 2770
Lock to Lock Time	: 6.0
Steering Angle	: 25.0

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.





PLOT DATE: December 03, 2024

DRAWN BY: A.B.

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24229

Date DEC 03, 2024

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

6 0 6 12 18m
1:600

LOADING REVIEW
WASTE COLLECTION TRUCK
ENTRY AND EXIT PATHS
TOWER 2

Drawing No. 003B

DRAWING NAME: F:\24229\Drafting\24229WF016 – FDR.dwg

NOTE:

1. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE.
   THE SYSTEM TO REMAIN ACTIVATED DURING THE CITY GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE.
2. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.
3. MINIMUM VERTICAL CLEARANCE OF 4.4m.

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.

PLOT DATE: December 03, 2024

DRAWN BY: A.B.

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No.
24229

Date
DEC 03, 2024

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

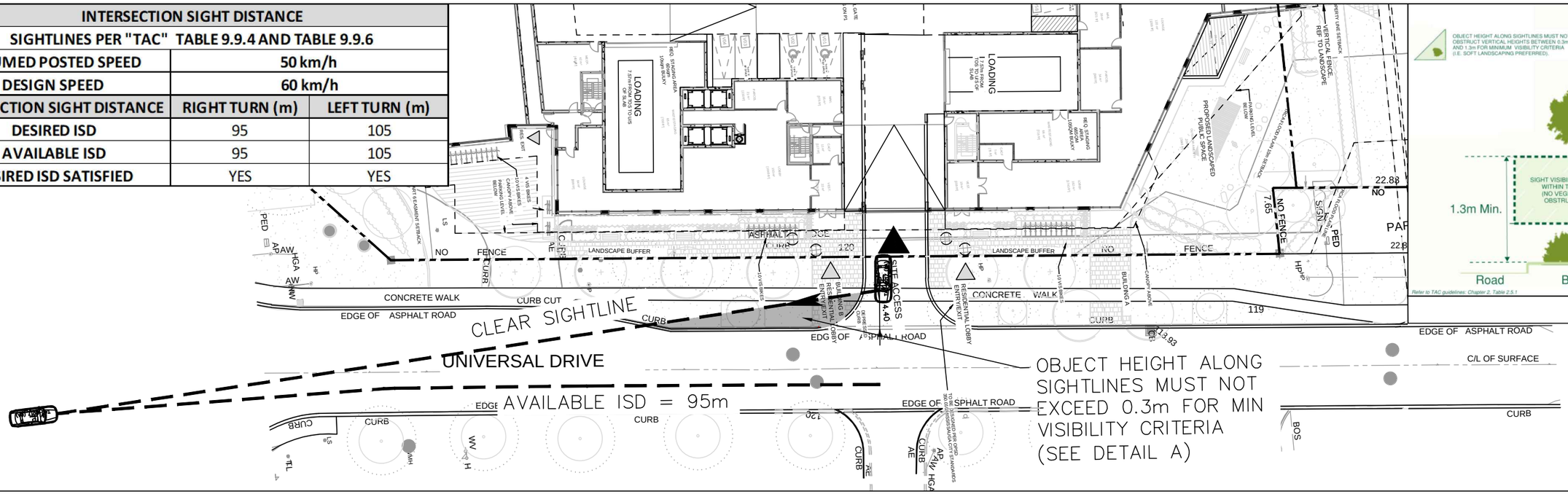
5 0 5 10 15m
1:500

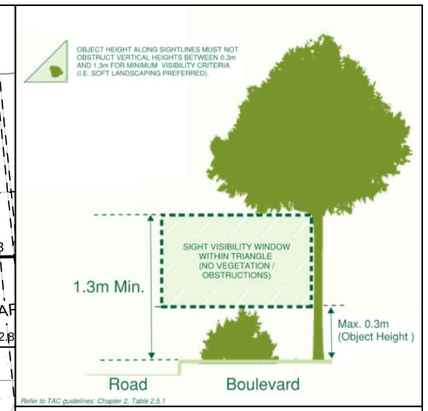
GROUND FLOOR
LOADING REVIEW
MOVING/DELIVERY TRUCK
ENTRY & EXIT PATHS

Drawing No.
004

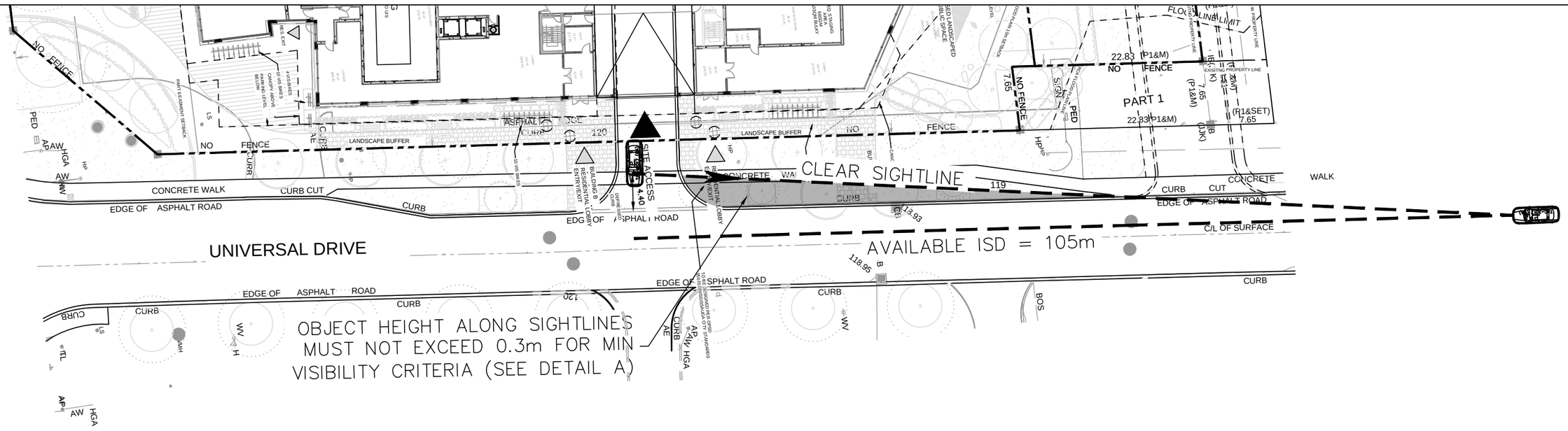
DRAWING NAME: F:\24229\Drafting\24229WF016 – FDR.dwg

INTERSECTION SIGHT DISTANCE		
SIGHTLINES PER "TAC" TABLE 9.9.4 AND TABLE 9.9.6		
ASSUMED POSTED SPEED	50 km/h	
DESIGN SPEED	60 km/h	
INTERSECTION SIGHT DISTANCE	RIGHT TURN (m)	LEFT TURN (m)
DESIRED ISD	95	105
AVAILABLE ISD	95	105
DESIRED ISD SATISFIED	YES	YES





RIGHT TURN



LEFT TURN

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24229

Date DEC 03, 2024

LEGEND
- SIGHT LINE
- AVAILABLE ISD
- PROPERTY LINE
- RESTRICTED OBJECT HEIGHT AREA

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

5 0 5 10 15m
1:500

UNIVERSAL DRIVE
SIGHT LINE ANALYSIS
INTERSECTION SIGHT DISTANCE (ISD)

Drawing No. 005

PLOT DATE: December 03, 2024
DRAWN BY: A.B.

DRAWING NAME: F:\24229\Drafting\24229WF016 – FDR.dwg

PER CITY OF MISSISSAUGA ZONING BY-LAW PART 3:

3.1.14 PARKING SPACE DIMENSIONS

(A) PARKING SPACES WITH A PARKING ANGLE EXCEEDING 15 DEGREE, EXCEPT THOSE DESIGNATED FOR PERSONS WITH DISABILITIES, SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.6m AND A MIN LENGTH OF 5.2m, EXCLUSIVE OF ANY AISLE OR DRIVEWAY.

(B) THE MIN WIDTH OF A PARKING SPACE, OTHER THAN AN ACCESSIBLE PARKING PARKING SPACE OR PARALLEL PARKING SPACE, SHALL BE INCREASED TO 2.75m WHERE THE LENGTH OF ONE SIDE OF THE PARKING SPACE ABUTS A BUILDING, STRUCTURE OR PART THEREOF AND 2.9m WHERE THE OBSTRUCTION IS FROM BOTH SIDES OF THE PARKING SPACE, EXCEPT FOR A BUILDING, STRUCTURE OR PART THEROF, THAT EXTENDS 1.0m OR LESS INTO THE FRONT AND/OR REAR OF THE PARKING SPACE.

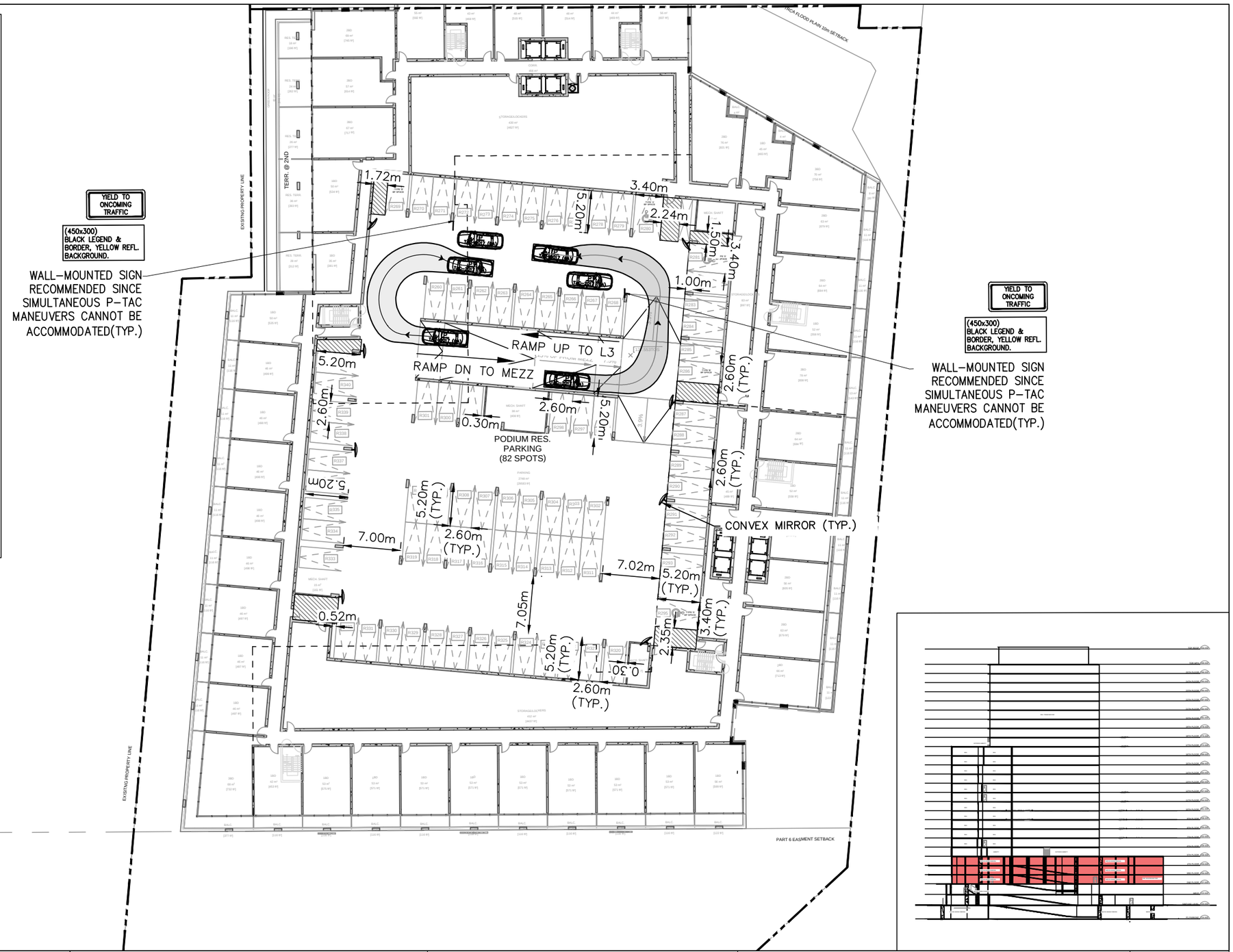
(C) ACCESSIBLE PARKING SPACES ARE TO BE PROVIDED IN TWO SIZES AND MAINTAIN A 1.5m WIDE ACCESS AISLE ABUTTING THE ENTIRE LENGTH OF EACH PARKING SPACE (0190-2014):

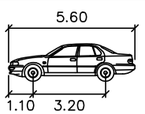
(1) TYPE A SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 3.4m AND A MIN LENGTH OF 5.2m.

(2) TYPE B SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.4m AND A MIN LENGTH OF 5.2m.

3.1.1.5 AISLES

(A) THE MIN DRIVE AISLE WIDTH SHALL BE 7.0m.





P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

PLOT DATE: December 03, 2024

DRAWN BY: A.B.

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24229

Date DEC 03, 2024

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

5 0 5 10 15m
1:500

LEVEL 2-4
PARKING ANALYSIS

Drawing No. 006

DRAWING NAME: F:\24229\Drafting\24229WF016 - FDR.dwg

PER CITY OF MISSISSAUGA ZONING BY-LAW PART 3:

3.1.14 PARKING SPACE DIMENSIONS

(A) PARKING SPACES WITH A PARKING ANGLE EXCEEDING 15 DEGREE, EXCEPT THOSE DESIGNATED FOR PERSONS WITH DISABILITIES, SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.6m AND A MIN LENGTH OF 5.2m, EXCLUSIVE OF ANY AISLE OR DRIVEWAY.

(B) THE MIN WIDTH OF A PARKING SPACE, OTHER THAN AN ACCESSIBLE PARKING PARKING SPACE OR PARALLEL PARKING SPACE, SHALL BE INCREASED TO 2.75m WHERE THE LENGTH OF ONE SIDE OF THE PARKING SPACE ABUTS A BUILDING, STRUCTURE OR PART THEREOF AND 2.9m WHERE THE OBSTRUCTION IS FROM BOTH SIDES OF THE PARKING SPACE, EXCEPT FOR A BUILDING, STRUCTURE OR PART THEROF, THAT EXTENDS 1.0m OR LESS INTO THE FRONT AND/OR REAR OF THE PARKING SPACE.

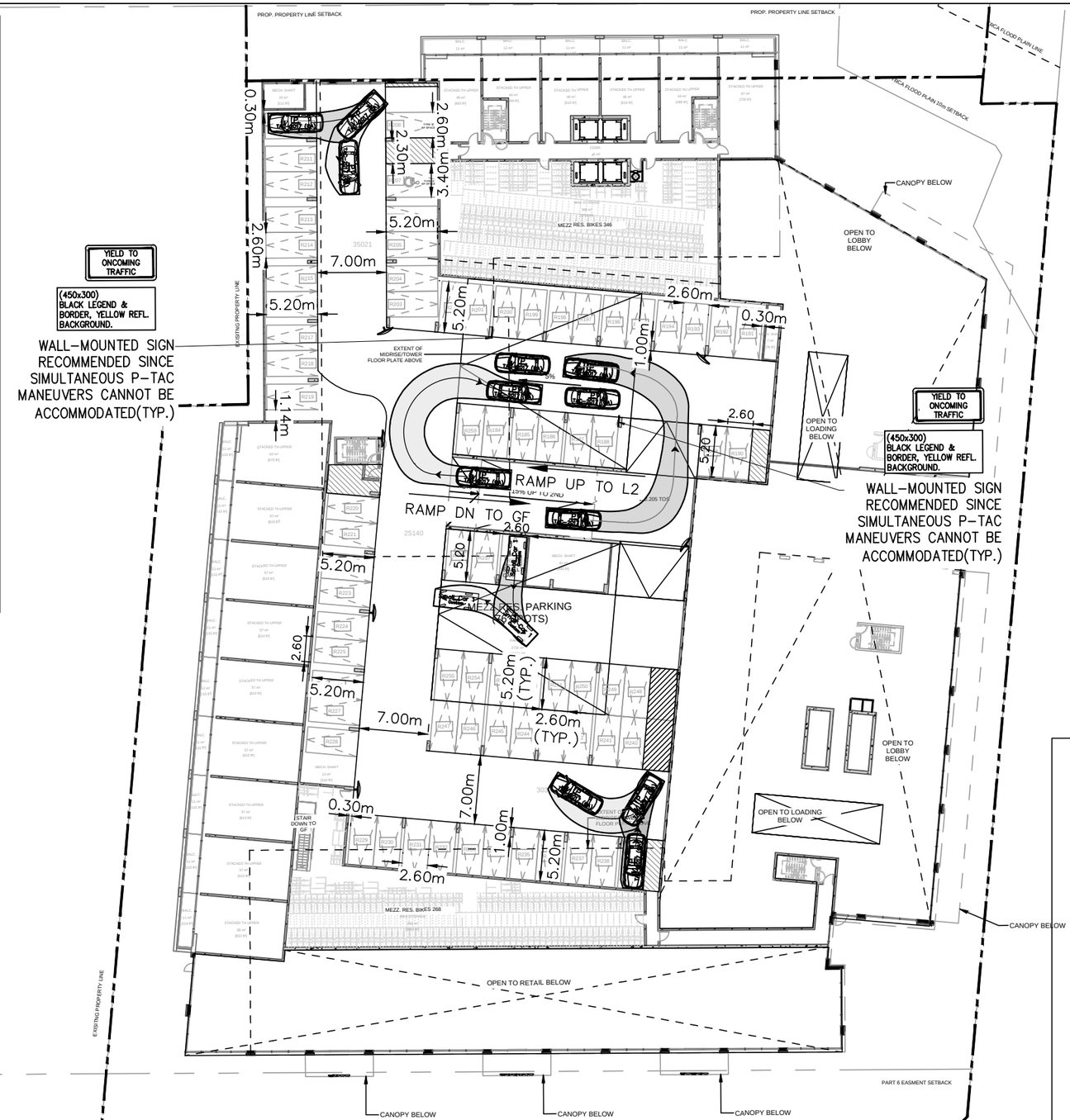
(C) ACCESSIBLE PARKING SPACES ARE TO BE PROVIDED IN TWO SIZES AND MAINTAIN A 1.5m WIDE ACCESS AISLE ABUTTING THE ENTIRE LENGTH OF EACH PARKING SPACE (0190-2014):

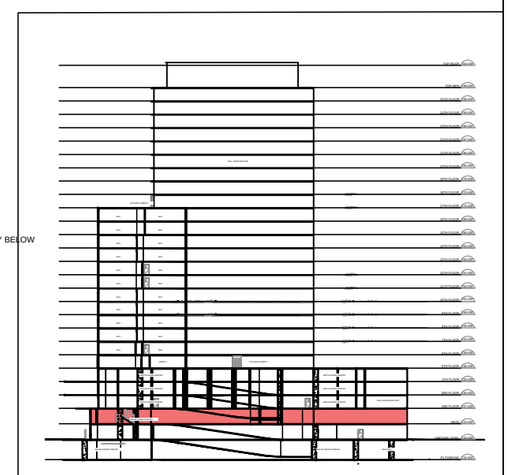
(1) TYPE A SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 3.4m AND A MIN LENGTH OF 5.2m.

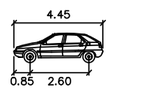
(2) TYPE B SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.4m AND A MIN LENGTH OF 5.2m.

3.1.1.5 AISLES

(A) THE MIN DRIVE AISLE WIDTH SHALL BE 7.0m.

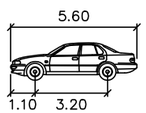






Small Car 1

	meters
Width	: 1.75
Track	: 1.63
Lock to Lock Time	: 6.0
Steering Angle	: 38.5



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

PLOT DATE: December 03, 2024

DRAWN BY: A.B.

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24229

Date DEC 03, 2024

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

5 0 5 10 15m
1:500

MEZZANINE PARKING ANALYSIS

Drawing No. 007

DRAWING NAME: F:\24229\Drafting\24229WF016 - FDR.dwg

PER CITY OF MISSISSAUGA ZONING BY-LAW PART 3:

3.1.14 PARKING SPACE DIMENSIONS

(A) PARKING SPACES WITH A PARKING ANGLE EXCEEDING 15 DEGREE, EXCEPT THOSE DESIGNATED FOR PERSONS WITH DISABILITIES, SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.6m AND A MIN LENGTH OF 5.2m, EXCLUSIVE OF ANY AISLE OR DRIVEWAY.

(B) THE MIN WIDTH OF A PARKING SPACE, OTHER THAN AN ACCESSIBLE PARKING PARKING SPACE OR PARALLEL PARKING SPACE, SHALL BE INCREASED TO 2.75m WHERE THE LENGTH OF ONE SIDE OF THE PARKING SPACE ABUTS A BUILDING, STRUCTURE OR PART THEREOF AND 2.9m WHERE THE OBSTRUCTION IS FROM BOTH SIDES OF THE PARKING SPACE, EXCEPT FOR A BUILDING, STRUCTURE OR PART THEROF, THAT EXTENDS 1.0m OR LESS INTO THE FRONT AND/OR REAR OF THE PARKING SPACE.

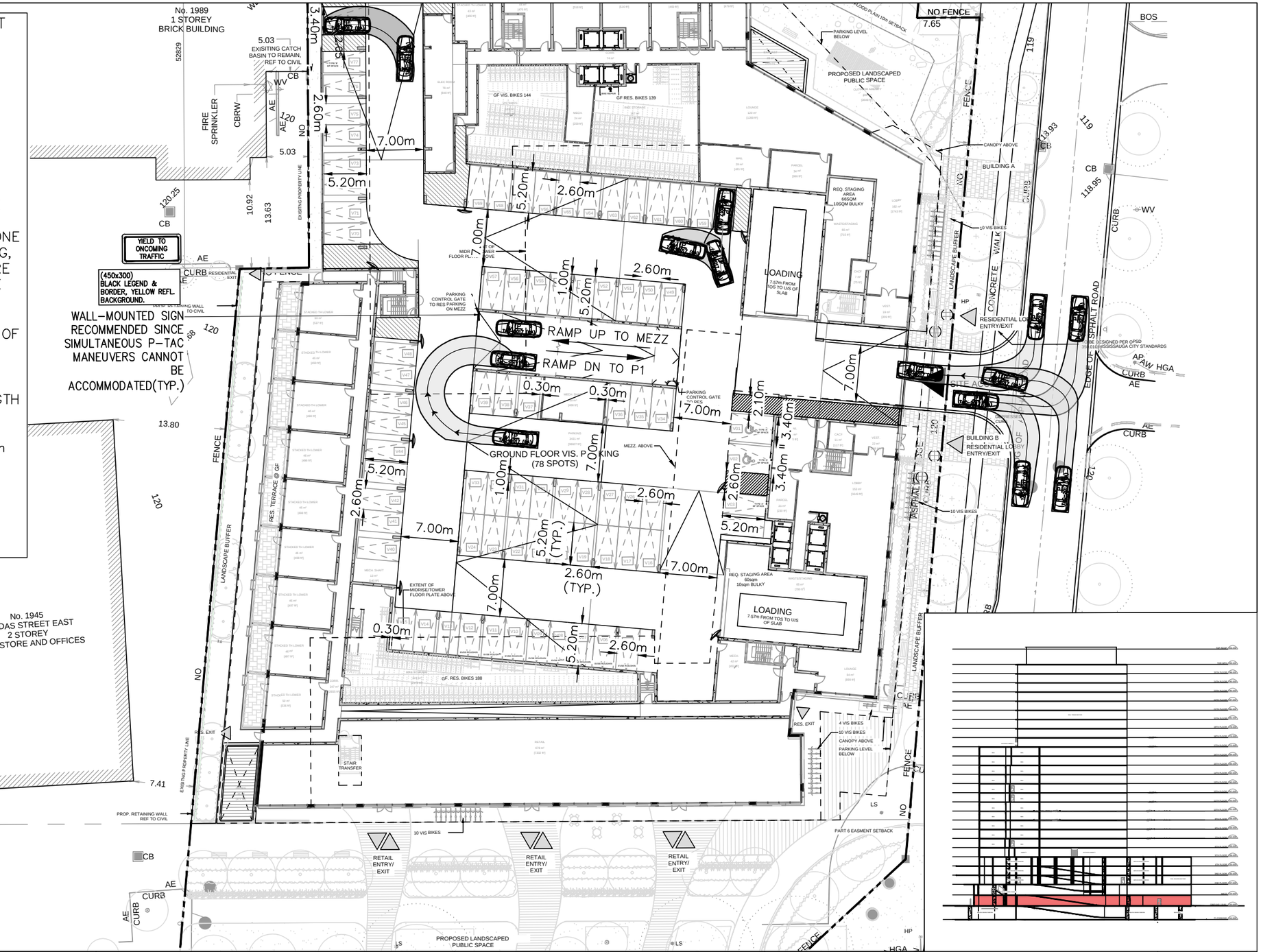
(C) ACCESSIBLE PARKING SPACES ARE TO BE PROVIDED IN TWO SIZES AND MAINTAIN A 1.5m WIDE ACCESS AISLE ABUTTING THE ENTIRE LENGTH OF EACH PARKING SPACE (0190-2014):

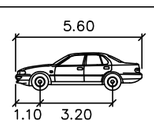
(1) TYPE A SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 3.4m AND A MIN LENGTH OF 5.2m.

(2) TYPE B SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.4m AND A MIN LENGTH OF 5.2m.

3.1.1.5 AISLES

(A) THE MIN DRIVE AISLE WIDTH SHALL BE 7.0m.





P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

PLOT DATE: December 03, 2024

DRAWN BY: A.B.

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24229

Date DEC 03, 2024

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

5 0 5 10 15m
1:500

GROUND FLOOR PARKING ANALYSIS

Drawing No. 008

DRAWING NAME: F:\24229\Drafting\24229WF016 - FDR.dwg

PER CITY OF MISSISSAUGA ZONING BY-LAW PART 3:

3.1.14 PARKING SPACE DIMENSIONS

(A) PARKING SPACES WITH A PARKING ANGLE EXCEEDING 15 DEGREE, EXCEPT THOSE DESIGNATED FOR PERSONS WITH DISABILITIES, SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.6m AND A MIN LENGTH OF 5.2m, EXCLUSIVE OF ANY AISLE OR DRIVEWAY.

(B) THE MIN WIDTH OF A PARKING SPACE, OTHER THAN AN ACCESSIBLE PARKING PARKING SPACE OR PARALLEL PARKING SPACE, SHALL BE INCREASED TO 2.75m WHERE THE LENGTH OF ONE SIDE OF THE PARKING SPACE ABUTS A BUILDING, STRUCTURE OR PART THEREOF AND 2.9m WHERE THE OBSTRUCTION IS FROM BOTH SIDES OF THE PARKING SPACE, EXCEPT FOR A BUILDING, STRUCTURE OR PART THEROF, THAT EXTENDS 1.0m OR LESS INTO THE FRONT AND/OR REAR OF THE PARKING SPACE.

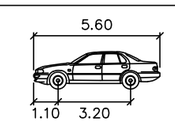
(C) ACCESSIBLE PARKING SPACES ARE TO BE PROVIDED IN TWO SIZES AND MAINTAIN A 1.5m WIDE ACCESS AISLE ABUTTING THE ENTIRE LENGTH OF EACH PARKING SPACE (0190-2014):

(1) TYPE A SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 3.4m AND A MIN LENGTH OF 5.2m.

(2) TYPE B SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.4m AND A MIN LENGTH OF 5.2m.

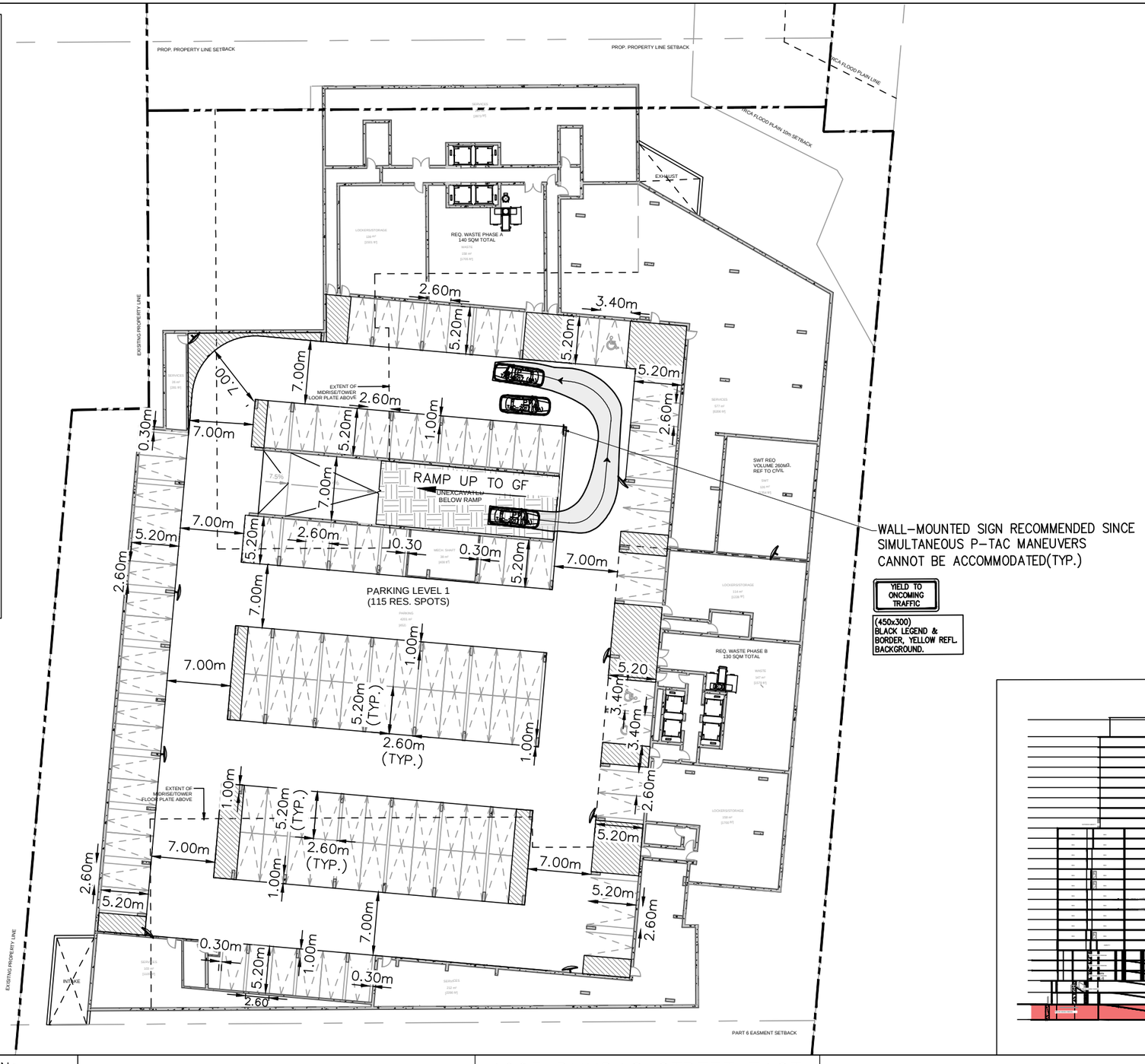
3.1.1.5 AISLES

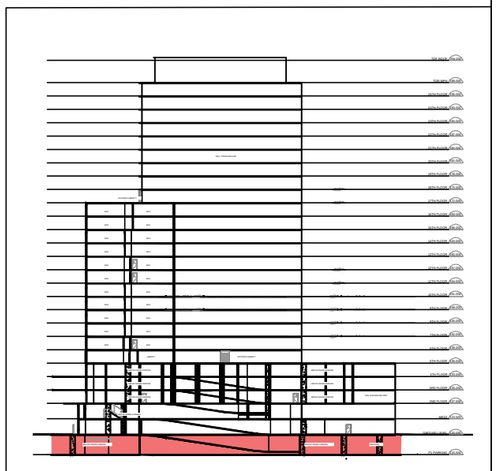
(A) THE MIN DRIVE AISLE WIDTH SHALL BE 7.0m.



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9





PLOT DATE: December 03, 2024

DRAWN BY: A.B.

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24229

Date DEC 03, 2024

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

5 0 5 10 15m
1:500

PARKING LEVEL 1
PARKING ANALYSIS

Drawing No. 009

DRAWING NAME: F:\24229\Drafting\24229WF016 - FDR.dwg

APPENDIX G

Transportation Demand Management Checklist

Appendix E

Transportation Demand Management and Pedestrian Circulation Checklist

This checklist is designed to evaluate the incorporation of Transportation Demand Management (TDM) measures, including pedestrian circulation techniques, into development proposals. The template is modelled on the prototype Class 2: Medium Density/Moderate Congestion (TDM Moderate) checklist contained in *TDM Supportive Guidelines for Development Approvals* (ACT Canada, 2008).

The applicant must complete and return this checklist with their **Transportation Demand Management Plan** (TDMP) and/or **Pedestrian Circulation Plan** (PCP).

Application Summary

Development Application No: DARC 23/164 W3	Date: July 2024
Applicant: Landeal Group	Staff:
SCORE AND RATING: 75%: 3 star	**TDM SUPPORTIVE?** Yes X No

Scorecard

Use the scorecard below to determine the TDM rating and supportiveness of the development proposal based on the final score calculated on page E-5. If the proposal does not satisfy the minimum threshold, review and enhance the TDM measures.

Final Score	Rating	TDM Supportive?
91% - 100%	***** (5 Star)	YES
81% - 90%	**** (4 Star)	
71% - 80%	*** (3 Star)	
61% - 70%	** (2 Star)	NO (Review and Enhance TDM Measures)
50% - 60%	* (1 Star)	
Less than 50%	(None)	

CATEGORY A – Pedestrian Circulation					
In creating an environment that facilitates and supports pedestrian activity, the public realm needs to be accessible, safe, and comfortable to encourage movement on the street and in the surrounding area(s).					
	Features	**Yes**	**No**	**N/A**	**Comments**
A1	Development located within 800 m walking distance of residential (if employment) or employment (if residential) uses	X			The subject site is located in a primarily commercial area, providing abundant employment opportunities within 800m
A2	Development located within 400 m walking distance of retail, restaurant, or other pedestrian-oriented uses or similar services provided on-site	X			The subject site is located near a variety of restaurants, retail and services. Retail is also proposed on-site.
A3	At least one functional building entrance oriented towards public space (i.e., street, park, square)	X			Retail entrances and most residential entrances will face public streets.
A4	At least one functional building entrance located close to on-site or adjacent street transit stop	X			Multiple building entrances are within 100m of adjacent street transit stops.
A5	Nearest functional building entrance located within 50 m of (and connected to) public street with sidewalk	X			Building entrances are within 50m, and connected to public sidewalks.
A6	Accessible on-site pedestrian routes provided and connected to surrounding network and transit	X			Pedestrian routes will be accessible.
A7	Continuous sidewalks (1.5 m min. width) provided along all on-site roads and both sides of adjacent public streets	X			Sidewalks will be provided along the Future Public Street through the site. Sidewalks exist on Universal Dr and Dundas St E.
A8	No conflict points between pedestrians and other users (i.e., vehicles, cyclists)	X			Conflict points are minimized by providing separate entrances for pedestrians, cyclists and vehicles.
A9	Adequate and properly designed pedestrian crossings provided on-site	X			Pedestrian crossings will be properly designed.
A10	Off-site road works designed to maximize pedestrian safety and minimize pedestrian crossing distances (e.g., no right turn channelization)	X			Local road network improvement proposed in Dundas Connects will enhance pedestrian comfort and safety.
A11	Amenities provided along pedestrian routes (i.e., benches, street furniture)	X			Pedestrian amenities will be considered as the design develops
A11	Shelters and benches provided at transit stops	X			Shelters/benches are provided.
A12	Wayfinding provided to guide pedestrians		X		
A13	Lighting provided along pedestrian routes	X			Lighting will be included on the site as the design develops.
A14	Weather protection provided along pedestrian routes		X		
A15	Vehicle parking areas located away from street and pedestrian routes	X			Vehicular access to be consolidated and moved off of arterial corridor as part of the redevelopment.
A16	Protected pedestrian routes provided through vehicle parking lots and linked to building(s)	X			

CATEGORY A – Pedestrian Circulation					
In creating an environment that facilitates and supports pedestrian activity, the public realm needs to be accessible, safe, and comfortable to encourage movement on the street and in the surrounding area(s).					
	Features	**Yes**	**No**	**N/A**	**Comments**
A17	Passenger pick-up and drop-off areas located to side or rear of buildings, downstream from major building entrance points, but no more than 30 m away		X		
A18	Loading areas located away from street and pedestrian routes	X			Loading areas are located within ground floor of building, away from street and sidewalks.
	Sub-Total	16	3		

CATEGORY B – Cycling Orientation					
In creating an environment that facilitates and supports cycling activity, the public realm needs to be accessible, safe, and comfortable to encourage movement on the street and in the surrounding area(s).					
	Features	**Yes**	**No**	**N/A**	**Comments**
B1	On-site cycling routes provided and connected to surrounding network		X		
B2	Class A (long-term) and Class B (short-term) bicycle parking spaces provided per City of Mississauga Zoning By-law (reproduced at end of this checklist for reference)	X			
B3	Bicycle repair station provided at-grade or within underground structure close to long-term bicycle parking	X			
B4	Wayfinding provided to guide cyclists		X		
B5	Other amenities provided for cyclists (e.g., showers, change rooms)		X		
	Sub-Total	2	3		

CATEGORY C – Transit Service					
The availability and proximity of convenient public transit service with direct pedestrian linkages to the building expands the range of viable travel options for employees, visitors, and residents.					
	Features	**Yes**	**No**	**N/A**	**Comments**
C1	Development located within 800 m walking distance of a rapid transit station (existing or planned) or within 400 m of two or more public bus routes with minimum 15-minute headway service during peak commuter periods and every 30 minutes throughout the remainder of the day	X			
C2	Information about public transit routes, schedules, and fares provided in accessible and visible location on-site and in adjacent bus stops	X			
C3	Sufficient capacity available to accommodate transit riders generated by development	X			
	Sub-Total	3			

CATEGORY D – Motor Vehicle Parking					
The location and design of motor vehicle parking facilities can affect the character and cost of a development. Avoiding the oversupply of parking can also help reduce single occupant vehicle travel.					
	Features	**Yes**	**No**	**N/A**	**Comments**
D1	No more than the minimum number of parking spaces required by the Zoning By-law provided	X			Proposed parking supply is below requirements for Precinct 3.
D2	Priority parking equivalent to 10% of employee spaces provided for carpooling/vanpooling			X	
D3	Priority parking equivalent to 3% of full-time building occupants provided for auto share and hybrid/alternative fuel vehicles	X			20% of residential parking and 10% of visitor parking will be prioritized for EV parking, and equipped with chargers
D4	Priority parking equivalent to 1% of the parking stalls provided for mopeds, motorcycles, and minicars		X		
D5	Parking shared for different uses on-site and/or adjoining properties	X			Visitor and retail parking supply to be shared.
D6	50% of parking located underground or in structured parking	X			All parking to be located underground.
	Sub-Total	4	1	1	

CATEGORY E – Incentives

Building owners and tenants can offer occupants Transportation Demand Management incentives that help reduce single occupant vehicle travel.

	Features	Yes	No	N/A	Comments
E1	TDM Plan prepared that targets a 10% reduction in peak hour trips using forecast trip generation with status quo travel characteristics	X			
E2	Building owner/tenant will provide a ride matching service for car/vanpooling			X	
E3	Building owner/tenant will provide emergency ride home options			X	
E4	Building owner/tenant will provide subsidized transit passes for all occupants for a period of at least two years		X		
E5	Building owner/tenant will charge for parking as an unbundled cost to occupants	X			
E6	Building owner/tenant will reduce cost for users of car/van pool, bicycle, moped/motorcycle/minicar spaces			X	No car/van pool or moped/ motorcycle/minicar parking is provided.
E7	Building owner/tenant will become a member of a local TMA and appoint a TDM Coordinator to oversee and coordinate promotional opportunities and events on site		X		
	Sub-Total	2	2	3	

SCORING SUMMARY

Count the number of applicable features for each category (items not assigned "N/A") and enter under the column "Applicable" in the table below.

Assign 1 point to each "Yes" answer, except for Category A (Pedestrian Circulation) where each "Yes" answer is worth ½ a point and Category C (Transit Service) where each "Yes" answer is worth 2 points. Award 0 points for a "No" answer. Tally the points for each category under the column "Points" in the table below.

Calculate "Final Score" as a percentage by dividing total "Points" by the total "Applicable" and enter in the table below and in the "SCORE AND RATING" field on page E-1.

Category	Possible	Applicable	Points	Comments
A – Pedestrian Circulation	9 (18/2)	9.5 (19/2)	8 (16/2)	
B – Cyclist Orientation	5	5	2	
C – Transit Service	6 (3x2)	6 (3x2)	6 (3x2)	
D – Motor Vehicle Parking	6	5	4	
E – Incentives	7	4	2	
TOTAL	**33**	29.5	22	
Score% (Points/Applicable)			75%	

APPENDIX H

Future Proposed Street Functional Road Design

APPROX. LOCATION OF PROPERTY LINES ATTAINED FROM THE CITY OF MISSISSAUGA PARCEL MAPPING

DAYLIGHT ENCROACHES OVER NEIGHBORS PROPERTY AND DRIVEWAY ACCESS (ADDITIONAL COORDINATION REQUIRED)

CROSS SECTION TO BE APPROVED BY CITY OF MISSISSAUGA

PARKING LAY BY DETAIL AS PER MISSISSAUGA STANDARD NO. 2230.031

TIE TO EXISTING CURB.

ADDITIONAL TOPO TO BE PROVIDED BY OTHERS

CURB RADIUS FROM CITY OF MISSISSAUGA STANDARD 2211.170

TIE INTO FUTURE ROADWAY

ACCESS DESIGNED AS PER OPSD 350.010.

ACCESS WIDTH TO ADJUSTED TO 7.2m.

TIE TO PROPOSED LANDSCAPING PLAN

PART 1 HATCHED AREA IS APPROX. LOCATION OF PROPERTY FABRIC FROM THE CITY OF MISSISSAUGA PARCEL MAPPING.

EXACT LOCATION TO BE PROVIDED.

7.5m X 7.5m DAYLIGHT (TYP.)

PROPOSED R.O.W. PROP LINE
0.30
1.50 SIDEWALK
2.25 BOULEVARD
2.60 PARKING LAYBY
EXISTING PROPERTY LINE
3.00 TRAFFIC LANE
PROPOSED FUTURE STREET
20.00 ROW
3.00 TRAFFIC LANE
5.20 BOULEVARD
1.50 SIDEWALK
0.30
PROPERTY LINE SETBACK
SITE ACCESS
R4.50
R4.50
R8.00
R8.00
3.00
7.50
7.50
7.50
7.20
5.0M
3.4M
9.4M
17.2M
92.2M
20000
23389
10510
8971
7611
PART 1
PART 2
UNIVERSAL DRIVE
PROPERTY LINE SETBACK
TRCA FLOOD PLAIN SET BACKS
TRCA FLOOD PLAIN SET BACKS
GROUND FLOOR TH RES UNITS
BIKE STORAGE
RES LOBBY
WASTE/LOADING
1.5M
13.5M
5.0M
ENTRY

PLOT DATE: August 12, 2024

DRAWN BY: C.T.

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24229

Date AUG. 12, 2024

DRAFT
FOR DISCUSSION

1995 DUNDAS STREET EAST
MISSISSAUGA ONTARIO

4 0 4 8 12m
1:600

ULTIMATE CONDITION
PROPOSED FUTURE STREET

Drawing No. 001

DRAWING NAME: F:\24229\Drafting\24229WF004 – Cross section.dwg