Whitehorn Investments Limited

Dundix Realty Holdings

1225 Dundas Street East

Transportation Impact Study

CGH TRANSPORTATION

1225 Dundas Street East
Transportation Impact Study

Prepared for:

Whitehorn Investments Limited

Dundix Realty Holdings

c/o SmartCentres REIT

3200 Highway 7

Vaughan, ON L4K 5Z5

Prepared by:

CGH TRANSPORTATION

628 Haines Road

Newmarket, ON

L3Y 6V5

August 2024

PN: 2022-050

Table of Contents

List of Figures

List of Tables

List of Appendices

1. Introduction

This Transportation Impact Study (TIS) has been prepared to support the proposed development at 1225 Dundas Street East in the City of Mississauga. The scope of this TIA has been confirmed with staff from both the City of Mississauga and the Region of Peel in the forms of a Terms of Reference (TOR) document which can be seen in Appendix A. It is noted that this Transportation Impact Study serves as an update to a previously circulated version dated July 2022. Comments received on the initial TIS have been implemented in this update.

The existing site, located at 1225 Dundas Street East, is zoned as Commercial Zone (C3). The proposed development includes 30 townhome units and 612 condo units with a ground floor retail space (626 m^2) and will replace the existing a single-storey shopping centre. The proposed development will have two full-movement accesses located on Arena Road and Dundix Road to access the surface parking and one level of underground parking. A total of 320 underground parking spaces and 11 surface parking spaces are proposed. This site is within the Dixie GO Major Transit Station Area. For the purposes of this TIS, the projected full build-out and occupancy horizon has been assumed to be 2028. Figure 1 illustrates the site context. Figure 2 illustrates the proposed site plan.

Figure 1: Site Context

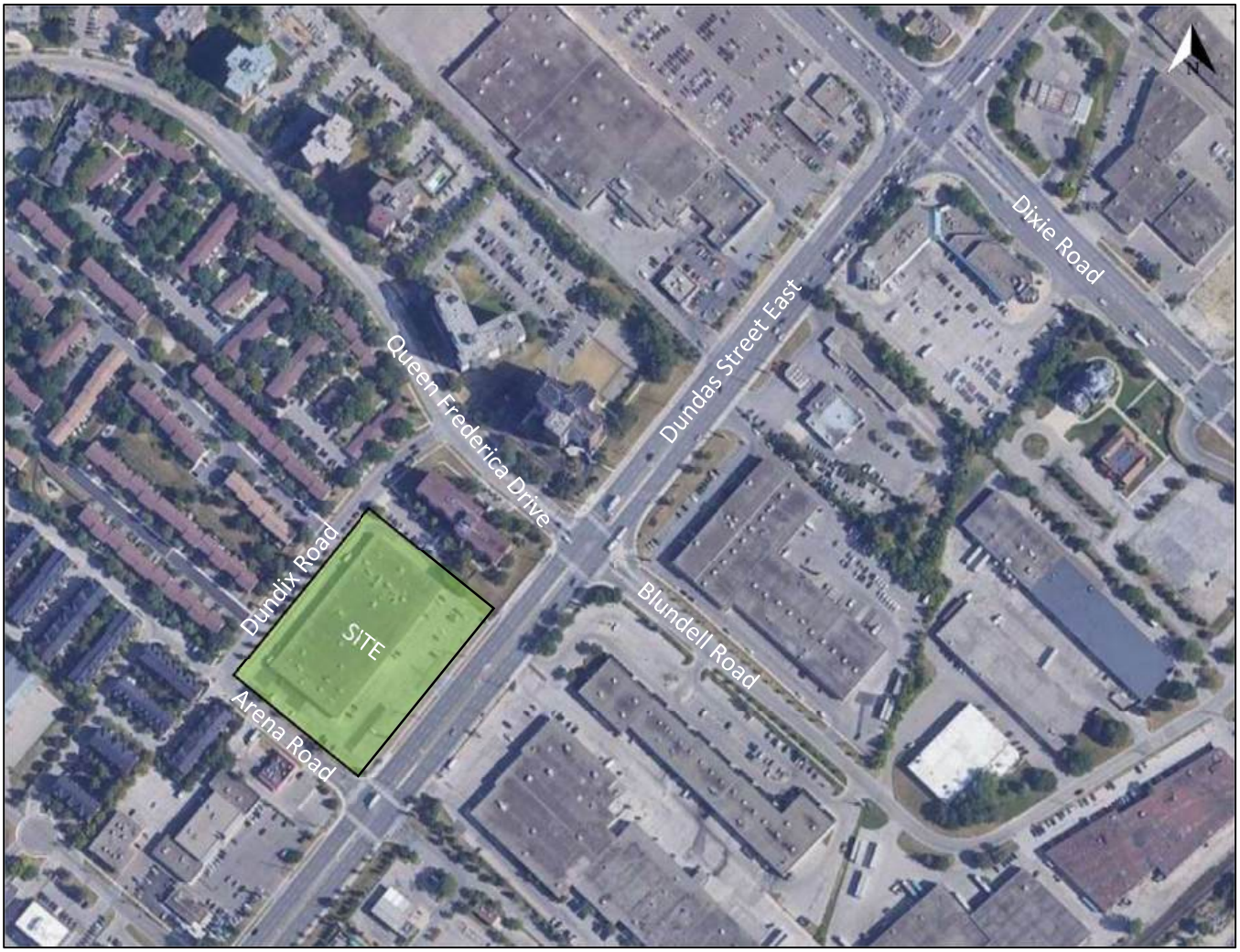


Figure 2: Proposed Site Plan

2. Existing Conditions

2.1 Area Road Network

Dundas Street East

Dundas Street East is a City of Mississauga arterial road with a six-lane urban cross-section. The City of Mississauga Official Plan protects a 35-metre right-of-way for this road. West of Queen Frederica Drive, a boulevard-separated sidewalk is provided on the north side of the road and a sidewalk is provided on the south side of the road. East of Queen Frederica Drive sidewalks are provided on both sides of the road. The posted speed limit is 60 km/h within the study area.

Dixie Road

Dixie Road is a City of Mississauga regional arterial road with a six-lane urban cross-section. The City of Mississauga Official Plan protects a 45-metre right-of-way for this road. North of Dundas Street East, a multi-use path is provided on the west side of the road and a sidewalk is provided on the east side of the road. South of Dundas Street East, sidewalks are provided on both sides of the road. The posted speed limit is 60 km/h within the study area.

Queen Frederica Drive

Queen Frederica Drive is a City of Mississauga minor collector road with a two-lane urban cross-section. The right-of-way of this road has been measured using the Mississauga Zoning Information Map and found to be approximately 26 metre wide. Boulevard-separated sidewalks are provided on both sides of the road. The posted speed limit is 40 km/h within the study area.

Blundell Road

Blundell Road is a City of Mississauga minor collector road with a two-lane urban cross-section. The right-of-way of this road has been measured using the Mississauga Zoning Information Map and found to be approximately 26 metre wide. Boulevard-separated sidewalks are provided on both sides of the road. The posted speed limit is 40 km/h within the study area.

Arena Road

Arena Road is a City of Mississauga local road with a two-lane urban cross-section. The right-of-way of this road has been measured using the Mississauga Zoning Information Map and found to be approximately 20 metre wide. Boulevard-separated sidewalks are provided on both sides of the road south of Dundix Road and on the west side of the road north of Dundix Road. The posted speed limit is 40 km/h south of Dundix Road.

Dundix Road

Dundix Road is a City of Mississauga local road with a two-lane urban cross-section. The right-of-way of this road has been measured using the Mississauga Zoning Information Map and found to be approximately 20 metre wide. Boulevard-separated sidewalks are provided on both sides of the road. The unposted speed limit is assumed to be 40 km/h. On-street parking is permitted on the south side of the road for a maximum of 15 hours.

2.2 Existing Intersections

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

Dundas Street East and Dixie Road

The intersection of Dundas Street East and Dixie Road is a four-legged signalized intersection. The northbound and westbound approaches each consist of an auxiliary left-turn lane, two through lanes, and a shared through/channelized right-turn lane, and the southbound approach consists of two auxiliary left-turn lanes, three through lanes, an auxiliary channelized right-turn lane. The eastbound approach consists of an auxiliary left-turn lane, three through lanes, and an auxiliary channelized right-turn lane. Pedestrian signal heads and pedestrian call buttons are present on all legs of the intersection. No turn restrictions were noted.

Dundas Street East and Queen Frederica Drive/Blundell Road

Dundas Street East and Queen Frederica Drive/Blundell Road is a four-legged signalized intersection. The northbound approach consists of a left-turn lane and a channelized right-turn lane, and the southbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. The eastbound and westbound approaches each consist of an auxiliary left-turn, two through lanes, and a shared through/right-turn lane. A bus-only taper is present on the westbound approach to the west of the intersection along Dundas Street East. Pedestrian signal heads are present on all legs with pedestrian call buttons on the east and west legs. Northbound through movement is restricted at this intersection.

Arena Road at Dundas Street East

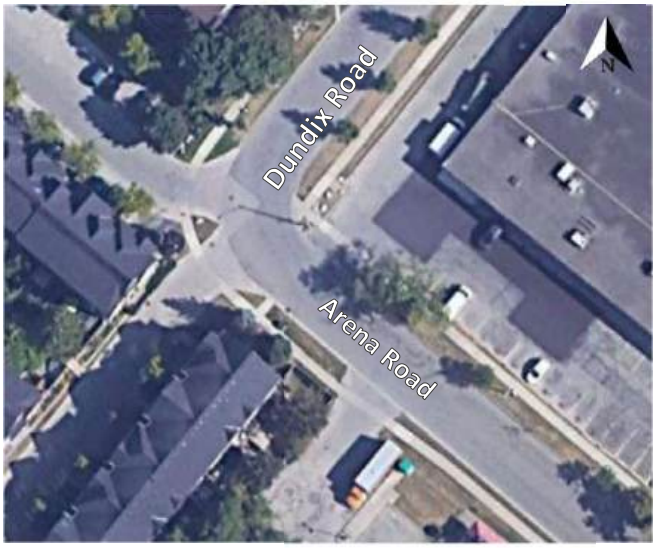
Arena Road at Dundas Street East is a four-legged signalized intersection. The northbound and southbound approaches each consist of a left-turn lane and a shared through/ right-turn lane. The eastbound and westbound approaches each consist of an auxiliary left-turn, two through lanes, and a shared through/right-turn lane. Crosswalks and pedestrian signal heads are present on all legs with pedestrian call buttons on the east and west legs. No turn restrictions were noted.

Queen Frederica Drive at Dundix Road

Queen Frederica Drive at Dundix Road is a three-legged all-way stop-controlled intersection. Each approach consists of a shared all-movement lane. Crosswalks and pedestrian signal heads are present on all legs. No turn restrictions were noted.

Dundix Road at Arena Road

Dundix Road at Arena Road is a four-legged unsignalized intersection with free movement on the northbound and westbound approach and stop controls on the eastbound and southbound approach. Each approach consists of a shared all-movement lane. No turn restrictions were noted.



2.2.1 Existing Driveways

As the proposed development is located near residential land uses, driveways to townhouses are located on the north side of Dundix Street. One driveway to a restaurant is located on the west side of Arena Road. Multiple driveways to the retail plaza and shopping centre are located along Dundas Street East.

As part of the proposed redevelopment, existing access to 1225 Dundas Street East on Dundas Street East will be closed. Additionally, the existing access to Arena Road will be relocated and reconfigured.

2.3 Cycling and Pedestrian Facilities

Sidewalks are located along at least one side of all roads in the Study Area, with boulevards present along portions of Dundas Street East, Queen Frederica Drive, Blundell Road, Arena Road, and Dundix Road. There is a multi-use pathway present on the west side of Dixie Road. No other bike lanes are present in the vicinity of the subject development.

2.4 Transit

As of July of 2024, MiWay routes within the Study Area include Route #1, Route #1C, Route #101 and Route #101A along Dundas Street East and Route #5 along Dixie Road. Transit destinations along Dundas Street East near the study area include Kipling Bus Terminal, Kipling Subway Station and Trillium Hospital. Transit destinations along Dixie Road include Dixie GO station, Dixie Outlet Mall, Sherway Gardens and Dixie Transitway Station. The existing Study Area MiWay service is presented in Figure 3.

Figure 3: Existing MiWay Transit Study Area Service

Source: https://web.mississauga.ca/ Accessed: July 23, 2024

2.5 Existing Peak Hour Travel Demand

To understand the existing AM and PM peak hour traffic volumes, turning movement counts (TMC) for the Study Area intersections have been acquired from the Ontario Traffic Inc. Signal timing plans have been obtained from City of Mississauga staff. Table 1 summarizes the dates and data sources of the turning movement counts used as part

of this study. Turning movement count data and signal timing plans are included in Appendix B. Existing traffic volumes are displayed in Figure 4.

Table 1: Turning Movement Count Data Dates and Data Source

Intersection	Count Date	Data Source
Dixie Road and Dundas Street East	Tuesday, June 7, 2022	Ontario Traffic Inc.
Queen Frederica Drive/Blundell Road and Dundas Street East		
Arena Road and Dundas Street East		
Queen Frederica Drive and Dundix Road		
Arena Road and Dundix Road		

Given that the turning movement counts were collected in 2022, compound annual background growth rates for Dundas Street were obtained from City staff and applied to the Study Area intersections to represent the 2024 existing horizon volumes. The confirmed growth rates are listed in Table 2.

Table 2: Compound Annual Growth Rates - Dundas Corridor

Roadway	Peak Period	CAGR from 2022 to 2024to 2026	
		EB	WB
Dundas Street East	AM	0.5%	1.0%
	PM	0.5%	0.5%

Along Dixie Road, a conservative growth rate of 1% has been assumed and applied to through movements only to grow the 2022 traffic volumes to the 2024 existing horizon traffic volumes. This growth rate has not been applied to local roadways, accesses, or left or right turning movements. This growth rate assumption has been used to capture any land use changes that may have been implemented along the Dixie Road corridor in the vicinity of Dundas Street since the turning movement counts have been collected at the intersection of Dundas Street East at Dixie Road.

Additionally, the collected intersection counts also provided existing pedestrian and cyclist volumes at the four Study Area intersections for both AM and PM peak periods. It is noted that there is no existing cyclist volume at the study area intersections. Figure 5 illustrates the existing pedestrian volumes.

Figure 4: Existing Traffic Volumes

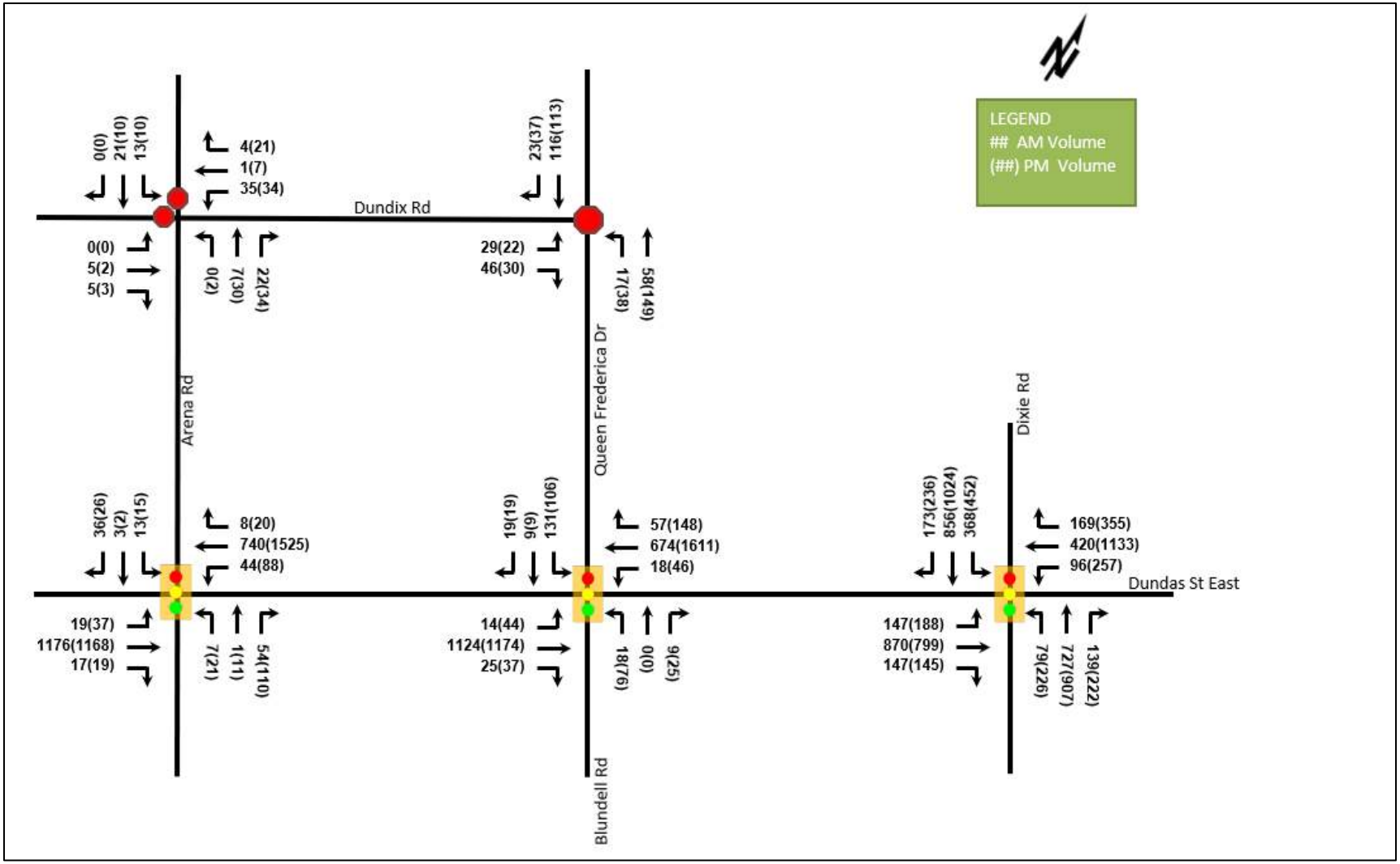
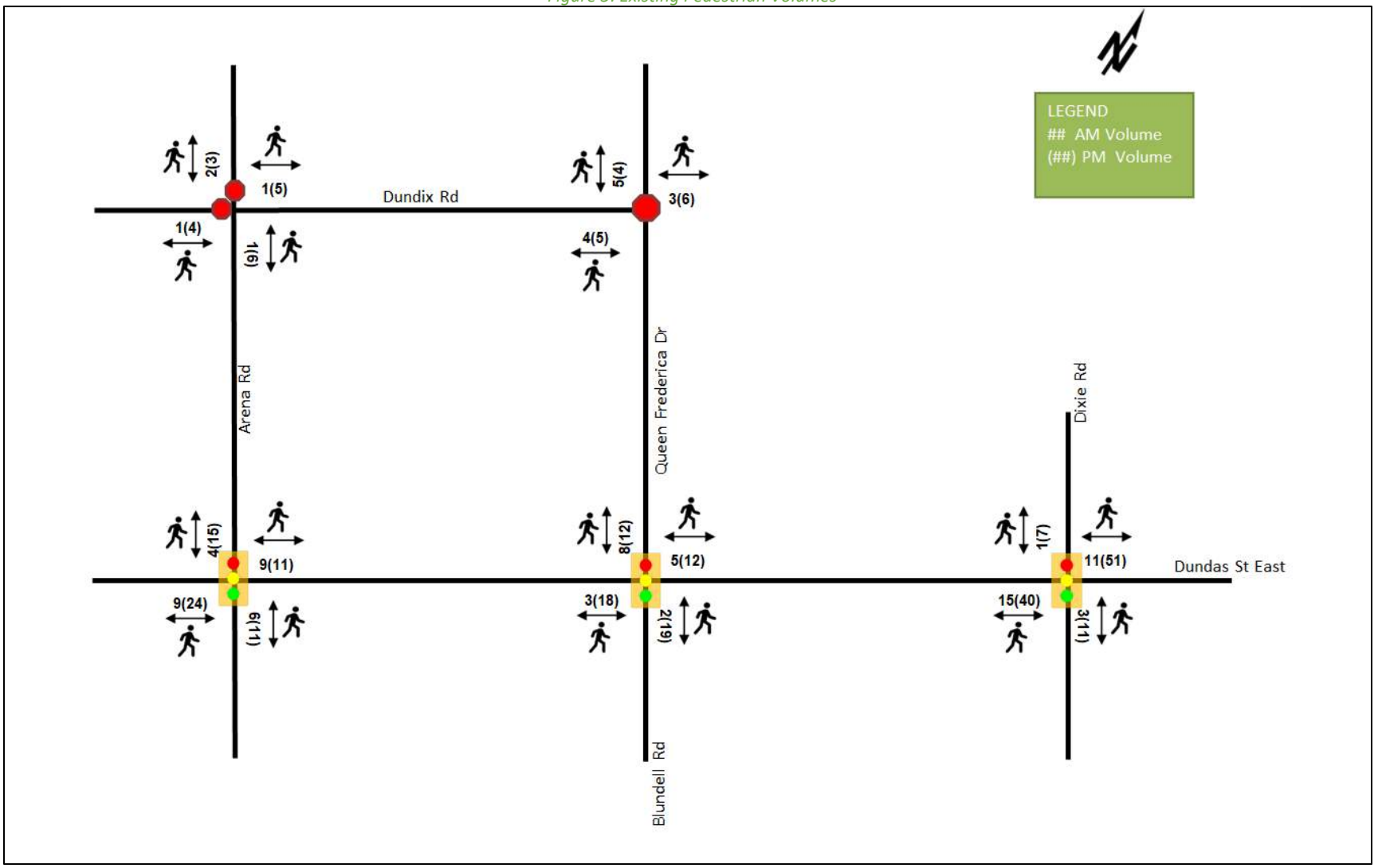


Figure 5: Existing Pedestrian Volumes



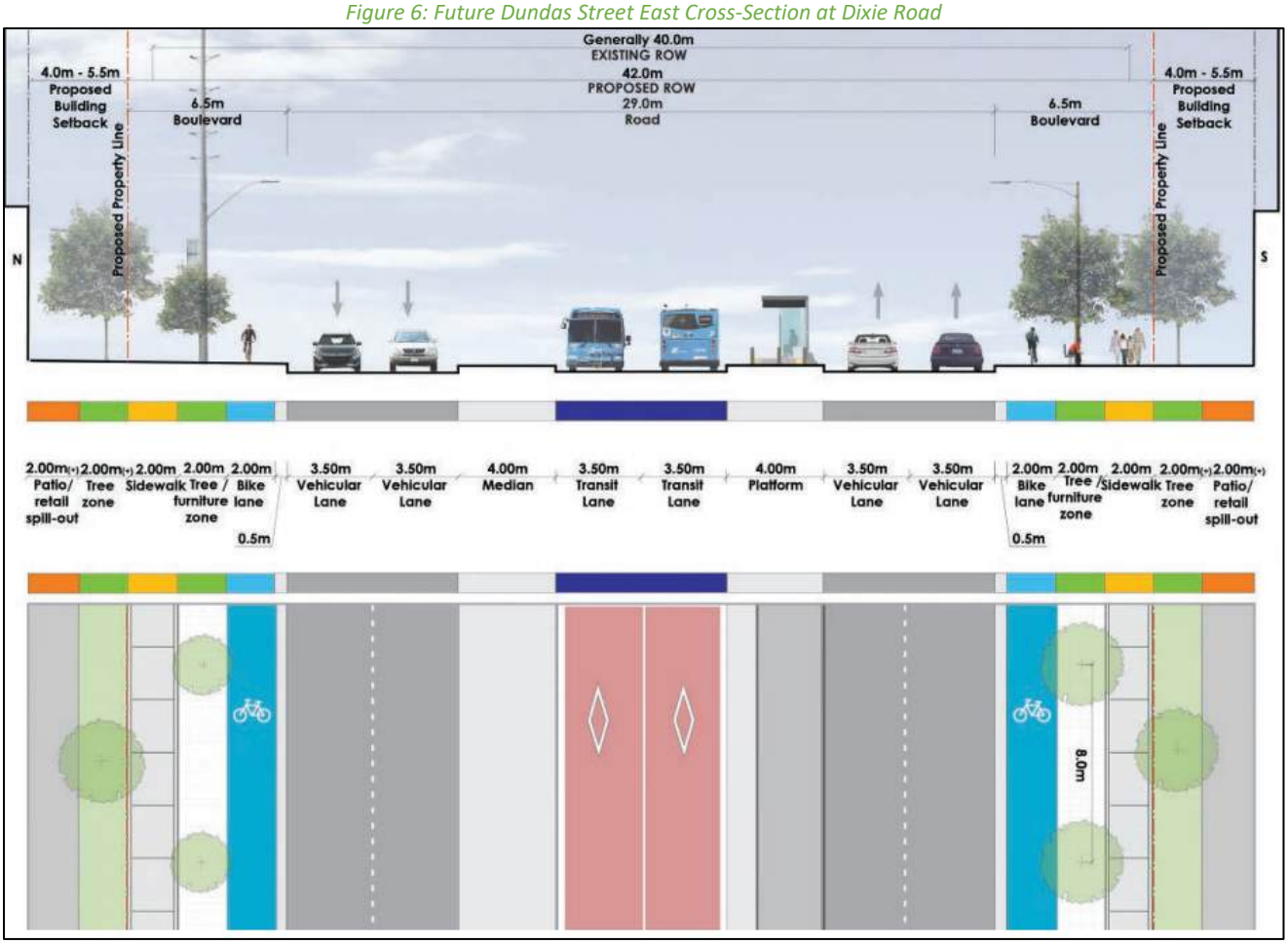
3. Future Background Conditions

3.1 Planned Conditions

3.1.1 Dundas Bus Rapid Transit

The subject development is located along the future Dundas BRT Alignment, which will enhance the mobility and transit experience along Dundas Street East. The future Dundas BRT is assumed to be build-out prior to 2027, based on the TOR comments from the City, which stated that the Dundas Street East construction commencement is anticipated to be in 2026, and the future Dundas BRT will be analyzed in the future horizons. The future geometry is based upon the preliminary detailed design from the Dundas Bus Rapid Transit Mississauga East Environmental Report (Metrolinx/City of Mississauga, 2022), and is provided in Appendix C. The closest BRT stop to the proposed development will be located at Dixie Road. Figure 6 shows the proposed Dundas Street East cross-section at Dixie Road and is an excerpt from Dundas Connects Master Plan (Mississauga, 2018).

Figure 6: Future Dundas Street East Cross-Section at Dixie Road



Source: Dundas Connects Master Plan (March 2018)

3.2 Other Study Area Developments

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

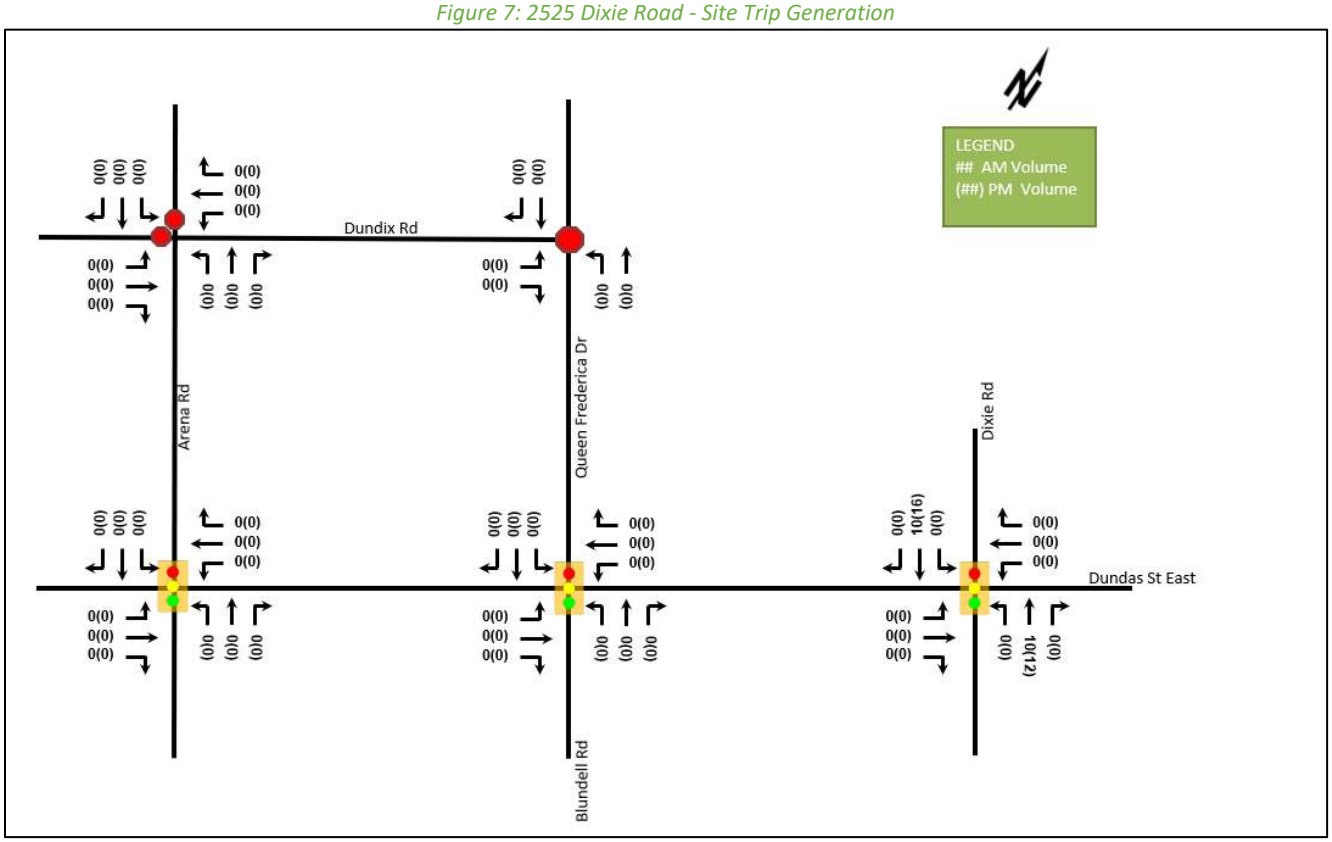
3085 Queen Frederica Drive

The proposed development at 3085 Queen Frederica Drive includes a condominium conversion of 73 units. No additional trips are anticipated to be generated.

2525 Dixie Road

The proposed development at 2525 Dixie Road includes a Shell gasoline station with associated convenience store (211 sq.m.), Jiffy Lube service station (159 sq.m.), and an automated carwash facility (114 sq.m.). The proposed development was analyzed with respect to a 2024 study horizon for the build-out year. The site traffic volume figure for this development is shown in Appendix D. However, as of April 2024, the site is currently undeveloped. As such, it has been assumed that this site will be buildout by the 2028 future analysis horizon and will be included in the 2028 future analysis horizon. The development is anticipated to generate 40 new AM and 56 new PM two-way peak hour auto trips. (WSP, 2019). A volume figure for site traffic at the subject site Study Area intersections has been created using trip distribution and assignment assumptions for the subject site, and it is shown in Figure 7. These trips have been included in the background traffic projections.

Figure 7: 2525 Dixie Road - Site Trip Generation

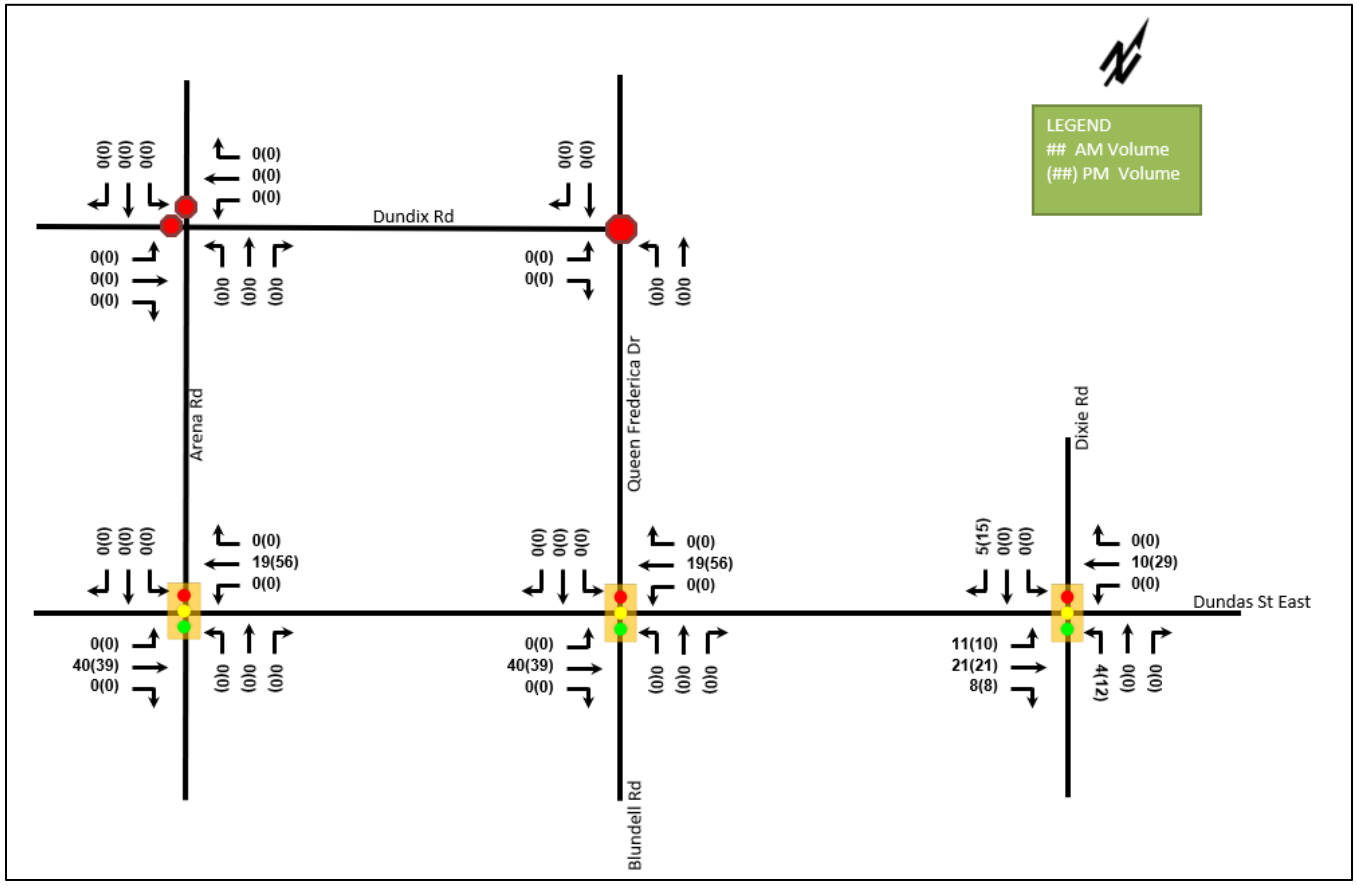


1000 and 1024 Dundas Street East

The proposed development at 1000 and 1024 Dundas Street East includes 462 rental apartment units and ground floor retail (790 sq. m.). The proposed development was analyzed with respect to a 2028 study horizon for the build-out year. The development is anticipated to generate 117 new AM and 191 new PM two-way peak hour auto trips. (GHD, 2022). These trips have been included in the background traffic projections. The 2026 and 2031 site traffic volume figures for this development are shown in Appendix D. It has been noted that this background development TIS has provided two volume figures for site trip generation in different horizon years. However, these two volume figures were provided to differentiate the site access configuration before and after the

implementation of the BRT median lane along Dundas Street East. As a result, this change does not impact the background development site trip volumes travelling eastbound or westbound through the subject site Study Area intersections at Arena Road, Queen Frederica Drive/Blundell Road, or Dixie Road, which have remained the same. The volume figure for 2026 site traffic has been created using the same trip distribution and assignment prepared for 1225 Dundas Street East discussed in Sections 3.5 and 3.6, given its proximity to the Study Area. As such, this site trip generation will be included in the 2028 future analysis horizon and the 2033 future analysis horizon. Figure 8 illustrates the site traffic for the proposed development at full buildout.

Figure 8: 1000 and 1024 Dundas Street Projected Site Trips – 2026 & 2031



3.3 Background Growth

The growth rates from the existing horizon to 2026, 2026 to 2031, and 2031 to 2035 for Dundas Street East were obtained from the City of Mississauga Transportation and Works Department. These rates are specific to the studied road segments, peak periods, and horizon years. The growth rates between 2026 and 2035 account for the expected reduction in traffic as a result of the Dundas Street East implementation. It has been noted, however, that non-zero growth rates for the westbound direction in the AM peak period and for the eastbound direction in the PM peak period have been projected between 2031 and 2035. Table 3 summarizes the projected growth rates for Dundas Street within the Study Area.

Table 3: Compounded Annual Growth Rates

Roadway	Peak Period	CAGR from Existing to 2026		CAGR from 2026 to 2031		CAGR from 2031 to 2035	
		EB	WB	EB	WB	EB	WB
Dundas Street East	AM	0.5%	1.0%	0%	0%	0%	1.0%
	PM	0.5%	0%	0%	0%	0.5%	0%

Consistent with the background growth rate that has been applied along Dixie Road in Section 2.5, a growth rate of 1% has been assumed and applied to Dixie Road through movements to grow the 2024 existing horizon volumes to the 2028 and 2033 future analysis horizon volumes. This growth rate has not been applied to local roadways, accesses, or left or right turning movements. This growth rate assumption has been applied to produce future volumes that capture any future changes to the currently and mostly built out land use conditions along the Dixie Road corridor in the vicinity of Dundas Street.

3.3.1 Future Background Traffic Volumes

Using the background growth rates above, the turning movement volumes were grown to reflect the 2028 and 2033 Future Background traffic volumes. Figure 9 illustrates the 2028 Future Background traffic volumes and Figure 10 illustrates the 2033 Future Background traffic volumes.

Figure 9: 2028 Future Background Traffic Volumes

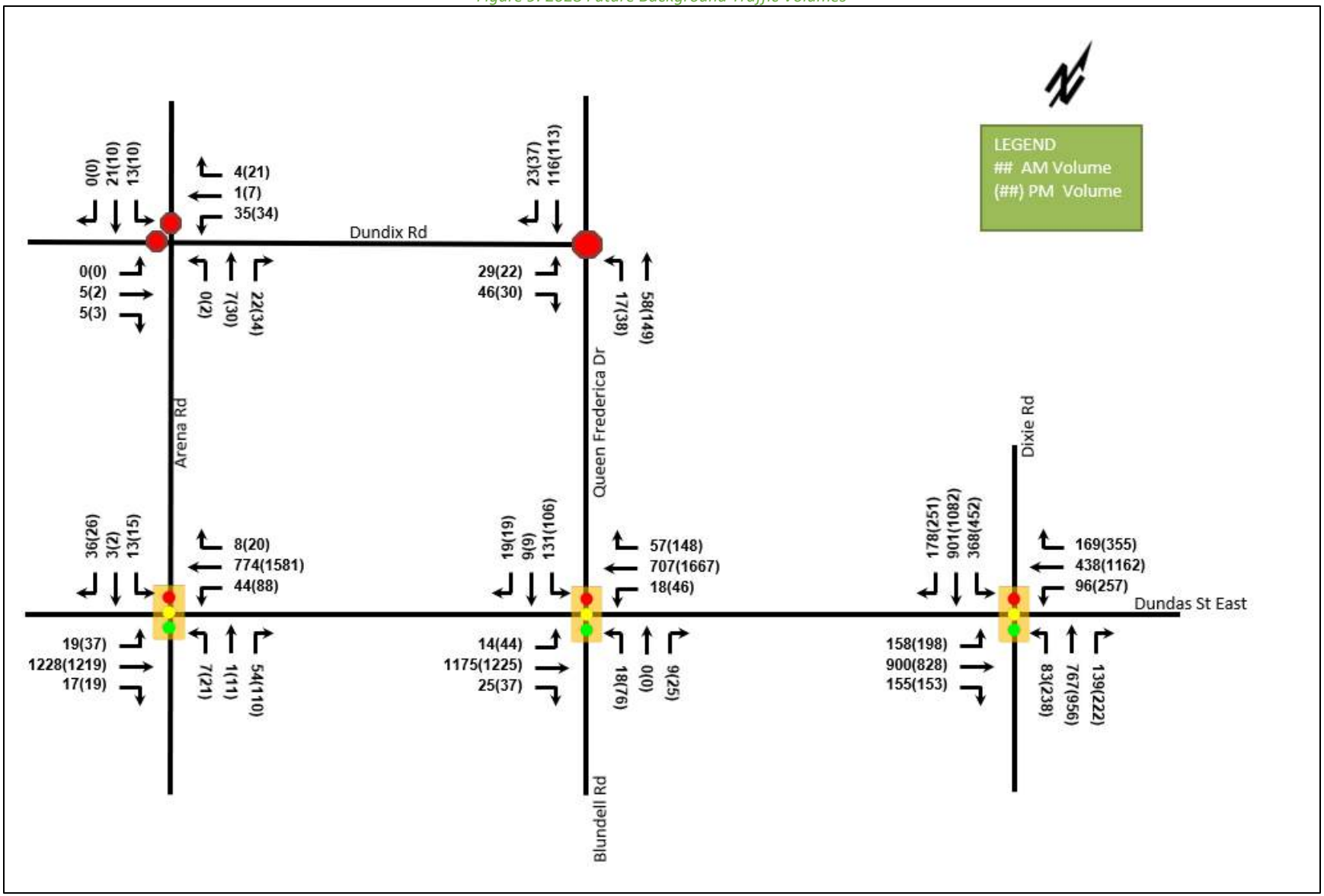
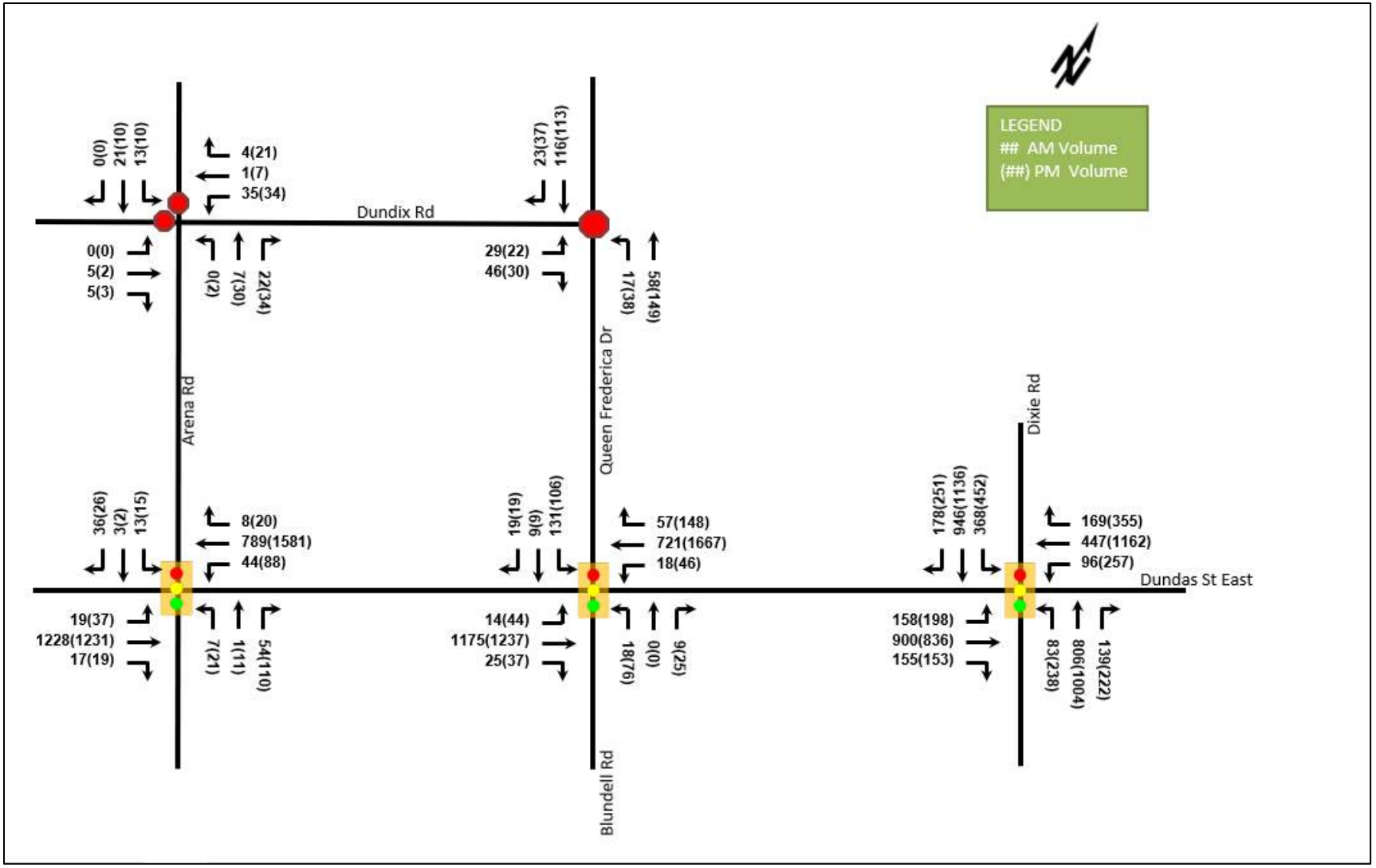


Figure 10: 2033 Future Background Traffic Volumes



3.4 Trip Generation and Mode Shares

The proposed development will include 612 condo units, 30 townhome units, and 626 m^2 (6738 ft^2) of retail spaces. The *ITE Trip Generation Manual 11th Edition* has been reviewed to determine the appropriate trip generation rate equations for the proposed land uses. To estimate person trip generation, a factor of 1.28, calculated from a default 10% non-auto mode share and an average vehicle occupancy rate of 1.15 (i.e. 1.15/0.90 = 1.28), has been applied to the vehicle trip rates. Table 4 summarizes the person trip rates for the proposed land uses.

Table 4: Trip Generation Person Trip Rates

Dwelling Type	Land Use Code	Peak Hour	Vehicle Trip Rate	Person Trip Rates
Multifamily Housing (Low-Rise)	220	AM	0.40	0.51
		PM	0.51	0.65
Multifamily Housing (High-Rise)	222	AM	0.27	0.35
		PM	0.32	0.41
Retail	822	AM	2.36	3.02
		PM	6.59	8.44

Using the above Person Trip rates, the total person trip generation has been estimated. Table 5 below illustrates the total person trip generation by land use.

Table 5: Total Person Trip Generation

Land Use	Units/GFA (sq. ft.)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily Housing (Low-Rise)	30	4	11	15	13	7	20
Multifamily Housing (High-Rise)	612	56	158	214	156	95	251
Retail	6,738	12	8	20	28	29	57
Total Person Trips		**72**	**177**	**249**	**197**	**131**	**328**

As shown above, the proposed development is projected to generate 197 AM and 328 PM two-way person trips.

The existing mode shares in the Study Area were obtained from the 2016 Transportation Tomorrow Survey (TTS). The Dundas Street East implementation is expected to increase transit mode share in the Study Area, therefore, a 6% shift to transit mode and a 2% shift to cycling mode taken from the auto mode is proposed (see Appendix E). Table 6 and Table 7 summarize the 2016 TTS mode shares and applied mode shares, respectively.

Table 6: 2016 TTS Mode Shares

Travel Mode	2016 Mode Shares (TTS)
Auto Driver	63%
Auto Passenger	16%
Transit	14%
Cycling	0%
Walking	7%
Total	**100%**

Travel Mode	Applied Mode Shares
Auto Driver	55%
Auto Passenger	16%
Transit	20%
Cycling	2%
Walking	7%
Total	**100%**

Synergy is expected at the proposed development since it includes mixed-use buildings containing residential, and retail uses. Internal capture rates for both the retail and residential land uses were calculated using the methodology identified in Section 6.5 of the ITE Trip Generation Handbook 3rd Edition. The synergy trip calculation tool developed by National Cooperative Highway Research Program (NCHRP) was used and can be found in Appendix F. The rates summarized in Table 8 represent the percentage of trips to/from each use that are considered internal capture trips.

Land Use	AM		PM	
	In	Out	In	Out
Residential	3%	1%	4%	4%
Retail	14%	25%	13%	25%

Pass-by reductions have been applied to the retail trip generation at a rate of 40%. This value is based on the average value in Appendix E in ITE Trip Generation Handbook 3rd Edition.

Using the above mode share targets, the internal capture and pass-by rates, and the person trip rates, the person trips by mode have been projected. Table 9 summarizes the residential trip generation and the non-residential trip generation by mode and peak hour.

Travel Mode			AM Peak Hour			PM Peak Hour		
		Mode Share	In	Out	Total	In	Out	Total
Multi-Unit (Low-Rise)	Auto Driver	55%	2	6	8	7	4	11
	Auto Passenger	16%	1	2	2	2	1	3
	Transit	20%	1	2	3	3	1	4
	Cycling	2%	0	0	0	0	0	0
	Walking	7%	0	1	1	1	0	1
	Total	**100%**	**31**	**87**	**118**	**86**	**52**	**138**
	Net New Auto Driver	***55%***						
Multi-Unit (High-Rise)	Auto Driver	55%	31	87	118	86	52	138
	Auto Passenger	16%	9	25	34	25	15	40
	Transit	20%	11	32	43	31	19	50
	Cycling	2%	1	3	4	3	2	5
	Walking	7%	4	11	15	11	7	18
	Total	**100%**	**31**	**87**	**118**	**86**	**52**	**138**
			-1	***-1***	***-2***	***-3***	***-2***	***-5***

Travel Mode			AM Peak Hour			PM Peak Hour		
		Mode Share	In	Out	Total	In	Out	Total
Retail	Auto Driver	55%	7	4	11	15	16	31
	Auto Passenger	16%	2	1	3	4	5	9
	Transit	20%	2	2	4	6	6	11
	Cycling	2%	0	0	0	1	1	1
	Walking	7%	1	1	1	2	2	4
	Total	**100%**	**12**	**8**	**20**	**28**	**29**	**57**
	Internal Capture (varies)	-	*-1*	*-1*	*-2*	*-2*	*-4*	*-6*
	Pass-by (40%)	-	*-3*	*-2*	*-5*	*-5*	*-6*	*-11*
	Net New Auto Driver	*55%*	*3*	*1*	*4*	*7*	*6*	*13*
Total	Auto Driver	55%	40	97	137	108	72	180
	Auto Passenger	16%	12	28	39	31	21	52
	Transit	20%	14	36	50	40	26	65
	Cycling	2%	1	3	4	4	3	6
	Walking	7%	5	13	17	14	9	23
	Total	**100%**	**72**	**177**	**249**	**197**	**131**	**328**
	Net New Auto Driver	*55%*	*35*	*93*	*128*	*97*	*60*	*157*

As shown above, 249 AM and 328 PM new peak hour two-way person trips are projected as a result of the proposed development, of which 128 AM and 157 PM trips are net new peak hour two-way vehicle trips.

3.5 Trip Distribution

Using 2016 TTS data in Appendix G, the travel patterns in the traffic analysis zone 3669 have been determined. Table 10 below summarizes the trip distribution in the vicinity of 1225 Dundas Street East.

Table 10: 2016 TTS Trip Distribution

To/From	Percent of Trips
North	30%
South	25%
East	15%
West	30%
Total	100%

3.6 Trip Assignment and Future Total Travel Demands

Using existing turning movement splits, access to major transportation infrastructure, lane configurations, and traffic controls, the major routes and their associated probability of use to and from the site have been determined for each direction in the above distribution. Using this information and the above distribution, the trips generated by the site have been assigned to the study area road network. Figure 11 illustrates the new site generated volumes, and Figure 12 illustrates the Pass-By volumes. The site generated traffic has been combined with the 2028 and 2033 Future Background traffic volumes to estimate the Future Total traffic volumes. The 2028 and 2033 Total Future traffic volumes are illustrated in Figure 13 and Figure 14.

Figure 11: New Site Generated Auto Volumes

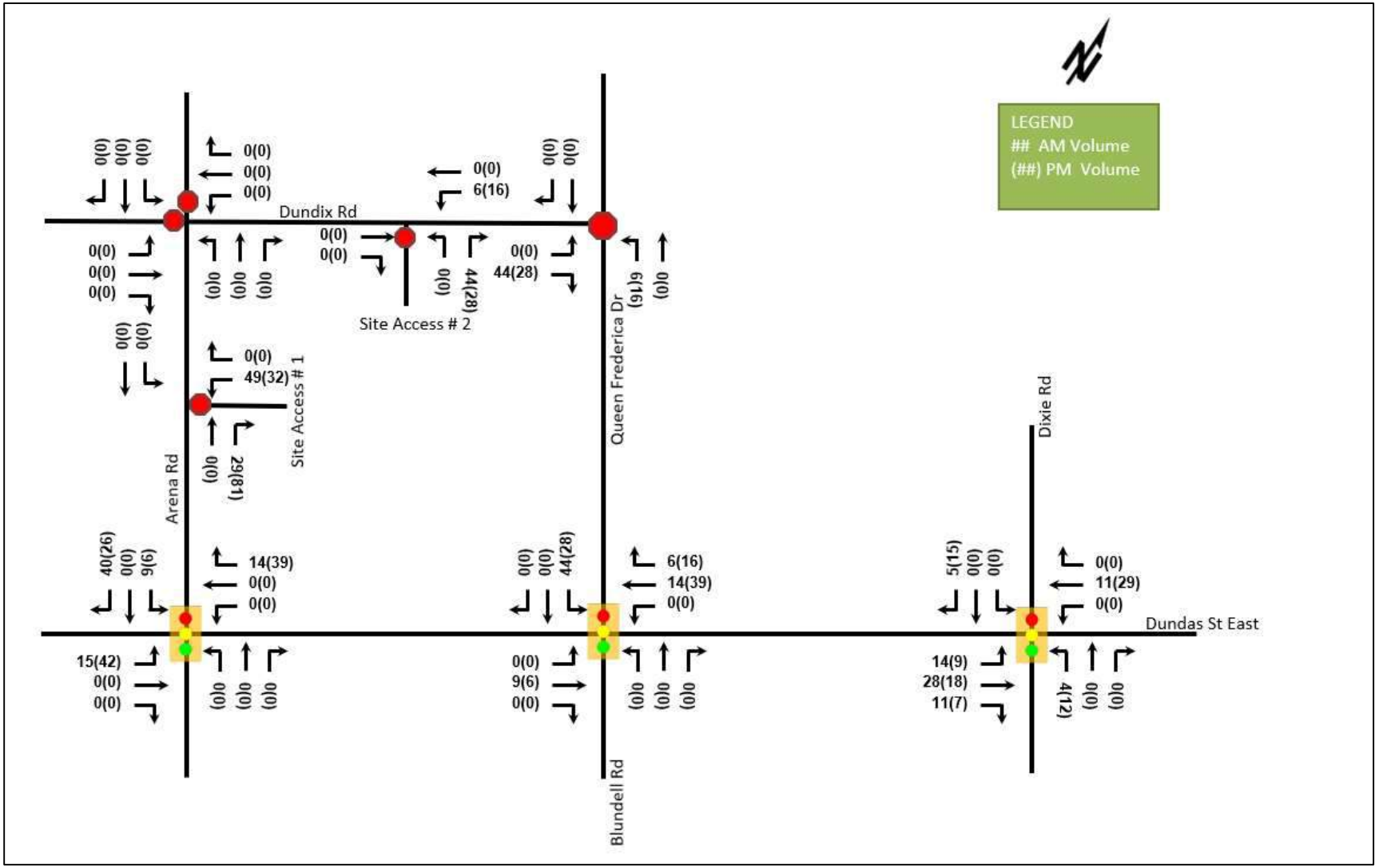


Figure 12: Pass-By Volumes

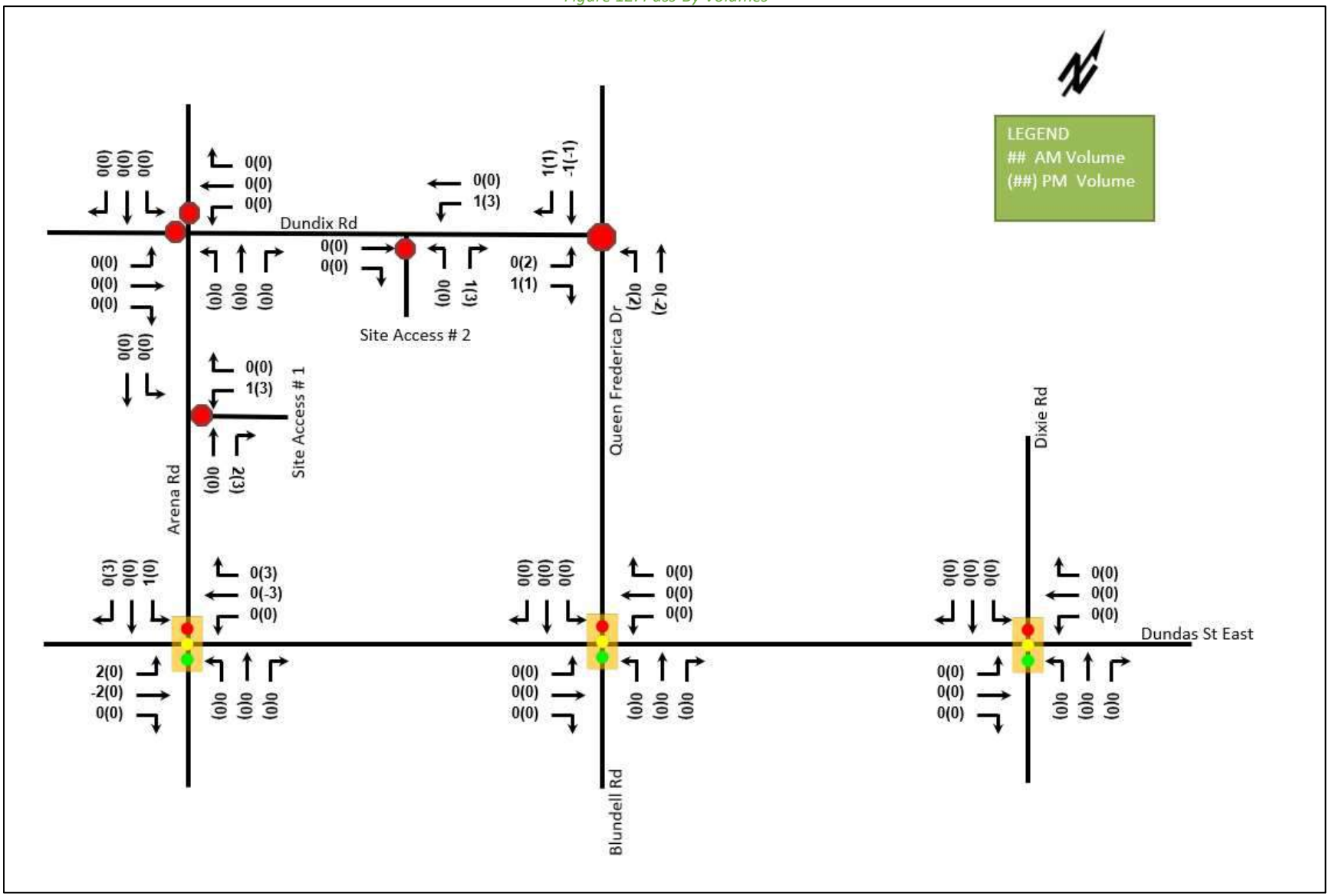


Figure 13: 2028 Future Total Traffic Volumes

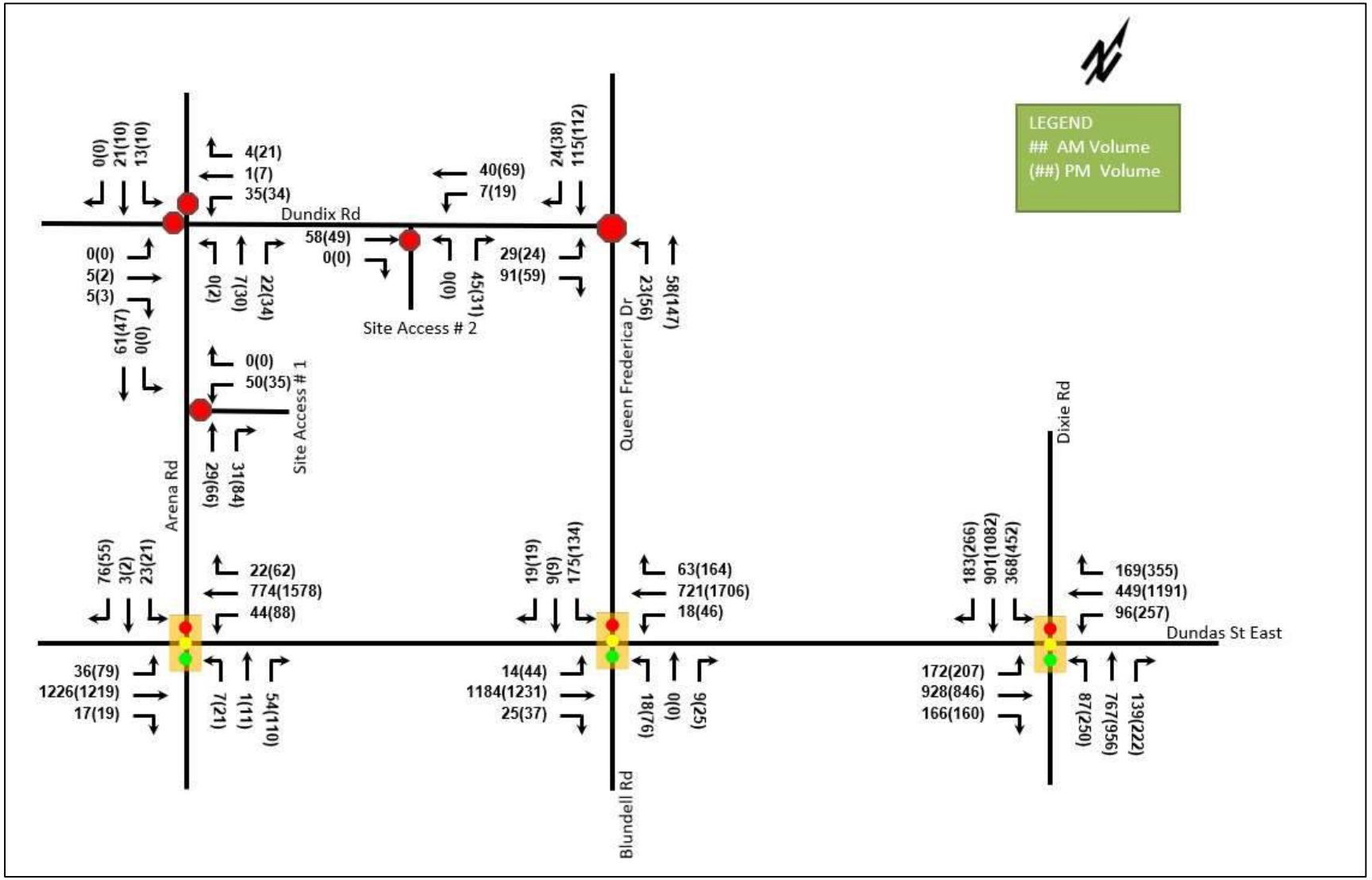
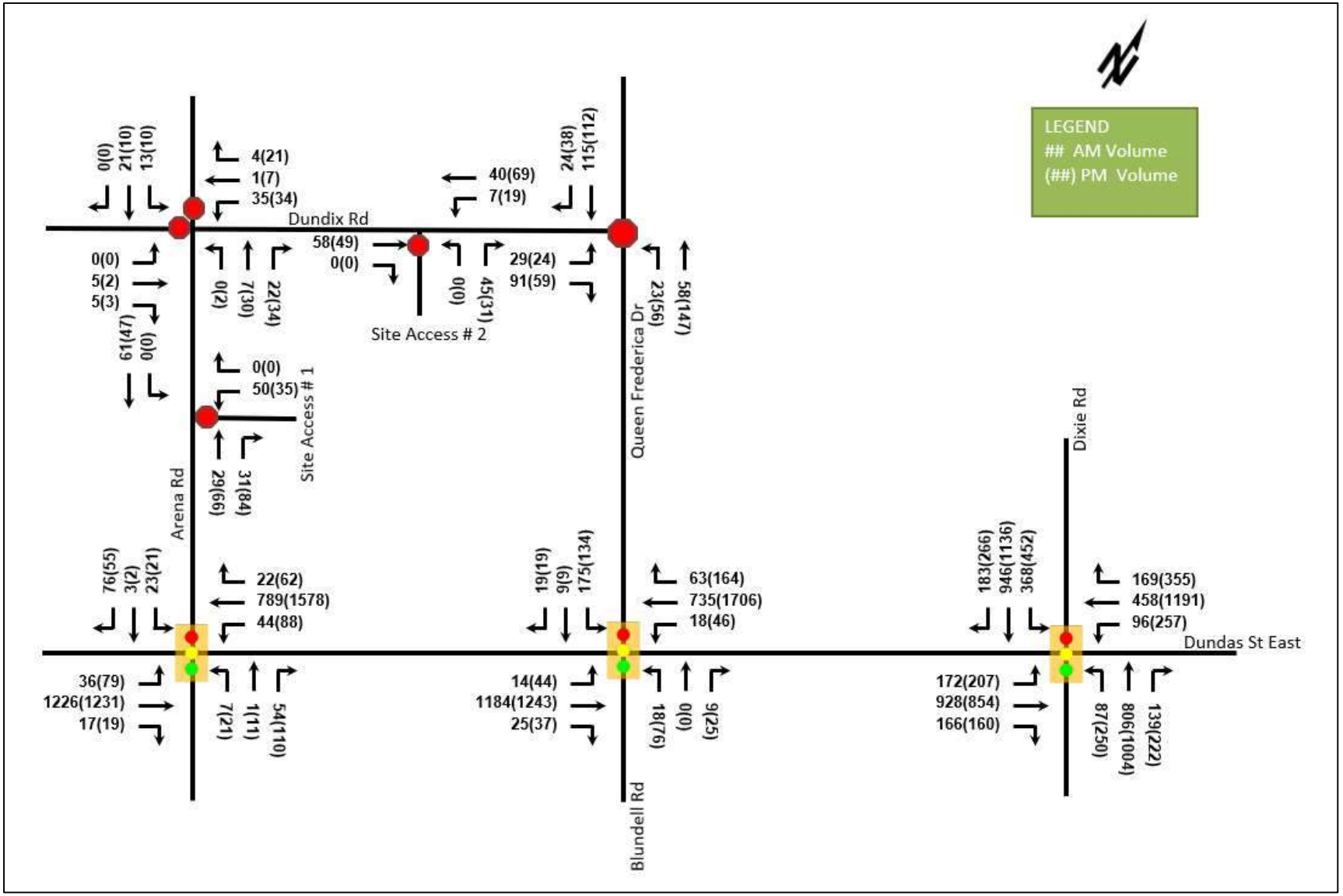


Figure 14: 2033 Future Total Traffic Volumes



4. Development Design

4.1 Development Access

The site is proposed to have two accesses – one full movement access on Arena Road (Site Access #1) and one full movement access on Dundix Road (Site Access #2). Both accesses are 6.0 metres wide and are connected to a drop-off loop, surface parking spaces, and parking garage access. The vehicle and bicycle parking are proposed to access the underground parking via a 7.5% slope parking garage ramp. A total of four loading spaces are provided for garbage collection and move-in truck loading.

A total of 11 surface parking and 320 underground parking spaces are proposed. Pedestrian and cycling connections are provided from the building entrances to the boundary streets of Dundas Street East, Dundix Road, and Arena Road.

Using OTM Book 12 Justification 7, traffic control signal warrants at the site accesses have been examined using the 2028 and 2033 future total volumes. It has been found that signals are not warranted using Justification 7, and thus the site access will have a stop control on the minor approach. The signalization warrant for the accesses can be found in Appendix H. A Left-turn Lane warrant for unsignalized intersections was examined at accesses for the 2028 and 2033 future total horizons. To determine if a left-turn lane is warranted, the MTO Geometric Design Standards for Ontario Highways, Section E, left-turn lane warrant nomographs were examined. It was found that a left turn lane is not warranted at the accesses for the future horizons. Left-turn Lane warrants have been provided in Appendix I.

According to Transportation Association of Canada's Geometric Design Guide for Canadian Roads (TAC), Table 8.9.3, no throat length requirements for local road. As Dundix Road and Arena Road are both designated as local roads, minimum throat length requirements for both Site Access #1 and Site Access #2 are not applicable. However, for reference, the suggested minimum clear throat lengths for collector roads, for a development of this size, based on each land use are summarized in Table 11 below.

Table 11: Minimum Clear Throat Length by Land Use

Land Use	Required Clear Throat Length (m) Collector
Apartment (>200 units)	25
Shopping Centre (< 25,000 sq.m)	8

The throat length of the access on Arena Road (Site Access #1) is proposed to be approximately 27.0 metres, which meets the requirement for collector roads. The throat length of the access on Dundix Road (Site Access #2) is approximately 3.0 metres due to the location of the proposed surface level parking spaces.. With reference to corner clearance, it is noted that the minimum suggested clearance from street corners required for local roads as per Figure 8.9.2 in the TAC design guidelines is 2 metres for residential land uses. Therefore, this applicable minimum clearance requirement is met for both site accesses. In addition, based on our vehicle queue analysis in section 5.5 at the proposed site accesses, there is expected to be minimal queues for outbound vehicles, meaning the parking spaces along the throat of the access at Dundix Road would have minimal conflicts with the site through traffic.

4.2 Turning Template Analysis

The delivery, move-in, and garbage collection vehicle turning templates were reviewed to confirm movements will be permitted on site. Appendix J includes drawings illustrating the turning paths for the design vehicles.

4.3 Sightline Review

A sightline analysis of the proposed site accesses onto Arena Road and Dundix Road has been undertaken to determine if the proposed access is impeded by obstructions, which would limit the visibility from the access point to cars approaching on Arena Road and Dundix Road. The sightlines have been reviewed to the right and to the left of vehicles entering Arena Road and Dundix Road from the site accesses. The cases associated with stop control on the minor road have been reviewed at this location. To the right, the left turn scenario for sightline calculations governs. To the left, the right turn scenario for sightline calculations governs. The departure sight distance and stopping sight distance have been reviewed for a 50 km/h design speed (40 km/h speed limit). Table 12 outlines the stopping sight distance and departure sight requirements for the proposed accesses, and Appendix K includes a sightline drawing and reference tables for these scenarios.

Table 12: Sightline Calculations

Road	Design Speed (km/h)	Departure Sight Distance (left-turn scenario)	Departure Sight Distance (right-turn scenario)	Stopping Sight Distance	Available Sight Distance – Left-turn	Available Sight Distance – Right-turn
Arena Road	50	105.00	95.00	65.00	52.9	77.8
Dundix Road	50	105.00	110.00	65.00	126.3	81.6

Since no site volumes will be generated at the intersection of Arena Road and Dundix Road and the proposed access on Arena Road (Site Access #1) will move the existing access toward Dundas Street by approximately 5.0 metres, the distance between Site Access #1 and Arena Road and Dundix Road intersection will be increased, and the site distance will be improved.

To the north of Site Access #1, a sight distance of 52.9 metres is provided along Arena Road, due to a 90 degree turn between Arena Road and Dundix Road. The distance would meet the stopping sight distance requirements for a vehicle speed of 32 km/h traveling onto Arena Road. Approximately 120 metres in advance of the left turn from Dundix Road to Arena Road, there is a posted warning speed sign indicating a sharp-bend, and that vehicles should reduce speed to 20 km/h. Therefore, it is anticipated that vehicles turning this corner would be traveling at speeds below the posted speed and would be decelerating as they approach the subject corner. Stopping sight distance for a 42-kilometre per hour design speed (turning speed of 32 km/h plus 10km/h) has been evaluated and it has been determined to be 50 metres. This is an appropriate design speed for a short section of a local road, which assumes a 10 km/h buffer from the 32 km/h turning speed As a result, the assumed turning speed of 32 km/h is anticipated to be accommodated in both directions at Site Access #1 at a minimum. Therefore, no mitigation measures are required or recommended. Itis anticipated that provided stopping sight distances for the access on Arena Road (Site Access #1) would be sufficient.

4.4 Loading

According to the City of Mississauga Loading Space Regulations, three loading spaces in total are required. The dimensions of a loading space outlined in the City of Mississauga Zoning By-Law are 3.5 metres in width, and 9 metres in length. The loading spaces at this site meets these requirements. Given that there are four loading spaces provided onsite, the City of Mississauga Loading Space requirements are met.

4.5 Design for Sustainable Modes

Dundas Bus Rapid Transit Mississauga East Environmental Report (Metrolinx/City of Mississauga, 2022) identified that protected cycle tracks, multi-use-paths, and widened sidewalks will be provided along Dundas Steet. Furthermore, The City of Mississauga Pedestrian Master Plan aims to improve the pedestrian network and increase the number of walking trips in Mississauga. The active mode facilities will encourage pedestrian traffic within the overall Study Area.

4.6 Transportation Demand Management

Outlined below are the measures that will be provided at 1225 Dundas Street East site to ensure that the mode shares at the proposed development contribute to the Study Area traffic superzone meeting the Regional mode share targets:

- Unbundle parking costs from purchase price
- Provide a multimodal travel option information package to new residents
- Assist in resident school travel planning
- Provide 3 carpool spaces
- Provide indoor and outdoor bicycle parking spaces in excess of City of Mississauga By-law 0118-2022 requirements

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

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

4.7 Parking

4.7.1 Vehicular Parking

The parking requirements and provisions for the proposed land uses at 1225 Dundas Street East were established through the review of the City of Mississauga Zoning By-law 0117-2022, which serves to amend Zoning By-law 0225-2007 Section 3.1.2. Precinct 3 parking rates within the by-law apply. The vehicle parking requirements and provisions are summarized in Table 13.

Table 13: 1225 Dundas Street East Vehicle Parking Requirements – Zoning By-Law Approach

Parking Classification	Units/ GFA (sq.m.)	Parking Rate	Parking Spaces Required	Parking Spaces Provided
Condominium Apartment	612 units	1.00 residential spaces/dwelling unit 0.20 residential visitor spaces/dwelling unit	612 resident spaces 122 visitor spaces	260 resident spaces 65 visitor spaces 6 retail spaces
Townhouse	30	1.3 resident spaces per unit 0.25 visitor spaces per unit	39 resident spaces 8 visitor spaces	
Retail (Total)	626	(4.0 spaces per 100 m²)	25 retail spaces	
		Total	**781 resident spaces 65 visitor spaces 26 retail spaces (806 spaces total)**	**260 resident spaces 65 visitor spaces (331 spaces total)**

As noted above, the parking space requirement for the proposed land uses at 1225 Dundas Street East is 806 stalls, whereas 331 parking spaces are provided. Shared parking arrangements are outlined in the by-law that may be applied at the subject site for residential visitor and non-residential parking components of a new development, which is outlined in the amended by-law. The shared parking requirements for residential and retail land use within Precinct 3 proposed in the zoning by-law can be seen in Table 14.

Table 14: 1225 Dundas Street East Vehicle Parking Requirements – Shared Parking Arrangement Application

Shared Parking Arrangement			
Criteria	**Parking Rate**	**Parking Spaces Required**	**Parking Spaces Provided**
Option 1	Visitor spaces per unit in accordance with applicable regulations contained in Table 3.1.2.1 of this By-law	130 spaces	-
Option 2	Parking required for all non-residential uses, located in the same building or on the same lot as the residential use	26 spaces	-
Shared Arrangement	The greater of Option 1 and Option 2	**130 spaces shared in total**	-
	Total	**130 shared spaces**	**65 visitor spaces**

As shown above, the shared parking arrangement for the proposed development as per the by-law requires that 130 spaces are allocated to be shared between visitor and retail users. With this arrangement in place, there is a deficiency of 64 shared parking spaces for the use of visitor and retail parking. However, the application of Bill 185 and resulting updated parking standards supports the removal of minimum parking requirements for residential, visitor, and retail parking spaces for new developments located in protected major transit station areas (PMTSAs).

No Parking Requirements for PMTSAs – Bill 185

On April 10, 2024, Ontario's provincial government introduced new legislation to expedite government processes known as Bill 185: the Cutting Red Tape to Build More Homes Act ("Bill 185"), which has recently been approved through Royal Assent. This Act was created to assist in the province's goal of building 1.5 million homes by 2031 using key land-use planning legislation. A provision as part of this Act states that no official plan or zoning by-law in Ontario may "contain any policy that has the effect of requiring an owner or occupant of a building or structure to provide and maintain parking facilities, other than parking facilities for bicycles" on specified lands that include protected major transit station areas (PMTSAs). The planned major transit station stop located at Dundas Street East at Dixie Road is City of Mississauga Dixie PMTSA according to Schedule 11 of the latest 2024 amendment to the City of Mississauga Official Plan. This PMTSA corresponds to the Primary Major Transit Station Area in the Peel Region Official Plan with reference code "DUN-16" (2021). Given that the future Dundas and Dixie BRT station at Dundas Street at Dixie Road is within a 400-metre walking distance from the proposed development located within this PMTSA, it is anticipated that new developments within this area will not require minimum auto parking rates for residential, visitor, and commercial land uses. Transit and active transportation are anticipated to be attractive modes of travel for residents and visitors to and from this area with the implementation of the BRT in the future.

4.7.2 Accessible Parking

The accessible parking requirements and provisions for the proposed land uses at 1225 Dundas Street East were estimated through the Mississauga Zoning By-law 0225-2007 Section 3.1.3. Based on the Mississauga Zoning By-law, accessible parking spaces for residential uses shall only apply to the total number of visitor parking spaces required. The accessible parking supply is calculated based on the required parking as per the Zoning By-law. However, considering the no parking requirement legislation of Bill 185, the proposed supply was used to calculate the required accessible parking space instead and it is summarized in Table 15.

Table 15: 1225 Dundas Street East Accessible Parking Requirements and Provisions - AODA

Parking Classification	Parking Spaces Requirements	Parking Spaces Required			Parking Spaces Provided		
		Type A	Type B	Total	Type A	Type B	Total
Residential	4% of the total	1	2	3	2	2	4
Retail	1	1	-	1			
Total		2	2	4	2	2	4

As shown in the above table, 2 Type A and 2 Type B barrier-free parking spaces are required at the site based on the number of visitor parking spaces and retail parking spaces provided on-site. The provision of 2 Type A barrier-free parking spaces and 2 Type B barrier-free parking spaces at the site satisfies this zoning requirement.

4.7.3 Bike Parking

The bicycle parking provisions at 1225 Dundas Street East will be compared to bicycle parking requirements outlined in the City of Mississauga Zoning By-law 0118-2022, which serves to amend Zoning By-law 0225-2007 Section 3.1.6.5 and 3.1.6.6. The bicycle parking provisions and requirements are summarized in Table 16.

Table 16: 1225 Dundas Street East Bike Parking Provisions

Land Use / Unit Type	GFA (sq.m.) / Units	Parking Rate (Required)	Parking Required	Parking Provided
Residential	642	0.6 spaces/unit (indoor) 0.05 spaces/unit (outdoor) (6 minimum)	385 (indoor) 32 (outdoor)	392 (indoor) 32(outdoor)
Retail	626	Bicycle parking spaces shall not be required for non-residential uses with less than 1000 m2 of gross floor area – non-residential	0	
Total	-	-	**385 (indoor) 32 (outdoor)**	**392(indoor) 32 (outdoor)**

As shown in the above table, the number of indoor bicycle parking spaces provided on-site exceed requirements by 7 spaces and the number of outdoor bicycle parking spaces provided on-site meet bicycle parking requirements exactly according to the by-law, as amended. As a result, bicycle parking provisions at 1225 Dundas Street East are satisfied.

4.7.4 Electric Vehicle Ready Parking Spaces

The electric vehicle ready parking requirements and provisions for the proposed land uses at 1225 Dundas Street East have been reviewed using the City of Mississauga Zoning By-law 0117-2022, which serves to amend Zoning By-law 0225-2007 Section 3.1.2, and are summarized in Table 17.

Table 17: Electric Vehicle Ready Parking Requirements

Land Use / Unit Type	Total Spaces	Parking Rate (Required)	Parking Required	Parking Provided
Residential	260	20% of the total or 1.0 space, whichever is greater	52	52
Visitor	65	10% of the total or 1.0 space, whichever is greater	7	7
Retail	6	10% of the total or 1.0 space, whichever is greater, where parking structure includes 10 or more parking spaces	0	0
Total	**331**	-	**59**	**59**

As shown in the above table, the number of electric vehicle ready parking spaces provided on-site meet zoning by-law requirements based on number of parking spaces provided.

4.8 Community Impacts

The site is anticipated to generate approximately 80 AM and 116 PM new two-way vehicle trips on Arena Road and 50 AM and 46 PM new two-way vehicle trips on Dundix Road. No site generated volume is anticipated to travel north of Site Access #1 and west of Site Access #2, and all site-generated volumes are anticipated to travel straight to the major road. Given the location of the proposed development and the location of the proposed accesses, there are no opportunities for cut-through traffic through the existing adjacent low-rise residential developments. Therefore, no detrimental community impacts are anticipated.

5. Operational Analysis

To understand the operational characteristics of the Study Area intersections, Synchro (Version 11) model has been coded using the existing traffic signal timing plans, provided by City of Mississauga and Peel Region staff. Peak Hour Factors (PHF) have been calculated based on the existing turning movement counts and are included in Appendix L. Where peak hour volumes in 15-minute increments were unavailable, the PHF from the adjacent intersections was used. The Peak Hour Factors used for each intersection are shown below in Table 18.

Table 18: Peak Hour Factors

Intersection	Peak Hour Factor	
	AM	PM
Dixie Road and Dundas Street East	0.96	0.98
Queen Frederica Drive/Blundell Road and Dundas Street East	0.93	0.93
Arena Road and Dundas Street East	0.92	0.99
Queen Frederica Drive and Dundix Road	0.93	0.94
Arena Road and Dundix Road	0.86	0.98
Site Access 1 # at Arena Road	*0.86	*0.98
Site Access 2 # at Dundix Road	*0.86	*0.98
***PHF taken from adjacent intersections**		

The Heavy Vehicle percentage (HV %) was obtained from the TMC data for each turning movement. All Heavy Vehicle percentages below 2% were entered as 2% in order to produce a conservative analysis. All other parameters have been coded using accepted best practices and default parameters where applicable.

Criteria for critical movements and critical intersections have been considered for Study Area intersections as outlined by The City of Mississauga's Traffic Impact Study Guidelines (2022). Criteria for critical movements and critical intersections for signalized intersections have been defined as those with volume to capacity ratios of 0.85 or greater for the overall intersection, volume to capacity ratios of 1.00 or greater for individual through or turning movements. Additionally, 95th percentile queue lengths for an individual movement that exceed available turning lane storage or 95th percentile queue lengths for through lanes that block vehicles from entering turning lanes have been identified as critical conditions for signalized intersections. Critical movements at unsignalized intersections have been defined as individual movements with worse than LOS E, based on the average delay, or if the 95th percentile queue for an individual movement exceeds the available lane storage.

5.1 2024 Existing Conditions

The existing intersection volumes have been analyzed to establish a baseline condition and determine the impact of the subject development, surrounding background developments, growth, and changes to the transportation network on the Study Area. Table 19 summarizes the operational analysis of the 2024 existing conditions. Appendix M contains the 2024 Existing Conditions Synchro worksheets and HCM 2000 results are reported for signalized intersections. Given the incompatibility of HCM 2000 and all-way stop analysis, HCM 6th Edition values were reported for unsignalized intersections. All 95th percentile queues were also reported using HCM 6th Edition reports given its ability to provide these values.

Table 19: 2024 Existing Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Dixie Road and Dundas Street East *(Signalized)*	EBL	C	0.47	33	38	F	0.93	96	#87
	EBT/R	D	0.81	54	45	E	0.75	68	112
	WBL	E	0.68	56	33	F	0.95	81	#105
	WBT	D	0.40	52	53	E	0.79	55	133
	WBR	D	0.13	49	20	D	0.41	46	53
	NBL	C	0.26	27	21	D	0.72	38	64
	NBT/R	D	0.49	38	102	D	0.76	54	143
	SBL	E	0.78	74	77	E	0.78	70	#100
	SBT	C	0.38	26	83	D	0.57	42	125
	SBR	C	0.12	22	14	D	0.17	35	23
	Overall	**D**	**0.65**	**44**	-	**E**	**0.86**	**56**	-
Mitigation Measure: Signal Timing Adjustments									
Dixie Road and Dundas Street East *(Signalized)*	EBL	-				E	0.84	74	#84
	EBT/R					E	0.80	69	112
	WBL					E	0.89	70	#102
	WBT					E	0.83	58	143
	WBR					D	0.47	49	67
	NBL					D	0.74	39	62
	NBT/R					D	0.72	51	140
	SBL					E	0.86	79	94
	SBT					D	0.56	42	123
	SBR					C	0.16	35	20
	Overall					**E**	**0.84**	**56**	-
Queen Frederica Drive/Blundell Road and Dundas Street East *(Signalized)*	EBL	A	0.03	2	1	B	0.39	14	#11
	EBT/R	A	0.32	3	6	A	0.35	4	27
	WBL	A	0.06	3	3	A	0.19	4	m3
	WBT/R	A	0.21	3	24	A	0.51	7	#181
	NBL	E	0.11	62	12	E	0.37	60	38
	NBR	E	0.01	61	1	E	0.02	56	9
	SBL	E	0.62	71	59	E	0.40	60	49
	SBT/R	E	0.06	61	12	E	0.05	56	12
	Overall	**A**	**0.36**	**9**	-	**A**	**0.49**	**10**	-
Arena Road and Dundas Street East *(Signalized)*	EBL	A	0.05	3	6	B	0.21	10	14
	EBT/R	A	0.32	3	72	A	0.34	9	84
	WBL	A	0.16	4	9	A	0.25	2	4
	WBT/R	A	0.20	2	28	A	0.44	3	53
	NBL	E	0.08	69	7	E	0.13	62	13
	NBT/R	E	0.05	68	12	E	0.13	62	19
	SBL	E	0.14	69	10	E	0.11	62	10
	SBT/R	E	0.05	68	11	E	0.03	61	9
	Overall	**A**	**0.30**	**7**	-	**A**	**0.38**	**9**	-
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.10	8	2	A	0.07	8	2
	NBL/T	A	0.10	8	2	A	0.24	9	7
	SBT/R	A	0.17	8	5	A	0.18	8	5
	Overall	**A**	-	**8**	-	**A**	-	**8**	-
Arena Road and Dundix Road *(Unsignalized)*	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.07	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	-	**7**	-	**A**	-	**7**	-
Notes:	# - 95% percentile exceeds capacity m - volume for the 95th percentile queue is metered by an upstream signal								

The intersections within study area operate well overall in the 2024 existing conditions.

At Dixie Road and Dundas Street East intersection during PM peak hour, the volume for the 95th percentile cycle exceeds capacity at eastbound, and westbound left-turn movements. However, where a V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded. Moreover, turn lane storage length adjustments at this intersection is not a feasible mitigation measure as storage lengths are limited by adjacent intersection turn lanes as well as existing access locations along Dundas Street East and Dixie Road. The eastbound and westbound left movement may be subject to high delays as a result. To address the overall V/C ratio greater than 0.85 at this intersection in the PM peak hour, signal timing adjustments have been proposed in the PM peak hour. This mitigation measure was shown to reduce the delays for individual movements and reduce the overall V/C ratio of this intersection from 0.86 to 0.84. With the mitigation measure applied, the intersection operates below critical conditions overall in the PM peak hour.

At Queen Frederica Drive/Blundell Road and Dundas Street East intersection during PM peak hour, the volume for the 95th percentile cycle queue exceeds capacity at eastbound left and westbound shared through/right movements. Since V/C ratios are less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

The unsignalized intersections of Queen Frederica Drive at Dundix Road and Arena Road at Dundix Road both operate with individual movement LOS A for all movements and with overall intersection LOS A in both peak hours.

5.2 2028 Future Background Conditions

The 2028 Future Background conditions have been examined to determine the future traffic conditions without the addition of the proposed development. This will isolate the impact of the subject development on the traffic network. Due to the proposed roadway modifications to accommodate Dundas BRT, the signal timing splits, and phasing have been adjusted throughout the Study Area. Along Dundas Street East, the intersection geometry was coded in Synchro according to the Dundas Bus Rapid Transit Mississauga East Environmental Report (Metrolinx/City of Mississauga, 2022). Excerpts of these documents showcasing the preliminary design of Dundas Street East have been included in Appendix C. Eastbound and westbound protected left turn phases along Dundas Street East at each signalized intersection were added to support the BRT operations within the median lanes on Dundas Street East as per the comments received from City staff in Appendix A. Amber clearance and all red clearance times were calculated using the methodology provided in OTM Book 12-Traffic Signals for these phases. The same Walk Times and Flash Don't Walk times provided in the existing signal timing plans were carried forward as it is not anticipated that crosswalk lengths will meaningfully change with the conversion of the innermost lanes to include BRT infrastructure. The minimum initial was also taken from OTM Book 12 where applicable, and the signal offsets and signal timing splits were optimized using the Synchro optimization features. Further details are shown in the Synchro worksheets.

Table 20 summarizes the operational analysis of the 2028 Future Background conditions, and the 2028 Future Background Synchro worksheets are included as Appendix N.

Table 20: 2028 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Dixie Road and Dundas Street East *(Signalized)*	EBL	F	0.78	86	76	F	1.18	208	#132
	EBT/R	D	0.92	52	153	D	0.88	46	#163
	WBL	F	0.76	94	#58	F	0.92	98	#133
	WBT/R	D	0.64	49	110	F	1.15	126	#344
	NBL	D	0.35	36	27	F	1.10	137	#128
	NBT/R	D	0.69	54	119	F	0.99	84	#171
	SBL	E	0.84	80	80	F	1.21	188	#127
	SBT	D	0.52	39	105	E	0.85	63	141
	SBR	C	0.13	33	17	D	0.25	49	37
	Overall	**D**	**0.83**	**53**	-	**F**	**1.15**	**98**	-
Queen Frederica Drive/Blundell Road and Dundas Street East *(Signalized)*	EBL	F	0.44	115	m10	F	0.73	126	m#31
	EBT/R	A	0.52	3	12	A	0.59	5	33
	WBL	E	0.35	75	m12	F	0.59	80	m19
	WBT/R	A	0.34	6	53	B	0.83	11	m95
	NBL	E	0.11	62	12	E	0.37	60	38
	NBR	E	0.01	61	0	E	0.02	56	2
	SBL	E	0.63	71	59	E	0.40	60	49
	SBT/R	E	0.06	61	12	E	0.05	56	12
	Overall	**B**	**0.53**	**11**	-	**B**	**0.74**	**14**	-
Arena Road and Dundas Street East *(Signalized)*	EBL	F	0.45	83	16	E	0.49	80	24
	EBT/R	A	0.52	9	183	B	0.56	17	168
	WBL	E	0.54	75	31	F	0.64	88	m37
	WBT/R	A	0.33	6	55	A	0.69	9	64
	NBL	E	0.08	69	7	E	0.10	57	13
	NBT/R	E	0.05	68	12	E	0.11	57	19
	SBL	E	0.14	69	10	E	0.08	57	10
	SBT/R	E	0.05	68	11	E	0.02	56	9
	Overall	**B**	**0.48**	**13**	-	**B**	**0.59**	**18**	-
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.10	8	2	A	0.07	8	2
	NBL/T	A	0.10	8	2	A	0.23	9	7
	SBT/R	A	0.17	8	5	A	0.18	8	5
	Overall	**A**	-	**8**	-	**A**	-	**8**	-
Arena Road and Dundix Road *(Unsignalized)*	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.07	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	-	**7**	-	**A**	-	**7**	-
Notes:	# - 95% percentile exceeds capacity m - volume for the 95th percentile queue is metered by an upstream signal								

With the addition of background development traffic, growth, and the geometric changes due to Dundas BRT implementation, the overall V/C ratio will be increased at all intersections within the study area.

The intersections within the study area will operate well overall in terms of V/C ratio except for the Dixie Road and Dundas Street East intersection where V/C ratios greater than 1.00 will occur at opposing approaches. For example, in the PM period, the westbound shared through/right movement will experience a V/C ratio of 1.15, while the southbound left movement will experience a V/C ratio of 1.29. Signal optimization and signal timing adjustments were explored as mitigation measures for the critical V/C ratios at this intersection in both peak hours; however, this mitigation was not sufficient to reduce the V/C ratios below one and decrease delays at all

movements due to the constrained opposing movements. Providing more green time to the westbound movement to clear the accumulated volume in that direction will reduce green time for the southbound direction and as a result, increase its V/C ratio further. Given that this intersection contains two major arterial roads with large through volumes during the peak periods of analysis and the geometric changes results in one through lane being removed, the level of service of F observed is expected. It is anticipated that TDM measures and active mode shares will improve with the anticipated Dundas corridor improvements. As such, no signal optimization was performed at this Study Area intersection.

The unsignalized intersections of Queen Frederica Drive at Dundix Road and Arena Road at Dundix Road continue to both operate with individual movement LOS A for all movements and with overall intersection LOS A in both peak hours in the 2028 Future Background analysis horizon.

5.3 2028 Future Total Conditions

The 2028 trip generation of the proposed development has been added to the 2028 Future Background traffic volumes to project the impact of new traffic on the future road network. Table 21 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix O.

Table 21: 2028 Total Future Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Dixie Road and Dundas Street East *(Signalized)*	EBL	F	0.81	89	82	F	1.23	226	#139
	EBT/R	D	0.94	54	#99	D	0.90	49	#199
	WBL	F	0.76	94	#58	F	0.92	98	#133
	WBT/R	D	0.65	50	112	F	1.17	135	#354
	NBL	D	0.37	37	28	F	1.15	155	#137
	NBT/R	D	0.71	55	119	F	0.99	84	#171
	SBL	E	0.84	80	80	F	1.21	188	#127
	SBT	D	0.53	40	105	E	0.85	63	141
	SBR	C	0.13	34	17	D	0.30	50	43
	Overall	**D**	**0.84**	**54**	-	**F**	**1.18**	**102**	-
Queen Frederica Drive/Blundell Road and Dundas Street East *(Signalized)*	EBL	F	0.44	111	m10	F	0.73	126	m#31
	EBT/R	A	0.54	4	16	A	0.59	5	35
	WBL	E	0.35	76	m12	E	0.59	80	m19
	WBT/R	A	0.36	7	54	B	0.86	12	m99
	NBL	E	0.09	59	12	E	0.35	60	38
	NBR	E	0.01	58	0	D	0.02	55	2
	SBL	E	0.72	***65***	78	E	0.49	61	61
	SBT/R	E	0.05	58	12	E	0.05	55	12
	Overall	**B**	**0.56**	**13**	-	**B**	**0.78**	**15**	-
Arena Road and Dundas Street East *(Signalized)*	EBL	F	0.54	83	#27	F	0.75	98	#55
	EBT/R	A	0.53	10	182	B	0.56	17	168
	WBL	E	0.54	75	31	F	0.64	88	m36
	WBT/R	A	0.35	7	57	B	0.73	11	65
	NBL	E	0.07	67	7	E	0.10	57	13
	NBT/R	E	0.05	66	12	E	0.11	57	19
	SBL	E	0.22	68	15	E	0.11	57	13
	SBT/R	E	0.07	67	15	E	0.04	56	12
	Overall	**B**	**0.50**	**15**	-	**C**	**0.62**	**20**	-
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.15	8	4	A	0.11	8	3
	NBL/T	A	0.11	8	3	A	0.26	9	8
	SBT/R	A	0.17	8	5	A	0.19	8	5
	Overall	**A**	-	**8**	-	**A**	-	**9**	-

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Arena Road and Dundix Road *(Unsignalized)*	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.07	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	**-**	**7**	**-**	**A**	**-**	**7**	**-**
Site Access 1 # at Arena Road *(Unsignalized)*	WBL/R	A	0.06	9	2	A	0.04	10	1
	NBT/R	-	-	-	-	-	-	-	-
	SBL/T	A	-	0	0	A	-	0	0
	Overall	**A**	**-**	**3**	**-**	**A**	**-**	**1**	**-**
Site Access 2 # at Dundix Road *(Unsignalized)*	EBT/R	-	-	-	-	-	-	-	-
	WBL/T	A	0.01	7	0	A	0.01	7	0
	NBL/R	A	0.05	9	2	A	0.03	9	1
	Overall	**A**	**-**	**3**	**-**	**A**	**-**	**2**	**-**
Notes:	# - 95% percentile exceeds capacity m - volume for the 95th percentile queue is metered by an upstream signal								

The network intersection operations for the 2028 future total conditions will operate similarly to the 2028 future background conditions.

Upon adding site-generated traffic to the 2028 future background conditions, movements previously projected to operate with a level of service of F at the Dixie Road and Dundas Street East intersection will remain the same level of service as the future background conditions, and no new capacity issues are noted. The V/C ratios that exceeded 1.00 in the 2028 future background analysis horizon have either stayed the same or slightly increased with the addition of background growth.

At the intersection of Dixie Road and Dundas Street East during the PM peak, the site volumes are projected to increase the delay on the eastbound left-turn movement by eighteen seconds, on the northbound left movement by eighteen seconds, and on the westbound through movement by nine seconds. The site volumes are projected to be nine on the eastbound left-turn movement (4.79% of existing volumes), four on the northbound left movement (1.77% of the existing volumes) and eleven on the westbound through movement (0.97% of existing volumes), and none on the southbound left movement. Therefore, the site-generated volumes are not anticipated to be a contributing factor to the existing network constraints.

The planned geometric changes at the Dixie Road and Dundas Street intersections focus on the development and facilitation of transit service along the corridor and will not directly mitigate auto operational constraints.

Both access intersections at Arena Road and Dundix Road will operate well with individual movement LOS A for all movements and overall LOS A for both intersections.

5.4 2033 Future Background Conditions

The 2033 Future Background conditions have been examined to determine the future traffic conditions without the addition of the proposed development. This will isolate the impact of the subject development on the traffic network. Due to the proposed roadway modifications to accommodate Dundas BRT, the signal timing splits, and phasing have been adjusted throughout the Study Area, similar to the 2033 Future Background analysis horizon. Table 22 summarizes the operational analysis of the 2033 Future Background conditions, and the 2033 Future Background Synchro worksheets are included as Appendix P.

Table 22: 2033 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Dixie Road and Dundas Street East *(Signalized)*	EBL	F	0.78	86	76	F	1.18	207	#133
	EBT/R	D	0.92	52	153	D	0.89	47	#172
	WBL	F	0.76	94	#58	F	0.92	98	#133
	WBT/R	D	0.65	50	112	F	1.15	126	#344
	NBL	D	0.36	37	27	F	1.10	137	#128
	NBT/R	D	0.72	55	125	F	1.03	95	#183
	SBL	E	0.84	80	80	F	1.21	188	#127
	SBT	D	0.54	40	111	E	0.89	66	150
	SBR	C	0.13	33	17	D	0.25	49	37
	Overall	**D**	**0.84**	**53**	-	**F**	**1.15**	**100**	-
Queen Frederica Drive/Blundell Road and Dundas Street East *(Signalized)*	EBL	F	0.44	115	m10	F	0.73	126	m#30
	EBT/R	A	0.52	3	12	A	0.59	5	34
	WBL	E	0.35	76	m12	F	0.59	80	m19
	WBT/R	A	0.34	6	53	B	0.83	11	m95
	NBL	E	0.11	62	12	E	0.37	60	38
	NBR	E	0.01	61	0	E	0.02	56	2
	SBL	E	0.63	71	59	E	0.40	60	49
	SBT/R	E	0.06	61	12	E	0.05	56	12
	Overall	**B**	**0.53**	**11**	-	**B**	**0.74**	**14**	-
Arena Road and Dundas Street East *(Signalized)*	EBL	F	0.45	83	16	E	0.49	80	24
	EBT/R	A	0.52	9	183	B	0.57	17	171
	WBL	E	0.54	75	31	F	0.64	88	m37
	WBT/R	A	0.33	6	57	A	0.69	9	64
	NBL	E	0.08	69	7	E	0.10	57	13
	NBT/R	E	0.05	68	12	E	0.11	57	19
	SBL	E	0.14	69	10	E	0.08	57	10
	SBT/R	E	0.05	68	11	E	0.02	56	9
	Overall	**B**	**0.48**	**13**	-	**B**	**0.59**	**18**	-
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.10	8	2	A	0.07	8	2
	NBL/T	A	0.10	8	2	A	0.23	9	7
	SBT/R	A	0.17	8	5	A	0.18	8	5
	Overall	**A**	-	**8**	-	**A**	-	**8**	-
	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.07	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	-	**7**	-	**A**	-	**7**	-
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.10	8	2	A	0.07	8	2
	NBL/T	A	0.10	8	2	A	0.23	9	7
	SBT/R	A	0.17	8	5	A	0.18	8	5
	Overall	**A**	-	**8**	-	**A**	-	**8**	-
Arena Road and Dundix Road *(Unsignalized)*	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.07	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	-	**7**	-	**A**	-	**7**	-
Notes:	# - 95% percentile exceeds capacity m - volume for the 95th percentile queue is metered by an upstream signal								

The network intersection operations for the 2033 future background conditions will operate similarly to the 2028 future background conditions with only slight increases in V/C ratios and LOS for select movements. Between the 2028 Future Background horizon and the 2033 Future Background horizon, the eastbound and westbound

volumes along Dundas Street East experience no growth between 2028 and 2031 and experience minimal growth between 2031 and 2033 in the westbound direction in the AM peak hour and in the eastbound direction in the PM peak hour. As such, the operational performance of individual movements and overall intersections operate very similarly to the 2028 Future Background conditions and no new capacity issues have been identified.

5.5 2033 Future Total Conditions

The 2033 trip generation of the proposed development has been added to the 2033 Future Background traffic volumes to project the impact of new traffic on the future road network. Table 23 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix Q.

Table 23: 2033 Total Future Operational Conditions

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Dixie Road and Dundas Street East *(Signalized)*	EBL	F	0.81	89	82	F	1.23	226	#139
	EBT/R	D	0.94	54	#79	D	0.91	50	#202
	WBL	F	0.76	94	#58	F	0.92	98	#133
	WBT/R	D	0.66	50	114	F	1.17	135	#354
	NBL	D	0.39	37	28	F	1.15	156	#137
	NBT/R	E	0.74	56	125	F	1.03	95	#183
	SBL	E	0.84	80	80	F	1.21	188	#127
	SBT	D	0.55	41	111	E	0.89	66	150
	SBR	C	0.13	34	17	D	0.30	50	43
	Overall	**D**	**0.85**	**54**	-	**F**	**1.18**	**104**	-
Queen Frederica Drive/Blundell Road and Dundas Street East *(Signalized)*	EBL	F	0.44	111	m10	F	0.73	126	m#31
	EBT/R	A	0.54	4	16	A	0.60	5	35
	WBL	E	0.35	76	m12	E	0.59	80	m19
	WBT/R	A	0.36	7	55	B	0.86	12	m99
	NBL	E	0.09	59	12	E	0.35	59	38
	NBR	E	0.01	58	0	D	0.02	55	2
	SBL	E	0.72	***74***	78	E	0.49	61	61
	SBT/R	E	0.05	58	12	E	0.05	55	12
	Overall	**B**	**0.56**	**13**	-	**B**	**0.78**	**15**	-
Arena Road and Dundas Street East *(Signalized)*	EBL	F	0.54	83	#27	F	0.75	98	#55
	EBT/R	A	0.53	10	182	B	0.57	17	171
	WBL	E	0.54	75	31	F	0.64	88	m36
	WBT/R	A	0.35	7	58	B	0.73	11	65
	NBL	E	0.07	67	7	E	0.10	57	13
	NBT/R	E	0.05	66	12	E	0.11	57	19
	SBL	E	0.22	68	15	E	0.11	57	13
	SBT/R	E	0.07	67	15	E	0.04	56	12
	Overall	**B**	**0.50**	**15**	-	**C**	**0.62**	**21**	-
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.15	8	4	A	0.11	8	3
	NBL/T	A	0.11	8	3	A	0.26	9	8
	SBT/R	A	0.17	8	5	A	0.19	8	5
	Overall	**A**	-	**8**	-	**A**	-	**9**	-
Arena Road and Dundix Road *(Unsignalized)*	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.07	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	-	**7**	-	**A**	-	**7**	-
Site Access 1 # at Arena Road *(Unsignalized)*	WBL/R	A	0.06	9	2	A	0.04	10	1
	NBT/R	-	-	-	-	-	-	-	-
	SBL/T	A	-	0	0	A	-	0	0
	Overall	**A**	-	**3**	-	**A**	-	**1**	-

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Site Access 2 # at Dundix Road *(Unsignalized)*	EBT/R	-	-	-	-	-	-	-	-
	WBL/T	A	0.01	7	0	A	0.01	7	0
	NBL/R	A	0.05	9	2	A	0.03	9	1
	Overall	**A**	**-**	**3**	**-**	**A**	**-**	**2**	**-**
Notes:	# - 95% percentile exceeds capacity m - volume for the 95th percentile queue is metered by an upstream signal								

With the addition of site generated traffic to the 2033 future background horizon, the Study Area intersections operate similarly to the 2033 future background horizon with slight V/C ratio increases for select movements that were previously overcapacity. Movements previously projected to operate with a level of service of F at the Dixie Road and Dundas Street East intersection will remain the same level of service as the future background conditions, and no new capacity issues are noted. The V/C ratios that exceeded 1.00 in the 2028 future total analysis horizon have either stayed the same or slightly increased with the addition of background growth.

At the intersection of Dixie Road and Dundas Street East during the PM peak, the site volumes are projected to increase the delay on the eastbound left-turn movement by nineteen seconds, on the northbound left movement by nineteen seconds, and on the westbound through movement by nine seconds. Similar to the 2028 Future Total analysis horizon, the site-generated volumes are not anticipated to be a contributing factor to the network constraints.

Both access intersections at Arena Road and Dundix Road will operate well with individual movement LOS A for all movements and overall LOS A for both intersections.

6. Conclusion

This Transportation Impact Study Update has examined the trip generation, access requirements, and study area road network impact of the proposed development at 1225 Dundas Street East. The TIS has shown the following:

a) The proposed development will include 30 townhome units and 612 condo units with a 6,738 ft^2 (626 m^2) ground floor retail space.

b) The subject development will include 331 vehicular parking spaces, which include 65 visitor parking spaces. The parking justification section of this report has been prepared to support the proposed vehicular parking provision rates.

c) Access to the development will be accommodated via one full movement access at Arena Road (Site Access #1) and full movement access at Dundix Road (Site Access #2).

d) The growth rates in the Study Area were mostly provided by the City of Mississauga staff and range between 0% to 1.0% depending on the studied segment and horizon year for Dundas Street East. Growth rates along this corridor beyond 2026 take into account the lane reductions along Dundas Street East as a result of the Dundas Street East implementation. Along Dixie Road, a conservative growth rate of 1% has been assumed and applied to through movements along Dixie Road over all years of analysis.

e) The proposed development is located within the Dunas BRT area, and the implementation of the Dundas BRT was included in the future horizons.

f) The existing mode shares in the Study Area were obtained from the 2016 TTS, and 6% shift to transit mode and a 2% shift to cycling mode taken from the auto mode is proposed as a result of the Dundas Street East implementation.

g) It was found that 249 AM and 328 PM new peak hour two-way person trips are projected as a result of the proposed development, of which 128 AM and 157 PM trips are net new peak hour two-way vehicle trips

h) Using the available turning movement counts in the Study Area. The key findings of the existing horizon operational analysis are listed below:

    a. Several movements at Dixie Road and Dundas Street East intersection during PM peak hour may be subject to high delays, and optimized signal timings has been shown to reduce the delays.

    b. The volume for the 95th percentile cycle exceeds capacity on several movements at the intersections of Dixie Road at Dundas Street East and Queen Frederica Drive/Blundell Road at Dundas Street East. However, where a V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

i) The 2028 future background traffic volumes, including background developments, growth, and geometric changes to Dundas Street East as a result of the Dundas BRT implementation, were analysed. With these changes the Study Area performs at a lower level of service and with higher V/C ratios at critical movements when compared to the existing horizon.

j) The addition of the site generated trips to the 2028 Future Background horizon resulted in slight increases in the delays on several movements in the study area. However, the site-generated volumes are low and are not anticipated to be a contributing factor to the existing network constraints.

k) The 2033 Future Background traffic volumes, including growth compared to the 2028 Future Background traffic volumes, were analysed. Due to the minimal growth applied between these horizons, the 2033 Future Background horizon operates similarly to the 2028 Future Background horizon and no new capacity issues have been identified.

l) The addition of the site generated trips to the 2033 Future Background horizon resulted in slight increases in the delays on several movements in the study area. However, the site-generated volumes are not anticipated to be a contributing factor to the existing network constraints.

m) The planned geometric changes at the Dixie Road and Dundas Street intersections focus on the development and facilitation of transit service along the corridor and will not directly mitigate auto operational constraints.

n) Both access intersections at Arena Road and Dundix Road operate well in the 2028 and 2033 Future total horizons.

o) The delivery, move-in, and garbage collection vehicle turning templates were reviewed to confirm movements will be permitted on site.

p) A parking justification has been provided to support the parking variance at 1225 Dundas Street East. Considering the no parking requirement legislation of Bill 185 as well as the features of the Dixie PMTSA, residential, visitor, retail, and accessible parking provisions at the site are anticipated to be sufficient for the proposed land uses.

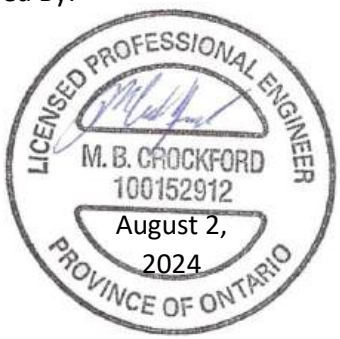
q) A sightline analysis of the proposed site access has been reviewed, and it is anticipated that provided stopping sight distances for both site accesses would be sufficient.

r) Site design elements and TDM measures supportive of sustainable modes have been proposed for 1225 Dundas Street East to ensure that the mode shares at the proposed development contribute to the Study Area traffic superzone meeting the Regional mode share targets. Some of the proposed TDM measures include reduced vehicular parking provisions and enhanced-usability bike parking.

The proposed development will have a minor impact on the study area road network and the proposed accesses will operate well overall with the proposed mitigation measures. The 1225 Dundas Street East site design aligns with the future surrounding area context, with an emphasis on sustainable modes of travel. It is recommended that, from a transportation perspective, the proposed development application proceed.

Prepared By:

Reviewed By:



Nasteha Abdullahi, M.Eng.
647-965-2835
Nasteha.Abdullahi@cghtransportation.com

Mark Crockford, P. Eng.
905-251-4070
Mark.Crockford@CGHTransportation.com

Appendix A

Terms of Reference (TOR)

Technical Memorandum

To:	Michael Turco – City of Mississauga Rosalie Shan – Region of Peel	Date:	2022-04-25
Cc:	Mark Crockford – CGH Transportation		
From:	Zhengxuan Lai, EIT	Project Number:	2022-050

Re: 1225 Dundas Street East Transportation Impact Study – Terms of Reference

We have been asked to undertake a Transportation Impact Study (TIS) for in Mississauga, located approximately 450 metres west of Dixie Road at Dundas Street intersection. Currently, the 1225 Dundas Street East property lot is occupied by a single-storey shopping centre containing nine retail units and its parking lot along the frontage. The subject development would replace the existing shopping centre with a proposed residential development. The existing uses will be removed as part of the proposed development. The residential development is proposed to include 520 apartment units and 24 townhome units equally divided into two phases, while ground floor retail space is included along the Dundas Street frontage. Parking will be provided via one level of underground parking, with access to the parking garage from Dundix Road behind the lot. A total of 378 and 24 parking spaces will be provided to the apartment and the townhouse units, respectively.

Attached is a concept plan illustrating the proposed development. This plan has been provided without prejudice and for discussion only as it is subject to change as the development design proceeds.

We have prepared the following TIS scope of work for Peel Region's and the City of Mississauga's review. Please let us know if you have any comments or additions.

Transportation Impact Study Requirements (TIS):

The study will be in accordance with the Region of Peel's *Guidelines for the Preparation of Traffic Impact Studies*, and City of Mississauga's *Traffic Impact Study Guidelines*.

Proposed Development Overview:

- A description of the proposed development and any planned active mode facilities.
- Outline of land use as it relates to the development and site statistics.
- Transportation Demand Management (TDM) supportive elements of the proposed development.
- Review of site circulation, site access, and sight triangle

Study Area:

- An overview of the transportation network existing conditions will be documented (including transit, cycling, pedestrian and automobile modes)
- A summary of existing transportation planning policies within the Study Area will be identified.
- An overview of the study area road network will be provided including the road classification and descriptions of:
    - Dundas Street
    - Dixie Road
    - Queen Frederica Drive/Blundell Road

  - Arena Road
  - Dundix Road
- The following intersections will be included in the Transportation Impact Study:
  - Dundas Street and Dixie Road
  - Queen Frederica Drive/Blundell Road and Dundas Street
  - Arena Road at Dundas Street
  - Queen Frederica Drive at Dundix Road
  - Dundix Road at Arena Road

Study Horizon & Peak Periods:

- Base year 2022, followed by a full buildout future horizon of 2027, and a 5-years beyond full buildout future horizon of 2027
- AM, and PM peak hour periods

Existing Study Area Multimodal Conditions:

- **Existing Turning Movement Count Summary Reports will be requested for the following intersections from Peel Region and the City of Mississauga staff**, as applicable, and will be used to produce the existing conditions auto, cyclist, and pedestrian volumes within the Study Area:
  - Dundas Street and Dixie Road (Regional)
  - Queen Frederica Drive/Blundell Road and Dundas Street (Regional)
  - Arena Road at Dundas Street (Regional)
  - Queen Frederica Drive at Dundix Road (City)
  - Dundix Road at Arena Road (City)
- **Signal Timing Plans will be requested for the same intersections from Peel Region's and the City of Mississauga's traffic signal operations divisions:**
  - Dundas Street and Dixie Road
  - Queen Frederica Drive/Blundell Road and Dundas Street
  - Arena Road at Dundas Street
- Existing transit ridership data will be obtained from Mississauga Transit and GO Transit.

Planned Transportation Improvements:

- Dundas BRT Corridor – currently under the public consultation phase, CGH would like to confirm the expected completion date of this project as part of this TOR

Background Growth:

- As per TIS Guidelines and as part of this TOR, CGH would like to acquire growth rates for all study area segments from a calibrated traffic forecasting model from the City of Mississauga's Transportation Planning section
- If such data is not available or extra information is required, compound annual growth rates calculated using historical traffic counts and output from the Region of Peel Travel Demand Forecasting Model will be applied to auto, walking, cycling and transit 2022 existing volumes, as applicable, to establish the 2027 future analysis horizon volumes.
- Background development generated traffic will be considered as part of the background growth. **Surrounding background development that need to be included in this Study are to be confirmed with the City of Mississauga staff**, relevant information is also requested for each development. Currently, the following developments will be included:
  - **3085 Queen Frederica Drive**
  - **2525 Dixie Road**

- **1333 Tonolli Road**

Development Site Multimodal Trip Distribution and Assignment:

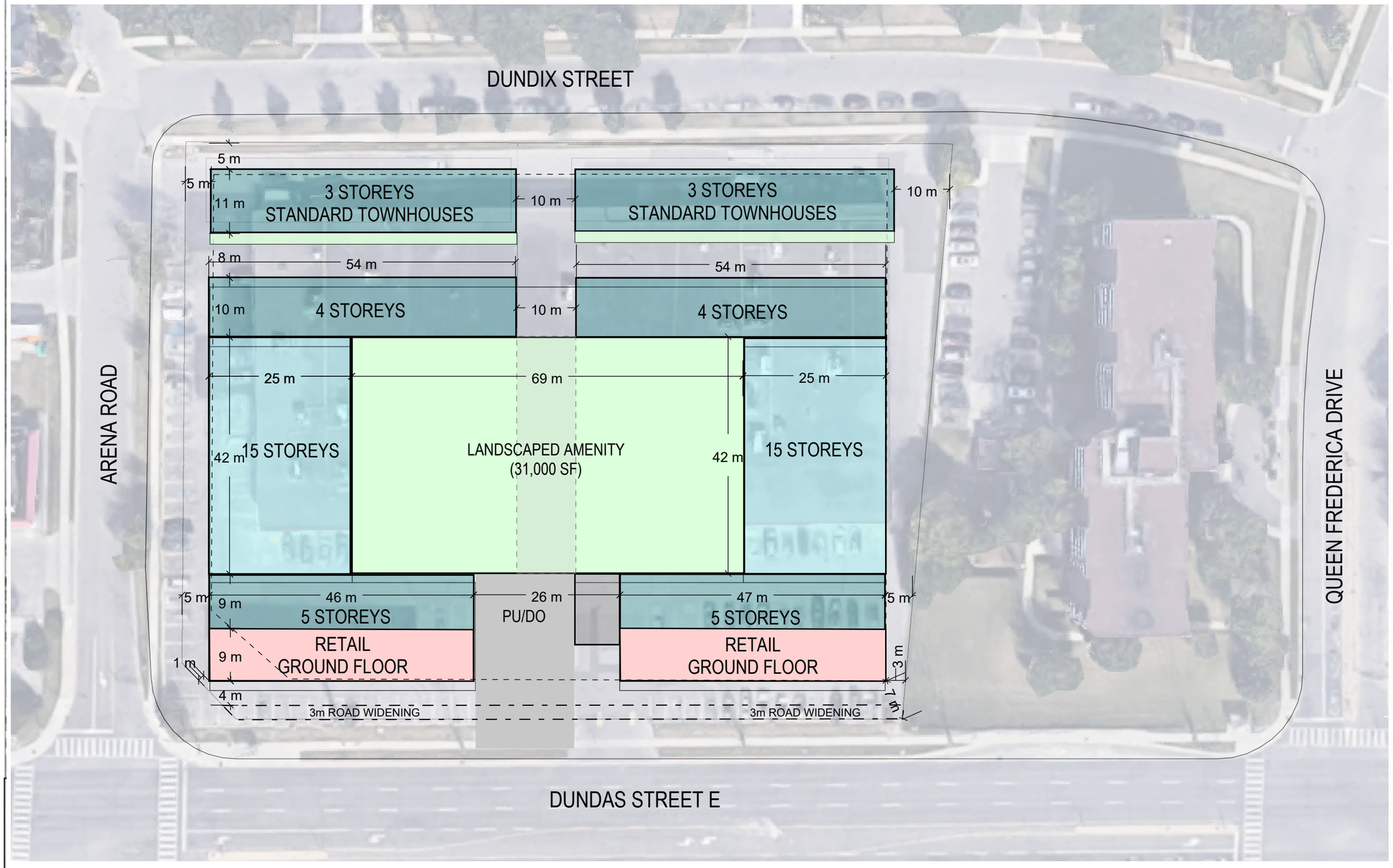
- Trip generation: ITE Trip Generation Manual 11th Edition (residential, commercial).
  - To estimate person trip generation, a factor of 1.28, calculated from a default 10% non-auto mode share and an average vehicle occupancy rate of 1.15 (i.e. 1.15/0.90 = 1.28), will be applied to the vehicle trip rates.
- Existing Modal Split will be calculated based on Transportation Tomorrow Survey (TTS) in the surrounding zones.
- Future mode shares estimation
  - As the proposed development is fronting the proposed Dundas BRT and within 1 km walking distance of Dixie GO train station, it is not recommended that the existing TAZ mode shares are used in determining the future modal share in the Study Area. Instead, CGH would like to acquire target mode shares in the area from the City of Mississauga as part of this TOR to use in the analysis of future horizons.
  - Alternatively, Peel Region's Sustainable Transportation Strategy Development of Mode Share Targets (2018) is aiming for 50% of sustainable (non-auto driver) mode share in 2041, consisting of approximately 18% of carpool, 17% of transit, 11% of active transportation, and 4% of others. CGH would like the Region and the City to confirm whether interpolations from this projection could be applied to the proposed development.
- Trip distribution and assignment of auto trips: Transportation Tomorrow Survey (TTS), existing traffic routing patterns and surrounding area characteristics.
- Synergy trip reductions as required for residential and commercial interactions.

Performance and Analysis:

- Traffic analysis to be performed using Synchro 11 on Study Area network intersections to determine the LOS, delay, V / C ratio and the 95th percentile queues for both signalized and unsignalized intersections as well as individual critical movements.
  - Critical movements for signalized and unsignalized intersections will be identified, using the definitions from City of Mississauga's TIS Guidelines.
  - Heavy Vehicle % and Peak Hour Factors will be taken from the collected TMC data. Where information is not available, a Heavy Vehicle % of 2%, and the Peak Hour Factor of an adjacent intersection will be applied.
  - Base saturation flow rates for arterial roadways according to City of Mississauga's TIS Guidelines
    - Advanced Left 1860, Through 1900, Right 1640
  - Other Synchro inputs will be based on site observations as well as Synchro default parameters.
- A qualitative transit, cycling, and pedestrian analysis in consideration of any planned improvements.
- Access configuration and control will be explored. Access location analysis will include a sight distance evaluation.
- Site circulation to be considered where necessary.
- Parking and loading to be evaluated against the City of Mississauga's comprehensive Zoning By-Law. Proxy parking data will be collected at a comparable site in order to help justify the proposed parking reduction.

Recommendations, Implementation Plan, and Conclusions:

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



01
SITE PLAN

19-Nov-21
1 : 750

0 3.757.5 18.75 37.5m

1225 DUNDAS ST E
MISSISSAUGA, ON

SMARTCENTRES®
REAL ESTATE INVESTMENT TRUST

RD-06

Appendix B

Turning Movement Count Data

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Dundas St E & Dixie Rd
Site Code:	2219300001
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Dixie Rd - Traffic Summary

Hour	North Approach Totals (Includes Cars, Trucks, Buses, Bicycles)						South Approach Totals (Includes Cars, Trucks, Buses, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	290	635	126	0	1051	12	78	480	106	0	664	20	1715
08:00 - 09:00	368	820	173	0	1361	11	79	713	139	0	931	15	2292
BREAK													
16:00 - 17:00	423	907	237	0	1567	47	207	848	213	0	1268	54	2835
17:00 - 18:00	467	960	225	0	1652	56	218	817	232	0	1267	27	2919
GRAND TOTAL	**1548**	**3322**	**761**	**0**	**5631**	**126**	**582**	**2858**	**690**	**0**	**4130**	**116**	**9761**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Dundas St E & Dixie Rd
Site Code:	2219300001
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Dundas St E - Traffic Summary

Hour	East Approach Totals (Includes Cars, Trucks, Buses, Bicycles)						West Approach Totals (Includes Cars, Trucks, Buses, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	77	323	103	0	503	7	116	704	121	0	941	0	1444
08:00 - 09:00	96	412	169	0	677	3	147	861	147	0	1155	1	1832
BREAK													
16:00 - 17:00	237	1111	362	0	1710	29	189	751	162	0	1102	8	2812
17:00 - 18:00	261	1134	343	0	1738	21	191	875	148	0	1214	6	2952
GRAND TOTAL	**671**	**2980**	**977**	**0**	**4628**	**60**	**643**	**3191**	**578**	**0**	**4412**	**15**	**9040**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Dixie Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	57	134	21	0	212	2	1	1	0	4	0	2	0	0	2	0	0	0	0	0	3
07:15	52	127	32	0	211	1	2	1	0	4	0	6	0	0	6	0	0	0	0	0	2
07:30	78	162	27	0	267	2	5	5	0	12	0	2	2	0	4	0	0	0	0	0	3
07:45	93	180	31	0	304	4	11	4	0	19	1	3	2	0	6	0	0	0	0	0	4
08:00	80	189	31	0	300	5	14	0	0	19	1	3	2	0	6	0	0	0	0	0	2
08:15	74	221	46	0	341	10	9	4	0	23	0	3	1	0	4	0	0	0	0	0	1
08:30	103	151	28	0	282	4	6	2	0	12	1	6	3	0	10	0	0	0	0	0	5
08:45	88	205	54	0	347	2	12	1	0	15	0	1	1	0	2	0	0	0	0	0	3
SUBTOTAL	625	1369	270	0	2264	30	60	18	0	108	3	26	11	0	40	0	0	0	0	0	23

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Dixie Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	104	215	53	0	372	4	2	6	0	12	0	1	1	0	2	0	0	0	0	0	7
16:15	114	236	56	0	406	6	3	2	0	11	4	3	0	0	7	0	0	0	0	0	9
16:30	93	188	52	0	333	0	4	1	0	5	0	2	0	0	2	0	0	0	0	0	18
16:45	98	247	63	0	408	0	5	3	0	8	0	1	0	0	1	0	0	0	0	0	13
17:00	121	234	47	0	402	1	5	2	0	8	0	2	0	0	2	0	0	0	0	0	16
17:15	92	219	56	0	367	2	3	4	0	9	0	1	0	0	1	0	0	0	0	0	13
17:30	137	281	61	0	479	1	5	0	0	6	0	1	0	0	1	0	0	0	0	0	9
17:45	109	204	51	0	364	4	3	4	0	11	0	2	0	0	2	0	0	0	0	0	18
SUBTOTAL	868	1824	439	0	3131	18	30	22	0	70	4	13	1	0	18	0	0	0	0	0	103
GRAND TOTAL	1493	3193	709	0	5395	48	90	40	0	178	7	39	12	0	58	0	0	0	0	0	126

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Dixie Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	13	87	28	0	128	0	4	1	0	5	1	1	1	0	3	0	0	0	0	0	9
07:15	20	89	24	0	133	1	3	1	0	5	0	3	1	0	4	0	0	0	0	0	5
07:30	20	137	24	0	181	0	8	1	0	9	0	3	0	0	3	0	0	0	0	0	5
07:45	21	140	23	0	184	1	3	2	0	6	1	2	0	0	3	0	0	0	0	0	1
08:00	18	127	36	0	181	1	12	2	0	15	0	4	2	0	6	0	0	0	0	0	4
08:15	8	176	34	0	218	1	15	3	0	19	0	5	0	0	5	0	0	0	0	0	4
08:30	29	172	26	0	227	1	5	0	0	6	0	1	1	0	2	0	0	0	0	0	7
08:45	21	183	35	0	239	0	10	0	0	10	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	150	1111	230	0	1491	5	60	10	0	75	2	22	5	0	29	0	0	0	0	0	35

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Dixie Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	42	235	70	0	347	1	5	1	0	7	0	1	0	0	1	0	0	0	0	0	15
16:15	60	191	47	0	298	1	9	1	0	11	0	1	2	0	3	0	0	0	0	0	13
16:30	43	166	48	0	257	0	3	2	0	5	0	3	0	0	3	0	0	0	0	0	7
16:45	59	227	41	0	327	1	6	0	0	7	0	1	1	0	2	0	0	0	0	0	19
17:00	58	243	50	0	351	0	4	1	0	5	0	1	1	0	2	0	0	0	0	0	5
17:15	52	204	49	0	305	0	1	2	0	3	0	3	0	0	3	0	0	0	0	0	7
17:30	54	192	76	0	322	2	6	0	0	8	0	1	1	0	2	0	0	0	0	0	9
17:45	52	156	49	0	257	0	5	3	0	8	0	1	0	0	1	0	0	0	0	0	6
SUBTOTAL	420	1614	430	0	2464	5	39	10	0	54	0	12	5	0	17	0	0	0	0	0	81
GRAND TOTAL	**570**	**2725**	**660**	**0**	**3955**	**10**	**99**	**20**	**0**	**129**	**2**	**34**	**10**	**0**	**46**	**0**	**0**	**0**	**0**	**0**	**116**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	21	68	24	0	113	2	2	1	0	5	0	3	0	0	3	0	0	0	0	0	1
07:15	12	65	23	0	100	2	8	0	0	10	1	4	1	0	6	0	0	0	0	0	0
07:30	19	64	17	0	100	1	5	2	0	8	1	2	0	0	3	0	0	0	0	0	3
07:45	16	90	28	0	134	0	8	6	0	14	2	4	1	0	7	0	0	0	0	0	3
08:00	25	100	32	0	157	2	5	4	0	11	1	1	3	0	5	0	0	0	0	0	0
08:15	15	83	36	0	134	1	4	7	0	12	1	3	1	0	5	0	0	0	0	0	1
08:30	29	116	38	0	183	1	8	3	0	12	0	3	1	0	4	0	0	0	0	0	0
08:45	18	80	38	0	136	3	6	3	0	12	0	3	3	0	6	0	0	0	0	0	2
SUBTOTAL	155	666	236	0	1057	12	46	26	0	84	6	23	10	0	39	0	0	0	0	0	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
16:00	33	253	78	0	364	0	27	8	0	35	0	3	1	0	4	0	0	0	0	0	12
16:15	59	249	93	0	401	1	10	3	0	14	1	3	0	0	4	0	0	0	0	0	10
16:30	83	276	90	0	449	1	4	3	0	8	0	4	0	0	4	0	0	0	0	0	6
16:45	58	276	82	0	416	1	2	4	0	7	0	4	0	0	4	0	0	0	0	0	1
17:00	75	264	105	0	444	1	7	2	0	10	0	2	0	0	2	0	0	0	0	0	4
17:15	49	332	68	0	449	2	0	2	0	4	0	3	0	0	3	0	0	0	0	0	2
17:30	70	236	86	0	392	1	5	6	0	12	0	2	0	0	2	0	0	0	0	0	4
17:45	60	276	70	0	406	3	3	4	0	10	0	4	0	0	4	0	0	0	0	0	11
SUBTOTAL	487	2162	672	0	3321	10	58	32	0	100	1	25	1	0	27	0	0	0	0	0	50
GRAND TOTAL	642	2828	908	0	4378	22	104	58	0	184	7	48	11	0	66	0	0	0	0	0	60

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	21	147	31	0	199	3	3	0	0	6	2	3	0	0	5	0	0	0	0	0	0
07:15	22	161	27	0	210	3	11	0	0	14	0	4	0	0	4	0	0	0	0	0	0
07:30	26	146	25	0	197	3	8	1	0	12	0	3	0	0	3	0	0	0	0	0	0
07:45	32	203	34	0	269	4	10	1	0	15	0	5	2	0	7	0	0	0	0	0	0
08:00	21	163	35	0	219	3	8	1	0	12	0	3	1	0	4	0	0	0	0	0	1
08:15	39	190	44	0	273	2	9	2	0	13	1	2	0	0	3	0	0	0	0	0	0
08:30	46	231	31	0	308	3	8	0	0	11	0	6	0	0	6	0	0	0	0	0	0
08:45	27	234	33	0	294	4	5	0	0	9	1	2	0	0	3	0	0	0	0	0	0
SUBTOTAL	234	1475	260	0	1969	25	62	5	0	92	4	28	3	0	35	0	0	0	0	0	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	42	164	30	0	236	1	8	2	0	11	0	1	0	0	1	0	0	0	0	0	1
16:15	43	188	40	0	271	3	6	1	0	10	0	2	1	0	3	0	0	0	0	0	5
16:30	57	183	53	0	293	3	9	0	0	12	0	2	0	0	2	0	0	0	0	0	1
16:45	38	179	34	0	251	2	6	0	0	8	0	3	1	0	4	0	0	0	0	0	1
17:00	42	188	42	0	272	0	3	2	0	5	0	3	0	0	3	0	0	0	0	0	6
17:15	49	233	34	0	316	5	3	0	0	8	0	1	1	0	2	0	0	0	0	0	0
17:30	52	163	31	0	246	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	0
17:45	42	267	38	0	347	1	4	0	0	5	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	365	1565	302	0	2232	15	45	5	0	65	0	16	3	0	19	0	0	0	0	0	14
GRAND TOTAL	599	3040	562	0	4201	40	107	10	0	157	4	44	6	0	54	0	0	0	0	0	15

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dixie Rd runs N/S

North Approach

	Out	In	Total
Cars	1270	935	2205
Trucks	69	71	140
Buses	22	23	45
Bicycles	0	0	0
	1361	**1029**	**2390**

Dixie Rd

Bicycles	0	0	0	0
Buses	7	13	2	0
Trucks	7	41	21	0
Cars	159	766	345	0
Totals	**173**	**820**	**368**	**0**

East Approach

	Out	In	Total
Cars	610	1294	1904
Trucks	47	56	103
Buses	20	18	38
Bicycles	0	0	0
	677	**1368**	**2045**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals	
0	0	0	0	**0**	
0	2	12	133	**147**	
0	13	30	818	**861**	
0	1	3	143	**147**	

Peds: 1

Peds: 11

Peds: 3

Peds: 15

Dundas St E

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
169	144	17	8	0
412	379	23	10	0
96	87	7	2	0

West Approach

	Out	In	Total
Cars	1094	614	1708
Trucks	45	33	78
Buses	16	17	33
Bicycles	0	0	0
	1155	**664**	**1819**

Dixie Rd

Totals	79	713	139	0
Cars	76	658	131	0
Trucks	3	42	5	0
Buses	0	13	3	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	865	996	1861
Trucks	50	51	101
Buses	16	16	32
Bicycles	0	0	0
	931	**1063**	**1994**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

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

Start Time	North Approach Dixie Rd						South Approach Dixie Rd						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	86	206	33	0	2	325	19	143	40	0	4	202	28	106	39	0	0	173	24	174	37	0	1	235	935
08:15	84	233	51	0	1	368	9	196	37	0	4	242	17	90	44	0	1	151	42	201	46	0	0	289	1050
08:30	108	163	33	0	5	304	30	178	27	0	7	235	30	127	42	0	0	199	49	245	31	0	0	325	1063
08:45	90	218	56	0	3	364	21	196	35	0	0	252	21	89	44	0	2	154	32	241	33	0	0	306	1076
Grand Total	**368**	**820**	**173**	**0**	**11**	**1361**	**79**	**713**	**139**	**0**	**15**	**931**	**96**	**412**	**169**	**0**	**3**	**677**	**147**	**861**	**147**	**0**	**1**	**1155**	**4124**
Approach %	27	60.2	12.7	0		-	8.5	76.6	14.9	0		-	14.2	60.9	25	0		-	12.7	74.5	12.7	0		-	
Totals %	8.9	19.9	4.2	0		33	1.9	17.3	3.4	0		22.6	2.3	10	4.1	0		16.4	3.6	20.9	3.6	0		28	
PHF	**0.85**	**0.88**	**0.77**	**0**		**0.92**	**0.66**	**0.91**	**0.87**	**0**		**0.92**	**0.8**	**0.81**	**0.96**	**0**		**0.85**	**0.75**	**0.88**	**0.8**	**0**		**0.89**	**0.96**
Cars	345	766	159	0		1270	76	658	131	0		865	87	379	144	0		610	133	818	143	0		1094	3839
% Cars	93.8	93.4	91.9	0		93.3	96.2	92.3	94.2	0		92.9	90.6	92	85.2	0		90.1	90.5	95	97.3	0		94.7	93.1
Trucks	21	41	7	0		69	3	42	5	0		50	7	23	17	0		47	12	30	3	0		45	211
% Trucks	5.7	5	4	0		5.1	3.8	5.9	3.6	0		5.4	7.3	5.6	10.1	0		6.9	8.2	3.5	2	0		3.9	5.1
Buses	2	13	7	0		22	0	13	3	0		16	2	10	8	0		20	2	13	1	0		16	74
% Buses	0.5	1.6	4	0		1.6	0	1.8	2.2	0		1.7	2.1	2.4	4.7	0		3	1.4	1.5	0.7	0		1.4	1.8
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					11	-					15	-					3	-					1	-	30
% Peds					36.7	-					50	-					10	-					3.3	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:45:00
To:	18:00:00	To:	17:45:00

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dixie Rd runs N/S

North Approach

	Out	In	Total
Cars	1656	1388	3044
Trucks	31	38	69
Buses	5	6	11
Bicycles	0	0	0
	1692	**1432**	**3124**

Dixie Rd

Bicycles	0	0	0	0
Buses	0	5	0	0
Trucks	9	18	4	0
Cars	227	981	448	0
Totals	**236**	**1004**	**452**	**0**

East Approach

	Out	In	Total
Cars	1701	1427	3128
Trucks	33	25	58
Buses	11	13	24
Bicycles	0	0	0
	1745	**1465**	**3210**

Peds: 51

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	0	7	181	**188**
0	10	18	763	**791**
0	2	2	141	**145**

Peds: 7

Peds: 11

Dundas St E

	Totals	Cars	Trucks	Buses	Bicycles
	0	0	0	0	0
	355	341	14	0	0
	1133	1108	14	11	0
	257	252	5	0	0

Peds: 40

West Approach

	Out	In	Total
Cars	1085	1558	2643
Trucks	27	26	53
Buses	12	11	23
Bicycles	0	0	0
	1124	**1595**	**2719**

Totals	**226**	**889**	**222**	**0**
Cars	223	866	216	0
Trucks	3	17	3	0
Buses	0	6	3	0
Bicycles	0	0	0	0

Dixie Rd

South Approach

	Out	In	Total
Cars	1305	1374	2679
Trucks	23	25	48
Buses	9	7	16
Bicycles	0	0	0
	1337	**1406**	**2743**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Dundas St E & Dixie Rd
Site Code:	2219300001
Count Date:	Jun 07, 2022
Period:	16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Dixie Rd						South Approach Dixie Rd						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45	98	253	66	0	13	417	60	234	42	0	19	336	59	282	86	0	1	427	40	188	35	0	1	263	1443
17:00	122	241	49	0	16	412	58	248	52	0	5	358	76	273	107	0	4	456	42	194	44	0	6	280	1506
17:15	94	223	60	0	13	377	52	208	51	0	7	311	51	335	70	0	2	456	54	237	35	0	0	326	1470
17:30	138	287	61	0	9	486	56	199	77	0	9	332	71	243	92	0	4	406	52	172	31	0	0	255	1479
Grand Total	**452**	**1004**	**236**	**0**	**51**	**1692**	**226**	**889**	**222**	**0**	**40**	**1337**	**257**	**1133**	**355**	**0**	**11**	**1745**	**188**	**791**	**145**	**0**	**7**	**1124**	**5898**
Approach %	26.7	59.3	13.9	0		-	16.9	66.5	16.6	0		-	14.7	64.9	20.3	0		-	16.7	70.4	12.9	0		-	
Totals %	7.7	17	4	0		28.7	3.8	15.1	3.8	0		22.7	4.4	19.2	6	0		29.6	3.2	13.4	2.5	0		19.1	
PHF	**0.82**	**0.87**	**0.89**	**0**		**0.87**	**0.94**	**0.9**	**0.72**	**0**		**0.93**	**0.85**	**0.85**	**0.83**	**0**		**0.96**	**0.87**	**0.83**	**0.82**	**0**		**0.86**	**0.98**
Cars	448	981	227	0		1656	223	866	216	0		1305	252	1108	341	0		1701	181	763	141	0		1085	5747
% Cars	99.1	97.7	96.2	0		97.9	98.7	97.4	97.3	0		97.6	98.1	97.8	96.1	0		97.5	96.3	96.5	97.2	0		96.5	97.4
Trucks	4	18	9	0		31	3	17	3	0		23	5	14	14	0		33	7	18	2	0		27	114
% Trucks	0.9	1.8	3.8	0		1.8	1.3	1.9	1.4	0		1.7	1.9	1.2	3.9	0		1.9	3.7	2.3	1.4	0		2.4	1.9
Buses	0	5	0	0		5	0	6	3	0		9	0	11	0	0		11	0	10	2	0		12	37
% Buses	0	0.5	0	0		0.3	0	0.7	1.4	0		0.7	0	1	0	0		0.6	0	1.3	1.4	0		1.1	0.6
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					51	-					40	-					11	-					7	-	109
% Peds					46.8	-					36.7	-					10.1	-					6.4	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code:	2219300002
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Queen Frederica Dr - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	104	9	19	0	132	1	13	0	10	0	23	5	155
08:00 - 09:00	131	9	19	0	159	5	18	0	9	0	27	3	186
BREAK													
16:00 - 17:00	78	3	13	0	94	3	82	1	22	0	105	20	199
17:00 - 18:00	111	9	16	0	136	12	76	0	25	0	101	16	237
GRAND TOTAL	**424**	**30**	**67**	**0**	**521**	**21**	**189**	**1**	**66**	**0**	**256**	**44**	**777**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code:	2219300002
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Dundas St E - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	16	498	35	0	549	4	10	804	21	0	835	5	1384
08:00 - 09:00	18	661	57	0	736	2	14	1113	25	0	1152	8	1888
BREAK													
16:00 - 17:00	38	1563	131	0	1732	16	32	1042	36	0	1110	13	2842
17:00 - 18:00	50	1609	147	0	1806	13	43	1131	31	0	1205	4	3011
GRAND TOTAL	**122**	**4331**	**370**	**0**	**4823**	**35**	**99**	**4090**	**113**	**0**	**4302**	**30**	**9125**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	31	0	5	0	36	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:15	13	1	3	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	36	2	4	0	42	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:45	22	6	7	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	24	1	6	0	31	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
08:15	34	2	4	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	35	2	3	0	40	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:45	36	4	6	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	231	18	38	0	287	3	0	0	0	3	1	0	0	0	1	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
16:00	16	0	6	0	22	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	1
16:15	14	1	2	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:30	25	2	1	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	21	0	4	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	24	4	6	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:15	25	1	5	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:30	35	4	4	0	43	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
17:45	26	0	1	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	186	12	29	0	227	1	0	0	0	1	2	0	0	0	2	0	0	0	0	0	15
GRAND TOTAL	**417**	**30**	**67**	**0**	**514**	**4**	**0**	**0**	**0**	**4**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**21**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Blundell Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	2	0	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	2	0	2	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
07:30	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45	5	0	4	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:15	7	0	3	0	10	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
08:30	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45	4	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	30	0	17	0	47	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	8

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Blundell Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	22	0	5	0	27	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
16:15	16	0	2	0	18	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	5
16:30	22	0	9	0	31	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
16:45	19	1	5	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
17:00	20	0	9	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:15	20	0	4	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:30	17	0	7	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
17:45	19	0	5	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	155	1	46	0	202	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	36
GRAND TOTAL	185	1	63	0	249	4	0	3	0	7	0	0	0	0	0	0	0	0	0	0	44

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	3	92	7	0	102	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	1
07:15	4	94	12	0	110	1	6	0	0	7	0	4	0	0	4	0	0	0	0	0	1
07:30	3	118	9	0	130	0	9	0	0	9	0	4	1	0	5	0	0	0	0	0	1
07:45	5	149	5	0	159	0	11	1	0	12	0	5	0	0	5	0	0	0	0	0	1
08:00	3	127	15	0	145	0	3	2	0	5	0	2	0	0	2	0	0	0	0	0	0
08:15	10	154	13	0	177	0	10	0	0	10	0	4	0	0	4	0	0	0	0	0	0
08:30	3	166	10	0	179	0	16	2	0	18	0	3	0	0	3	0	0	0	0	0	1
08:45	2	167	15	0	184	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	1
SUBTOTAL	33	1067	86	0	1186	1	63	5	0	69	0	29	1	0	30	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
16:00	9	359	22	0	390	2	12	0	0	14	0	3	1	0	4	0	0	0	0	0	2
16:15	7	396	41	0	444	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	2
16:30	7	378	31	0	416	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	5
16:45	13	388	35	0	436	0	3	1	0	4	0	5	0	0	5	0	0	0	0	0	7
17:00	8	382	36	0	426	1	10	0	0	11	0	2	0	0	2	0	0	0	0	0	2
17:15	13	413	45	0	471	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	7
17:30	11	395	31	0	437	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	3
17:45	16	383	35	0	434	1	7	0	0	8	0	4	0	0	4	0	0	0	0	0	1
SUBTOTAL	84	3094	276	0	3454	4	56	1	0	61	0	22	1	0	23	0	0	0	0	0	29
GRAND TOTAL	117	4161	362	0	4640	5	119	6	0	130	0	51	2	0	53	0	0	0	0	0	35

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	4	166	3	0	173	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	1
07:15	4	170	8	0	182	0	14	1	0	15	0	3	0	0	3	0	0	0	0	0	0
07:30	2	172	4	0	178	0	5	0	0	5	0	3	0	0	3	0	0	0	0	0	0
07:45	0	243	5	0	248	0	13	0	0	13	0	3	0	0	3	0	0	0	0	0	4
08:00	4	223	8	0	235	0	10	1	0	11	1	1	0	0	2	0	0	0	0	0	4
08:15	1	281	6	0	288	0	8	0	0	8	0	3	0	0	3	0	0	0	0	0	0
08:30	5	266	7	0	278	1	10	0	0	11	0	3	0	0	3	0	0	0	0	0	2
08:45	2	297	3	0	302	0	9	0	0	9	0	2	0	0	2	0	0	0	0	0	2
SUBTOTAL	22	1818	44	0	1884	1	79	2	0	82	1	20	0	0	21	0	0	0	0	0	13

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
16:00	6	216	6	0	228	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	1
16:15	8	260	9	0	277	0	8	1	0	9	0	2	0	0	2	0	0	0	0	0	0
16:30	12	245	7	0	264	0	5	1	0	6	0	2	0	0	2	0	0	0	0	0	4
16:45	6	285	12	0	303	0	6	0	0	6	0	4	0	0	4	0	0	0	0	0	8
17:00	17	257	7	0	281	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	0
17:15	11	318	8	0	337	0	9	0	0	9	0	2	0	0	2	0	0	0	0	0	1
17:30	10	268	9	0	287	0	6	1	0	7	0	2	0	0	2	0	0	0	0	0	3
17:45	5	260	5	0	270	0	1	0	0	1	0	3	1	0	4	0	0	0	0	0	0
SUBTOTAL	75	2109	63	0	2247	0	42	3	0	45	0	22	1	0	23	0	0	0	0	0	17
GRAND TOTAL	97	3927	107	0	4131	1	121	5	0	127	1	42	1	0	44	0	0	0	0	0	30

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dundas St E runs E/W

North Approach

	Out	In	Total
Cars	157	65	222
Trucks	1	5	6
Buses	1	1	2
Bicycles	0	0	0
	159	**71**	**230**

Queen Frederica Dr

Bicycles	0	0	0	0
Buses	0	0	1	0
Trucks	0	0	1	0
Cars	19	9	129	0
Totals	**19**	**9**	**131**	**0**

Peds: 5

East Approach

	Out	In	Total
Cars	685	1203	1888
Trucks	38	40	78
Buses	13	10	23
Bicycles	0	0	0
	736	**1253**	**1989**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals	
0	0	0	0	**0**	
0	1	1	12	**14**	
0	9	37	1067	**1113**	
0	0	1	24	**25**	

Peds: 8

Peds: 2

Dundas St E

	Totals	Cars	Trucks	Buses	Bicycles
	0	0	0	0	0
	57	53	4	0	0
	661	614	34	13	0
	18	18	0	0	0

Peds: 3

West Approach

	Out	In	Total
Cars	1103	651	1754
Trucks	39	34	73
Buses	10	13	23
Bicycles	0	0	0
	1152	**698**	**1850**

Totals	**18**	**0**	**9**	**0**
Cars	18	0	7	0
Trucks	0	0	2	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Blundell Rd

South Approach

	Out	In	Total
Cars	25	51	76
Trucks	2	1	3
Buses	0	0	0
Bicycles	0	0	0
	27	**52**	**79**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

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

Start Time	North Approach Queen Frederica Dr						South Approach Blundell Rd						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	
08:00	25	1	6	0	3	32	3	0	1	0	2	4	3	132	17	0	0	152	5	234	9	0	4	248	436
08:15	34	2	4	0	0	40	7	0	5	0	0	12	10	168	13	0	0	191	1	292	6	0	0	299	542
08:30	36	2	3	0	1	41	4	0	1	0	1	5	3	185	12	0	1	200	6	279	7	0	2	292	538
08:45	36	4	6	0	1	46	4	0	2	0	0	6	2	176	15	0	1	193	2	308	3	0	2	313	558
Grand Total	**131**	**9**	**19**	**0**	**5**	**159**	**18**	**0**	**9**	**0**	**3**	**27**	**18**	**661**	**57**	**0**	**2**	**736**	**14**	**1113**	**25**	**0**	**8**	**1152**	**2074**
Approach %	82.4	5.7	11.9	0		-	66.7	0	33.3	0		-	2.4	89.8	7.7	0		-	1.2	96.6	2.2	0		-	
Totals %	6.3	0.4	0.9	0		7.7	0.9	0	0.4	0		1.3	0.9	31.9	2.7	0		35.5	0.7	53.7	1.2	0		55.5	
PHF	**0.91**	**0.56**	**0.79**	**0**		**0.86**	**0.64**	**0**	**0.45**	**0**		**0.56**	**0.45**	**0.89**	**0.84**	**0**		**0.92**	**0.58**	**0.9**	**0.69**	**0**		**0.92**	**0.93**
Cars	129	9	19	0		157	18	0	7	0		25	18	614	53	0		685	12	1067	24	0		1103	1970
% Cars	98.5	100	100	0		98.7	100	0	77.8	0		92.6	100	92.9	93	0		93.1	85.7	95.9	96	0		95.7	95
Trucks	1	0	0	0		1	0	0	2	0		2	0	34	4	0		38	1	37	1	0		39	80
% Trucks	0.8	0	0	0		0.6	0	0	22.2	0		7.4	0	5.1	7	0		5.2	7.1	3.3	4	0		3.4	3.9
Buses	1	0	0	0		1	0	0	0	0		0	0	13	0	0		13	1	9	0	0		10	24
% Buses	0.8	0	0	0		0.6	0	0	0	0		0	0	2	0	0		1.8	7.1	0.8	0	0		0.9	1.2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					5	-					3	-					2	-					8	-	18
% Peds					27.8	-					16.7	-					11.1	-					44.4	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:45:00
To:	18:00:00	To:	17:45:00

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dundas St E runs E/W

North Approach

	Out	In	Total
Cars	133	192	325
Trucks	1	1	2
Buses	0	0	0
Bicycles	0	0	0
	134	**193**	**327**

Queen Frederica Dr

Bicycles	0	0	0	0
Buses	0	0	0	0
Trucks	0	0	1	0
Cars	19	9	105	0
Totals	**19**	**9**	**106**	**0**

East Approach

	Out	In	Total
Cars	1770	1258	3028
Trucks	24	23	47
Buses	11	12	23
Bicycles	0	0	0
	1805	**1293**	**3098**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	0	0	44	**44**
0	12	22	1128	**1162**
0	0	1	36	**37**

Peds: 12

Peds: 12

N
W
E
S

Peds: 19

Peds: 18

Dundas St E

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
148	147	1	0	0
1611	1578	22	11	0
46	45	1	0	0

West Approach

	Out	In	Total
Cars	1208	1673	2881
Trucks	23	22	45
Buses	12	11	23
Bicycles	0	0	0
	1243	**1706**	**2949**

Totals	76	1	25	0
Cars	76	1	25	0
Trucks	0	0	0	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Blundell Rd

South Approach

	Out	In	Total
Cars	102	90	192
Trucks	0	2	2
Buses	0	0	0
Bicycles	0	0	0
	102	**92**	**194**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Count Date: Jun 07, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Queen Frederica Dr						South Approach Blundell Rd						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45	21	0	4	0	0	25	19	1	5	0	5	25	13	396	36	0	7	445	6	295	12	0	8	313	808
17:00	24	4	6	0	3	34	20	0	9	0	4	29	9	394	36	0	2	439	17	262	7	0	0	286	788
17:15	25	1	5	0	4	31	20	0	4	0	3	24	13	419	45	0	7	477	11	329	8	0	1	348	880
17:30	36	4	4	0	5	44	17	0	7	0	6	24	11	402	31	0	3	444	10	276	10	0	3	296	808
Grand Total	**106**	**9**	**19**	**0**	**12**	**134**	**76**	**1**	**25**	**0**	**18**	**102**	**46**	**1611**	**148**	**0**	**19**	**1805**	**44**	**1162**	**37**	**0**	**12**	**1243**	**3284**
Approach %	79.1	6.7	14.2	0		-	74.5	1	24.5	0		-	2.5	89.3	8.2	0		-	3.5	93.5	3	0		-	
Totals %	3.2	0.3	0.6	0		4.1	2.3	0	0.8	0		3.1	1.4	49.1	4.5	0		55	1.3	35.4	1.1	0		37.9	
PHF	**0.74**	**0.56**	**0.79**	**0**		**0.76**	**0.95**	**0.25**	**0.69**	**0**		**0.88**	**0.88**	**0.96**	**0.82**	**0**		**0.95**	**0.65**	**0.88**	**0.77**	**0**		**0.89**	**0.93**
Cars	105	9	19	0		133	76	1	25	0		102	45	1578	147	0		1770	44	1128	36	0		1208	3213
% Cars	99.1	100	100	0		99.3	100	100	100	0		100	97.8	98	99.3	0		98.1	100	97.1	97.3	0		97.2	97.8
Trucks	1	0	0	0		1	0	0	0	0		0	1	22	1	0		24	0	22	1	0		23	48
% Trucks	0.9	0	0	0		0.7	0	0	0	0		0	2.2	1.4	0.7	0		1.3	0	1.9	2.7	0		1.9	1.5
Buses	0	0	0	0		0	0	0	0	0		0	0	11	0	0		11	0	12	0	0		12	23
% Buses	0	0	0	0		0	0	0	0	0		0	0	0.7	0	0		0.6	0	1	0	0		1	0.7
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					12	-					18	-					19	-					12	-	61
% Peds					19.7	-					29.5	-					31.1	-					19.7	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Dundas St E & Arena Rd - Commercial Access
Site Code:	2219300003
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Arena Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	4	0	38	0	42	1	2	0	18	0	20	6	62
08:00 - 09:00	13	3	36	0	52	9	7	1	54	0	62	9	114
BREAK													
16:00 - 17:00	14	3	29	0	46	3	22	10	109	0	141	20	187
17:00 - 18:00	13	2	23	0	38	13	19	9	105	0	133	20	171
GRAND TOTAL	**44**	**8**	**126**	**0**	**178**	**26**	**50**	**20**	**286**	**0**	**356**	**55**	**534**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Dundas St E & Arena Rd - Commercial Access
Site Code:	2219300003
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Dundas St E - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	23	490	5	0	518	5	21	849	10	0	880	3	1398
08:00 - 09:00	44	725	8	0	777	6	19	1164	17	0	1200	4	1977
BREAK													
16:00 - 17:00	84	1492	17	0	1593	4	41	1080	17	0	1138	18	2731
17:00 - 18:00	81	1530	18	0	1629	10	29	1162	17	0	1208	12	2837
GRAND TOTAL	**232**	**4237**	**48**	**0**	**4517**	**25**	**110**	**4255**	**61**	**0**	**4426**	**37**	**8943**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	1	0	9	0	10	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:45	3	0	11	0	14	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
08:00	4	1	7	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15	4	1	15	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	1	0	7	0	8	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	6
08:45	3	1	7	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	16	3	72	0	91	0	0	0	0	0	1	0	2	0	3	0	0	0	0	0	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	5	0	7	0	12	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
16:15	1	2	6	0	9	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
16:30	5	0	9	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	3	1	5	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	4	0	6	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:15	3	1	6	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
17:30	3	0	5	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:45	3	1	5	0	9	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	27	5	49	0	81	0	0	2	0	2	0	0	1	0	1	0	0	0	0	0	16
GRAND TOTAL	43	8	121	0	172	0	0	2	0	2	1	0	3	0	4	0	0	0	0	0	26

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Commercial Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15	0	0	5	0	5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	1	0	7	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	1	0	9	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
08:15	2	0	11	0	13	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
08:30	1	1	19	0	21	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
08:45	3	0	11	0	14	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	9	1	67	0	77	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	15

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Commercial Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	4	1	24	0	29	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3
16:15	6	2	21	0	29	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	7
16:30	8	3	30	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
16:45	3	4	31	0	38	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
17:00	4	3	23	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
17:15	5	1	26	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
17:30	6	4	27	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:45	4	1	29	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
SUBTOTAL	40	19	211	0	270	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	40
GRAND TOTAL	**49**	**20**	**278**	**0**	**347**	**1**	**0**	**8**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**55**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	102	1	0	103	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0
07:15	6	96	1	0	103	1	7	0	0	8	0	3	0	0	3	0	0	0	0	0	0
07:30	3	117	2	0	122	1	2	0	0	3	0	4	0	0	4	0	0	0	0	0	3
07:45	12	141	1	0	154	0	5	0	0	5	0	5	0	0	5	0	0	0	0	0	2
08:00	7	138	1	0	146	2	6	0	0	8	0	2	0	0	2	0	0	0	0	0	0
08:15	15	163	2	0	180	0	7	0	0	7	0	4	0	0	4	0	0	0	0	0	0
08:30	9	189	2	0	200	0	13	0	0	13	0	3	0	0	3	0	0	0	0	0	3
08:45	11	185	3	0	199	0	11	0	0	11	0	4	0	0	4	0	0	0	0	0	3
SUBTOTAL	63	1131	13	0	1207	4	55	0	0	59	0	29	0	0	29	0	0	0	0	0	11

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	19	336	3	0	358	0	9	0	0	9	0	3	0	0	3	0	0	0	0	0	1
16:15	18	370	3	0	391	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	1
16:30	19	371	4	0	394	0	5	0	0	5	0	3	0	0	3	0	0	0	0	0	2
16:45	27	372	7	0	406	1	9	0	0	10	0	5	0	0	5	0	0	0	0	0	0
17:00	20	372	1	0	393	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	7
17:15	21	371	8	0	400	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	2
17:30	17	375	4	0	396	1	3	0	0	4	0	2	0	0	2	0	0	0	0	0	0
17:45	22	382	5	0	409	0	5	0	0	5	0	3	0	0	3	0	0	0	0	0	1
SUBTOTAL	163	2949	35	0	3147	2	51	0	0	53	0	22	0	0	22	0	0	0	0	0	14
GRAND TOTAL	**226**	**4080**	**48**	**0**	**4354**	**6**	**106**	**0**	**0**	**112**	**0**	**51**	**0**	**0**	**51**	**0**	**0**	**0**	**0**	**0**	**25**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	2	185	0	0	187	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	1
07:15	5	178	3	0	186	0	13	0	0	13	1	3	0	0	4	0	0	0	0	0	0
07:30	4	182	3	0	189	0	7	1	0	8	0	3	0	0	3	0	0	0	0	0	1
07:45	8	247	3	0	258	0	16	0	0	16	1	3	0	0	4	0	0	0	0	0	1
08:00	5	228	1	0	234	0	11	0	0	11	0	2	0	0	2	0	0	0	0	0	1
08:15	4	304	4	0	312	0	7	0	0	7	1	3	0	0	4	0	0	0	0	0	0
08:30	5	276	7	0	288	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	2
08:45	3	308	5	0	316	0	11	0	0	11	1	2	0	0	3	0	0	0	0	0	1
SUBTOTAL	36	1908	26	0	1970	0	85	1	0	86	4	20	0	0	24	0	0	0	0	0	7

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	12	221	1	0	234	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	4
16:15	11	283	3	0	297	0	8	0	0	8	0	2	0	0	2	0	0	0	0	0	1
16:30	8	264	7	0	279	1	7	1	0	9	0	3	0	0	3	0	0	0	0	0	7
16:45	9	272	5	0	286	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	6
17:00	11	293	2	0	306	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0	2
17:15	8	291	4	0	303	0	8	0	0	8	0	2	0	0	2	0	0	0	0	0	0
17:30	5	275	5	0	285	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	5
17:45	5	272	6	0	283	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	5
SUBTOTAL	69	2171	33	0	2273	1	48	1	0	50	0	23	0	0	23	0	0	0	0	0	30
GRAND TOTAL	**105**	**4079**	**59**	**0**	**4243**	**1**	**133**	**2**	**0**	**136**	**4**	**43**	**0**	**0**	**47**	**0**	**0**	**0**	**0**	**0**	**37**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dundas St E runs E/W

North Approach

	Out	In	Total
Cars	51	26	77
Trucks	0	0	0
Buses	1	2	3
Bicycles	0	0	0
	52	**28**	**80**

Arena Rd

Bicycles	0	0	0	0
Buses	0	0	1	0
Trucks	0	0	0	0
Cars	36	3	12	0
Totals	**36**	**3**	**13**	**0**

East Approach

	Out	In	Total
Cars	725	1178	1903
Trucks	39	43	82
Buses	13	10	23
Bicycles	0	0	0
	777	**1231**	**2008**

Peds: 9

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	2	0	17	**19**
0	9	39	1116	**1164**
0	0	0	17	**17**

Peds: 4

Peds: 6

Dundas St E

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
8	8	0	0	0
725	675	37	13	0
44	42	2	0	0

Peds: 9

West Approach

	Out	In	Total
Cars	1150	718	1868
Trucks	39	37	76
Buses	11	13	24
Bicycles	0	0	0
	1200	**768**	**1968**

Commercial Access

Totals	**7**	**1**	**54**	**0**
Cars	7	1	50	0
Trucks	0	0	4	0
Buses	0	0	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	58	62	120
Trucks	4	2	6
Buses	0	0	0
Bicycles	0	0	0
	62	**64**	**126**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

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

Start Time	North Approach Arena Rd						South Approach Commercial Access						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	4	1	7	0	1	12	1	0	9	0	4	10	9	146	1	0	0	156	5	241	1	0	1	247	425
08:15	4	1	15	0	0	20	2	0	13	0	2	15	15	174	2	0	0	191	5	314	4	0	0	323	549
08:30	2	0	7	0	6	9	1	1	20	0	1	22	9	205	2	0	3	216	5	288	7	0	2	300	547
08:45	3	1	7	0	2	11	3	0	12	0	2	15	11	200	3	0	3	214	4	321	5	0	1	330	570
Grand Total	**13**	**3**	**36**	**0**	**9**	**52**	**7**	**1**	**54**	**0**	**9**	**62**	**44**	**725**	**8**	**0**	**6**	**777**	**19**	**1164**	**17**	**0**	**4**	**1200**	**2091**
Approach %	25	5.8	69.2	0		-	11.3	1.6	87.1	0		-	5.7	93.3	1	0		-	1.6	97	1.4	0		-	
Totals %	0.6	0.1	1.7	0		2.5	0.3	0	2.6	0		3	2.1	34.7	0.4	0		37.2	0.9	55.7	0.8	0		57.4	
PHF	**0.81**	**0.75**	**0.6**	**0**		**0.65**	**0.58**	**0.25**	**0.68**	**0**		**0.7**	**0.73**	**0.88**	**0.67**	**0**		**0.9**	**0.95**	**0.91**	**0.61**	**0**		**0.91**	**0.92**
Cars	12	3	36	0		51	7	1	50	0		58	42	675	8	0		725	17	1116	17	0		1150	1984
% Cars	92.3	100	100	0		98.1	100	100	92.6	0		93.5	95.5	93.1	100	0		93.3	89.5	95.9	100	0		95.8	94.9
Trucks	0	0	0	0		0	0	0	4	0		4	2	37	0	0		39	0	39	0	0		39	82
% Trucks	0	0	0	0		0	0	0	7.4	0		6.5	4.5	5.1	0	0		5	0	3.4	0	0		3.3	3.9
Buses	1	0	0	0		1	0	0	0	0		0	0	13	0	0		13	2	9	0	0		11	25
% Buses	7.7	0	0	0		1.9	0	0	0	0		0	0	1.8	0	0		1.7	10.5	0.8	0	0		0.9	1.2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					9	-					9	-					6	-					4	-	28
% Peds					32.1	-					32.1	-					21.4	-					14.3	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:30:00
To:	18:00:00	To:	17:30:00

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dundas St E runs E/W

North Approach

	Out	In	Total
Cars	43	67	110
Trucks	0	1	1
Buses	0	0	0
Bicycles	0	0	0
	43	**68**	**111**

Arena Rd

Bicycles	0	0	0	0
Buses	0	0	0	0
Trucks	0	0	0	0
Cars	26	2	15	0
Totals	**26**	**2**	**15**	**0**

East Approach

	Out	In	Total
Cars	1593	1245	2838
Trucks	27	24	51
Buses	13	12	25
Bicycles	0	0	0
	1633	**1281**	**2914**

Dundas St E

				Totals
0	0	0	0	**0**
0	0	1	36	**37**
0	12	24	1120	**1156**
0	0	1	18	**19**

Peds: 11

Peds: 15

N
W
E
S

Peds: 11

Peds: 24

Dundas St E

Totals				
0	0	0	0	0
20	20	0	0	0
1525	1486	26	13	0
88	87	1	0	0

West Approach

	Out	In	Total
Cars	1174	1532	2706
Trucks	26	27	53
Buses	12	13	25
Bicycles	0	0	0
	1212	**1572**	**2784**

Totals	21	11	110	0
Cars	20	11	110	0
Trucks	1	0	0	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Commercial Access

South Approach

	Out	In	Total
Cars	141	107	248
Trucks	1	2	3
Buses	0	0	0
Bicycles	0	0	0
	142	**109**	**251**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Count Date: Jun 07, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach Arena Rd						South Approach Commercial Access						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	
16:30	5	0	9	0	1	14	8	3	30	0	4	41	19	379	4	0	2	402	9	274	8	0	7	291	748
16:45	3	1	5	0	2	9	4	4	31	0	6	39	28	386	7	0	0	421	9	282	5	0	6	296	765
17:00	4	0	6	0	2	10	4	3	23	0	8	30	20	381	1	0	7	402	11	299	2	0	2	312	754
17:15	3	1	6	0	6	10	5	1	26	0	6	32	21	379	8	0	2	408	8	301	4	0	0	313	763
Grand Total	**15**	**2**	**26**	**0**	**11**	**43**	**21**	**11**	**110**	**0**	**24**	**142**	**88**	**1525**	**20**	**0**	**11**	**1633**	**37**	**1156**	**19**	**0**	**15**	**1212**	**3030**
Approach %	34.9	4.7	60.5	0		-	14.8	7.7	77.5	0		-	5.4	93.4	1.2	0		-	3.1	95.4	1.6	0		-	
Totals %	0.5	0.1	0.9	0		1.4	0.7	0.4	3.6	0		4.7	2.9	50.3	0.7	0		53.9	1.2	38.2	0.6	0		40	
PHF	**0.75**	**0.5**	**0.72**	**0**		**0.77**	**0.66**	**0.69**	**0.89**	**0**		**0.87**	**0.79**	**0.99**	**0.63**	**0**		**0.97**	**0.84**	**0.96**	**0.59**	**0**		**0.97**	**0.99**
Cars	15	2	26	0		43	20	11	110	0		141	87	1486	20	0		1593	36	1120	18	0		1174	2951
% Cars	100	100	100	0		100	95.2	100	100	0		99.3	98.9	97.4	100	0		97.6	97.3	96.9	94.7	0		96.9	97.4
Trucks	0	0	0	0		0	1	0	0	0		1	1	26	0	0		27	1	24	1	0		26	54
% Trucks	0	0	0	0		0	4.8	0	0	0		0.7	1.1	1.7	0	0		1.7	2.7	2.1	5.3	0		2.1	1.8
Buses	0	0	0	0		0	0	0	0	0		0	0	13	0	0		13	0	12	0	0		12	25
% Buses	0	0	0	0		0	0	0	0	0		0	0	0.9	0	0		0.8	0	1	0	0		1	0.8
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					11	-					24	-					11	-					15	-	61
% Peds					18	-					39.3	-					18	-					24.6	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

Queen Frederica Dr - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	0	108	13	0	121	5	12	37	0	0	49	2	170
08:00 - 09:00	0	116	23	0	139	3	17	58	0	0	75	4	214
BREAK													
16:00 - 17:00	0	72	25	0	97	12	37	128	0	0	165	12	262
17:00 - 18:00	0	117	37	0	154	5	42	139	0	0	181	7	335
GRAND TOTAL	**0**	**413**	**98**	**0**	**511**	**25**	**108**	**362**	**0**	**0**	**470**	**25**	**981**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

Dundix Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	0	0	0	0	0	0	23	0	27	0	50	4	50
08:00 - 09:00	0	0	0	0	0	0	29	0	46	0	75	5	75
BREAK													
16:00 - 17:00	0	0	0	0	0	0	24	0	18	0	42	6	42
17:00 - 18:00	0	0	0	0	0	0	15	0	32	0	47	2	47
GRAND TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**91**	**0**	**123**	**0**	**214**	**17**	**214**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	0	31	1	0	32	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:15	0	15	4	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30	0	29	2	0	31	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45	0	31	5	0	36	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
08:00	0	28	5	0	33	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
08:15	0	24	5	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30	0	34	8	0	42	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
08:45	0	28	5	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	220	35	0	255	0	3	0	0	3	0	1	1	0	2	0	0	0	0	0	8

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
16:00	0	16	4	0	20	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
16:15	0	13	4	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	0	19	7	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
16:45	0	22	10	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:00	0	28	8	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:15	0	27	12	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	35	7	0	42	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:45	0	26	10	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	186	62	0	248	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	17
GRAND TOTAL	0	406	97	0	503	0	4	0	0	4	0	3	1	0	4	0	0	0	0	0	25

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
07:00	3	7	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	4	15	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	2	10	0	0	12	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	1
07:45	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	3	18	0	0	21	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	2
08:15	2	14	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	5	10	0	0	15	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	1
08:45	6	11	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	27	89	0	0	116	0	4	0	0	4	2	2	0	0	4	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
16:00	5	23	0	0	28	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
16:15	9	36	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	13	32	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
16:45	9	37	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	10	42	0	0	52	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:15	11	35	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:30	8	34	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	13	27	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
SUBTOTAL	78	266	0	0	344	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	19
GRAND TOTAL	105	355	0	0	460	0	5	0	0	5	3	2	0	0	5	0	0	0	0	0	25

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundix Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
07:00	3	0	4	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	4	0	4	0	8	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
07:30	7	0	11	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	7	0	8	0	15	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
08:00	3	0	6	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15	12	0	14	0	26	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:30	6	0	11	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45	6	0	15	0	21	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
SUBTOTAL	48	0	73	0	121	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	9

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundix Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	6	0	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	6	0	6	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	3	0	7	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
16:45	9	0	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	6	0	8	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:15	4	0	8	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	3	0	12	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	2	0	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	39	0	50	0	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
GRAND TOTAL	87	0	123	0	210	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	17

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Queen Frederica Dr runs N/S

North Approach

	Out	In	Total
Cars	137	80	217
Trucks	1	4	5
Buses	1	3	4
Bicycles	0	0	0
	139	**87**	**226**

Queen Frederica Dr

Bicycles	0	0	0
Buses	0	1	0
Trucks	0	1	0
Cars	23	114	0
Totals	**23**	**116**	**0**

Peds: 3

Dundix Rd

Bicycles	Buses	Trucks	Cars	Totals	
0	0	0	0	**0**	
0	2	0	27	**29**	
0	0	0	46	**46**	

Peds: 5

Peds: 0

Peds: 4

West Approach

	Out	In	Total
Cars	73	39	112
Trucks	0	0	0
Buses	2	1	3
Bicycles	0	0	0
	75	**40**	**115**

Queen Frederica Dr

Totals	**17**	**58**	**0**
Cars	16	53	0
Trucks	0	4	0
Buses	1	1	0
Bicycles	0	0	0

South Approach

	Out	In	Total
Cars	69	160	229
Trucks	4	1	5
Buses	2	1	3
Bicycles	0	0	0
	75	**162**	**237**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

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

Start Time	North Approach Queen Frederica Dr						South Approach Queen Frederica Dr						East Approach						West Approach Dundix Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00		29	5	0	2	34	3	21		0	2	24					0		3		6	0	1	9	67
08:15		24	5	0	1	29	2	14		0	0	16					0		13		14	0	1	27	72
08:30		35	8	0	0	43	6	12		0	1	18					0		6		11	0	1	17	78
08:45		28	5	0	0	33	6	11		0	1	17					0		7		15	0	2	22	72
Grand Total		**116**	**23**	**0**	**3**	**139**	**17**	**58**		**0**	**4**	**75**					**0**	**0**	**29**		**46**	**0**	**5**	**75**	**289**
Approach %		83.5	16.5	0		-	22.7	77.3		0		-						-	38.7		61.3	0		-	
Totals %		40.1	8	0		48.1	5.9	20.1		0		26						0	10		15.9	0		26	
PHF		**0.83**	**0.72**	**0**		**0.81**	**0.71**	**0.69**		**0**		**0.78**						**0**	**0.56**		**0.77**	**0**		**0.69**	**0.93**
Cars		114	23	0		137	16	53		0		69						0	27		46	0		73	279
% Cars		98.3	100	0		98.6	94.1	91.4		0		92						0	93.1		100	0		97.3	96.5
Trucks		1	0	0		1	0	4		0		4						0	0		0	0		0	5
% Trucks		0.9	0	0		0.7	0	6.9		0		5.3						0	0		0	0		0	1.7
Buses		1	0	0		1	1	1		0		2						0	2		0	0		2	5
% Buses		0.9	0	0		0.7	5.9	1.7		0		2.7						0	6.9		0	0		2.7	1.7
Bicycles		0	0	0		0	0	0		0		0						0	0		0	0		0	0
% Bicycles		0	0	0		0	0	0		0		0						0	0		0	0		0	0
Peds					3	-					4	-					0	-					5	-	12
% Peds					25	-					33.3	-					0	-					41.7	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:45:00
To:	18:00:00	To:	17:45:00

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Queen Frederica Dr runs N/S

North Approach

	Out	In	Total
Cars	149	170	319
Trucks	1	1	2
Buses	0	0	0
Bicycles	0	0	0
	150	**171**	**321**

Queen Frederica Dr

Bicycles	0	0	0
Buses	0	0	0
Trucks	0	1	0
Cars	37	112	0
Totals	**37**	**113**	**0**

Peds: 6

Dundix Rd

				Totals
0	0	0	0	**0**
0	0	0	22	**22**
0	0	0	30	**30**

Peds: 4

Peds: 0

Peds: 5

West Approach

	Out	In	Total
Cars	52	75	127
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	52	**75**	**127**

Totals	**38**	**149**	**0**
Cars	38	148	0
Trucks	0	1	0
Buses	0	0	0
Bicycles	0	0	0

Queen Frederica Dr

South Approach

	Out	In	Total
Cars	186	142	328
Trucks	1	1	2
Buses	0	0	0
Bicycles	0	0	0
	187	**143**	**330**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Count Date: Jun 07, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Queen Frederica Dr						South Approach Queen Frederica Dr						East Approach						West Approach Dundix Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45		22	10	0	1	32	9	37		0	2	46					0		9		2	0	2	11	89
17:00		28	8	0	4	36	10	43		0	0	53					0		6		8	0	1	14	103
17:15		27	12	0	0	39	11	35		0	2	46					0		4		8	0	0	12	97
17:30		36	7	0	1	43	8	34		0	1	42					0		3		12	0	1	15	100
Grand Total		**113**	**37**	**0**	**6**	**150**	**38**	**149**		**0**	**5**	**187**					**0**	**0**	**22**		**30**	**0**	**4**	**52**	**389**
Approach %		75.3	24.7	0		-	20.3	79.7		0		-						-	42.3		57.7	0		-	
Totals %		29	9.5	0		38.6	9.8	38.3		0		48.1						0	5.7		7.7	0		13.4	
PHF		**0.78**	**0.77**	**0**		**0.87**	**0.86**	**0.87**		**0**		**0.88**						**0**	**0.61**		**0.63**	**0**		**0.87**	**0.94**
Cars		112	37	0		149	38	148		0		186						0	22		30	0		52	387
% Cars		99.1	100	0		99.3	100	99.3		0		99.5						0	100		100	0		100	99.5
Trucks		1	0	0		1	0	1		0		1						0	0		0	0		0	2
% Trucks		0.9	0	0		0.7	0	0.7		0		0.5						0	0		0	0		0	0.5
Buses		0	0	0		0	0	0		0		0						0	0		0	0		0	0
% Buses		0	0	0		0	0	0		0		0						0	0		0	0		0	0
Bicycles		0	0	0		0	0	0		0		0						0	0		0	0		0	0
% Bicycles		0	0	0		0	0	0		0		0						0	0		0	0		0	0
Peds					6	-					5	-					0	-					4	-	15
% Peds					40	-					33.3	-					0	-					26.7	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

Arena Rd - Traffic Summary

Hour	North Approach Totals (Includes Cars, Trucks, Buses, Bicycles)						South Approach Totals (Includes Cars, Trucks, Buses, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	11	15	0	0	26	3	1	5	20	0	26	3	52
08:00 - 09:00	12	16	0	0	28	0	1	8	18	0	27	0	55
BREAK													
16:00 - 17:00	10	10	0	0	20	5	2	30	34	0	66	4	86
17:00 - 18:00	9	13	0	0	22	1	1	30	28	0	59	8	81
GRAND TOTAL	**42**	**54**	**0**	**0**	**96**	**9**	**5**	**73**	**100**	**0**	**178**	**15**	**274**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

Dundix Rd - Traffic Summary

Hour	East Approach Totals (Includes Cars, Trucks, Buses, Bicycles)						West Approach Totals (Includes Cars, Trucks, Buses, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	25	1	3	0	29	2	0	2	2	0	4	5	33
08:00 - 09:00	33	1	2	0	36	2	0	6	4	0	10	1	46
BREAK													
16:00 - 17:00	34	7	21	0	62	6	0	2	3	0	5	3	67
17:00 - 18:00	23	2	16	0	41	6	0	2	1	0	3	3	44
GRAND TOTAL	**115**	**11**	**42**	**0**	**168**	**16**	**0**	**12**	**10**	**0**	**22**	**12**	**190**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30	4	7	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	5	3	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	2	7	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	5	2	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	23	31	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
16:00	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:15	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	3	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:45	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:00	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	2	3	0	0	5	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	19	22	0	0	41	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	6
GRAND TOTAL	42	53	0	0	95	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	9

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	0	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	1	1	4	0	6	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:30	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	8	0	8	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
08:00	0	2	5	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	2	4	0	6	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
08:30	1	2	4	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	2	3	0	5	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
SUBTOTAL	2	13	34	0	49	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	3

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	1	6	8	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	8	7	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	1	7	9	0	17	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
16:45	0	9	9	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	7	9	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:15	1	9	8	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	6	6	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:45	0	8	5	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	3	60	61	0	124	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	12
GRAND TOTAL	5	73	95	0	173	0	0	1	0	1	0	0	4	0	4	0	0	0	0	0	15

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundix Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	6	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	7	1	2	0	10	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
07:45	5	0	0	0	5	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:00	7	0	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	4	1	0	0	5	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
08:45	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	55	2	5	0	62	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	4

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundix Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	8	3	4	0	15	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
16:15	10	2	5	0	17	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:30	8	1	6	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	6	1	6	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	5	0	4	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:15	7	1	5	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	6	0	4	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	5	1	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	55	9	37	0	101	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	12
GRAND TOTAL	110	11	42	0	163	1	0	0	0	1	4	0	0	0	4	0	0	0	0	0	16

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Private Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	8	6	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Private Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
16:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	4	4	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
GRAND TOTAL	0	12	10	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	07:30:00
To:	09:00:00	To:	08:30:00

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Arena Rd runs N/S

North Approach

	Out	In	Total
Cars	34	11	45
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	34	**11**	**45**

Arena Rd

Bicycles	0	0	0	0
Buses	0	0	0	0
Trucks	0	0	0	0
Cars	0	21	13	0
Totals	**0**	**21**	**13**	**0**

East Approach

	Out	In	Total
Cars	38	38	76
Trucks	0	0	0
Buses	2	2	4
Bicycles	0	0	0
	40	**40**	**80**

Peds: 1

Private Access

Bicycles	Buses	Trucks	Cars	Totals	
0	0	0	0	**0**	↶
0	0	0	0	**0**	↑
0	0	0	5	**5**	→
0	0	0	5	**5**	↓

Peds: 2

Peds: 1

Dundix Rd

Totals	Cars	Trucks	Buses	Bicycles	
0	0	0	0	0	↷
4	4	0	0	0	↑
1	1	0	0	0	←
35	33	0	2	0	↓

Peds: 1

West Approach

	Out	In	Total
Cars	10	1	11
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	10	**1**	**11**

Arena Rd

Totals	**0**	**7**	**22**	**0**
Cars	0	7	20	0
Trucks	0	0	0	0
Buses	0	0	2	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	27	59	86
Trucks	0	0	0
Buses	2	2	4
Bicycles	0	0	0
	29	**61**	**90**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Arena Rd						South Approach Arena Rd						East Approach Dundix Rd						West Approach Private Access						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:30	4	7	0	0	1	11	0	3	3	0	0	6	8	1	2	0	0	11	0	1	0	0	0	1	29
07:45	5	3	0	0	0	8	0	0	9	0	1	9	6	0	0	0	1	6	0	0	2	0	1	2	25
08:00	2	7	0	0	0	9	0	2	5	0	0	7	7	0	2	0	0	9	0	1	0	0	1	1	26
08:15	2	4	0	0	0	6	0	2	5	0	0	7	14	0	0	0	0	14	0	3	3	0	0	6	33
Grand Total	**13**	**21**	**0**	**0**	**1**	**34**	**0**	**7**	**22**	**0**	**1**	**29**	**35**	**1**	**4**	**0**	**1**	**40**	**0**	**5**	**5**	**0**	**2**	**10**	**113**
Approach %	38.2	61.8	0	0		-	0	24.1	75.9	0		-	87.5	2.5	10	0		-	0	50	50	0		-	
Totals %	11.5	18.6	0	0		30.1	0	6.2	19.5	0		25.7	31	0.9	3.5	0		35.4	0	4.4	4.4	0		8.8	
PHF	**0.65**	**0.75**	**0**	**0**		**0.77**	**0**	**0.58**	**0.61**	**0**		**0.81**	**0.63**	**0.25**	**0.5**	**0**		**0.71**	**0**	**0.42**	**0.42**	**0**		**0.42**	**0.86**
Cars	13	21	0	0		34	0	7	20	0		27	33	1	4	0		38	0	5	5	0		10	109
% Cars	100	100	0	0		100	0	100	90.9	0		93.1	94.3	100	100	0		95	0	100	100	0		100	96.5
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Buses	0	0	0	0		0	0	0	2	0		2	2	0	0	0		2	0	0	0	0		0	4
% Buses	0	0	0	0		0	0	0	9.1	0		6.9	5.7	0	0	0		5	0	0	0	0		0	3.5
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					1	-					1	-					1	-					2	-	5
% Peds					20	-					20	-					20	-					40	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:00:00
To:	18:00:00	To:	17:00:00

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Arena Rd runs N/S

North Approach

	Out	In	Total
Cars	20	51	71
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	20	**51**	**71**

Arena Rd

Bicycles	0	0	0	0
Buses	0	0	0	0
Trucks	0	0	0	0
Cars	0	10	10	0
Totals	**0**	**10**	**10**	**0**

Peds: 5

East Approach

	Out	In	Total
Cars	60	45	105
Trucks	1	1	2
Buses	1	0	1
Bicycles	0	0	0
	62	**46**	**108**

Private Access

Bicycles	Buses	Trucks	Cars	Totals	
0	0	0	0	**0**	↰
0	0	0	0	**0**	↑
0	0	0	2	**2**	→
0	0	0	3	**3**	↓

Peds: 3

Peds: 6

Dundix Rd

	Totals	Cars	Trucks	Buses	Bicycles
↱	**0**	0	0	0	0
↑	**21**	21	0	0	0
←	**7**	7	0	0	0
↓	**34**	32	1	1	0

Peds: 4

West Approach

	Out	In	Total
Cars	5	9	14
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	5	**9**	**14**

Totals	↰ 2	↑ 30	→ 34	↓ 0
Cars	2	30	33	0
Trucks	0	0	1	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Arena Rd

South Approach

	Out	In	Total
Cars	65	45	110
Trucks	1	1	2
Buses	0	1	1
Bicycles	0	0	0
	66	**47**	**113**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Count Date: Jun 07, 2022
Period: 16:00 - 18:00

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

Start Time	North Approach Arena Rd						South Approach Arena Rd						East Approach Dundix Rd						West Approach Private Access						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	2	2	0	0	2	4	1	6	8	0	0	15	9	3	4	0	3	16	0	0	2	0	0	2	37
16:15	2	3	0	0	0	5	0	8	7	0	1	15	11	2	5	0	0	18	0	1	0	0	1	1	39
16:30	3	2	0	0	2	5	1	7	10	0	1	18	8	1	6	0	1	15	0	0	1	0	0	1	39
16:45	3	3	0	0	1	6	0	9	9	0	2	18	6	1	6	0	2	13	0	1	0	0	2	1	38
Grand Total	**10**	**10**	**0**	**0**	**5**	**20**	**2**	**30**	**34**	**0**	**4**	**66**	**34**	**7**	**21**	**0**	**6**	**62**	**0**	**2**	**3**	**0**	**3**	**5**	**153**
Approach %	50	50	0	0		-	3	45.5	51.5	0		-	54.8	11.3	33.9	0		-	0	40	60	0		-	
Totals %	6.5	6.5	0	0		13.1	1.3	19.6	22.2	0		43.1	22.2	4.6	13.7	0		40.5	0	1.3	2	0		3.3	
PHF	**0.83**	**0.83**	**0**	**0**		**0.83**	**0.5**	**0.83**	**0.85**	**0**		**0.92**	**0.77**	**0.58**	**0.88**	**0**		**0.86**	**0**	**0.5**	**0.38**	**0**		**0.63**	**0.98**
Cars	10	10	0	0		20	2	30	33	0		65	32	7	21	0		60	0	2	3	0		5	150
% Cars	100	100	0	0		100	100	100	97.1	0		98.5	94.1	100	100	0		96.8	0	100	100	0		100	98
Trucks	0	0	0	0		0	0	0	1	0		1	1	0	0	0		1	0	0	0	0		0	2
% Trucks	0	0	0	0		0	0	0	2.9	0		1.5	2.9	0	0	0		1.6	0	0	0	0		0	1.3
Buses	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	1
% Buses	0	0	0	0		0	0	0	0	0		0	2.9	0	0	0		1.6	0	0	0	0		0	0.7
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					5	-					4	-					6	-					3	-	18
% Peds					27.8	-					22.2	-					33.3	-					16.7	-	

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**July 25, 2024**		**Prepared Date**	**July 29, 2024**
Database Rev	**iNET**		**Completed By**	**N.T**
Timing Card / Field rev	**-**		**Checked By**	**N.R.L**

Location — **Dixie Road and Dundas Street**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s) (Green+Amber+All Red)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Dixie Road - NBLT Prot. Perm.	7	0	0	3	0	16	19	24
2	Dixie Road - Southbound	10	10	26	4	2.5	64	54	54
3	Dundas Street - EBLT Prot. Perm.	7	0	0	3	0	21	24	18
4	Dundas Street - Westbound	10	10	31	4	2.8	59	63	64
5	Dixie Road - SBLT PROT.	7	0	0	3	2	29	27	27
6	Dixie Road - Northbound	10	10	26	4	2.5	51	46	51
7	Dundas Street - WBLT Prot. Perm.	7	0	0	3	0	13	18	23
8	Dundas Street - Eastbound	10	10	31	4	2.8	67	69	59

System Control
Yes

Semi-Actuated Mode
No

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
6:00 - 9:30	AM	160	3
9:30 - 15:00 19:30 - 00:00	OFF	160	0
15:00 - 19:30	PM	160	0

Intelight 1306 DUNDAS STREET E @ Queen Fredrica Drive/Blundell Road

Phase - Parameter 1-16	Units	Phase 1	Phase 2 -EB	Phase 3	Phase 4 - NB	Phase 5	Phase 6 - WB	Phase 7	Phase 8 - SB
Phase Description*	String								
Walk	Sec	0	10	0	10	0	10	0	10
Ped Clear	Sec	0	17	0	27	0	17	0	27
Min Green	Sec	0	8	0	8	0	8	0	8
Passage	Sec	0.0	3.0	0.0	3.0	0.0	0.0	0.0	3.0
Maximum 1	Sec	0	39	0	25	0	39	0	25
Maximum 2	Sec	0	39	0	25	0	39	0	25
Yellow Change	Sec	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
Red Clearance	Sec	0.0	3.0	0.0	4.0	0.0	3.0	0.0	4.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before 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	37	96	101	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	107	0	53	0	107	0	53
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	99	0	61	0	99	0	61
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	107	0	53	0	107	0	53
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	12345678901234567890123456789	12345678901234567890123456789	12345678901234567890123456789	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	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								

Intelight 1305 DUNDAS STREET E @ Arena Road/Private Access

Phase - Parameter 1-16	Units	Phase 1 -WBL	Phase 2 -E/W	Phase 3	Phase 4 - N/S	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	19	0	29	0	0	0	0
Min Green	Sec	5	8	0	8	0	0	0	0
Passage	Sec	2.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	10	36	0	25	0	0	0	0
Maximum 2	Sec	10	36	0	25	0	0	0	0
Yellow Change	Sec	3.0	4.0	3.0	3.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.5	0.0	4.5	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	phaseNotOn	redClear	other	phaseNotOn	other	other	other	other
[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 13:Actuated Rest In Walk		0:Enabled Phase 5:Non Lock Detector Memory				
[P2] Ring	Ring	1	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	19	96	114	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	phaseOmitted	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	109	0	51	0	0	0	0
Split 1 - Coord	Enum	False	True	False	False	False	False	False	False
Split 1 - Coord Phase Options*	Bit		0: Reference Point						
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	16	85	0	59	0	0	0	0
Split 2 - Coord	Enum	False	True	False	False	False	False	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	13	96	0	51	0	0	0	0
Split 3 - Coord	Enum	False	True	False	False	False	False	False	False
Split 3 - Coord Phase Options*	Bit		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	123456789012345678901234567890	123456789012345678901234567890	123456789012345678901234567890	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	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								

Appendix C

Dundas Bus Rapid Transit Preliminary Detailed Design

DRAFT PRELIMINARY PLAN

DRAFT PRELIMINARY PLAN

LEGEND

PROPOSED BRT LANE		PROPOSED SIDEWALK	
PROPOSED BRT STATION		PROPOSED CYCLE TRACK	
EXISTING ROW		PROPOSED MUP	
MISSISSAUGA OP 42m ROW		APPROXIMATE GRADING LIMITS	
		PROPOSED RETAINING WALL	

MISSISSAUGA

AECOM

DUNDAS BRT
MISSISSAUGA EAST
CORRIDOR DESIGN

KIRWIN AVE. TO ETOBICOKE CREEK
DRAFT 10% ROLL PLAN
SECTION 1 OF 2

20m 0m 20m

DUNDAS BRT
MISSISSAUGA EAST
CORRIDOR DESIGN

KIRWIN AVE. TO ETOBICOKE CREEK
DRAFT 10% ROLL PLAN
SECTION 1 OF 2

20m 0m 20m

MISSISSAUGA

AECOM

LEGEND
PROPOSED BRT LANE
PROPOSED BRT STATION
EXISTING ROW
MISSISSAUGA OP 42m ROW
PROPOSED SIDEWALK
PROPOSED CYCLE TRACK
PROPOSED MUP
APPROXIMATE GRADING LIMITS
PROPOSED RETAINING WALL

LEGEND

PROPOSED BRT LANE	PROPOSED SIDEWALK
PROPOSED BRT STATION	PROPOSED CYCLE TRACK
EXISTING ROW	PROPOSED MUP
MISSISSAUGA OP 42m ROW	APPROXIMATE GRADING LIMITS
	PROPOSED RETAINING WALL

MISSISSAUGA

AECOM

DUNDAS BRT
MISSISSAUGA EAST
CORRIDOR DESIGN

KIRWIN AVE. TO ETOBICOKE CREEK
DRAFT 10% ROLL PLAN
SECTION 2 OF 2

20m 0m 20m

DUNDAS BRT
MISSISSAUGA EAST
CORRIDOR DESIGN

KIRWIN AVE. TO ETOBICOKE CREEK
DRAFT 10% ROLL PLAN
SECTION 2 OF 2

20m 0m 20m

MISSISSAUGA

AECOM

LEGEND

PROPOSED BRT LANE	PROPOSED SIDEWALK
PROPOSED BRT STATION	PROPOSED CYCLE TRACK
EXISTING ROW	PROPOSED MUP
MISSISSAUGA OP 42m ROW	APPROXIMATE GRADING LIMITS
	PROPOSED RETAINING WALL

Appendix D

Background Development Trip Generation Figures and E-mail Correspondence

Nasteha Abdullahi

From: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Sent: July 25, 2024 9:06 AM
To: Nasteha Abdullahi
Cc: Tyrone Dollano
Subject: RE: 2022-050 1225 Dundas St Mississauga Data Request

Good Morning Nasteha,

Below are the updated recommended growth rates to be used along Dundas Street, these rates are compounded annually from existing to 2026, 2026 to 2031 and 2031 to 2035.

Dundas Street

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

	Compounded Annual Growth from 2026 to 2031	
	EB	WB
AM Peak	0.0%	0.0%
PM Peak	0.0%	0.0%

	Compounded Annual Growth from 2031 to 2035	
	EB	WB
AM Peak	0.0%	1.0%
PM Peak	0.5%	0.0%

Regards,

MISSISSAUGA

From: Tyler Xuereb
To: Nasteha Abdullahi
Cc: Michelle Chen; Mark Crockford
Subject: RE: 2022-050 1225 Dundas St Mississauga Data Request
Date: Thursday, June 2, 2022 1:56:28 PM
Attachments: image001.png
image002.png

Hi Nasteha,

Below are the recommended growth rates to be used along Dundas Street for your study.

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

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

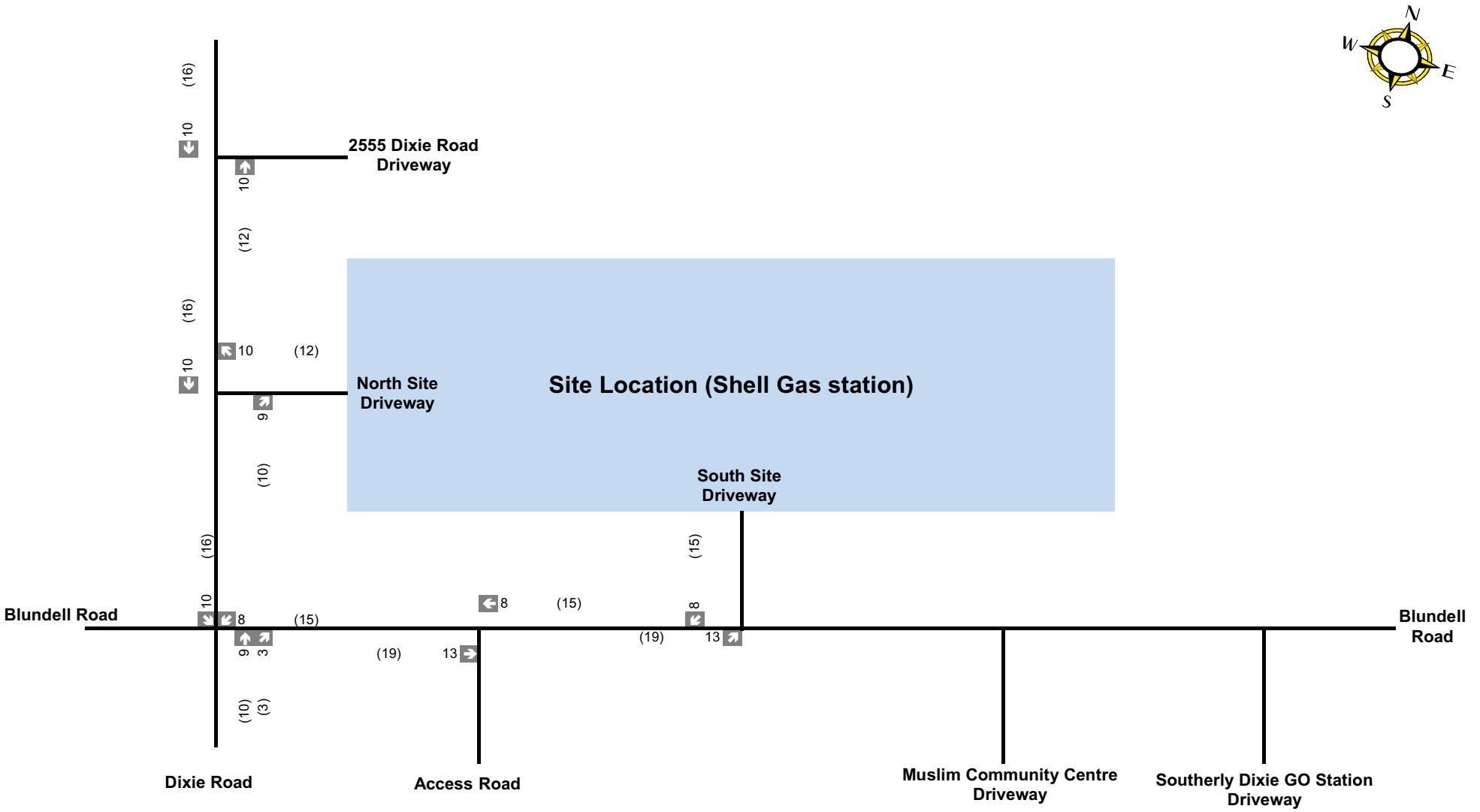
Rates from 2026 to 2027 show a 0.0% growth due to the lane reductions along Dundas Street as a result of BRT implementation.

Regards,

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

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

From: Nasteha Abdullahi <nasteha.abdullahi@cghtransportation.com>
Sent: Thursday, June 2, 2022 10:48 AM



wsp

Legend

A.M. Peak Hour Traffic Volumes

(##) P.M. Peak Hour Traffic Volumes

Figure 4-2

Net Site-Generated Traffic Volumes

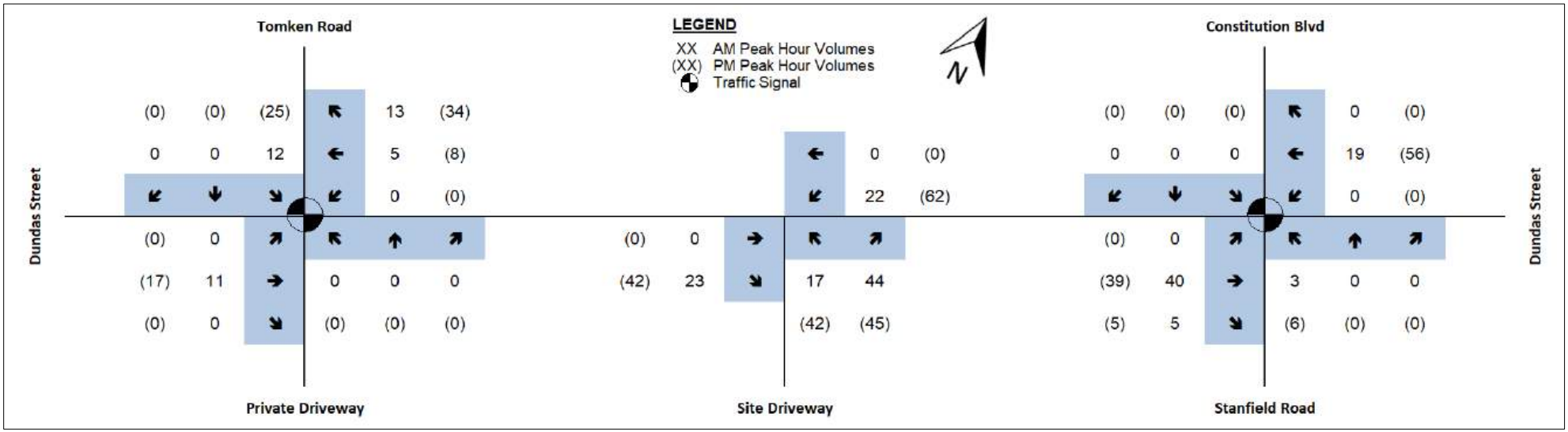


Figure 11 2026 Site Trip Volumes

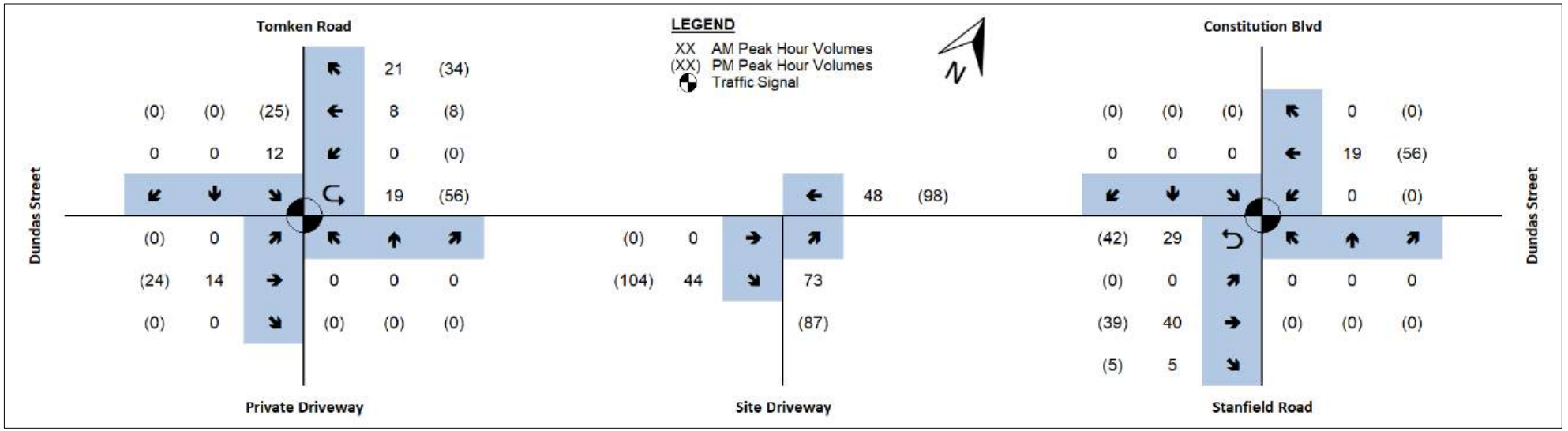


Figure 12 2031 Site Trip Volumes

Appendix E

Mode Shares and E-mail Correspondence

From: Michelle Chen
To: Norbert Orzel
Cc: Mark Crockford; Kate Vassilyev
Subject: RE: Mode Share Targets in the City of Mississauga
Date: Wednesday, June 8, 2022 3:45:00 PM
Attachments: image001.png
image004.png

Hi Norbert,

Based on the TOR comments from the City, the Dundas BRT study completion is anticipated to be completed this year (2022) with the design. It is anticipated that the construction commencement will be in 2024.
Also, the Dundas Bus Rapid Transit Mississauga East Project Live Meeting – January 27, 2022, 1:15:15 mentioned that if successfully getting the funding, the construction will occur between 2024 and 2027.
https://www.metrolinxengage.com/en/content/dundas-bus-rapid-transit-mississauga-east-project-live-meeting-%E2%80%93-january-27-2022
Therefore, we assumed that it will be completed in 2027.

After discussing with our client, the full buildout year 2028 was more in line with their schedule. Therefore, the horizon year would be the base year 2022, followed by a full buildout future horizon of 2028, and a 5-years beyond full buildout future horizon of 2028.
The applied mode shares provided in the previous email will be used for 2028 (full buildout year).

Regards,

Michelle

From: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Sent: Wednesday, June 8, 2022 11:51 AM
To: Michelle Chen <michelle.chen@cghtransportation.com>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Michelle,

I'm okay with your suggested mode shares. One additional point I wanted to make is in regards to the Dundas BRT. My understanding is that the BRT would not be built by 2027 and as such I'm just wondering where did you get assumption that it would be built by 2027?

Thanks, Norbert

From: Michelle Chen <michelle.chen@cghtransportation.com>
Sent: Wednesday, June 8, 2022 11:12 AM

To: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Norbert,

Thanks for your input and suggestions. We've looked at the existing (2016) TTS data. Please see the table below.

Table 5: 2016 TTS Mode Shares

Travel Mode	2016 Mode Shares (TTS)
Auto Driver	63%
Auto Passenger	16%
Transit	14%
Cycling	0%
Walking	7%
Total	**100%**

It is noted that the 2016 TTS Transit share for the area in question has already reached the 2027 mode share targets that we calculated for the whole Region. (44% of sustainable (non-auto driver) mode share, consisting of approximately 17% of carpool, 14% of transit, 9% of active transportation, and 4% of others)

From the mode share targets shown in the Peel Region's Sustainable Transportation Strategy Development of Mode Share Targets (2018)), transit will increase by approximately 6% and cycling will increase approximately 2% from 2011 to 2041.
Because the development is located on Dundas Street, and the future BRT will be completed by 2027, it is expected that the cycling and transit will increase more than the % increase for region.

Mode Share in AM Peak Period	Baseline 2011	2041 'Vision'
Driving	62.6%	49.7%
Walking	6.8%	9.1%
Cycling	0.3%	2.0%
Transit	10.8%	17.0%
Carpool	15.2%	17.9%
Other	4.3%	4.3%
Sustainable Modes	**37.4%**	**50.3%**

We are thinking about shifting 6% from auto driver to transit and 2% from auto driver to cycling and using the mode share shown below. Please confirm if you agree with the applied mode shares.

Table 6: Applied Mode Shares

Travel Mode	Applied Mode Shares
Auto Driver	55%
Auto Passenger	16%
Transit	20%
Cycling	2%
Walking	7%
Total	**100%**

Regards,

Michelle Chen, EIT
CGH Transportation Inc.
P:343-777-2426
E: michelle.chen@CGHTransportation.com

From: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Sent: Tuesday, June 7, 2022 2:44 PM
To: Michelle Chen <michelle.chen@cghtransportation.com>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Michelle,

I have reviewed the data you provided and while I don't have a concerns with the modal split values you are proposing to use I was wondering if you have reviewed existing (2016) Transportation Tomorrow Survey (TTS) data to look at existing travel behaviours in the area? The Regional values represent targets for the Region as a whole which may not be reflective of the area where the development is located, specifically the proposed development is located along Dundas St. which may experience higher levels of transit usage as compared to Region wide target values. I would suggest you review the existing TTS data to determine if the Regional target values are appropriate for this area. Using the TTS data you may also be able to decipher different values between commercial/ residential trips and also different values for different time periods of the day.

Thanks,

Norbert

From: Michelle Chen <michelle.chen@cghtransportation.com>
Sent: Thursday, June 2, 2022 10:42 AM
To: Norbert Orzel <Norbert.Orzel@mississauga.ca>

Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Norbert,

- The horizon year: The base year 2022, followed by a full buildout future horizon of 2027, and a 5-years beyond full buildout future horizon of 2027
- Yes, we will estimate person trip generation and apply the mode split
- Yes, it should be 44% sustainable mode share. It is interpolations from the projection to get the mode share for 2027. Please see the table shown below (from Peel Region's Sustainable Transportation Strategy Development of Mode Share Targets (2018)).

Mode Share in AM Peak Period	Baseline 2011	2041 'Vision'
Driving	62.6%	49.7%
Walking	6.8%	9.1%
Cycling	0.3%	2.0%
Transit	10.8%	17.0%
Carpool	15.2%	17.9%
Other	4.3%	4.3%
Sustainable Modes	**37.4%**	**50.3%**

Thank you,

Michelle

From: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Sent: Thursday, June 2, 2022 10:25 AM
To: Michelle Chen <michelle.chen@cghtransportation.com>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Michelle,

Thanks for your email. I have a few comments and questions in regards to your email:

-What is the horizon year of your analysis? The Region of Peel's mode split target is a long term goal and is identified for the AM Peak Period and as such it may not be appropriate to assume those rates for your application if the analysis horizon year is more short term.
-In terms of your trip generation process will you be developing person trips generated from the proposed development and applying the mode split adjustments on those numbers?
-I'm assuming from your email below that you meant 44% sustainable mode share and not 56% (i.e. 56% would be the auto driver split)? How were those numbers generated?

Thanks,

Norbert

From: Michelle Chen <michelle.chen@cghtransportation.com>
Sent: Wednesday, June 1, 2022 5:11 PM
To: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>
Subject: Mode Share Targets in the City of Mississauga

Hi Norbert,

CGH has been retained to prepare a Traffic Impact Study for a property in eastern Mississauga at 1225 Dundas Street East.
Peel Region's Sustainable Transportation Strategy Development of Mode Share Targets (2018) is aiming for 50% of sustainable (non-auto driver) mode share in 2041, consisting of approximately 18% of carpool, 17% of transit, 11% of active transportation, and 4% of others. We would like to confirm whether interpolations from this projection could be applied to the proposed development. Could 56% of sustainable (non-auto driver) mode share, consisting of approximately 17% of carpool, 14% of transit, 9% of active transportation, and 4% of others be applied to the proposed development? Are there any differences between mode share for residential and commercial?

Regards,

Michelle Chen, EIT
CGH Transportation Inc.
P:343-777-2426
E: michelle.chen@CGHTransportation.com

Appendix F

The Synergy Trip Calculation

Project Name:	2022-50
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	8	8	1.00	5	5
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	31	31	1.00	64	64
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		1	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	13	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	1		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	7	8	7	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	30	31	30	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	4	5	4	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	63	64	63	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	2022-050
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	17	17	1.00	18	18
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	64	64	1.00	48	48
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		5	1	5	1
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	20	10	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	3	0
Retail	0		0	0	29	0
Restaurant	0	9		0	10	0
Cinema/Entertainment	0	1	0		3	0
Residential	0	2	0	0		0
Hotel	0	0	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	2	15	17	15	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	5	59	64	59	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	5	13	18	13	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	46	48	46	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Appendix G

TTS 2016 Zone 3669 Data

Fri Jun 03 2022 14:39:27 GMT-0400 (Eastern Daylight Time) - Run Time: 2676ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
(2006 GTA zone of destination - gta06_dest In 3669
and
Primary travel mode of trip - mode_prime In D
and
Start time of trip - start_time In 700-1000)

Trip 2016
Table:

	3669
68	8
128	18
147	14
271	25
285	32
308	47
309	18
312	4
324	36
336	10
339	28
439	19
2564	19
3344	13
3436	41
3604	15
3607	7
3608	12
3610	16
3622	14
3638	7
3641	27
3642	69
3643	14
3646	27
3649	13
3651	8
3653	60
3658	48
3660	20
3667	8
3668	83
3669	423
3673	12
3674	214
3675	70
3677	8
3678	72
3681	35
3689	12
3690	50
3709	12
3714	22
3716	15
3812	5
3841	8
3842	18
3844	19
3853	13
3861	23
3863	80
3874	26
8904	11

Fri Jun 03 2022 14:39:41 GMT-0400 (Eastern Daylight Time) - Run Time: 2602ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
(2006 GTA zone of origin - gta06_orig In 3669
and
Primary travel mode of trip - mode_prime In D
and
Start time of trip - start_time In 700-1000)

Trip 2016
Table:

	3669
36	20
56	10
67	16
68	8
93	16
147	14
210	8
211	37
218	12
269	9
270	41
290	15
292	7
296	34
308	65
309	31
311	33
312	20
313	50
322	33
323	17
325	6
326	18
332	42
336	10
358	36
361	19
371	23
373	15
387	19
391	37
439	19
456	13
2236	46
2366	17
2400	34
2562	10
3323	18
3361	6
3385	12
3494	38
3601	8
3603	13
3605	24
3608	17
3610	16
3612	5
3626	22
3627	75
3632	34
3635	20
3645	22
3649	79
3650	27
3653	18
3654	43
3658	4
3659	11
3660	34
3661	33
3662	11
3663	11
3666	5
3668	46
3669	423
3670	59
3672	4
3673	44
3674	149
3675	67
3677	8
3678	24
3680	63
3692	18
3693	21
3698	99
3702	90
3703	8
3705	23
3706	7
3707	29
3709	8
3710	67
3711	10
3715	22
3719	19
3721	108
3831	10
3841	62
3842	58
3844	19
3846	69
3847	7
3851	39
3853	13
3857	10
3861	46
3863	11
3874	56
4024	33
4027	11
4035	46
4040	4
4041	46
4126	22
4185	30
4196	20
5142	28
6129	14
6258	46
7302	14

Fri Jun 03 2022 14:38:33 GMT-0400 (Eastern Daylight Time) - Run Time: 2379ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
(2006 GTA zone of destination - gta06_dest In 3669
and
Primary travel mode of trip - mode_prime In D
and
Start time of trip - start_time In 1500-1800)

Trip 2016
Table:

	3669
43	10
45	14
56	10
57	20
65	7
69	18
89	10
110	41
147	14
210	8
211	18
222	11
285	32
290	15
292	7
295	11
296	34
309	25
311	33
313	40
323	33
326	10
332	42
336	27
351	10
371	12
379	13
386	14
387	19
388	25
391	37
403	25
439	19
465	16
2063	25
2082	7
2109	17
2236	46
2366	17
2400	34
2422	4
2562	10
2656	22
2702	28
3323	18
3339	12
3361	6
3364	18
3419	13
3429	9
3480	24
3494	38
3496	34
3605	24
3608	17
3610	30
3612	5
3613	11
3621	17
3626	10
3627	75
3635	43
3639	15
3649	59
3653	9
3654	70
3655	32
3656	10
3658	4
3660	39
3661	56
3664	13
3666	11
3667	12
3668	36
3669	195
3674	152
3675	37
3680	29
3682	28
3685	17
3686	69
3688	7
3692	18
3696	17
3698	65
3699	19
3701	42
3703	34
3705	23
3709	8
3710	67
3713	22
3715	37
3717	14
3720	16
3721	66
3816	44
3831	10
3834	11
3841	35
3842	58
3844	19
3848	18
3851	18
3857	54
3858	10
3860	22
3861	48
3862	11
3863	33
3874	35
3876	50
4005	21
4024	33
4027	11
4041	46
4069	11
4126	22
4196	20
5112	12
5142	28
6258	46
7572	4

Fri Jun 03 2022 14:37:20 GMT-0400 (Eastern Daylight Time) - Run Time: 2553ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
(2006 GTA zone of origin - gta06_orig In 3669
and
Primary travel mode of trip - mode_prime In D
and
Start time of trip - start_time In 1500-1800)

Trip 2016
Table:

	3669
128	18
147	14
211	28
271	25
309	17
323	36
345	28
439	19
1171	14
3151	11
3324	50
3339	12
3344	13
3479	9
3602	4
3604	15
3610	11
3619	31
3632	18
3635	29
3639	13
3641	14
3642	38
3649	39
3651	10
3653	103
3654	78
3655	10
3656	14
3660	25
3661	41
3668	15
3669	195
3671	10
3673	12
3674	74
3675	32
3680	13
3682	9
3686	69
3693	7
3698	14
3701	27
3703	16
3709	42
3714	22
3716	15
3812	5
3841	8
3844	19
3848	18
3857	37
3858	16
3859	23
3860	11
3861	42
3863	58
3874	18
3879	7
4005	15
4193	10

Appendix H

Traffic Control Signal Warrants

Access #1 @ Arena Rd
2028 FT

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	101	14%	14%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	32	19%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	80	11%	11%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	21	28%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Access #1 @ Arena Rd
2033 FT

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	101	14%	14%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	32	19%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	80	11%	11%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	21	28%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Access #2 @ Dundix Rd
2028 FT

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	80	11%	11%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	29	17%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	61	8%	0%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	0	0%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Access #2 @ Dundix Rd
2033 FT

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	80	11%	11%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	29	17%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	61	8%	0%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	0	0%		

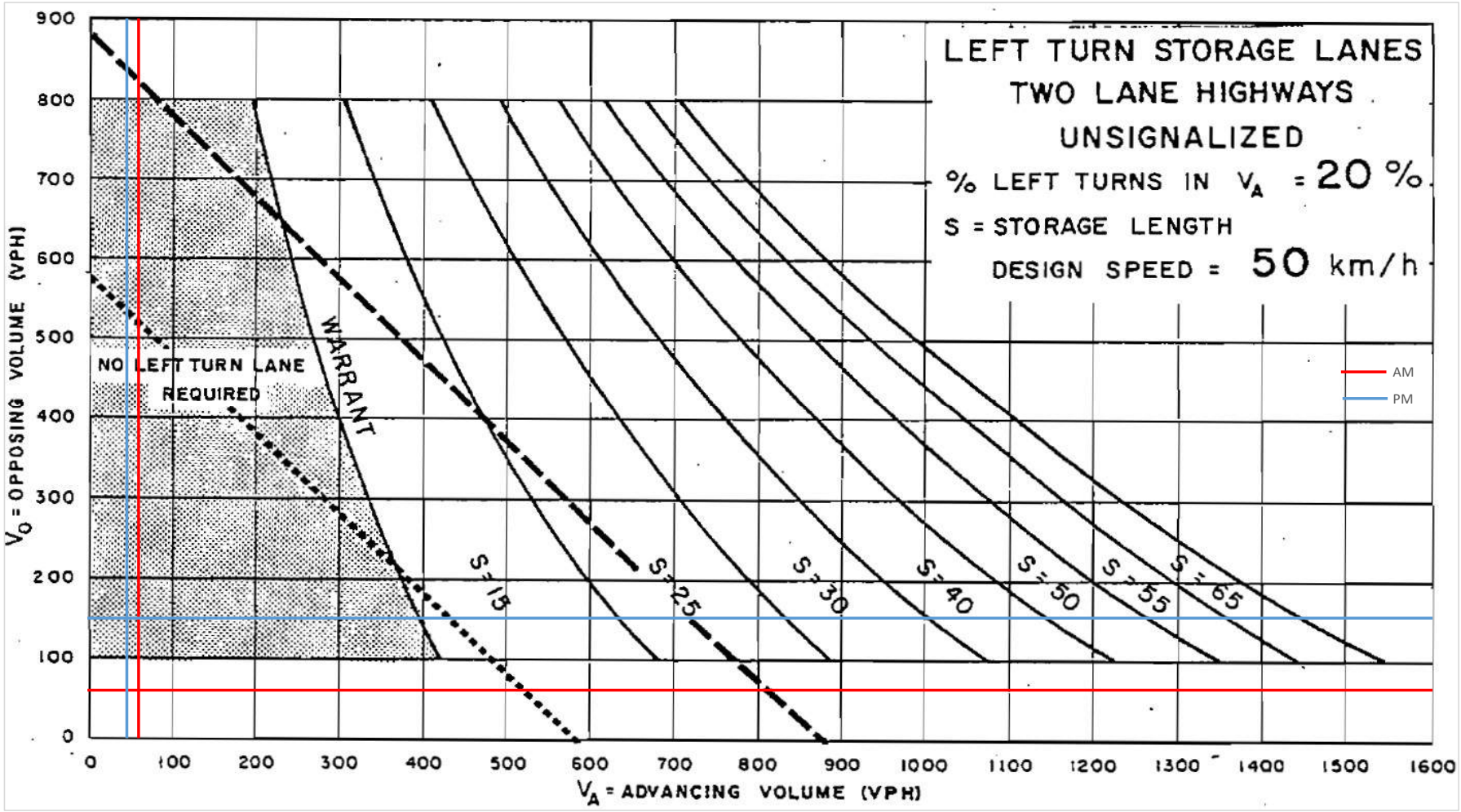
Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Appendix I

Left Turn Lane Warrants

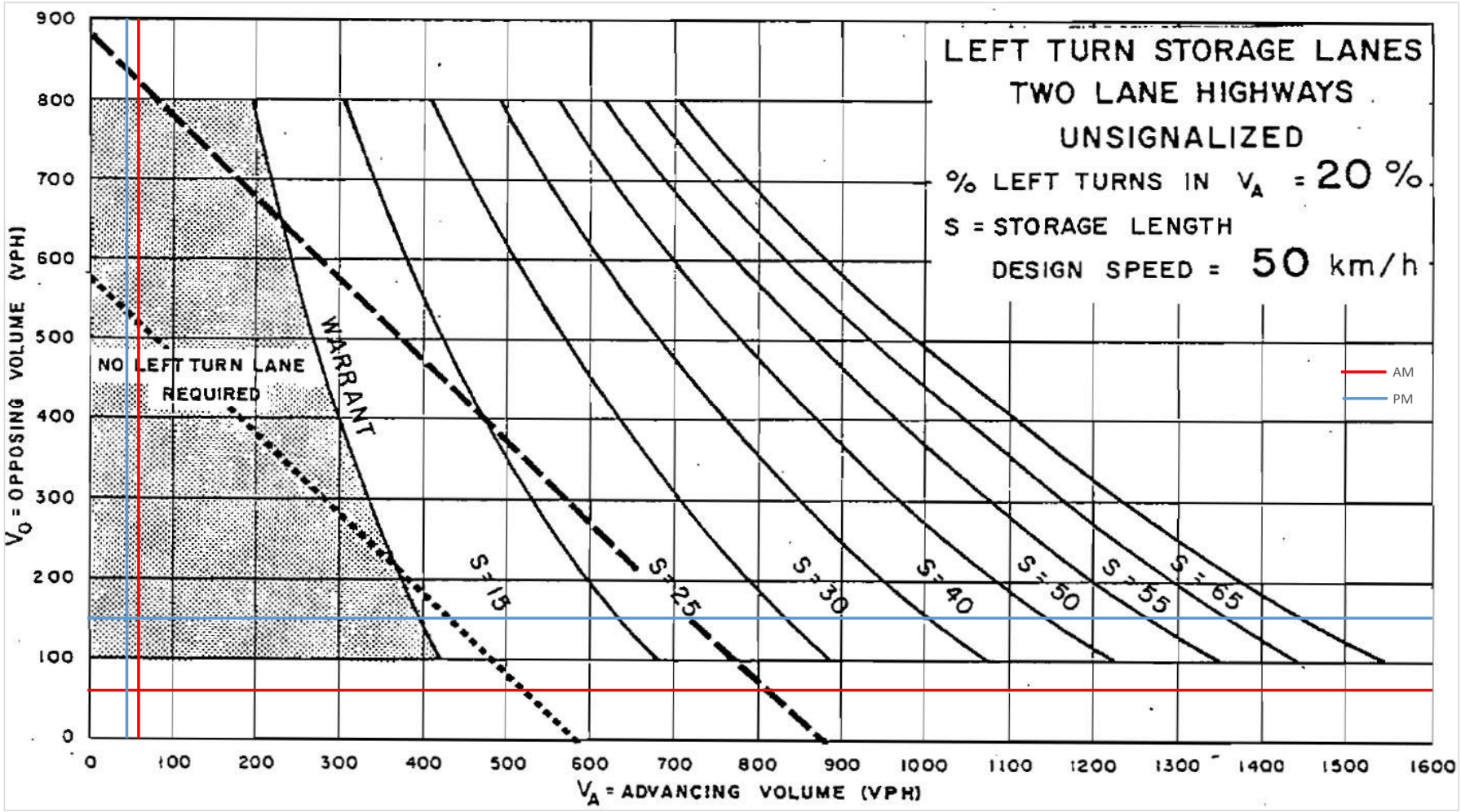
Site Access #2 and Dundix Road

Design Speed	Westbound Left				Yes												
50 km/h		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing	
	AM	0	58	0	7	40	0	0	0	45	0	0	0	13.0%	46	58	
	PM	0	49	0	19	69	0	0	0	31	0	0	0	15.9%	82	49	


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 20 %
S = STORAGE LENGTH
DESIGN SPEED = 50 km/h
NO LEFT TURN LANE REQUIRED
WARRANT
S=15
S=25
S=30
S=40
S=50
S=55
S=65
AM
PM
V_O = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

Site Access #2 and Dundix Road

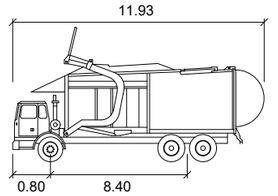
Design Speed	Westbound Left				Yes												
50 km/h		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing	
	AM	0	58	0	7	40	0	0	0	45	0	0	0	13.0%	46	58	
	PM	0	49	0	19	69	0	0	0	31	0	0	0	15.9%	82	49	


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 20 %
S = STORAGE LENGTH
DESIGN SPEED = 50 km/h
NO LEFT TURN LANE REQUIRED
WARRANT
S=15
S=25
S=30
S=40
S=50
S=55
S=65
AM
PM
V_O = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

Appendix J

Turning Template Drawings

Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
04	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

ARCHITECT:

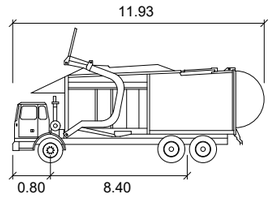
SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
Garbage Inbound Movements

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	001	04

Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
04	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

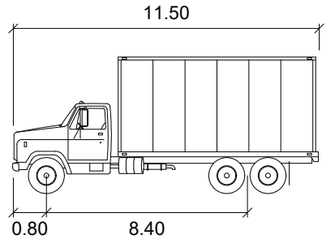
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
Garbage Outbound Movements

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC
PROJECT NO:	DRAWING NO:		REVISION:
2022-050	002		04

Notes:



HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
04	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

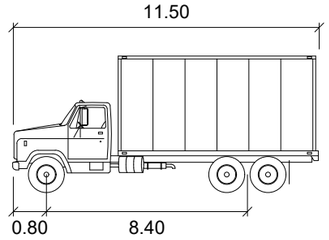
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
HSU Inbound Movements

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC
PROJECT NO:	DRAWING NO:		REVISION:
2022-050	003		04

Notes:



HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
04	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

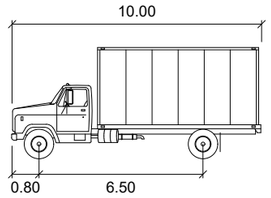
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
HSU Inbound Movements

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC
PROJECT NO:	DRAWING NO:		REVISION:
2022-050	004		04

Notes:



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
04	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

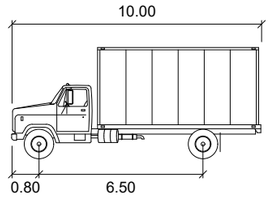
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
MSU Inbound Movements (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC
PROJECT NO:	DRAWING NO:		REVISION:
2022-050	005		04

Notes:



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
04	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

ARCHITECT:

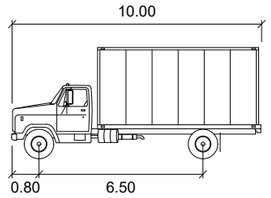
SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
MSU Inbound Movements (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	006	04

Notes:



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
04	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
MSU Outbound Movements (1)

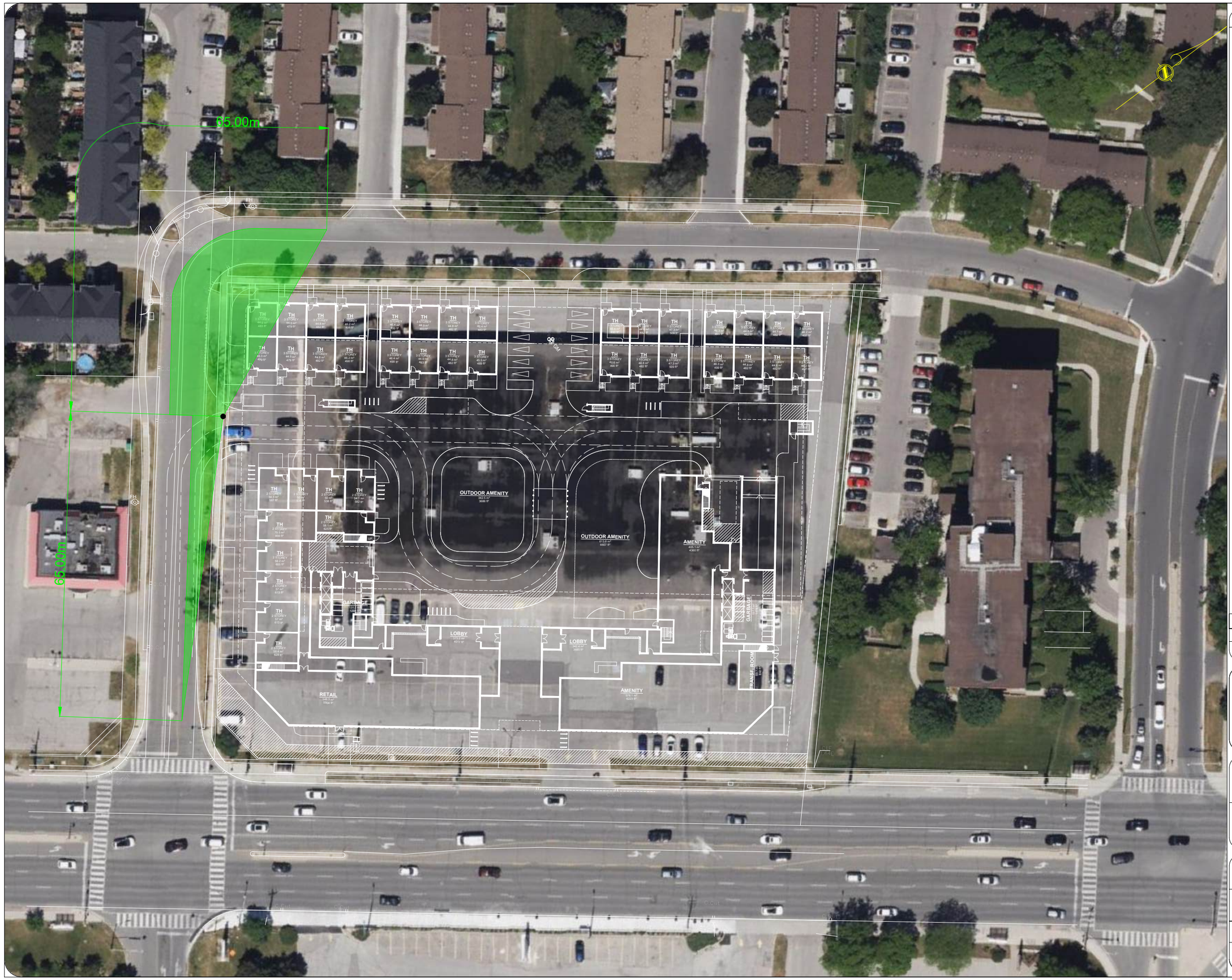
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	007	04


Sidewalk
Edge of Asphalt
℄ OF ROAD
Sidewalk
Edge of Asphalt
Sidewalk
EOA
Steel Edge
Conc.
MSU
STAC-2017 (CA)
MSU
STAC-2017 (CA)
OUTDOOR AMENITY
342.5 m²
3686 ft²
OUTDOOR AMENITY
613.8 m²
6607 ft²
AMENITY
405.1 m²
4360 ft²
GARBAGE
120.3 m²
1295 ft²
GARBAGE
14.5 m²
156 ft²
LOBBY
373.2 m²
4017 ft²
LOBBY
342.4 m²
3685 ft²
PARKING
PARKING
PARKING
PARKING
PARKING
RETAIL
548.5 m²
5904 ft²
AMENITY
578.1 m²
6223 ft²
TRANSF. ROOM
59.7 m²
642 ft²
BICYCLE PARKING
TH
3 STOREY
44.9 m²
483 ft²
TH
2 STOREY
54.5 m²
587 ft²
TH
2 STOREY
50 m²
538 ft²
TH
2 STOREY
54.1 m²
582 ft²
TH
2 STOREY
58.1 m²
625 ft²
TH
2 STOREY
79.5 m²
856 ft²
TH
2 STOREY
56.2 m²
605 ft²
TH
2 STOREY
57 m²
613 ft²
TH
2 STOREY
56.4 m²
608 ft²
Chain Link Fence
Sidewalk
℄ OF ROAD
Edge of Asphalt
Sidewalk
℄ OF ROAD
MH
CB
LS
HP
BV
Sign
C.Cut
CLF
1.67E
1.64E
FH
123.00
122.03
122.11
121.09

Appendix K

Sightline Calculations



Notes:

LEGEND

Stopping Sight Distace: **65m**

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

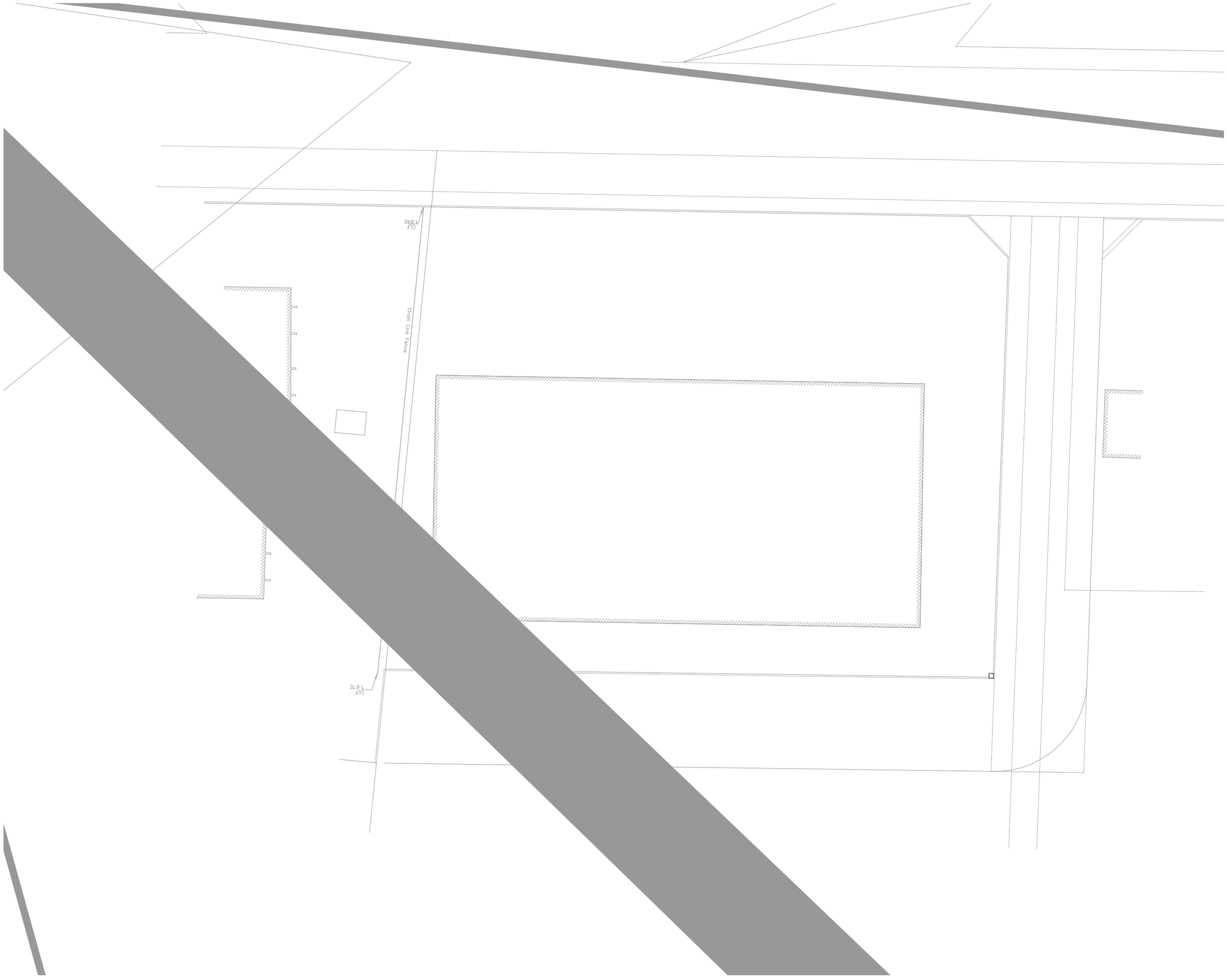
ARCHITECT:

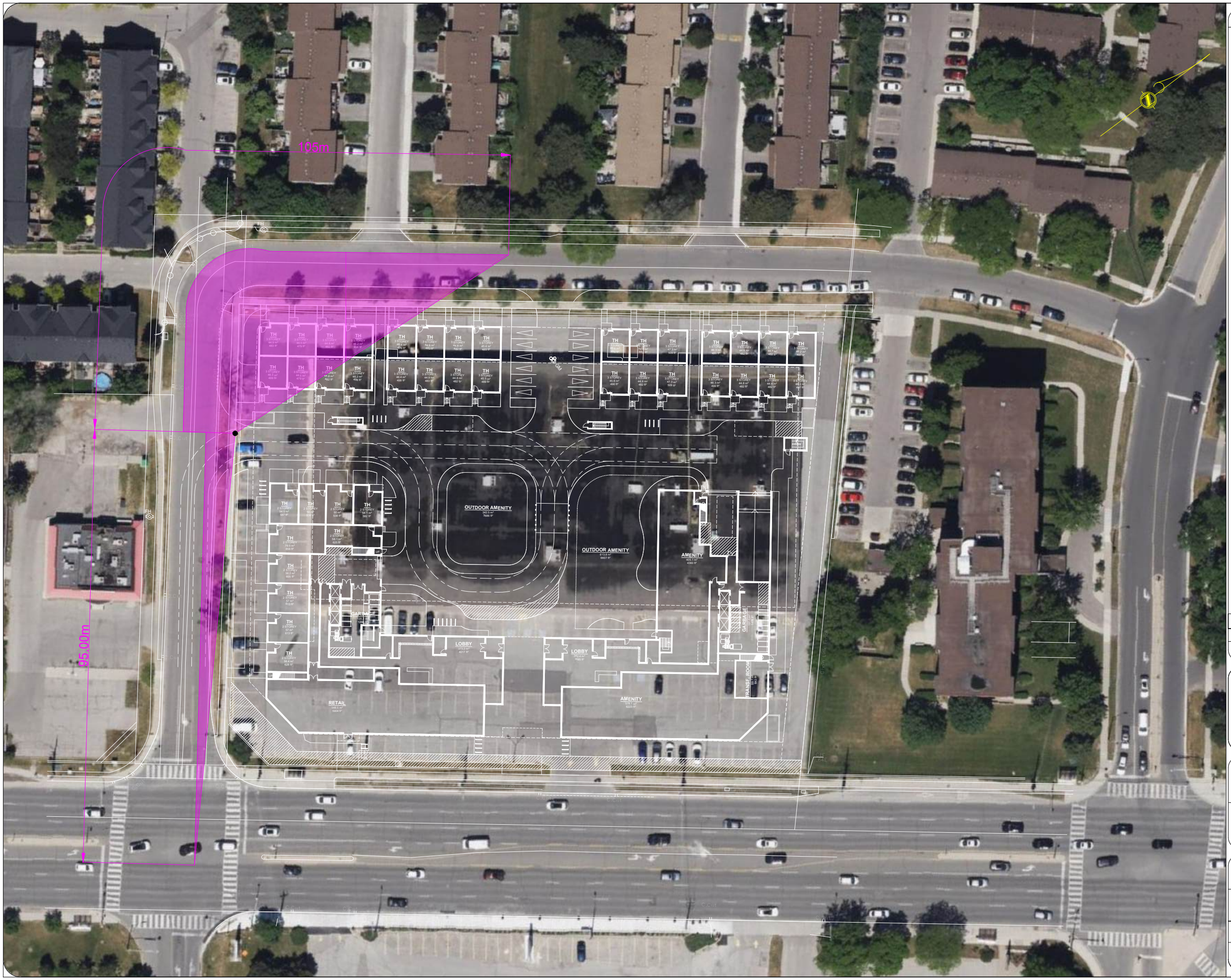
SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis - Access 1
Stopping Sight Distance (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	001	02


Chain Link Fence
GLF
71.67E



Notes:

LEGEND

Departure Sight Distance:
Right Turn: **95m**
Left Turn: **105m**

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

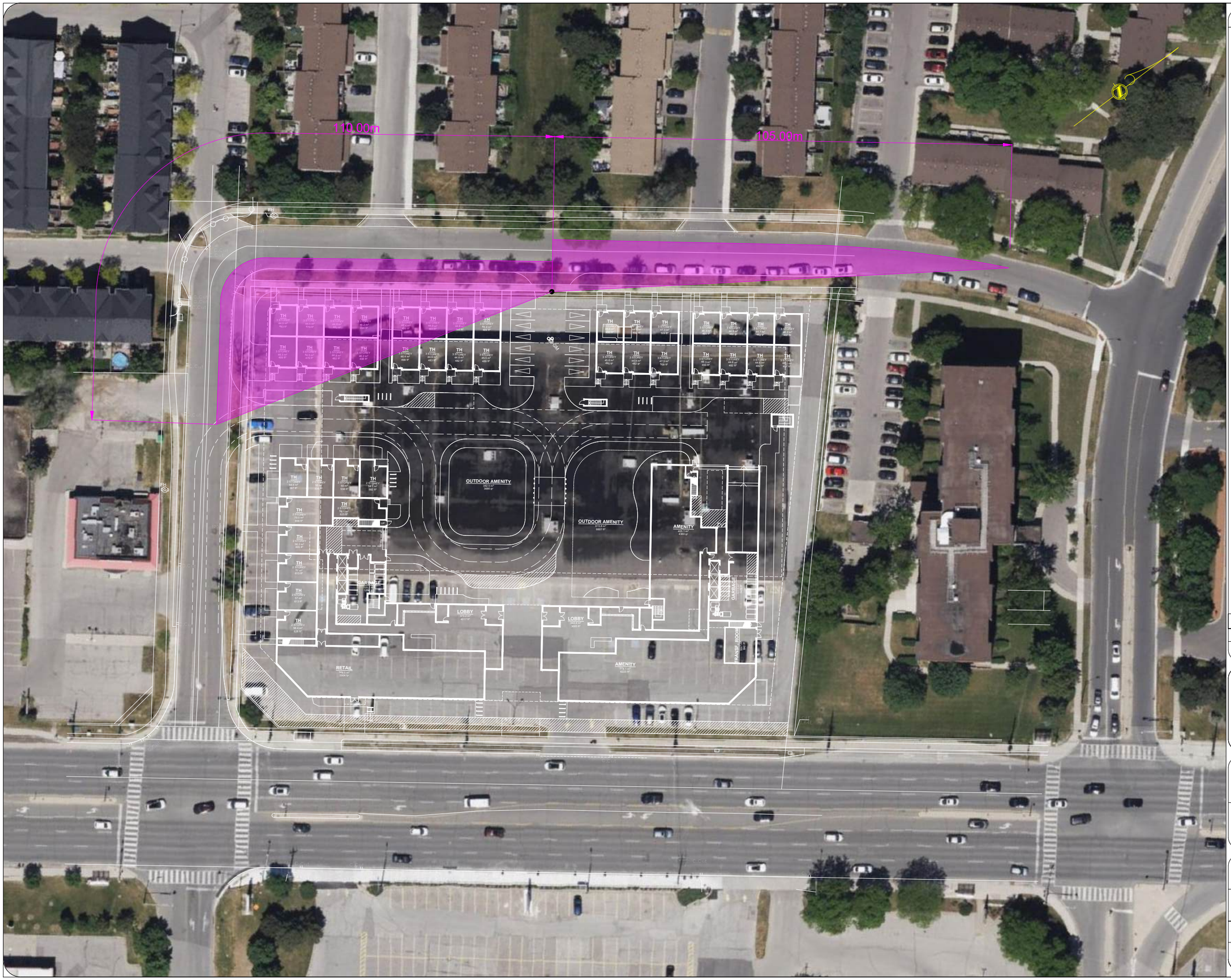
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis - Access 1
Departure Sightline Distance (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	003	02



Notes:

LEGEND

Departure Sight Distance:
Right Turn: **95m**
Left Turn: **105m**

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-07-30

STATUS:

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

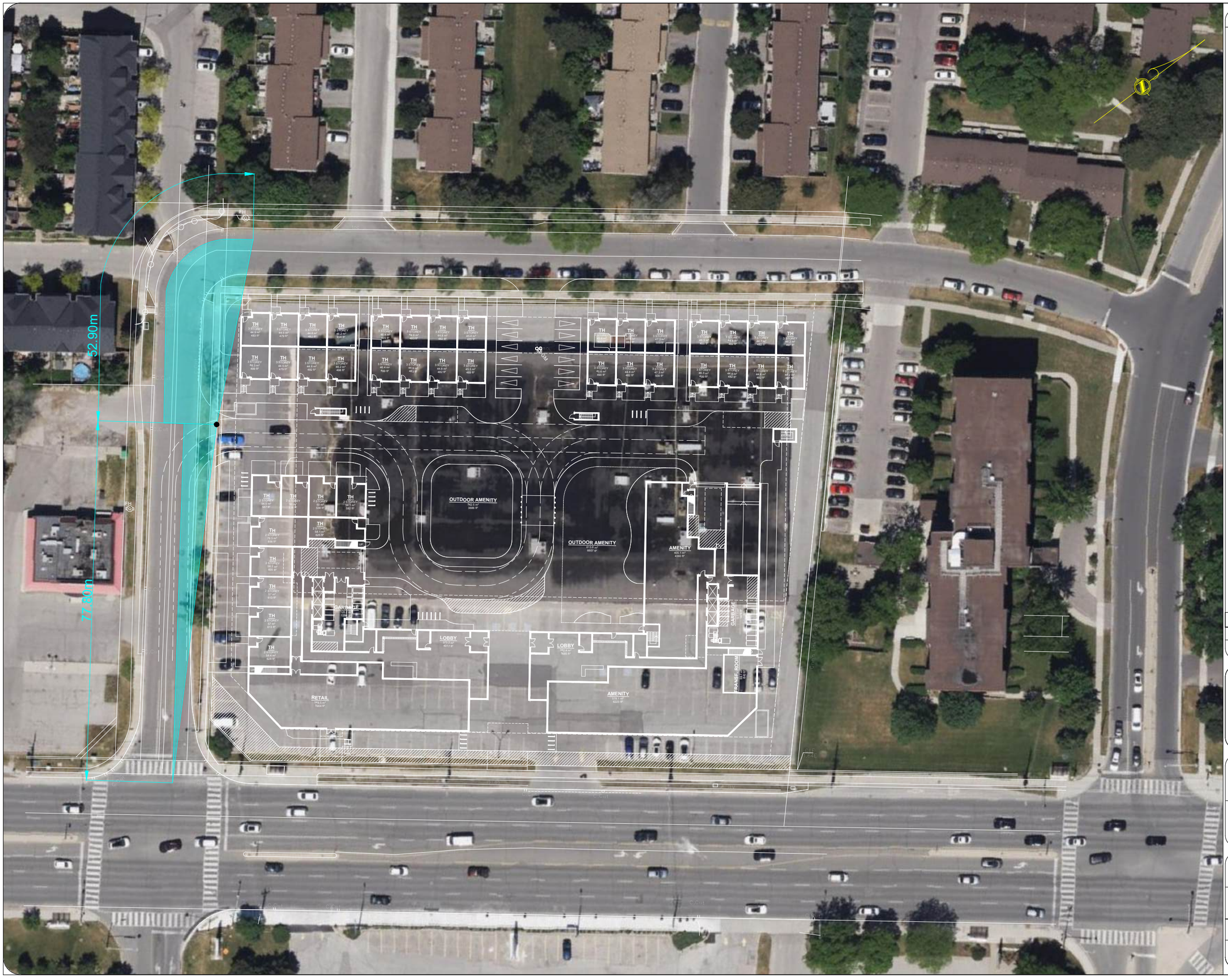
CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis - Access 2
Departure Sightline Distance (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC
PROJECT NO:	**DRAWING NO:**		**REVISION:**
2022-050	004		02



LEGEND

Available Sight Distance:
Right Turn: **77.8m**
Left Turn: **52.9m**

REV:	DESCRIPTION:	BY:	DATE:

STATUS:

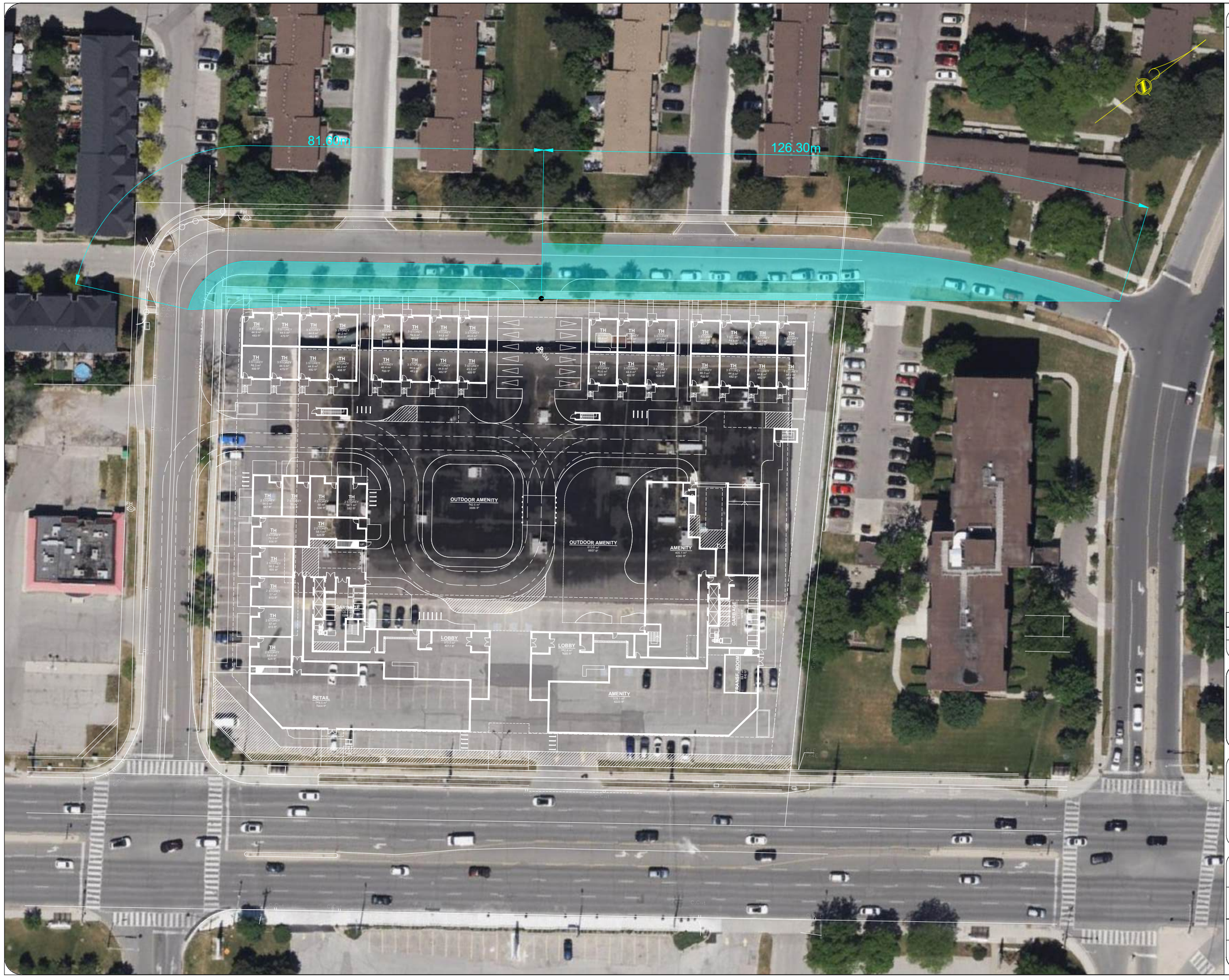
CLIENT:

ARCHITECT:

SITE:

TITLE:

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
PROJECT NO:	DRAWING NO:		REVISION:



Notes:

LEGEND

Available Sight Distance:
Right Turn: **81.6m**
Left Turn: **126.3m**

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-07-30

STATUS:

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

CLIENT: Whitehorn Investments Limited
3200 Highway 7
Vaughan, ON
L4K 5Z5

ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis
Available Sightline Distance (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-07-30	AN	MC
PROJECT NO:	**DRAWING NO:**		**REVISION:**
2022-050	006		02

Appendix L

Peak Hour Factor Calculations

[1] Dixie Road and Dundas Street E													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
8:00	86	206	33	19	143	40	28	106	39	24	174	37	935
8:15	84	233	51	9	196	37	17	90	44	42	201	46	1050
8:30	108	163	33	30	178	27	30	127	42	49	245	31	1063
8:45	90	218	56	21	196	35	21	89	44	32	241	33	1076
Total	368	820	173	79	713	139	96	412	169	147	861	147	4124
PHF	1.07	1.00	0.77	2.19	0.91	0.94	1.14	1.16	1.08	1.15	1.24	1.11	0.96
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:45	98	253	66	60	234	42	59	282	86	40	188	35	1443
17:00	122	241	49	58	248	52	76	273	107	42	194	44	1506
17:15	94	223	60	52	208	51	51	335	70	54	237	35	1470
17:30	138	287	61	56	199	77	71	243	92	52	172	31	1479
Total	452	1004	236	226	889	222	257	1133	355	188	791	145	5898
PHF	0.82	0.87	0.89	0.94	0.90	0.72	0.85	0.85	0.83	0.87	0.83	0.82	0.98

[2] Queen Frederica Drive/Blundell Road and Dundas Street E													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
8:00	25	1	6	3	0	1	3	132	17	5	234	9	436
8:15	34	2	4	7	0	5	10	168	13	1	292	6	542
8:30	36	2	3	4	0	1	3	185	12	6	279	7	538
8:45	36	4	6	4	0	2	2	176	15	2	308	3	558
Total	131	9	19	18	0	9	18	661	57	14	1113	25	2074
PHF	0.91	0.56	0.79	0.64	#DIV/0!	0.45	0.45	0.89	0.84	0.58	0.90	0.69	0.93
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:45	21	0	4	19	1	5	13	396	36	6	295	12	808
17:00	24	4	6	20	0	9	9	394	36	17	262	7	788
17:15	25	1	5	20	0	4	13	419	45	11	329	8	880
17:30	36	4	4	17	0	7	11	402	31	10	276	10	808
Total	106	9	19	76	1	25	46	1611	148	44	1162	37	3284
PHF	0.74	0.56	0.79	0.95	0.25	0.69	0.88	0.96	0.82	0.65	0.88	0.77	0.93

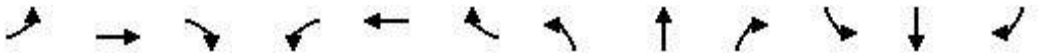
[3] Arena Road and Dundas Street E													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
8:00	4	1	7	1	0	9	9	146	1	5	241	1	425
8:15	4	1	15	2	0	13	15	174	2	5	314	4	549
8:30	2	0	7	1	1	20	9	205	2	5	288	7	547
8:45	3	1	7	3	0	12	11	200	3	4	321	5	570
Total	13	3	36	7	1	54	44	725	8	19	1164	17	2091
PHF	0.81	0.75	0.60	0.58	0.25	0.68	0.73	0.88	0.67	0.95	0.91	0.61	0.92
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:45	5	0	9	8	3	30	19	379	4	9	274	8	748
17:00	3	1	5	4	4	31	28	386	7	9	282	5	765
17:15	4	0	6	4	3	23	20	381	1	11	299	2	754
17:30	3	1	6	5	1	26	21	379	8	8	301	4	763
Total	15	2	26	21	11	110	88	1525	20	37	1156	19	3030
PHF	0.75	0.50	0.72	0.66	0.69	0.89	0.79	0.99	0.63	0.84	0.96	0.59	0.99

[4] Queen Frederica Drive and Dundix Road													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
8:00		29	5	3	21					3		6	67
8:15		24	5	2	14					13		14	72
8:30		35	8	6	12					6		11	78
8:45		28	5	6	11					7		15	72
Total	0	116	23	17	58	0	0	0	0	29	0	46	289
PHF	#DIV/0!	0.83	0.72	0.71	0.69	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.56	#DIV/0!	0.77	0.93
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:45		22	10	9	37					9		2	89
17:00		28	8	10	43					6		8	103
17:15		27	12	11	35					4		8	97
17:30		36	7	8	34					3		12	100
Total	0	113	37	38	149	0	0	0	0	22	0	30	389
PHF	#DIV/0!	0.78	0.77	0.86	0.87	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.61	#DIV/0!	0.63	0.94

[5] Arena Road and Dundix Road													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
7:30	4	7			3	3	8	1	2		1	0	29
7:45	5	3			0	9	6		0		0	2	25
8:00	2	7			2	5	7		2		1	0	26
8:15	2	4			2	5	14		0		3	3	33
Total	13	21	0	0	7	22	35	1	4	0	5	5	113
PHF	0.65	0.75	#DIV/0!	#DIV/0!	0.58	0.61	0.63	0.25	0.50	#DIV/0!	0.42	0.42	0.86
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:00	2	2		1	6	8	9	3	4		0	2	37
16:15	2	3		0	8	7	11	2	5		1	0	39
16:30	3	2		1	7	10	8	1	6		0	1	39
16:45	3	3		0	9	9	6	1	6		1	0	38
Total	10	10	0	2	30	34	34	7	21	0	2	3	153
PHF	0.83	0.83	#DIV/0!	0.50	0.83	0.85	0.77	0.58	0.88	#DIV/0!	0.50	0.38	0.98

Appendix M

2024 Existing Conditions Synchro Worksheets



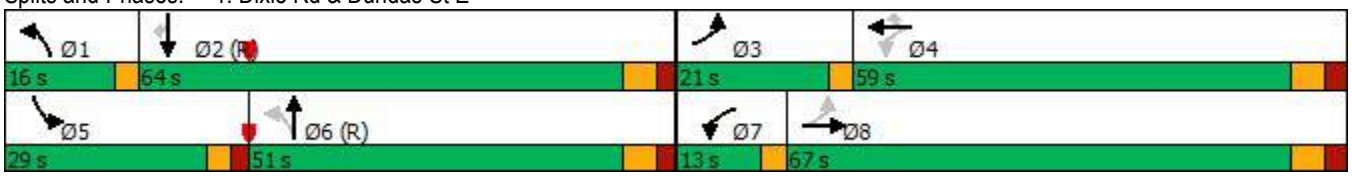
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	870	147	96	420	169	79	727	139	368	856	173
Future Volume (vph)	147	870	147	96	420	169	79	727	139	368	856	173
Satd. Flow (prot)	1623	4771	0	1638	4749	1389	1716	4637	0	3267	4794	1479
Flt Permitted	0.389			0.123			0.307			0.950		
Satd. Flow (perm)	660	4771	0	211	4749	1355	554	4637	0	3263	4794	1459
Satd. Flow (RTOR)		23				176		24				180
Lane Group Flow (vph)	153	1059	0	100	438	176	82	902	0	383	892	180
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Detector Phase	3	8		7	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	10.0	48.0		10.0	48.0	48.0	15.0	43.0		15.0	43.0	43.0
Total Split (s)	21.0	67.0		13.0	59.0	59.0	16.0	51.0		29.0	64.0	64.0
Total Split (%)	13.1%	41.9%		8.1%	36.9%	36.9%	10.0%	31.9%		18.1%	40.0%	40.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.8		0.0	2.8	2.8	0.0	2.5		2.0	2.5	2.5
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	6.8		3.0	6.8	6.8	3.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	59.6	43.1		50.7	37.2	37.2	74.5	61.9		23.9	78.8	78.8
Actuated g/C Ratio	0.37	0.27		0.32	0.23	0.23	0.47	0.39		0.15	0.49	0.49
v/c Ratio	0.45	0.81		0.65	0.40	0.39	0.25	0.50		0.78	0.38	0.22
Control Delay	33.1	54.5		53.2	52.6	8.6	19.1	38.9		77.0	26.9	4.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	33.1	54.5		53.2	52.6	8.6	19.1	38.9		77.0	26.9	4.0
LOS	C	D		D	D	A	B	D		E	C	A
Approach Delay		51.8			41.9			37.2			37.2	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	35.9	116.4		21.2	43.9	0.0	10.8	77.5		61.3	63.3	0.0
Queue Length 95th (m)	38.2	44.7		33.1	53.3	19.5	20.8	102.4		76.7	83.4	14.4
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	83.0			197.5		61.5	89.5			107.5		148.0
Base Capacity (vph)	354	1809		156	1549	560	365	1809		521	2361	810
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	0.43	0.59		0.64	0.28	0.31	0.22	0.50		0.74	0.38	0.22

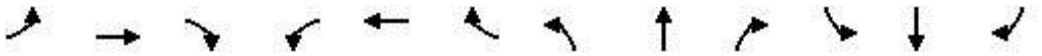
Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 3 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 42.0	Intersection LOS: D
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Dixie Rd & Dundas St E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	870	147	96	420	169	79	727	139	368	856	173
Future Volume (vph)	147	870	147	96	420	169	79	727	139	368	856	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.8		3.0	6.8	6.8	3.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1619	4772		1637	4749	1355	1716	4637		3267	4794	1459
Flt Permitted	0.39	1.00		0.12	1.00	1.00	0.31	1.00		0.95	1.00	1.00
Satd. Flow (perm)	662	4772		213	4749	1355	554	4637		3267	4794	1459
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	153	906	153	100	438	176	82	757	145	383	892	180
RTOR Reduction (vph)	0	17	0	0	0	135	0	15	0	0	0	91
Lane Group Flow (vph)	153	1042	0	100	438	41	82	887	0	383	892	89
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Actuated Green, G (s)	55.8	43.1		46.9	37.2	37.2	71.0	62.0		23.9	78.9	78.9
Effective Green, g (s)	55.8	43.1		46.9	37.2	37.2	71.0	62.0		23.9	78.9	78.9
Actuated g/C Ratio	0.35	0.27		0.29	0.23	0.23	0.44	0.39		0.15	0.49	0.49
Clearance Time (s)	3.0	6.8		3.0	6.8	6.8	3.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	324	1285		148	1104	315	311	1796		488	2364	719
v/s Ratio Prot	0.05	c0.22		c0.04	0.09		0.01	c0.19		c0.12	0.19	
v/s Ratio Perm	0.12			0.16		0.03	0.10					0.06
v/c Ratio	0.47	0.81		0.68	0.40	0.13	0.26	0.49		0.78	0.38	0.12
Uniform Delay, d1	37.7	54.6		44.1	51.9	48.6	26.0	37.1		65.6	25.3	21.9
Progression Factor	0.86	0.92		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	3.9		11.6	0.2	0.2	0.5	1.0		8.1	0.5	0.4
Delay (s)	33.3	54.4		55.6	52.1	48.8	26.5	38.1		73.7	25.7	22.2
Level of Service	C	D		E	D	D	C	D		E	C	C
Approach Delay (s)		51.7			51.8			37.1			37.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

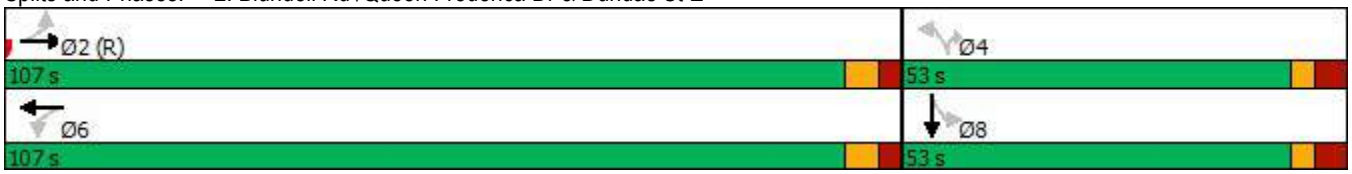
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1124	25	18	674	57	18	0	9	131	9	19
Future Volume (vph)	14	1124	25	18	674	57	18	0	9	131	9	19
Satd. Flow (prot)	1566	4914	0	1750	4724	0	1750	0	1309	1750	1633	0
Flt Permitted	0.342			0.206			0.738			0.950		
Satd. Flow (perm)	561	4914	0	379	4724	0	1346	0	1290	1745	1633	0
Satd. Flow (RTOR)		4			16				27		20	
Lane Group Flow (vph)	15	1236	0	19	786	0	19	0	10	141	30	0
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	107.0	107.0		107.0	107.0		53.0		53.0	53.0	53.0	
Total Split (%)	66.9%	66.9%		66.9%	66.9%		33.1%		33.1%	33.1%	33.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		Max	Max		None		None	None	None	
Act Effct Green (s)	125.2	125.2		125.2	125.2		20.8		20.8	20.8	20.8	
Actuated g/C Ratio	0.78	0.78		0.78	0.78		0.13		0.13	0.13	0.13	
v/c Ratio	0.03	0.32		0.06	0.21		0.11		0.05	0.62	0.13	
Control Delay	2.4	3.4		4.8	3.4		57.9		2.1	76.4	28.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	2.4	3.4		4.8	3.4		57.9		2.1	76.4	28.5	
LOS	A	A		A	A		E		A	E	C	
Approach Delay		3.4			3.5			38.7			68.0	
Approach LOS		A			A			D			E	
Queue Length 50th (m)	1.0	39.0		0.6	10.4		5.5		0.0	43.9	2.9	
Queue Length 95th (m)	0.5	6.2		3.4	23.8		12.3		1.3	59.3	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	46.0			60.0								
Base Capacity (vph)	439	3847		296	3701		386		390	501	483	
Starvation Cap Reductn	0	0		0	0		0		0	0	0	
Spillback Cap Reductn	0	0		0	0		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.03	0.32		0.06	0.21		0.05		0.03	0.28	0.06	

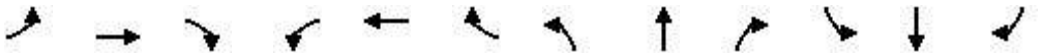
Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 37 (23%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 8.8	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1124	25	18	674	57	18	0	9	131	9	19
Future Volume (vph)	14	1124	25	18	674	57	18	0	9	131	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1558	4913		1747	4725		1733		1290	1745	1633	
Flt Permitted	0.34	1.00		0.21	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	561	4913		379	4725		1345		1290	1745	1633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	1209	27	19	725	61	19	0	10	141	10	20
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	9	0	17	0
Lane Group Flow (vph)	15	1235	0	19	783	0	19	0	1	141	13	0
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	125.2	125.2		125.2	125.2		20.8		20.8	20.8	20.8	
Effective Green, g (s)	125.2	125.2		125.2	125.2		20.8		20.8	20.8	20.8	
Actuated g/C Ratio	0.78	0.78		0.78	0.78		0.13		0.13	0.13	0.13	
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	438	3844		296	3697		174		167	226	212	
v/s Ratio Prot		c0.25			0.17						0.01	
v/s Ratio Perm	0.03			0.05			0.01		0.00	c0.08		
v/c Ratio	0.03	0.32		0.06	0.21		0.11		0.01	0.62	0.06	
Uniform Delay, d1	3.9	5.1		4.0	4.5		61.4		60.6	65.9	61.0	
Progression Factor	0.36	0.56		0.71	0.64		1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.2		0.4	0.1		0.3		0.0	5.3	0.1	
Delay (s)	1.6	3.0		3.2	3.1		61.7		60.6	71.2	61.1	
Level of Service	A	A		A	A		E		E	E	E	
Approach Delay (s)		3.0			3.1			61.3			69.4	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

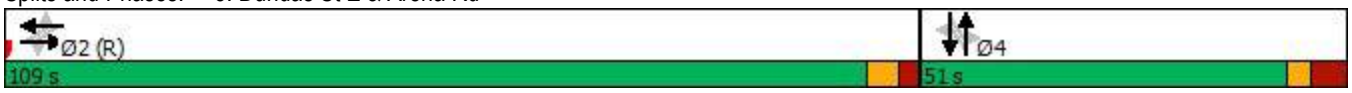
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1176	17	44	740	8	7	1	54	13	3	36
Future Volume (vph)	19	1176	17	44	740	8	7	1	54	13	3	36
Satd. Flow (prot)	1608	4921	0	1700	4784	0	1750	1469	0	1653	1561	0
Flt Permitted	0.333			0.197			0.730			0.718		
Satd. Flow (perm)	560	4921	0	351	4784	0	1338	1469	0	1241	1561	0
Satd. Flow (RTOR)		2			2			59			39	
Lane Group Flow (vph)	21	1296	0	48	813	0	8	60	0	14	42	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	109.0	109.0		109.0	109.0		46.5	46.5		46.5	46.5	
Total Split (s)	109.0	109.0		109.0	109.0		51.0	51.0		51.0	51.0	
Total Split (%)	68.1%	68.1%		68.1%	68.1%		31.9%	31.9%		31.9%	31.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		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	
Act Effct Green (s)	136.1	136.1		136.1	136.1		14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.85	0.85		0.85	0.85		0.09	0.09		0.09	0.09	
v/c Ratio	0.04	0.31		0.16	0.20		0.07	0.33		0.13	0.24	
Control Delay	5.3	4.4		6.6	3.4		60.4	17.3		63.2	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.3	4.4		6.6	3.4		60.4	17.3		63.2	20.3	
LOS	A	A		A	A		E	B		E	C	
Approach Delay		4.4			3.6			22.4			31.0	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	0.8	21.7		1.7	10.5		2.5	0.3		4.4	0.9	
Queue Length 95th (m)	5.6	72.4		8.6	28.1		6.7	12.3		9.8	11.2	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	476	4186		298	4070		363	442		337	452	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.31		0.16	0.20		0.02	0.14		0.04	0.09	

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 19 (12%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle: 160
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.33

Intersection Signal Delay: 5.3	Intersection LOS: A
Intersection Capacity Utilization 59.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Dundas St E & Arena Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1176	17	44	740	8	7	1	54	13	3	36
Future Volume (vph)	19	1176	17	44	740	8	7	1	54	13	3	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1595	4920		1693	4786		1742	1470		1641	1561	
Flt Permitted	0.33	1.00		0.20	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	559	4920		350	4786		1338	1470		1240	1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1278	18	48	804	9	8	1	59	14	3	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	54	0	0	36	0
Lane Group Flow (vph)	21	1296	0	48	813	0	8	6	0	14	6	0
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	133.3	133.3		133.3	133.3		12.7	12.7		12.7	12.7	
Effective Green, g (s)	133.3	133.3		133.3	133.3		12.7	12.7		12.7	12.7	
Actuated g/C Ratio	0.83	0.83		0.83	0.83		0.08	0.08		0.08	0.08	
Clearance Time (s)	6.5	6.5		6.5	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	465	4098		291	3987		106	116		98	123	
v/s Ratio Prot		c0.26			0.17			0.00			0.00	
v/s Ratio Perm	0.04			0.14			0.01			c0.01		
v/c Ratio	0.05	0.32		0.16	0.20		0.08	0.05		0.14	0.05	
Uniform Delay, d1	2.3	3.0		2.6	2.7		68.2	68.1		68.6	68.1	
Progression Factor	1.00	1.00		1.00	0.87		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2		1.2	0.1		0.3	0.2		0.7	0.2	
Delay (s)	2.5	3.2		3.8	2.4		68.5	68.2		69.3	68.2	
Level of Service	A	A		A	A		E	E		E	E	
Approach Delay (s)		3.2			2.5			68.3			68.5	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	46	17	58	116	23
Future Volume (vph)	29	46	17	58	116	23
Satd. Flow (prot)	1626	0	0	1715	1800	0
Flt Permitted	0.981			0.989		
Satd. Flow (perm)	1626	0	0	1715	1800	0
Lane Group Flow (vph)	80	0	0	80	150	0
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 28.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	29	46	17	58	116	23
Future Volume (vph)	29	46	17	58	116	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	31	49	18	62	125	25

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	80	80	150
Volume Left (vph)	31	18	0
Volume Right (vph)	49	0	25
Hadj (s)	-0.22	0.19	-0.07
Departure Headway (s)	4.2	4.4	4.1
Degree Utilization, x	0.09	0.10	0.17
Capacity (veh/h)	815	788	857
Control Delay (s)	7.6	7.9	7.9
Approach Delay (s)	7.6	7.9	7.9
Approach LOS	A	A	A

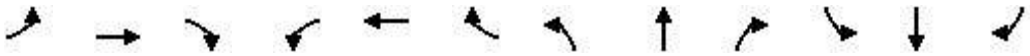
Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	46	17	58	116	23
Future Vol, veh/h	29	46	17	58	116	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	7	2	6	9	2	2
Mvmt Flow	31	49	18	62	125	25
Number of Lanes	1	0	0	1	1	0

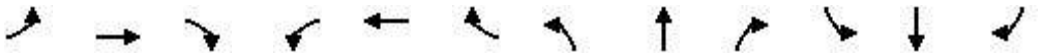
Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.7	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	23%	39%	0%
Vol Thru, %	77%	0%	83%
Vol Right, %	0%	61%	17%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	75	75	139
LT Vol	17	29	0
Through Vol	58	0	116
RT Vol	0	46	23
Lane Flow Rate	81	81	149
Geometry Grp	1	1	1
Degree of Util (X)	0.096	0.095	0.168
Departure Headway (Hd)	4.305	4.232	4.039
Convergence, Y/N	Yes	Yes	Yes
Cap	823	852	879
Service Time	2.382	2.232	2.106
HCM Lane V/C Ratio	0.098	0.095	0.17
HCM Control Delay	7.8	7.7	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.3	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Satd. Flow (prot)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Flt Permitted					0.958						0.981	
Satd. Flow (perm)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Lane Group Flow (vph)	0	12	0	0	47	0	0	34	0	0	39	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	6	6	41	1	5	0	8	26	15	24	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	47	34	39
Volume Left (vph)	0	41	0	15
Volume Right (vph)	6	5	26	0
Hadj (s)	-0.27	0.20	-0.33	0.11
Departure Headway (s)	3.8	4.3	3.7	4.2
Degree Utilization, x	0.01	0.06	0.04	0.05
Capacity (veh/h)	913	825	935	845
Control Delay (s)	6.9	7.5	6.9	7.4
Approach Delay (s)	6.9	7.5	6.9	7.4
Approach LOS	A	A	A	A

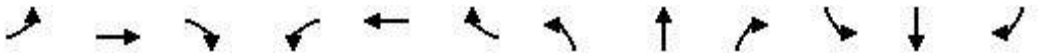
Intersection Summary				
Delay	7.3			
Level of Service	A			
Intersection Capacity Utilization	24.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Future Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	6	2	2	2	2	9	2	2	2
Mvmt Flow	0	6	6	41	1	5	0	8	26	15	24	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.5	6.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	88%	38%
Vol Thru, %	24%	50%	3%	62%
Vol Right, %	76%	50%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	10	40	34
LT Vol	0	0	35	13
Through Vol	7	5	1	21
RT Vol	22	5	4	0
Lane Flow Rate	34	12	47	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.012	0.055	0.045
Departure Headway (Hd)	3.608	3.796	4.253	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	987	939	841	864
Service Time	1.648	1.835	2.282	2.171
HCM Lane V/C Ratio	0.034	0.013	0.056	0.046
HCM Control Delay	6.8	6.9	7.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.2	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	799	145	257	1133	355	226	907	222	452	1024	236
Future Volume (vph)	188	799	145	257	1133	355	226	907	222	452	1024	236
Satd. Flow (prot)	1716	4783	0	1750	5029	1536	1750	4805	0	3395	5029	1536
Flt Permitted	0.103			0.127			0.197			0.950		
Satd. Flow (perm)	184	4783	0	232	5029	1427	362	4805	0	3385	5029	1503
Satd. Flow (RTOR)		24				272		36				234
Lane Group Flow (vph)	192	963	0	262	1156	362	231	1153	0	461	1045	241
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Detector Phase	3	8		7	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	10.0	47.8		10.0	47.8	47.8	12.0	42.5		12.0	42.5	42.5
Total Split (s)	18.0	59.0		23.0	64.0	64.0	24.0	51.0		27.0	54.0	54.0
Total Split (%)	11.3%	36.9%		14.4%	40.0%	40.0%	15.0%	31.9%		16.9%	33.8%	33.8%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.8		0.0	2.8	2.8	2.0	2.5		2.0	2.5	2.5
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	6.8		3.0	6.8	6.8	5.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	60.4	41.9		68.1	46.6	46.6	70.3	49.6		27.9	58.3	58.3
Actuated g/C Ratio	0.38	0.26		0.43	0.29	0.29	0.44	0.31		0.17	0.36	0.36
v/c Ratio	0.91	0.76		0.93	0.79	0.60	0.71	0.76		0.78	0.57	0.35
Control Delay	93.5	69.4		75.5	56.3	15.7	36.6	53.1		72.9	43.8	6.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	93.5	69.4		75.5	56.3	15.7	36.6	53.1		72.9	43.8	6.6
LOS	F	E		E	E	B	D	D		E	D	A
Approach Delay		73.4			50.9			50.3			46.4	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	56.4	108.3		59.6	125.3	22.9	39.2	119.8		72.4	98.7	1.5
Queue Length 95th (m)	#87.2	111.7		#104.6	133.0	53.4	63.7	142.7		#100.3	125.1	22.6
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	83.0			197.5		61.5	89.5			107.5		148.0
Base Capacity (vph)	213	1576		288	1797	684	344	1513		591	1831	696
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	0.90	0.61		0.91	0.64	0.53	0.67	0.76		0.78	0.57	0.35

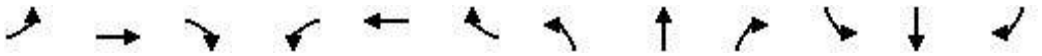
Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 53.7	Intersection LOS: D
Intersection Capacity Utilization 105.9%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 1: Dixie Rd & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	799	145	257	1133	355	226	907	222	452	1024	236
Future Volume (vph)	188	799	145	257	1133	355	226	907	222	452	1024	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.8		3.0	6.8	6.8	5.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	4783		1749	5029	1427	1749	4808		3395	5029	1503
Flt Permitted	0.10	1.00		0.13	1.00	1.00	0.20	1.00		0.95	1.00	1.00
Satd. Flow (perm)	186	4783		234	5029	1427	362	4808		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	192	815	148	262	1156	362	231	926	227	461	1045	241
RTOR Reduction (vph)	0	18	0	0	0	193	0	25	0	0	0	149
Lane Group Flow (vph)	192	945	0	262	1156	169	231	1128	0	461	1045	92
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Actuated Green, G (s)	56.7	42.0		64.3	46.6	46.6	68.7	49.5		27.9	58.2	58.2
Effective Green, g (s)	56.7	42.0		64.3	46.6	46.6	68.7	49.5		27.9	58.2	58.2
Actuated g/C Ratio	0.35	0.26		0.40	0.29	0.29	0.43	0.31		0.17	0.36	0.36
Clearance Time (s)	3.0	6.8		3.0	6.8	6.8	5.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	206	1255		276	1464	415	321	1487		592	1829	546
v/s Ratio Prot	0.09	0.20		c0.11	0.23		0.09	c0.23		c0.14	0.21	
v/s Ratio Perm	0.24			c0.27		0.12	0.22					0.06
v/c Ratio	0.93	0.75		0.95	0.79	0.41	0.72	0.76		0.78	0.57	0.17
Uniform Delay, d1	41.7	54.2		40.9	52.2	45.6	30.9	49.9		63.1	40.9	34.5
Progression Factor	1.33	1.24		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	42.6	2.5		40.1	2.9	0.7	7.5	3.7		6.4	1.3	0.7
Delay (s)	98.1	69.8		81.0	55.1	46.3	38.4	53.5		69.5	42.2	35.2
Level of Service	F	E		F	E	D	D	D		E	D	D
Approach Delay (s)		74.5			57.1			51.0			48.4	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	56.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	105.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1174	37	46	1611	148	76	0	25	106	9	19
Future Volume (vph)	44	1174	37	46	1611	148	76	0	25	106	9	19
Satd. Flow (prot)	1750	4944	0	1750	4941	0	1750	0	1566	1750	1628	0
Flt Permitted	0.090			0.187			0.738			0.950		
Satd. Flow (perm)	166	4944	0	342	4941	0	1339	0	1509	1707	1628	0
Satd. Flow (RTOR)		5			18				27		20	
Lane Group Flow (vph)	47	1302	0	49	1891	0	82	0	27	114	30	0
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	107.0	107.0		107.0	107.0		53.0		53.0	53.0	53.0	
Total Split (%)	66.9%	66.9%		66.9%	66.9%		33.1%		33.1%	33.1%	33.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		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	
Act Effct Green (s)	119.1	119.1		119.1	119.1		26.9		26.9	26.9	26.9	
Actuated g/C Ratio	0.74	0.74		0.74	0.74		0.17		0.17	0.17	0.17	
v/c Ratio	0.38	0.35		0.19	0.51		0.37		0.10	0.40	0.10	
Control Delay	17.6	5.1		5.1	8.0		60.2		16.2	60.6	25.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	17.6	5.1		5.1	8.0		60.2		16.2	60.6	25.0	
LOS	B	A		A	A		E		B	E	C	
Approach Delay		5.5			7.9			49.3			53.1	
Approach LOS		A			A			D			D	
Queue Length 50th (m)	4.6	63.6		1.7	179.0		21.6		0.0	30.2	2.5	
Queue Length 95th (m)	11.2	26.4		m3.4	180.5		38.0		8.6	48.8	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	46.0			60.0								
Base Capacity (vph)	123	3681		254	3682		384		453	490	482	
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	0.38	0.35		0.19	0.51		0.21		0.06	0.23	0.06	

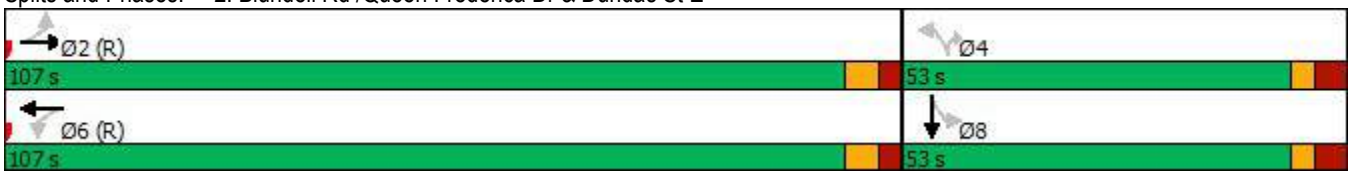
Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 101 (63%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

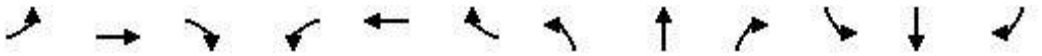
Maximum v/c Ratio: 0.51

Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E

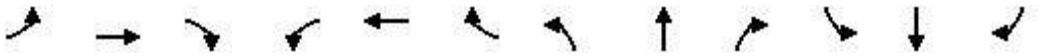




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1174	37	46	1611	148	76	0	25	106	9	19
Future Volume (vph)	44	1174	37	46	1611	148	76	0	25	106	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99		1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1747	4946		1737	4942		1724		1509	1707	1628	
Flt Permitted	0.09	1.00		0.19	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	165	4946		342	4942		1338		1509	1707	1628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	47	1262	40	49	1732	159	82	0	27	114	10	20
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	22	0	17	0
Lane Group Flow (vph)	47	1301	0	49	1886	0	82	0	5	114	13	0
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	119.1	119.1		119.1	119.1		26.9		26.9	26.9	26.9	
Effective Green, g (s)	119.1	119.1		119.1	119.1		26.9		26.9	26.9	26.9	
Actuated g/C Ratio	0.74	0.74		0.74	0.74		0.17		0.17	0.17	0.17	
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	122	3681		254	3678		224		253	286	273	
v/s Ratio Prot		0.26			c0.38						0.01	
v/s Ratio Perm	0.28			0.14			0.06		0.00	c0.07		
v/c Ratio	0.39	0.35		0.19	0.51		0.37		0.02	0.40	0.05	
Uniform Delay, d1	7.3	7.1		6.1	8.5		59.0		55.5	59.3	55.8	
Progression Factor	0.71	0.59		0.39	0.76		1.00		1.00	1.00	1.00	
Incremental Delay, d2	8.7	0.3		1.5	0.4		1.0		0.0	0.9	0.1	
Delay (s)	13.9	4.4		3.9	6.9		60.0		55.6	60.3	55.9	
Level of Service	B	A		A	A		E		E	E	E	
Approach Delay (s)		4.7			6.8			58.9			59.3	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



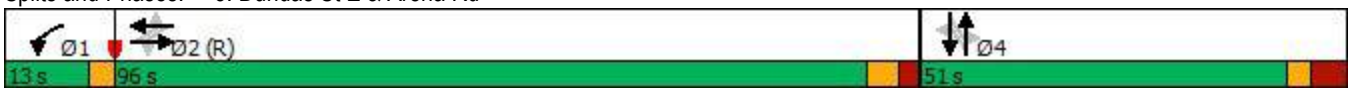
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1168	19	88	1525	20	21	11	110	15	2	26
Future Volume (vph)	37	1168	19	88	1525	20	21	11	110	15	2	26
Satd. Flow (prot)	1733	4962	0	1750	4967	0	1700	1555	0	1750	1542	0
Flt Permitted	0.133			0.207			0.739			0.591		
Satd. Flow (perm)	242	4962	0	378	4967	0	1299	1555	0	1076	1542	0
Satd. Flow (RTOR)		2			2			111			26	
Lane Group Flow (vph)	37	1199	0	89	1560	0	21	122	0	15	28	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		1	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	35.5	35.5		9.5	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	96.0	96.0		13.0	96.0		51.0	51.0		51.0	51.0	
Total Split (%)	60.0%	60.0%		8.1%	60.0%		31.9%	31.9%		31.9%	31.9%	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		0.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lag	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	115.2	115.2		126.1	115.2		20.4	20.4		20.4	20.4	
Actuated g/C Ratio	0.72	0.72		0.79	0.72		0.13	0.13		0.13	0.13	
v/c Ratio	0.21	0.34		0.25	0.44		0.13	0.41		0.11	0.13	
Control Delay	16.5	10.6		3.1	4.0		56.0	14.8		55.0	18.1	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	16.5	10.6		3.1	4.0		56.0	14.8		55.0	18.1	
LOS	B	B		A	A		E	B		D	B	
Approach Delay		10.8			4.0			20.8			31.0	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	2.3	30.9		0.6	13.6		6.6	3.4		4.7	0.6	
Queue Length 95th (m)	14.1	83.5		3.5	52.9		12.9	19.4		10.4	9.0	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	174	3572		388	3575		353	503		292	438	
Starvation Cap Reductn	0	0		0	448		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	0.21	0.34		0.23	0.50		0.06	0.24		0.05	0.06	

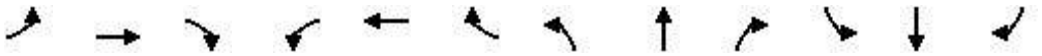
Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 114 (71%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 7.9	Intersection LOS: A
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1168	19	88	1525	20	21	11	110	15	2	26
Future Volume (vph)	37	1168	19	88	1525	20	21	11	110	15	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4960		1747	4968		1670	1554		1731	1541	
Flt Permitted	0.13	1.00		0.21	1.00		0.74	1.00		0.59	1.00	
Satd. Flow (perm)	242	4960		381	4968		1299	1554		1076	1541	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	37	1180	19	89	1540	20	21	11	111	15	2	26
RTOR Reduction (vph)	0	1	0	0	1	0	0	97	0	0	23	0
Lane Group Flow (vph)	37	1198	0	89	1559	0	21	25	0	15	5	0
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	115.2	115.2		122.6	115.2		20.4	20.4		20.4	20.4	
Effective Green, g (s)	115.2	115.2		122.6	115.2		20.4	20.4		20.4	20.4	
Actuated g/C Ratio	0.72	0.72		0.77	0.72		0.13	0.13		0.13	0.13	
Clearance Time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	174	3571		355	3576		165	198		137	196	
v/s Ratio Prot		0.24		c0.01	c0.31			c0.02			0.00	
v/s Ratio Perm	0.15			0.18			0.02			0.01		
v/c Ratio	0.21	0.34		0.25	0.44		0.13	0.13		0.11	0.03	
Uniform Delay, d1	7.4	8.3		4.9	9.1		61.9	61.9		61.8	61.1	
Progression Factor	1.00	1.00		0.31	0.31		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	0.3		0.3	0.3		0.3	0.3		0.4	0.1	
Delay (s)	10.2	8.5		1.9	3.2		62.3	62.2		62.1	61.2	
Level of Service	B	A		A	A		E	E		E	E	
Approach Delay (s)		8.6			3.1			62.2			61.5	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	30	38	149	113	37
Future Volume (vph)	22	30	38	149	113	37
Satd. Flow (prot)	1663	0	0	1824	1781	0
Flt Permitted	0.980			0.990		
Satd. Flow (perm)	1663	0	0	1824	1781	0
Lane Group Flow (vph)	55	0	0	199	159	0
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 33.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	22	30	38	149	113	37
Future Volume (vph)	22	30	38	149	113	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	23	32	40	159	120	39

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	55	199	159
Volume Left (vph)	23	40	0
Volume Right (vph)	32	0	39
Hadj (s)	-0.23	0.07	-0.11
Departure Headway (s)	4.4	4.3	4.1
Degree Utilization, x	0.07	0.24	0.18
Capacity (veh/h)	742	823	854
Control Delay (s)	7.8	8.6	8.0
Approach Delay (s)	7.8	8.6	8.0
Approach LOS	A	A	A

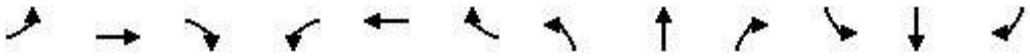
Intersection Summary			
Delay	8.3		
Level of Service	A		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	30	38	149	113	37
Future Vol, veh/h	22	30	38	149	113	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	32	40	159	120	39
Number of Lanes	1	0	0	1	1	0

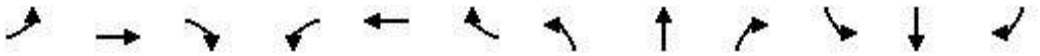
Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	8.5	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	20%	42%	0%
Vol Thru, %	80%	0%	75%
Vol Right, %	0%	58%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	187	52	150
LT Vol	38	22	0
Through Vol	149	0	113
RT Vol	0	30	37
Lane Flow Rate	199	55	160
Geometry Grp	1	1	1
Degree of Util (X)	0.232	0.068	0.179
Departure Headway (Hd)	4.193	4.445	4.033
Convergence, Y/N	Yes	Yes	Yes
Cap	847	811	876
Service Time	2.263	2.445	2.12
HCM Lane V/C Ratio	0.235	0.068	0.183
HCM Control Delay	8.5	7.8	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.9	0.2	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Satd. Flow (prot)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Flt Permitted					0.973			0.999			0.976	
Satd. Flow (perm)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Lane Group Flow (vph)	0	5	0	0	63	0	0	68	0	0	20	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 24.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2	3	35	7	21	2	31	35	10	10	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	63	68	20
Volume Left (vph)	0	35	2	10
Volume Right (vph)	3	21	35	0
Hadj (s)	-0.33	-0.02	-0.26	0.13
Departure Headway (s)	3.8	4.1	3.8	4.2
Degree Utilization, x	0.01	0.07	0.07	0.02
Capacity (veh/h)	913	862	918	828
Control Delay (s)	6.8	7.4	7.1	7.3
Approach Delay (s)	6.8	7.4	7.1	7.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.2			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			

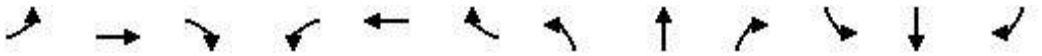
Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Future Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	6	2	2	2	2	3	2	2	2
Mvmt Flow	0	2	3	35	7	21	2	31	35	10	10	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.1	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	55%	50%
Vol Thru, %	45%	40%	11%	50%
Vol Right, %	52%	60%	34%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	5	62	20
LT Vol	2	0	34	10
Through Vol	30	2	7	10
RT Vol	34	3	21	0
Lane Flow Rate	67	5	63	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.005	0.071	0.024
Departure Headway (Hd)	3.765	3.774	4.065	4.205
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	948	943	880	849
Service Time	1.8	1.818	2.096	2.244
HCM Lane V/C Ratio	0.071	0.005	0.072	0.024
HCM Control Delay	7.1	6.8	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.2	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	799	145	257	1133	355	226	907	222	452	1024	236
Future Volume (vph)	188	799	145	257	1133	355	226	907	222	452	1024	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	83.0		0.0	197.5		61.5	89.5		0.0	107.5		148.0
Storage Lanes	1		0	1		1	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	0.99		0.99		0.93	1.00	0.99		1.00		0.98
Frt		0.977				0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	4783	0	1750	5029	1536	1750	4805	0	3395	5029	1536
Flt Permitted	0.101			0.115			0.192			0.950		
Satd. Flow (perm)	181	4783	0	210	5029	1427	353	4805	0	3385	5029	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				246		37				241
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Adj. Flow (vph)	192	815	148	262	1156	362	231	926	227	461	1045	241
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	963	0	262	1156	362	231	1153	0	461	1045	241
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Detector Phase	3	8		7	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	10.0	47.8		10.0	47.8	47.8	12.0	42.5		12.0	42.5	42.5
Total Split (s)	22.0	48.0		27.0	53.0	53.0	29.0	53.0		32.0	56.0	56.0
Total Split (%)	13.8%	30.0%		16.9%	33.1%	33.1%	18.1%	33.1%		20.0%	35.0%	35.0%
Maximum Green (s)	19.0	41.2		24.0	46.2	46.2	24.0	46.5		27.0	49.5	49.5
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.8		0.0	2.8	2.8	2.0	2.5		2.0	2.5	2.5
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	6.8		3.0	6.8	6.8	5.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0	31.0		26.0			26.0	26.0
Pedestrian Calls (#/hr)		40			51	51		11			7	7
Act Effct Green (s)	60.6	39.7		68.3	44.4	44.4	71.7	51.9		25.3	58.9	58.9
Actuated g/C Ratio	0.38	0.25		0.43	0.28	0.28	0.45	0.32		0.16	0.37	0.37
v/c Ratio	0.83	0.80		0.88	0.83	0.63	0.73	0.73		0.86	0.56	0.34
Control Delay	77.0	69.5		67.9	60.0	20.4	37.8	50.5		81.7	43.3	5.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	77.0	69.5		67.9	60.0	20.4	37.8	50.5		81.7	43.3	5.8
LOS	E	E		E	E	C	D	D		F	D	A
Approach Delay		70.8			53.1			48.4			48.3	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	54.6	94.2		60.0	125.5	31.4	41.2	121.0		73.7	100.7	0.0
Queue Length 95th (m)	#84.2	112.0		#101.6	143.0	66.9	61.7	140.0		93.9	122.7	20.1
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	83.0			197.5		61.5	89.5			107.5		148.0
Base Capacity (vph)	252	1247		320	1452	587	380	1583		572	1851	705
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	0.76	0.77		0.82	0.80	0.62	0.61	0.73		0.81	0.56	0.34

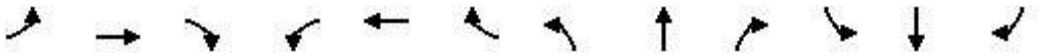
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 54.0		Intersection LOS: D	

Intersection Capacity Utilization 105.9% ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 1: Dixie Rd & Dundas St E



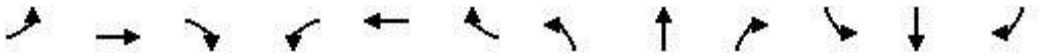
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	799	145	257	1133	355	226	907	222	452	1024	236
Future Volume (vph)	188	799	145	257	1133	355	226	907	222	452	1024	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.8		3.0	6.8	6.8	5.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1716	4783		1749	5029	1427	1749	4808		3395	5029	1503
Flt Permitted	0.10	1.00		0.12	1.00	1.00	0.19	1.00		0.95	1.00	1.00
Satd. Flow (perm)	181	4783		212	5029	1427	354	4808		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	192	815	148	262	1156	362	231	926	227	461	1045	241
RTOR Reduction (vph)	0	17	0	0	0	178	0	25	0	0	0	152
Lane Group Flow (vph)	192	946	0	262	1156	184	231	1128	0	461	1045	89
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Actuated Green, G (s)	56.9	39.8		64.5	44.4	44.4	70.2	51.9		25.3	58.9	58.9
Effective Green, g (s)	56.9	39.8		64.5	44.4	44.4	70.2	51.9		25.3	58.9	58.9
Actuated g/C Ratio	0.36	0.25		0.40	0.28	0.28	0.44	0.32		0.16	0.37	0.37
Clearance Time (s)	3.0	6.8		3.0	6.8	6.8	5.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	228	1189		293	1395	395	314	1559		536	1851	553
v/s Ratio Prot	0.09	0.20		c0.12	0.23		0.08	0.23		c0.14	0.21	
v/s Ratio Perm	0.21			c0.24		0.13	c0.24					0.06
v/c Ratio	0.84	0.80		0.89	0.83	0.47	0.74	0.72		0.86	0.56	0.16
Uniform Delay, d1	42.1	56.3		43.1	54.2	48.0	30.2	47.7		65.6	40.3	33.9
Progression Factor	1.26	1.16		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.7	3.6		27.2	4.2	0.9	8.7	3.0		13.2	1.3	0.6
Delay (s)	75.9	69.2		70.3	58.4	48.8	38.8	50.7		78.9	41.6	34.6
Level of Service	E	E		E	E	D	D	D		E	D	C
Approach Delay (s)		70.3			58.2			48.7			50.4	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	56.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	105.9%	ICU Level of Service	G
Analysis Period (min)	15		

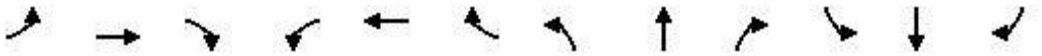
c Critical Lane Group

Appendix N

2028 Future Background Conditions Synchro Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	900	155	96	438	169	83	767	139	368	901	178
Future Volume (vph)	158	900	155	96	438	169	83	767	139	368	901	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	197.5		61.5	96.0		0.0	107.5		148.0
Storage Lanes	1		0	1		0	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	1.00		1.00		0.99
Frt		0.978			0.958			0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	3320	0	1638	3089	0	1716	4642	0	3267	4794	1479
Flt Permitted	0.950			0.950			0.278			0.950		
Satd. Flow (perm)	1614	3320	0	1631	3089	0	502	4642	0	3261	4794	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			36			22				185
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Adj. Flow (vph)	165	938	161	100	456	176	86	799	145	383	939	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	165	1099	0	100	632	0	86	944	0	383	939	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	10.0	47.8		10.0	47.8		15.0	42.5		15.0	42.5	42.5
Total Split (s)	29.0	67.0		17.0	55.0		15.0	47.0		29.0	61.0	61.0
Total Split (%)	18.1%	41.9%		10.6%	34.4%		9.4%	29.4%		18.1%	38.1%	38.1%
Maximum Green (s)	26.0	60.2		14.0	48.2		12.0	40.5		24.0	54.5	54.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.8		0.0	2.8		0.0	2.5		2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0			10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0			26.0			26.0	26.0
Pedestrian Calls (#/hr)		15			11			3			1	1
Act Effct Green (s)	20.9	57.2		12.9	49.2		59.5	46.2		22.4	60.8	60.8
Actuated g/C Ratio	0.13	0.36		0.08	0.31		0.37	0.29		0.14	0.38	0.38
v/c Ratio	0.78	0.92		0.76	0.65		0.33	0.70		0.84	0.52	0.28
Control Delay	92.9	53.1		104.1	48.6		28.7	53.8		83.5	40.5	5.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	92.9	53.1		104.1	48.6		28.7	53.8		83.5	40.5	5.7
LOS	F	D		F	D		C	D		F	D	A
Approach Delay		58.3			56.2			51.7			47.1	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	43.3	174.2		31.5	84.8		15.3	100.5		61.3	87.1	0.0
Queue Length 95th (m)	75.9	152.7		#58.2	109.5		26.5	118.7		80.0	104.7	17.1
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	263	1257		143	984		284	1356		490	1821	668
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.63	0.87		0.70	0.64		0.30	0.70		0.78	0.52	0.28

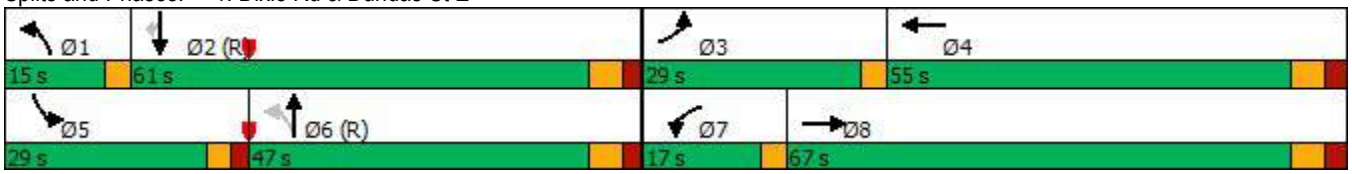
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 145 (91%), Referenced to phase 2:SBT and 6:NBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 52.7	Intersection LOS: D

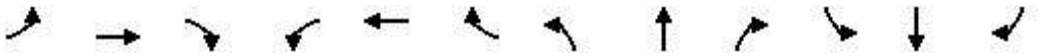
Intersection Capacity Utilization 96.6% ICU Level of Service F

Analysis Period (min) 15

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

Splits and Phases: 1: Dixie Rd & Dundas St E



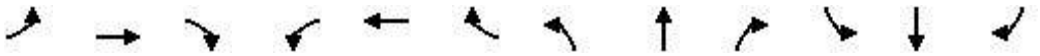


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	900	155	96	438	169	83	767	139	368	901	178
Future Volume (vph)	158	900	155	96	438	169	83	767	139	368	901	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1623	3320		1638	3090		1716	4642		3267	4794	1459
Flt Permitted	0.95	1.00		0.95	1.00		0.28	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1623	3320		1638	3090		501	4642		3267	4794	1459
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	165	938	161	100	456	176	86	799	145	383	939	185
RTOR Reduction (vph)	0	9	0	0	25	0	0	16	0	0	0	115
Lane Group Flow (vph)	165	1090	0	100	607	0	86	928	0	383	939	70
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Actuated Green, G (s)	20.9	57.2		12.9	49.2		56.0	46.2		22.4	60.8	60.8
Effective Green, g (s)	20.9	57.2		12.9	49.2		56.0	46.2		22.4	60.8	60.8
Actuated g/C Ratio	0.13	0.36		0.08	0.31		0.35	0.29		0.14	0.38	0.38
Clearance Time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	212	1186		132	950		249	1340		457	1821	554
v/s Ratio Prot	c0.10	c0.33		0.06	0.20		0.02	c0.20		c0.12	0.20	
v/s Ratio Perm							0.10					0.05
v/c Ratio	0.78	0.92		0.76	0.64		0.35	0.69		0.84	0.52	0.13
Uniform Delay, d1	67.3	49.2		72.0	47.7		35.6	50.6		67.0	38.2	32.3
Progression Factor	1.06	0.85		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.7	10.2		21.7	1.4		0.8	3.0		12.6	1.0	0.5
Delay (s)	86.1	52.3		93.7	49.2		36.4	53.6		79.7	39.3	32.8
Level of Service	F	D		F	D		D	D		E	D	C
Approach Delay (s)		56.7			55.3			52.1			48.8	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1175	25	18	707	57	18	0	9	131	9	19
Future Volume (vph)	14	1175	25	18	707	57	18	0	9	131	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	78.0		0.0	81.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99		0.99	1.00	0.99	
Frt		0.997			0.989				0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	3420	0	1750	3291	0	1750	0	1309	1750	1633	0
Flt Permitted	0.950			0.950			0.738			0.950		
Satd. Flow (perm)	1558	3420	0	1747	3291	0	1346	0	1290	1745	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			9				55		20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		208.5			336.2			112.0			112.9	
Travel Time (s)		12.5			20.2			10.1			10.2	
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
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
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Adj. Flow (vph)	15	1263	27	19	760	61	19	0	10	141	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1290	0	19	821	0	19	0	10	141	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1		1	1	2	
Detector Template	Left	Thru		Left	Thru		Left		Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0		2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0		2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	13.0	99.0		13.0	99.0		48.0		48.0	48.0	48.0	
Total Split (%)	8.1%	61.9%		8.1%	61.9%		30.0%		30.0%	30.0%	30.0%	
Maximum Green (s)	9.0	92.0		9.0	92.0		41.0		41.0	41.0	41.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None		None	None	None	
Walk Time (s)		10.0			10.0		10.0		10.0	10.0	10.0	
Flash Dont Walk (s)		17.0			17.0		27.0		27.0	27.0	27.0	
Pedestrian Calls (#/hr)		3			5		2		2	8	8	
Act Effct Green (s)	7.7	117.9		7.8	120.2		20.7		20.7	20.7	20.7	
Actuated g/C Ratio	0.05	0.74		0.05	0.75		0.13		0.13	0.13	0.13	
v/c Ratio	0.20	0.51		0.22	0.33		0.11		0.05	0.62	0.13	
Control Delay	107.0	3.5		74.1	6.2		57.9		0.4	76.4	28.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	107.0	3.6		74.1	6.2		57.9		0.4	76.4	28.5	
LOS	F	A		E	A		E		A	E	C	
Approach Delay		4.8			7.7			38.1			68.0	
Approach LOS		A			A			D			E	
Queue Length 50th (m)	5.0	31.5		6.4	22.1		5.5		0.0	44.0	2.9	
Queue Length 95th (m)	m10.1	12.3		m12.4	52.6		12.3		0.0	59.3	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	89	2519		99	2473		344		371	447	433	
Starvation Cap Reductn	0	99		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	0.17	0.53		0.19	0.33		0.06		0.03	0.32	0.07	

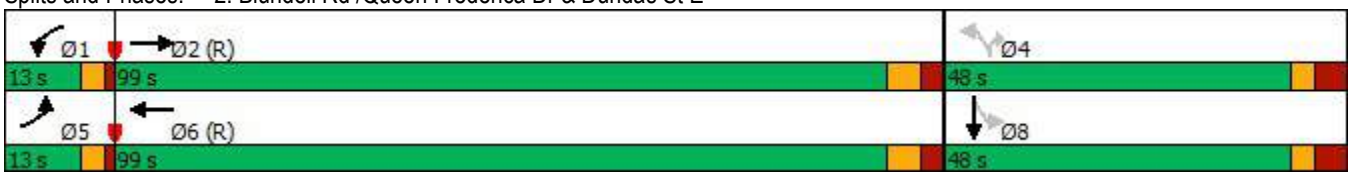
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 32 (20%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 10.8		Intersection LOS: B	

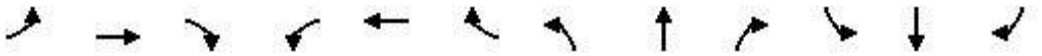
Intersection Capacity Utilization 66.3% ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E

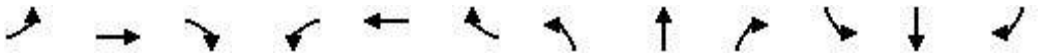




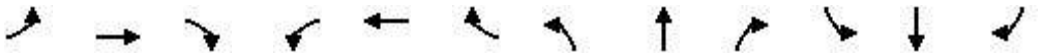
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1175	25	18	707	57	18	0	9	131	9	19
Future Volume (vph)	14	1175	25	18	707	57	18	0	9	131	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1566	3420		1750	3291		1733		1290	1745	1633	
Flt Permitted	0.95	1.00		0.95	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	1566	3420		1750	3291		1345		1290	1745	1633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	1263	27	19	760	61	19	0	10	141	10	20
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	9	0	17	0
Lane Group Flow (vph)	15	1289	0	19	819	0	19	0	1	141	13	0
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	3.5	116.3		5.0	117.8		20.7		20.7	20.7	20.7	
Effective Green, g (s)	3.5	116.3		5.0	117.8		20.7		20.7	20.7	20.7	
Actuated g/C Ratio	0.02	0.73		0.03	0.74		0.13		0.13	0.13	0.13	
Clearance Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	34	2485		54	2422		174		166	225	211	
v/s Ratio Prot	0.01	c0.38		c0.01	0.25						0.01	
v/s Ratio Perm							0.01		0.00	c0.08		
v/c Ratio	0.44	0.52		0.35	0.34		0.11		0.01	0.63	0.06	
Uniform Delay, d1	77.3	9.6		75.9	7.4		61.5		60.7	66.0	61.1	
Progression Factor	1.39	0.26		0.94	0.70		1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.9	0.7		3.6	0.3		0.3		0.0	5.4	0.1	
Delay (s)	115.4	3.2		74.8	5.5		61.8		60.7	71.4	61.2	
Level of Service	F	A		E	A		E		E	E	E	
Approach Delay (s)		4.5			7.1			61.4			69.6	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1228	17	44	774	8	7	1	54	13	3	36
Future Volume (vph)	19	1228	17	44	774	8	7	1	54	13	3	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	46.0		0.0	60.0		0.0	48.5		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.98		0.99	0.98	
Frt		0.998			0.998			0.852			0.861	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1608	3425	0	1700	3330	0	1750	1469	0	1653	1561	0
Flt Permitted	0.950			0.950			0.730			0.718		
Satd. Flow (perm)	1596	3425	0	1694	3330	0	1338	1469	0	1241	1561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			59			39	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		172.2			208.5			142.2			131.5	
Travel Time (s)		10.3			12.5			12.8			11.8	
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Adj. Flow (vph)	21	1335	18	48	841	9	8	1	59	14	3	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	1353	0	48	850	0	8	60	0	14	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

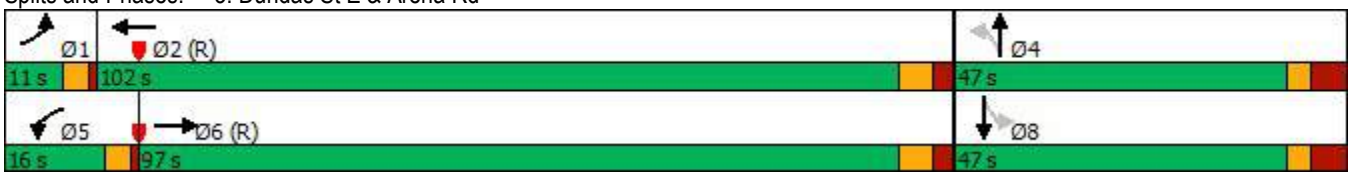


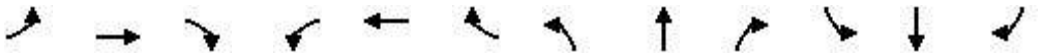
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	35.5		11.0	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	11.0	97.0		16.0	102.0		47.0	47.0		47.0	47.0	
Total Split (%)	6.9%	60.6%		10.0%	63.8%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	7.0	90.5		12.0	95.5		39.5	39.5		39.5	39.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.5		1.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		10.0			10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		19.0			19.0		29.0	29.0		29.0	29.0	
Pedestrian Calls (#/hr)		9			9		6	6		4	4	
Act Effct Green (s)	7.5	124.5		9.8	129.0		14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.05	0.78		0.06	0.81		0.09	0.09		0.09	0.09	
v/c Ratio	0.28	0.51		0.46	0.32		0.07	0.33		0.13	0.24	
Control Delay	83.1	11.3		81.0	7.1		60.4	17.3		63.2	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	83.1	11.3		81.0	7.1		60.4	17.3		63.2	20.3	
LOS	F	B		F	A		E	B		E	C	
Approach Delay		12.4			11.1			22.4			31.0	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	6.6	74.3		15.5	25.5		2.5	0.3		4.4	0.9	
Queue Length 95th (m)	16.3	182.8		30.8	55.1		6.7	12.3		9.8	11.2	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	75	2664		128	2684		330	407		306	414	
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	0.28	0.51		0.38	0.32		0.02	0.15		0.05	0.10	

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 24 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 12.6	Intersection LOS: B

Intersection Capacity Utilization 59.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1228	17	44	774	8	7	1	54	13	3	36
Future Volume (vph)	19	1228	17	44	774	8	7	1	54	13	3	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1608	3425		1700	3331		1742	1470		1641	1561	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	1608	3425		1700	3331		1338	1470		1240	1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1335	18	48	841	9	8	1	59	14	3	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	54	0	0	36	0
Lane Group Flow (vph)	21	1353	0	48	850	0	8	6	0	14	6	0
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	4.7	120.9		8.4	124.6		12.7	12.7		12.7	12.7	
Effective Green, g (s)	4.7	120.9		8.4	124.6		12.7	12.7		12.7	12.7	
Actuated g/C Ratio	0.03	0.76		0.05	0.78		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	47	2588		89	2594		106	116		98	123	
v/s Ratio Prot	0.01	c0.40		c0.03	c0.26			0.00			0.00	
v/s Ratio Perm							0.01			c0.01		
v/c Ratio	0.45	0.52		0.54	0.33		0.08	0.05		0.14	0.05	
Uniform Delay, d1	76.4	7.9		73.9	5.3		68.2	68.1		68.6	68.1	
Progression Factor	1.00	1.00		0.93	0.98		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	0.8		6.0	0.3		0.3	0.2		0.7	0.2	
Delay (s)	83.0	8.7		75.1	5.5		68.5	68.2		69.3	68.2	
Level of Service	F	A		E	A		E	E		E	E	
Approach Delay (s)		9.8			9.2			68.3			68.5	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	46	17	58	116	23
Future Volume (vph)	29	46	17	58	116	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.917				0.977	
Flt Protected	0.981			0.989		
Satd. Flow (prot)	1626	0	0	1715	1800	0
Flt Permitted	0.981			0.989		
Satd. Flow (perm)	1626	0	0	1715	1800	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	217.8			112.9	77.9	
Travel Time (s)	19.6			10.2	7.0	
Confl. Peds. (#/hr)	3	4	4			5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	2%	6%	9%	2%	2%
Adj. Flow (vph)	31	49	18	62	125	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	80	150	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	29	46	17	58	116	23
Future Volume (vph)	29	46	17	58	116	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	31	49	18	62	125	25

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	80	80	150
Volume Left (vph)	31	18	0
Volume Right (vph)	49	0	25
Hadj (s)	-0.22	0.19	-0.07
Departure Headway (s)	4.2	4.4	4.1
Degree Utilization, x	0.09	0.10	0.17
Capacity (veh/h)	815	788	857
Control Delay (s)	7.6	7.9	7.9
Approach Delay (s)	7.6	7.9	7.9
Approach LOS	A	A	A

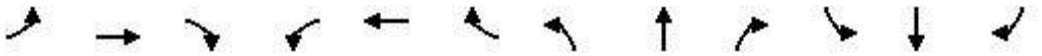
Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	46	17	58	116	23
Future Vol, veh/h	29	46	17	58	116	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	7	2	6	9	2	2
Mvmt Flow	31	49	18	62	125	25
Number of Lanes	1	0	0	1	1	0

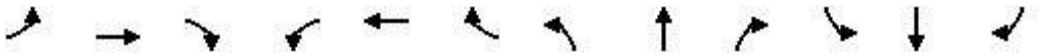
Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.7	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	23%	39%	0%
Vol Thru, %	77%	0%	83%
Vol Right, %	0%	61%	17%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	75	75	139
LT Vol	17	29	0
Through Vol	58	0	116
RT Vol	0	46	23
Lane Flow Rate	81	81	149
Geometry Grp	1	1	1
Degree of Util (X)	0.096	0.095	0.168
Departure Headway (Hd)	4.305	4.232	4.039
Convergence, Y/N	Yes	Yes	Yes
Cap	823	852	879
Service Time	2.382	2.232	2.106
HCM Lane V/C Ratio	0.098	0.095	0.17
HCM Control Delay	7.8	7.7	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.3	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.986			0.897				
Flt Protected					0.958						0.981	
Satd. Flow (prot)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Flt Permitted					0.958						0.981	
Satd. Flow (perm)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Link Speed (k/h)		40			40			40			20	
Link Distance (m)		67.0			217.8			131.5			82.6	
Travel Time (s)		6.0			19.6			11.8			14.9	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	2%	2%	9%	2%	2%	2%
Adj. Flow (vph)	0	6	6	41	1	5	0	8	26	15	24	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	47	0	0	34	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	6	6	41	1	5	0	8	26	15	24	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	47	34	39
Volume Left (vph)	0	41	0	15
Volume Right (vph)	6	5	26	0
Hadj (s)	-0.27	0.20	-0.33	0.11
Departure Headway (s)	3.8	4.3	3.7	4.2
Degree Utilization, x	0.01	0.06	0.04	0.05
Capacity (veh/h)	913	825	935	845
Control Delay (s)	6.9	7.5	6.9	7.4
Approach Delay (s)	6.9	7.5	6.9	7.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.3			
Level of Service	A			
Intersection Capacity Utilization	24.5%	ICU Level of Service	A	
Analysis Period (min)	15			

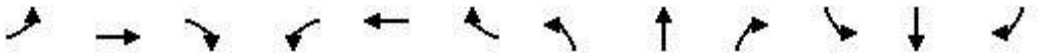
Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Future Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	6	2	2	2	2	9	2	2	2
Mvmt Flow	0	6	6	41	1	5	0	8	26	15	24	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.5	6.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	88%	38%
Vol Thru, %	24%	50%	3%	62%
Vol Right, %	76%	50%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	10	40	34
LT Vol	0	0	35	13
Through Vol	7	5	1	21
RT Vol	22	5	4	0
Lane Flow Rate	34	12	47	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.012	0.055	0.045
Departure Headway (Hd)	3.608	3.796	4.253	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	987	939	841	864
Service Time	1.648	1.835	2.282	2.171
HCM Lane V/C Ratio	0.034	0.013	0.056	0.046
HCM Control Delay	6.8	6.9	7.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.2	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	828	153	257	1162	355	238	956	222	452	1082	251
Future Volume (vph)	198	828	153	257	1162	355	238	956	222	452	1082	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	197.5		61.5	96.0		0.0	107.5		148.0
Storage Lanes	1		0	1		0	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00	1.00		1.00		0.98
Frt		0.977			0.965			0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3328	0	1750	3307	0	1750	4816	0	3395	5029	1536
Flt Permitted	0.950			0.950			0.101			0.950		
Satd. Flow (perm)	1704	3328	0	1730	3307	0	186	4816	0	3379	5029	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			30			32				213
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Adj. Flow (vph)	202	845	156	262	1186	362	243	976	227	461	1104	256
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	1001	0	262	1548	0	243	1203	0	461	1104	256
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	20.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	47.8		11.0	47.8		12.0	42.5		12.0	42.5	42.5
Total Split (s)	20.0	60.0		31.0	71.0		21.0	46.0		23.0	48.0	48.0
Total Split (%)	12.5%	37.5%		19.4%	44.4%		13.1%	28.8%		14.4%	30.0%	30.0%
Maximum Green (s)	16.0	53.2		27.0	64.2		16.0	39.5		18.0	41.5	41.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.8		1.0	2.8		2.0	2.5		2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0			10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0			26.0			26.0	26.0
Pedestrian Calls (#/hr)		40			51			11			7	7
Act Effct Green (s)	16.0	54.1		26.1	64.2		57.0	39.5		18.0	41.5	41.5
Actuated g/C Ratio	0.10	0.34		0.16	0.40		0.36	0.25		0.11	0.26	0.26
v/c Ratio	1.18	0.88		0.92	1.15		1.09	0.99		1.21	0.85	0.47
Control Delay	189.0	47.6		101.2	119.4		129.6	81.7		173.3	63.4	12.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	189.0	47.6		101.2	119.4		129.6	81.7		173.3	63.4	12.9
LOS	F	D		F	F		F	F		F	E	B
Approach Delay		71.4			116.7			89.7			84.1	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~78.6	81.6		82.7	~301.3		~70.8	138.0		~91.7	123.0	10.5
Queue Length 95th (m)	#132.4	#162.2		#132.7	#344.1		#128.2	#171.2		#127.3	141.2	36.5
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	171	1134		295	1344		222	1213		381	1304	547
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.18	0.88		0.89	1.15		1.09	0.99		1.21	0.85	0.47

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 48 (30%), Referenced to phase 2:SBT and 6:NBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 92.4	Intersection LOS: F

Intersection Capacity Utilization 117.1% ICU Level of Service H

Analysis Period (min) 15

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

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

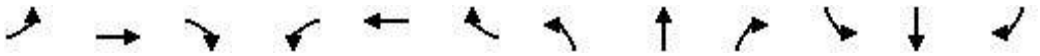
Splits and Phases: 1: Dixie Rd & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	828	153	257	1162	355	238	956	222	452	1082	251
Future Volume (vph)	198	828	153	257	1162	355	238	956	222	452	1082	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1716	3327		1750	3306		1750	4815		3395	5029	1503
Flt Permitted	0.95	1.00		0.95	1.00		0.10	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1716	3327		1750	3306		187	4815		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	202	845	156	262	1186	362	243	976	227	461	1104	256
RTOR Reduction (vph)	0	9	0	0	18	0	0	24	0	0	0	158
Lane Group Flow (vph)	202	992	0	262	1530	0	243	1179	0	461	1104	98
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Actuated Green, G (s)	16.0	54.1		26.1	64.2		55.5	39.5		18.0	41.5	41.5
Effective Green, g (s)	16.0	54.1		26.1	64.2		55.5	39.5		18.0	41.5	41.5
Actuated g/C Ratio	0.10	0.34		0.16	0.40		0.35	0.25		0.11	0.26	0.26
Clearance Time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	171	1124		285	1326		221	1188		381	1304	389
v/s Ratio Prot	c0.12	0.30		0.15	c0.46		0.11	0.24		c0.14	0.22	
v/s Ratio Perm							c0.27					0.07
v/c Ratio	1.18	0.88		0.92	1.15		1.10	0.99		1.21	0.85	0.25
Uniform Delay, d1	72.0	49.9		65.9	47.9		47.1	60.1		71.0	56.2	47.0
Progression Factor	1.20	0.78		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	120.7	7.2		32.5	78.3		89.7	24.3		116.6	6.9	1.6
Delay (s)	207.5	46.2		98.4	126.2		136.9	84.4		187.6	63.2	48.5
Level of Service	F	D		F	F		F	F		F	E	D
Approach Delay (s)		73.3			122.1			93.3			92.6	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	97.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	117.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1225	37	46	1667	148	76	0	25	106	9	19
Future Volume (vph)	44	1225	37	46	1667	148	76	0	25	106	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	78.0		0.0	81.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00		0.99		0.96	0.98	0.98	
Frt		0.996			0.988				0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	3445	0	1750	3442	0	1750	0	1566	1750	1628	0
Flt Permitted	0.950			0.950			0.738			0.950		
Satd. Flow (perm)	1746	3445	0	1736	3442	0	1339	0	1509	1707	1628	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			11				55		20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		208.5			336.2			112.0			112.9	
Travel Time (s)		12.5			20.2			10.1			10.2	
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
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
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1317	40	49	1792	159	82	0	27	114	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1357	0	49	1951	0	82	0	27	114	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1		1	1	2	
Detector Template	Left	Thru		Left	Thru		Left		Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0		2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0		2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	11.0	102.0		14.0	105.0		44.0		44.0	44.0	44.0	
Total Split (%)	6.9%	63.8%		8.8%	65.6%		27.5%		27.5%	27.5%	27.5%	
Maximum Green (s)	7.0	95.0		10.0	98.0		37.0		37.0	37.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None		None	None	None	
Walk Time (s)		10.0			10.0		10.0		10.0	10.0	10.0	
Flash Dont Walk (s)		17.0			17.0		27.0		27.0	27.0	27.0	
Pedestrian Calls (#/hr)		18			12		19		19	12	12	
Act Effct Green (s)	7.3	108.3		9.0	110.0		26.9		26.9	26.9	26.9	
Actuated g/C Ratio	0.05	0.68		0.06	0.69		0.17		0.17	0.17	0.17	
v/c Ratio	0.59	0.58		0.50	0.82		0.37		0.09	0.40	0.10	
Control Delay	117.7	5.6		82.0	12.6		60.2		2.0	60.6	25.0	
Queue Delay	0.0	0.0		0.0	0.1		0.0		0.0	0.0	0.0	
Total Delay	117.7	5.6		82.0	12.7		60.2		2.0	60.6	25.0	
LOS	F	A		F	B		E		A	E	C	
Approach Delay		9.3			14.4			45.7			53.1	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	15.9	26.6		16.1	98.0		21.6		0.0	30.2	2.5	
Queue Length 95th (m)	m#31.2	33.3		m18.7	m95.2		38.0		1.5	48.8	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	79	2332		109	2370		309		391	394	391	
Starvation Cap Reductn	0	20		0	45		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	0.59	0.59		0.45	0.84		0.27		0.07	0.29	0.08	

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 104 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 14.9	Intersection LOS: B

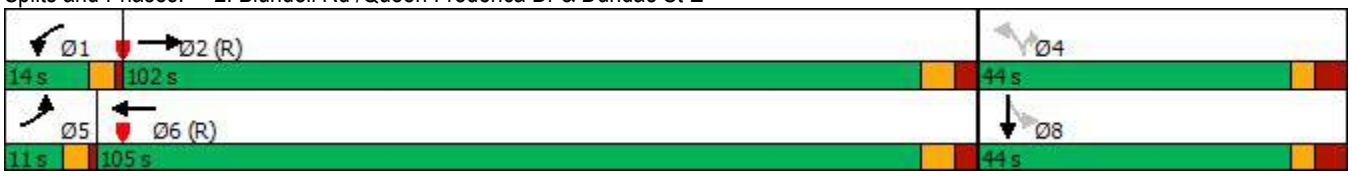
Intersection Capacity Utilization 81.1% ICU Level of Service D

Analysis Period (min) 15

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

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

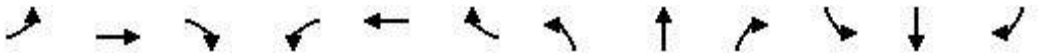
Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



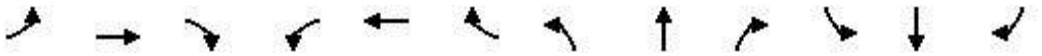
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1225	37	46	1667	148	76	0	25	106	9	19
Future Volume (vph)	44	1225	37	46	1667	148	76	0	25	106	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1750	3443		1750	3442		1724		1509	1707	1628	
Flt Permitted	0.95	1.00		0.95	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	1750	3443		1750	3442		1338		1509	1707	1628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	47	1317	40	49	1792	159	82	0	27	114	10	20
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	22	0	17	0
Lane Group Flow (vph)	47	1356	0	49	1948	0	82	0	5	114	13	0
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	5.9	107.5		7.6	109.2		26.9		26.9	26.9	26.9	
Effective Green, g (s)	5.9	107.5		7.6	109.2		26.9		26.9	26.9	26.9	
Actuated g/C Ratio	0.04	0.67		0.05	0.68		0.17		0.17	0.17	0.17	
Clearance Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	64	2313		83	2349		224		253	286	273	
v/s Ratio Prot	0.03	0.39		c0.03	c0.57						0.01	
v/s Ratio Perm							0.06		0.00	c0.07		
v/c Ratio	0.73	0.59		0.59	0.83		0.37		0.02	0.40	0.05	
Uniform Delay, d1	76.3	14.2		74.7	18.6		59.0		55.5	59.3	55.8	
Progression Factor	1.25	0.28		1.01	0.49		1.00		1.00	1.00	1.00	
Incremental Delay, d2	31.2	1.0		5.1	1.7		1.0		0.0	0.9	0.1	
Delay (s)	126.1	4.9		80.3	10.8		60.0		55.6	60.3	55.9	
Level of Service	F	A		F	B		E		E	E	E	
Approach Delay (s)		9.0			12.5			58.9			59.3	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1219	19	88	1581	20	21	11	110	15	2	26
Future Volume (vph)	37	1219	19	88	1581	20	21	11	110	15	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	46.0		0.0	60.0		0.0	48.5		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00		0.98	0.98		0.99	0.97	
Frt		0.998			0.998			0.864			0.861	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3453	0	1750	3457	0	1700	1555	0	1750	1542	0
Flt Permitted	0.950			0.950			0.739			0.623		
Satd. Flow (perm)	1727	3453	0	1730	3457	0	1299	1555	0	1135	1542	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			111			26	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		172.2			208.5			142.2			131.5	
Travel Time (s)		10.3			12.5			12.8			11.8	
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Adj. Flow (vph)	37	1231	19	89	1597	20	21	11	111	15	2	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1250	0	89	1617	0	21	122	0	15	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	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)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	35.5		11.0	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	13.0	94.0		19.0	100.0		47.0	47.0		47.0	47.0	
Total Split (%)	8.1%	58.8%		11.9%	62.5%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	9.0	87.5		15.0	93.5		39.5	39.5		39.5	39.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.5		1.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		10.0			10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		19.0			19.0		29.0	29.0		29.0	29.0	
Pedestrian Calls (#/hr)		24			11		11	11		15	15	
Act Effct Green (s)	8.4	102.6		12.8	109.2		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.05	0.64		0.08	0.68		0.17	0.17		0.17	0.17	
v/c Ratio	0.41	0.56		0.64	0.69		0.10	0.35		0.08	0.10	
Control Delay	86.4	20.4		94.7	11.3		50.3	12.7		49.3	17.2	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay	86.4	20.4		94.7	11.6		50.3	12.7		49.3	17.2	
LOS	F	C		F	B		D	B		D	B	
Approach Delay		22.3			15.9			18.2			28.4	
Approach LOS		C			B			B			C	
Queue Length 50th (m)	11.6	140.1		30.0	60.4		5.2	2.7		3.7	0.5	
Queue Length 95th (m)	24.3	168.4		m37.2	64.3		12.9	19.4		10.3	9.0	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	99	2214		166	2358		320	467		280	400	
Starvation Cap Reductn	0	0		0	205		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	0.37	0.56		0.54	0.75		0.07	0.26		0.05	0.07	

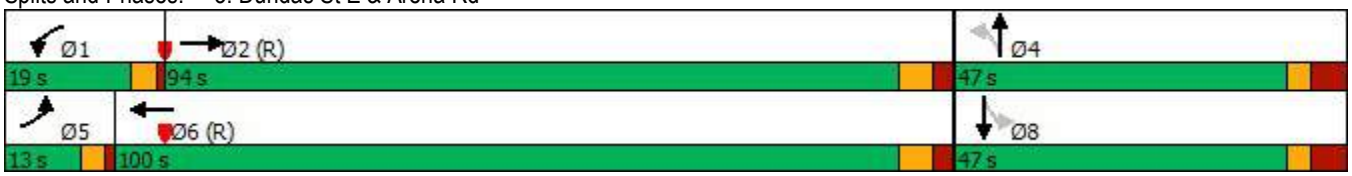
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 108 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 18.8	Intersection LOS: B

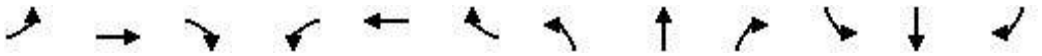
Intersection Capacity Utilization 85.5% ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1219	19	88	1581	20	21	11	110	15	2	26
Future Volume (vph)	37	1219	19	88	1581	20	21	11	110	15	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1733	3453		1750	3458		1670	1554		1731	1541	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.62	1.00	
Satd. Flow (perm)	1733	3453		1750	3458		1299	1554		1134	1541	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	37	1231	19	89	1597	20	21	11	111	15	2	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	93	0	0	22	0
Lane Group Flow (vph)	37	1250	0	89	1617	0	21	29	0	15	6	0
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	7.0	102.6		12.8	108.4		26.6	26.6		26.6	26.6	
Effective Green, g (s)	7.0	102.6		12.8	108.4		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.04	0.64		0.08	0.68		0.17	0.17		0.17	0.17	
Clearance Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	75	2214		140	2342		215	258		188	256	
v/s Ratio Prot	0.02	0.36		c0.05	c0.47			c0.02			0.00	
v/s Ratio Perm							0.02			0.01		
v/c Ratio	0.49	0.56		0.64	0.69		0.10	0.11		0.08	0.02	
Uniform Delay, d1	74.8	16.1		71.3	15.6		56.5	56.7		56.4	55.8	
Progression Factor	1.00	1.00		1.16	0.53		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.0	1.0		5.4	1.0		0.2	0.2		0.2	0.0	
Delay (s)	79.8	17.2		88.3	9.3		56.7	56.9		56.5	55.9	
Level of Service	E	B		F	A		E	E		E	E	
Approach Delay (s)		19.0			13.4			56.9			56.1	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	30	38	149	113	37
Future Volume (vph)	22	30	38	149	113	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.921				0.967	
Flt Protected	0.980			0.990		
Satd. Flow (prot)	1663	0	0	1824	1781	0
Flt Permitted	0.980			0.990		
Satd. Flow (perm)	1663	0	0	1824	1781	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	217.8			112.9	77.9	
Travel Time (s)	19.6			10.2	7.0	
Confl. Peds. (#/hr)	6	5	5			4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	23	32	40	159	120	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	0	199	159	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	22	30	38	149	113	37
Future Volume (vph)	22	30	38	149	113	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	23	32	40	159	120	39

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	55	199	159
Volume Left (vph)	23	40	0
Volume Right (vph)	32	0	39
Hadj (s)	-0.23	0.07	-0.11
Departure Headway (s)	4.4	4.3	4.1
Degree Utilization, x	0.07	0.24	0.18
Capacity (veh/h)	742	823	854
Control Delay (s)	7.8	8.6	8.0
Approach Delay (s)	7.8	8.6	8.0
Approach LOS	A	A	A

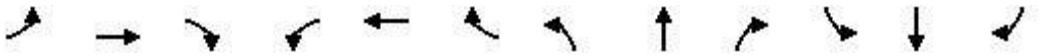
Intersection Summary			
Delay	8.3		
Level of Service	A		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	30	38	149	113	37
Future Vol, veh/h	22	30	38	149	113	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	32	40	159	120	39
Number of Lanes	1	0	0	1	1	0

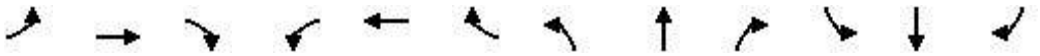
Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	8.5	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	20%	42%	0%
Vol Thru, %	80%	0%	75%
Vol Right, %	0%	58%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	187	52	150
LT Vol	38	22	0
Through Vol	149	0	113
RT Vol	0	30	37
Lane Flow Rate	199	55	160
Geometry Grp	1	1	1
Degree of Util (X)	0.232	0.068	0.179
Departure Headway (Hd)	4.193	4.445	4.033
Convergence, Y/N	Yes	Yes	Yes
Cap	847	811	876
Service Time	2.263	2.445	2.12
HCM Lane V/C Ratio	0.235	0.068	0.183
HCM Control Delay	8.5	7.8	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.9	0.2	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.955			0.931				
Flt Protected					0.973			0.999			0.976	
Satd. Flow (prot)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Flt Permitted					0.973			0.999			0.976	
Satd. Flow (perm)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Link Speed (k/h)		40			40			40			20	
Link Distance (m)		67.0			217.8			131.5			82.6	
Travel Time (s)		6.0			19.6			11.8			14.9	
Confl. Peds. (#/hr)	5		4	4		5	3		6	6		3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	2	3	35	7	21	2	31	35	10	10	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	63	0	0	68	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2	3	35	7	21	2	31	35	10	10	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	63	68	20
Volume Left (vph)	0	35	2	10
Volume Right (vph)	3	21	35	0
Hadj (s)	-0.33	-0.02	-0.26	0.13
Departure Headway (s)	3.8	4.1	3.8	4.2
Degree Utilization, x	0.01	0.07	0.07	0.02
Capacity (veh/h)	913	862	918	828
Control Delay (s)	6.8	7.4	7.1	7.3
Approach Delay (s)	6.8	7.4	7.1	7.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.2			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

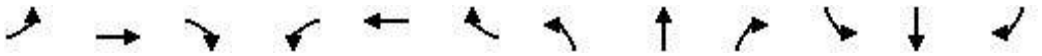
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Future Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	6	2	2	2	2	3	2	2	2
Mvmt Flow	0	2	3	35	7	21	2	31	35	10	10	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.1	7.3
HCM LOS	A	A	A	A

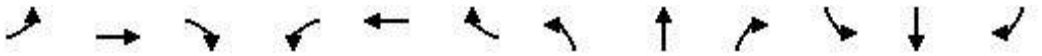
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	55%	50%
Vol Thru, %	45%	40%	11%	50%
Vol Right, %	52%	60%	34%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	5	62	20
LT Vol	2	0	34	10
Through Vol	30	2	7	10
RT Vol	34	3	21	0
Lane Flow Rate	67	5	63	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.005	0.071	0.024
Departure Headway (Hd)	3.765	3.774	4.065	4.205
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	948	943	880	849
Service Time	1.8	1.818	2.096	2.244
HCM Lane V/C Ratio	0.071	0.005	0.072	0.024
HCM Control Delay	7.1	6.8	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.2	0.1

Appendix O

2028 Future Total Conditions Synchro Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	928	166	96	449	169	87	767	139	368	901	183
Future Volume (vph)	172	928	166	96	449	169	87	767	139	368	901	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	197.5		61.5	96.0		0.0	107.5		148.0
Storage Lanes	1		0	1		0	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	1.00		1.00		0.99
Frt		0.977			0.959			0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	3317	0	1638	3094	0	1716	4642	0	3267	4794	1479
Flt Permitted	0.950			0.950			0.274			0.950		
Satd. Flow (perm)	1614	3317	0	1632	3094	0	495	4642	0	3261	4794	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			35			22				191
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Adj. Flow (vph)	179	967	173	100	468	176	91	799	145	383	939	191
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	1140	0	100	644	0	91	944	0	383	939	191
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	10.0	47.8		10.0	47.8		15.0	42.5		15.0	42.5	42.5
Total Split (s)	29.0	67.0		17.0	55.0		15.0	47.0		29.0	61.0	61.0
Total Split (%)	18.1%	41.9%		10.6%	34.4%		9.4%	29.4%		18.1%	38.1%	38.1%
Maximum Green (s)	26.0	60.2		14.0	48.2		12.0	40.5		24.0	54.5	54.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.8		0.0	2.8		0.0	2.5		2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0			10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0			26.0			26.0	26.0
Pedestrian Calls (#/hr)		15			11			3			1	1
Act Effct Green (s)	21.9	58.2		12.9	49.3		58.6	45.2		22.4	59.6	59.6
Actuated g/C Ratio	0.14	0.36		0.08	0.31		0.37	0.28		0.14	0.37	0.37
v/c Ratio	0.81	0.94		0.76	0.66		0.35	0.71		0.84	0.53	0.29
Control Delay	95.3	54.5		104.1	49.2		29.6	54.9		83.5	41.4	5.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	95.3	54.5		104.1	49.2		29.6	54.9		83.5	41.4	5.6
LOS	F	D		F	D		C	D		F	D	A
Approach Delay		60.0			56.5			52.7			47.5	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	47.4	183.2		31.5	87.4		16.5	101.4		61.3	88.3	0.0
Queue Length 95th (m)	81.7	#79.4		#58.2	112.3		27.9	118.7		80.0	104.7	17.3
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	263	1257		143	981		279	1326		490	1784	663
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.68	0.91		0.70	0.66		0.33	0.71		0.78	0.53	0.29

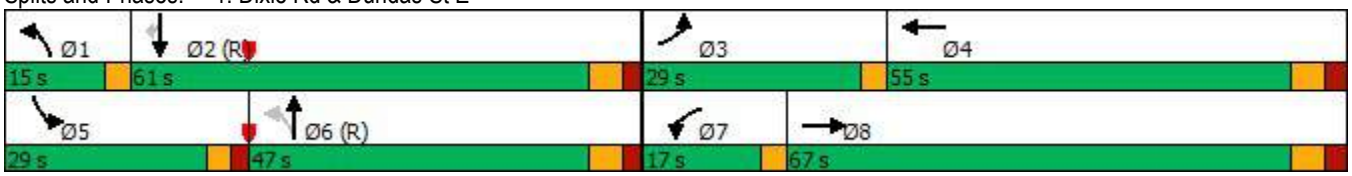
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 145 (91%), Referenced to phase 2:SBT and 6:NBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 53.7	Intersection LOS: D

Intersection Capacity Utilization 97.3% ICU Level of Service F

Analysis Period (min) 15

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

Splits and Phases: 1: Dixie Rd & Dundas St E

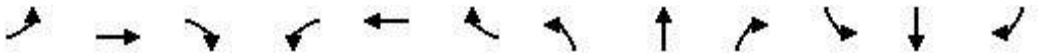


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	928	166	96	449	169	87	767	139	368	901	183
Future Volume (vph)	172	928	166	96	449	169	87	767	139	368	901	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1623	3317		1638	3094		1716	4642		3267	4794	1459
Flt Permitted	0.95	1.00		0.95	1.00		0.27	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1623	3317		1638	3094		495	4642		3267	4794	1459
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	179	967	173	100	468	176	91	799	145	383	939	191
RTOR Reduction (vph)	0	10	0	0	24	0	0	16	0	0	0	120
Lane Group Flow (vph)	179	1130	0	100	620	0	91	928	0	383	939	71
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Actuated Green, G (s)	21.9	58.3		12.9	49.3		55.1	45.1		22.4	59.5	59.5
Effective Green, g (s)	21.9	58.3		12.9	49.3		55.1	45.1		22.4	59.5	59.5
Actuated g/C Ratio	0.14	0.36		0.08	0.31		0.34	0.28		0.14	0.37	0.37
Clearance Time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	222	1208		132	953		246	1308		457	1782	542
v/s Ratio Prot	c0.11	c0.34		0.06	0.20		0.02	c0.20		c0.12	0.20	
v/s Ratio Perm							0.10					0.05
v/c Ratio	0.81	0.94		0.76	0.65		0.37	0.71		0.84	0.53	0.13
Uniform Delay, d1	67.0	49.0		72.0	47.9		36.3	51.6		67.0	39.3	33.2
Progression Factor	1.08	0.85		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	16.8	11.9		21.7	1.6		0.9	3.3		12.6	1.1	0.5
Delay (s)	89.0	53.7		93.7	49.5		37.3	54.9		79.7	40.4	33.7
Level of Service	F	D		F	D		D	D		E	D	C
Approach Delay (s)		58.5			55.4			53.3			49.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1184	25	18	721	63	18	0	9	175	9	19
Future Volume (vph)	14	1184	25	18	721	63	18	0	9	175	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	78.0		0.0	81.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99		0.99	1.00	0.99	
Frt		0.997			0.988				0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	3420	0	1750	3287	0	1750	0	1309	1750	1633	0
Flt Permitted	0.950			0.950			0.738			0.950		
Satd. Flow (perm)	1559	3420	0	1747	3287	0	1346	0	1290	1745	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			10				55		20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		208.5			336.2			112.0			112.9	
Travel Time (s)		12.5			20.2			10.1			10.2	
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
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
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Adj. Flow (vph)	15	1273	27	19	775	68	19	0	10	188	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1300	0	19	843	0	19	0	10	188	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1		1	1	2	
Detector Template	Left	Thru		Left	Thru		Left		Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0		2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0		2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	13.0	99.0		13.0	99.0		48.0		48.0	48.0	48.0	
Total Split (%)	8.1%	61.9%		8.1%	61.9%		30.0%		30.0%	30.0%	30.0%	
Maximum Green (s)	9.0	92.0		9.0	92.0		41.0		41.0	41.0	41.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None		None	None	None	
Walk Time (s)		10.0			10.0		10.0		10.0	10.0	10.0	
Flash Dont Walk (s)		17.0			17.0		27.0		27.0	27.0	27.0	
Pedestrian Calls (#/hr)		3			5		2		2	8	8	
Act Effct Green (s)	7.7	114.6		7.8	116.9		24.0		24.0	24.0	24.0	
Actuated g/C Ratio	0.05	0.72		0.05	0.73		0.15		0.15	0.15	0.15	
v/c Ratio	0.20	0.53		0.22	0.35		0.09		0.04	0.72	0.11	
Control Delay	103.1	4.8		75.1	7.1		55.4		0.3	79.2	27.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	103.1	4.9		75.1	7.1		55.4		0.3	79.2	27.4	
LOS	F	A		E	A		E		A	E	C	
Approach Delay		6.0			8.6			36.4			72.1	
Approach LOS		A			A			D			E	
Queue Length 50th (m)	4.9	101.3		6.1	25.2		5.4		0.0	58.4	2.8	
Queue Length 95th (m)	m10.1	15.9		m12.4	54.0		12.3		0.0	77.5	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	89	2450		99	2405		344		371	447	433	
Starvation Cap Reductn	0	98		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	0.17	0.55		0.19	0.35		0.06		0.03	0.42	0.07	

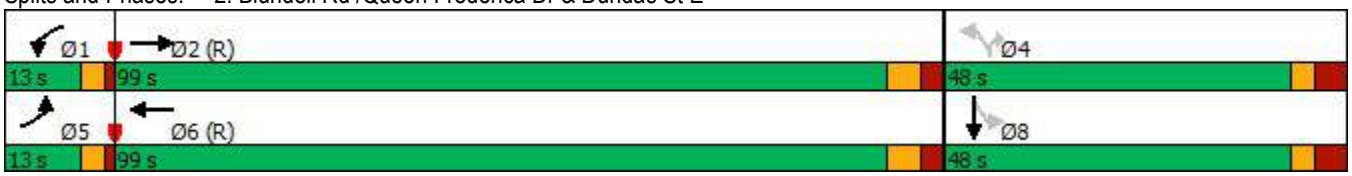
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 32 (20%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 13.2		Intersection LOS: B	

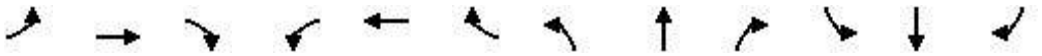
Intersection Capacity Utilization 69.0% ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E

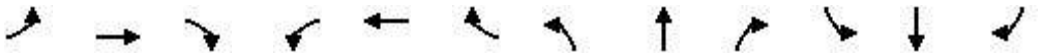




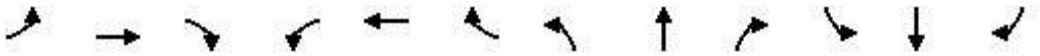
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1184	25	18	721	63	18	0	9	175	9	19
Future Volume (vph)	14	1184	25	18	721	63	18	0	9	175	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1566	3420		1750	3287		1733		1290	1745	1633	
Flt Permitted	0.95	1.00		0.95	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	1566	3420		1750	3287		1345		1290	1745	1633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	1273	27	19	775	68	19	0	10	188	10	20
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	9	0	17	0
Lane Group Flow (vph)	15	1299	0	19	840	0	19	0	2	188	13	0
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	3.5	113.0		5.0	114.5		24.0		24.0	24.0	24.0	
Effective Green, g (s)	3.5	113.0		5.0	114.5		24.0		24.0	24.0	24.0	
Actuated g/C Ratio	0.02	0.71		0.03	0.72		0.15		0.15	0.15	0.15	
Clearance Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	34	2415		54	2352		201		193	261	244	
v/s Ratio Prot	0.01	c0.38		c0.01	0.26						0.01	
v/s Ratio Perm							0.01		0.00	c0.11		
v/c Ratio	0.44	0.54		0.35	0.36		0.09		0.01	0.72	0.05	
Uniform Delay, d1	77.3	11.1		75.9	8.7		58.6		57.9	64.8	58.3	
Progression Factor	1.34	0.33		0.95	0.72		1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.8	0.8		3.6	0.4		0.2		0.0	9.4	0.1	
Delay (s)	111.3	4.4		75.8	6.6		58.8		57.9	74.2	58.4	
Level of Service	F	A		E	A		E		E	E	E	
Approach Delay (s)		5.7			8.1			58.5			72.0	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1226	17	44	774	22	7	1	54	23	3	76
Future Volume (vph)	36	1226	17	44	774	22	7	1	54	23	3	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	46.0		0.0	60.0		0.0	48.5		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.98		0.99	0.98	
Frt		0.998			0.996			0.852			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1608	3425	0	1700	3323	0	1750	1469	0	1653	1549	0
Flt Permitted	0.950			0.950			0.701			0.718		
Satd. Flow (perm)	1596	3425	0	1693	3323	0	1286	1469	0	1241	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3			59			83	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		172.2			208.5			142.2			79.4	
Travel Time (s)		10.3			12.5			12.8			7.1	
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Adj. Flow (vph)	39	1333	18	48	841	24	8	1	59	25	3	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1351	0	48	865	0	8	60	0	25	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	35.5		11.0	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	11.0	97.0		16.0	102.0		47.0	47.0		47.0	47.0	
Total Split (%)	6.9%	60.6%		10.0%	63.8%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	7.0	90.5		12.0	95.5		39.5	39.5		39.5	39.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.5		1.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		10.0			10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		19.0			19.0		29.0	29.0		29.0	29.0	
Pedestrian Calls (#/hr)		9			9		6	6		4	4	
Act Effct Green (s)	8.6	119.6		9.8	120.9		14.8	14.8		14.8	14.8	
Actuated g/C Ratio	0.05	0.75		0.06	0.76		0.09	0.09		0.09	0.09	
v/c Ratio	0.45	0.53		0.46	0.34		0.07	0.32		0.22	0.39	
Control Delay	90.2	11.9		81.0	8.5		59.9	17.0		66.5	16.6	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	90.2	11.9		81.0	8.6		59.9	17.0		66.5	16.6	
LOS	F	B		F	A		E	B		E	B	
Approach Delay		14.1			12.4			22.0			27.9	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	12.2	75.6		15.6	29.5		2.5	0.3		7.8	0.9	
Queue Length 95th (m)	#27.2	182.4		30.9	56.5		6.7	12.3		14.8	14.9	
Internal Link Dist (m)		148.2			184.5			118.2			55.4	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	86	2560		128	2511		317	407		306	444	
Starvation Cap Reductn	0	0		0	466		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.53		0.38	0.42		0.03	0.15		0.08	0.19	

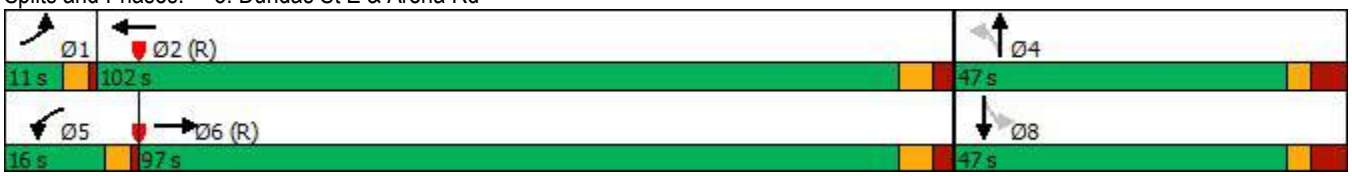
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 24 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 14.3		Intersection LOS: B	

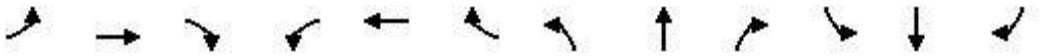
Intersection Capacity Utilization 59.6% ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1226	17	44	774	22	7	1	54	23	3	76
Future Volume (vph)	36	1226	17	44	774	22	7	1	54	23	3	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1608	3425		1700	3323		1742	1470		1641	1550	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.72	1.00	
Satd. Flow (perm)	1608	3425		1700	3323		1286	1470		1240	1550	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1333	18	48	841	24	8	1	59	25	3	83
RTOR Reduction (vph)	0	0	0	0	1	0	0	54	0	0	75	0
Lane Group Flow (vph)	39	1351	0	48	864	0	8	6	0	25	11	0
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	7.2	118.8		8.4	120.0		14.8	14.8		14.8	14.8	
Effective Green, g (s)	7.2	118.8		8.4	120.0		14.8	14.8		14.8	14.8	
Actuated g/C Ratio	0.05	0.74		0.05	0.75		0.09	0.09		0.09	0.09	
Clearance Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	72	2543		89	2492		118	135		114	143	
v/s Ratio Prot	0.02	c0.39		c0.03	0.26			0.00			0.01	
v/s Ratio Perm							0.01			c0.02		
v/c Ratio	0.54	0.53		0.54	0.35		0.07	0.05		0.22	0.07	
Uniform Delay, d1	74.8	8.8		73.9	6.8		66.3	66.2		67.2	66.3	
Progression Factor	1.00	1.00		0.94	0.99		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.1	0.8		6.0	0.4		0.2	0.1		1.0	0.2	
Delay (s)	82.9	9.6		75.1	7.0		66.5	66.3		68.2	66.6	
Level of Service	F	A		E	A		E	E		E	E	
Approach Delay (s)		11.6			10.6			66.4			66.9	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	91	23	58	115	24
Future Volume (vph)	29	91	23	58	115	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.897				0.977	
Flt Protected	0.988			0.986		
Satd. Flow (prot)	1613	0	0	1713	1800	0
Flt Permitted	0.988			0.986		
Satd. Flow (perm)	1613	0	0	1713	1800	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	126.4			112.9	77.9	
Travel Time (s)	11.4			10.2	7.0	
Confl. Peds. (#/hr)	3	4	4			5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	2%	6%	9%	2%	2%
Adj. Flow (vph)	31	98	25	62	124	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	0	87	150	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	29	91	23	58	115	24
Future Volume (vph)	29	91	23	58	115	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	31	98	25	62	124	26

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	129	87	150
Volume Left (vph)	31	25	0
Volume Right (vph)	98	0	26
Hadj (s)	-0.35	0.20	-0.07
Departure Headway (s)	4.1	4.5	4.2
Degree Utilization, x	0.15	0.11	0.18
Capacity (veh/h)	836	761	827
Control Delay (s)	7.8	8.1	8.1
Approach Delay (s)	7.8	8.1	8.1
Approach LOS	A	A	A

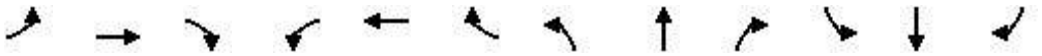
Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	91	23	58	115	24
Future Vol, veh/h	29	91	23	58	115	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	7	2	6	9	2	2
Mvmt Flow	31	98	25	62	124	26
Number of Lanes	1	0	0	1	1	0

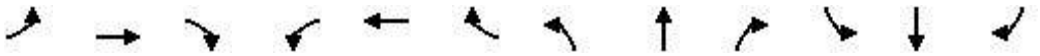
Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	8.1	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	28%	24%	0%
Vol Thru, %	72%	0%	83%
Vol Right, %	0%	76%	17%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	81	120	139
LT Vol	23	29	0
Through Vol	58	0	115
RT Vol	0	91	24
Lane Flow Rate	87	129	149
Geometry Grp	1	1	1
Degree of Util (X)	0.109	0.148	0.171
Departure Headway (Hd)	4.505	4.142	4.125
Convergence, Y/N	Yes	Yes	Yes
Cap	800	871	855
Service Time	2.505	2.145	2.22
HCM Lane V/C Ratio	0.109	0.148	0.174
HCM Control Delay	8.1	7.9	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.5	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.986			0.897				
Flt Protected					0.958						0.981	
Satd. Flow (prot)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Flt Permitted					0.958						0.981	
Satd. Flow (perm)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Link Speed (k/h)		40			40			40			20	
Link Distance (m)		67.0			91.4			52.1			82.6	
Travel Time (s)		6.0			8.2			4.7			14.9	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	2%	2%	9%	2%	2%	2%
Adj. Flow (vph)	0	6	6	41	1	5	0	8	26	15	24	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	47	0	0	34	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	6	6	41	1	5	0	8	26	15	24	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	47	34	39
Volume Left (vph)	0	41	0	15
Volume Right (vph)	6	5	26	0
Hadj (s)	-0.27	0.20	-0.33	0.11
Departure Headway (s)	3.8	4.3	3.7	4.2
Degree Utilization, x	0.01	0.06	0.04	0.05
Capacity (veh/h)	913	825	935	845
Control Delay (s)	6.9	7.5	6.9	7.4
Approach Delay (s)	6.9	7.5	6.9	7.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.3			
Level of Service	A			
Intersection Capacity Utilization	24.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Future Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	6	2	2	2	2	9	2	2	2
Mvmt Flow	0	6	6	41	1	5	0	8	26	15	24	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.5	6.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	88%	38%
Vol Thru, %	24%	50%	3%	62%
Vol Right, %	76%	50%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	10	40	34
LT Vol	0	0	35	13
Through Vol	7	5	1	21
RT Vol	22	5	4	0
Lane Flow Rate	34	12	47	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.012	0.055	0.045
Departure Headway (Hd)	3.608	3.796	4.253	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	987	939	841	864
Service Time	1.648	1.835	2.282	2.171
HCM Lane V/C Ratio	0.034	0.013	0.056	0.046
HCM Control Delay	6.8	6.9	7.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.2	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	0	29	31	0	61
Future Volume (vph)	50	0	29	31	0	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.930			
Flt Protected	0.950					
Satd. Flow (prot)	1750	0	1713	0	0	1842
Flt Permitted	0.950					
Satd. Flow (perm)	1750	0	1713	0	0	1842
Link Speed (k/h)	50		40			40
Link Distance (m)	55.0		79.4			52.1
Travel Time (s)	4.0		7.1			4.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	0	32	34	0	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	66	0	0	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	3.0		3.0			3.0
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	0	29	31	0	61
Future Volume (Veh/h)	50	0	29	31	0	61
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	0	32	34	0	68
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			79			
pX, platoon unblocked						
vC, conflicting volume	117	49			66	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117	49			66	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	100			100	
cM capacity (veh/h)	879	1020			1536	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	56	66	68
Volume Left	56	0	0
Volume Right	0	34	0
cSH	879	1700	1536
Volume to Capacity	0.06	0.04	0.00
Queue Length 95th (m)	1.5	0.0	0.0
Control Delay (s)	9.4	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.4	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	13.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	0	29	31	0	61
Future Vol, veh/h	50	0	29	31	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	0	32	34	0	68

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	117	49	0	0	66	0
Stage 1	49	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	879	1020	-	-	1536	-
Stage 1	973	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	879	1020	-	-	1536	-
Mov Cap-2 Maneuver	879	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	879	1536	-
HCM Lane V/C Ratio	-	-	0.063	-	-
HCM Control Delay (s)	-	-	9.4	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	58	0	7	40	0	45
Future Volume (vph)	58	0	7	40	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.992		
Satd. Flow (prot)	1842	0	0	1827	1593	0
Flt Permitted				0.992		
Satd. Flow (perm)	1842	0	0	1827	1593	0
Link Speed (k/h)	40			40	50	
Link Distance (m)	91.4			126.4	41.7	
Travel Time (s)	8.2			11.4	3.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	64	0	8	44	0	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	0	52	50	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	58	0	7	40	0	45
Future Volume (Veh/h)	58	0	7	40	0	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	64	0	8	44	0	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			64		124	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		124	64
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	95
cM capacity (veh/h)			1538		866	1000

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	52	50
Volume Left	0	8	0
Volume Right	0	0	50
cSH	1700	1538	1000
Volume to Capacity	0.04	0.01	0.05
Queue Length 95th (m)	0.0	0.1	1.2
Control Delay (s)	0.0	1.2	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	8.8
Approach LOS			A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3

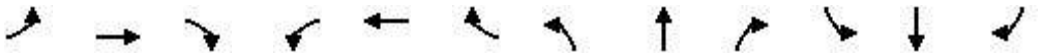
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	0	7	40	0	45
Future Vol, veh/h	58	0	7	40	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	0	8	44	0	50

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	124	64
Stage 1	-	-	-	-	64	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1538	-	871	1000
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	963	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1538	-	867	1000
Mov Cap-2 Maneuver	-	-	-	-	867	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	958	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1000	-	-	1538	-
HCM Lane V/C Ratio	0.05	-	-	0.005	-
HCM Control Delay (s)	8.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	846	160	257	1191	355	250	956	222	452	1082	266
Future Volume (vph)	207	846	160	257	1191	355	250	956	222	452	1082	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	197.5		61.5	96.0		0.0	107.5		148.0
Storage Lanes	1		0	1		0	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00	1.00		1.00		0.98
Frt		0.976			0.966			0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3324	0	1750	3311	0	1750	4816	0	3395	5029	1536
Flt Permitted	0.950			0.950			0.101			0.950		
Satd. Flow (perm)	1705	3324	0	1730	3311	0	186	4816	0	3379	5029	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			29			32				210
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Adj. Flow (vph)	211	863	163	262	1215	362	255	976	227	461	1104	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	211	1026	0	262	1577	0	255	1203	0	461	1104	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	20.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	47.8		11.0	47.8		12.0	42.5		12.0	42.5	42.5
Total Split (s)	20.0	60.0		31.0	71.0		21.0	46.0		23.0	48.0	48.0
Total Split (%)	12.5%	37.5%		19.4%	44.4%		13.1%	28.8%		14.4%	30.0%	30.0%
Maximum Green (s)	16.0	53.2		27.0	64.2		16.0	39.5		18.0	41.5	41.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.8		1.0	2.8		2.0	2.5		2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0			10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0			26.0			26.0	26.0
Pedestrian Calls (#/hr)		40			51			11			7	7
Act Effct Green (s)	16.0	54.1		26.1	64.2		57.0	39.5		18.0	41.5	41.5
Actuated g/C Ratio	0.10	0.34		0.16	0.40		0.36	0.25		0.11	0.26	0.26
v/c Ratio	1.23	0.90		0.92	1.17		1.15	0.99		1.21	0.85	0.50
Control Delay	204.6	50.0		101.2	127.4		146.6	81.7		173.3	63.4	15.5
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	0.0
Total Delay	204.6	50.0		101.2	127.6		146.6	81.7		173.3	63.4	15.5
LOS	F	D		F	F		F	F		F	E	B
Approach Delay		76.3			123.8			93.0			83.9	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~84.6	95.3		82.7	~311.4		~78.8	138.0		~91.7	123.0	15.1
Queue Length 95th (m)	#139.1	#199.1		#132.7	#353.9		#136.9	#171.2		#127.3	141.2	43.0
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	171	1134		295	1345		222	1213		381	1304	545
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	45		0	0		0	0	2
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.23	0.90		0.89	1.21		1.15	0.99		1.21	0.85	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 48 (30%), Referenced to phase 2:SBT and 6:NBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 96.1	Intersection LOS: F

Intersection Capacity Utilization 119.1% ICU Level of Service H

Analysis Period (min) 15

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

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

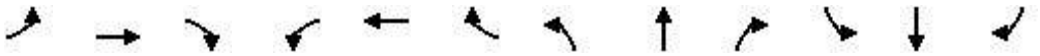
Splits and Phases: 1: Dixie Rd & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	846	160	257	1191	355	250	956	222	452	1082	266
Future Volume (vph)	207	846	160	257	1191	355	250	956	222	452	1082	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1716	3325		1750	3310		1750	4815		3395	5029	1503
Flt Permitted	0.95	1.00		0.95	1.00		0.10	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1716	3325		1750	3310		187	4815		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	211	863	163	262	1215	362	255	976	227	461	1104	271
RTOR Reduction (vph)	0	10	0	0	17	0	0	24	0	0	0	156
Lane Group Flow (vph)	211	1016	0	262	1560	0	255	1179	0	461	1104	115
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Actuated Green, G (s)	16.0	54.1		26.1	64.2		55.5	39.5		18.0	41.5	41.5
Effective Green, g (s)	16.0	54.1		26.1	64.2		55.5	39.5		18.0	41.5	41.5
Actuated g/C Ratio	0.10	0.34		0.16	0.40		0.35	0.25		0.11	0.26	0.26
Clearance Time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	171	1124		285	1328		221	1188		381	1304	389
v/s Ratio Prot	c0.12	0.31		0.15	c0.47		0.12	0.24		c0.14	0.22	
v/s Ratio Perm							c0.29					0.08
v/c Ratio	1.23	0.90		0.92	1.17		1.15	0.99		1.21	0.85	0.30
Uniform Delay, d1	72.0	50.5		65.9	47.9		47.1	60.1		71.0	56.2	47.5
Progression Factor	1.19	0.79		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	140.2	8.8		32.5	86.7		108.3	24.3		116.6	6.9	1.9
Delay (s)	226.1	48.7		98.4	134.6		155.4	84.4		187.6	63.2	49.5
Level of Service	F	D		F	F		F	F		F	E	D
Approach Delay (s)		79.0			129.5			96.9			92.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	101.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	119.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1231	37	46	1706	164	76	0	25	134	9	19
Future Volume (vph)	44	1231	37	46	1706	164	76	0	25	134	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	78.0		0.0	81.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00		0.99		0.96	0.98	0.98	
Frt		0.996			0.987				0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	3445	0	1750	3438	0	1750	0	1566	1750	1628	0
Flt Permitted	0.950			0.950			0.738			0.950		
Satd. Flow (perm)	1746	3445	0	1736	3438	0	1339	0	1509	1707	1628	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			12				55		20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		208.5			336.2			112.0			112.9	
Travel Time (s)		12.5			20.2			10.1			10.2	
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
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
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1324	40	49	1834	176	82	0	27	144	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1364	0	49	2010	0	82	0	27	144	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1		1	1	2	
Detector Template	Left	Thru		Left	Thru		Left		Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0		2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0		2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	11.0	102.0		14.0	105.0		44.0		44.0	44.0	44.0	
Total Split (%)	6.9%	63.8%		8.8%	65.6%		27.5%		27.5%	27.5%	27.5%	
Maximum Green (s)	7.0	95.0		10.0	98.0		37.0		37.0	37.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None		None	None	None	
Walk Time (s)		10.0			10.0		10.0		10.0	10.0	10.0	
Flash Dont Walk (s)		17.0			17.0		27.0		27.0	27.0	27.0	
Pedestrian Calls (#/hr)		18			12		19		19	12	12	
Act Effct Green (s)	7.3	107.4		9.0	109.1		27.8		27.8	27.8	27.8	
Actuated g/C Ratio	0.05	0.67		0.06	0.68		0.17		0.17	0.17	0.17	
v/c Ratio	0.59	0.59		0.50	0.86		0.35		0.09	0.49	0.10	
Control Delay	117.8	5.9		80.9	13.8		59.3		1.9	63.0	25.0	
Queue Delay	0.0	0.0		0.0	0.2		0.0		0.0	0.0	0.0	
Total Delay	117.8	5.9		80.9	14.0		59.3		1.9	63.0	25.0	
LOS	F	A		F	B		E		A	E	C	
Approach Delay		9.7			15.6			45.1			56.5	
Approach LOS		A			B			D			E	
Queue Length 50th (m)	15.8	27.7		16.2	104.2		21.6		0.0	38.9	2.5	
Queue Length 95th (m)	m#31.0	34.5		m18.8	m98.8		38.0		1.5	60.5	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	79	2312		109	2348		309		391	394	391	
Starvation Cap Reductn	0	19		0	42		0		0	0	0	
Spillback Cap Reductn	0	0		0	10		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.59	0.59		0.45	0.87		0.27		0.07	0.37	0.08	

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 104 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 16.1	Intersection LOS: B

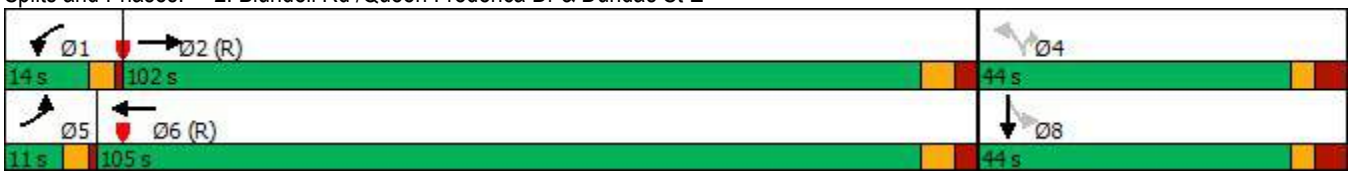
Intersection Capacity Utilization 83.8% ICU Level of Service E

Analysis Period (min) 15

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

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

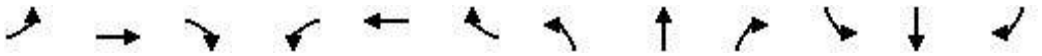
Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



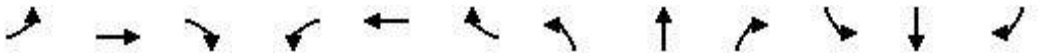
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1231	37	46	1706	164	76	0	25	134	9	19
Future Volume (vph)	44	1231	37	46	1706	164	76	0	25	134	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1750	3443		1750	3437		1724		1509	1707	1628	
Flt Permitted	0.95	1.00		0.95	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	1750	3443		1750	3437		1338		1509	1707	1628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	47	1324	40	49	1834	176	82	0	27	144	10	20
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	22	0	17	0
Lane Group Flow (vph)	47	1363	0	49	2006	0	82	0	5	144	13	0
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	5.9	106.6		7.6	108.3		27.8		27.8	27.8	27.8	
Effective Green, g (s)	5.9	106.6		7.6	108.3		27.8		27.8	27.8	27.8	
Actuated g/C Ratio	0.04	0.67		0.05	0.68		0.17		0.17	0.17	0.17	
Clearance Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	64	2293		83	2326		232		262	296	282	
v/s Ratio Prot	0.03	0.40		c0.03	c0.58						0.01	
v/s Ratio Perm							0.06		0.00	c0.08		
v/c Ratio	0.73	0.59		0.59	0.86		0.35		0.02	0.49	0.05	
Uniform Delay, d1	76.3	14.8		74.7	20.1		58.2		54.8	59.7	55.1	
Progression Factor	1.25	0.29		1.00	0.50		1.00		1.00	1.00	1.00	
Incremental Delay, d2	31.2	1.0		4.6	2.0		0.9		0.0	1.3	0.1	
Delay (s)	126.2	5.3		79.5	12.0		59.1		54.8	60.9	55.1	
Level of Service	F	A		E	B		E		D	E	E	
Approach Delay (s)		9.3			13.6			58.1			59.9	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1219	19	88	1578	62	21	11	110	21	2	55
Future Volume (vph)	79	1219	19	88	1578	62	21	11	110	21	2	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	46.0		0.0	60.0		0.0	48.5		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00		0.98	0.98		0.99	0.97	
Frt		0.998			0.994			0.864			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3453	0	1750	3440	0	1700	1555	0	1750	1529	0
Flt Permitted	0.950			0.950			0.719			0.623		
Satd. Flow (perm)	1728	3453	0	1730	3440	0	1265	1555	0	1135	1529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			4			111			56	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		172.2			208.5			142.2			79.4	
Travel Time (s)		10.3			12.5			12.8			7.1	
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Adj. Flow (vph)	80	1231	19	89	1594	63	21	11	111	21	2	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	1250	0	89	1657	0	21	122	0	21	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	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)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	35.5		11.0	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	13.0	94.0		19.0	100.0		47.0	47.0		47.0	47.0	
Total Split (%)	8.1%	58.8%		11.9%	62.5%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	9.0	87.5		15.0	93.5		39.5	39.5		39.5	39.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.5		1.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		10.0			10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		19.0			19.0		29.0	29.0		29.0	29.0	
Pedestrian Calls (#/hr)		24			11		11	11		15	15	
Act Effct Green (s)	9.9	102.6		12.8	105.5		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.06	0.64		0.08	0.66		0.17	0.17		0.17	0.17	
v/c Ratio	0.75	0.56		0.64	0.73		0.10	0.35		0.11	0.19	
Control Delay	110.9	20.4		93.9	12.3		50.4	12.7		50.8	12.9	
Queue Delay	0.0	0.0		0.0	0.4		0.0	0.0		0.0	0.0	
Total Delay	110.9	20.4		93.9	12.7		50.4	12.7		50.8	12.9	
LOS	F	C		F	B		D	B		D	B	
Approach Delay		25.8			16.9			18.3			23.0	
Approach LOS		C			B			B			C	
Queue Length 50th (m)	25.6	140.1		30.2	61.1		5.2	2.7		5.2	0.5	
Queue Length 95th (m)	#55.0	168.4		m36.1	65.3		12.9	19.4		13.0	12.3	
Internal Link Dist (m)		148.2			184.5			118.2			55.4	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	107	2214		166	2268		312	467		280	419	
Starvation Cap Reductn	0	0		0	201		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	0.75	0.56		0.54	0.80		0.07	0.26		0.07	0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 108 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 20.7	Intersection LOS: C

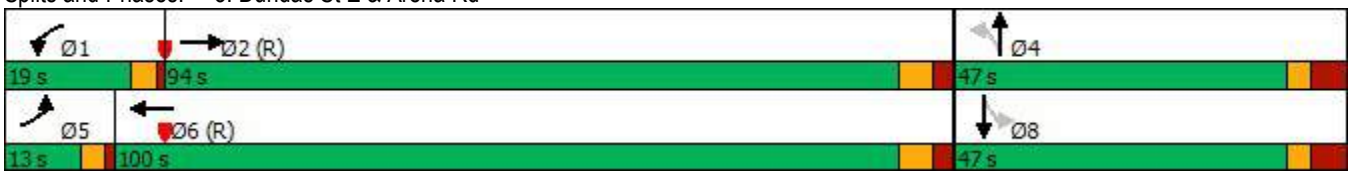
Intersection Capacity Utilization 89.8% ICU Level of Service E

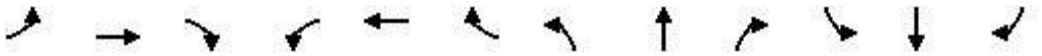
Analysis Period (min) 15

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

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

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1219	19	88	1578	62	21	11	110	21	2	55
Future Volume (vph)	79	1219	19	88	1578	62	21	11	110	21	2	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1733	3453		1750	3441		1671	1554		1731	1529	
Flt Permitted	0.95	1.00		0.95	1.00		0.72	1.00		0.62	1.00	
Satd. Flow (perm)	1733	3453		1750	3441		1265	1554		1134	1529	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	80	1231	19	89	1594	63	21	11	111	21	2	56
RTOR Reduction (vph)	0	0	0	0	1	0	0	93	0	0	47	0
Lane Group Flow (vph)	80	1250	0	89	1656	0	21	29	0	21	11	0
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.9	102.6		12.8	105.5		26.6	26.6		26.6	26.6	
Effective Green, g (s)	9.9	102.6		12.8	105.5		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.06	0.64		0.08	0.66		0.17	0.17		0.17	0.17	
Clearance Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	107	2214		140	2268		210	258		188	254	
v/s Ratio Prot	c0.05	0.36		0.05	c0.48			c0.02			0.01	
v/s Ratio Perm							0.02			0.02		
v/c Ratio	0.75	0.56		0.64	0.73		0.10	0.11		0.11	0.04	
Uniform Delay, d1	73.8	16.1		71.3	17.9		56.6	56.7		56.7	56.0	
Progression Factor	1.00	1.00		1.16	0.53		1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.4	1.0		5.0	1.1		0.2	0.2		0.3	0.1	
Delay (s)	98.3	17.2		88.0	10.6		56.8	56.9		56.9	56.1	
Level of Service	F	B		F	B		E	E		E	E	
Approach Delay (s)		22.1			14.6			56.9			56.3	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

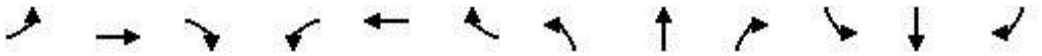
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	59	56	147	112	38
Future Volume (vph)	24	59	56	147	112	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904				0.966	
Flt Protected	0.986			0.986		
Satd. Flow (prot)	1642	0	0	1816	1779	0
Flt Permitted	0.986			0.986		
Satd. Flow (perm)	1642	0	0	1816	1779	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	126.4			112.9	77.9	
Travel Time (s)	11.4			10.2	7.0	
Confl. Peds. (#/hr)	6	5	5			4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	26	63	60	156	119	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	0	216	159	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	24	59	56	147	112	38
Future Volume (vph)	24	59	56	147	112	38
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	26	63	60	156	119	40

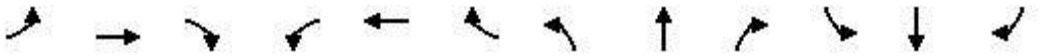
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	89	216	159
Volume Left (vph)	26	60	0
Volume Right (vph)	63	0	40
Hadj (s)	-0.33	0.09	-0.12
Departure Headway (s)	4.4	4.4	4.2
Degree Utilization, x	0.11	0.26	0.19
Capacity (veh/h)	750	801	818
Control Delay (s)	7.9	8.9	8.2
Approach Delay (s)	7.9	8.9	8.2
Approach LOS	A	A	A

Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.955			0.931				
Flt Protected					0.973			0.999			0.976	
Satd. Flow (prot)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Flt Permitted					0.973			0.999			0.976	
Satd. Flow (perm)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Link Speed (k/h)		40			40			40			20	
Link Distance (m)		67.0			91.4			52.1			82.6	
Travel Time (s)		6.0			8.2			4.7			14.9	
Confl. Peds. (#/hr)	5		4	4		5	3		6	6		3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	2	3	35	7	21	2	31	35	10	10	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	63	0	0	68	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2	3	35	7	21	2	31	35	10	10	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	63	68	20
Volume Left (vph)	0	35	2	10
Volume Right (vph)	3	21	35	0
Hadj (s)	-0.33	-0.02	-0.26	0.13
Departure Headway (s)	3.8	4.1	3.8	4.2
Degree Utilization, x	0.01	0.07	0.07	0.02
Capacity (veh/h)	913	862	918	828
Control Delay (s)	6.8	7.4	7.1	7.3
Approach Delay (s)	6.8	7.4	7.1	7.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.2			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	0	66	84	0	47
Future Volume (vph)	35	0	66	84	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.924			
Flt Protected	0.950					
Satd. Flow (prot)	1750	0	1702	0	0	1842
Flt Permitted	0.950					
Satd. Flow (perm)	1750	0	1702	0	0	1842
Link Speed (k/h)	50		40			40
Link Distance (m)	55.0		79.4			52.1
Travel Time (s)	4.0		7.1			4.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	0	73	93	0	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	166	0	0	52
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	3.0		3.0			3.0
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	0	66	84	0	47
Future Volume (Veh/h)	35	0	66	84	0	47
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	0	73	93	0	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			79			
pX, platoon unblocked						
vC, conflicting volume	172	120			166	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	120			166	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	819	932			1412	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	39	166	52
Volume Left	39	0	0
Volume Right	0	93	0
cSH	819	1700	1412
Volume to Capacity	0.05	0.10	0.00
Queue Length 95th (m)	1.1	0.0	0.0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	0	66	84	0	47
Future Vol, veh/h	35	0	66	84	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	73	93	0	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	172	120	0	0	166	0
Stage 1	120	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	818	931	-	-	1412	-
Stage 1	905	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	818	931	-	-	1412	-
Mov Cap-2 Maneuver	818	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	818	1412	-
HCM Lane V/C Ratio	-	-	0.048	-	-
HCM Control Delay (s)	-	-	9.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	49	0	19	69	0	31
Future Volume (vph)	49	0	19	69	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.989		
Satd. Flow (prot)	1842	0	0	1822	1593	0
Flt Permitted				0.989		
Satd. Flow (perm)	1842	0	0	1822	1593	0
Link Speed (k/h)	40			40	50	
Link Distance (m)	91.4			126.4	41.7	
Travel Time (s)	8.2			11.4	3.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	54	0	21	77	0	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	0	0	98	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	49	0	19	69	0	31
Future Volume (Veh/h)	49	0	19	69	0	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	54	0	21	77	0	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			54		173	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		173	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	97
cM capacity (veh/h)			1551		806	1013

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	54	98	34
Volume Left	0	21	0
Volume Right	0	0	34
cSH	1700	1551	1013
Volume to Capacity	0.03	0.01	0.03
Queue Length 95th (m)	0.0	0.3	0.8
Control Delay (s)	0.0	1.7	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	1.7	8.7
Approach LOS			A

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization		21.3%	ICU Level of Service
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	0	19	69	0	31
Future Vol, veh/h	49	0	19	69	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	0	21	77	0	34

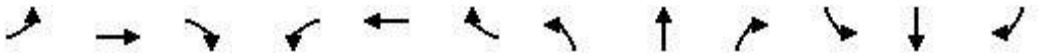
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	54	0	173	54
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	119	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1551	-	817	1013
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1551	-	806	1013
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	893	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	8.7
HCM LOS			A

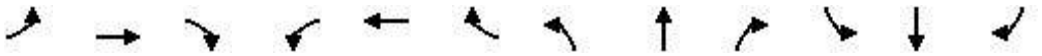
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1013	-	-	1551	-
HCM Lane V/C Ratio	0.034	-	-	0.014	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Appendix P

2033 Future Background Conditions Synchro Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	900	155	96	447	169	83	806	139	368	946	178
Future Volume (vph)	158	900	155	96	447	169	83	806	139	368	946	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	197.5		61.5	96.0		0.0	107.5		148.0
Storage Lanes	1		0	1		0	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	1.00		1.00		0.99
Frt		0.978			0.959			0.978				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	3320	0	1638	3094	0	1716	4647	0	3267	4794	1479
Flt Permitted	0.950			0.950			0.256			0.950		
Satd. Flow (perm)	1614	3320	0	1631	3094	0	462	4647	0	3261	4794	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			35			20				185
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Adj. Flow (vph)	165	938	161	100	466	176	86	840	145	383	985	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	165	1099	0	100	642	0	86	985	0	383	985	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	10.0	47.8		10.0	47.8		15.0	42.5		15.0	42.5	42.5
Total Split (s)	29.0	67.0		17.0	55.0		15.0	47.0		29.0	61.0	61.0
Total Split (%)	18.1%	41.9%		10.6%	34.4%		9.4%	29.4%		18.1%	38.1%	38.1%
Maximum Green (s)	26.0	60.2		14.0	48.2		12.0	40.5		24.0	54.5	54.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.8		0.0	2.8		0.0	2.5		2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0			10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0			26.0			26.0	26.0
Pedestrian Calls (#/hr)		15			11			3			1	1
Act Effct Green (s)	20.9	57.2		12.9	49.2		59.5	46.2		22.4	60.8	60.8
Actuated g/C Ratio	0.13	0.36		0.08	0.31		0.37	0.29		0.14	0.38	0.38
v/c Ratio	0.78	0.92		0.76	0.66		0.35	0.73		0.84	0.54	0.28
Control Delay	92.9	53.1		104.1	49.0		29.2	55.0		83.5	41.1	5.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	92.9	53.1		104.1	49.0		29.2	55.0		83.5	41.1	5.7
LOS	F	D		F	D		C	E		F	D	A
Approach Delay		58.3			56.4			52.9			47.3	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	43.3	174.2		31.5	86.7		15.3	106.4		61.3	92.6	0.0
Queue Length 95th (m)	75.9	152.7		#58.2	111.8		26.5	125.1		80.0	110.7	17.1
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	263	1257		143	985		272	1356		490	1821	668
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.63	0.87		0.70	0.65		0.32	0.73		0.78	0.54	0.28

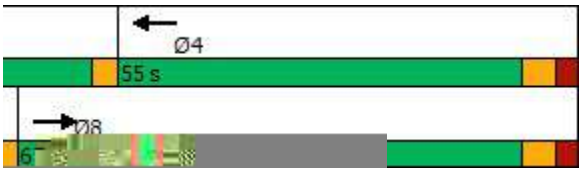
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 145 (91%), Referenced to phase 2:SBT and 6:NBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 53.1	Intersection LOS: D

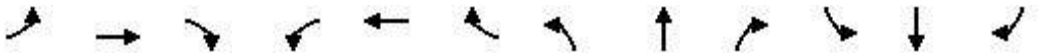
Intersection Capacity Utilization 96.6% ICU Level of Service F

Analysis Period (min) 15

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

Splits and Phases: 1: Dixie Rd & Dundas St E

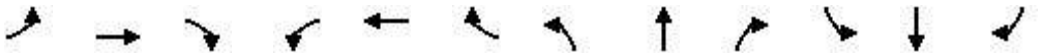




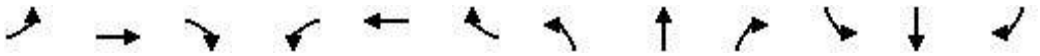
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	900	155	96	447	169	83	806	139	368	946	178
Future Volume (vph)	158	900	155	96	447	169	83	806	139	368	946	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1623	3320		1638	3093		1716	4646		3267	4794	1459
Flt Permitted	0.95	1.00		0.95	1.00		0.26	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1623	3320		1638	3093		462	4646		3267	4794	1459
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	165	938	161	100	466	176	86	840	145	383	985	185
RTOR Reduction (vph)	0	9	0	0	24	0	0	14	0	0	0	115
Lane Group Flow (vph)	165	1090	0	100	618	0	86	971	0	383	985	70
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Actuated Green, G (s)	20.9	57.2		12.9	49.2		56.0	46.2		22.4	60.8	60.8
Effective Green, g (s)	20.9	57.2		12.9	49.2		56.0	46.2		22.4	60.8	60.8
Actuated g/C Ratio	0.13	0.36		0.08	0.31		0.35	0.29		0.14	0.38	0.38
Clearance Time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	212	1186		132	951		238	1341		457	1821	554
v/s Ratio Prot	c0.10	c0.33		0.06	0.20		0.02	c0.21		c0.12	0.21	
v/s Ratio Perm							0.10					0.05
v/c Ratio	0.78	0.92		0.76	0.65		0.36	0.72		0.84	0.54	0.13
Uniform Delay, d1	67.3	49.2		72.0	47.9		35.6	51.2		67.0	38.7	32.3
Progression Factor	1.06	0.85		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.7	10.2		21.7	1.5		0.9	3.4		12.6	1.2	0.5
Delay (s)	86.1	52.3		93.7	49.5		36.6	54.6		79.7	39.9	32.8
Level of Service	F	D		F	D		D	D		E	D	C
Approach Delay (s)		56.7			55.4			53.1			48.8	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1175	25	18	721	57	18	0	9	131	9	19
Future Volume (vph)	14	1175	25	18	721	57	18	0	9	131	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	78.0		0.0	81.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99		0.99	1.00	0.99	
Frt		0.997			0.989				0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	3420	0	1750	3291	0	1750	0	1309	1750	1633	0
Flt Permitted	0.950			0.950			0.738			0.950		
Satd. Flow (perm)	1558	3420	0	1747	3291	0	1346	0	1290	1745	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			9				55		20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		208.5			336.2			112.0			112.9	
Travel Time (s)		12.5			20.2			10.1			10.2	
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
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
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Adj. Flow (vph)	15	1263	27	19	775	61	19	0	10	141	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1290	0	19	836	0	19	0	10	141	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1		1	1	2	
Detector Template	Left	Thru		Left	Thru		Left		Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0		2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0		2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	13.0	99.0		13.0	99.0		48.0		48.0	48.0	48.0	
Total Split (%)	8.1%	61.9%		8.1%	61.9%		30.0%		30.0%	30.0%	30.0%	
Maximum Green (s)	9.0	92.0		9.0	92.0		41.0		41.0	41.0	41.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None		None	None	None	
Walk Time (s)		10.0			10.0		10.0		10.0	10.0	10.0	
Flash Dont Walk (s)		17.0			17.0		27.0		27.0	27.0	27.0	
Pedestrian Calls (#/hr)		3			5		2		2	8	8	
Act Effct Green (s)	7.7	117.9		7.8	120.2		20.7		20.7	20.7	20.7	
Actuated g/C Ratio	0.05	0.74		0.05	0.75		0.13		0.13	0.13	0.13	
v/c Ratio	0.20	0.51		0.22	0.34		0.11		0.05	0.62	0.13	
Control Delay	107.0	3.5		74.9	6.1		57.9		0.4	76.4	28.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	107.0	3.6		74.9	6.1		57.9		0.4	76.4	28.5	
LOS	F	A		E	A		E		A	E	C	
Approach Delay		4.8			7.7			38.1			68.0	
Approach LOS		A			A			D			E	
Queue Length 50th (m)	5.0	31.5		6.4	22.3		5.5		0.0	44.0	2.9	
Queue Length 95th (m)	m10.1	12.3		m12.4	53.0		12.3		0.0	59.3	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	89	2519		99	2473		344		371	447	433	
Starvation Cap Reductn	0	99		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	0.17	0.53		0.19	0.34		0.06		0.03	0.32	0.07	

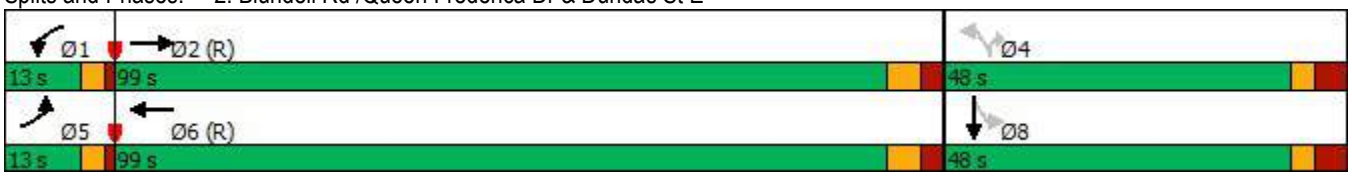
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 32 (20%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 10.8		Intersection LOS: B	

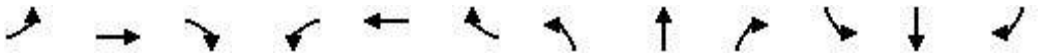
Intersection Capacity Utilization 66.3% ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E

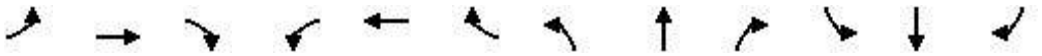




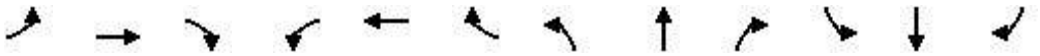
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1175	25	18	721	57	18	0	9	131	9	19
Future Volume (vph)	14	1175	25	18	721	57	18	0	9	131	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1566	3420		1750	3292		1733		1290	1745	1633	
Flt Permitted	0.95	1.00		0.95	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	1566	3420		1750	3292		1345		1290	1745	1633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	1263	27	19	775	61	19	0	10	141	10	20
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	9	0	17	0
Lane Group Flow (vph)	15	1289	0	19	834	0	19	0	1	141	13	0
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	3.5	116.3		5.0	117.8		20.7		20.7	20.7	20.7	
Effective Green, g (s)	3.5	116.3		5.0	117.8		20.7		20.7	20.7	20.7	
Actuated g/C Ratio	0.02	0.73		0.03	0.74		0.13		0.13	0.13	0.13	
Clearance Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	34	2485		54	2423		174		166	225	211	
v/s Ratio Prot	0.01	c0.38		c0.01	0.25						0.01	
v/s Ratio Perm							0.01		0.00	c0.08		
v/c Ratio	0.44	0.52		0.35	0.34		0.11		0.01	0.63	0.06	
Uniform Delay, d1	77.3	9.6		75.9	7.5		61.5		60.7	66.0	61.1	
Progression Factor	1.39	0.26		0.95	0.69		1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.9	0.7		3.6	0.4		0.3		0.0	5.4	0.1	
Delay (s)	115.4	3.2		75.7	5.5		61.8		60.7	71.4	61.2	
Level of Service	F	A		E	A		E		E	E	E	
Approach Delay (s)		4.5			7.0			61.4			69.6	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1228	17	44	789	8	7	1	54	13	3	36
Future Volume (vph)	19	1228	17	44	789	8	7	1	54	13	3	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	46.0		0.0	60.0		0.0	48.5		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.98		0.99	0.98	
Frt		0.998			0.998			0.852			0.861	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1608	3425	0	1700	3330	0	1750	1469	0	1653	1561	0
Flt Permitted	0.950			0.950			0.730			0.718		
Satd. Flow (perm)	1596	3425	0	1694	3330	0	1338	1469	0	1241	1561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			59			39	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		172.2			208.5			142.2			131.5	
Travel Time (s)		10.3			12.5			12.8			11.8	
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Adj. Flow (vph)	21	1335	18	48	858	9	8	1	59	14	3	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	1353	0	48	867	0	8	60	0	14	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

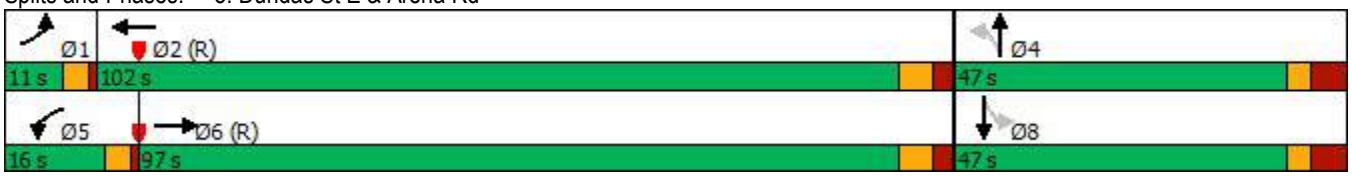


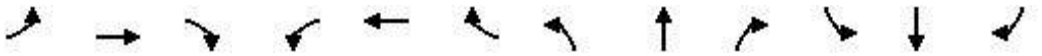
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	35.5		11.0	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	11.0	97.0		16.0	102.0		47.0	47.0		47.0	47.0	
Total Split (%)	6.9%	60.6%		10.0%	63.8%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	7.0	90.5		12.0	95.5		39.5	39.5		39.5	39.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.5		1.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		10.0			10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		19.0			19.0		29.0	29.0		29.0	29.0	
Pedestrian Calls (#/hr)		9			9		6	6		4	4	
Act Effct Green (s)	7.5	124.5		9.8	129.0		14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.05	0.78		0.06	0.81		0.09	0.09		0.09	0.09	
v/c Ratio	0.28	0.51		0.46	0.32		0.07	0.33		0.13	0.24	
Control Delay	83.1	11.3		80.7	7.3		60.4	17.3		63.2	20.3	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	83.1	11.3		80.7	7.4		60.4	17.3		63.2	20.3	
LOS	F	B		F	A		E	B		E	C	
Approach Delay		12.4			11.2			22.4			31.0	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	6.6	74.3		15.5	27.0		2.5	0.3		4.4	0.9	
Queue Length 95th (m)	16.3	182.8		30.8	57.0		6.7	12.3		9.8	11.2	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	75	2664		128	2684		330	407		306	414	
Starvation Cap Reductn	0	0		0	501		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	0.28	0.51		0.38	0.40		0.02	0.15		0.05	0.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 24 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 12.6		Intersection LOS: B	

Intersection Capacity Utilization 59.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1228	17	44	789	8	7	1	54	13	3	36
Future Volume (vph)	19	1228	17	44	789	8	7	1	54	13	3	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1608	3425		1700	3331		1742	1470		1641	1561	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	1608	3425		1700	3331		1338	1470		1240	1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1335	18	48	858	9	8	1	59	14	3	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	54	0	0	36	0
Lane Group Flow (vph)	21	1353	0	48	867	0	8	6	0	14	6	0
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	4.7	120.9		8.4	124.6		12.7	12.7		12.7	12.7	
Effective Green, g (s)	4.7	120.9		8.4	124.6		12.7	12.7		12.7	12.7	
Actuated g/C Ratio	0.03	0.76		0.05	0.78		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	47	2588		89	2594		106	116		98	123	
v/s Ratio Prot	0.01	c0.40		c0.03	c0.26			0.00			0.00	
v/s Ratio Perm							0.01			c0.01		
v/c Ratio	0.45	0.52		0.54	0.33		0.08	0.05		0.14	0.05	
Uniform Delay, d1	76.4	7.9		73.9	5.3		68.2	68.1		68.6	68.1	
Progression Factor	1.00	1.00		0.93	0.99		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	0.8		6.0	0.3		0.3	0.2		0.7	0.2	
Delay (s)	83.0	8.7		74.8	5.6		68.5	68.2		69.3	68.2	
Level of Service	F	A		E	A		E	E		E	E	
Approach Delay (s)		9.8			9.2			68.3			68.5	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	46	17	58	116	23
Future Volume (vph)	29	46	17	58	116	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.917				0.977	
Flt Protected	0.981			0.989		
Satd. Flow (prot)	1626	0	0	1715	1800	0
Flt Permitted	0.981			0.989		
Satd. Flow (perm)	1626	0	0	1715	1800	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	217.8			112.9	77.9	
Travel Time (s)	19.6			10.2	7.0	
Confl. Peds. (#/hr)	3	4	4			5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	2%	6%	9%	2%	2%
Adj. Flow (vph)	31	49	18	62	125	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	80	150	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	46	17	58	116	23
Future Vol, veh/h	29	46	17	58	116	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	7	2	6	9	2	2
Mvmt Flow	31	49	18	62	125	25
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.7	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	23%	39%	0%
Vol Thru, %	77%	0%	83%
Vol Right, %	0%	61%	17%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	75	75	139
LT Vol	17	29	0
Through Vol	58	0	116
RT Vol	0	46	23
Lane Flow Rate	81	81	149
Geometry Grp	1	1	1
Degree of Util (X)	0.096	0.095	0.168
Departure Headway (Hd)	4.305	4.232	4.039
Convergence, Y/N	Yes	Yes	Yes
Cap	823	852	879
Service Time	2.382	2.232	2.106
HCM Lane V/C Ratio	0.098	0.095	0.17
HCM Control Delay	7.8	7.7	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.3	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.986			0.897				
Flt Protected					0.958						0.981	
Satd. Flow (prot)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Flt Permitted					0.958						0.981	
Satd. Flow (perm)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Link Speed (k/h)		40			40			40			20	
Link Distance (m)		67.0			217.8			131.5			82.6	
Travel Time (s)		6.0			19.6			11.8			14.9	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	2%	2%	9%	2%	2%	2%
Adj. Flow (vph)	0	6	6	41	1	5	0	8	26	15	24	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	47	0	0	34	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			

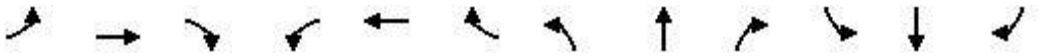
Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Future Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	6	2	2	2	2	9	2	2	2
Mvmt Flow	0	6	6	41	1	5	0	8	26	15	24	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.5	6.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	88%	38%
Vol Thru, %	24%	50%	3%	62%
Vol Right, %	76%	50%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	10	40	34
LT Vol	0	0	35	13
Through Vol	7	5	1	21
RT Vol	22	5	4	0
Lane Flow Rate	34	12	47	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.012	0.055	0.045
Departure Headway (Hd)	3.608	3.796	4.253	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	987	939	841	864
Service Time	1.648	1.835	2.282	2.171
HCM Lane V/C Ratio	0.034	0.013	0.056	0.046
HCM Control Delay	6.8	6.9	7.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.2	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	836	153	257	1162	355	238	1004	222	452	1136	251
Future Volume (vph)	198	836	153	257	1162	355	238	1004	222	452	1136	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	197.5		61.5	96.0		0.0	107.5		148.0
Storage Lanes	1		0	1		0	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00	1.00		1.00		0.98
Frt		0.977			0.965			0.973				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3329	0	1750	3307	0	1750	4822	0	3395	5029	1536
Flt Permitted	0.950			0.950			0.101			0.950		
Satd. Flow (perm)	1704	3329	0	1730	3307	0	186	4822	0	3380	5029	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			30			29				213
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Adj. Flow (vph)	202	853	156	262	1186	362	243	1024	227	461	1159	256
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	1009	0	262	1548	0	243	1251	0	461	1159	256
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	20.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	47.8		11.0	47.8		12.0	42.5		12.0	42.5	42.5
Total Split (s)	20.0	60.0		31.0	71.0		21.0	46.0		23.0	48.0	48.0
Total Split (%)	12.5%	37.5%		19.4%	44.4%		13.1%	28.8%		14.4%	30.0%	30.0%
Maximum Green (s)	16.0	53.2		27.0	64.2		16.0	39.5		18.0	41.5	41.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.8		1.0	2.8		2.0	2.5		2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0			10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0			26.0			26.0	26.0
Pedestrian Calls (#/hr)		40			51			11			7	7
Act Effct Green (s)	16.0	54.1		26.1	64.2		57.0	39.5		18.0	41.5	41.5
Actuated g/C Ratio	0.10	0.34		0.16	0.40		0.36	0.25		0.11	0.26	0.26
v/c Ratio	1.18	0.89		0.92	1.15		1.09	1.03		1.21	0.89	0.47
Control Delay	188.9	48.4		101.2	119.4		129.6	90.9		173.3	66.4	12.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	188.9	48.4		101.2	119.4		129.6	90.9		173.3	66.4	12.9
LOS	F	D		F	F		F	F		F	E	B
Approach Delay		71.9			116.7			97.2			85.4	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~78.8	85.4		82.7	~301.3		~70.8	~153.0		~91.7	130.9	10.5
Queue Length 95th (m)	#132.5	#171.7		#132.7	#344.1		#128.2	#183.1		#127.3	149.8	36.5
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	171	1135		295	1344		222	1212		381	1304	547
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.18	0.89		0.89	1.15		1.09	1.03		1.21	0.89	0.47

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 48 (30%), Referenced to phase 2:SBT and 6:NBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 94.5	Intersection LOS: F

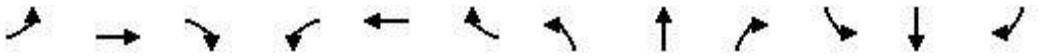
Intersection Capacity Utilization 117.1% ICU Level of Service H

Analysis Period (min) 15

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

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

Splits and Phases: 1: Dixie Rd & Dundas St E

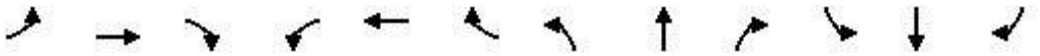


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	836	153	257	1162	355	238	1004	222	452	1136	251
Future Volume (vph)	198	836	153	257	1162	355	238	1004	222	452	1136	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1716	3328		1750	3306		1750	4821		3395	5029	1503
Flt Permitted	0.95	1.00		0.95	1.00		0.10	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1716	3328		1750	3306		187	4821		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	202	853	156	262	1186	362	243	1024	227	461	1159	256
RTOR Reduction (vph)	0	9	0	0	18	0	0	22	0	0	0	158
Lane Group Flow (vph)	202	1000	0	262	1530	0	243	1229	0	461	1159	98
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Actuated Green, G (s)	16.0	54.1		26.1	64.2		55.5	39.5		18.0	41.5	41.5
Effective Green, g (s)	16.0	54.1		26.1	64.2		55.5	39.5		18.0	41.5	41.5
Actuated g/C Ratio	0.10	0.34		0.16	0.40		0.35	0.25		0.11	0.26	0.26
Clearance Time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	171	1125		285	1326		221	1190		381	1304	389
v/s Ratio Prot	c0.12	0.30		0.15	c0.46		0.11	0.25		c0.14	0.23	
v/s Ratio Perm							c0.27					0.07
v/c Ratio	1.18	0.89		0.92	1.15		1.10	1.03		1.21	0.89	0.25
Uniform Delay, d1	72.0	50.1		65.9	47.9		47.4	60.2		71.0	57.0	47.0
Progression Factor	1.21	0.79		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	120.6	7.5		32.5	78.3		89.7	34.9		116.6	9.3	1.6
Delay (s)	207.4	47.0		98.4	126.2		137.1	95.2		187.6	66.3	48.5
Level of Service	F	D		F	F		F	F		F	E	D
Approach Delay (s)		73.8			122.1			102.0			93.7	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	99.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	117.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1237	37	46	1667	148	76	0	25	106	9	19
Future Volume (vph)	44	1237	37	46	1667	148	76	0	25	106	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	78.0		0.0	81.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00		0.99		0.96	0.98	0.98	
Frt		0.996			0.988				0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	3445	0	1750	3442	0	1750	0	1566	1750	1628	0
Flt Permitted	0.950			0.950			0.738			0.950		
Satd. Flow (perm)	1746	3445	0	1736	3442	0	1339	0	1509	1707	1628	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			11				55		20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		208.5			336.2			112.0			112.9	
Travel Time (s)		12.5			20.2			10.1			10.2	
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
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
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1330	40	49	1792	159	82	0	27	114	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1370	0	49	1951	0	82	0	27	114	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1		1	1	2	
Detector Template	Left	Thru		Left	Thru		Left		Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0		2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0		2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	

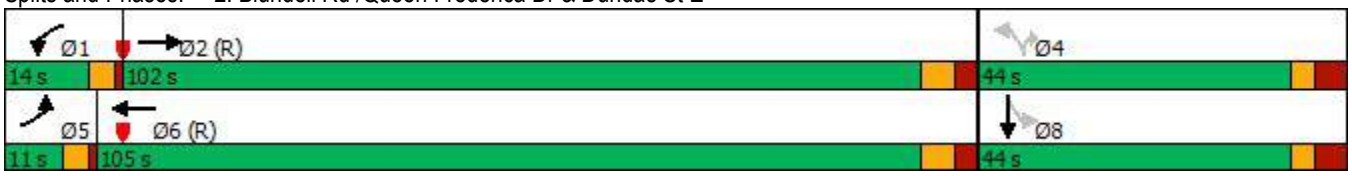


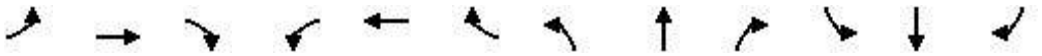
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	11.0	102.0		14.0	105.0		44.0		44.0	44.0	44.0	
Total Split (%)	6.9%	63.8%		8.8%	65.6%		27.5%		27.5%	27.5%	27.5%	
Maximum Green (s)	7.0	95.0		10.0	98.0		37.0		37.0	37.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None		None	None	None	
Walk Time (s)		10.0			10.0		10.0		10.0	10.0	10.0	
Flash Dont Walk (s)		17.0			17.0		27.0		27.0	27.0	27.0	
Pedestrian Calls (#/hr)		18			12		19		19	12	12	
Act Effct Green (s)	7.3	108.3		9.0	110.0		26.9		26.9	26.9	26.9	
Actuated g/C Ratio	0.05	0.68		0.06	0.69		0.17		0.17	0.17	0.17	
v/c Ratio	0.59	0.59		0.50	0.82		0.37		0.09	0.40	0.10	
Control Delay	117.1	5.6		82.0	12.6		60.2		2.0	60.6	25.0	
Queue Delay	0.0	0.0		0.0	0.1		0.0		0.0	0.0	0.0	
Total Delay	117.1	5.6		82.0	12.7		60.2		2.0	60.6	25.0	
LOS	F	A		F	B		E		A	E	C	
Approach Delay		9.3			14.4			45.7			53.1	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	15.9	26.8		16.1	98.0		21.6		0.0	30.2	2.5	
Queue Length 95th (m)	m#30.4	33.5		m18.7	m95.2		38.0		1.5	48.8	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	79	2332		109	2370		309		391	394	391	
Starvation Cap Reductn	0	19		0	45		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	0.59	0.59		0.45	0.84		0.27		0.07	0.29	0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 104 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 14.9		Intersection LOS: B	

Intersection Capacity Utilization 81.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E

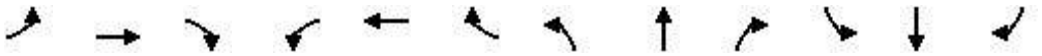




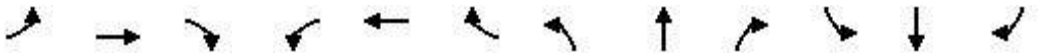
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1237	37	46	1667	148	76	0	25	106	9	19
Future Volume (vph)	44	1237	37	46	1667	148	76	0	25	106	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1750	3443		1750	3442		1724		1509	1707	1628	
Flt Permitted	0.95	1.00		0.95	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	1750	3443		1750	3442		1338		1509	1707	1628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	47	1330	40	49	1792	159	82	0	27	114	10	20
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	22	0	17	0
Lane Group Flow (vph)	47	1369	0	49	1948	0	82	0	5	114	13	0
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	5.9	107.5		7.6	109.2		26.9		26.9	26.9	26.9	
Effective Green, g (s)	5.9	107.5		7.6	109.2		26.9		26.9	26.9	26.9	
Actuated g/C Ratio	0.04	0.67		0.05	0.68		0.17		0.17	0.17	0.17	
Clearance Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	64	2313		83	2349		224		253	286	273	
v/s Ratio Prot	0.03	0.40		c0.03	c0.57						0.01	
v/s Ratio Perm							0.06		0.00	c0.07		
v/c Ratio	0.73	0.59		0.59	0.83		0.37		0.02	0.40	0.05	
Uniform Delay, d1	76.3	14.3		74.7	18.6		59.0		55.5	59.3	55.8	
Progression Factor	1.24	0.28		1.01	0.49		1.00		1.00	1.00	1.00	
Incremental Delay, d2	31.1	1.0		5.1	1.7		1.0		0.0	0.9	0.1	
Delay (s)	125.6	4.9		80.3	10.8		60.0		55.6	60.3	55.9	
Level of Service	F	A		F	B		E		E	E	E	
Approach Delay (s)		8.9			12.5			58.9			59.3	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1231	19	88	1581	20	21	11	110	15	2	26
Future Volume (vph)	37	1231	19	88	1581	20	21	11	110	15	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	46.0		0.0	60.0		0.0	48.5		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00		0.98	0.98		0.99	0.97	
Frt		0.998			0.998			0.864			0.861	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3454	0	1750	3457	0	1700	1555	0	1750	1542	0
Flt Permitted	0.950			0.950			0.739			0.623		
Satd. Flow (perm)	1727	3454	0	1730	3457	0	1299	1555	0	1135	1542	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			111			26	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		172.2			208.5			142.2			131.5	
Travel Time (s)		10.3			12.5			12.8			11.8	
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Adj. Flow (vph)	37	1243	19	89	1597	20	21	11	111	15	2	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1262	0	89	1617	0	21	122	0	15	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	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)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	35.5		11.0	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	13.0	94.0		19.0	100.0		47.0	47.0		47.0	47.0	
Total Split (%)	8.1%	58.8%		11.9%	62.5%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	9.0	87.5		15.0	93.5		39.5	39.5		39.5	39.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.5		1.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		10.0			10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		19.0			19.0		29.0	29.0		29.0	29.0	
Pedestrian Calls (#/hr)		24			11		11	11		15	15	
Act Effct Green (s)	8.4	102.6		12.8	109.2		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.05	0.64		0.08	0.68		0.17	0.17		0.17	0.17	
v/c Ratio	0.41	0.57		0.64	0.69		0.10	0.35		0.08	0.10	
Control Delay	86.4	20.5		94.7	11.3		50.3	12.7		49.3	17.2	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay	86.4	20.5		94.7	11.6		50.3	12.7		49.3	17.2	
LOS	F	C		F	B		D	B		D	B	
Approach Delay		22.4			15.9			18.2			28.4	
Approach LOS		C			B			B			C	
Queue Length 50th (m)	11.6	142.2		30.0	60.4		5.2	2.7		3.7	0.5	
Queue Length 95th (m)	24.3	170.7		m37.2	64.3		12.9	19.4		10.3	9.0	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	99	2214		166	2358		320	467		280	400	
Starvation Cap Reductn	0	0		0	205		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	0.37	0.57		0.54	0.75		0.07	0.26		0.05	0.07	

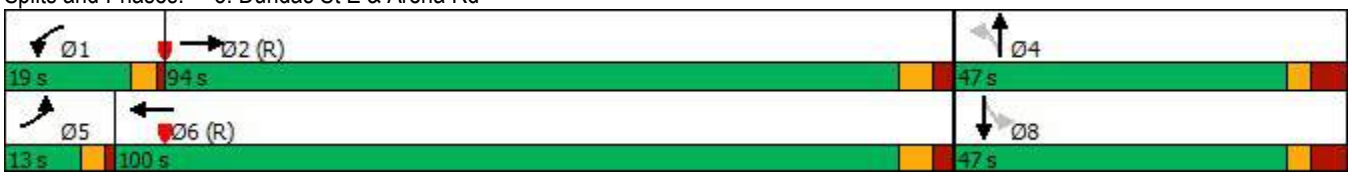
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 108 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 18.8	Intersection LOS: B

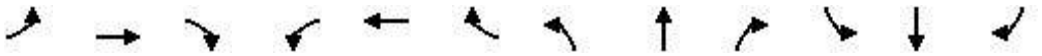
Intersection Capacity Utilization 85.5% ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1231	19	88	1581	20	21	11	110	15	2	26
Future Volume (vph)	37	1231	19	88	1581	20	21	11	110	15	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1733	3453		1750	3458		1670	1554		1731	1541	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.62	1.00	
Satd. Flow (perm)	1733	3453		1750	3458		1299	1554		1134	1541	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	37	1243	19	89	1597	20	21	11	111	15	2	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	93	0	0	22	0
Lane Group Flow (vph)	37	1262	0	89	1617	0	21	29	0	15	6	0
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	7.0	102.6		12.8	108.4		26.6	26.6		26.6	26.6	
Effective Green, g (s)	7.0	102.6		12.8	108.4		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.04	0.64		0.08	0.68		0.17	0.17		0.17	0.17	
Clearance Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	75	2214		140	2342		215	258		188	256	
v/s Ratio Prot	0.02	0.37		c0.05	c0.47			c0.02			0.00	
v/s Ratio Perm							0.02			0.01		
v/c Ratio	0.49	0.57		0.64	0.69		0.10	0.11		0.08	0.02	
Uniform Delay, d1	74.8	16.2		71.3	15.6		56.5	56.7		56.4	55.8	
Progression Factor	1.00	1.00		1.16	0.53		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.0	1.1		5.4	1.0		0.2	0.2		0.2	0.0	
Delay (s)	79.8	17.3		88.3	9.3		56.7	56.9		56.5	55.9	
Level of Service	E	B		F	A		E	E		E	E	
Approach Delay (s)		19.1			13.4			56.9			56.1	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	30	38	149	113	37
Future Volume (vph)	22	30	38	149	113	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.921				0.967	
Flt Protected	0.980			0.990		
Satd. Flow (prot)	1663	0	0	1824	1781	0
Flt Permitted	0.980			0.990		
Satd. Flow (perm)	1663	0	0	1824	1781	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	217.8			112.9	77.9	
Travel Time (s)	19.6			10.2	7.0	
Confl. Peds. (#/hr)	6	5	5			4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	23	32	40	159	120	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	0	199	159	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	22	30	38	149	113	37
Future Volume (vph)	22	30	38	149	113	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	23	32	40	159	120	39

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	55	199	159
Volume Left (vph)	23	40	0
Volume Right (vph)	32	0	39
Hadj (s)	-0.23	0.07	-0.11
Departure Headway (s)	4.4	4.3	4.1
Degree Utilization, x	0.07	0.24	0.18
Capacity (veh/h)	742	823	854
Control Delay (s)	7.8	8.6	8.0
Approach Delay (s)	7.8	8.6	8.0
Approach LOS	A	A	A

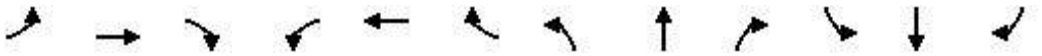
Intersection Summary			
Delay	8.3		
Level of Service	A		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	30	38	149	113	37
Future Vol, veh/h	22	30	38	149	113	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	32	40	159	120	39
Number of Lanes	1	0	0	1	1	0

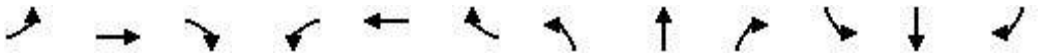
Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	8.5	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	20%	42%	0%
Vol Thru, %	80%	0%	75%
Vol Right, %	0%	58%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	187	52	150
LT Vol	38	22	0
Through Vol	149	0	113
RT Vol	0	30	37
Lane Flow Rate	199	55	160
Geometry Grp	1	1	1
Degree of Util (X)	0.232	0.068	0.179
Departure Headway (Hd)	4.193	4.445	4.033
Convergence, Y/N	Yes	Yes	Yes
Cap	847	811	876
Service Time	2.263	2.445	2.12
HCM Lane V/C Ratio	0.235	0.068	0.183
HCM Control Delay	8.5	7.8	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.9	0.2	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.955			0.931				
Flt Protected					0.973			0.999			0.976	
Satd. Flow (prot)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Flt Permitted					0.973			0.999			0.976	
Satd. Flow (perm)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Link Speed (k/h)		40			40			40			20	
Link Distance (m)		67.0			217.8			131.5			82.6	
Travel Time (s)		6.0			19.6			11.8			14.9	
Confl. Peds. (#/hr)	5		4	4		5	3		6	6		3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	2	3	35	7	21	2	31	35	10	10	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	63	0	0	68	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2	3	35	7	21	2	31	35	10	10	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	63	68	20
Volume Left (vph)	0	35	2	10
Volume Right (vph)	3	21	35	0
Hadj (s)	-0.33	-0.02	-0.26	0.13
Departure Headway (s)	3.8	4.1	3.8	4.2
Degree Utilization, x	0.01	0.07	0.07	0.02
Capacity (veh/h)	913	862	918	828
Control Delay (s)	6.8	7.4	7.1	7.3
Approach Delay (s)	6.8	7.4	7.1	7.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.2			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

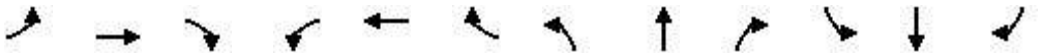
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Future Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	6	2	2	2	2	3	2	2	2
Mvmt Flow	0	2	3	35	7	21	2	31	35	10	10	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.1	7.3
HCM LOS	A	A	A	A

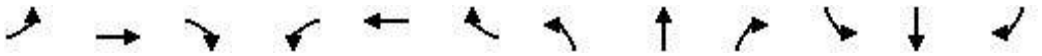
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	55%	50%
Vol Thru, %	45%	40%	11%	50%
Vol Right, %	52%	60%	34%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	5	62	20
LT Vol	2	0	34	10
Through Vol	30	2	7	10
RT Vol	34	3	21	0
Lane Flow Rate	67	5	63	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.005	0.071	0.024
Departure Headway (Hd)	3.765	3.774	4.065	4.205
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	948	943	880	849
Service Time	1.8	1.818	2.096	2.244
HCM Lane V/C Ratio	0.071	0.005	0.072	0.024
HCM Control Delay	7.1	6.8	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.2	0.1

Appendix Q

2033 Future Total Conditions Synchro Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	928	166	96	458	169	87	806	139	368	946	183
Future Volume (vph)	172	928	166	96	458	169	87	806	139	368	946	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	197.5		61.5	96.0		0.0	107.5		148.0
Storage Lanes	1		0	1		0	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	1.00		1.00		0.99
Frt		0.977			0.960			0.978				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	3317	0	1638	3098	0	1716	4647	0	3267	4794	1479
Flt Permitted	0.950			0.950			0.252			0.950		
Satd. Flow (perm)	1614	3317	0	1632	3098	0	455	4647	0	3261	4794	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			34			20				191
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Adj. Flow (vph)	179	967	173	100	477	176	91	840	145	383	985	191
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	1140	0	100	653	0	91	985	0	383	985	191
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	10.0	47.8		10.0	47.8		15.0	42.5		15.0	42.5	42.5
Total Split (s)	29.0	67.0		17.0	55.0		15.0	47.0		29.0	61.0	61.0
Total Split (%)	18.1%	41.9%		10.6%	34.4%		9.4%	29.4%		18.1%	38.1%	38.1%
Maximum Green (s)	26.0	60.2		14.0	48.2		12.0	40.5		24.0	54.5	54.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.8		0.0	2.8		0.0	2.5		2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0			10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0			26.0			26.0	26.0
Pedestrian Calls (#/hr)		15			11			3			1	1
Act Effct Green (s)	21.9	58.2		12.9	49.3		58.6	45.2		22.4	59.6	59.6
Actuated g/C Ratio	0.14	0.36		0.08	0.31		0.37	0.28		0.14	0.37	0.37
v/c Ratio	0.81	0.94		0.76	0.67		0.37	0.74		0.84	0.55	0.29
Control Delay	95.3	54.5		104.1	49.6		30.1	56.1		83.5	42.0	5.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	95.3	54.5		104.1	49.6		30.1	56.1		83.5	42.0	5.6
LOS	F	D		F	D		C	E		F	D	A
Approach Delay		60.0			56.8			53.9			47.7	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	47.4	183.2		31.5	89.1		16.5	107.3		61.3	93.8	0.0
Queue Length 95th (m)	81.7	#79.4		#58.2	114.2		27.9	125.1		80.0	110.7	17.3
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	263	1257		143	982		266	1326		490	1784	663
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.68	0.91		0.70	0.66		0.34	0.74		0.78	0.55	0.29

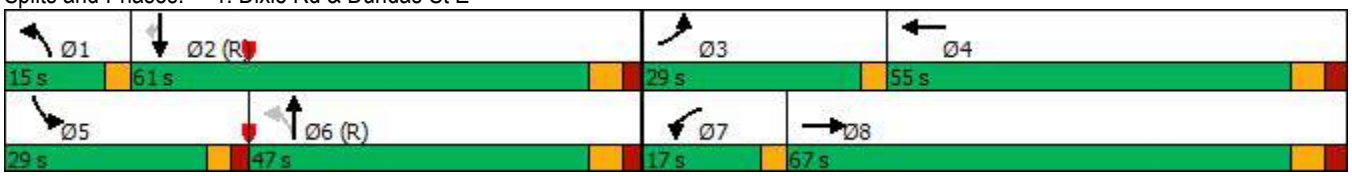
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 145 (91%), Referenced to phase 2:SBT and 6:NBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 54.0	Intersection LOS: D

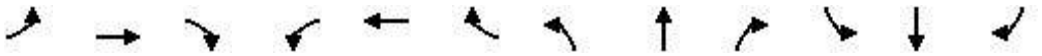
Intersection Capacity Utilization 97.3% ICU Level of Service F

Analysis Period (min) 15

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

Splits and Phases: 1: Dixie Rd & Dundas St E



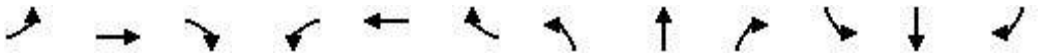


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	928	166	96	458	169	87	806	139	368	946	183
Future Volume (vph)	172	928	166	96	458	169	87	806	139	368	946	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1623	3317		1638	3097		1716	4646		3267	4794	1459
Flt Permitted	0.95	1.00		0.95	1.00		0.25	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1623	3317		1638	3097		455	4646		3267	4794	1459
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	179	967	173	100	477	176	91	840	145	383	985	191
RTOR Reduction (vph)	0	10	0	0	24	0	0	14	0	0	0	120
Lane Group Flow (vph)	179	1130	0	100	629	0	91	971	0	383	985	71
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Actuated Green, G (s)	21.9	58.3		12.9	49.3		55.1	45.1		22.4	59.5	59.5
Effective Green, g (s)	21.9	58.3		12.9	49.3		55.1	45.1		22.4	59.5	59.5
Actuated g/C Ratio	0.14	0.36		0.08	0.31		0.34	0.28		0.14	0.37	0.37
Clearance Time (s)	3.0	6.8		3.0	6.8		3.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	222	1208		132	954		235	1309		457	1782	542
v/s Ratio Prot	c0.11	c0.34		0.06	0.20		0.02	c0.21		c0.12	0.21	
v/s Ratio Perm							0.11					0.05
v/c Ratio	0.81	0.94		0.76	0.66		0.39	0.74		0.84	0.55	0.13
Uniform Delay, d1	67.0	49.0		72.0	48.1		36.4	52.2		67.0	39.7	33.2
Progression Factor	1.08	0.85		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	16.8	11.9		21.7	1.7		1.1	3.8		12.6	1.2	0.5
Delay (s)	89.0	53.7		93.7	49.7		37.4	56.0		79.7	41.0	33.7
Level of Service	F	D		F	D		D	E		E	D	C
Approach Delay (s)		58.5			55.6			54.4			49.6	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1184	25	18	735	63	18	0	9	175	9	19
Future Volume (vph)	14	1184	25	18	735	63	18	0	9	175	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	78.0		0.0	81.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99		0.99	1.00	0.99	
Frt		0.997			0.988				0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	3420	0	1750	3287	0	1750	0	1309	1750	1633	0
Flt Permitted	0.950			0.950			0.738			0.950		
Satd. Flow (perm)	1559	3420	0	1747	3287	0	1346	0	1290	1745	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			9				55		20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		208.5			336.2			112.0			112.9	
Travel Time (s)		12.5			20.2			10.1			10.2	
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
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
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Adj. Flow (vph)	15	1273	27	19	790	68	19	0	10	188	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1300	0	19	858	0	19	0	10	188	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1		1	1	2	
Detector Template	Left	Thru		Left	Thru		Left		Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0		2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0		2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	13.0	99.0		13.0	99.0		48.0		48.0	48.0	48.0	
Total Split (%)	8.1%	61.9%		8.1%	61.9%		30.0%		30.0%	30.0%	30.0%	
Maximum Green (s)	9.0	92.0		9.0	92.0		41.0		41.0	41.0	41.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None		None	None	None	
Walk Time (s)		10.0			10.0		10.0		10.0	10.0	10.0	
Flash Dont Walk (s)		17.0			17.0		27.0		27.0	27.0	27.0	
Pedestrian Calls (#/hr)		3			5		2		2	8	8	
Act Effct Green (s)	7.7	114.6		7.8	116.9		24.0		24.0	24.0	24.0	
Actuated g/C Ratio	0.05	0.72		0.05	0.73		0.15		0.15	0.15	0.15	
v/c Ratio	0.20	0.53		0.22	0.36		0.09		0.04	0.72	0.11	
Control Delay	103.1	4.8		74.4	7.1		55.4		0.3	79.2	27.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	103.1	4.9		74.4	7.1		55.4		0.3	79.2	27.4	
LOS	F	A		E	A		E		A	E	C	
Approach Delay		6.0			8.5			36.4			72.1	
Approach LOS		A			A			D			E	
Queue Length 50th (m)	4.9	101.3		6.4	25.5		5.4		0.0	58.4	2.8	
Queue Length 95th (m)	m10.1	15.9		m12.1	54.7		12.3		0.0	77.5	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	89	2450		99	2404		344		371	447	433	
Starvation Cap Reductn	0	98		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	0.17	0.55		0.19	0.36		0.06		0.03	0.42	0.07	

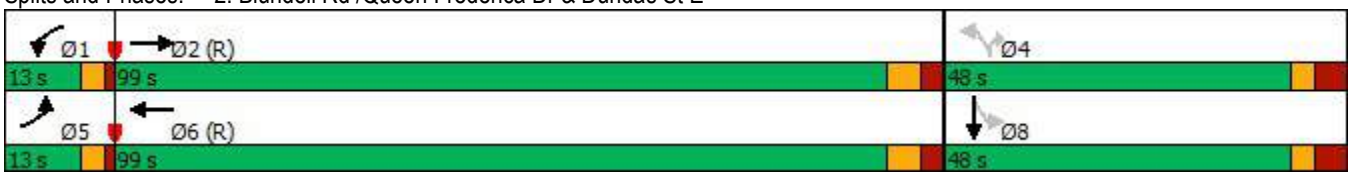
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 32 (20%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 13.2		Intersection LOS: B	

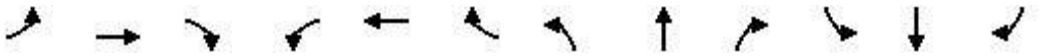
Intersection Capacity Utilization 69.0% ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E

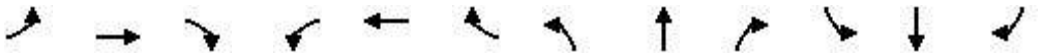




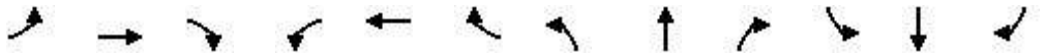
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1184	25	18	735	63	18	0	9	175	9	19
Future Volume (vph)	14	1184	25	18	735	63	18	0	9	175	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1566	3420		1750	3288		1733		1290	1745	1633	
Flt Permitted	0.95	1.00		0.95	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	1566	3420		1750	3288		1345		1290	1745	1633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	1273	27	19	790	68	19	0	10	188	10	20
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	9	0	17	0
Lane Group Flow (vph)	15	1299	0	19	855	0	19	0	2	188	13	0
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	3.5	113.0		5.0	114.5		24.0		24.0	24.0	24.0	
Effective Green, g (s)	3.5	113.0		5.0	114.5		24.0		24.0	24.0	24.0	
Actuated g/C Ratio	0.02	0.71		0.03	0.72		0.15		0.15	0.15	0.15	
Clearance Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	34	2415		54	2352		201		193	261	244	
v/s Ratio Prot	0.01	c0.38		c0.01	0.26						0.01	
v/s Ratio Perm							0.01		0.00	c0.11		
v/c Ratio	0.44	0.54		0.35	0.36		0.09		0.01	0.72	0.05	
Uniform Delay, d1	77.3	11.1		75.9	8.7		58.6		57.9	64.8	58.3	
Progression Factor	1.34	0.33		0.94	0.71		1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.8	0.8		3.6	0.4		0.2		0.0	9.4	0.1	
Delay (s)	111.3	4.4		75.2	6.6		58.8		57.9	74.2	58.4	
Level of Service	F	A		E	A		E		E	E	E	
Approach Delay (s)		5.7			8.1			58.5			72.0	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1226	17	44	789	22	7	1	54	23	3	76
Future Volume (vph)	36	1226	17	44	789	22	7	1	54	23	3	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	46.0		0.0	60.0		0.0	48.5		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.98		0.99	0.98	
Frt		0.998			0.996			0.852			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1608	3425	0	1700	3323	0	1750	1469	0	1653	1549	0
Flt Permitted	0.950			0.950			0.701			0.718		
Satd. Flow (perm)	1596	3425	0	1693	3323	0	1286	1469	0	1241	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3			59			83	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		172.2			208.5			142.2			79.4	
Travel Time (s)		10.3			12.5			12.8			7.1	
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Adj. Flow (vph)	39	1333	18	48	858	24	8	1	59	25	3	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1351	0	48	882	0	8	60	0	25	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	35.5		11.0	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	11.0	97.0		16.0	102.0		47.0	47.0		47.0	47.0	
Total Split (%)	6.9%	60.6%		10.0%	63.8%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	7.0	90.5		12.0	95.5		39.5	39.5		39.5	39.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.5		1.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		10.0			10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		19.0			19.0		29.0	29.0		29.0	29.0	
Pedestrian Calls (#/hr)		9			9		6	6		4	4	
Act Effct Green (s)	8.6	119.6		9.8	120.9		14.8	14.8		14.8	14.8	
Actuated g/C Ratio	0.05	0.75		0.06	0.76		0.09	0.09		0.09	0.09	
v/c Ratio	0.45	0.53		0.46	0.35		0.07	0.32		0.22	0.39	
Control Delay	90.2	11.9		80.8	8.7		59.9	17.0		66.5	16.6	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	90.2	11.9		80.8	8.7		59.9	17.0		66.5	16.6	
LOS	F	B		F	A		E	B		E	B	
Approach Delay		14.1			12.5			22.0			27.9	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	12.2	75.6		15.6	30.9		2.5	0.3		7.8	0.9	
Queue Length 95th (m)	#27.2	182.4		30.9	58.2		6.7	12.3		14.8	14.9	
Internal Link Dist (m)		148.2			184.5			118.2			55.4	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	86	2560		128	2511		317	407		306	444	
Starvation Cap Reductn	0	0		0	449		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.53		0.38	0.43		0.03	0.15		0.08	0.19	

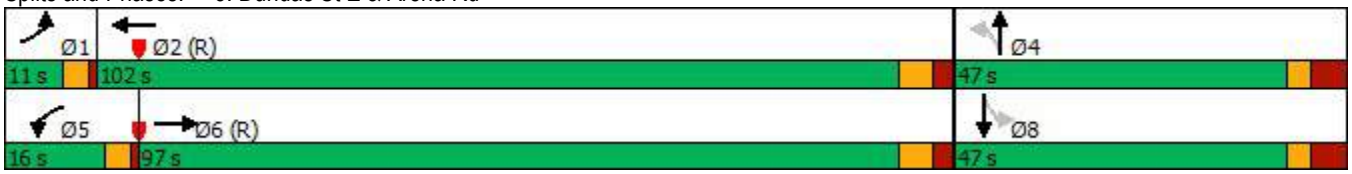
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 24 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 14.3	Intersection LOS: B

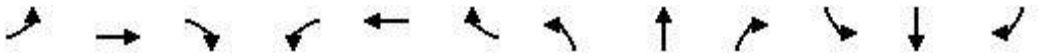
Intersection Capacity Utilization 59.6% ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1226	17	44	789	22	7	1	54	23	3	76
Future Volume (vph)	36	1226	17	44	789	22	7	1	54	23	3	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1608	3425		1700	3323		1742	1470		1641	1550	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.72	1.00	
Satd. Flow (perm)	1608	3425		1700	3323		1286	1470		1240	1550	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1333	18	48	858	24	8	1	59	25	3	83
RTOR Reduction (vph)	0	0	0	0	1	0	0	54	0	0	75	0
Lane Group Flow (vph)	39	1351	0	48	881	0	8	6	0	25	11	0
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	7.2	118.8		8.4	120.0		14.8	14.8		14.8	14.8	
Effective Green, g (s)	7.2	118.8		8.4	120.0		14.8	14.8		14.8	14.8	
Actuated g/C Ratio	0.05	0.74		0.05	0.75		0.09	0.09		0.09	0.09	
Clearance Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	72	2543		89	2492		118	135		114	143	
v/s Ratio Prot	0.02	c0.39		c0.03	0.27			0.00			0.01	
v/s Ratio Perm							0.01			c0.02		
v/c Ratio	0.54	0.53		0.54	0.35		0.07	0.05		0.22	0.07	
Uniform Delay, d1	74.8	8.8		73.9	6.8		66.3	66.2		67.2	66.3	
Progression Factor	1.00	1.00		0.93	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.1	0.8		6.0	0.4		0.2	0.1		1.0	0.2	
Delay (s)	82.9	9.6		75.0	7.2		66.5	66.3		68.2	66.6	
Level of Service	F	A		E	A		E	E		E	E	
Approach Delay (s)		11.6			10.7			66.4			66.9	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	91	23	58	115	24
Future Volume (vph)	29	91	23	58	115	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.897				0.977	
Flt Protected	0.988			0.986		
Satd. Flow (prot)	1613	0	0	1713	1800	0
Flt Permitted	0.988			0.986		
Satd. Flow (perm)	1613	0	0	1713	1800	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	126.4			112.9	77.9	
Travel Time (s)	11.4			10.2	7.0	
Confl. Peds. (#/hr)	3	4	4			5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	2%	6%	9%	2%	2%
Adj. Flow (vph)	31	98	25	62	124	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	0	87	150	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	29	91	23	58	115	24
Future Volume (vph)	29	91	23	58	115	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	31	98	25	62	124	26

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	129	87	150
Volume Left (vph)	31	25	0
Volume Right (vph)	98	0	26
Hadj (s)	-0.35	0.20	-0.07
Departure Headway (s)	4.1	4.5	4.2
Degree Utilization, x	0.15	0.11	0.18
Capacity (veh/h)	836	761	827
Control Delay (s)	7.8	8.1	8.1
Approach Delay (s)	7.8	8.1	8.1
Approach LOS	A	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

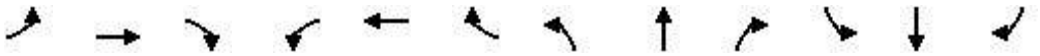
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	91	23	58	115	24
Future Vol, veh/h	29	91	23	58	115	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	7	2	6	9	2	2
Mvmt Flow	31	98	25	62	124	26
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	8.1	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	28%	24%	0%
Vol Thru, %	72%	0%	83%
Vol Right, %	0%	76%	17%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	81	120	139
LT Vol	23	29	0
Through Vol	58	0	115
RT Vol	0	91	24
Lane Flow Rate	87	129	149
Geometry Grp	1	1	1
Degree of Util (X)	0.109	0.148	0.171
Departure Headway (Hd)	4.505	4.142	4.125
Convergence, Y/N	Yes	Yes	Yes
Cap	800	871	855
Service Time	2.505	2.145	2.22
HCM Lane V/C Ratio	0.109	0.148	0.174
HCM Control Delay	8.1	7.9	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.5	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.986			0.897				
Flt Protected					0.958						0.981	
Satd. Flow (prot)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Flt Permitted					0.958						0.981	
Satd. Flow (perm)	0	1717	0	0	1682	0	0	1570	0	0	1807	0
Link Speed (k/h)		40			40			40			20	
Link Distance (m)		67.0			91.4			52.1			82.6	
Travel Time (s)		6.0			8.2			4.7			14.9	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	2%	2%	9%	2%	2%	2%
Adj. Flow (vph)	0	6	6	41	1	5	0	8	26	15	24	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	47	0	0	34	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Future Volume (vph)	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	6	6	41	1	5	0	8	26	15	24	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	47	34	39
Volume Left (vph)	0	41	0	15
Volume Right (vph)	6	5	26	0
Hadj (s)	-0.27	0.20	-0.33	0.11
Departure Headway (s)	3.8	4.3	3.7	4.2
Degree Utilization, x	0.01	0.06	0.04	0.05
Capacity (veh/h)	913	825	935	845
Control Delay (s)	6.9	7.5	6.9	7.4
Approach Delay (s)	6.9	7.5	6.9	7.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.3			
Level of Service	A			
Intersection Capacity Utilization	24.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Future Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	6	2	2	2	2	9	2	2	2
Mvmt Flow	0	6	6	41	1	5	0	8	26	15	24	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.5	6.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	88%	38%
Vol Thru, %	24%	50%	3%	62%
Vol Right, %	76%	50%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	10	40	34
LT Vol	0	0	35	13
Through Vol	7	5	1	21
RT Vol	22	5	4	0
Lane Flow Rate	34	12	47	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.012	0.055	0.045
Departure Headway (Hd)	3.608	3.796	4.253	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	987	939	841	864
Service Time	1.648	1.835	2.282	2.171
HCM Lane V/C Ratio	0.034	0.013	0.056	0.046
HCM Control Delay	6.8	6.9	7.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.2	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	0	29	31	0	61
Future Volume (vph)	50	0	29	31	0	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.930			
Flt Protected	0.950					
Satd. Flow (prot)	1750	0	1713	0	0	1842
Flt Permitted	0.950					
Satd. Flow (perm)	1750	0	1713	0	0	1842
Link Speed (k/h)	50		40			40
Link Distance (m)	55.0		79.4			52.1
Travel Time (s)	4.0		7.1			4.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	0	32	34	0	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	66	0	0	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	3.0		3.0			3.0
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	0	29	31	0	61
Future Volume (Veh/h)	50	0	29	31	0	61
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	0	32	34	0	68
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			79			
pX, platoon unblocked						
vC, conflicting volume	117	49			66	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117	49			66	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	100			100	
cM capacity (veh/h)	879	1020			1536	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	56	66	68
Volume Left	56	0	0
Volume Right	0	34	0
cSH	879	1700	1536
Volume to Capacity	0.06	0.04	0.00
Queue Length 95th (m)	1.5	0.0	0.0
Control Delay (s)	9.4	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.4	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	13.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	0	29	31	0	61
Future Vol, veh/h	50	0	29	31	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	0	32	34	0	68

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	117	49	0	0	66	0
Stage 1	49	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	879	1020	-	-	1536	-
Stage 1	973	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	879	1020	-	-	1536	-
Mov Cap-2 Maneuver	879	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	879	1536	-
HCM Lane V/C Ratio	-	-	0.063	-	-
HCM Control Delay (s)	-	-	9.4	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	58	0	7	40	0	45
Future Volume (vph)	58	0	7	40	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.992		
Satd. Flow (prot)	1842	0	0	1827	1593	0
Flt Permitted				0.992		
Satd. Flow (perm)	1842	0	0	1827	1593	0
Link Speed (k/h)	40			40	50	
Link Distance (m)	91.4			126.4	41.7	
Travel Time (s)	8.2			11.4	3.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	64	0	8	44	0	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	0	52	50	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	58	0	7	40	0	45
Future Volume (Veh/h)	58	0	7	40	0	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	64	0	8	44	0	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			64		124	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		124	64
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	95
cM capacity (veh/h)			1538		866	1000

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	52	50
Volume Left	0	8	0
Volume Right	0	0	50
cSH	1700	1538	1000
Volume to Capacity	0.04	0.01	0.05
Queue Length 95th (m)	0.0	0.1	1.2
Control Delay (s)	0.0	1.2	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	8.8
Approach LOS			A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		

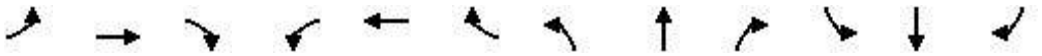
Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	0	7	40	0	45
Future Vol, veh/h	58	0	7	40	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	0	8	44	0	50

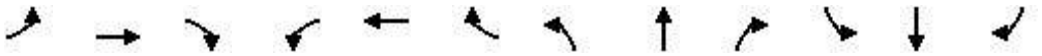
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	124	64
Stage 1	-	-	-	-	64	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1538	-	871	1000
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	963	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1538	-	867	1000
Mov Cap-2 Maneuver	-	-	-	-	867	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	958	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1000	-	-	1538	-
HCM Lane V/C Ratio	0.05	-	-	0.005	-
HCM Control Delay (s)	8.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	854	160	257	1191	355	250	1004	222	452	1136	266
Future Volume (vph)	207	854	160	257	1191	355	250	1004	222	452	1136	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	197.5		61.5	96.0		0.0	107.5		148.0
Storage Lanes	1		0	1		0	1		0	2		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	0.91	0.97	0.91	1.00
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00	1.00		1.00		0.98
Frt		0.976			0.966			0.973				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1716	3325	0	1750	3311	0	1750	4822	0	3395	5029	1536
Flt Permitted	0.950			0.950			0.101			0.950		
Satd. Flow (perm)	1705	3325	0	1730	3311	0	186	4822	0	3380	5029	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			29			29				210
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		336.2			205.0			231.1			222.2	
Travel Time (s)		20.2			12.3			13.9			13.3	
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Adj. Flow (vph)	211	871	163	262	1215	362	255	1024	227	461	1159	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	211	1034	0	262	1577	0	255	1251	0	461	1159	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	20.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	47.8		11.0	47.8		12.0	42.5		12.0	42.5	42.5
Total Split (s)	20.0	60.0		31.0	71.0		21.0	46.0		23.0	48.0	48.0
Total Split (%)	12.5%	37.5%		19.4%	44.4%		13.1%	28.8%		14.4%	30.0%	30.0%
Maximum Green (s)	16.0	53.2		27.0	64.2		16.0	39.5		18.0	41.5	41.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.8		1.0	2.8		2.0	2.5		2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		10.0			10.0			10.0			10.0	10.0
Flash Dont Walk (s)		31.0			31.0			26.0			26.0	26.0
Pedestrian Calls (#/hr)		40			51			11			7	7
Act Effct Green (s)	16.0	54.1		26.1	64.2		57.0	39.5		18.0	41.5	41.5
Actuated g/C Ratio	0.10	0.34		0.16	0.40		0.36	0.25		0.11	0.26	0.26
v/c Ratio	1.23	0.91		0.92	1.17		1.15	1.03		1.21	0.89	0.50
Control Delay	204.6	51.1		101.2	127.4		146.6	90.9		173.3	66.4	15.5
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	0.0
Total Delay	204.6	51.1		101.2	127.6		146.6	90.9		173.3	66.4	15.5
LOS	F	D		F	F		F	F		F	E	B
Approach Delay		77.1			123.8			100.3			85.2	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~84.5	100.1		82.7	~311.4		~78.8	~153.0		~91.7	130.9	15.1
Queue Length 95th (m)	#139.3	#202.4		#132.7	#353.9		#136.9	#183.1		#127.3	149.8	43.0
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	171	1133		295	1345		222	1212		381	1304	545
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	45		0	0		0	0	2
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.23	0.91		0.89	1.21		1.15	1.03		1.21	0.89	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 48 (30%), Referenced to phase 2:SBT and 6:NBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 98.1	Intersection LOS: F

Intersection Capacity Utilization 119.1% ICU Level of Service H

Analysis Period (min) 15

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

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

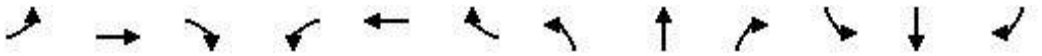
Splits and Phases: 1: Dixie Rd & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	854	160	257	1191	355	250	1004	222	452	1136	266
Future Volume (vph)	207	854	160	257	1191	355	250	1004	222	452	1136	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1716	3326		1750	3310		1750	4821		3395	5029	1503
Flt Permitted	0.95	1.00		0.95	1.00		0.10	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1716	3326		1750	3310		187	4821		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	211	871	163	262	1215	362	255	1024	227	461	1159	271
RTOR Reduction (vph)	0	9	0	0	17	0	0	22	0	0	0	156
Lane Group Flow (vph)	211	1025	0	262	1560	0	255	1229	0	461	1159	115
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases							6					2
Actuated Green, G (s)	16.0	54.1		26.1	64.2		55.5	39.5		18.0	41.5	41.5
Effective Green, g (s)	16.0	54.1		26.1	64.2		55.5	39.5		18.0	41.5	41.5
Actuated g/C Ratio	0.10	0.34		0.16	0.40		0.35	0.25		0.11	0.26	0.26
Clearance Time (s)	4.0	6.8		4.0	6.8		5.0	6.5		5.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	171	1124		285	1328		221	1190		381	1304	389
v/s Ratio Prot	c0.12	0.31		0.15	c0.47		0.12	0.25		c0.14	0.23	
v/s Ratio Perm							c0.29					0.08
v/c Ratio	1.23	0.91		0.92	1.17		1.15	1.03		1.21	0.89	0.30
Uniform Delay, d1	72.0	50.7		65.9	47.9		47.4	60.2		71.0	57.0	47.5
Progression Factor	1.20	0.80		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	140.0	9.5		32.5	86.7		108.3	34.9		116.6	9.3	1.9
Delay (s)	226.2	49.9		98.4	134.6		155.7	95.2		187.6	66.3	49.5
Level of Service	F	D		F	F		F	F		F	E	D
Approach Delay (s)		79.7			129.5			105.4			93.5	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	103.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	119.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1243	37	46	1706	164	76	0	25	134	9	19
Future Volume (vph)	44	1243	37	46	1706	164	76	0	25	134	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	78.0		0.0	81.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00		0.99		0.96	0.98	0.98	
Frt		0.996			0.987				0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1750	3445	0	1750	3438	0	1750	0	1566	1750	1628	0
Flt Permitted	0.950			0.950			0.738			0.950		
Satd. Flow (perm)	1746	3445	0	1736	3438	0	1339	0	1509	1707	1628	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			12				55		20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		208.5			336.2			112.0			112.9	
Travel Time (s)		12.5			20.2			10.1			10.2	
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
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
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1337	40	49	1834	176	82	0	27	144	10	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1377	0	49	2010	0	82	0	27	144	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1		1	1	2	
Detector Template	Left	Thru		Left	Thru		Left		Right	Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0		2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0		2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4						9.4	
Detector 2 Size(m)		0.6			0.6						0.6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	11.0	102.0		14.0	105.0		44.0		44.0	44.0	44.0	
Total Split (%)	6.9%	63.8%		8.8%	65.6%		27.5%		27.5%	27.5%	27.5%	
Maximum Green (s)	7.0	95.0		10.0	98.0		37.0		37.0	37.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None		None	None	None	
Walk Time (s)		10.0			10.0		10.0		10.0	10.0	10.0	
Flash Dont Walk (s)		17.0			17.0		27.0		27.0	27.0	27.0	
Pedestrian Calls (#/hr)		18			12		19		19	12	12	
Act Effct Green (s)	7.3	107.4		9.0	109.1		27.8		27.8	27.8	27.8	
Actuated g/C Ratio	0.05	0.67		0.06	0.68		0.17		0.17	0.17	0.17	
v/c Ratio	0.59	0.60		0.50	0.86		0.35		0.09	0.49	0.10	
Control Delay	117.6	5.9		80.9	13.8		59.3		1.9	63.0	25.0	
Queue Delay	0.0	0.0		0.0	0.2		0.0		0.0	0.0	0.0	
Total Delay	117.6	6.0		80.9	14.0		59.3		1.9	63.0	25.0	
LOS	F	A		F	B		E		A	E	C	
Approach Delay		9.6			15.6			45.1			56.5	
Approach LOS		A			B			D			E	
Queue Length 50th (m)	15.8	27.9		16.2	104.2		21.6		0.0	38.9	2.5	
Queue Length 95th (m)	m#30.6	34.7		m18.8	m98.8		38.0		1.5	60.5	11.7	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	79	2312		109	2348		309		391	394	391	
Starvation Cap Reductn	0	18		0	42		0		0	0	0	
Spillback Cap Reductn	0	0		0	10		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.59	0.60		0.45	0.87		0.27		0.07	0.37	0.08	

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 104 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 16.1	Intersection LOS: B

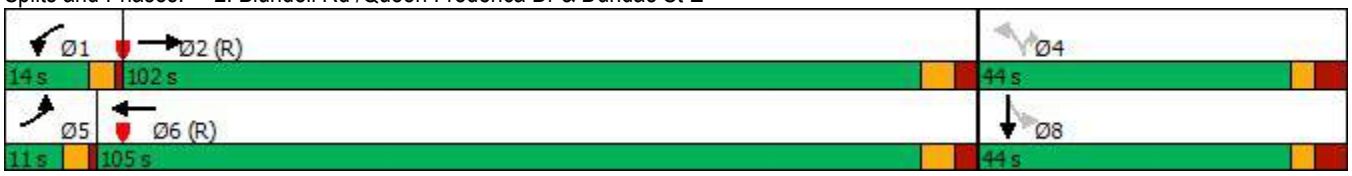
Intersection Capacity Utilization 83.8% ICU Level of Service E

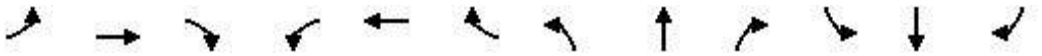
Analysis Period (min) 15

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

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



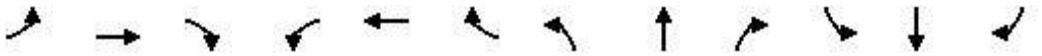


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1243	37	46	1706	164	76	0	25	134	9	19
Future Volume (vph)	44	1243	37	46	1706	164	76	0	25	134	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1750	3444		1750	3437		1724		1509	1707	1628	
Flt Permitted	0.95	1.00		0.95	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	1750	3444		1750	3437		1338		1509	1707	1628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	47	1337	40	49	1834	176	82	0	27	144	10	20
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	22	0	17	0
Lane Group Flow (vph)	47	1376	0	49	2006	0	82	0	5	144	13	0
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm	NA	
Protected Phases	5	2		1	6						8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	5.9	106.6		7.6	108.3		27.8		27.8	27.8	27.8	
Effective Green, g (s)	5.9	106.6		7.6	108.3		27.8		27.8	27.8	27.8	
Actuated g/C Ratio	0.04	0.67		0.05	0.68		0.17		0.17	0.17	0.17	
Clearance Time (s)	4.0	7.0		4.0	7.0		7.0		7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	64	2294		83	2326		232		262	296	282	
v/s Ratio Prot	0.03	0.40		c0.03	c0.58						0.01	
v/s Ratio Perm							0.06		0.00	c0.08		
v/c Ratio	0.73	0.60		0.59	0.86		0.35		0.02	0.49	0.05	
Uniform Delay, d1	76.3	14.8		74.7	20.1		58.2		54.8	59.7	55.1	
Progression Factor	1.24	0.29		1.00	0.50		1.00		1.00	1.00	1.00	
Incremental Delay, d2	31.1	1.0		4.6	2.0		0.9		0.0	1.3	0.1	
Delay (s)	126.0	5.3		79.5	12.0		59.1		54.8	60.9	55.1	
Level of Service	F	A		E	B		E		D	E	E	
Approach Delay (s)		9.3			13.6			58.1			59.9	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1231	19	88	1578	62	21	11	110	21	2	55
Future Volume (vph)	79	1231	19	88	1578	62	21	11	110	21	2	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	46.0		0.0	60.0		0.0	48.5		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00		0.98	0.98		0.99	0.97	
Frt		0.998			0.994			0.864			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	3454	0	1750	3440	0	1700	1555	0	1750	1529	0
Flt Permitted	0.950			0.950			0.719			0.623		
Satd. Flow (perm)	1728	3454	0	1730	3440	0	1265	1555	0	1135	1529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			4			111			56	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		172.2			208.5			142.2			79.4	
Travel Time (s)		10.3			12.5			12.8			7.1	
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Adj. Flow (vph)	80	1243	19	89	1594	63	21	11	111	21	2	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	1262	0	89	1657	0	21	122	0	21	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	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)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	35.5		11.0	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	13.0	94.0		19.0	100.0		47.0	47.0		47.0	47.0	
Total Split (%)	8.1%	58.8%		11.9%	62.5%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	9.0	87.5		15.0	93.5		39.5	39.5		39.5	39.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.5		1.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		10.0			10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)		19.0			19.0		29.0	29.0		29.0	29.0	
Pedestrian Calls (#/hr)		24			11		11	11		15	15	
Act Effct Green (s)	9.9	102.6		12.8	105.5		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.06	0.64		0.08	0.66		0.17	0.17		0.17	0.17	
v/c Ratio	0.75	0.57		0.64	0.73		0.10	0.35		0.11	0.19	
Control Delay	110.9	20.5		93.9	12.3		50.4	12.7		50.8	12.9	
Queue Delay	0.0	0.0		0.0	0.4		0.0	0.0		0.0	0.0	
Total Delay	110.9	20.5		93.9	12.7		50.4	12.7		50.8	12.9	
LOS	F	C		F	B		D	B		D	B	
Approach Delay		25.9			16.9			18.3			23.0	
Approach LOS		C			B			B			C	
Queue Length 50th (m)	25.6	142.2		30.2	61.1		5.2	2.7		5.2	0.5	
Queue Length 95th (m)	#55.0	170.7		m36.1	65.3		12.9	19.4		13.0	12.3	
Internal Link Dist (m)		148.2			184.5			118.2			55.4	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	107	2214		166	2268		312	467		280	419	
Starvation Cap Reductn	0	0		0	201		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	0.75	0.57		0.54	0.80		0.07	0.26		0.07	0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 108 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 20.7	Intersection LOS: C

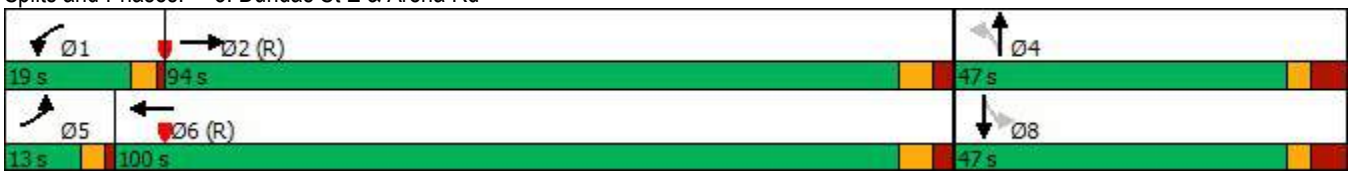
Intersection Capacity Utilization 89.8% ICU Level of Service E

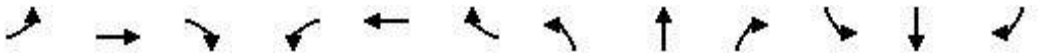
Analysis Period (min) 15

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

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

Splits and Phases: 3: Dundas St E & Arena Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1231	19	88	1578	62	21	11	110	21	2	55
Future Volume (vph)	79	1231	19	88	1578	62	21	11	110	21	2	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1733	3453		1750	3441		1671	1554		1731	1529	
Flt Permitted	0.95	1.00		0.95	1.00		0.72	1.00		0.62	1.00	
Satd. Flow (perm)	1733	3453		1750	3441		1265	1554		1134	1529	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	80	1243	19	89	1594	63	21	11	111	21	2	56
RTOR Reduction (vph)	0	0	0	0	1	0	0	93	0	0	47	0
Lane Group Flow (vph)	80	1262	0	89	1656	0	21	29	0	21	11	0
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.9	102.6		12.8	105.5		26.6	26.6		26.6	26.6	
Effective Green, g (s)	9.9	102.6		12.8	105.5		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.06	0.64		0.08	0.66		0.17	0.17		0.17	0.17	
Clearance Time (s)	4.0	6.5		4.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	107	2214		140	2268		210	258		188	254	
v/s Ratio Prot	c0.05	0.37		0.05	c0.48			c0.02			0.01	
v/s Ratio Perm							0.02			0.02		
v/c Ratio	0.75	0.57		0.64	0.73		0.10	0.11		0.11	0.04	
Uniform Delay, d1	73.8	16.2		71.3	17.9		56.6	56.7		56.7	56.0	
Progression Factor	1.00	1.00		1.16	0.53		1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.4	1.1		5.0	1.1		0.2	0.2		0.3	0.1	
Delay (s)	98.3	17.3		88.0	10.6		56.8	56.9		56.9	56.1	
Level of Service	F	B		F	B		E	E		E	E	
Approach Delay (s)		22.1			14.6			56.9			56.3	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	59	56	147	112	38
Future Volume (vph)	24	59	56	147	112	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904				0.966	
Flt Protected	0.986			0.986		
Satd. Flow (prot)	1642	0	0	1816	1779	0
Flt Permitted	0.986			0.986		
Satd. Flow (perm)	1642	0	0	1816	1779	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	126.4			112.9	77.9	
Travel Time (s)	11.4			10.2	7.0	
Confl. Peds. (#/hr)	6	5	5			4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	26	63	60	156	119	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	0	216	159	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	24	59	56	147	112	38
Future Volume (vph)	24	59	56	147	112	38
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	26	63	60	156	119	40

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	89	216	159
Volume Left (vph)	26	60	0
Volume Right (vph)	63	0	40
Hadj (s)	-0.33	0.09	-0.12
Departure Headway (s)	4.4	4.4	4.2
Degree Utilization, x	0.11	0.26	0.19
Capacity (veh/h)	750	801	818
Control Delay (s)	7.9	8.9	8.2
Approach Delay (s)	7.9	8.9	8.2
Approach LOS	A	A	A

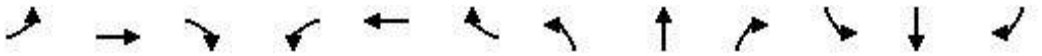
Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	59	56	147	112	38
Future Vol, veh/h	24	59	56	147	112	38
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	63	60	156	119	40
Number of Lanes	1	0	0	1	1	0

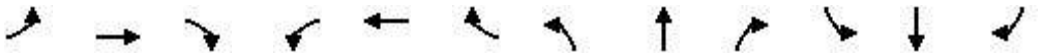
Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	8.9	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	28%	29%	0%
Vol Thru, %	72%	0%	75%
Vol Right, %	0%	71%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	203	83	150
LT Vol	56	24	0
Through Vol	147	0	112
RT Vol	0	59	38
Lane Flow Rate	216	88	160
Geometry Grp	1	1	1
Degree of Util (X)	0.262	0.108	0.187
Departure Headway (Hd)	4.367	4.387	4.209
Convergence, Y/N	Yes	Yes	Yes
Cap	827	819	854
Service Time	2.367	2.406	2.225
HCM Lane V/C Ratio	0.261	0.107	0.187
HCM Control Delay	8.9	7.9	8.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.1	0.4	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.955			0.931				
Flt Protected					0.973			0.999			0.976	
Satd. Flow (prot)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Flt Permitted					0.973			0.999			0.976	
Satd. Flow (perm)	0	1693	0	0	1675	0	0	1705	0	0	1798	0
Link Speed (k/h)		40			40			40			20	
Link Distance (m)		67.0			91.4			52.1			82.6	
Travel Time (s)		6.0			8.2			4.7			14.9	
Confl. Peds. (#/hr)	5		4	4		5	3		6	6		3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	2	3	35	7	21	2	31	35	10	10	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	63	0	0	68	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Future Volume (vph)	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2	3	35	7	21	2	31	35	10	10	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	63	68	20
Volume Left (vph)	0	35	2	10
Volume Right (vph)	3	21	35	0
Hadj (s)	-0.33	-0.02	-0.26	0.13
Departure Headway (s)	3.8	4.1	3.8	4.2
Degree Utilization, x	0.01	0.07	0.07	0.02
Capacity (veh/h)	913	862	918	828
Control Delay (s)	6.8	7.4	7.1	7.3
Approach Delay (s)	6.8	7.4	7.1	7.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.2			
Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Future Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	6	2	2	2	2	3	2	2	2
Mvmt Flow	0	2	3	35	7	21	2	31	35	10	10	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.1	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	55%	50%
Vol Thru, %	45%	40%	11%	50%
Vol Right, %	52%	60%	34%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	5	62	20
LT Vol	2	0	34	10
Through Vol	30	2	7	10
RT Vol	34	3	21	0
Lane Flow Rate	67	5	63	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.005	0.071	0.024
Departure Headway (Hd)	3.765	3.774	4.065	4.205
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	948	943	880	849
Service Time	1.8	1.818	2.096	2.244
HCM Lane V/C Ratio	0.071	0.005	0.072	0.024
HCM Control Delay	7.1	6.8	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.2	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	0	66	84	0	47
Future Volume (vph)	35	0	66	84	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.924			
Flt Protected	0.950					
Satd. Flow (prot)	1750	0	1702	0	0	1842
Flt Permitted	0.950					
Satd. Flow (perm)	1750	0	1702	0	0	1842
Link Speed (k/h)	50		40			40
Link Distance (m)	55.0		79.4			52.1
Travel Time (s)	4.0		7.1			4.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	0	73	93	0	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	166	0	0	52
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	3.0		3.0			3.0
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	0	66	84	0	47
Future Volume (Veh/h)	35	0	66	84	0	47
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	0	73	93	0	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			79			
pX, platoon unblocked						
vC, conflicting volume	172	120			166	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	120			166	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	819	932			1412	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	39	166	52
Volume Left	39	0	0
Volume Right	0	93	0
cSH	819	1700	1412
Volume to Capacity	0.05	0.10	0.00
Queue Length 95th (m)	1.1	0.0	0.0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	0	66	84	0	47
Future Vol, veh/h	35	0	66	84	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	73	93	0	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	172	120	0	0	166	0
Stage 1	120	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	818	931	-	-	1412	-
Stage 1	905	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	818	931	-	-	1412	-
Mov Cap-2 Maneuver	818	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	818	1412	-
HCM Lane V/C Ratio	-	-	0.048	-	-
HCM Control Delay (s)	-	-	9.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	49	0	19	69	0	31
Future Volume (vph)	49	0	19	69	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.989		
Satd. Flow (prot)	1842	0	0	1822	1593	0
Flt Permitted				0.989		
Satd. Flow (perm)	1842	0	0	1822	1593	0
Link Speed (k/h)	40			40	50	
Link Distance (m)	91.4			126.4	41.7	
Travel Time (s)	8.2			11.4	3.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	54	0	21	77	0	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	0	0	98	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	49	0	19	69	0	31
Future Volume (Veh/h)	49	0	19	69	0	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	54	0	21	77	0	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			54		173	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		173	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	97
cM capacity (veh/h)			1551		806	1013

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	54	98	34
Volume Left	0	21	0
Volume Right	0	0	34
cSH	1700	1551	1013
Volume to Capacity	0.03	0.01	0.03
Queue Length 95th (m)	0.0	0.3	0.8
Control Delay (s)	0.0	1.7	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	1.7	8.7
Approach LOS			A

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	0	19	69	0	31
Future Vol, veh/h	49	0	19	69	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	0	21	77	0	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	54	0	173	54
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	119	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1551	-	817	1013
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1551	-	806	1013
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	893	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1013	-	-	1551	-
HCM Lane V/C Ratio	0.034	-	-	0.014	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-