



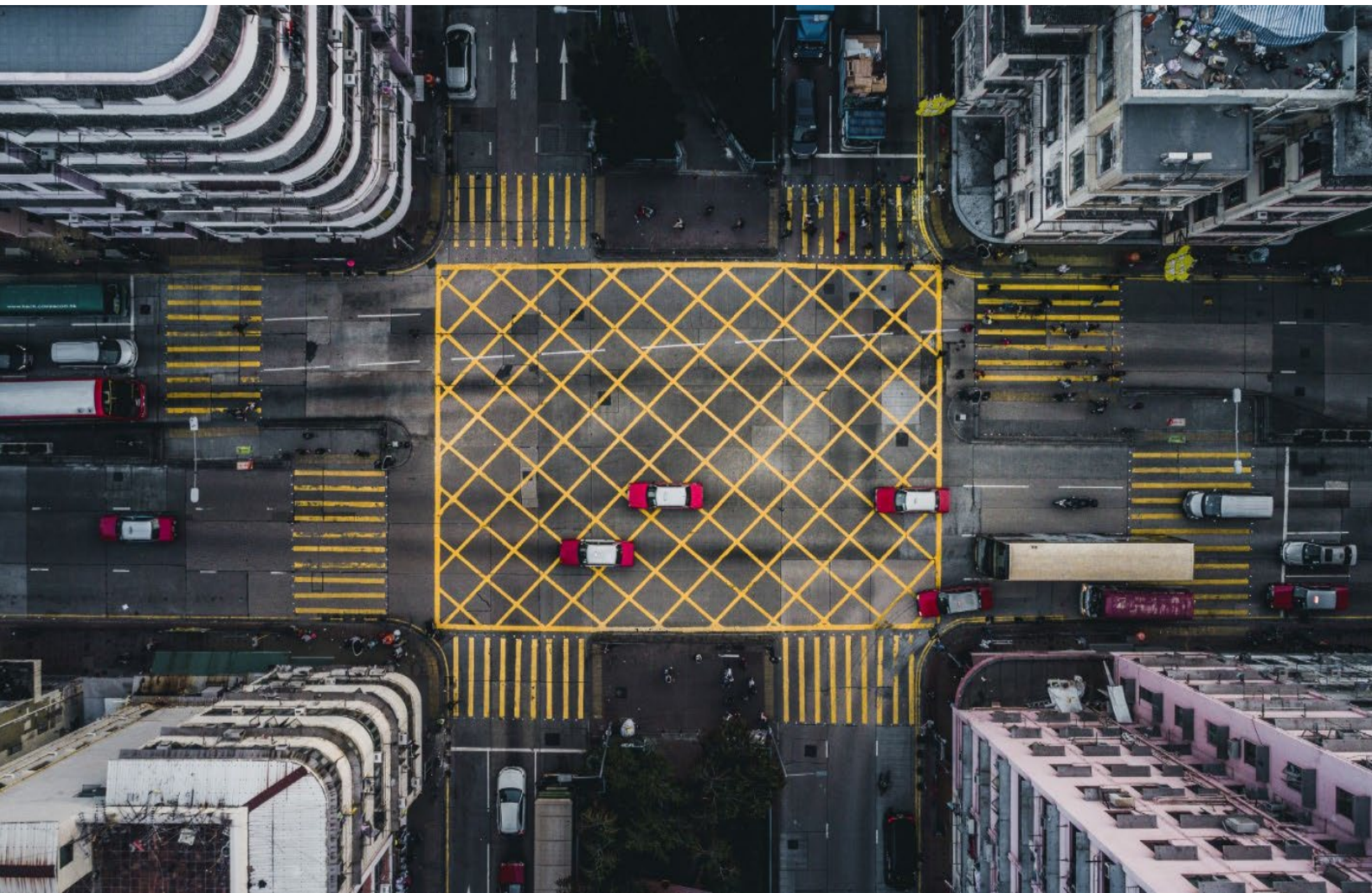
Traffic Impact Study

Joshua Creek Phase 3

Mattamy (Joshua Creek) Limited

15 November 2022

→ The Power of Commitment



Executive summary

GHD Limited was retained by Mattamy (Joshua Creek) Limited to prepare a Traffic Impact Study in support of the Joshua Creek Phase 3 residential development located north of Dundas Street East between Eighth Line and Ninth Line in the North Oakville East Secondary Plan in the Town of Oakville.

This report includes updates since the previous submission (April 2022) to address comments received from the Town of Oakville in August 2022. GHD's response to the comments are included in **Appendix A**.

This report determines the site related traffic and subsequent traffic related impacts on the adjacent road network during the weekday a.m. and p.m. peak hours. These impacts are based on the projected future background traffic and road network conditions derived for a 2027 future planning horizon year.

The composite plan for Joshua Creek was prepared by Korsiak Urban Planning and is dated February 2022. It includes the Joshua Creek Phase 3 residential development consisting of townhouses, single detached homes, and an elementary school. The proposed unit count and student load is summarized below:

- 306 townhouse units
- 709 single detached homes
- Elementary school (700 students)

Under the interim traffic scenario before the complete road network is constructed into Joshua Creek Phase 3 including collector road connections to Burnhamthorpe Road, access to the proposed subdivision will be primarily from Dundas Street via John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard and from Eighth Line via Wheat Boom Drive.

The proposed subdivision is expected to generate a total of 1050 new two-way trips consisting of 423 inbound and 627 outbound trips during weekday a.m. peak hour and 806 new two-way trips consisting of 81 inbound and 325 outbound trips during the weekday p.m. peak hour.

The analysis of the study intersections found that there would be multiple critical or over capacity movements at each intersection along Dundas Road. The signal timings for all signalized intersections along Dundas Street East were optimized as needed to reduce v/c ratios and delays where possible.

As requested by Town staff, GHD completed an all-way stop warrant and signal warrants for all unsignalized study intersections and found that no intersection qualified for either four way stops or signalization.

As requested by Town staff, GHD completed a sensitivity analysis to determine the determine the volume of site trips from Joshua Creek Phase 3 that would travel north of the study area once future connections are established that will provide access to Eighth Line and Burnhamthorpe Road. It was found that approximately 92 two-way trips north to Burnhamthorpe Road and 37 two-way trips east to Eighth Line in the a.m. peak hour and a total of 123 two-way trips will be made north to Burnhamthorpe Road and 49 two-way trips east to Eighth Line in the p.m. peak hour when connections planned in Joshua Creek Phase 5 are completed.

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

Sincerely,

GHD



William Maria, P. Eng.

Transportation Planning Lead

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1. Introduction

1.1 Retainer and Objective

GHD Limited was retained by Mattamy (Joshua Creek) Limited to prepare a Transportation Impact Study in support of the Draft Plan of Subdivision and Zoning By-Law Amendment of a proposed subdivision located on part of Lots 8 and 9, Concession 1 within the North Oakville Secondary Plan Area in the Town of Oakville.

The site location is illustrated in **Figure 1**.

The purpose of this study is to:

- Establish baseline traffic conditions for the study area in 2022 and determine future background operating conditions for a future planning horizon in 2027.
- Utilize Institute of Transportation Engineer's (ITE) Trip Generation data and first principles to estimate the site trips generated by the proposed development and distribute the traffic to the adjacent road network.
- Determine future operating traffic conditions for a 2027 future horizon during the weekday peak periods through intersection capacity analysis.
- Conduct an All-way stop and signal warrants for all unsignalized study intersections under Future Total 2027 conditions using estimations of site traffic movements.
- Conduct a sensitivity analysis to determine the redistribution of site traffic from Joshua Creek Phase 3 under future traffic conditions northerly to Burnhamthorpe Road via Street A (John McKay Boulevard) and Street B and westerly to Eighth Line via Street D.

1.2 Study Team

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

- William Maria, P. Eng., Transportation Planning Lead
- Rafael Andrenacci, B.Eng., Transportation Planner
- James Emerson, B.Eng., Engineering Assistant



Figure 1 Site Location

2. Site Characteristics

2.1 Study Area

The Site boundary is detailed in **Figure 1**. The numbered Study Intersections are named below.

Based on the approved Terms of Reference for the study provided in **Appendix A**, the following intersections are included in the study area:

- 1 - Eighth Line and Wheat Boom Drive
- 2 - Dundas Street East and Eighth Line
- 3 - Dundas Street East and John McKay Boulevard/Prince Michael Drive
- 4 - Dundas Street East and Meadowridge Drive
- 5 - Dundas Street East and William Cutmore Boulevard
- 6 - Dundas Street East and Ninth Line
- 7* - William Cutmore Boulevard and Meadowridge Drive (only exists in Future Total conditions)

The Town has also request additional secondary intersections be included for volume analysis. These intersections will be assessed for movement volumes but not for capacity analysis calculations at the time of this report. These intersections are listed below and are identified as secondary intersections in **Figure 1**:

- Wheat Boom Drive and John McKay Boulevard (only exists in Future Background and Total conditions)
- Street "F" and John McKay Boulevard (only exists in Future Total conditions)
- Street "F" and Meadowridge Drive (only exists in Future Total conditions)

2.2 Proposed Development Content

A composite plan for Joshua Creek was prepared by Korsiak Urban Planning dated February 2022. The plan is shown in **Figure 2** with Joshua Creek Phase 3 highlighted by the blue line. The residential and institutional development of Joshua Creek Phase 3 consists of the following characteristics:

- 306 Townhouse units
- 709 Single Detached units
- An approx. 700 student elementary school

Under the interim traffic scenario before the full build-out of the Joshua Creek lands and construction of the ultimate planned road network as per the Secondary Plan, access to the proposed residential development from the surrounding road network is provided via Wheat Boom Drive, John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard.



Figure 2 Joshua Creek Composite Plan

3. Existing Conditions

3.1 Existing Road Network

Dundas Street East is an east/west major arterial road under the jurisdiction of the Region of Halton. In the study area it has a six-lane urban cross section and a posted speed limit of 70 km/h. All of the study area roads intersecting with Dundas Street East are signalized. Auxiliary left-turn and right-turn lanes are provided in both directions throughout the study area for all existing approaches. At the intersections with John McKay Boulevard and Meadowridge Drive, there are provisional auxiliary eastbound left-turn and westbound right-turn lanes that will be operational once the respective north approaches are established.

Eighth Line is classified as a north/south Connector/Transit Corridor under the North Oakville East Secondary Plan with a four-lane cross-section south of Dundas Street, which is reduced to a two-lane cross-section north of Dundas Street. Its intersection with Dundas Street is signalized, with a northbound right-turn lane and an auxiliary left-turn lane, and a southbound auxiliary left-turn lane. Its intersection with Wheat Boom Drive is unsignalized, with a stop-control only on the Wheat Boom Drive approach. The posted speed limit on Eighth Line is 50 km/h.

Wheat Boom Drive is classified as an east/west Avenue/Transit Corridor under the North Oakville East Secondary Plan and currently exists to the west of Eighth Line. Wheat Boom Drive is planned to have a two-lane cross-section within the study area with a posted speed limit of 50 km/h.

Prince Michael Drive is a north/south major collector road under the jurisdiction of the Town of Oakville and currently exists only to the south of Dundas Street with a two-lane cross-section and a northbound auxiliary left-turn lane at its signalized intersection with Dundas Street. The posted speed limit is 50 km/h.

Meadowridge Drive currently exists only to the south of Dundas Street and is a minor collector road under the jurisdiction of the Town of Oakville. The road has a two-lane cross-section with dual northbound auxiliary left-turn lanes at its signalized intersection with Dundas Street with an assumed posted speed limit of 50 km/h.

William Cutmore Boulevard is a minor collector road under the jurisdiction of the Town of Oakville recently constructed north of Dundas Street. The road has a two-lane cross-section with southbound right and left turn lanes at its signalized intersection with Dundas Street and an assumed posted speed limit of 50 km/h.

Ninth Line is classified as a major arterial road under the jurisdiction of the Region of Halton. Within the study area, Ninth Line has a four-lane cross-section south of Dundas Street and reduced to a two-lane cross-section north of Dundas Street. Auxiliary left-turn and right-turn lanes are provided in both the northbound and southbound directions along Ninth Line. The posted speed limit within the study area is 60 km/h

The existing lane configuration is detailed in **Figure 3**.

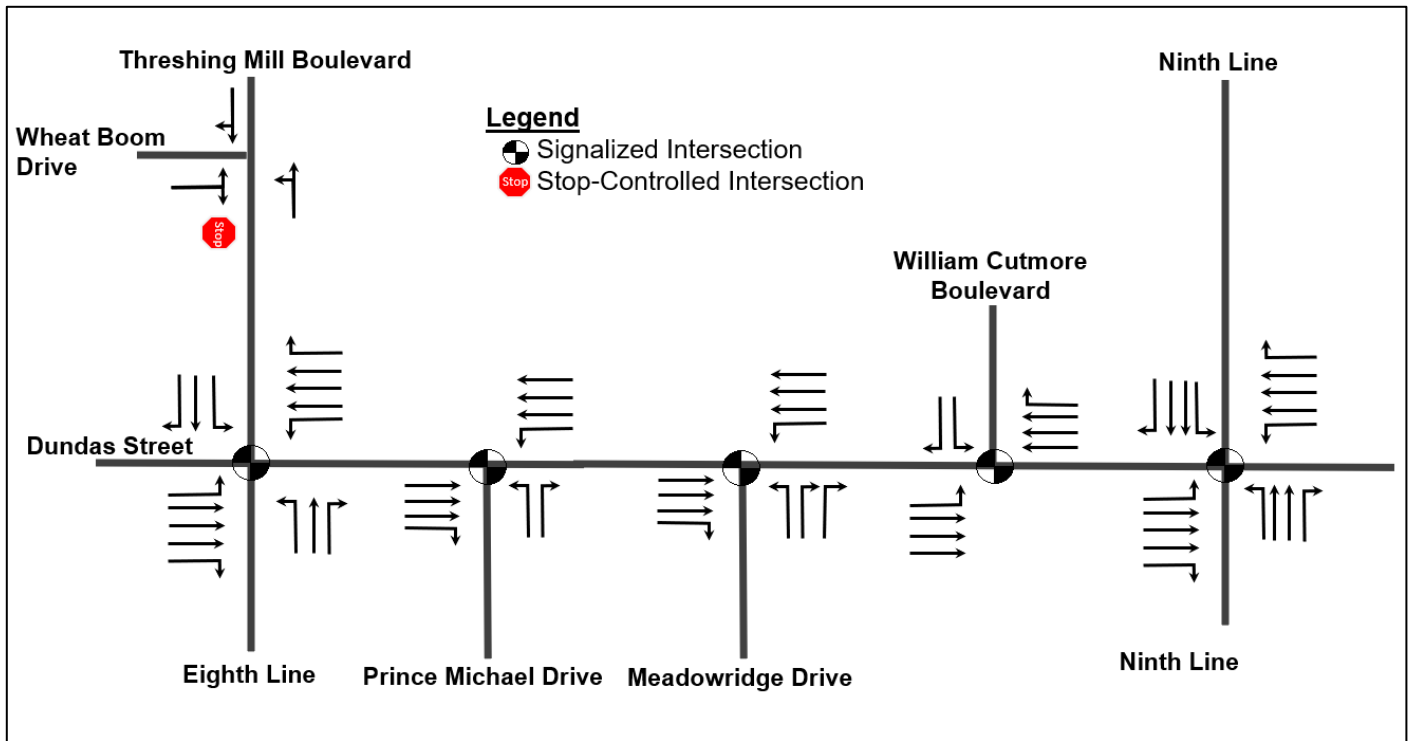


Figure 3 Existing Lane Configurations and Controls

3.2 Pedestrian and Bicycle Routes

Within the study area, pedestrian sidewalks are only provided along both sides of the road of Eighth Line, Prince Michael Drive, Meadowridge Drive and Ninth Line south of Dundas Street. North of Dundas Street, Eighth Line has sidewalk provisions only along the east side of the road. Sidewalks are currently provided on both sides of Wheat Boom Drive.

There are no sidewalks provided along Dundas Street, however a multi-use trail is provided along the south side of Dundas Street.

Bike Lanes are provided along both sides of the street of Prince Michael Drive and Eight Line (south of Dundas Street). Bike lanes are also provided along Ninth Line south of Dundas Street and begin and end 100 metres on the north side of the intersection.

The existing pedestrian sidewalks and cycling infrastructure for the existing study intersections are shown in **Figure 4**.

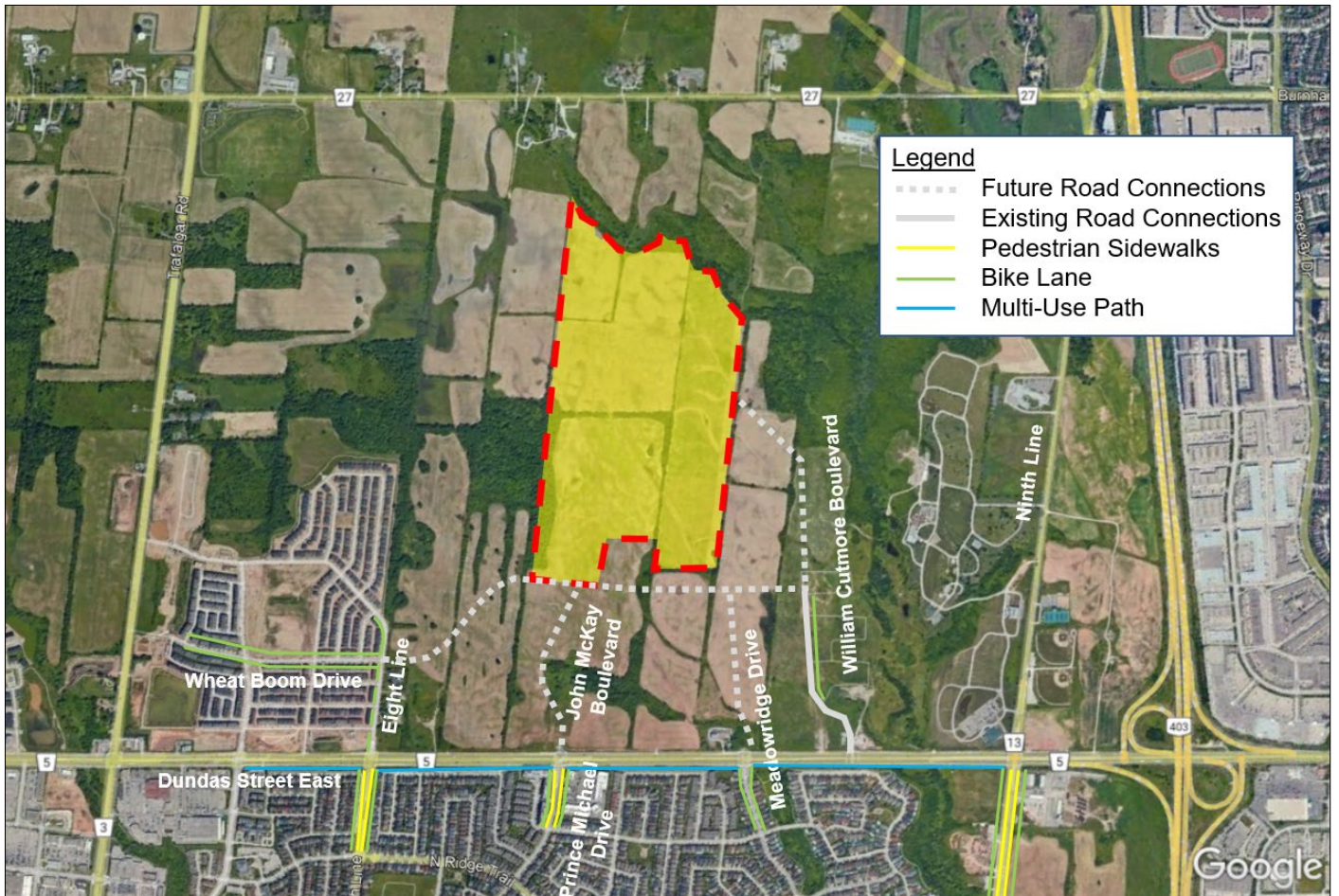


Figure 4 Existing Pedestrian and Cycling Infrastructure

3.3 Transit Services

Oakville Transit currently offers the following routes within or near the study area:

Route 24 (Trafalgar) operates in the east/west direction along Dundas Street within the study area. The route operates between the Oakville GO Station and South Common Centre.

3.4 Existing Traffic Data

Due to COVID-19 pandemic and local and provincial restrictions, turning movement counts conducted within years 2020-2022 will likely have depressed results. As a result, GHD used 2019 historic traffic counts for the study intersections and applied a 2% per annum growth rate to establish baseline projected 2022 existing traffic volumes, as directed by Town and Region Staff and further described in **Section 4.3**. The Bressa Background Development was completed in 2021, so it was assumed that the site trips for this development were already active for 2022, so the trips were added to the baseline projected 2022 existing traffic volumes.

The projected baseline 2022 traffic volumes for the a.m. and p.m. peak hours are summarized in **Figure 5**.

The historic count data for each intersection are provided in **Appendix B**.

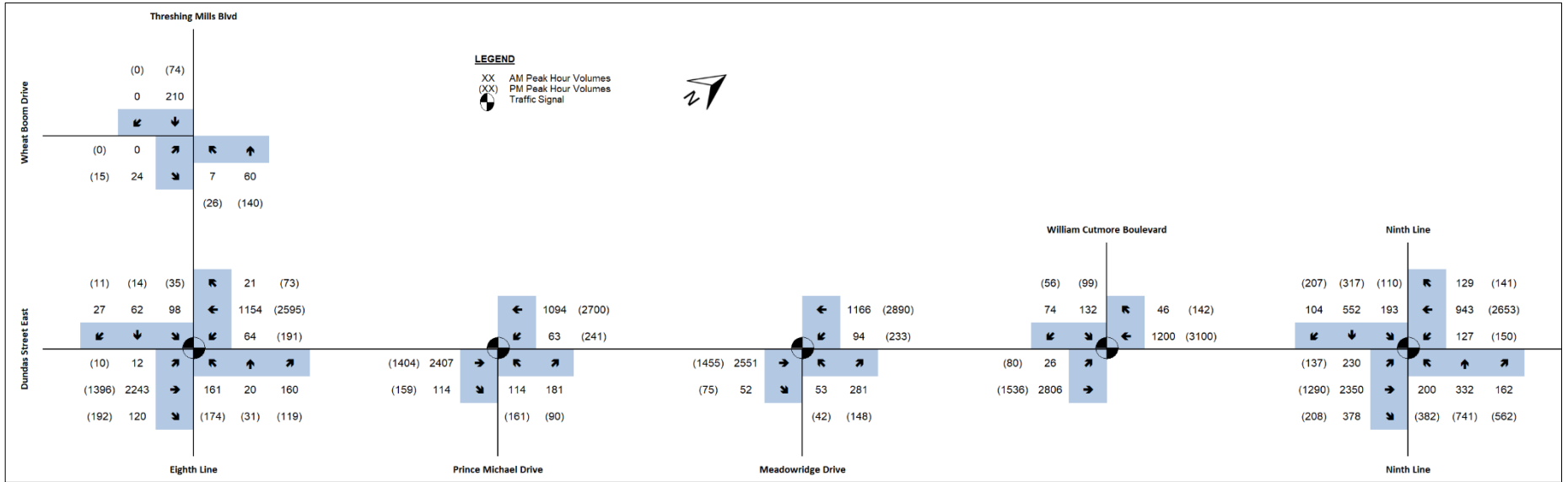


Figure 5 Projected 2022 Existing Traffic Volumes

4. Future Background Traffic

4.1 Study Horizon Year

As agreed with the Region of Halton and Town of Oakville Staff, a future year of 2027 was selected for the analysis of future traffic conditions which corresponds to a period of five-years from the date of the study.

4.2 Future Road Network

The future planned road network north of Dundas Street includes the extension of Wheat Boom Drive to the east of Eighth Line as well as the extension Prince Michael Drive to the north of Dundas Street as John McKay Boulevard and Meadowridge Drive to the north of Dundas Street.

Wheat Boom Drive is classified as an east/west Avenue/Transit Corridor under the North Oakville East Secondary Plan. Wheat Boom Drive is planned to have a two-lane cross-section within the study area with a posted speed limit of 50 km/h.

John McKay Boulevard is classified as a north-south Avenue/Transit corridor under the North Oakville East Secondary Plan. Within the study area, John McKay Boulevard will have a 2-lane cross-section with a 50 km/h posted speed limit. North of Wheat Boom Drive, John McKay Boulevard is classified as a Secondary Transit Corridor under the North Oakville East Secondary Plan.

William Cutmore Boulevard is a minor collector road under the jurisdiction of the Town of Oakville recently constructed north of Dundas Street. Upon site construction the road will be extended to intersect east/west with Meadowridge Drive north of Wheat Boom Drive. The road has a two-lane cross-section with southbound right and left turn lanes at its signalized intersection with Dundas Street and an assumed posted speed limit of 50 km/h.

Street “F” is classified as an east/west local road to be implemented within the subject site that intersects John McKay Boulevard and Meadowridge Drive. Street “F” is planned to have a two-lane cross-section within the study area with a posted speed limit of 50 km/h.

In addition to extension of the study area roads towards the subject site, the Region of Halton has plans to convert the curbside lane along Dundas Street to an HOV lane.

The proposed future lane configurations for the study intersections are detailed in **Figure 6**.

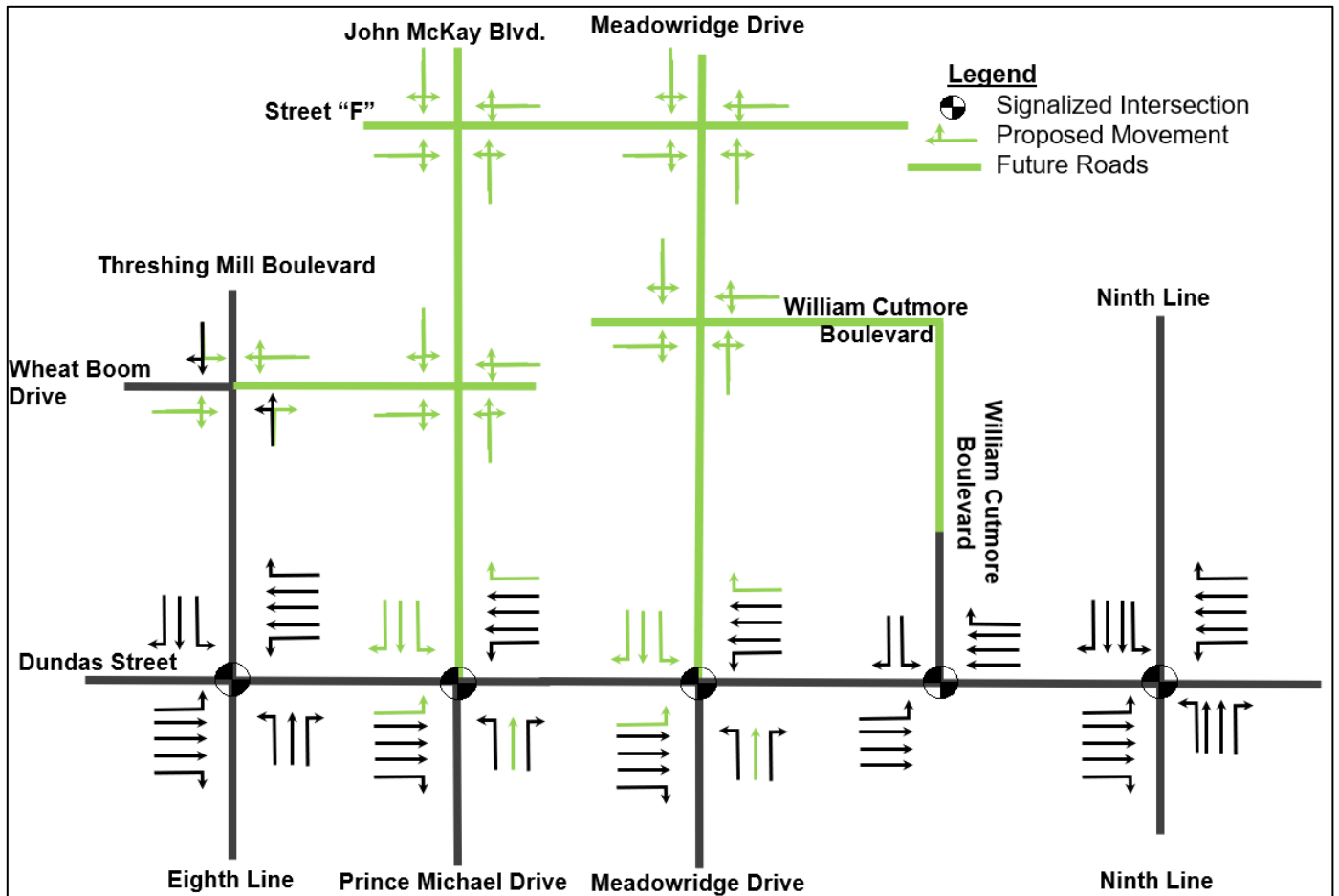


Figure 6 Proposed Lane Configurations

4.3 Corridor Growth

GHD applied a 2% per annum growth rate to all roads within the study area. This growth rate was agreed to with Region and Town staff. As previously discussed, the corridor growth rate was used to derive the projected base 2022 traffic volumes from 2019 historic turning movements and was also used to account for future corridor growth to the 2027 planning horizon year.

4.4 Background Development Traffic

As directed by Town staff, the following developments were included as background traffic:

- **Traffic Impact Study for ARGO Land Development in the Joshua Creek Residential Subdivision in North Oakville**, prepared by CGH Transportation Inc. in December 2019. This study included an analysis of the 2019 and 2024 horizon years for the following intersections with Dundas Street: Eighth Line, Prince Michael Drive, Meadowridge Drive, Street A (William Cutmore Drive), and Ninth Line.
- **Traffic Impact Study for the Dunoak and Bressa Draft Plans Proposed Residential Developments** prepared by GHD July 2020. This study included an analysis of the 2020 and 2025 planning horizon year for the intersections of Dundas Street with: Eighth Line, Prince Michael Drive, Meadowridge Drive, Street A, and Ninth Line. The Bressa Development site trips were already included in the Existing 2022 volumes detailed in **Section 3** of this report.

- **Traffic Impact Study for the Proposed Redoak/Capoak Residential Development** prepared by GHD and updated in November 2021. This study included an analysis of the 2022 and 2027 planning horizon year for the intersections of Dundas Street and Eighth Line, Dundas Street and Prince Michael Drive, Eighth Line and Wheat Boom Drive, and John McKay and Wheat Boom.
- **Traffic Impact Study for 1005 Dundas Street East and 3033 Eighth Line** prepared by Paradigm Transportation Solutions Limited. Only the number of site trips generated by the proposed development were used from this report, with trips assigned to the intersections of Dundas Street and Eighth Line as well as Dundas Street and Prince Michael Drive.

The proposed trip generation from each background development is summarized in the table below, with the trip distribution for each site provided in **Appendix C**.

Table 4-1 Background Development Traffic

Background Development	Peak Hour Trips					
	Weekday AM			Weekday PM		
	In	Out	Total	In	Out	Total
ARGO Land Development - Joshua Creek Residential Subdivision	140	453	593	494	290	784
Dunoak Residential Developments	137	431	568	418	264	682
Redoak/Capoak Residential Development	114	355	469	362	220	582
1005 Dundas Street East and 3033 Eighth Line	19	58	77	60	40	100

The location of each background development relative to the subject site is provided in **Figure 7**, while **Figure 8** summarizes the total site trips from all four background developments assigned to the study area intersections.

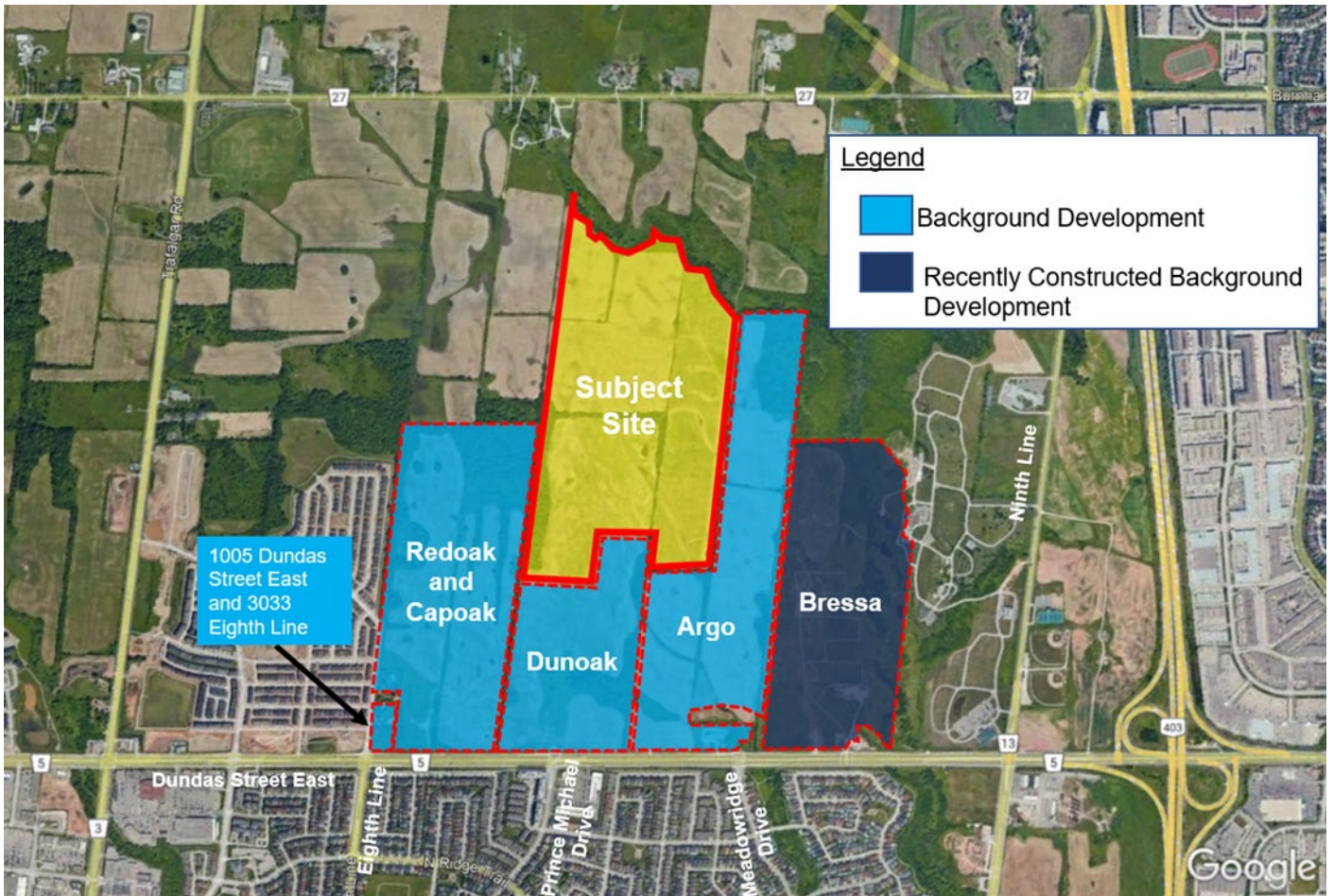


Figure 7 Background Developments Locations

4.5 Future Background Traffic Volumes

The background traffic volumes for the 2027 horizon year was derived by applying the 2% per annum corridor growth rate to the projected 2022 traffic volumes and adding the total background development site traffic from **Figure 8**. The resulting 2027 future background traffic volumes are summarized in **Figure 9**.

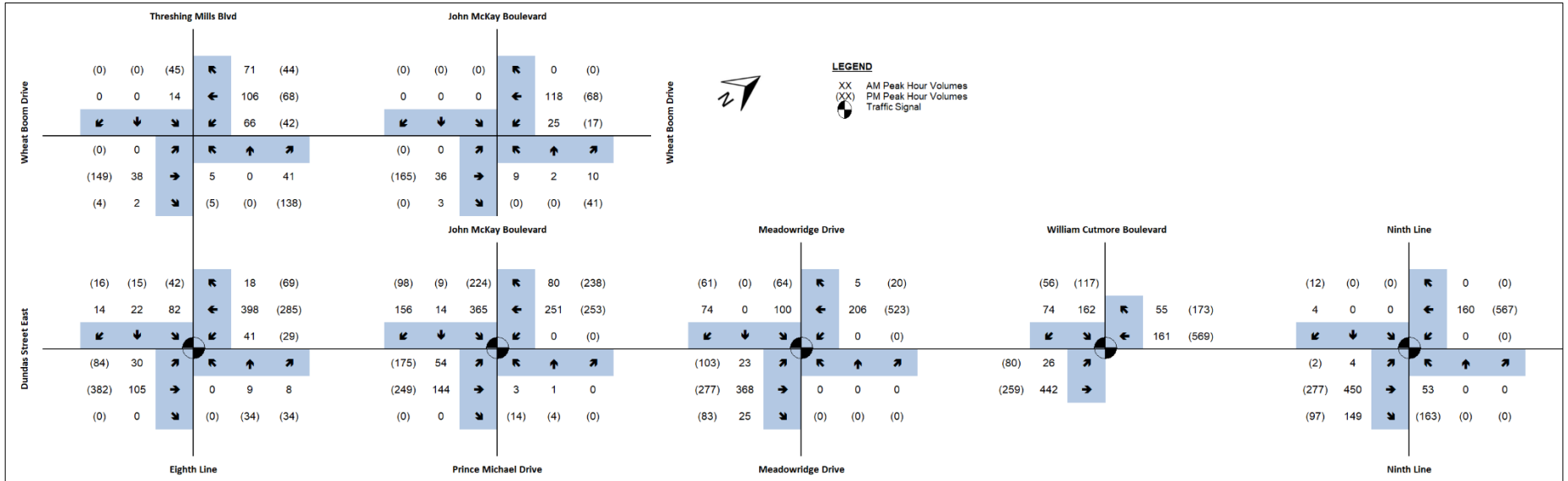


Figure 8 Total Background Development Site Traffic

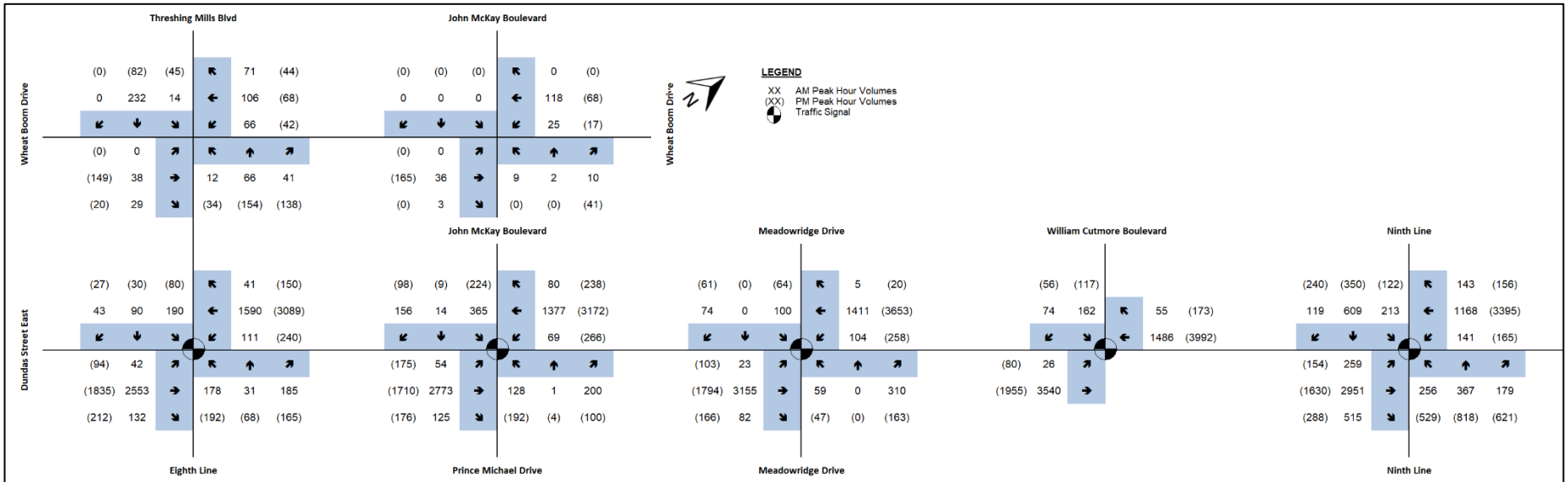


Figure 9 2027 Future Background Traffic Volumes

5. Site Generated Traffic

5.1 Site Traffic Generation

The proposed Joshua Creek Phase 3 residential development consists of a total of 709 Single Detached units, 306 Townhouse units, and a 700-student elementary school. The development generated traffic was estimated using the rates provided in the Institute of Transportation Engineer’s (ITE) Trip Generation Manual, 11th Edition using Land Use Code (LUC) 210 (Single-Family Detached Housing for the Single Detached units and LUC 215 (Single-Family Attached Housing) for the Townhouse units.

Consistent with other traffic studies completed in the areas, Region of Halton staff confirmed that a 10% mode split could be assumed for the transit modal split, 5% for active transportation and 3% for Transportation Demand Management (TDM) in the area for the 2027 planning horizon. As a result, an 18% total mode split reduction was applied to all residential inbound and outbound site generated traffic during both peak hours from the calculated site trips estimated by the ITE trip rates.

No reduction was applied for the elementary school as most trips will be local. A comparison of the fitted curve equations and average rates for each individual Land Use Code was completed, therefore whichever calculation resulted in a greater trip generation was applied as a conservative measure.

Table 5-1 below summarizes the estimated trip generation for the subject site.

Table 5-1 Estimated Joshua Creek Phase 3 Site Trips

Land Uses	GFA (Dwelling Units)	Parameters	Peak Hour					
			Weekday AM			Weekday PM		
			In	Out	Total	In	Out	Total
Single Family Detached (LUC 210)	709 units	Trip Ratio	26%	74%	100%	63%	37%	100%
		Gross Trips	129	367	496	420	246	666
		Total Mode Split Reduction (18%)	23	66	89	76	44	120
		Total New Trips	106	301	407	344	202	546
Single Family Attached (LUC 215)	306 units	Trip Ratio	31%	69%	100%	57%	43%	100%
		Gross Trips	46	107	153	103	77	180
		Total Mode Split Reduction (18%)	9	19	28	18	14	32
		Total New Trips	37	88	125	85	63	148
Elementary School (LUC 520)	700 Students	Trip Ratio	54%	46%	100%	46%	54%	100%
		Gross Trips	280	238	518	52	60	112
		Total Mode Split Reduction (0%)	0	0	0	0	0	0
		Total New Trips	280	238	518	52	60	112
Total Primary Trips			423	627	1050	481	325	806

The proposed subdivision is expected to generate a total of 1050 new two-way trips consisting of 423 inbound and 627 outbound trips during weekday a.m. peak hour and 806 new two-way trips consisting of 81 inbound and 325 outbound trips during the weekday p.m. peak hour.

5.2 Site Traffic Distribution and Assignment

The distribution for the residential trips was completed using information extracted from the 2016 Transportation Tomorrow Survey and first principles based on the assumed route choice available under the 2027 road network. The percentage breakdown of overall directional distribution is summarized in **Table 5-2**. Taking into consideration that motorists will use the path of least resistance, this distribution assumes an evenly distributed trip assignment onto Dundas Street as a result of the various route options available for site trips from the subject site.

Table 5-2 Trips Distribution

Origin/Destination	AM Peak Hour		PM Peak Hour	
	Percentage of Inbound Trips	Percentage of Outbound Trips	Percentage of Inbound Trips	Percentage of Outbound Trips
North	25%	25%	25%	25%
South	25%	25%	25%	25%
East	20%	20%	20%	20%
West	30%	30%	30%	30%
Total	100%	100%	100%	100%

Using the distribution outlined in the table above, the subject site trips were assigned to the study area intersections using the distribution percentages summarized in **Figure 10**.

A few assumptions were made for the school trip distribution as the catchment area for the school has not been established. The site trip distribution for the future elementary school was assumed that 25% of the site trips would originate from outside the study area and arrive along Dundas Street using the various study intersections. For site trips origination north of Dundas Street within the Joshua Creek Draft Plan, the distribution was based on first principles using the estimated number of the units within each draft plan and considering the shortest route from each draft plan to the school. Also, it was assumed that the elementary school would have two accesses: one along William Cutmore Boulevard and one along Meadowridge Drive. The distribution for the school trips is detailed in **Figure 11**.

The Resident, School, and Overall subject site trips assigned to the study area road network for the a.m. and p.m. peak hour are summarized in **Figure 12**, **Figure 13**, and **Figure 14**, respectively.

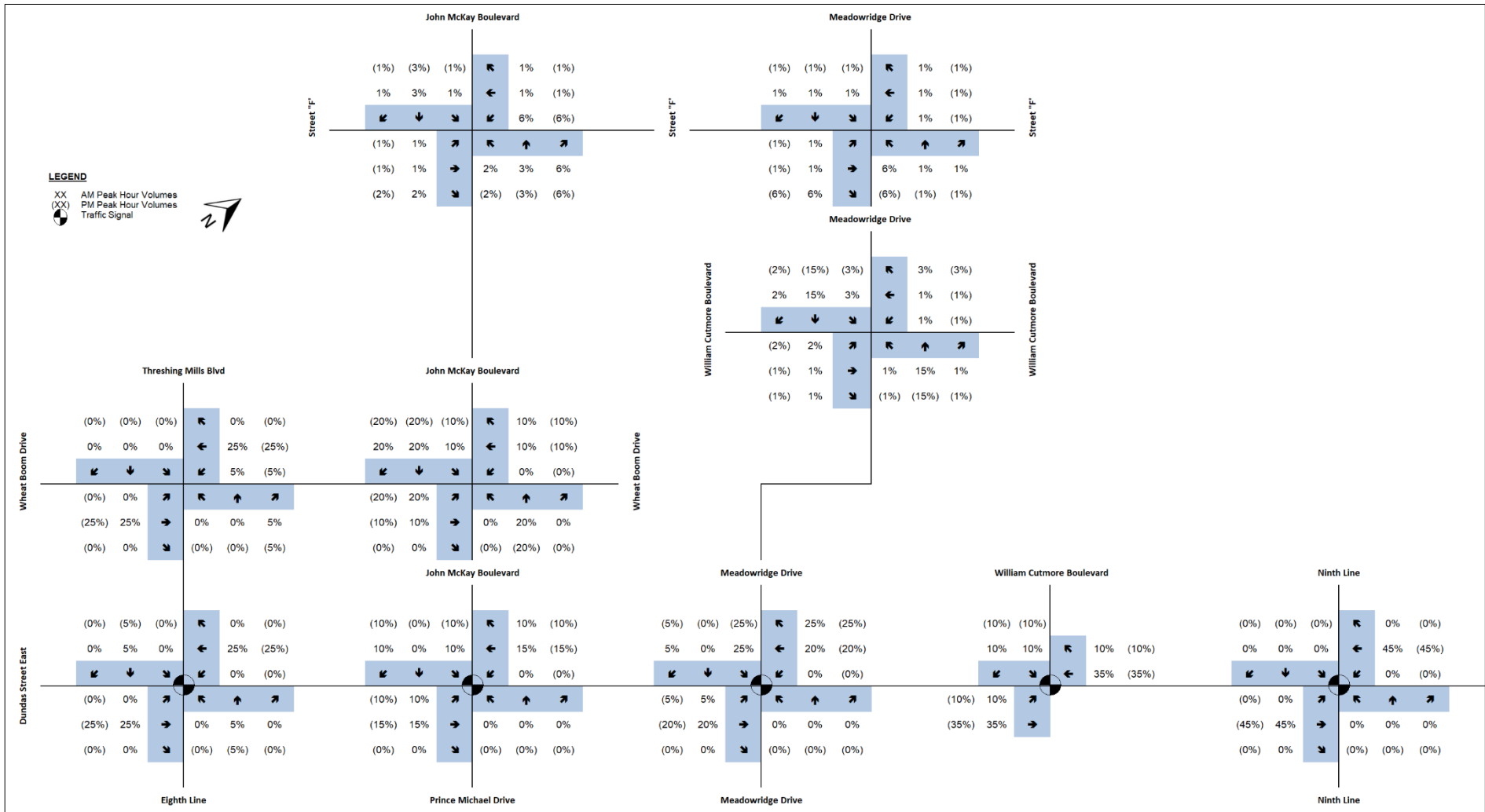


Figure 10 Site Trip Distribution (Resident Trips)

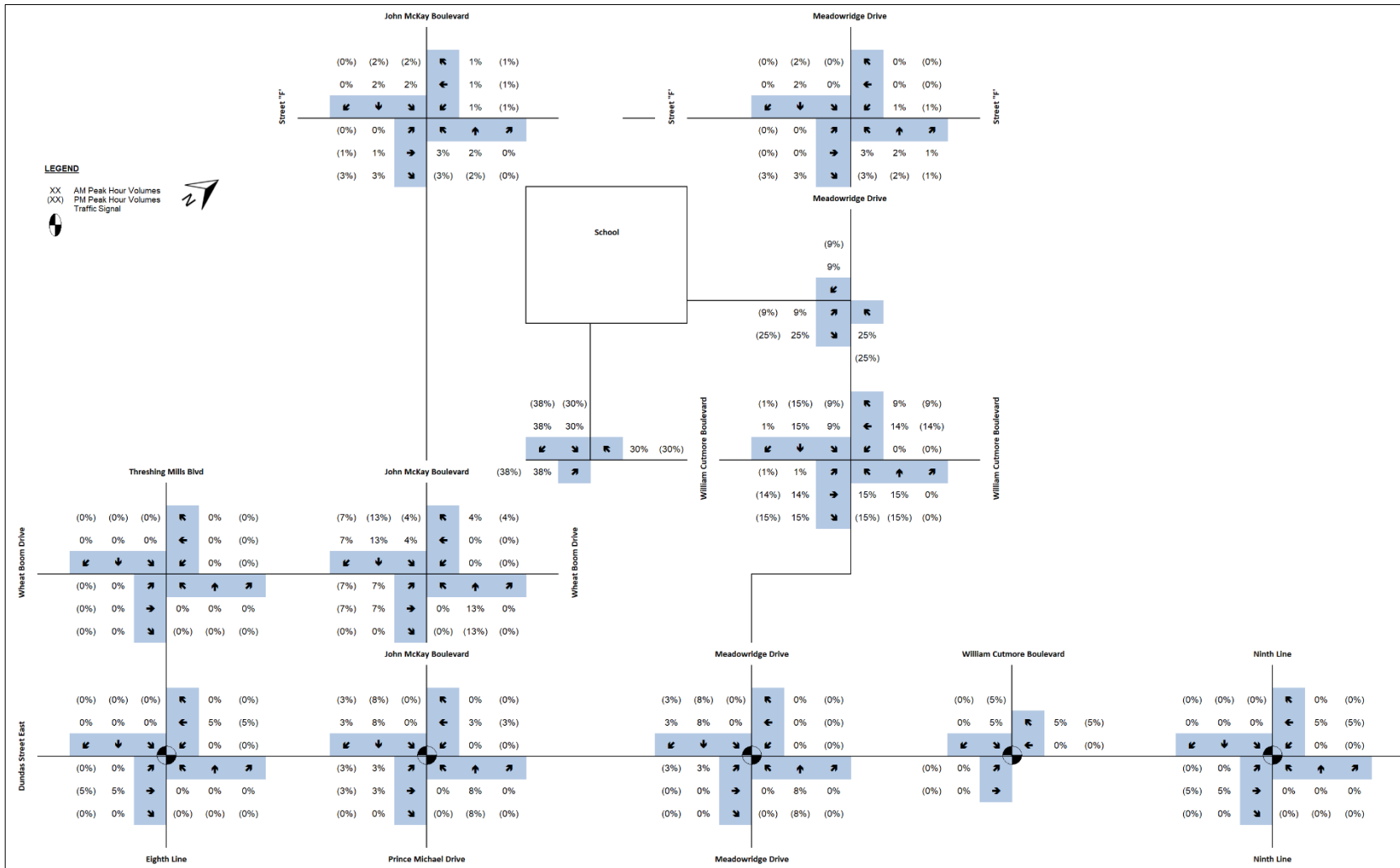


Figure 11 Site Trip Distribution (School Trips)

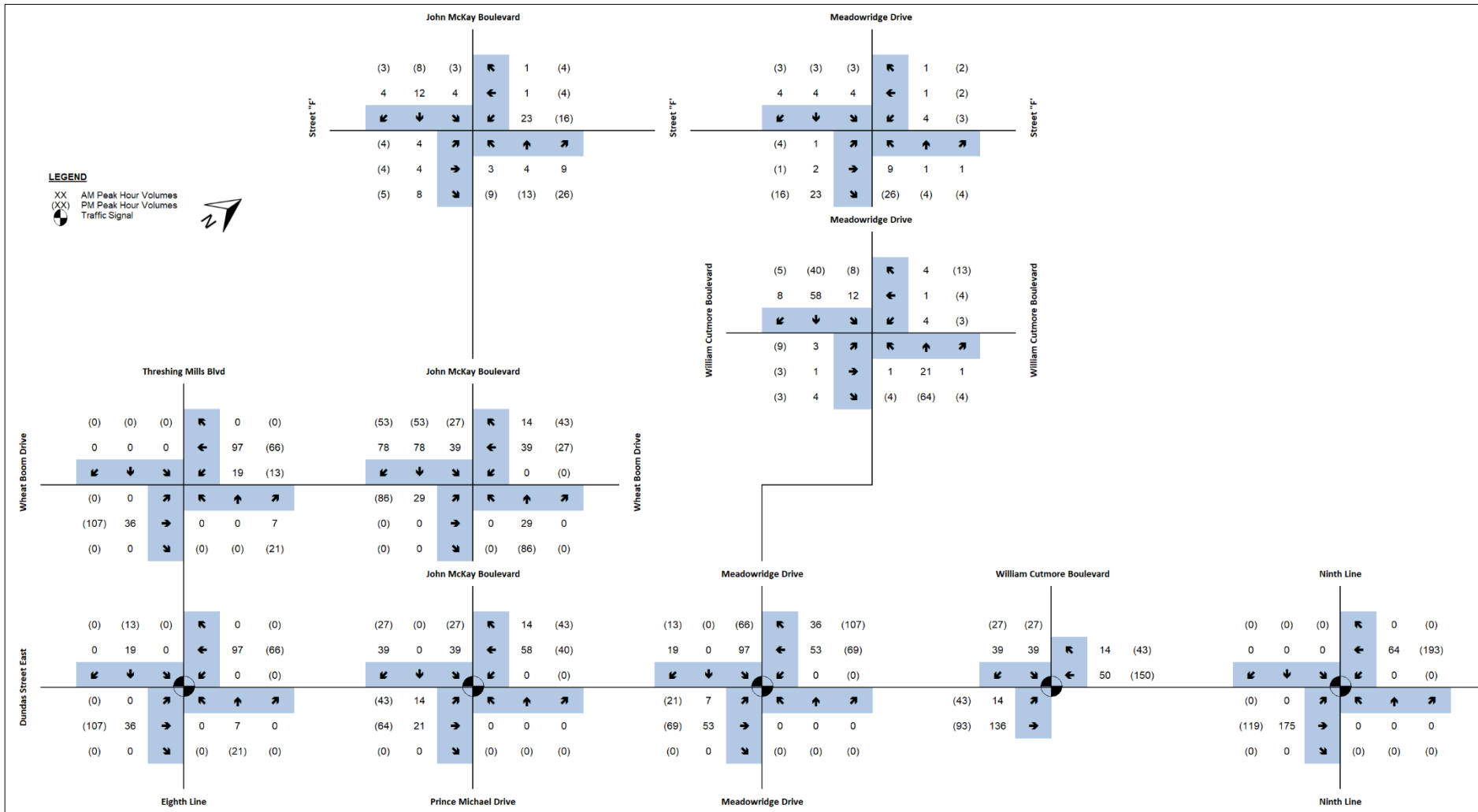


Figure 12 Site Trip Assignment (Resident)

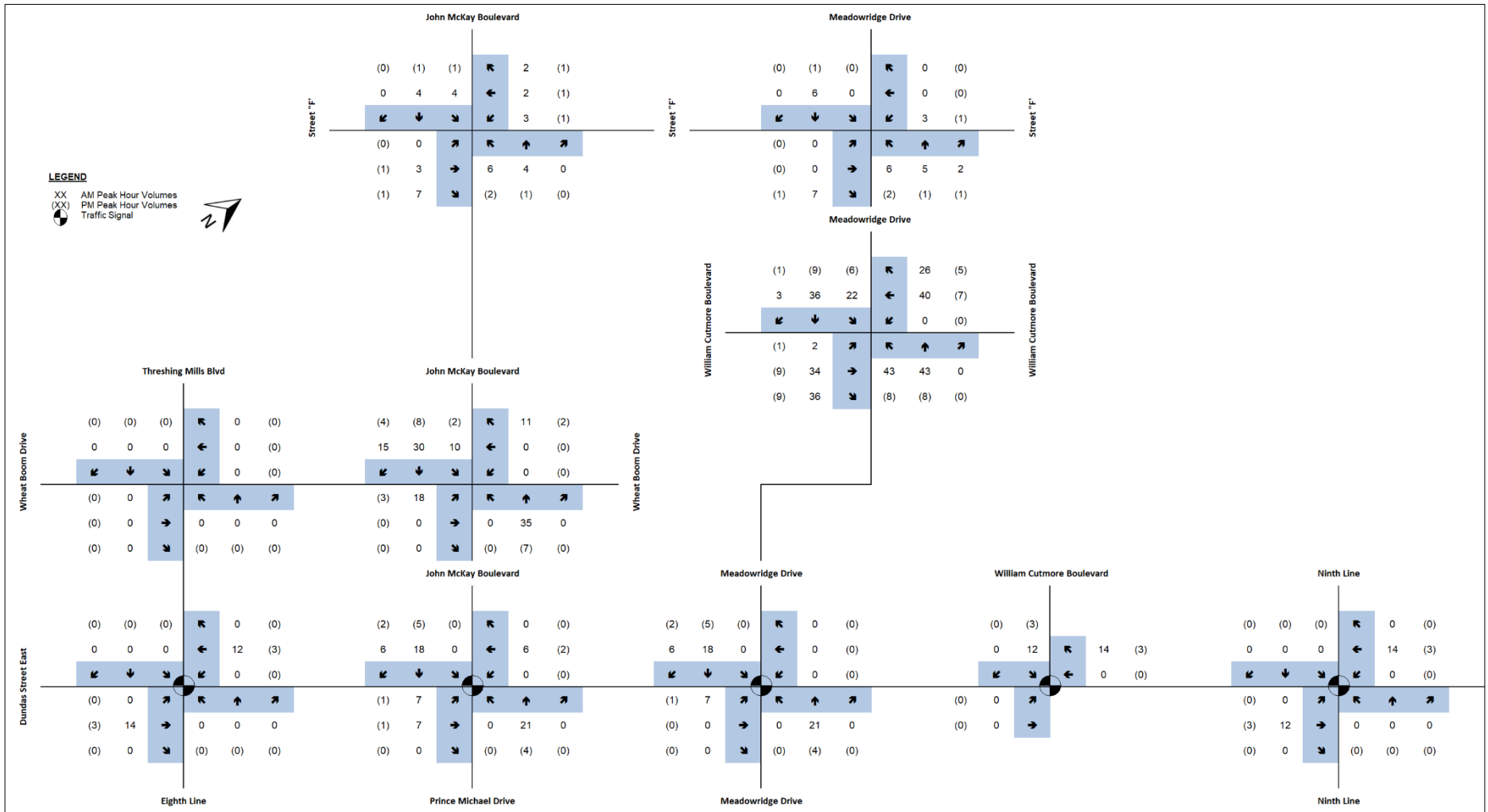


Figure 13 Site Trip Assignment (School)

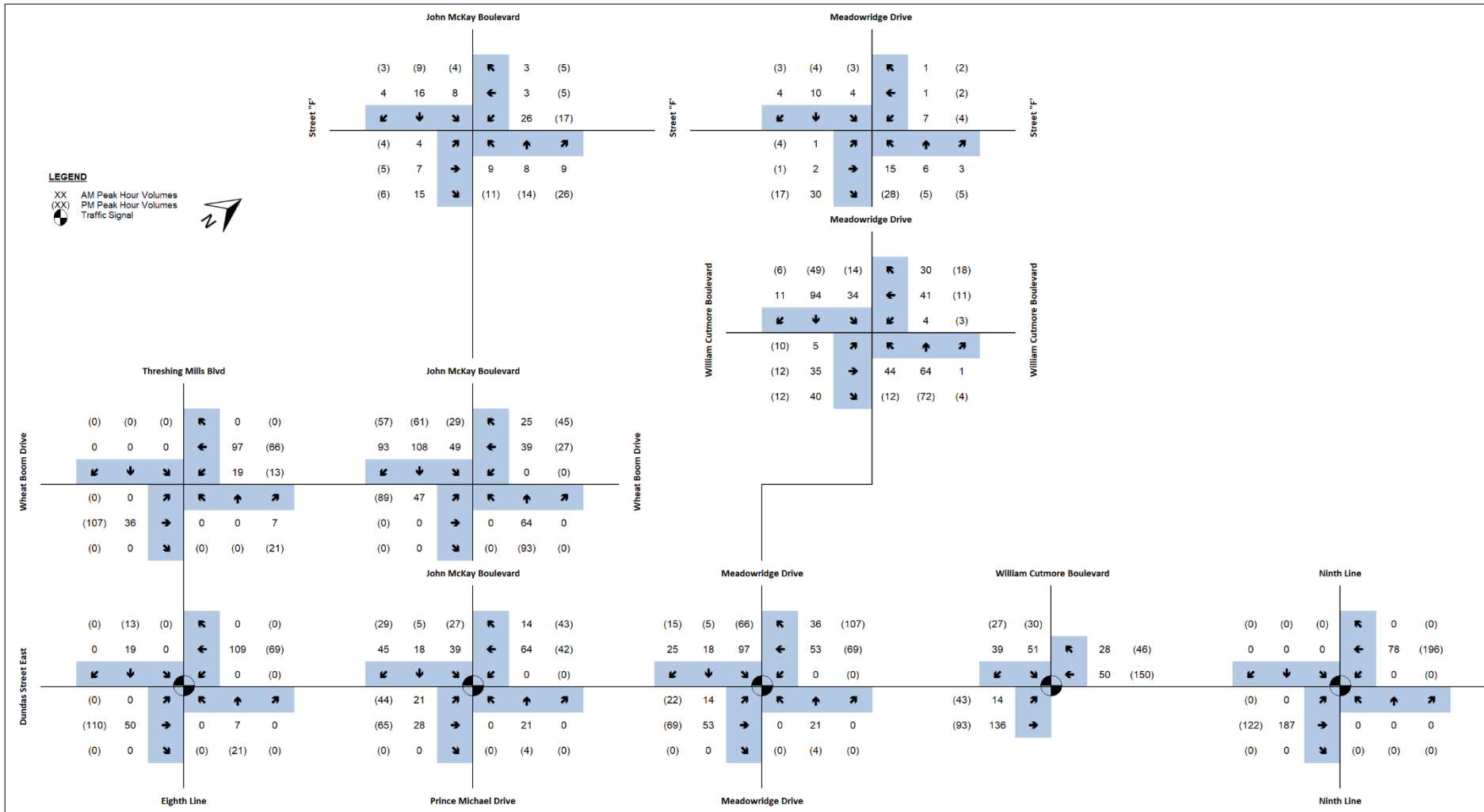


Figure 14 Site Trip Assignment (Total)

6. Future Total Traffic

The future total traffic condition during the weekday a.m. and p.m. peak hours for the 2027 planning horizon was derived by combining the projected future background traffic with the estimated site generated traffic. The resulting traffic volumes are presented in **Figure 15**.

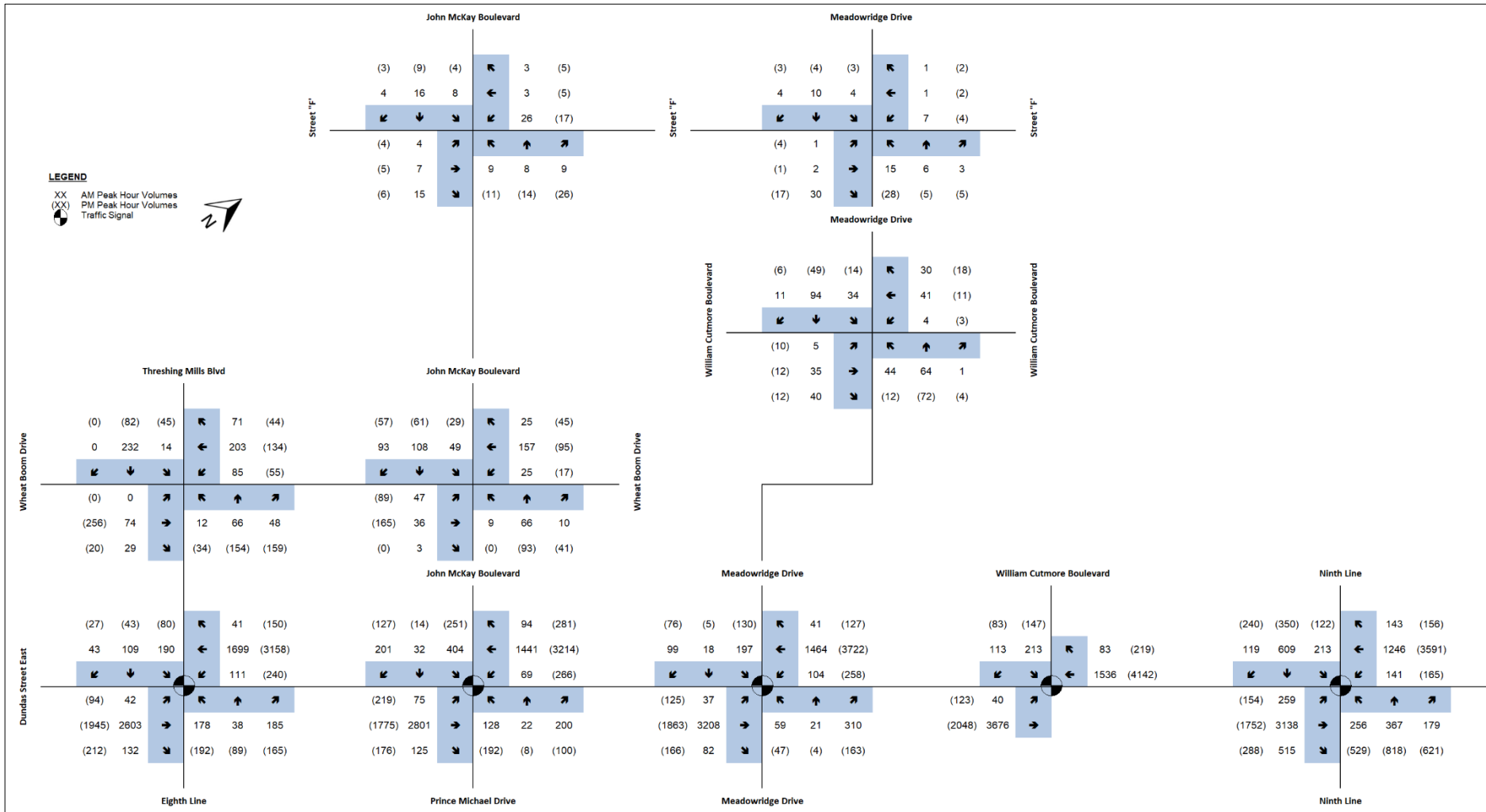


Figure 15 2027 Future Total Traffic Volumes

7. Capacity Analysis

The capacity analysis identifies how well the intersections and driveways are operating. The analysis contained within this report utilized the Highway Capacity Manual (HCM) 2000 procedure within the Synchro Version 10 Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement. Queuing characteristics are reported as the predicted 95th percentile queue for each turning movement. Both pedestrian crossing volumes and heavy vehicle proportions are included in the analyses.

Metrolinx is planning to construct a Bus Rapid Transit Line to run from Kipling Station in Toronto to Brant Street in Burlington. To accommodate the planned BRT service, Halton Region has begun widening Dundas Street from four to six lanes. The additional lane is expected to operate as an HOV lane in the future and then as a BRT lane. To account for the reduction in road capacity from the proposed HOV/BRT lanes during the weekday a.m. and p.m. peak hours, GHD adopted the established methodology of applying a 0.80 lane utilization factor to the through lanes along Dundas Street to consider the estimated volumes of traffic anticipated to utilize the HOV/BRT lanes.

The analysis includes identification and required modifications and improvements (if any) at intersections where the addition of background growth or background growth plus site-generated traffic volumes causes the following:

‘Critical’ intersections and movements for a signalized intersection include:

- V/C ratios for overall intersections operations, through movements, or shared through/turning movements increase to 0.85 or above;
- V/C ratios for exclusive movements increase to 0.95 or above; or
- 95th percentile queue length for individual movements that are projected to, or exceed, the storage length.

‘Critical’ intersections and movements for an unsignalized intersection include:

- Level of Services (LOS), based on average delay per vehicle, on individual movements exceeds LOS “D”,
- Queue length for individual movements that exceeds the lesser of 5 vehicles or the available queue storage.

The following tables summarize the HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing (2021), future background (2027) and future total (2027) traffic conditions. The detailed Synchro sheets are provided in **Appendix D**.

7.1 Eighth Line and Wheat Boom Drive

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic condition are summarized in the following table.

Table 7-1 Capacity analysis of Eighth Line and Wheat Boom Drive

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2022	EBLR = 0.03 (A) 10 NBTL = 0.01 (A) 1 SBTR = 0.12 (A) 0	EBLR = 5 m NBTL = 5 m SBTR = 0 m	EBLR = 0.02 (A) 9 NBTL = 0.02 (A) 1 SBTR = 0.04 (A) 0	EBLR = 5 m NBTL = 5 m SBTR = 0 m
Future Background 2027	EBTLR = 0.1 (B) 11 WBTLR = 0.4 (B) 15 NBTLR = 0.01 (A) 1 SBTLR = 0.01 (A) 0	EBTLR = 5 m WBTLR = 15 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.37 (C) 17 WBTLR = 0.33 (C) 17 NBTLR = 0.02 (A) 1 SBTLR = 0.04 (A) 3	EBTLR = 15 m WBTLR = 10 m NBTLR = 5 m SBTLR = 5 m

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Total 2027	EBTLR = 0.17 (B) 12 WBTLR = 0.63 (C) 22 NBTLR = 0.01 (A) 1 SBTLR = 0.01 (A) 0	EBTLR = 5 m WBTLR = 35 m NBTLR = 5 m SBTLR = 5 m	EBTR = 0.63 (D) 26 WBTLR = 0.62 (D) 29 NBTLR = 0.02 (A) 1 SBTLR = 0.04 (A) 3	EBTLR = 35 m WBTLR = 30 m NBTLR = 5 m SBTLR = 5 m

Under existing 2022 conditions this unsignalized intersection is expected to operate at satisfactory levels, with ample reserve for all movements and queuing.

With the addition of corridor growth under the 2027 future background traffic scenario which includes the assumed background traffic development traffic, this unsignalized intersection is expected to continue to operate at satisfactory levels, with ample reserve for all movements and acceptable queuing.

Under the 2027 future total traffic condition including the subject site traffic from Joshua Creek Phase 3, this intersection is expected to continue to operate at satisfactory levels, with ample reserve for all movements and queuing. The incremental increase in v/c ratios, delays and queuing due to the addition of the subject site trips is acceptable and there remains no critical movements to report.

No geometric improvements are recommended at this intersection in response to the development of the subject site.

7.2 Dundas Street East and Eighth Line

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background and future total traffic conditions out are summarized in the following table.

Table 7-2 Capacity analysis of Dundas Street East and Eighth Line

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2022	Overall: 0.62 (C) 30 EBL = 0.02 (A) 5 EBT = 0.85 (C) 32 EBR = 0.11 (B) 17 WBL = 0.13 (C) 32 WBT = 0.45 (B) 19 WBR = 0.01 (B) 16 NBL = 0.64 (D) 54 NBT = 0.06 (D) 44 NBR = 0.21 (D) 46 SBL = 0.37 (D) 47 SBT = 0.18 (D) 45 SBR = 0.02 (D) 44	EBL = 5 m EBT = 200 m EBR = 20 m WBL = 15 m WBT = 60 m WBR = 0 m NBL = 60 m NBT = 10 m NBR = 25 m SBL = 35 m SBT = 25 m SBR = 0 m	Overall: 0.67 (B) 15 EBL = 0.08 (B) 11 EBT = 0.41 (B) 12 EBR = 0.13 (B) 10 WBL = 0.49 (A) 7 WBT = 0.7 (B) 13 WBR = 0.05 (A) 6 NBL = 0.64 (E) 56 NBT = 0.08 (D) 45 NBR = 0.07 (D) 45 SBL = 0.13 (D) 45 SBT = 0.04 (D) 44 SBR = 0.01 (D) 44	EBL = 5 m EBT = 90 m EBR = 15 m WBL = 25 m WBT = 205 m WBR = 10 m NBL = 65 m NBT = 15 m NBR = 15 m SBL = 20 m SBT = 10 m SBR = 0 m
	Future Background 2027	Overall: 0.8 (C) 25 EBL = 0.17 (A) 7 EBT = 0.83 (B) 18 EBR = 0.1 (A) 8 WBL = 0.53 (C) 34 WBT = 0.56 (B) 18 WBR = 0.03 (E) 56 NBL = 0.89 (F) 87 NBT = 0.1 (D) 46 NBR = 0.41 (D) 50 SBL = 0.82 (E) 73	EBL = 5 m EBT = 210 m EBR = 10 m WBL = 35 m WBT = 110 m WBR = 5 m NBL = 90 m NBT = 20 m NBR = 45 m SBL = 85 m SBT = 40 m	Overall: 0.94 (D) 46 EBL = 0.42 (C) 29 EBT = 0.74 (C) 24 EBR = 0.18 (B) 15 WBL = 0.68 (D) 42 WBT = 1.09 (E) 63 WBR = 0.12 (B) 17 NBL = 0.66 (D) 53 NBT = 0.17 (D) 42 NBR = 0.18 (D) 43 SBL = 0.28 (D) 44

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
	SBT = 0.29 (D) 48 SBR = 0.03 (D) 46	SBR = 5 m	SBT = 0.07 (D) 41 SBR = 0.02 (D) 41	SBT = 15 m SBR = 0 m
Future Total 2027	<u>Overall: 0.83 (C) 22</u> EBL = 0.19 (A) 8 EBT = 0.84 (B) 19 EBR = 0.1 (A) 8 WBL = 0.54 (E) 70 WBT = 0.59 (A) 4 WBR = 0.03 (A) 0 NBL = 0.95 (F) 105 NBT = 0.13 (D) 46 NBR = 0.41 (D) 50 SBL = 0.81 (E) 72 SBT = 0.35 (D) 49 SBR = 0.03 (D) 46	EBL = 5 m EBT = 220 m EBR = 10 m WBL = 30 m WBT = 25 m WBR = 0 m NBL = 90 m NBT = 20 m NBR = 45 m SBL = 85 m SBT = 45 m SBR = 5 m	<u>Overall: 0.96 (D) 54</u> EBL = 0.42 (C) 29 EBT = 0.79 (C) 26 EBR = 0.19 (B) 15 WBL = 0.68 (D) 42 WBT = 1.11 (E) 78 WBR = 0.12 (B) 17 NBL = 0.66 (D) 52 NBT = 0.22 (D) 43 NBR = 0.18 (D) 42 SBL = 0.3 (D) 44 SBT = 0.1 (D) 42 SBR = 0.02 (D) 41	EBL = 25 m EBT = 215 m EBR = 30 m WBL = 50 m WBT = 330 m WBR = 10 m NBL = 65 m NBT = 30 m NBR = 25 m SBL = 30 m SBT = 20 m SBR = 0 m

Under the projected existing conditions, this intersection is expected to operate at satisfactory levels with an overall v/c ratio of 0.62 LOS C and 0.67 LOS B during the a.m. and p.m. peak hours respectively. Only the eastbound through during the a.m. peak hour has reached a critical level of 0.85 LOS C but remains below the theoretical capacity of 1.00.

Under the 2027 future background traffic scenario, the overall v/c ratios for the intersection increase to 0.80 LOS E during the a.m. peak hour and a critical v/c ratio 0.94 LOS D during the p.m. peak hour. Signal timings were optimized where possible to reduce delays and queueing. During the a.m. peak hour, no movements are reported to be over capacity. During the p.m. peak hour, the westbound through is reported to operate over capacity with a v/c ratio of 1.09 LOS E. All other movements are reported to operate below critical levels.

With the addition of the subject site traffic under the 2027 future total traffic scenario, the overall intersection v/c ratio increases slightly from 0.81 to 0.83 LOS E during the a.m. peak hour and from 0.94 to 0.96 LOS D during the p.m. peak hour. Signal timings were optimized where possible to reduce delays and queueing. During the a.m. peak hour, the northbound left movement increases from 0.98 to 0.95 LOS F while during the p.m. peak hour, the westbound through increases from 1.09 to 1.11 LOS E.

The volume of east-west traffic along Dundas Street based on the 2019 traffic counts was already quite high and the 2% per annum compounded growth rate will increase the growth of this traffic rapidly leading to significant capacity constraints. It is unlikely that this level of growth will occur along this corridor as the planned completion of the parallel William Halton Parkway is expected to be completed by 2027 and it is expected that some of this east-west traffic will divert away from Dundas Street which should improve intersection operations. Additionally, the conversion of the curbside lane to an HOV/BRT lane also reduces the capacity along Dundas Street. It is expected that along with the introduction of the HOV and future BRT service, that the modal splits will also increase from existing levels which will further improve the operation of intersections along Dundas Street.

No geometric improvements are recommended at this intersection in response to the development of the subject site.

7.3 Dundas Street East and John McKay Boulevard/Prince Michael Drive

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 7-3 Capacity analysis of Dundas Street East and John McKay Boulevard/Prince Michael Drive

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2022	<u>Overall: 0.58 (A) 6</u> EBT = 0.62 (A) 2 EBR = 0.08 (A) 1 WBL = 0.32 (A) 9 WBT = 0.26 (A) 3 NBL = 0.47 (D) 54 NBR = 0.17 (D) 53	EBT = 25 m EBR = 5 m WBL = 15 m WBT = 30 m NBL = 45 m NBR = 25 m	<u>Overall: 0.66 (B) 12</u> EBT = 0.39 (B) 10 EBR = 0.1 (A) 8 WBL = 0.57 (B) 12 WBT = 0.65 (A) 10 NBL = 0.61 (E) 57 NBR = 0.06 (D) 48	EBT = 80 m EBR = 10 m WBL = 45 m WBT = 185 m NBL = 60 m NBR = 15 m
Future Background 2027	<u>Overall: 1.04 (E) 64</u> EBL = 0.33 (A) 9 EBT = 1.19 (F) 98 EBR = 0.1 (A) 1 WBL = 0.37 (D) 37 WBT = 0.64 (B) 15 WBR = 0.05 (C) 26 NBL = 0.82 (F) 84 NBTR = 0.64 (E) 68 SBL = 0.81 (D) 46 SBT = 0.02 (C) 29 SBR = 0.14 (C) 30	EBL = 5 m EBT = 325 m EBR = 0 m WBL = 20 m WBT = 95 m WBR = 15 m NBL = 70 m NBTR = 60 m SBL = 110 m SBT = 10 m SBR = 25 m	<u>Overall: 1.08 (E) 57</u> EBL = 0.85 (E) 69 EBT = 0.67 (B) 16 EBR = 0.14 (B) 16 WBL = 0.75 (D) 39 WBT = 1.13 (F) 84 WBR = 0.2 (B) 19 NBL = 0.7 (E) 57 NBTR = 0.07 (D) 45 SBL = 0.89 (F) 80 SBT = 0.02 (D) 42 SBR = 0.06 (D) 43	EBL = 60 m EBT = 100 m EBR = 20 m WBL = 55 m WBT = 350 m WBR = 20 m NBL = 75 m NBTR = 20 m SBL = 100 m SBT = 10 m SBR = 15 m
Future Total 2027	<u>Overall: 1.08 (F) 92</u> EBL = 0.5 (C) 29 EBT = 1.21 (F) 142 EBR = 0.1 (D) 37 WBL = 0.38 (D) 54 WBT = 0.68 (C) 28 WBR = 0.06 (C) 34 NBL = 0.85 (F) 91 NBTR = 0.88 (F) 102 SBL = 0.87 (D) 53 SBT = 0.05 (C) 29 SBR = 0.23 (C) 31	EBL = 15 m EBT = 400 m EBR = 20 m WBL = 25 m WBT = 85 m WBR = 10 m NBL = 70 m NBTR = 80 m SBL = 140 m SBT = 15 m SBR = 35 m	<u>Overall: 1.14 (E) 75</u> EBL = 0.96 (F) 89 EBT = 0.72 (B) 18 EBR = 0.14 (B) 18 WBL = 0.76 (D) 40 WBT = 1.2 (F) 118 WBR = 0.24 (C) 22 NBL = 0.65 (D) 52 NBTR = 0.09 (D) 43 SBL = 0.92 (F) 85 SBT = 0.03 (D) 41 SBR = 0.08 (D) 41	EBL = 80 m EBT = 105 m EBR = 20 m WBL = 55 m WBT = 350 m WBR = 25 m NBL = 70 m NBTR = 20 m SBL = 110 m SBT = 10 m SBR = 15 m

Under the projected 2022 conditions, the intersection is expected to operate at satisfactory levels with an overall v/c ratio of 0.58 LOS A and 0.66 LOS B during the a.m. and p.m. peak hours respectively. No individual movements were reported to operate at critical levels.

Under the 2027 future background traffic scenario, with the addition of the north leg of the intersection into the Dunoak residential development, the overall intersection v/c ratio increases during the a.m. peak hour from 0.58 to 1.04 LOS E and from 0.66 to 1.08 LOS E during the p.m. peak hour. Signal timings were optimized where possible to reduce delays and queueing. During the a.m. peak hour, the eastbound through movement is reported to be over capacity with a v/c ratio of 1.19 LOS F. During the p.m. peak hour, the westbound through movement is reported to be over capacity with a v/c ratio of 1.13 LOS F. All other movements are reported to operate below critical levels.

With the addition of the subject site traffic under the 2027 future total traffic scenario, the overall intersection v/c ratio increases from 1.04 to 1.08 LOS F during the a.m. and from 1.08 to 1.14 LOS E during the p.m. peak hour. During the a.m. peak hour, the eastbound v/c ratio increases by 0.02 to 1.21 LOS F and the northbound through right movement v/c ratio increases by 0.22 to 0.88 LOS F. During the p.m. peak hour, the westbound through movement v/c ratio increased by 0.08 to 1.21 LOS D and the eastbound left increases to just over critical levels with a v/c ratio of 0.96 LOS F.

As previously noted, the capacity issues along Dundas Street are prevalent under the 2027 future background traffic scenario given the background development site trips and assumed corridor growth along Dundas Street. It is expected that some of this growth along with existing traffic will redistribute to the future William Halton Parkway (a parallel route) once construction is completed and delays along Dundas Street become excessive for drivers.

No geometric improvements are recommended at this intersection in response to the development of the subject site.

7.4 Dundas Street East and Meadowridge Drive

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions out are summarized in the following table.

Table 7-4 Capacity analysis of Dundas Street East and Meadowridge Drive

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2022	Overall: 0.66 (C) 32 EBT = 0.96 (D) 42 EBR = 0.05 (B) 17 WBL = 0.15 (B) 19 WBT = 0.27 (A) 3 NBL = 0.31 (E) 56 NBR = 0.17 (D) 55	EBT = 265 m EBR = 10 m WBL = 15 m WBT = 25 m NBL = 25 m NBR = 20 m	Overall: 0.63 (A) 9 EBT = 0.38 (B) 12 EBR = 0.05 (B) 11 WBL = 0.53 (A) 4 WBT = 0.66 (A) 5 NBL = 0.25 (E) 56 NBR = 0.05 (D) 54	EBT = 110 m EBR = 10 m WBL = 15 m WBT = 95 m NBL = 25 m NBR = 15 m
Future Background 2027	Overall: 1.01 (E) 63 EBL = 0.12 (B) 10 EBT = 1.11 (F) 90 EBR = 0.06 (C) 21 WBL = 0.43 (D) 52 WBT = 0.5 (B) 11 WBR = 0 (A) 8 NBL = 0.21 (D) 45 NBT = 0.00 (A) 0 NBR = 0.81 (E) 65 SBL = 0.36 (D) 46 SBT = 0.00 (A) 0 SBR = 0.05 (D) 42	EBL = 5 m EBT = 320 m EBR = 5 m WBL = 35 m WBT = 80 m WBR = 0 m NBL = 25 m NBT = 0 m NBR = 100 m SBL = 40 m SBT = 0 m SBR = 5 m	Overall: 1.03 (D) 39 EBL = 0.66 (D) 45 EBT = 0.59 (A) 9 EBR = 0.1 (A) 10 WBL = 0.76 (C) 34 WBT = 1.09 (D) 54 WBR = 0.01 (A) 5 NBL = 0.32 (E) 56 NBT = 0.00 (A) 0 NBR = 0.16 (D) 54 SBL = 0.44 (E) 57 SBT = 0.00 (A) 0 SBR = 0.04 (D) 53	EBL = 30 m EBT = 70 m EBR = 5 m WBL = 40 m WBT = 140 m WBR = 0 m NBL = 25 m NBT = 0 m NBR = 25 m SBL = 30 m SBT = 0 m SBR = 5 m
Future Total 2027	Overall: 1.03 (D) 52 EBL = 0.2 (A) 10 EBT = 1.12 (E) 71 EBR = 0.06 (A) 9 WBL = 0.44 (D) 51 WBT = 0.51 (B) 12 WBR = 0.03 (D) 48 NBL = 0.22 (D) 45 NBT = 0.06 (D) 45 NBR = 0.82 (E) 66 SBL = 0.72 (E) 58 SBT = 0.05 (D) 43 SBR = 0.06 (D) 43	EBL = 5 m EBT = 115 m EBR = 5 m WBL = 35 m WBT = 90 m WBR = 5 m NBL = 25 m NBT = 15 m NBR = 100 m SBL = 75 m SBT = 10 m SBR = 15 m	Overall: 1.1 (D) 48 EBL = 0.87 (E) 72 EBT = 0.62 (A) 9 EBR = 0.11 (A) 9 WBL = 0.8 (C) 32 WBT = 1.12 (E) 69 WBR = 0.09 (A) 10 NBL = 0.29 (D) 54 NBT = 0.02 (D) 53 NBR = 0.17 (D) 53 SBL = 0.81 (F) 81 SBT = 0.02 (D) 51 SBR = 0.05 (D) 51	EBL = 40 m EBT = 70 m EBR = 5 m WBL = 35 m WBT = 165 m WBR = 5 m NBL = 25 m NBT = 5 m NBR = 25 m SBL = 65 m SBT = 5 m SBR = 10 m

Under the projected 2022 conditions, the intersection is expected to operate at satisfactory levels with an overall v/c ratio of 0.66 LOS C and 0.63 LOS A during the a.m. and p.m. peak hours respectively. No individual movements were reported to operate at critical levels with the exception of the eastbound through movement with a reported v/c ratio of 0.96 LOS D.

Under the 2027 future background traffic scenario, with the addition of the north leg of the intersection into the Argo residential development, the overall intersection v/c ratio increases during the a.m. peak hour from 0.66 to 1.01 LOS E and from 0.63 to 1.03 LOS D during the p.m. peak hour. Signal timings were optimized where possible to reduce delays and queueing. During the a.m. peak hour, the eastbound through movement continues to report to be over capacity with a v/c ratio of 1.11 LOS F. During the p.m. peak hour, the westbound through movement increases significantly and is reported to be over capacity with a v/c ratio of 1.09 LOS D. All other movements are reported to operate below critical levels.

With the addition of the subject site traffic under the 2027 future total traffic scenario, the overall intersection v/c ratio increases slightly from 1.01 to 1.03 LOS F during the a.m. and from 1.03 to 1.10 LOS D during the p.m. peak hour. During the a.m. peak hour, the eastbound through movement v/c ratio increases by 0.01 to 1.12 LOS E. During the p.m. peak hour, the westbound through movement v/c ratio increased by 0.03 to 1.12 LOS E. All other movements are reported to operate below critical levels.

As previously noted, the capacity issues along Dundas Street are prevalent under the 2027 future background traffic scenario given the background development site trips and assumed corridor growth along Dundas Street. It is expected that some of this growth along with existing traffic will redistribute to the future William Halton Parkway (a parallel route) once construction is completed and delays along Dundas Street become excessive for drivers.

No geometric improvements are recommended at this intersection in response to the development of the subject site.

7.5 Dundas Street East and William Cutmore Boulevard

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions out are summarized in the following table.

Table 7-5 Capacity analysis of Dundas Street East and William Cutmore Boulevard

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2022	Overall: 0.66 (A) 8 EBL = 0.08 (A) 4 EBT = 0.7 (A) 8 WBT = 0.3 (A) 2 WBR = 0.03 (A) 1 SBL = 0.49 (E) 57 SBR = 0.05 (D) 48	EBL = 5 m EBT = 120 m WBT = 20 m WBR = 5 m SBL = 55 m SBR = 15 m	Overall: 0.86 (A) 7 EBL = 0.87 (F) 89 EBT = 0.35 (A) 2 WBT = 0.76 (A) 4 WBR = 0.09 (A) 0 SBL = 0.62 (E) 74 SBR = 0.19 (E) 58	EBL = 25 m EBT = 30 m WBT = 40 m WBR = 0 m SBL = 50 m SBR = 20 m
Future Background 2027	Overall: 0.94 (B) 12 EBL = 0.15 (A) 2 EBT = 1.00 (B) 14 WBT = 0.42 (A) 1 WBR = 0.03 (A) 0 SBL = 0.6 (E) 61 SBR = 0.05 (D) 48	EBL = 5 m EBT = 50 m WBT = 15 m WBR = 5 m SBL = 65 m SBR = 15 m	Overall: 1.09 (E) 59 EBL = 0.6 (E) 71 EBT = 0.51 (A) 2 WBT = 1.15 (F) 88 WBR = 0.12 (A) 0 SBL = 0.77 (E) 79 SBR = 0.03 (D) 55	EBL = 25 m EBT = 35 m WBT = 50 m WBR = 0 m SBL = 60 m SBR = 15 m
Future Total 2027	Overall: 1 (C) 22 EBL = 0.25 (A) 2 EBT = 1.04 (C) 28 WBT = 0.44 (A) 1 WBR = 0.05 (A) 0 SBL = 0.79 (E) 74 SBR = 0.19 (D) 50	EBL = 5 m EBT = 65 m WBT = 15 m WBR = 5 m SBL = 90 m SBR = 25 m	Overall: 1.16 (E) 71 EBL = 0.92 (F) 118 EBT = 0.54 (A) 2 WBT = 1.2 (F) 107 WBR = 0.15 (A) 0 SBL = 0.92 (F) 113 SBR = 0.21 (E) 58	EBL = 55 m EBT = 25 m WBT = 35 m WBR = 0 m SBL = 80 m SBR = 25 m

The Bressa residential subdivision has been constructed since the 2019 traffic counts were conducted and this study intersection is now a three-leg signalized intersection, as a result, the expected trip generation from the Bressa Traffic study was included in the 2022 traffic scenario. Under the projected 2022 conditions, the intersection is expected to

operate at satisfactory levels with an overall v/c ratio of 0.66 LOS A during the a.m. peak hour, but with a critical 0.86 LOS A during the p.m. peak hour. No individual movements were reported to operate at critical levels.

Under the 2027 future background traffic scenario, the overall intersection v/c ratio increases during the a.m. peak hour from 0.66 to 0.94 LOS B and from 0.86 to 1.09 LOS E during the p.m. peak hour. Signal timings were optimized where possible to reduce delays and queueing. During the a.m. peak hour, the eastbound through movement continues to report to be over capacity with a v/c ratio of 1.00 LOS B. During the p.m. peak hour, the westbound through movement also increases and is reported to be over capacity with a v/c ratio of 1.15 LOS F. All other movements are reported to operate below critical levels.

With the addition of the subject site traffic under the 2027 future total traffic scenario, the overall intersection v/c ratio increases slightly from 0.94 to 1.00 LOS C during the a.m. and from 1.09 to 1.16 LOS E during the p.m. peak hour. During the a.m. peak hour, the eastbound through v/c ratio increases by 0.04 to 1.04 LOS E. During the p.m. peak hour, the westbound through movement v/c ratio increased by 0.05 to 1.20 LOS F. All other movements are reported to operate below critical levels.

As previously noted, the capacity issues along Dundas Street are prevalent under the 2027 future background traffic scenario given the background development site trips and assumed corridor growth along Dundas Street. It is expected that some of this growth along with existing traffic will redistribute to the future William Halton Parkway (a parallel route) once construction is completed and delays along Dundas Street become excessive for drivers.

No geometric improvements are recommended at this intersection in response to the development of the subject site.

7.6 Dundas Street East and Ninth Line

Table 7-6 Capacity analysis of Ernest Dundas Street East and Ninth Line

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2022	Overall: 0.78 (C) 29		Overall: 0.93 (D) 42	
	EBL = 0.50 (B) 14	EBL = 40 m	EBL = 0.62 (E) 57	EBL = 45 m
	EBT = 0.84 (C) 24	EBT = 125 m	EBT = 0.48 (B) 20	EBT = 85 m
	EBR = 0.29 (B) 17	EBR = 35 m	EBR = 0.11 (B) 13	EBR = 10 m
	WBL = 0.60 (C) 31	WBL = 40 m	WBL = 0.47 (B) 14	WBL = 25 m
	WBT = 0.39 (C) 22	WBT = 75 m	WBT = 0.98 (D) 45	WBT = 275 m
	WBR = 0.08 (B) 18	WBR = 15 m	WBR = 0.11 (B) 17	WBR = 20 m
	NBL = 0.76 (D) 48	NBL = 55 m	NBL = 0.91 (E) 66	NBL = 120 m
	NBT = 0.45 (D) 46	NBT = 55 m	NBT = 0.78 (D) 49	NBT = 120 m
	NBR = 0.11 (D) 42	NBR = 20 m	NBR = 0.95 (E) 78	NBR = 180 m
	SBL = 0.53 (D) 36	SBL = 55 m	SBL = 0.64 (D) 44	SBL = 35 m
	SBT = 0.74 (D) 52	SBT = 90 m	SBT = 0.38 (D) 42	SBT = 50 m
	SBR = 0.06 (D) 42	SBR = 10 m	SBR = 0.27 (D) 41	SBR = 40 m
Future Background 2027	Overall: 1.07 (F) 113		Overall: 1.27 (F) 160	
	EBL = 0.71 (C) 32	EBL = 50 m	EBL = 0.69 (D) 44	EBL = 50 m
	EBT = 1.38 (F) 212	EBT = 440 m	EBT = 0.79 (D) 38	EBT = 150 m
	EBR = 0.56 (C) 32	EBR = 70 m	EBR = 0.26 (D) 40	EBR = 45 m
	WBL = 0.6 (C) 32	WBL = 45 m	WBL = 0.75 (D) 45	WBL = 55 m
	WBT = 0.66 (C) 32	WBT = 130 m	WBT = 1.6 (F) 308	WBT = 545 m
	WBR = 0.1 (C) 23	WBR = 15 m	WBR = 0.14 (C) 20	WBR = 20 m
	NBL = 0.98 (F) 86	NBL = 85 m	NBL = 0.98 (E) 71	NBL = 185 m
	NBT = 0.39 (D) 40	NBT = 50 m	NBT = 0.93 (E) 64	NBT = 160 m
	NBR = 0.15 (D) 37	NBR = 20 m	NBR = 0.92 (E) 74	NBR = 175 m
	SBL = 0.58 (D) 36	SBL = 55 m	SBL = 0.48 (D) 46	SBL = 35 m
	SBT = 0.72 (D) 49	SBT = 90 m	SBT = 1.15 (F) 157	SBT = 90 m
	SBR = 0.07 (D) 39	SBR = 15 m	SBR = 0.84 (F) 94	SBR = 80 m

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Total 2027	Overall: 1.11 (F) 129		Overall: 1.32 (F) 179	
	EBL = 0.74 (D) 35	EBL = 50 m	EBL = 0.69 (D) 42	EBL = 45 m
	EBT = 1.46 (F) 244	EBT = 455 m	EBT = 0.85 (D) 41	EBT = 200 m
	EBR = 0.56 (C) 31	EBR = 65 m	EBR = 0.27 (D) 37	EBR = 45 m
	WBL = 0.6 (C) 32	WBL = 50 m	WBL = 0.75 (D) 46	WBL = 55 m
	WBT = 0.7 (C) 33	WBT = 140 m	WBT = 1.7 (F) 350	WBT = 590 m
	WBR = 0.1 (C) 23	WBR = 15 m	WBR = 0.14 (C) 20	WBR = 20 m
	NBL = 0.98 (F) 86	NBL = 85 m	NBL = 0.98 (E) 71	NBL = 185 m
	NBT = 0.39 (D) 40	NBT = 50 m	NBT = 0.93 (E) 64	NBT = 160 m
	NBR = 0.15 (D) 37	NBR = 20 m	NBR = 0.93 (E) 74	NBR = 175 m
	SBL = 0.58 (D) 36	SBL = 55 m	SBL = 0.48 (D) 46	SBL = 35 m
	SBT = 0.72 (D) 49	SBT = 90 m	SBT = 1.15 (F) 157	SBT = 90 m
	SBR = 0.07 (D) 39	SBR = 15 m	SBR = 0.84 (F) 94	SBR = 80 m

Under the projected 2022 conditions, the intersection is expected to operate at satisfactory levels with an overall v/c ratio of 0.78 LOS C and 0.93 LOS D during the a.m. and p.m. peak hours respectively. No critical movements were reported during the a.m. peak hour but during the p.m. peak hour, critical movements were reported for the westbound through movement with a v/c ratio of 0.98 LOS D and the northbound right turn movement with a v/c ratio of 0.95 LOS E.

Under the 2027 future background traffic scenario, overall intersection v/c ratio increases during the a.m. peak hour from 0.78 to 1.07 LOS F and from 0.93 to 1.27 LOS F during the p.m. peak hour. Signal timings were optimized where possible to reduce delays and queueing. During the a.m. peak hour, the eastbound through movement is reported to be over capacity with a v/c ratio of 1.38 LOS F as is the northbound left turn with a v/c ratio of 0.98 LOS F. During the p.m. peak hour, the westbound through, northbound left and southbound through movements are all at critical levels. All other movements are reported to operate below critical levels.

With the addition of the subject site traffic under the 2027 future total traffic scenario, the overall intersection v/c ratio increases slightly from 1.07 to 1.11 LOS F during the a.m. and from 1.27 to 1.32 LOS F during the p.m. peak hour. During the a.m. peak hour, the eastbound through and northbound left are operating at critical levels. During the p.m. peak hour, the eastbound through, westbound through, northbound left and southbound through are all operating at critical levels. All other movements are reported to operate below critical levels.

As previously noted, the capacity issues along Dundas Street are prevalent under the 2027 future background traffic scenario given the background development site trips and assumed corridor growth along Dundas Street. It is expected that some of this growth along with existing traffic will redistribute to the future William Halton Parkway (a parallel route) once construction is completed and delays along Dundas Street become excessive for drivers.

No geometric improvements are recommended at this intersection in response to the development of the subject site.

7.7 Meadowridge Drive & William Cutmore Boulevard

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background and future total traffic conditions out are summarized in the following table.

Table 7-7 Capacity analysis of Meadowridge Drive & William Cutmore Boulevard

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Total 2027	EBTLR = 0.11 (B) 11 WBTLR = 0.11 (B) 11 NBTLR = 0.03 (A) 3 SBTLR = 0.02 (A) 2	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.04 (A) 8 WBTLR = 0.03 (A) 8 NBTLR = 0.12 (A) 9 SBTLR = 0.09 (A) 9	EBTLR = 5 m WBTLR = 5 m NBTLR = 10 m SBTLR = 10 m

With the subject site traffic under the 2027 future total traffic scenario at this intersection, the overall intersection v/c ratio, LOS, Delay, and 95th percentile queuing are expected to operate well below capacity with no critical movements.

No geometric improvements are recommended at this intersection in response to the development of the subject site.

Section 8 details that this intersection is predicted to operate at levels that do not require a four-way stop control.

8. All-way Stop Warrant Analysis

Upon request of the Town, an All-way stop warrant was conducted for all of the study unsignalized intersections.

The current proposed unsignalized intersections are all two-way stop intersections, as shown in **Figure 16**.

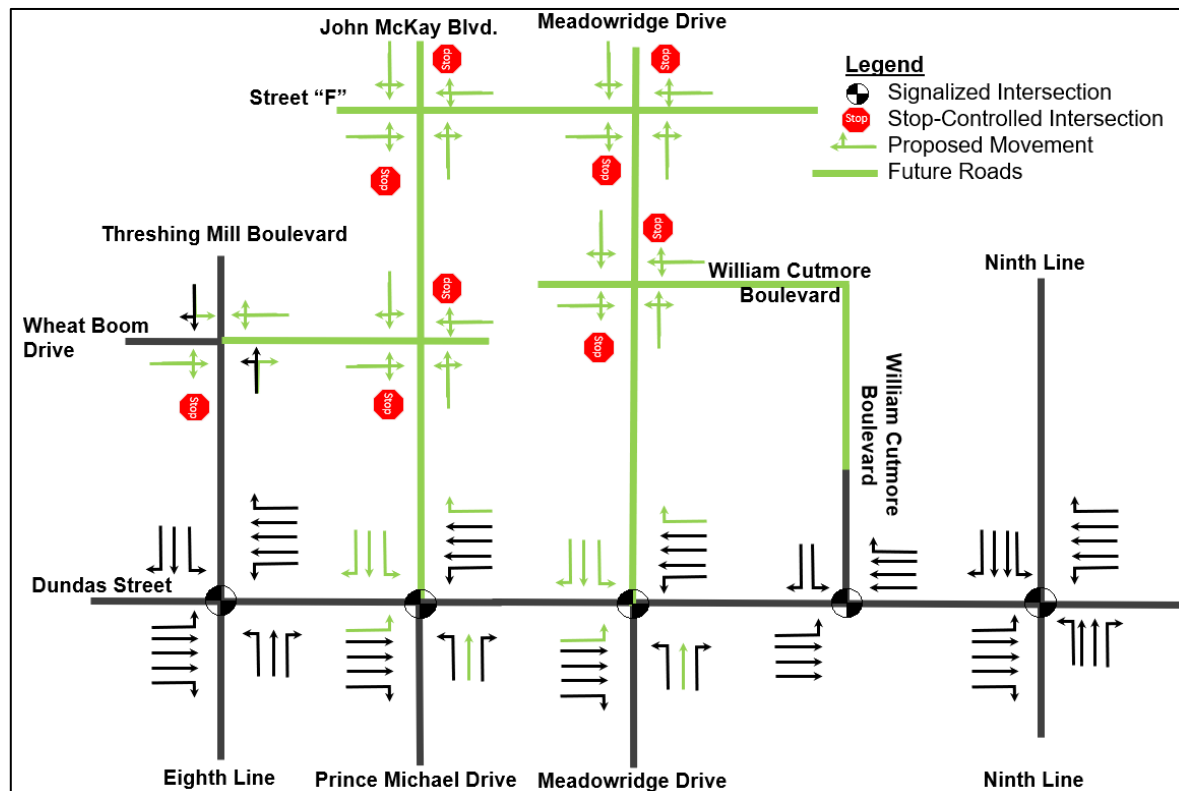


Figure 16 Proposed Traffic Control

OTM Book 5, Section 2, dictates that both of the following requirements for minor roads need to be met for a two-way stop-controlled intersection to be converted to an all way stop:

- Total vehicle volume on all intersection approaches exceeds 350 for the highest hour recorded; and
- Volume split does not exceed 75/25 for three-way control or 65/35 for four-way control (volume is defined as vehicles only)

Table 8-1 summarizes the all-way stop warrants for the current two-way stop intersections.

Table 8-1 All-way Stop Warrant Analysis

Intersection	Parameter	Requirement	Average Future Total 2026 Conditions	All-way stop required? (Y/N)	All requirements Met for All-way Stop Control?
William Cutmore Boulevard & Meadowridge Drive	Intersection Volume	350 total volumes from all directions in highest peak hour	101	No	No
	Volume Split	Split to exceed 65/35 for 4-leg intersections	62/38	No	
John McKay Boulevard & Wheat Boom Drive	Intersection Volume	350 total volumes from all directions in highest peak hour	173	No	No
	Volume Split	Split to exceed 65/35 for 4-leg intersections	41/59	Yes	
Threshing Mills & Wheat Boom Drive	Intersection Volume	350 total volumes from all directions in highest peak hour	246	No	No
	Volume Split	Split to exceed 65/35 for 4-leg intersections	48/52	Yes	
John McKay Boulevard & Street "F"	Intersection Volume	350 total volumes from all directions in highest peak	27	No	No

		hour			
	Volume Split	Split to exceed 65/35 for 4-leg intersections	50/50	Yes	
Meadowridge & Street "F"	Intersection Volume	350 total volumes from all directions in highest peak hour	20	No	No
	Volume Split	Split to exceed 65/35 for 4-leg intersections	62/38	Yes	

The resulting all-way stop control warrant as per OTM Book 5 confirms that under the future 2027 total traffic conditions that none of the intersections require an all way stop.

9. Signal Warrant Analysis

GHD completed a signal warrant analysis for all the unsignalized study intersections according to the Ontario Traffic Manual Book 12 (Justification 7 for Projected Volumes). The results of the signal warrant for the 2026 future total traffic planning horizon is attached in **Appendix E**.

According to the signal warrant calculations none of the intersections meet either Justification 1 – Minimum Vehicle Volume or Justification 2 – Delay to Cross Traffic, compliance percentages to justify the installation of traffic signals at any intersection under future traffic conditions.

10. Sensitivity Analysis

During the interim traffic conditions for Joshua Creek Phase 3, the residential development can only be accessed by Eighth Line using Wheat Boom Drive or from Dundas Street via John McKay Boulevard, Meadowridge Drive or William Cutmore Boulevard. However, the composite plan for Joshua Creek also shows the future connections to Eighth Line and Burnhamthorpe Road are planned once the Coscorp lands to the west and Joshua Creek Phase 5 to the north are developed. The Town requested a sensitivity analysis to determine the number of site generated trips from Joshua Creek Phase 3 that would access these future road connections once they are constructed.

GHD undertook an exercise to estimate the turning movements at the following internal intersections which will upon full build-out of the surrounding lands will result in connections to Eighth Line and Burnhamthorpe Road to project the expected volume of traffic to the north of the subject site:

- John McKay Boulevard and Street 'D'; and
- Meadowridge Drive and Street 'F'

The location of these intersections within the site is illustrated in **Figure 17**, with John McKay Boulevard and Street 'D' identified by the blue circle and the intersection of Meadowridge Drive and Street 'F' identified by the orange circle.



Figure 17 Location of Internal Intersections for the Sensitivity Analysis

Once the connections to the north and the west of Joshua Creek Phase 3 are established, for the purpose of this exercise, it was assumed that 25% of site generated traffic from Joshua Creek Phase 3 would redistribute to these alternate routes as an alternative to travelling south and using Wheat Boom Drive to travel to Eighth Line or continue south to travel east or west on Dundas Street. The same distribution assumptions used to distribute site traffic to the road network in this report were also used for this exercise.

Of the 25% of trips being reassigned to the north, it was assumed that 15% would be using John McKay Boulevard and 10% would be using Meadowridge Road, this distribution was based on the review of the distribution of residential units along those roads.

The distribution of outbound site traffic at the intersection of John McKay Boulevard and Street 'D' assumed that the 15% of traffic assigned to the intersection would be evenly distributed to go west to Eighth Line and north to Burnhamthorpe Road. An additional 1% of site traffic was assumed to travel east/west along Street 'D' to account for the residential units to the east of the John McKay Boulevard and Street 'D' that would travel through the intersection. The inbound distribution used the same assumption as the outbound distribution (7% from the east, 8% from the north, 15% towards the south, 1% east/west through the intersection).

The intersection of Meadowridge and Street 'F' provided only one connection to Burnhamthorpe Road which requires a bridge over the Natural Heritage System, resulting with all the outbound traffic being assigned to the north towards Burnhamthorpe Road. The distribution of traffic arriving at the intersection consisted of 8% arriving from the south and 1% assigned from the east and west along Street 'F' respectively, consistent with the distribution of residential

developments surrounding the intersection. The inbound distribution used the same assumption as the outbound distribution (10% from the north, 1% to the east, 1% to the west, 8% to the south).

GHD also assigned site traffic at the intersection of Meadowridge Drive and Street 'F' from the nearby residential areas that would use that intersection but would not use the future connections to Burnhamthorpe Road. The projected site trip assignment to both of these internal intersections is shown in **Figure 18**.

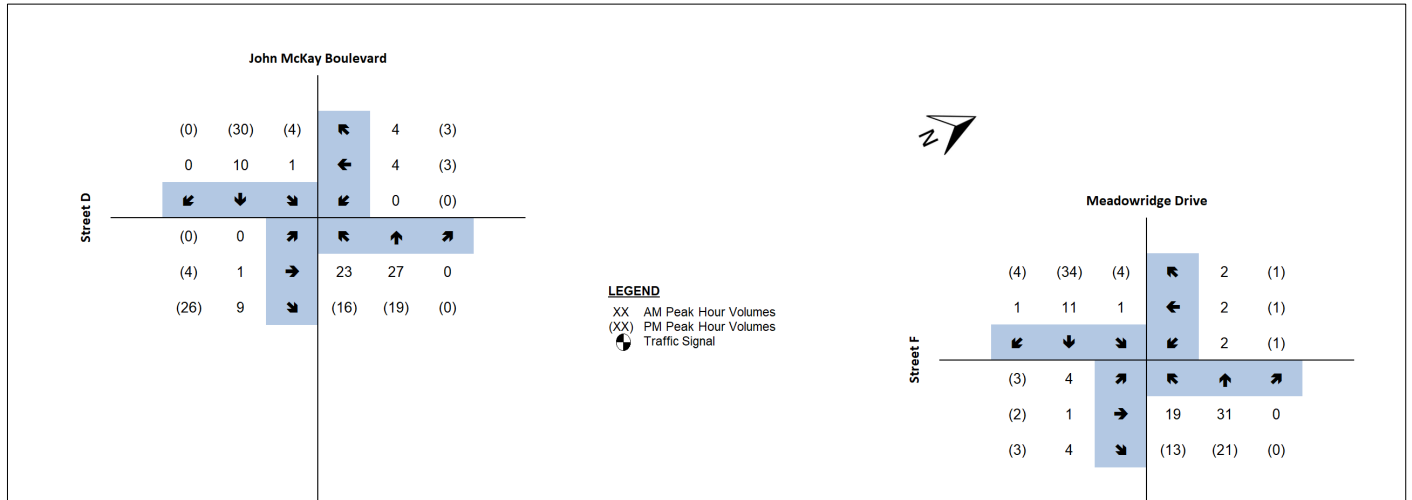


Figure 18 Sensitivity Analysis for Internal Intersections

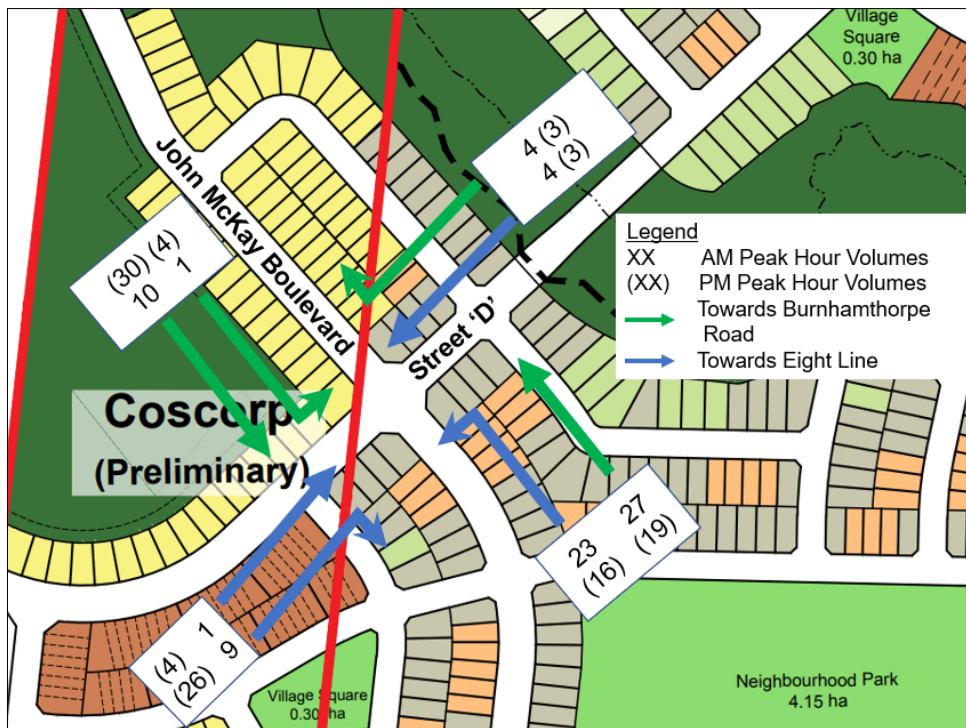


Figure 19 Trip Distribution at John McKay Boulevard and Street 'D'

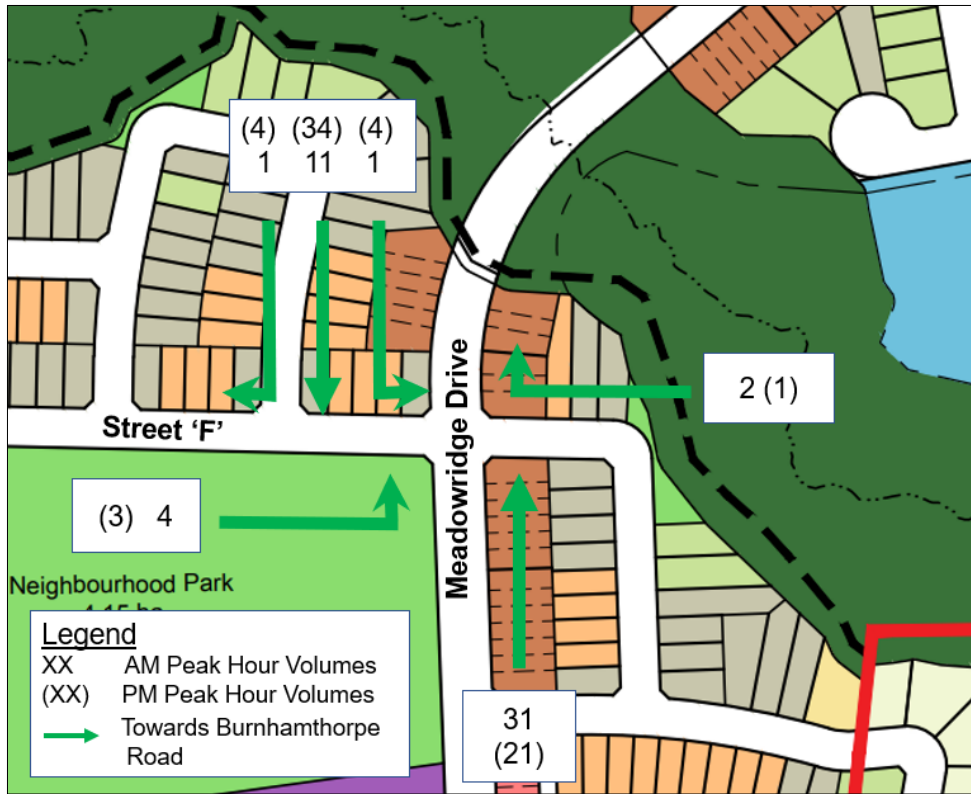


Figure 20 Trip Distribution at Meadowridge Drive and Street 'F'

It is expected that Joshua Creek Phase 3 will produce 92 two-way trips north to Burnhamthorpe Road and 37 two-way trips east to Eighth Line in the a.m. peak hour. A total of 123 two-way trips will be made north to Burnhamthorpe Road and 49 two-way trips east to Eighth Line in the p.m. peak hour when connections planned in Joshua Creek Phase 5 are completed.

11. Trail, Bike and Pedestrian Connectivity

The provision of trail and bicycle connectivity within the Joshua Creek Phase 3 Development area is identified in the North Oakville Trail Map, which shows existing and proposed multi-use paths, trails and cycling provisions.

Figure 21 details the location of the major trails and cycling provisions within the study area.

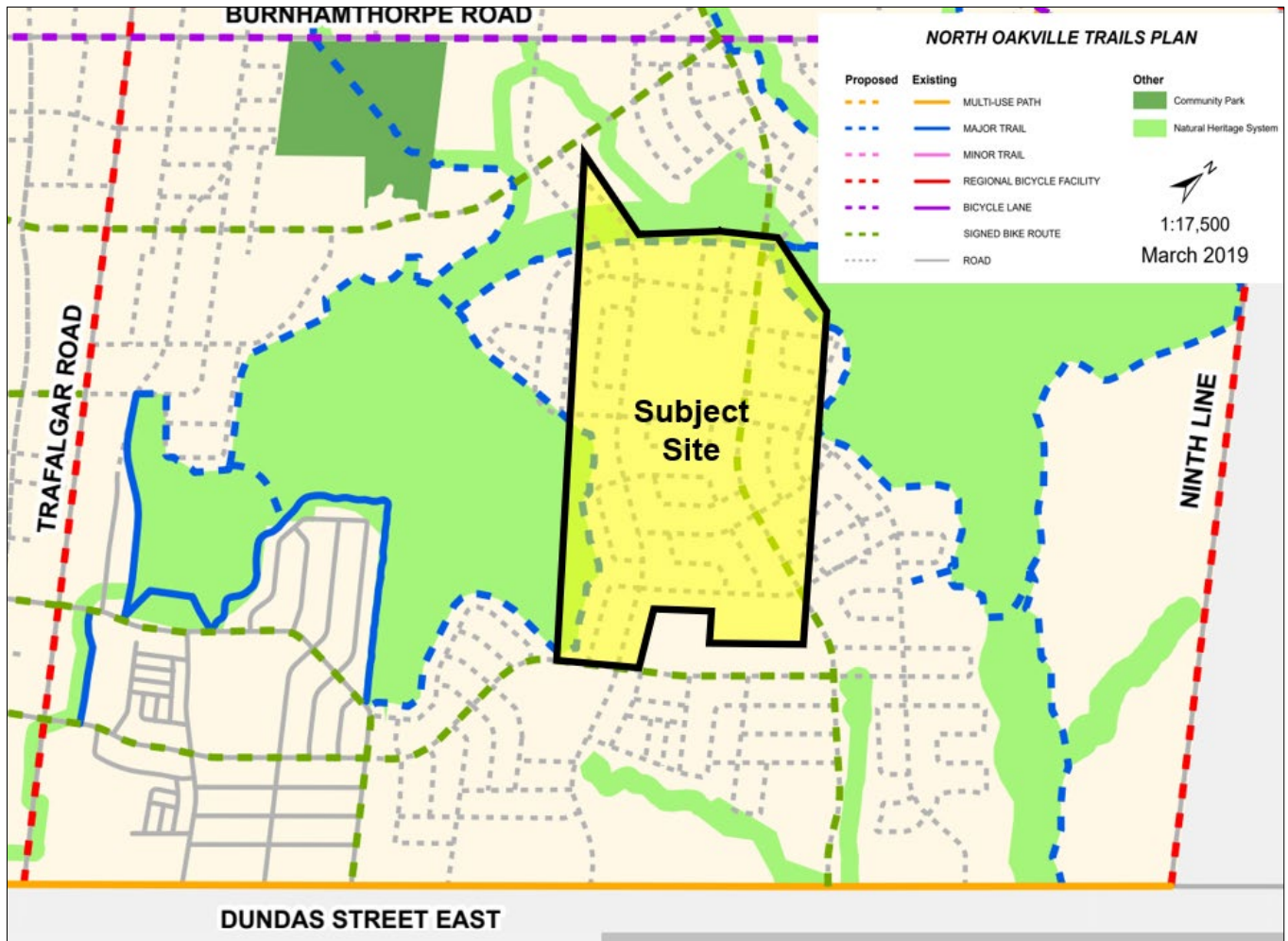


Figure 21 North Oakville Trails Plan

11.1 Trail Connections

Proposed trail connections have been outlined in the North Oakville Trails Plan map, which includes trails along the eastern, northern, and western limits of the proposed Joshua Creek Phase 3 developments. The trails will connect to the series of trails provided within the Natural Heritage System Areas that surround the subject site. A multi-use trail is also proposed along the north side of Dundas with the buildout of the adjacent developments.

11.2 Bike Route Connections

Proposed bike routes have been outlined in the North Oakville Trails Plan map and includes signed biked routes along Wheat Boom Drive and Meadowridge Drive within the study area. These cycling provisions will provide connections to the series of surrounding signed bike routes as well as the multi-use path along the north side of Dundas Street East, the bicycle lane along Burnhamthorpe Road and the proposed Regional Bicycle Facilities along Trafalgar Road and Ninth Line.

11.3 Pedestrian Connections

The Joshua Creek Phase 3 development is expected to have full sidewalk connectivity. **Figure 22** details the expected pedestrian connections within the development which includes sidewalks on both sides of all local and collector roads.



Figure 22 Sidewalk Connections

12. Conclusion

The composite plan for Joshua Creek was prepared by Korsiak Urban Planning and is dated February 2022. It includes the Joshua Creek Phase 3 residential development consisting of townhouses, single detached homes, and an elementary school. The proposed unit count and student load is summarized below:

- 306 townhouse units
- 709 single detached homes
- Elementary school (700 students)

Access to the proposed subdivision from the regional arterial roads is proposed via John McKay Boulevard, Meadowridge Drive and Burnhamthorpe Road.

Due to COVID-19 pandemic and local and provincial restrictions, turning movement counts conducted within years 2020-2022 will likely have depressed results. As a result, GHD used 2019 historic traffic counts for the study intersections and applied a 2% per annum growth rate to establish baseline projected 2022 existing traffic volumes.

Through discussion with Town and Region staff, as well as a review of the Town of Oakville's Development Application portal, it was determined that the Bressa, Argo, Dunoak, Redoak and Capoak residential development as well as the proposed residential site located at 1005 Dundas Street East and 3033 Eighth Line should be considered as background developments. The background development site traffic as well as the 2% per annum growth rate used to account for future corridor growth to the 2027 planning horizon year were used to establish the 2027 future background traffic condition.

The proposed subdivision is expected to generate a total of 1050 new two-way trips consisting of 423 inbound and 627 outbound trips during weekday a.m. peak hour and 806 new two-way trips consisting of 81 inbound and 325 outbound trips during the weekday p.m. peak hour.

The analysis of the study intersections found that there would be multiple critical or over capacity movements at each intersection along Dundas Road. The signal timings for all signalized intersections along Dundas Street East were optimized as needed to reduce v/c ratios and delays where possible. It was found that the site traffic had minimal effect on the overall intersection operations and is not expected to have a detrimental impact the study intersections.

All-way stop warrant and signal warrants were conducted for all unsignalized study intersections and found that no intersection qualified for either four way stops or signalization.

A sensitivity analysis was conducted to assess the impacts on site traffic once future connections at the north of the subject site are established that will provide access to Eighth Line and Burnhamthorpe Road. It was found that approximately 92 two-way trips north to Burnhamthorpe Road and 37 two-way trips east to Eighth Line in the a.m. peak hour and a total of 123 two-way trips will be made north to Burnhamthorpe Road and 49 two-way trips east to Eighth Line in the p.m. peak hour when connections planned in Joshua Creek Phase 5 are completed.

The provision of sidewalks within the Joshua Creek Phase 3 Development in addition to the provision of trail and bicycle connectivity within the subject site as identified in the North Oakville Trail Map will provide great connectivity to the series of trail and cycling networks within the surrounding area and the Town of Oakville.

Appendices

Appendix A

**Terms of Reference and Comment
Responses**

**RESPONSE TO TOWN COMMENTS ON MATTAMY PHASE 3
DRAFT PLAN OF SUBDIVISION AND ZONING BY-LAW AMENDMENT MATTAMY (JOSHUA CREEK) LTD., DUNDAS
STREET EAST, 24T-20007/Z.1307.07**

Town Comments received August 12, 2022	Response	DSEL COMMENT/RESPONSIBILITY
<p>F</p> <p>Transportation</p> <p>[Circ. 3] – TIA dated April 18, 2022</p> <p><u>Site Characteristics</u></p> <p>i. Please clarify where "The numbered study intersection" are being referenced.</p> <p>a</p> <p>ii. Please identify the listed roadways on the relative figure.</p> <p>Under the interim traffic scenario before the full build-out of the Joshua Creek lands and construction of the ultimate planned road network as per the Secondary Plan, access to the proposed residential development from the surrounding road network is provided via Wheat Boom Drive, John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard.</p>	<p>intersections are clarified and numbered in the report for primary (Volumes and Capacity analysis) and Secondary (Volumes only)</p> <p>All Roadways Listed</p>	GHD
<p><u>Existing Conditions</u></p> <p>i. Please provide a relative figure identifying the bike/pedestrian network with respect to the study area.</p> <p>b</p> <p>ii. Please provide existing lane configure plan for both existing and proposed.</p> <p>iii. Please illustrate the location of the study site with respect to the road network and the anticipated roads to be utilized to access the site. (i.e. show the road connectivity to the site boundary)</p>	<p>An additional figure was included in Section 3.2 outlining the pedestrian and bicycle amenities for the existing study intersections only on Figure 4.</p> <p>Existing and Proposed lane configuration drawing are added in updated report</p> <p>Figure 1 details connections. Intersections are numbered in this figure in updated report</p>	GHD
<p><u>Future Background</u></p> <p>c</p> <p>i. Please confirm that the background trip generated and trip distribution were taken from the background development respective reports.</p>	<p>Background development trips generated and trip distribution were taken from the background development respective reports. As detailed in Section 4.4, Appendix D, Table 4-1, and Figure 7</p>	GHD
<p><u>Site Generated</u></p> <p>d</p> <p>i. Please update Table 2 to reflect the correct land use and identify the form of calculations used (equation or average rate).</p> <p>ii. Please clarify where the referenced figures can be found in the respective sections of the report. (E.g. Figures 7 & 8 are in Section 7)</p>	<p>Land use code for Single family Detached was misslabeled in report (labeled as S20, should be 210), but calculations are correct based on 210</p> <p>Site Distribution and Trip figures moved to relevant section</p>	GHD
<p><u>Capacity Analysis</u></p> <p>e</p> <p>i. Analysis would be required for the intersection William Cutmore Blvd. and Meadowridge Dr.</p>	<p>Additional intersection are analyzed in updated report</p>	GHD
<p><u>Sensitivity Analysis</u></p> <p>f</p> <p>i. Please provide illustrated the trips generated and the trip redistribution throughout the whole site.</p> <p>ii. Please include Burnhamthorpe Road and Meadowridge Dr. intersection as part of the sensitivity analysis. (assume Meadowridge Dr will be the north/south collector through Phase 4/5 of this subdivision).</p> <p>iii. Please provide all analysis undertaken for the study intersections within the study area with the re-distribution.</p> <p>iv. Please provide intersection traffic control warrants (signals, stop).</p>	<p>During a meeting with Aquisha Khan on October 26, 2022, It was discussed and clarified that This comment be amended and instead have the following:</p> <p>*Include the School within the site for trip generation</p> <p>*Include the following intersections as secondary, volume only intersections for future conditions:</p> <ul style="list-style-type: none"> •Wheat Boom Drive and John McKay Boulevard (only exists in Future Background and Total conditions) •Street "F" and John McKay Boulevard (only exists in Future Total conditions) •Street "F" and Meadowridge Drive (only exists in Future Total conditions) <p>and include the intersection of William Cutmore Boulevard and Meadowridge Drive for full volume and capacity analysis.</p> <p>*provide All-way stop and Signal warrants for all unsignalized intersections in mentioned above</p> <p>*It was agreed that Intersections at Burnhamthorpe Road need not be included</p>	GHD

Raf Andrenacci

From: Will Maria
Sent: Thursday, March 24, 2022 2:47 PM
To: Raf Andrenacci
Subject: FW: Joshua Creek Phase 3 Traffic Study Update TOR

DISABLEFILINGSTA10

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.

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From: Krusto, Matt <Matt.Krusto@halton.ca>
Sent: Friday, February 18, 2022 2:52 PM
To: 'Aquisha Khan' <aquisha.khan@oakville.ca>; Will Maria <William.Maria@ghd.com>
Cc: Leigh Musson <leigh.musson@oakville.ca>
Subject: RE: Joshua Creek Phase 3 Traffic Study Update TOR

Hi Will,

In addition to Aquisha's comments, I have one additional comment:

For the "Analysis Scenarios", these should be year 2022 as "existing", and the 2019 volumes should be factored to year 2022, with analysis to year 2027.

Matt

Matt Krusto

Supervisor, Transportation Development Review

Infrastructure Planning & Policy

Public Works

Halton Region

905-825-6000, ext. 7225 | 1-866-442-5866



halton.ca 311

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From: Aquisha Khan <aquisha.khan@oakville.ca>
Sent: February 18, 2022 11:32 AM
To: 'Will Maria' <William.Maria@ghd.com>
Cc: Krusto, Matt <Matt.Krusto@halton.ca>; Leigh Musson <leigh.musson@oakville.ca>
Subject: RE: Joshua Creek Phase 3 Traffic Study Update TOR

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Hi Will;

I do understand that connections to Burnhamthorpe will be in phase 5, it would be beneficial to undertake a sensitivity analysis to illustrate the number of trips anticipated from phase 3 to access Burhamthorpe Road. These are also access points to this part of the subdivision illustrated on the site plan.

I would also like the study intersection of Wheat Boom and Eight Line to be included in the analysis.

Regards;

Aquisha Khan, P. Eng.

Transportation Engineer,
Transportation and Engineering Department,
Town of Oakville | P: 905-845-6601 | www.oakville.ca

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From: Will Maria <William.Maria@ghd.com>
Sent: February 18, 2022 9:10 AM
To: Aquisha Khan <aquisha.khan@oakville.ca>
Cc: Matt Krusto (InTouch) <matt.krusto@halton.ca>; Leigh Musson <leigh.musson@oakville.ca>
Subject: RE: Joshua Creek Phase 3 Traffic Study Update TOR

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Hi Aquisha, thanks for the comments.

Please be advised that the site will not have any connections to Burnhamthorpe Road, Phase 5 which is north of the NHS including the required crossings of the NHS will not be constructed until Phase 5 proceeds in the future.

Phase 3 will only have access to Dundas Street and Wheat Boom.

That being said, in your comment on study intersections does that mean you would like us to include the intersection of Wheat Boom and Eighth Line in addition to the Dundas Street intersections?

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.

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From: Aquisha Khan <aquisha.khan@oakville.ca>
Sent: Friday, February 18, 2022 9:02 AM
To: Will Maria <William.Maria@ghd.com>
Cc: Matt Krusto (InTouch) <matt.krusto@halton.ca>; Leigh Musson <leigh.musson@oakville.ca>
Subject: RE: Joshua Creek Phase 3 Traffic Study Update TOR

Hi Will;

Thank you for the clarification. Please see my comments below.

Study Area:

- On the proposed map provided, please identify clearly the area that represents Phase for this study

Study Intersections:

Please include traffic analysis the following intersections in the study:

- All proposed accesses leading towards Burnhamthorpe Road
- All Proposed access leading towards Eight Line

Background Development Traffic

The identified background developments are acceptable

Background Growth Rate

Please use 2% annual growth rate along the major corridors

Warrant Analysis

Please provide any warrant analysis that may require traffic control devices upgrades in the future

Trail, Bike and Pedestrian Connectivity

Please confirm the proposed trail connectivity meets the Town of Oakville Trail Plans. As well as, if there are any proposed bike lanes also identify where the pedestrian walkways would connect in the future. All these can be illustrated in figures with brief summaries.

On-Street Parking

Please include a draft of the anticipated number of on-street parking in this subdivision

If you have any question or require clarification, please feel free to contact me.

Regards

Aquisha

Aquisha Khan, P. Eng.
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext.3236 | www.oakville.ca

Vision: To be the most livable town in Canada

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From: Will Maria <William.Maria@ghd.com>
Sent: February 17, 2022 10:52 AM
To: Aquisha Khan <aquisha.khan@oakville.ca>
Cc: Matt Krusto (InTouch) <matt.krusto@halton.ca>
Subject: RE: Joshua Creek Phase 2 Traffic Study Update TOR

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Please see attached.

Sorry for the error but the subject line should have read Joshua Creek Phase 3 Traffic Study update TOR. In the attached plan you can see Great Gulf's site which is DunOak, Dunoak which is Phase 2 of Joshua Creek and Bressa which is Phase 1 of Joshua Creek. Phase 3 is located north of Phase 1 and 2 and south of the NHS.

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.

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From: Aquisha Khan <aquisha.khan@oakville.ca>
Sent: Thursday, February 17, 2022 8:30 AM
To: Will Maria <William.Maria@ghd.com>
Cc: Matt Krusto (InTouch) <matt.krusto@halton.ca>
Subject: RE: Joshua Creek Phase 2 Traffic Study Update TOR

Hi Will;

Please submit a copy of the proposed location of the study area for review as well.

Thanks

From: Will Maria <William.Maria@ghd.com>
Sent: February 16, 2022 4:30 PM
To: Matt Krusto (InTouch) <matt.krusto@halton.ca>; Aquisha Khan <aquisha.khan@oakville.ca>
Subject: Joshua Creek Phase 2 Traffic Study Update TOR

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Hi Matt/Aquisha

In response to comments we received from the Region and Town based on the July 7, 2020 Joshua Creek Phase 3 memo submitted by GHD, we will be completing an updated traffic study for the Joshua Creek Phase 3 development as per the Region's TIS guidelines.

Our proposed scope of work is as follows for your review and comment.

- **Study Intersections:**
 - Dundas and Eighth Line
 - Dundas and Prince Michael Drive
 - Dundas and Meadowridge Drive
 - Dundas and William Cutmore Blvd
 - Dundas and Ninth Line
- **Traffic Data:** Existing Turning Movement Counts (TMC) from 2019 will be used in the analysis (already confirmed with the Region).
- **Traffic Signal Timings:** were also obtained from the Region in 2019 .
- **Study Peak Hours:** Weekday AM and PM.
- **Trips Generation:** Based on latest edition of ITE Trip Generation.
- **Transportation Modes:** Transit mode split assumptions include 10% transit modal split (increase from 6% from the 2016 TTS data), 5% for walk and cycle and 3% for TDM for 2025.
- **Trip Distribution:** Based on first principle of route choice under given road network.
- **Study Horizon Year:** Five year from the date of the study - 2026 as requested by the Region.
- **Analysis Scenarios:** 2020 Existing (2019 volumes factored to 2020), 2025 Future Background and 2025 Future Total as requested by the Region.
- **Background Development Traffic:** GHD will include the following background developments: Dunoak (GHD report), Bressa (GHD report), Redoak (GHD report), 1005 Dundas Street and 3033 Eighth Line development (Paradigm report)
- **Background Growth Rate:** A 1.5 percent annual growth rate will be used to account corridor growth along Dundas Street (this was provided by the Region for the terms of reference for our previous study for Bressa and Dunoak from 2019)
- **Capacity Analysis:** Synchro analysis as per Regions standards.

Your review and comments on the proposed Terms are gently appreciated.
Thanks,

Will

William C. Maria, P.Eng.
Transportation Planning Lead

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Appendix B

Traffic Data

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00
To: 9:00:00

One Hour Peak

From: 7:45:00
To: 8:45:00

Municipality: Oakville
Site #: 1902900001
Intersection: Dundas St E & Ninth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 1452
North Entering: 800
North Peds: 0
Peds Cross: \bowtie

Heavys	0	0	0	0
Trucks	0	2	0	2
Cars	98	518	182	798
Totals	98	520	182	



Heavys	0
Trucks	5
Cars	647
Totals	652

East Leg Total: 3571
East Entering: 1102
East Peds: 0
Peds Cross: \bowtie

Heavys	0	Trucks	95	Cars	1036	Totals	1131
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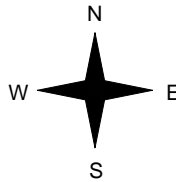


Ninth Line

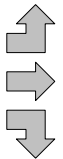
Cars	122	Trucks	0	Heavys	0	Totals	122
Cars	786	Trucks	74	Heavys	0	Totals	860
Cars	118	Trucks	2	Heavys	0	Totals	120
Cars	1026	Trucks	76	Heavys	0	Totals	



Dundas St E



Heavys	0	Trucks	0	Cars	217	Totals	217
Heavys	0	Trucks	25	Cars	2109	Totals	2134
Heavys	0	Trucks	1	Cars	312	Totals	313
Heavys	0	Trucks	26	Cars	2638	Totals	



Ninth Line

Dundas St E



Cars	2439	Trucks	30	Heavys	0	Totals	2469
------	------	--------	----	--------	---	--------	------

Peds Cross: \bowtie
West Peds: 0
West Entering: 2664
West Leg Total: 3795

Cars	948	Cars	152	308	148	608
Trucks	5	Trucks	21	5	5	31
Heavys	0	Heavys	0	0	0	0
Totals	953	Totals	173	313	153	



Peds Cross: \bowtie
South Peds: 0
South Entering: 639
South Leg Total: 1592

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period

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

One Hour Peak

From: 16:45:00
To: 17:45:00

Municipality: Oakville
Site #: 1902900001
Intersection: Dundas St E & Ninth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 1558
North Entering: 598
North Peds: 0
Peds Cross: \times

Heavys	0	0	0	0
Trucks	0	2	2	4
Cars	195	297	102	594
Totals	195	299	104	



Heavys	0
Trucks	6
Cars	954
Totals	960

East Leg Total: 4476
East Entering: 2687
East Peds: 0
Peds Cross: \times

Heavys	0
Trucks	25
Cars	2896
Totals	2921

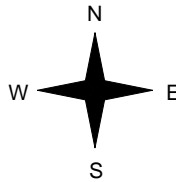


Ninth Line

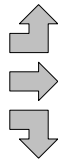
Cars	133	0	0	133
Trucks	2393	20	0	2413
Heavys	138	3	0	141
Totals	2664	23	0	



Dundas St E



Heavys	0
Trucks	0
Cars	129
Totals	129
Heavys	0
Trucks	35
Cars	1120
Totals	1155
Heavys	0
Trucks	4
Cars	159
Totals	163
Heavys	0
Trucks	39
Cars	1408
Totals	



Dundas St E



Cars	1726	63	0	1789
Trucks				
Heavys				
Totals				

Peds Cross: \times
West Peds: 0
West Entering: 1447
West Leg Total: 4368

Cars	594	308	692	504	1504
Trucks	9	5	6	26	37
Heavys	0	0	0	0	0
Totals	603	313	698	530	



Peds Cross: \times
South Peds: 0
South Entering: 1541
South Leg Total: 2144

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Oakville
Site #: 1902900001
Intersection: Dundas St E & Ninth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 5571
 North Entering: 2631
 North Peds: 1
 Peds Cross: \bowtie

Heavys	0	0	0	0
Trucks	1	9	5	15
Cars	548	1505	563	2616
Totals	549	1514	568	



Heavys	0
Trucks	24
Cars	2916
Totals	2940

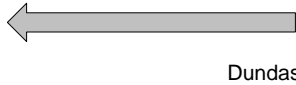
East Leg Total: 15364
 East Entering: 7140
 East Peds: 0
 Peds Cross: \bowtie

Heavys	Trucks	Cars	Totals
0	262	7476	7738

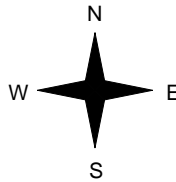


Ninth Line

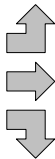
Cars	Trucks	Heavys	Totals
440	2	0	442
6020	205	0	6225
463	10	0	473
6923	217	0	



Dundas St E



Heavys	Trucks	Cars	Totals
0	1	610	611
0	145	6276	6421
0	20	830	850
0	166	7716	



Ninth Line

Dundas St E



Cars	Trucks	Heavys	Totals
8016	208	0	8224

Peds Cross: \bowtie
 West Peds: 0
 West Entering: 7882
 West Leg Total: 15620

Cars	2798
Trucks	39
Heavys	0
Totals	2837



Cars	908	1866	1177	3951
Trucks	56	21	58	135
Heavys	0	0	0	0
Totals	964	1887	1235	

Peds Cross: \bowtie
 South Peds: 1
 South Entering: 4086
 South Leg Total: 6923

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: Dundas St E & Ninth Line

Count Date: 19-Feb-19

Municipality: Oakville

North Approach Totals						South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	194	414	43	651	1	1193	8:00:00	136	268	138	542	0
9:00:00	177	510	107	794	0	1413	9:00:00	188	289	142	619	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	82	283	207	572	0	1982	17:00:00	305	654	451	1410	1
18:00:00	115	307	192	614	0	2129	18:00:00	335	676	504	1515	0
Totals:	568	1514	549	2631	1	6717		964	1887	1235	4086	1
East Approach Totals						West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	94	718	86	898	0	3452	8:00:00	181	2131	242	2554	0
9:00:00	103	817	106	1026	0	3527	9:00:00	204	2007	290	2501	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	134	2350	111	2595	0	3998	17:00:00	99	1147	157	1403	0
18:00:00	142	2340	139	2621	0	4045	18:00:00	127	1136	161	1424	0
Totals:	473	6225	442	7140	0	15022		611	6421	850	7882	0
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	16:00			17:00	18:00	18:00	18:00		
Crossing Values:	0	744	875	0			1041	2609	1126	2609		

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:45:00

To: 8:45:00

Municipality: Oakville
Site #: 1902900002
Intersection: Dundas St E & Meadowridge Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

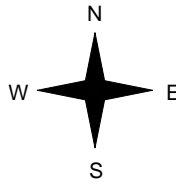
East Leg Total: 3762
 East Entering: 1118
 East Peds: 0
 Peds Cross: X

Heavys	Trucks	Cars	Totals
0	97	982	1079



Dundas St E

Heavys	Trucks	Cars	Totals
0	28	2351	2379
0	1	48	49
0	29	2399	



Meadowridge Dr

Cars	Trucks	Heavys	Totals
933	96	0	1029
88	1	0	89
1021	97	0	



Dundas St E

Cars	Trucks	Heavys	Totals
2616	28	0	2644

Peds Cross: X
 South Peds: 0
 South Entering: 315
 South Leg Total: 453

Peds Cross: X
 West Peds: 0
 West Entering: 2428
 West Leg Total: 3507

Cars	136		
Trucks	2		
Heavys	0		
Totals	138		



Cars	49	265	314
Trucks	1	0	1
Heavys	0	0	0
Totals	50	265	

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 18:00:00

One Hour Peak

From: 17:00:00

To: 18:00:00

Municipality: Oakville
Site #: 1902900002
Intersection: Dundas St E & Meadowridge Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

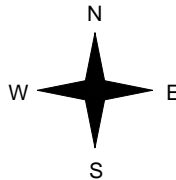
East Leg Total: 4325
 East Entering: 2891
 East Peds: 0
 Peds Cross: ∞

Heavys	Trucks	Cars	Totals
0	22	2689	2711



Dundas St E

Heavys	Trucks	Cars	Totals
0	37	1258	1295
0	0	71	71
0	37	1329	



Meadowridge Dr

Cars	Trucks	Heavys	Totals
------	--------	--------	--------



2649	22	0	2671
220	0	0	220
2869	22	0	

Dundas St E



Cars	Trucks	Heavys	Totals
1397	37	0	1434

Peds Cross: ∞
 West Peds: 0
 West Entering: 1366
 West Leg Total: 4077

Cars	291
Trucks	0
Heavys	0
Totals	291



Cars	40	139	179
Trucks	0	0	0
Heavys	0	0	0
Totals	40	139	

Peds Cross: ∞
 South Peds: 0
 South Entering: 179
 South Leg Total: 470

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Oakville
Site #: 1902900002
Intersection: Dundas St E & Meadowridge Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

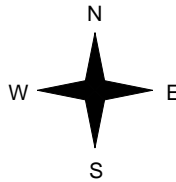
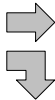
East Leg Total: 15666
 East Entering: 7748
 East Peds: 1
 Peds Cross: X

Heavys	Trucks	Cars	Totals
0	240	7114	7354



Dundas St E

Heavys	Trucks	Cars	Totals
0	163	6967	7130
0	1	207	208
0	164	7174	



Meadowridge Dr

Cars	Trucks	Heavys	Totals
6962	239	0	7201
536	11	0	547
7498	250	0	



Dundas St E

Cars	Trucks	Heavys	Totals
7746	172	0	7918



Peds Cross: X
 West Peds: 1
 West Entering: 7338
 West Leg Total: 14692

Cars	743	Cars	152	779	931
Trucks	12	Trucks	1	9	10
Heavys	0	Heavys	0	0	0
Totals	755	Totals	153	788	



Peds Cross: X
 South Peds: 2
 South Entering: 941
 South Leg Total: 1696

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: Dundas St E & Meadowridge Dr													Count Date: 19-Feb-19		Municipality: Oakville	
North Approach Totals						North/South Total Approaches	South Approach Totals									
Includes Cars, Trucks, & Heavys					Total Peds		Includes Cars, Trucks, & Heavys					Total Peds				
Hour Ending	Left	Thru	Right	Grand Total			Hour Ending	Left	Thru	Right	Grand Total					
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0				
8:00:00	0	0	0	0	0	245	8:00:00	18	0	227	245	0				
9:00:00	0	0	0	0	0	345	9:00:00	58	0	287	345	0				
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0				
17:00:00	0	0	0	0	0	172	17:00:00	37	0	135	172	2				
18:00:00	0	0	0	0	0	179	18:00:00	40	0	139	179	0				
Totals:						941	Totals:						941	2		
East Approach Totals						East/West Total Approaches	West Approach Totals									
Includes Cars, Trucks, & Heavys					Total Peds		Includes Cars, Trucks, & Heavys					Total Peds				
Hour Ending	Left	Thru	Right	Grand Total			Hour Ending	Left	Thru	Right	Grand Total					
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0				
8:00:00	43	841	0	884	1	3207	8:00:00	0	2304	19	2323	1				
9:00:00	91	1059	0	1150	0	3463	9:00:00	0	2261	52	2313	0				
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0				
17:00:00	193	2630	0	2823	0	4159	17:00:00	0	1270	66	1336	0				
18:00:00	220	2671	0	2891	0	4257	18:00:00	0	1295	71	1366	0				
Totals:						15086	Totals:						7338	1		
Calculated Values for Traffic Crossing Major Street																
Hours Ending:	7:00	8:00	9:00	16:00		17:00	17:00	18:00	18:00							
Crossing Values:	0	20	58	0		37	37	40	40							

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:30:00

To: 8:30:00

Municipality: Oakville
Site #: 1902900003
Intersection: Dundas St E & Prince Michael Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

East Leg Total: 3435
 East Entering: 1020
 East Peds: 2
 Peds Cross: ∞

Heavys	Trucks	Cars	Totals
0	108	960	1068

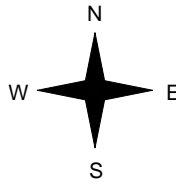


Dundas St E

Heavys	Trucks	Cars	Totals
0	28	2216	2244
0	4	103	107
0	32	2319	



Prince Michael Dr



Cars	Trucks	Heavys	Totals
854	107	0	961
59	0	0	59
913	107	0	



Dundas St E

Cars	Trucks	Heavys	Totals
2386	29	0	2415

Peds Cross: ∞
 South Peds: 1
 South Entering: 278
 South Leg Total: 444

Peds Cross: ∞
 West Peds: 2
 West Entering: 2351
 West Leg Total: 3419

Cars	162	Cars	106	170	276
Trucks	4	Trucks	1	1	2
Heavys	0	Heavys	0	0	0
Totals	166	Totals	107	171	

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 18:00:00

One Hour Peak

From: 16:45:00

To: 17:45:00

Municipality: Oakville
Site #: 1902900003
Intersection: Dundas St E & Prince Michael Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

East Leg Total: 4051
 East Entering: 2719
 East Peds: 0
 Peds Cross: ∞

Heavys	Trucks	Cars	Totals
0	21	2623	2644

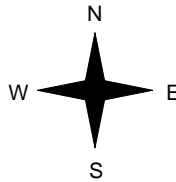


Dundas St E

Heavys	Trucks	Cars	Totals
0	40	1207	1247
0	3	147	150
0	43	1354	



Prince Michael Dr



Cars	Trucks	Heavys	Totals
2471	21	0	2492
226	1	0	227
2697	22	0	



Dundas St E

Cars	Trucks	Heavys	Totals
1292	40	0	1332

Peds Cross: ∞
 South Peds: 5
 South Entering: 237
 South Leg Total: 614

Peds Cross: ∞
 West Peds: 0
 West Entering: 1397
 West Leg Total: 4041

Cars	373
Trucks	4
Heavys	0
Totals	377



Cars	152	85	237
Trucks	0	0	0
Heavys	0	0	0
Totals	152	85	

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Oakville
Site #: 1902900003
Intersection: Dundas St E & Prince Michael Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

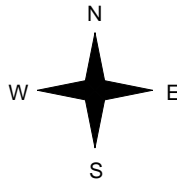
East Leg Total: 14447
 East Entering: 7337
 East Peds: 3
 Peds Cross: 8

Heavys	Trucks	Cars	Totals
0	239	7018	7257



Dundas St E

Heavys	Trucks	Cars	Totals
0	157	6516	6673
0	12	489	501
0	169	7005	



Prince Michael Dr

Cars	Trucks	Heavys	Totals
6542	234	0	6776
559	2	0	561
7101	236	0	



Dundas St E



Cars	Trucks	Heavys	Totals
6952	158	0	7110

Peds Cross: 8
 West Peds: 8
 West Entering: 7174
 West Leg Total: 14431

Cars	1048
Trucks	14
Heavys	0
Totals	1062



Cars	476	436	912
Trucks	5	1	6
Heavys	0	0	0
Totals	481	437	

Peds Cross: 8
 South Peds: 14
 South Entering: 918
 South Leg Total: 1980

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: Dundas St E & Prince Michael Dr Count Date: 19-Feb-19 Municipality: Oakville

North Approach Totals						South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	215	8:00:00	69	0	146	215	3
9:00:00	0	0	0	0	0	249	9:00:00	108	0	141	249	1
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0	229	17:00:00	156	0	73	229	8
18:00:00	0	0	0	0	0	225	18:00:00	148	0	77	225	2
Totals:	0	0	0	0	0	918		481	0	437	918	14
East Approach Totals						West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	46	820	0	866	0	3106	8:00:00	0	2168	72	2240	1
9:00:00	67	1041	0	1108	2	3328	9:00:00	0	2074	146	2220	2
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	211	2444	0	2655	1	3989	17:00:00	0	1200	134	1334	3
18:00:00	237	2471	0	2708	0	4088	18:00:00	0	1231	149	1380	2
Totals:	561	6776	0	7337	3	14511		0	6673	501	7174	8
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	0:00	0:00	7:00	8:00			9:00	16:00	17:00	18:00		
Crossing Values:	0	0	0	70			112	0	160	150		

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00
To: 9:00:00

One Hour Peak

From: 7:45:00
To: 8:45:00

Municipality: Oakville
Site #: 1902900004
Intersection: Dundas St E & Eighth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 225
North Entering: 175
North Peds: 0
Peds Cross: \times

Heavys	0	0	0	0
Trucks	0	1	0	1
Cars	25	57	92	174
Totals	25	58	92	



Heavys	0
Trucks	2
Cars	48
Totals	50

East Leg Total: 3429
East Entering: 1097
East Peds: 1
Peds Cross: \times

Heavys	0
Trucks	95
Cars	1099
Totals	1194

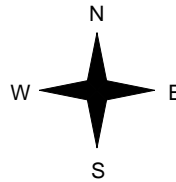


Eighth Line

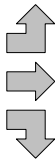
Cars	20	0	0	20
Trucks	922	95	0	1017
Heavys	60	0	0	60
Totals	1002	95	0	



Dundas St E



Heavys	0
Trucks	1
Cars	10
Totals	11
Heavys	0
Trucks	29
Cars	2060
Totals	2089
Heavys	0
Trucks	3
Cars	110
Totals	113
Heavys	0
Trucks	33
Cars	2180
Totals	2180



Dundas St E



Cars	2300	32	0	2332
Trucks				
Heavys				
Totals				

Peds Cross: \times
West Peds: 0
West Entering: 2213
West Leg Total: 3407

Cars	227
Trucks	4
Heavys	0
Totals	231



Cars	152	18	148	318
Trucks	0	1	3	4
Heavys	0	0	0	0
Totals	152	19	151	

Peds Cross: \times
South Peds: 1
South Entering: 322
South Leg Total: 553

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period

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

One Hour Peak

From: 16:45:00
To: 17:45:00

Municipality: Oakville
Site #: 1902900004
Intersection: Dundas St E & Eighth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 163
North Entering: 56
North Peds: 0
Peds Cross: \times

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	10	13	33	56
Totals	10	13	33	



Heavys	0
Trucks	1
Cars	106
Totals	107

East Leg Total: 4027
East Entering: 2642
East Peds: 2
Peds Cross: \times

Heavys	0	Trucks	20	Cars	2547	Totals	2567
--------	---	--------	----	------	------	--------	------

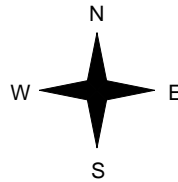


Eighth Line

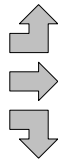
Cars	69	Trucks	0	Heavys	0	Totals	69
Cars	2374	Trucks	19	Heavys	0	Totals	2393
Cars	180	Trucks	0	Heavys	0	Totals	180
Cars	2623	Trucks	19	Heavys	0	Totals	



Dundas St E



Heavys	0	Trucks	0	Cars	9	Totals	9
Heavys	0	Trucks	42	Cars	1198	Totals	1240
Heavys	0	Trucks	3	Cars	178	Totals	181
Heavys	0	Trucks	45	Cars	1385	Totals	



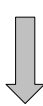
Dundas St E



Cars	1343	Trucks	42	Heavys	0	Totals	1385
------	------	--------	----	--------	---	--------	------

Peds Cross: \times
West Peds: 1
West Entering: 1430
West Leg Total: 3997

Cars	371	Cars	163	28	112	303
Trucks	3	Trucks	1	1	0	2
Heavys	0	Heavys	0	0	0	0
Totals	374	Totals	164	29	112	



Peds Cross: \times
South Peds: 0
South Entering: 305
South Leg Total: 679

Comments

Ontario Traffic Inc.

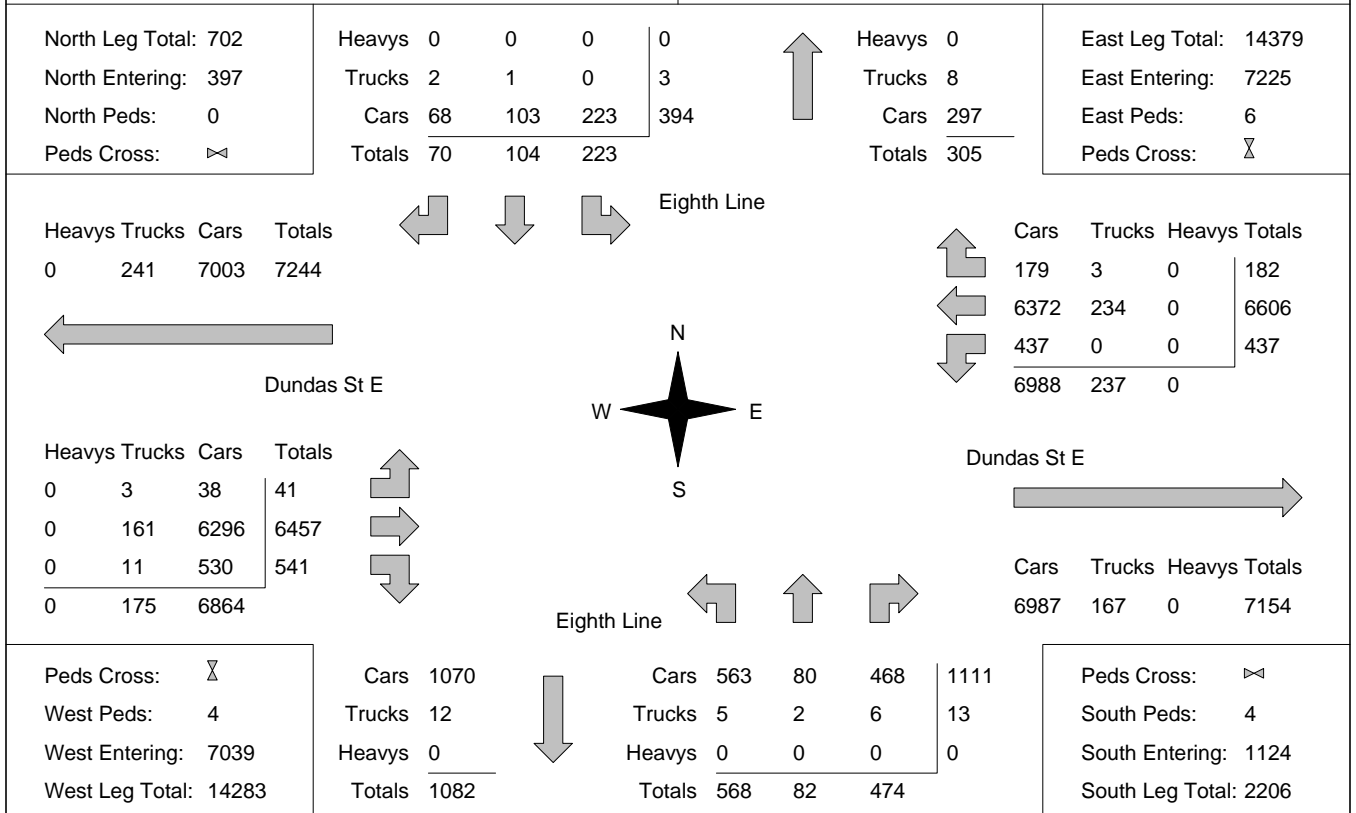
Total Count Diagram

Municipality: Oakville
Site #: 1902900004
Intersection: Dundas St E & Eighth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E



Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: Dundas St E & Eighth Line

Count Date: 19-Feb-19

Municipality: Oakville

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	71	27	28	126	0	345	8:00:00	83	6	130	219	1
9:00:00	86	47	17	150	0	472	9:00:00	164	20	138	322	1
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	24	19	11	54	0	326	17:00:00	153	24	95	272	2
18:00:00	42	11	14	67	0	378	18:00:00	168	32	111	311	0
Totals:	223	104	70	397	0	1521		568	82	474	1124	4
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	30	840	16	886	1	2991	8:00:00	4	2013	88	2105	1
9:00:00	66	1029	26	1121	1	3251	9:00:00	15	2003	112	2130	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	172	2388	70	2630	1	4022	17:00:00	12	1220	160	1392	1
18:00:00	169	2349	70	2588	3	4000	18:00:00	10	1221	181	1412	2
Totals:	437	6606	182	7225	6	14264		41	6457	541	7039	4
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	16:00		17:00	17:00	18:00	18:00			
Crossing Values:	0	183	298	0		203	203	247	247			

18. APPENDIX D: PROGRAM REFERENCE CARD

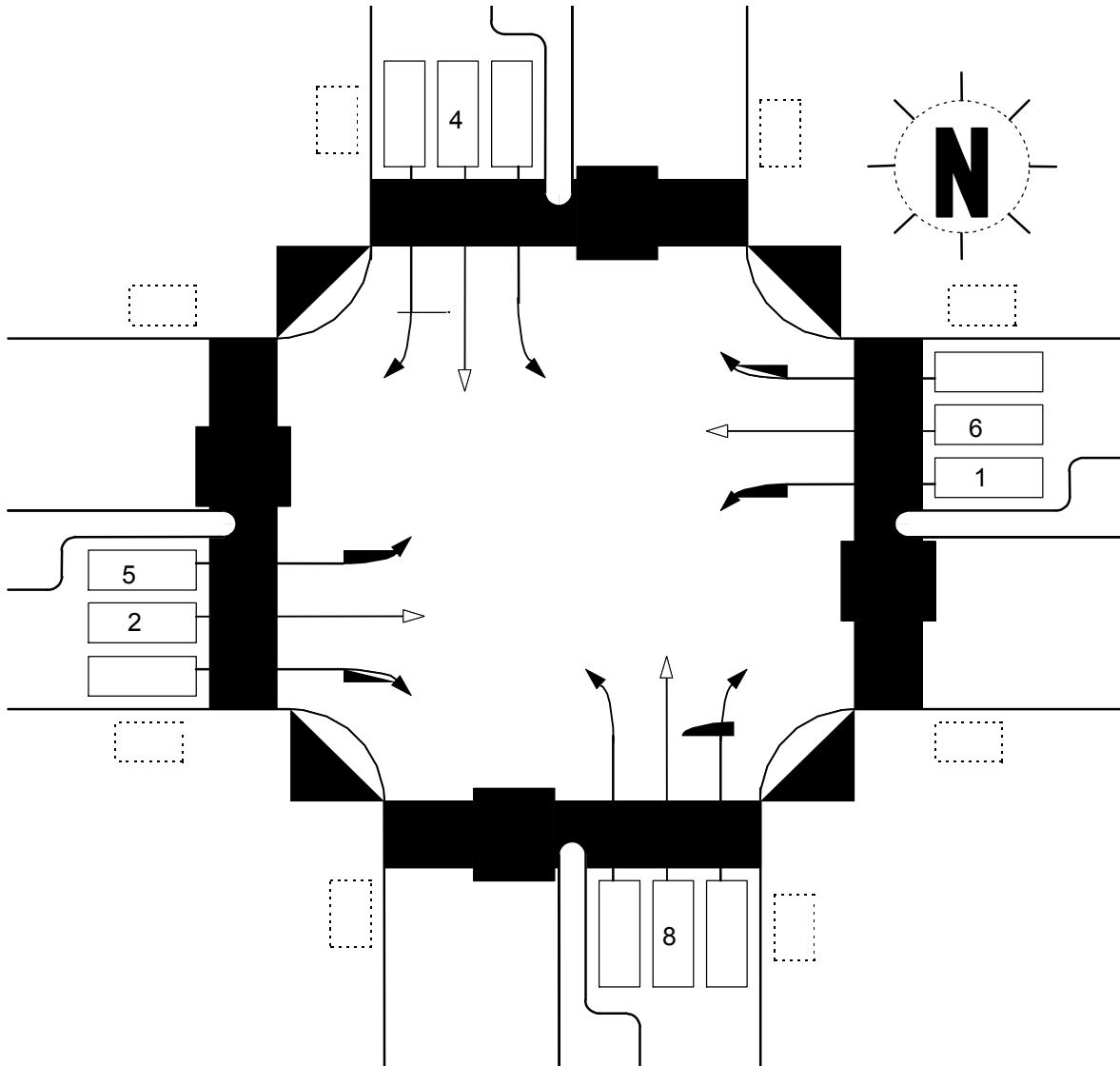
ASC/3

PROGRAM REFERENCE CARD

INTERSECTION Dundas Street & Eighth Line

CONTROLLER NUMBER _____ ENTERED BY: _____ DATE 03 / 27 / 17

BOOT: _____ MAIN: _____ HELP: _____ DATA BASE _____



CONFIGURATION SUBMENU

1-1-1. PHASE RING ASSIGNMENT

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RING																

1-1-2. PHASE COMPATIBILITY

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-2. PHASES IN USE / EXCLUSIVE PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASES IN USE																
EXCLUSIVE PED																

1-1-4. BACKUP PREVENT PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-5 SIMULTANEOUS GAP

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-3. PHASE RING SEQUENCE

CONTROLLER 1			SEQUENCE 1																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 2																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 3																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 4																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 5																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 6																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 7																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 8																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-1-3. PHASE RING SEQUENCE (CONT)

CONTROLLER 1		SEQUENCE 9																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 10																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 11																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 12																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 13																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 14																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 15																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 16																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH	PHASE / OVERLAP	TYPE	DIMMING				AUTO FLASH	
			RED	YELLOW	GREEN	PHASE	COLOR	TOGETHER
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

1-4-2. MMU PROGRAM

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

1-4-1. SDLC OPTIONS

TERM & FACIL	BIU NUMBER							
	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
MMU ENABLE								
MMU STOP TIME								
DIAGNOSTIC ENABLE (TEST FIXTURE)								
CONTROLLER PEER TO PEER ENABLE								
DISABLE 3 CRITICAL RFEs LOCKUP								

1-4-3. COLOR CHECK DISABLE

DISABLE ALL COLOR CHECKS																
MMU CHANNEL	1	2	3	4	5	6	7	8								
GREEN / WALK																
YELLOW / PC																
RED / DW																
MMU CHANNEL	9	10	11	12	13	14	15	16								
GREEN / WALK																
YELLOW / PC																
RED / DW																

1-5-1 GLOBAL PORT PARAMETERS

NTCIP BACKUP TIME (SECONDS)	
PORT 2 PRIORITY	
PORT 3A PRIORITY	
PORT 3B PRIORITY	
ETHERNET PRIORITY	

1-5-1 PORT 2 (TERMINAL)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-3 PORT 3A (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
ELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-7-1 ADMINISTRATION

SUPERVISOR ACCESS CODE	
ENABLE CRC CHECK OF DATA BASE	
CRC OF PROGRAM DATA BASE	
REQUEST DOWNLOAD OF PROGRAMMED DATA	

1-7-2 DISPLAY OPTIONS

KEY CLICK ENABLE	
BACKLIGHT ENABLE	

1-5-4. PORT 3B (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-5 ETHERNET PORT CONFIGURATION

IP ADDRESS					
ADDRESS MASK					
FTP SERVER ADDRESS					
DEFAULT GATEWAY ADDRESS					

1-6-1 ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TE)	
3 CRITICAL RFE ERRORS IN 24 HOURS	
NON-CRITICAL RFE'S (DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
ACCESS	
DATA CHANGE	
CONTROLLER DOWNLOAD	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

1-8-1 LOGIC STATEMENT CONTROL

	1	2	3	4	5	6	7	8	9	10
LP 1-10										
LP 11-20										
LP 21-30										
LP 31-40										
LP 41-50										
LP 51-60										
LP 61-70										
LP 71-80										
LP 81-90										
LP 91-100										

THEN				
ELSE				

1-8-1 LOGIC STATEMENT CONTROL

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR STATEMENTS

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				

LOGIC GATE NUMBER				
IF				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				

IF				
THEN				
ELSE				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				

LOGIC GATE NUMBER				
IF				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	7	20	7	10	7	20	7	10								
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MINIMUM GREEN																
DELAYED GREEN																
WALK		7		7		7		7								
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		24		32		24		32								
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	3.5	5.5	3.5	3.5	3.5	5.5	3.5	3.5								
VEHICLE EXTENSION 2																
MAX1	15	46		25	15	46		25								
MAX2	20	60		30	20	60		30								
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	3.0	4.2		3.3	3.0	4.2		3.3								
RED CLRANCE	1.0	2.5		3.7	1.0	2.5		3.7								
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

2-2 VEHICLE OVERLAP

OVERLAP A PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP C PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP B PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP D PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP E PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP G PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP F PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP H PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP M PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP O PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP N PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP P PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-3 PEDESTRIAN OVERLAP

PEDESTRIAN OVERLAP CONSISTS OF PHASES																
PEDESTRIAN OVERLAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

2-4 GUARANTEED MINIMUM TIMES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
WALK																
PEDESTRIAN CLEARANCE																
YELLOW CHANGE																
RED CLEARANCE																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MINIMUM GREEN																

2-5 START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
OVERLAP																
POWER START RED									FLASH TIME							
REMOTE (AUTOMATIC) FLASH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY																
EXIT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
EXIT REMOTE FLASH									MINIMUM AUTOMATIC FLASH							
MINIMUM RECALL									CYCLE THROUGH PHASES							

2-6-1 CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT																
UNIT RED REVERT																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
GUARANTEE D PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEHICLE EXIT																

2-7 ACTUATED / PRE-TIMED MODE PHASES

ENABLE PRE-TIMED OPERATION																
FREE INPUT DISABLED PRE-TIMED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
PRE-TIMED																

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN	4		
CYCLE LENGTH (SECONDS)	100	SPLIT PATTERN	
OFFSET VALUE	44		
SPLITS IN	Per	OFFSETS IN	Per
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	4
ACTUATED COORDINATION	Yes	TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

COORDINATOR PATTERN	5		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	5
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

Per
Per

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN															
CYCLE LENGTH (SECONDS)		SPLIT PATTERN													
OFFSET VALUE		SEQUENCE													
SPLITS IN		OFFSETS IN													
CROSSING ARTERY PATTERN															
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH													
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN													
ACTUATED COORDINATION		TIMING PLAN													
ACTUATED REST IN WALK		PHASE RESERVICE													
RING SPLIT EXTENSION (SECONDS)		1	2	3	4										
SPLIT DEMAND PATTERN															
RING DISPLACEMENT															
		1	2	3	4	5		8	9	1	1	1	1	1	1
										0	1		3		5
PREFERENCE 1 PHASES															
PREFERENCE 2 PHASES															

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	
											0	1	2	3	4	5	6
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

3-3 SPLIT PATTERN

SPLIT PATTERN NUMBER		1																					
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)			X				X																
PHASE		1	2	3	4	5	6	7	8														
SPLIT VALUE		9	54	0	37	9	54	0	37														
MODE																							
PHASE		9	10	11	12	13	14	15	16														
SPLIT VALUE																							
MODE																							

SPLIT PATTERN NUMBER		2																					
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)			X				X																
PHASE		1	2	3	4	5	6	7	8														
SPLIT VALUE		10	50	0	40	10	50	0	40														
MODE																							
PHASE		9	10	11	12	13	14	15	16														
SPLIT VALUE																							
MODE																							

SPLIT PATTERN NUMBER		3																					
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)			X				X																
PHASE		1	2	3	4	5	6	7	8														
SPLIT VALUE		12	51	0	37	9	54	0	37														
MODE																							
PHASE		9	10	11	12	13	14	15	16														
SPLIT VALUE																							
MODE																							

SPLIT PATTERN NUMBER		4																					
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)			X				X																
PHASE		1	2	3	4	5	6	7	8														
SPLIT VALUE		11	42	0	47	11	42	0	47														
MODE																							
PHASE		9	10	11	12	13	14	15	16														
SPLIT VALUE																							
MODE																							

SPLIT PATTERN NUMBER																							
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)																							
PHASE		1	2	3	4	5	6	7	8														
SPLIT VALUE																							
MODE																							
PHASE		9	10	11	12	13	14	15	16														
SPLIT VALUE																							
MODE																							

SPLIT PATTERN NUMBER																							
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)																							
PHASE		1	2	3	4	5	6	7	8														
SPLIT VALUE																							
MODE																							
PHASE		9	10	11	12	13	14	15	16														
SPLIT VALUE																							
MODE																							

SPLIT PATTERN NUMBER																							
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)																							
PHASE		1	2	3	4	5	6	7	8														
SPLIT VALUE																							
MODE																							
PHASE		9	10	11	12	13	14	15	16														
SPLIT VALUE																							
MODE																							

SPLIT PATTERN NUMBER																							
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)																							
PHASE		1	2	3	4	5	6	7	8														
SPLIT VALUE																							
MODE																							
PHASE		9	10	11	12	13	14	15	16														
SPLIT VALUE																							
MODE																							

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-4 AUTO PERMISSIVE MINIMUM GREEN TIME

PHASE	1	2	3	4	5	6	7	8								
MINIMUM GREEN																
PHASE	9	10	11	12	13	14	15	16								
MINIMUM GREEN																

3-5 SPLIT DEMAND

PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
DEMAND 1																	
DEMAND 2																	
DEMAND		1	2														
DETECTOR																	
CALL TIME (SECONDS)																	
CYCLE COUNT																	

PREEMPTOR SUBMENU

4-1 PREEMPTOR

PREEMPTOR NUMBER	1																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/ EXIT YELLOW /RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

PREEMPTOR NUMBER	2																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/EXIT YELLOW/RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

4-2 LOW PRIORITY PREEMPTOR SELECTION

FILTERED INPUT	SOLID	PULSING
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		3															
ACTIVE		NON-LOCK INPUT															
PREEMPTION OVERRIDE		INTERLOCK ENABLE															
DELAY TIME (SECONDS)		INHIBIT TIME (SECONDS)															
EXTEND INPUT (SECONDS)		MAX PRESENCE TIME (SECONDS)															
DURATION TIME (SECONDS)		TRACK CLEARANCE RESERVICE															
PED DARK		RESERVICE TIME															
AUTOMATIC FLASH HAS PRIORITY		RED CLEAR GOES GREEN															
TERMINATE OVERLAPS ASAP		PC THROUGH YELLOW															
RING	1	2	3														
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN														
			YELLOW														
			RED														
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH	FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		4															
ACTIVE		NON-LOCK INPUT															
PREEMPTION OVERRIDE		INTERLOCK ENABLE															
DELAY TIME (SECONDS)		INHIBIT TIME (SECONDS)															
EXTEND INPUT (SECONDS)		MAX PRESENCE TIME (SECONDS)															
DURATION TIME (SECONDS)		TRACK CLEARANCE RESERVICE															
PED DARK		RESERVICE TIME															
AUTOMATIC FLASH HAS PRIORITY		RED CLEAR GOES GREEN															
TERMINATE OVERLAPS ASAP		PC THROUGH YELLOW															
RING	1	2	3														
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN														
			YELLOW														
			RED														
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH	FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		5															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		6															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		7																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		8																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		9															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		10															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

TIME BASE SUBMENU

5-1 CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL ACTION PLAN	
SYNC REFERENCE TIME	
SYNC REFERENCE	
DAYLIGHT SAVINGS	
TIME RESET INPUT TIME SET	
STANDARD TIME FROM GMT	

5-2 SCHEDULE

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
		X	X	X	X	X				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	1
DAY PLAN NUMBER	2

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
	X						X			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

ACTION PLAN	5															
PATTERN	5										SYSTEM OVERRIDE					
VEHICLE DETECTOR PLAN											DETECTOR LOG					
FLASH																
RED REST											VEHICLE DET DIAGNOSTIC PLAN					
CONTROLLER SEQUENCE											PED DET DIAGNOSTIC PLAN					
TIMING PLAN											DIMMING ENABLE					
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION											(1-8)					
AUX FUNCTION	(1-3)															
	1	2	3	4	5	6	7	8	9	10						
LP 1-10																
LP 11-20																
LP 21-30																
LP 31-40																
LP 41-50																
LP 51-60																
LP 61-70																
LP 71-80																
LP 81-90																
LP 91-100																

ACTION PLAN																
PATTERN											SYSTEM OVERRIDE					
VEHICLE DETECTOR PLAN											DETECTOR LOG					
FLASH																
RED REST											VEHICLE DET DIAGNOSTIC PLAN					
CONTROLLER SEQUENCE											PED DET DIAGNOSTIC PLAN					
TIMING PLAN											DIMMING ENABLE					
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION											(1-8)					
AUX FUNCTION	(1-3)															
	1	2	3	4	5	6	7	8	9	10						
LP 1-10																
LP 11-20																
LP 21-30																
LP 31-40																
LP 41-50																
LP 51-60																
LP 61-70																
LP 71-80																
LP 81-90																
LP 91-100																

ACTION PLAN																
PATTERN											SYSTEM OVERRIDE					
VEHICLE DETECTOR PLAN											DETECTOR LOG					
FLASH																
RED REST											VEHICLE DET DIAGNOSTIC PLAN					
CONTROLLER SEQUENCE											PED DET DIAGNOSTIC PLAN					
TIMING PLAN											DIMMING ENABLE					
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION											(1-8)					
AUX FUNCTION	(1-3)															
	1	2	3	4	5	6	7	8	9	10						
LP 1-10																
LP 11-20																
LP 21-30																
LP 31-40																
LP 41-50																
LP 51-60																
LP 61-70																
LP 71-80																
LP 81-90																
LP 91-100																

ACTION PLAN																
PATTERN											SYSTEM OVERRIDE					
VEHICLE DETECTOR PLAN											DETECTOR LOG					
FLASH																
RED REST											VEHICLE DET DIAGNOSTIC PLAN					
CONTROLLER SEQUENCE											PED DET DIAGNOSTIC PLAN					
TIMING PLAN											DIMMING ENABLE					
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION											(1-8)					
AUX FUNCTION	(1-3)															
	1	2	3	4	5	6	7	8	9	10						
LP 1-10																
LP 11-20																
LP 21-30																
LP 31-40																
LP 41-50																
LP 51-60																
LP 61-70																
LP 71-80																
LP 81-90																
LP 91-100																

5-5 EXCEPTION DAY PROGRAM

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
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27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

DETECTORS

6-1. DETECTOR TYPE AND TS SELECT

DET	TYPE	TS1 DETECTOR
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

DET	TYPE	TS1 DETECTOR
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
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62		
63		
64		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

6-2 VEHICLE DETECTOR SETUP

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

6-3 PHASE DETECTOR OPTIONS

PHASE DETECTOR OPTION PLAN NUMBER										1						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										2						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										3						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										4						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

6-4 PEDESTRIAN AND SYSTEM DETECTOR OPTIONS

PHASE PEDESTRIAN DETECTOR								
	1	2	3	4	5	6	7	8
PED DET INPUT								
	9	10	11	12	13	14	15	16
PED DET INPUT								
LOCAL SYSTEM DETECTOR								
	1	2	3	4	5	6	7	8
VEH DET INPUT								
	9	10	11	12	13	14	15	16
VEH DET INPUT								

6-5 LOG – SPEED DETECTOR SET UP

NTCIP LOG PERIOD								
ECPI LOG PERIOD								
LENGTH UNIT								
SPEED DETECTOR	1	2	3	4	5	6	7	8
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DETECTOR	9	10	11	12	13	14	15	16
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

6-6 VEHICLE DETECTOR DIAGNOSTICS

VEHICLE DIAGNOSTIC PLAN NUMBER					1
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					2
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

**6-6 VEHICLE DETECTOR DIAGNOSTICS
(CONTINUED)**

VEHICLE DIAGNOSTIC PLAN NUMBER					3
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					4
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

6-7 PEDESTRIAN DETECTOR DIAGNOSTICS

PED DIAGNOSTIC PLAN NUMBER 1					PED DIAGNOSTIC PLAN NUMBER 2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

PED DIAGNOSTIC PLAN NUMBER 3					PED DIAGNOSTIC PLAN NUMBER 4				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

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18. APPENDIX D: PROGRAM REFERENCE CARD

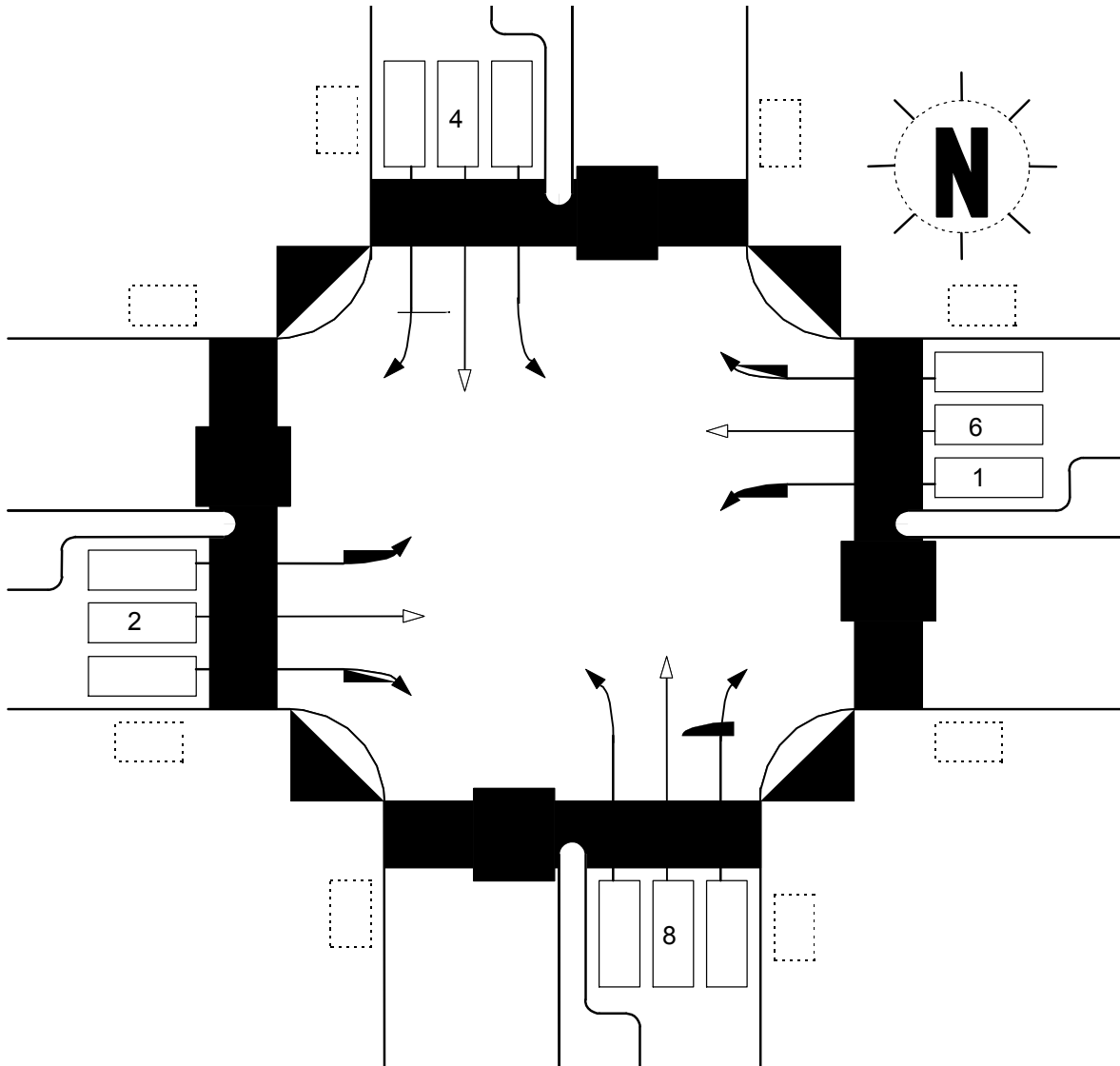
ASC/3

PROGRAM REFERENCE CARD

INTERSECTION Dundas Street & Meadowridge Drive

CONTROLLER NUMBER _____ ENTERED BY: _____ DATE 03/27/17

BOOT: _____ MAIN: _____ HELP: _____ DATA BASE _____



CONFIGURATION SUBMENU

1-1-1. PHASE RING ASSIGNMENT

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RING																

1-1-2. PHASE COMPATIBILITY

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-2. PHASES IN USE / EXCLUSIVE PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASES IN USE																
EXCLUSIVE PED																

1-1-4. BACKUP PREVENT PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-5 SIMULTANEOUS GAP

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-3. PHASE RING SEQUENCE

CONTROLLER 1			SEQUENCE 1																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 2																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 3																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 4																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 5																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 6																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 7																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 8																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-1-3. PHASE RING SEQUENCE (CONT)

CONTROLLER 1		SEQUENCE 9																	
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1		SEQUENCE 10																	
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1		SEQUENCE 11																	
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1		SEQUENCE 12																	
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1		SEQUENCE 13																	
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1		SEQUENCE 14																	
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1		SEQUENCE 15																	
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1		SEQUENCE 16																	
RING 1																			
RING 2																			
RING 3																			
RING 4																			

1-3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH	PHASE / OVERLAP	TYPE	DIMMING				AUTO FLASH	
			RED	YELLOW	GREEN	PHASE	COLOR	TOGETHER
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

1-4-2. MMU PROGRAM

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

1-4-1. SDLC OPTIONS

TERM & FACIL	BIU NUMBER							
	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
MMU ENABLE								
MMU STOP TIME								
DIAGNOSTIC ENABLE (TEST FIXTURE)								
CONTROLLER PEER TO PEER ENABLE								
DISABLE 3 CRITICAL RFEs LOCKUP								

1-4-3. COLOR CHECK DISABLE

DISABLE ALL COLOR CHECKS																
MMU CHANNEL	1	2	3	4	5	6	7	8								
GREEN / WALK																
YELLOW / PC																
RED / DW																
MMU CHANNEL	9	10	11	12	13	14	15	16								
GREEN / WALK																
YELLOW / PC																
RED / DW																

1-5-1 GLOBAL PORT PARAMETERS

NTCIP BACKUP TIME (SECONDS)	
PORT 2 PRIORITY	
PORT 3A PRIORITY	
PORT 3B PRIORITY	
ETHERNET PRIORITY	

1-5-1 PORT 2 (TERMINAL)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-3 PORT 3A (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
ELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-7-1 ADMINISTRATION

SUPERVISOR ACCESS CODE	
ENABLE CRC CHECK OF DATA BASE	
CRC OF PROGRAM DATA BASE	
REQUEST DOWNLOAD OF PROGRAMMED DATA	

1-7-2 DISPLAY OPTIONS

KEY CLICK ENABLE	
BACKLIGHT ENABLE	

1-5-4. PORT 3B (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-5 ETHERNET PORT CONFIGURATION

IP ADDRESS					
ADDRESS MASK					
FTP SERVER ADDRESS					
DEFAULT GATEWAY ADDRESS					

1-6-1 ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TE)	
3 CRITICAL RFE ERRORS IN 24 HOURS	
NON-CRITICAL RFE'S (DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
ACCESS	
DATA CHANGE	
CONTROLLER DOWNLOAD	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

1-8-1 LOGIC STATEMENT CONTROL

	1	2	3	4	5	6	7	8	9	10
LP 1-										
10										
LP 11-20										
LP 21-30										
LP 31-40										
LP 41-50										
LP 51-60										
LP 61-70										
LP 71-80										
LP 81-90										
LP 91-10										

THEN									
ELSE									

1-8-1 LOGIC STATEMENT CONTROL

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR STATEMENTS

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				

LOGIC GATE NUMBER				
IF				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				

1-8-2 LOGIC PROCESSOR (CONTINUED)

IF				
THEN				
ELSE				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				

LOGIC GATE NUMBER				
IF				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	7	20	7	10	7	20	7	10								
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MINIMUM GREEN																
DELAYED GREEN																
WALK		7		7		7		7								
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		23		30		23		30								
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	3.5	5.5	3.5	3.5	3.5	5.5	3.5	3.5								
VEHICLE EXTENSION 2																
MAX1	20	55		30		55		30								
MAX2	20	60		30		60		30								
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	3.0	4.2		3.3		4.2		3.3								
RED CLRANCE	1.0	2.5		3.6		2.5		3.6								
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

2-2 VEHICLE OVERLAP

OVERLAP A PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP C PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP B PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP D PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP E PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP G PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP F PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP H PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP I PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP K PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP J PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP L PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP M PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP O PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP N PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP P PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-3 PEDESTRIAN OVERLAP

PEDESTRIAN OVERLAP CONSISTS OF PHASES																
PEDESTRIAN OVERLAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

2-4 GUARANTEED MINIMUM TIMES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
WALK																
PEDESTRIAN CLEARANCE																
YELLOW CHANGE																
RED CLEARANCE																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MINIMUM GREEN																

2-5 START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
OVERLAP																
POWER START RED									FLASH TIME							
REMOTE (AUTOMATIC) FLASH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY																
EXIT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
EXIT REMOTE FLASH									MINIMUM AUTOMATIC FLASH							
MINIMUM RECALL									CYCLE THROUGH PHASES							

2-6-1 CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT																
UNIT RED REVERT																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
GUARANTEE D PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEHICLE EXIT																

2-7 ACTUATED / PRE-TIMED MODE PHASES

ENABLE PRE-TIMED OPERATION																
FREE INPUT DISABLED PRE-TIMED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
PRE-TIMED																

COORDINATOR SUBMENU

3-1 COORDINATOR OPTIONS

MANUAL PATTERN	Auto		
INTERCONNECT SOURCE	TBC	INTERCONNECT FORMAT	
TRANSITION	Smooth	ECPI COORDINATION	Yes
OFFSET REFERENCE	Lead	DWELL / ADD TIME	
DELAY COORD WALK TO LOCAL ZERO	No	FORCE OFF	Float
FORCE OFF ADDED INITIAL GREEN	No	USE PED TIME FOR SMOOTH TRANSITION	No
PEDESTRIAN RECALL	No	PEDESTRIAN RESERVICE	Yes
ENABLE MANUAL SYNC INPUT		LOCAL ZERO OVERRIDE	No
RE-SYNC COUNT	No	MAX SELECT	MaxInh
MULTISYNC	No		

3-2 COORDINATOR PATTERN

COORDINATOR PATTERN	1																																																																										
CYCLE LENGTH (SECONDS)	130	SPLIT PATTERN																																																																									
OFFSET VALUE	70	SEQUENCE																																																																									
SPLITS IN	Per	OFFSETS IN . . .	Per																																																																								
CROSSING ARTERY PATTERN																																																																											
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																																																																									
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	1																																																																								
ACTUATED COORDINATION	Yes	TIMING PLAN																																																																									
ACTUATED REST IN WALK		PHASE RESERVICE																																																																									
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	1	2	3	4																																																																							
RING SPLIT EXTENSION (SECONDS)																																																																											
SPLIT DEMAND PATTERN																																																																											
RING DISPLACEMENT																																																																											
	1	2	3	4	5	8	9	1	1	1	1	1																																																															
PREFERENCE 1 PHASES								0	1	3	5																																																																
PREFERENCE 2 PHASES																																																																											
SPECIAL FUNCTION	1	2	3	4	5	8																																																																					

COORDINATOR PATTERN	2																																																													
CYCLE LENGTH (SECONDS)	120	SPLIT PATTERN																																																												
OFFSET VALUE	7	SEQUENCE																																																												
SPLITS IN	Per	OFFSETS IN	Per																																																											
CROSSING ARTERY PATTERN																																																														
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																																																												
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	2																																																											
ACTUATED COORDINATION	Yes	TIMING PLAN																																																												
ACTUATED REST IN WALK		PHASE RESERVICE																																																												
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	1	2	3	4																																																										
RING SPLIT EXTENSION (SECONDS)																																																														
SPLIT DEMAND PATTERN																																																														
RING DISPLACEMENT																																																														
	1	2	3	4	5	8	9	1	1	1	1	1																																																		
PREFERENCE 1 PHASES								0	1	3	5																																																			
PREFERENCE 2 PHASES																																																														

COORDINATOR PATTERN	3																																																													
CYCLE LENGTH (SECONDS)	130	SPLIT PATTERN																																																												
OFFSET VALUE	75	SEQUENCE																																																												
SPLITS IN	Per	OFFSETS IN	Per																																																											
CROSSING ARTERY PATTERN																																																														
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																																																												
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	3																																																											
ACTUATED COORDINATION	Yes	TIMING PLAN																																																												
ACTUATED REST IN WALK		PHASE RESERVICE																																																												
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	1	2	3	4																																																										
RING SPLIT EXTENSION (SECONDS)																																																														
SPLIT DEMAND PATTERN																																																														
RING DISPLACEMENT																																																														
	1	2	3	4	5	8	9	1	1	1	1	1																																																		
PREFERENCE 1 PHASES								0	1	3	5																																																			
PREFERENCE 2 PHASES																																																														

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN	4		
CYCLE LENGTH (SECONDS)	100	SPLIT PATTERN	
OFFSET VALUE	8		
SPLITS IN	Per	OFFSETS IN	Per
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	4
ACTUATED COORDINATION	Yes	TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN	5		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	5
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

Per
Per

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN																		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																
OFFSET VALUE		SEQUENCE																
SPLITS IN		OFFSETS IN																
CROSSING ARTERY PATTERN																		
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																
ACTUATED COORDINATION		TIMING PLAN																
ACTUATED REST IN WALK		PHASE RESERVICE																
RING SPLIT EXTENSION (SECONDS)		1	2	3	4													
SPLIT DEMAND PATTERN																		
RING DISPLACEMENT																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
PREFERENCE 1 PHASES																		
PREFERENCE 2 PHASES																		

COORDINATOR PATTERN																		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																
OFFSET VALUE		SEQUENCE																
SPLITS IN		OFFSETS IN																
CROSSING ARTERY PATTERN																		
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																
ACTUATED COORDINATION		TIMING PLAN																
ACTUATED REST IN WALK		PHASE RESERVICE																
RING SPLIT EXTENSION (SECONDS)		1	2	3	4													
SPLIT DEMAND PATTERN																		
RING DISPLACEMENT																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
PREFERENCE 1 PHASES																		
PREFERENCE 2 PHASES																		

3-3 SPLIT PATTERN

SPLIT PATTERN NUMBER		1																								
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)			X				X																			
PHASE		1	2	3	4	5	6	7	8																	
SPLIT VALUE		11	54	0	35	0	65	0	35																	
MODE																										
PHASE		9	10	11	12	13	14	15	16																	
SPLIT VALUE																										
MODE																										

SPLIT PATTERN NUMBER		2																								
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)			X				X																			
PHASE		1	2	3	4	5	6	7	8																	
SPLIT VALUE		10	52	0	38	0	62	0	38																	
MODE																										
PHASE		9	10	11	12	13	14	15	16																	
SPLIT VALUE																										
MODE																										

SPLIT PATTERN NUMBER		3																								
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)			X				X																			
PHASE		1	2	3	4	5	6	7	8																	
SPLIT VALUE		16	49	0	35	0	65	0	35																	
MODE																										
PHASE		9	10	11	12	13	14	15	16																	
SPLIT VALUE																										
MODE																										

SPLIT PATTERN NUMBER		4																								
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)			X				X																			
PHASE		1	2	3	4	5	6	7	8																	
SPLIT VALUE		11	44	0	45	0	55	0	45																	
MODE																										
PHASE		9	10	11	12	13	14	15	16																	
SPLIT VALUE																										
MODE																										

SPLIT PATTERN NUMBER																										
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)																										
PHASE		1	2	3	4	5	6	7	8																	
SPLIT VALUE																										
MODE																										
PHASE		9	10	11	12	13	14	15	16																	
SPLIT VALUE																										
MODE																										

SPLIT PATTERN NUMBER																										
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)																										
PHASE		1	2	3	4	5	6	7	8																	
SPLIT VALUE																										
MODE																										
PHASE		9	10	11	12	13	14	15	16																	
SPLIT VALUE																										
MODE																										

SPLIT PATTERN NUMBER																										
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)																										
PHASE		1	2	3	4	5	6	7	8																	
SPLIT VALUE																										
MODE																										
PHASE		9	10	11	12	13	14	15	16																	
SPLIT VALUE																										
MODE																										

SPLIT PATTERN NUMBER																										
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
COORDINATED PHASE(S)																										
PHASE		1	2	3	4	5	6	7	8																	
SPLIT VALUE																										
MODE																										
PHASE		9	10	11	12	13	14	15	16																	
SPLIT VALUE																										
MODE																										

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-4 AUTO PERMISSIVE MINIMUM GREEN TIME

PHASE	1	2	3	4	5	6	7	8								
MINIMUM GREEN																
PHASE	9	10	11	12	13	14	15	16								
MINIMUM GREEN																

3-5 SPLIT DEMAND

PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
DEMAND 1																	
DEMAND 2																	
DEMAND		1	2														
DETECTOR																	
CALL TIME (SECONDS)																	
CYCLE COUNT																	

PREEMPTOR SUBMENU

4-1 PREEMPTOR

PREEMPTOR NUMBER	1																
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL – CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH	FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION									EXIT TIMING PLAN								
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL								
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT								
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER	2																
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL – CYCLE GREEN/EXIT YELLOW/RED																	
DWELL FLASH	FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION									EXIT TIMING PLAN								
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL								
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT								
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-2 LOW PRIORITY PREEMPTOR SELECTION

FILTERED INPUT	SOLID	PULSING
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		3																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		4																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		5																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH																		
FLASH EXIT COLOR																		
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION					EXIT TIMING PLAN													
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL													
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT													
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		6																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH																		
FLASH EXIT COLOR																		
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION					EXIT TIMING PLAN													
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL													
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT													
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		7																
ACTIVE		NON-LOCK INPUT																
PREEMPTION OVERRIDE		INTERLOCK ENABLE																
DELAY TIME (SECONDS)		INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)		MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)		TRACK CLEARANCE RESERVICE																
PED DARK		RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY		RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP		PC THROUGH YELLOW																
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		8																
ACTIVE		NON-LOCK INPUT																
PREEMPTION OVERRIDE		INTERLOCK ENABLE																
DELAY TIME (SECONDS)		INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)		MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)		TRACK CLEARANCE RESERVICE																
PED DARK		RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY		RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP		PC THROUGH YELLOW																
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		9															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		10															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

TIME BASE SUBMENU

5-1 CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL ACTION PLAN	
SYNC REFERENCE TIME	
SYNC REFERENCE	
DAYLIGHT SAVINGS	
TIME RESET INPUT TIME SET	
STANDARD TIME FROM GMT	

5-2 SCHEDULE

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
		x	x	x	x	x				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	1
DAY PLAN NUMBER	2

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
	x						x			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

5-5 EXCEPTION DAY PROGRAM

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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28					
29					
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31					
32					
33					
34					
35					
36					

DETECTORS

6-1. DETECTOR TYPE AND TS SELECT

DET	TYPE	TS1 DETECTOR
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
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18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

DET	TYPE	TS1 DETECTOR
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
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64		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

6-2 VEHICLE DETECTOR SETUP

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1 1	
CALLED		

6-3 PHASE DETECTOR OPTIONS

PHASE DETECTOR OPTION PLAN NUMBER										1						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										2						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										3						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										4						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

6-4 PEDESTRIAN AND SYSTEM DETECTOR OPTIONS

PHASE PEDESTRIAN DETECTOR								
	1	2	3	4	5	6	7	8
PED DET INPUT								
	9	10	11	12	13	14	15	16
PED DET INPUT								
LOCAL SYSTEM DETECTOR								
	1	2	3	4	5	6	7	8
VEH DET INPUT								
	9	10	11	12	13	14	15	16
VEH DET INPUT								

6-5 LOG – SPEED DETECTOR SET UP

NTCIP LOG PERIOD								
ECPI LOG PERIOD								
LENGTH UNIT								
SPEED DETECTOR	1	2	3	4	5	6	7	8
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DETECTOR	9	10	11	12	13	14	15	16
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

6-6 VEHICLE DETECTOR DIAGNOSTICS

VEHICLE DIAGNOSTIC PLAN NUMBER					1				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					33				
2					34				
3					35				
4					36				
5					37				
6					38				
7					39				
8					40				
9					41				
10					42				
11					43				
12					44				
13					45				
14					46				
15					47				
16					48				
17					49				
18					50				
19					51				
20					52				
21					53				
22					54				
23					55				
24					56				
25					57				
26					58				
27					59				
28					60				
29					61				
30					62				
31					63				
32					64				

VEHICLE DIAGNOSTIC PLAN NUMBER					2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					33				
2					34				
3					35				
4					36				
5					37				
6					38				
7					39				
8					40				
9					41				
10					42				
11					43				
12					44				
13					45				
14					46				
15					47				
16					48				
17					49				
18					50				
19					51				
20					52				
21					53				
22					54				
23					55				
24					56				
25					57				
26					58				
27					59				
28					60				
29					61				
30					62				
31					63				
32					64				

**6-6 VEHICLE DETECTOR DIAGNOSTICS
(CONTINUED)**

VEHICLE DIAGNOSTIC PLAN NUMBER					3
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					4
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

6-7 PEDESTRIAN DETECTOR DIAGNOSTICS

PED DIAGNOSTIC PLAN NUMBER 1					PED DIAGNOSTIC PLAN NUMBER 2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

PED DIAGNOSTIC PLAN NUMBER 3					PED DIAGNOSTIC PLAN NUMBER 4				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

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18. APPENDIX D: PROGRAM REFERENCE CARD

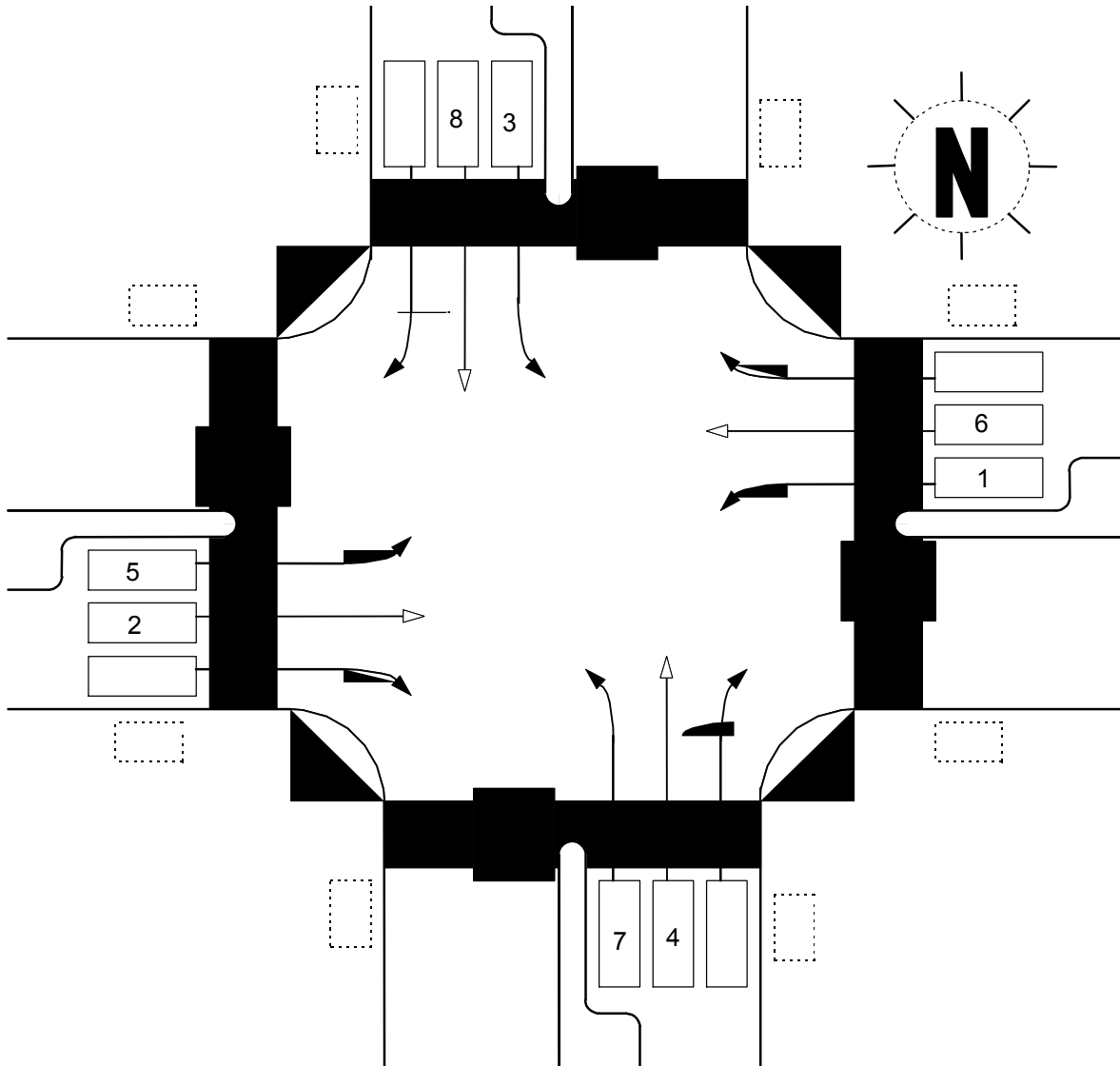
ASC/3

PROGRAM REFERENCE CARD

INTERSECTION Dundas Street & Ninth Line

CONTROLLER NUMBER _____ ENTERED BY: _____ DATE 03 / 13 / 17

BOOT: _____ MAIN: _____ HELP: _____ DATA BASE _____



CONFIGURATION SUBMENU

1-1-1. PHASE RING ASSIGNMENT

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RING																

1-1-2. PHASE COMPATIBILITY

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-2. PHASES IN USE / EXCLUSIVE PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASES IN USE																
EXCLUSIVE PED																

1-1-4. BACKUP PREVENT PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-5 SIMULTANEOUS GAP

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-3. PHASE RING SEQUENCE

CONTROLLER 1			SEQUENCE 1																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 2																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 3																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 4																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 5																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 6																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 7																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 8																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-1-3. PHASE RING SEQUENCE (CONT)

CONTROLLER 1		SEQUENCE 9																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 10																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 11																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 12																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 13																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 14																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 15																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 16																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH	PHASE / OVERLAP	TYPE	DIMMING				AUTO FLASH	
			RED	YELLOW	GREEN	PHASE	COLOR	TOGETHER
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

1-4-2. MMU PROGRAM

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

1-4-1. SDLC OPTIONS

TERM & FACIL	BIU NUMBER							
	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
MMU ENABLE								
MMU STOP TIME								
DIAGNOSTIC ENABLE (TEST FIXTURE)								
CONTROLLER PEER TO PEER ENABLE								
DISABLE 3 CRITICAL RFEs LOCKUP								

1-4-3. COLOR CHECK DISABLE

DISABLE ALL COLOR CHECKS																
MMU CHANNEL	1	2	3	4	5	6	7	8								
GREEN / WALK																
YELLOW / PC																
RED / DW																
MMU CHANNEL	9	10	11	12	13	14	15	16								
GREEN / WALK																
YELLOW / PC																
RED / DW																

1-5-1 GLOBAL PORT PARAMETERS

NTCIP BACKUP TIME (SECONDS)	
PORT 2 PRIORITY	
PORT 3A PRIORITY	
PORT 3B PRIORITY	
ETHERNET PRIORITY	

1-5-1 PORT 2 (TERMINAL)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-3 PORT 3A (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
ELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-7-1 ADMINISTRATION

SUPERVISOR ACCESS CODE	
ENABLE CRC CHECK OF DATA BASE	
CRC OF PROGRAM DATA BASE	
REQUEST DOWNLOAD OF PROGRAMMED DATA	

1-7-2 DISPLAY OPTIONS

KEY CLICK ENABLE	
BACKLIGHT ENABLE	

1-5-4. PORT 3B (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-5 ETHERNET PORT CONFIGURATION

IP ADDRESS					
ADDRESS MASK					
FTP SERVER ADDRESS					
DEFAULT GATEWAY ADDRESS					

1-6-1 ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TE)	
3 CRITICAL RFE ERRORS IN 24 HOURS	
NON-CRITICAL RFE'S (DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
ACCESS	
DATA CHANGE	
CONTROLLER DOWNLOAD	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

1-8-1 LOGIC STATEMENT CONTROL

	1	2	3	4	5	6	7	8	9	10
LP 1-										
10										
LP 11-20										
LP 21-30										
LP 31-40										
LP 41-50										
LP 51-60										
LP 61-70										
LP 71-80										
LP 81-90										
LP 91-10										

THEN				
ELSE				

1-8-1 LOGIC STATEMENT CONTROL

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR STATEMENTS

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				

LOGIC GATE NUMBER				
IF				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				

IF				
THEN				
ELSE				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				

LOGIC GATE NUMBER				
IF				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	7	20	7	10	7	20	7	10								
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MINIMUM GREEN																
DELAYED GREEN																
WALK		7		7		7		7								
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		32		34		32		34								
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	3.5	5.5	3.5	3.5	3.5	5.5	3.5	3.5								
VEHICLE EXTENSION 2																
MAX1	20	55	20	35	20	55	20	35								
MAX2	20	60	20	40	20	60	20	40								
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.7								
RED CLRANCE	1.0	2.6	1.0	2.8	2.0	2.6	1.0	2.8								
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

2-2 VEHICLE OVERLAP

OVERLAP A PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP C PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP B PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP D PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP E PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP G PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP F PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP H PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP I PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES TRAILING LEADING	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
ADVANCE GREEN																	
PHASES FLASH GREEN	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1

OVERLAP K PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES TRAILING LEADING	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
ADVANCE GREEN																	
PHASES FLASH GREEN	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1

OVERLAP J PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES TRAILING LEADING	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
ADVANCE GREEN																	
PHASES FLASH GREEN	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1

OVERLAP L PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES TRAILING LEADING	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
ADVANCE GREEN																	
PHASES FLASH GREEN	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP M PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP O PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP N PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP P PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-3 PEDESTRIAN OVERLAP

PEDESTRIAN OVERLAP CONSISTS OF PHASES																
PEDESTRIAN OVERLAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

2-4 GUARANTEED MINIMUM TIMES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
WALK																
PEDESTRIAN CLEARANCE																
YELLOW CHANGE																
RED CLEARANCE																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MINIMUM GREEN																

2-5 START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
OVERLAP																
POWER START RED									FLASH TIME							
REMOTE (AUTOMATIC) FLASH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY																
EXIT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
EXIT REMOTE FLASH									MINIMUM AUTOMATIC FLASH							
MINIMUM RECALL									CYCLE THROUGH PHASES							

2-6-1 CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT																
UNIT RED REVERT																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
GUARANTEE D PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEHICLE EXIT																

2-7 ACTUATED / PRE-TIMED MODE PHASES

ENABLE PRE-TIMED OPERATION																
FREE INPUT DISABLED PRE-TIMED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
PRE-TIMED																

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN	4			
CYCLE LENGTH (SECONDS)	100	SPLIT PATTERN		
OFFSET VALUE	59			
SPLITS IN	Per	OFFSETS IN	Per	
CROSSING ARTERY PATTERN				
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH		
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	4	
ACTUATED COORDINATION	Yes	TIMING PLAN		
ACTUATED REST IN WALK		PHASE RESERVICE		
RING SPLIT EXTENSION (SECONDS)				
SPLIT DEMAND PATTERN				
RING DISPLACEMENT				
	1	2	3	4
PREFER ENCE 1 PHASES				
PREFER ENCE 2 PHASES				

COORDINATOR PATTERN	5			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN		
OFFSET VALUE		SEQUENCE		
SPLITS IN		OFFSETS IN		
CROSSING ARTERY PATTERN				
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH		
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	5	
ACTUATED COORDINATION		TIMING PLAN		
ACTUATED REST IN WALK		PHASE RESERVICE		
RING SPLIT EXTENSION (SECONDS)				
SPLIT DEMAND PATTERN				
RING DISPLACEMENT				
	1	2	3	4
PREFER ENCE 1 PHASES				
PREFER ENCE 2 PHASES				

COORDINATOR PATTERN				
CYCLE LENGTH (SECONDS)		SPLIT PATTERN		
OFFSET VALUE		SEQUENCE		
SPLITS IN		OFFSETS IN		
CROSSING ARTERY PATTERN				
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH		
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN		
ACTUATED COORDINATION		TIMING PLAN		
ACTUATED REST IN WALK		PHASE RESERVICE		
RING SPLIT EXTENSION (SECONDS)				
SPLIT DEMAND PATTERN				
RING DISPLACEMENT				
	1	2	3	4
PREFER ENCE 1 PHASES				
PREFER ENCE 2 PHASES				

COORDINATOR PATTERN				
CYCLE LENGTH (SECONDS)		SPLIT PATTERN		
OFFSET VALUE		SEQUENCE		
SPLITS IN		OFFSETS IN		
CROSSING ARTERY PATTERN				
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH		
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN		
ACTUATED COORDINATION		TIMING PLAN		
ACTUATED REST IN WALK		PHASE RESERVICE		
RING SPLIT EXTENSION (SECONDS)				
SPLIT DEMAND PATTERN				
RING DISPLACEMENT				
	1	2	3	4
PREFER ENCE 1 PHASES				
PREFER ENCE 2 PHASES				

Per
Per

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)																								
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES											0	1			3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)																								
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES											0	1			3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)																								
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES											0	1			3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)																								
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES											0	1			3								5	
PREFERENCE 2 PHASES																								

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN															
CYCLE LENGTH (SECONDS)		SPLIT PATTERN													
OFFSET VALUE		SEQUENCE													
SPLITS IN		OFFSETS IN													
CROSSING ARTERY PATTERN															
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH													
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN													
ACTUATED COORDINATION		TIMING PLAN													
ACTUATED REST IN WALK		PHASE RESERVICE													
RING SPLIT EXTENSION (SECONDS)		1	2	3	4										
SPLIT DEMAND PATTERN															
RING DISPLACEMENT															
		1	2	3	4	5		8	9	1	1	1	1	1	1
										0	1		3		5
PREFERENCE 1 PHASES															
PREFERENCE 2 PHASES															

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	
											0	1	2	3	4	5	6
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

3-3 SPLIT PATTERN

SPLIT PATTERN NUMBER		1																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		9	53	11	27	15	47	11	27											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		2																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		12	51	12	25	12	51	12	25											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		3																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		10	53	17	20	10	53	10	27											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		4																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		12	48	12	28	12	48	12	28											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-4 AUTO PERMISSIVE MINIMUM GREEN TIME

PHASE	1	2	3	4	5	6	7	8								
MINIMUM GREEN																
PHASE	9	10	11	12	13	14	15	16								
MINIMUM GREEN																

3-5 SPLIT DEMAND

PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
DEMAND 1																	
DEMAND 2																	
DEMAND		1	2														
DETECTOR																	
CALL TIME (SECONDS)																	
CYCLE COUNT																	

PREEMPTOR SUBMENU

4-1 PREEMPTOR

PREEMPTOR NUMBER	1																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/ EXIT YELLOW /RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1			
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

PREEMPTOR NUMBER	2																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/EXIT YELLOW/RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1			
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

4-2 LOW PRIORITY PREEMPTOR SELECTION

FILTERED INPUT	SOLID	PULSING
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		3															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		4															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		5															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		6															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		7															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		8															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		9																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		10																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

TIME BASE SUBMENU

5-1 CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL ACTION PLAN	
SYNC REFERENCE TIME	
SYNC REFERENCE	
DAYLIGHT SAVINGS	
TIME RESET INPUT TIME SET	
STANDARD TIME FROM GMT	

5-2 SCHEDULE

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
		x	x	x	x	x				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	1
DAY PLAN NUMBER	2

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
	x						x			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER															
DAY PLAN NUMBER															
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE									
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER									
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT								
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10					
	11	12	13	14	15	16	17	18	19	20					
	21	22	23	24	25	26	27	28	29	30					
	31														

SCHEDULE NUMBER															
DAY PLAN NUMBER															
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE									
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER									
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT								
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10					
	11	12	13	14	15	16	17	18	19	20					
	21	22	23	24	25	26	27	28	29	30					
	31														

SCHEDULE NUMBER															
DAY PLAN NUMBER															
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE									
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER									
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT								
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10					
	11	12	13	14	15	16	17	18	19	20					
	21	22	23	24	25	26	27	28	29	30					
	31														

SCHEDULE NUMBER															
DAY PLAN NUMBER															
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE									
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER									
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT								
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10					
	11	12	13	14	15	16	17	18	19	20					
	21	22	23	24	25	26	27	28	29	30					
	31														

SCHEDULE NUMBER															
DAY PLAN NUMBER															
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE									
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER									
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT								
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10					
	11	12	13	14	15	16	17	18	19	20					
	21	22	23	24	25	26	27	28	29	30					
	31														

SCHEDULE NUMBER															
DAY PLAN NUMBER															
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE									
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER									
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT								
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10					
	11	12	13	14	15	16	17	18	19	20					
	21	22	23	24	25	26	27	28	29	30					
	31														

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

ACTION PLAN		5	
PATTERN	5	SYSTEM OVERRIDE	
VEHICLE DETECTOR PLAN		DETECTOR LOG	
FLASH			
RED REST		VEHICLE DET DIAGNOSTIC PLAN	
CONTROLLER SEQUENCE		PED DET DIAGNOSTIC PLAN	
TIMING PLAN		DIMMING ENABLE	
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1		
PED RECALL			
WALK 2			
VEH EXT 2			
VEH RECALL			
MAX RECALL			
MAX 2			
MAX 3			
CS INHIBIT			
PHASE OMIT			
SPEC FUNCTION		(1-8)	
AUX FUNCTION		(1-3)	
	1 2 3 4 5 6 7 8 9 10		
LP 1-10			
LP 11-20			
LP 21-30			
LP 31-40			
LP 41-50			
LP 51-60			
LP 61-70			
LP 71-80			
LP 81-90			
LP 91-100			

ACTION PLAN			
PATTERN		SYSTEM OVERRIDE	
VEHICLE DETECTOR PLAN		DETECTOR LOG	
FLASH			
RED REST		VEHICLE DET DIAGNOSTIC PLAN	
CONTROLLER SEQUENCE		PED DET DIAGNOSTIC PLAN	
TIMING PLAN		DIMMING ENABLE	
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1		
PED RECALL			
WALK 2			
VEH EXT 2			
VEH RECALL			
MAX RECALL			
MAX 2			
MAX 3			
CS INHIBIT			
PHASE OMIT			
SPEC FUNCTION		(1-8)	
AUX FUNCTION		(1-3)	
	1 2 3 4 5 6 7 8 9 10		
LP 1-10			
LP 11-20			
LP 21-30			
LP 31-40			
LP 41-50			
LP 51-60			
LP 61-70			
LP 71-80			
LP 81-90			
LP 91-100			

ACTION PLAN			
PATTERN		SYSTEM OVERRIDE	
VEHICLE DETECTOR PLAN		DETECTOR LOG	
FLASH			
RED REST		VEHICLE DET DIAGNOSTIC PLAN	
CONTROLLER SEQUENCE		PED DET DIAGNOSTIC PLAN	
TIMING PLAN		DIMMING ENABLE	
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1		
PED RECALL			
WALK 2			
VEH EXT 2			
VEH RECALL			
MAX RECALL			
MAX 2			
MAX 3			
CS INHIBIT			
PHASE OMIT			
SPEC FUNCTION		(1-8)	
AUX FUNCTION		(1-3)	
	1 2 3 4 5 6 7 8 9 10		
LP 1-10			
LP 11-20			
LP 21-30			
LP 31-40			
LP 41-50			
LP 51-60			
LP 61-70			
LP 71-80			
LP 81-90			
LP 91-100			

ACTION PLAN			
PATTERN		SYSTEM OVERRIDE	
VEHICLE DETECTOR PLAN		DETECTOR LOG	
FLASH			
RED REST		VEHICLE DET DIAGNOSTIC PLAN	
CONTROLLER SEQUENCE		PED DET DIAGNOSTIC PLAN	
TIMING PLAN		DIMMING ENABLE	
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1		
PED RECALL			
WALK 2			
VEH EXT 2			
VEH RECALL			
MAX RECALL			
MAX 2			
MAX 3			
CS INHIBIT			
PHASE OMIT			
SPEC FUNCTION		(1-8)	
AUX FUNCTION		(1-3)	
	1 2 3 4 5 6 7 8 9 10		
LP 1-10			
LP 11-20			
LP 21-30			
LP 31-40			
LP 41-50			
LP 51-60			
LP 61-70			
LP 71-80			
LP 81-90			
LP 91-100			

5-5 EXCEPTION DAY PROGRAM

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

DETECTORS

6-1. DETECTOR TYPE AND TS SELECT

DET	TYPE	TS1 DETECTOR
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

DET	TYPE	TS1 DETECTOR
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

6-2 VEHICLE DETECTOR SETUP

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

6-3 PHASE DETECTOR OPTIONS

PHASE DETECTOR OPTION PLAN NUMBER 1										
PHASE	1	2	3	4	5	6	7	8	9	0
DETECTOR LOCK										
VEH RECALL										
PED RECALL										
MAX RECALL										
SOFT RECALL										
NO REST										
ADD INIT CALC										

PHASE DETECTOR OPTION PLAN NUMBER 2										
PHASE	1	2	3	4	5	6	7	8	9	0
DETECTOR LOCK										
VEH RECALL										
PED RECALL										
MAX RECALL										
SOFT RECALL										
NO REST										
ADD INIT CALC										

PHASE DETECTOR OPTION PLAN NUMBER 3										
PHASE	1	2	3	4	5	6	7	8	9	0
DETECTOR LOCK										
VEH RECALL										
PED RECALL										
MAX RECALL										
SOFT RECALL										
NO REST										
ADD INIT CALC										

PHASE DETECTOR OPTION PLAN NUMBER 4										
PHASE	1	2	3	4	5	6	7	8	9	0
DETECTOR LOCK										
VEH RECALL										
PED RECALL										
MAX RECALL										
SOFT RECALL										
NO REST										
ADD INIT CALC										

6-4 PEDESTRIAN AND SYSTEM DETECTOR OPTIONS

PHASE PEDESTRIAN DETECTOR								
	1	2	3	4	5	6	7	8
PED DET INPUT								
	9	10	11	12	13	14	15	16
PED DET INPUT								
LOCAL SYSTEM DETECTOR								
	1	2	3	4	5	6	7	8
VEH DET INPUT								
	9	10	11	12	13	14	15	16
VEH DET INPUT								

6-5 LOG – SPEED DETECTOR SET UP

NTCIP LOG PERIOD								
ECPI LOG PERIOD								
LENGTH UNIT								
SPEED DETECTOR	1	2	3	4	5	6	7	8
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DETECTOR	9	10	11	12	13	14	15	16
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

6-6 VEHICLE DETECTOR DIAGNOSTICS

VEHICLE DIAGNOSTIC PLAN NUMBER					1
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					2
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

**6-6 VEHICLE DETECTOR DIAGNOSTICS
(CONTINUED)**

VEHICLE DIAGNOSTIC PLAN NUMBER					3
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					4
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

6-7 PEDESTRIAN DETECTOR DIAGNOSTICS

PED DIAGNOSTIC PLAN NUMBER 1					PED DIAGNOSTIC PLAN NUMBER 2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

PED DIAGNOSTIC PLAN NUMBER 3					PED DIAGNOSTIC PLAN NUMBER 4				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

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18. APPENDIX D: PROGRAM REFERENCE CARD

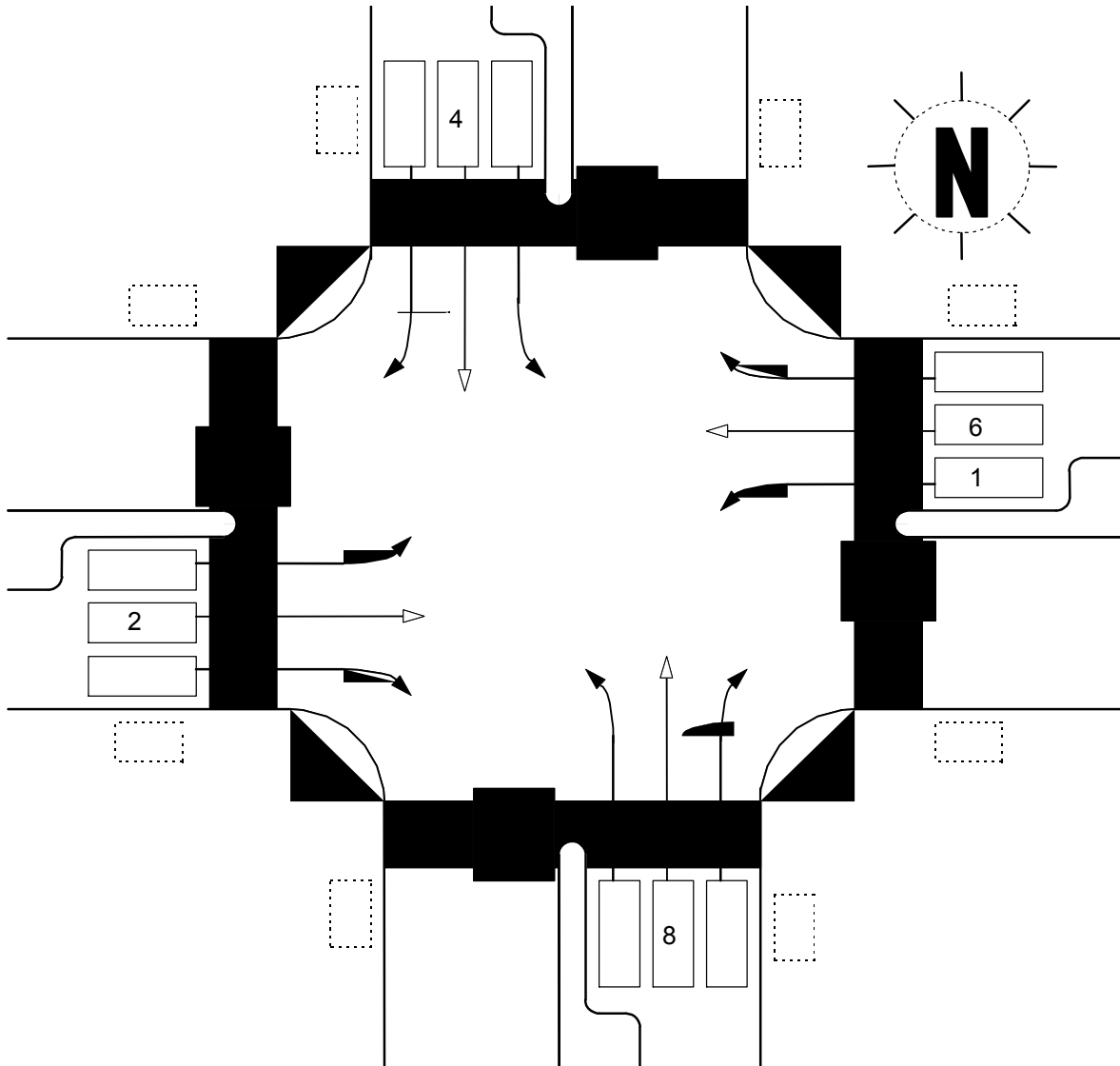
ASC/3

PROGRAM REFERENCE CARD

INTERSECTION Dundas Street & Prince Michael Drive

CONTROLLER NUMBER _____ ENTERED BY: _____ DATE 03 / 13 / 17

BOOT: _____ MAIN: _____ HELP: _____ DATA BASE _____



CONFIGURATION SUBMENU

1-1-1. PHASE RING ASSIGNMENT

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RING																

1-1-2. PHASE COMPATIBILITY

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-2. PHASES IN USE / EXCLUSIVE PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASES IN USE																
EXCLUSIVE PED																

1-1-4. BACKUP PREVENT PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-5 SIMULTANEOUS GAP

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-3. PHASE RING SEQUENCE

CONTROLLER 1			SEQUENCE 1																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 2																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 3																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 4																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 5																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 6																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 7																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 8																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-1-3. PHASE RING SEQUENCE (CONT)

CONTROLLER 1		SEQUENCE 9																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 10																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 11																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 12																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 13																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 14																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 15																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 16																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH	PHASE / OVERLAP	TYPE	DIMMING				AUTO FLASH	
			RED	YELLOW	GREEN	PHASE	COLOR	TOGETHER
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

1-4-2. MMU PROGRAM

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

1-4-1. SDLC OPTIONS

TERM & FACIL	BIU NUMBER							
	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
MMU ENABLE								
MMU STOP TIME								
DIAGNOSTIC ENABLE (TEST FIXTURE)								
CONTROLLER PEER TO PEER ENABLE								
DISABLE 3 CRITICAL RFEs LOCKUP								

1-4-3. COLOR CHECK DISABLE

DISABLE ALL COLOR CHECKS																
MMU CHANNEL	1	2	3	4	5	6	7	8								
GREEN / WALK																
YELLOW / PC																
RED / DW																
MMU CHANNEL	9	10	11	12	13	14	15	16								
GREEN / WALK																
YELLOW / PC																
RED / DW																

1-5-1 GLOBAL PORT PARAMETERS

NTCIP BACKUP TIME (SECONDS)	
PORT 2 PRIORITY	
PORT 3A PRIORITY	
PORT 3B PRIORITY	
ETHERNET PRIORITY	

1-5-1 PORT 2 (TERMINAL)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-3 PORT 3A (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
ELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-7-1 ADMINISTRATION

SUPERVISOR ACCESS CODE	
ENABLE CRC CHECK OF DATA BASE	
CRC OF PROGRAM DATA BASE	
REQUEST DOWNLOAD OF PROGRAMMED DATA	

1-7-2 DISPLAY OPTIONS

KEY CLICK ENABLE	
BACKLIGHT ENABLE	

1-5-4. PORT 3B (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-5 ETHERNET PORT CONFIGURATION

IP ADDRESS					
ADDRESS MASK					
FTP SERVER ADDRESS					
DEFAULT GATEWAY ADDRESS					

1-6-1 ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TE)	
3 CRITICAL RFE ERRORS IN 24 HOURS	
NON-CRITICAL RFE'S (DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
ACCESS	
DATA CHANGE	
CONTROLLER DOWNLOAD	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

1-8-1 LOGIC STATEMENT CONTROL

	1	2	3	4	5	6	7	8	9	10
LP 1-10										
LP 11-20										
LP 21-30										
LP 31-40										
LP 41-50										
LP 51-60										
LP 61-70										
LP 71-80										
LP 81-90										
LP 91-100										

THEN				
ELSE				

1-8-1 LOGIC STATEMENT CONTROL

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR STATEMENTS

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				

LOGIC GATE NUMBER				
IF				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				

IF				
THEN				
ELSE				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				

LOGIC GATE NUMBER				
IF				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	7	20	7	10	7	20	7	10								
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MINIMUM GREEN																
DELAYED GREEN																
WALK		7		7		7		7								
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		25		30		25		30								
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	3.5	5.5	3.5	3.5	3.5	5.5	3.5	3.5								
VEHICLE EXTENSION 2																
MAX1	20	55		35		55		35								
MAX2	20	60		40		60		40								
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	3.0	4.2		3.3		4.2		3.3								
RED CLRANCE	1.0	2.6		3.4		2.6		3.4								
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

2-2 VEHICLE OVERLAP

OVERLAP A PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP C PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP B PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP D PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP E PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP G PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP F PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP H PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP I																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
INCLUDED																			
PROTECTED																			
MODIFIER																			
PEDESTRIAN PROTECT NOT OVERLAP																			
TRAILING GREEN				TRAILING YELLOW						TRAILING RED									
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
TRAILING LEADING																			
ADVANCE GREEN																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
FLASH GREEN																			

OVERLAP K																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
INCLUDED																			
PROTECTED																			
MODIFIER																			
PEDESTRIAN PROTECT NOT OVERLAP																			
TRAILING GREEN				TRAILING YELLOW						TRAILING RED									
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
TRAILING LEADING																			
ADVANCE GREEN																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
FLASH GREEN																			

OVERLAP J																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
INCLUDED																			
PROTECTED																			
MODIFIER																			
PEDESTRIAN PROTECT NOT OVERLAP																			
TRAILING GREEN				TRAILING YELLOW						TRAILING RED									
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
TRAILING LEADING																			
ADVANCE GREEN																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
FLASH GREEN																			

OVERLAP L																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
INCLUDED																			
PROTECTED																			
MODIFIER																			
PEDESTRIAN PROTECT NOT OVERLAP																			
TRAILING GREEN				TRAILING YELLOW						TRAILING RED									
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
TRAILING LEADING																			
ADVANCE GREEN																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	
FLASH GREEN																			

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP M PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP O PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP N PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP P PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-3 PEDESTRIAN OVERLAP

PEDESTRIAN OVERLAP CONSISTS OF PHASES																
PEDESTRIAN OVERLAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

2-4 GUARANTEED MINIMUM TIMES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
WALK																
PEDESTRIAN CLEARANCE																
YELLOW CHANGE																
RED CLEARANCE																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MINIMUM GREEN																

2-5 START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
OVERLAP																
POWER START RED									FLASH TIME							
REMOTE (AUTOMATIC) FLASH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY																
EXIT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
EXIT REMOTE FLASH									MINIMUM AUTOMATIC FLASH							
MINIMUM RECALL									CYCLE THROUGH PHASES							

2-6-1 CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT																
UNIT RED REVERT																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
GUARANTEE D PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEHICLE EXIT																

2-7 ACTUATED / PRE-TIMED MODE PHASES

ENABLE PRE-TIMED OPERATION																
FREE INPUT DISABLED PRE-TIMED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
PRE-TIMED																

COORDINATOR SUBMENU

3-1 COORDINATOR OPTIONS

MANUAL PATTERN	Auto		
INTERCONNECT SOURCE	TBC	INTERCONNECT FORMAT	
TRANSITION	Smooth	ECPI COORDINATION	Yes
OFFSET REFERENCE	Lead	DWELL / ADD TIME	
DELAY COORD WALK TO LOCAL ZERO	No	FORCE OFF	Float
FORCE OFF ADDED INITIAL GREEN	No	USE PED TIME FOR SMOOTH TRANSITION	No
PEDESTRIAN RECALL	No	PEDESTRIAN RESERVICE	Yes
ENABLE MANUAL SYNC INPUT		LOCAL ZERO OVERRIDE	No
RE-SYNC COUNT	No	MAX SELECT	MaxInh
MULTISYNC	No		

3-2 COORDINATOR PATTERN

COORDINATOR PATTERN	1													
CYCLE LENGTH (SECONDS)	130	SPLIT PATTERN												
OFFSET VALUE	60	SEQUENCE												
SPLITS IN	Per	OFFSETS IN . . .												Per
CROSSING ARTERY PATTERN														
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH												
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN												1
ACTUATED COORDINATION	Yes	TIMING PLAN												
ACTUATED REST IN WALK		PHASE RESERVICE												
			1	2	3	4								
RING SPLIT EXTENSION (SECONDS)														
SPLIT DEMAND PATTERN														
RING DISPLACEMENT														
		1	2	3	4	5		8	9	1 0	1 1		1 3	1 5
PREFERENCE 1 PHASES														
PREFERENCE 2 PHASES														
SPECIAL FUNCTION		1	2	3	4	5		8						

COORDINATOR PATTERN	2													
CYCLE LENGTH (SECONDS)	120	SPLIT PATTERN												
OFFSET VALUE	66	SEQUENCE												
SPLITS IN	Per	OFFSETS IN												Per
CROSSING ARTERY PATTERN														
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH												
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN												2
ACTUATED COORDINATION	Yes	TIMING PLAN												
ACTUATED REST IN WALK		PHASE RESERVICE												
			1	2	3	4								
RING SPLIT EXTENSION (SECONDS)														
SPLIT DEMAND PATTERN														
RING DISPLACEMENT														
		1	2	3	4	5		8	9	1 0	1 1		1 3	1 5
PREFERENCE 1 PHASES														
PREFERENCE 2 PHASES														

COORDINATOR PATTERN	3													
CYCLE LENGTH (SECONDS)	130	SPLIT PATTERN												
OFFSET VALUE	75	SEQUENCE												
SPLITS IN	Per	OFFSETS IN												Per
CROSSING ARTERY PATTERN														
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH												
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN												3
ACTUATED COORDINATION	Yes	TIMING PLAN												
ACTUATED REST IN WALK		PHASE RESERVICE												
			1	2	3	4								
RING SPLIT EXTENSION (SECONDS)														
SPLIT DEMAND PATTERN														
RING DISPLACEMENT														
		1	2	3	4	5		8	9	1 0	1 1		1 3	1 5
PREFERENCE 1 PHASES														
PREFERENCE 2 PHASES														

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN	4		
CYCLE LENGTH (SECONDS)	100	SPLIT PATTERN	
OFFSET VALUE	79		
SPLITS IN	Per	OFFSETS IN	Per
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	4
ACTUATED COORDINATION	Yes	TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN	5		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	5
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

Per
Per

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1	2	3
	4	5	
		8	9
		1	1
		0	1
		1	3
		1	5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1	2	3
	4	5	
		8	9
		1	1
		0	1
		1	3
		1	5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1	2	3
	4	5	
		8	9
		1	1
		0	1
		1	3
		1	5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1	2	3
	4	5	
		8	9
		1	1
		0	1
		1	3
		1	5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9 1 1	1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5			8	9	1	1		1		1	
											0	1		3		5	
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
											0	1	2	3	4	5	6
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

3-3 SPLIT PATTERN

SPLIT PATTERN NUMBER		1																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X															
PHASE		1	2	3	4	5	6	7	8													
SPLIT VALUE		9	56	0	35	0	65	0	35													
MODE																						
PHASE		9	10	11	12	13	14	15	16													
SPLIT VALUE																						
MODE																						

SPLIT PATTERN NUMBER		2																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X															
PHASE		1	2	3	4	5	6	7	8													
SPLIT VALUE		10	52	0	38	0	62	0	38													
MODE																						
PHASE		9	10	11	12	13	14	15	16													
SPLIT VALUE																						
MODE																						

SPLIT PATTERN NUMBER		3																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X															
PHASE		1	2	3	4	5	6	7	8													
SPLIT VALUE		12	53	0	35	0	65	0	35													
MODE																						
PHASE		9	10	11	12	13	14	15	16													
SPLIT VALUE																						
MODE																						

SPLIT PATTERN NUMBER		4																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X															
PHASE		1	2	3	4	5	6	7	8													
SPLIT VALUE		11	44	0	45	0	44	0	45													
MODE																						
PHASE		9	10	11	12	13	14	15	16													
SPLIT VALUE																						
MODE																						

SPLIT PATTERN NUMBER																						
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																						
PHASE		1	2	3	4	5	6	7	8													
SPLIT VALUE																						
MODE																						
PHASE		9	10	11	12	13	14	15	16													
SPLIT VALUE																						
MODE																						

SPLIT PATTERN NUMBER																						
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																						
PHASE		1	2	3	4	5	6	7	8													
SPLIT VALUE																						
MODE																						
PHASE		9	10	11	12	13	14	15	16													
SPLIT VALUE																						
MODE																						

SPLIT PATTERN NUMBER																						
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																						
PHASE		1	2	3	4	5	6	7	8													
SPLIT VALUE																						
MODE																						
PHASE		9	10	11	12	13	14	15	16													
SPLIT VALUE																						
MODE																						

SPLIT PATTERN NUMBER																						
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																						
PHASE		1	2	3	4	5	6	7	8													
SPLIT VALUE																						
MODE																						
PHASE		9	10	11	12	13	14	15	16													
SPLIT VALUE																						
MODE																						

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-4 AUTO PERMISSIVE MINIMUM GREEN TIME

PHASE	1	2	3	4	5	6	7	8								
MINIMUM GREEN																
PHASE	9	10	11	12	13	14	15	16								
MINIMUM GREEN																

3-5 SPLIT DEMAND

PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
DEMAND 1																	
DEMAND 2																	
DEMAND		1	2														
DETECTOR																	
CALL TIME (SECONDS)																	
CYCLE COUNT																	

PREEMPTOR SUBMENU

4-1 PREEMPTOR

PREEMPTOR NUMBER	1																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/ EXIT YELLOW /RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

PREEMPTOR NUMBER	2																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/EXIT YELLOW/RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

4-2 LOW PRIORITY PREEMPTOR SELECTION

FILTERED INPUT	SOLID	PULSING
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		3																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		4																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		5																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH																		
FLASH EXIT COLOR																		
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION					EXIT TIMING PLAN													
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL													
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT													
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		6																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH																		
FLASH EXIT COLOR																		
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION					EXIT TIMING PLAN													
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL													
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT													
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		7															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		8															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		9																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		10																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

TIME BASE SUBMENU

5-1 CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL ACTION PLAN	
SYNC REFERENCE TIME	
SYNC REFERENCE	
DAYLIGHT SAVINGS	
TIME RESET INPUT TIME SET	
STANDARD TIME FROM GMT	

5-2 SCHEDULE

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	1
DAY PLAN NUMBER	2

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER										
DAY PLAN NUMBER										
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER										
DAY PLAN NUMBER										
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER										
DAY PLAN NUMBER										
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER										
DAY PLAN NUMBER										
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER										
DAY PLAN NUMBER										
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER										
DAY PLAN NUMBER										
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

ACTION PLAN		2														
PATTERN	2		SYSTEM OVERRIDE													
VEHICLE DETECTOR PLAN			DETECTOR LOG													
FLASH																
RED REST			VEHICLE DET DIAGNOSTIC PLAN													
CONTROLLER SEQUENCE			PED DET DIAGNOSTIC PLAN													
TIMING PLAN			DIMMING ENABLE													
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION										(1-8)						
AUX FUNCTION				(1-3)												
	1	2	3	4	5	6	7	8	9	10						
LP 1-10																
LP 11-20																
LP 21-30																
LP 31-40																
LP 41-50																
LP 51-60																
LP 61-70																
LP 71-80																
LP 81-90																
LP 91-100																

ACTION PLAN		3														
PATTERN	3		SYSTEM OVERRIDE													
VEHICLE DETECTOR PLAN			DETECTOR LOG													
FLASH																
RED REST			VEHICLE DET DIAGNOSTIC PLAN													
CONTROLLER SEQUENCE			PED DET DIAGNOSTIC PLAN													
TIMING PLAN			DIMMING ENABLE													
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION										(1-8)						
AUX FUNCTION				(1-3)												
	1	2	3	4	5	6	7	8	9	10						
LP 1-10																
LP 11-20																
LP 21-30																
LP 31-40																
LP 41-50																
LP 51-60																
LP 61-70																
LP 71-80																
LP 81-90																
LP 91-100																

ACTION PLAN		4														
PATTERN	4		SYSTEM OVERRIDE													
VEHICLE DETECTOR PLAN			DETECTOR LOG													
FLASH																
RED REST			VEHICLE DET DIAGNOSTIC PLAN													
CONTROLLER SEQUENCE			PED DET DIAGNOSTIC PLAN													
TIMING PLAN			DIMMING ENABLE													
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION										(1-8)						
AUX FUNCTION				(1-3)												
	1	2	3	4	5	6	7	8	9	10						
LP 1-10																
LP 11-20																
LP 21-30																
LP 31-40																
LP 41-50																
LP 51-60																
LP 61-70																
LP 71-80																
LP 81-90																
LP 91-100																

ACTION PLAN		5														
PATTERN	5		SYSTEM OVERRIDE													
VEHICLE DETECTOR PLAN			DETECTOR LOG													
FLASH																
RED REST			VEHICLE DET DIAGNOSTIC PLAN													
CONTROLLER SEQUENCE			PED DET DIAGNOSTIC PLAN													
TIMING PLAN			DIMMING ENABLE													
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION										(1-8)						
AUX FUNCTION				(1-3)												
	1	2	3	4	5	6	7	8	9	10						
LP 1-10																
LP 11-20																
LP 21-30																
LP 31-40																
LP 41-50																
LP 51-60																
LP 61-70																
LP 71-80																
LP 81-90																
LP 91-100																

ACTION PLAN		5									
PATTERN		5									
VEHICLE DETECTOR PLAN		SYSTEM OVERRIDE									
FLASH		DETECTOR LOG									
RED REST		VEHICLE DET DIAGNOSTIC PLAN									
CONTROLLER SEQUENCE		PED DET DIAGNOSTIC PLAN									
TIMING PLAN		DIMMING ENABLE									
PHASE		1	1	1	1	1	1	1	1	1	1
		1	2	3	4	5	6	7	8	9	0
PED RECALL											
WALK 2											
VEH EXT 2											
VEH RECALL											
MAX RECALL											
MAX 2											
MAX 3											
CS INHIBIT											
PHASE OMIT											
SPEC FUNCTION											(1-8)
AUX FUNCTION											(1-3)
		1	2	3	4	5	6	7	8	9	10
LP 1-10											
LP 11-20											
LP 21-30											
LP 31-40											
LP 41-50											
LP 51-60											
LP 61-70											
LP 71-80											
LP 81-90											
LP 91-100											

ACTION PLAN											
PATTERN											
VEHICLE DETECTOR PLAN		SYSTEM OVERRIDE									
FLASH		DETECTOR LOG									
RED REST		VEHICLE DET DIAGNOSTIC PLAN									
CONTROLLER SEQUENCE		PED DET DIAGNOSTIC PLAN									
TIMING PLAN		DIMMING ENABLE									
PHASE		1	1	1	1	1	1	1	1	1	1
		1	2	3	4	5	6	7	8	9	0
PED RECALL											
WALK 2											
VEH EXT 2											
VEH RECALL											
MAX RECALL											
MAX 2											
MAX 3											
CS INHIBIT											
PHASE OMIT											
SPEC FUNCTION											(1-8)
AUX FUNCTION											(1-3)
		1	2	3	4	5	6	7	8	9	10
LP 1-10											
LP 11-20											
LP 21-30											
LP 31-40											
LP 41-50											
LP 51-60											
LP 61-70											
LP 71-80											
LP 81-90											
LP 91-100											

ACTION PLAN											
PATTERN											
VEHICLE DETECTOR PLAN		SYSTEM OVERRIDE									
FLASH		DETECTOR LOG									
RED REST		VEHICLE DET DIAGNOSTIC PLAN									
CONTROLLER SEQUENCE		PED DET DIAGNOSTIC PLAN									
TIMING PLAN		DIMMING ENABLE									
PHASE		1	1	1	1	1	1	1	1	1	1
		1	2	3	4	5	6	7	8	9	0
PED RECALL											
WALK 2											
VEH EXT 2											
VEH RECALL											
MAX RECALL											
MAX 2											
MAX 3											
CS INHIBIT											
PHASE OMIT											
SPEC FUNCTION											(1-8)
AUX FUNCTION											(1-3)
		1	2	3	4	5	6	7	8	9	10
LP 1-10											
LP 11-20											
LP 21-30											
LP 31-40											
LP 41-50											
LP 51-60											
LP 61-70											
LP 71-80											
LP 81-90											
LP 91-100											

ACTION PLAN											
PATTERN											
VEHICLE DETECTOR PLAN		SYSTEM OVERRIDE									
FLASH		DETECTOR LOG									
RED REST		VEHICLE DET DIAGNOSTIC PLAN									
CONTROLLER SEQUENCE		PED DET DIAGNOSTIC PLAN									
TIMING PLAN		DIMMING ENABLE									
PHASE		1	1	1	1	1	1	1	1	1	1
		1	2	3	4	5	6	7	8	9	0
PED RECALL											
WALK 2											
VEH EXT 2											
VEH RECALL											
MAX RECALL											
MAX 2											
MAX 3											
CS INHIBIT											
PHASE OMIT											
SPEC FUNCTION											(1-8)
AUX FUNCTION											(1-3)
		1	2	3	4	5	6	7	8	9	10
LP 1-10											
LP 11-20											
LP 21-30											
LP 31-40											
LP 41-50											
LP 51-60											
LP 61-70											
LP 71-80											
LP 81-90											
LP 91-100											

5-5 EXCEPTION DAY PROGRAM

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

DETECTORS

6-1. DETECTOR TYPE AND TS SELECT

DET	TYPE	TS1 DETECTOR
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

DET	TYPE	TS1 DETECTOR
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

6-2 VEHICLE DETECTOR SETUP

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

6-3 PHASE DETECTOR OPTIONS

PHASE DETECTOR OPTION PLAN NUMBER										1						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										2						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										3						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										4						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

6-4 PEDESTRIAN AND SYSTEM DETECTOR OPTIONS

PHASE PEDESTRIAN DETECTOR								
	1	2	3	4	5	6	7	8
PED DET INPUT								
	9	10	11	12	13	14	15	16
PED DET INPUT								
LOCAL SYSTEM DETECTOR								
	1	2	3	4	5	6	7	8
VEH DET INPUT								
	9	10	11	12	13	14	15	16
VEH DET INPUT								

6-5 LOG – SPEED DETECTOR SET UP

NTCIP LOG PERIOD								
ECPI LOG PERIOD								
LENGTH UNIT								
SPEED DETECTOR	1	2	3	4	5	6	7	8
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DETECTOR	9	10	11	12	13	14	15	16
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

6-6 VEHICLE DETECTOR DIAGNOSTICS

VEHICLE DIAGNOSTIC PLAN NUMBER					1				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					33				
2					34				
3					35				
4					36				
5					37				
6					38				
7					39				
8					40				
9					41				
10					42				
11					43				
12					44				
13					45				
14					46				
15					47				
16					48				
17					49				
18					50				
19					51				
20					52				
21					53				
22					54				
23					55				
24					56				
25					57				
26					58				
27					59				
28					60				
29					61				
30					62				
31					63				
32					64				

VEHICLE DIAGNOSTIC PLAN NUMBER					2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					33				
2					34				
3					35				
4					36				
5					37				
6					38				
7					39				
8					40				
9					41				
10					42				
11					43				
12					44				
13					45				
14					46				
15					47				
16					48				
17					49				
18					50				
19					51				
20					52				
21					53				
22					54				
23					55				
24					56				
25					57				
26					58				
27					59				
28					60				
29					61				
30					62				
31					63				
32					64				

**6-6 VEHICLE DETECTOR DIAGNOSTICS
(CONTINUED)**

VEHICLE DIAGNOSTIC PLAN NUMBER					3
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					4
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

6-7 PEDESTRIAN DETECTOR DIAGNOSTICS

PED DIAGNOSTIC PLAN NUMBER 1					PED DIAGNOSTIC PLAN NUMBER 2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

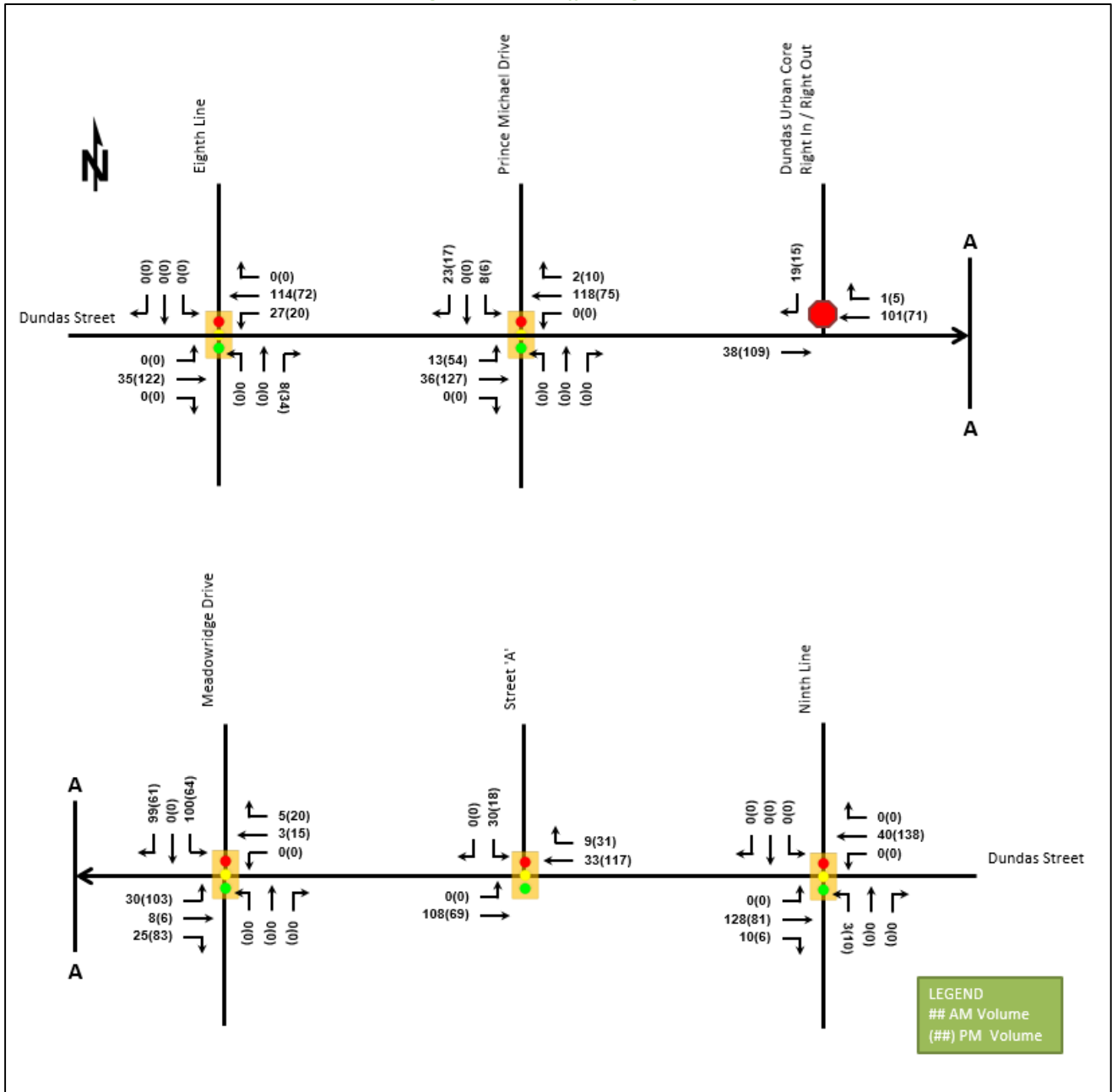
PED DIAGNOSTIC PLAN NUMBER 3					PED DIAGNOSTIC PLAN NUMBER 4				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

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Appendix C

Background Development Details

Figure 17: 2024 Traffic Assignment





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

Traffic Impact Study



Table 2 Site Trip Distribution

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

5.3 Site Trips Volumes

The estimated site trips generated by the proposed development for the 2% transit modal split scenario and the 10% transit modal split scenario, as assigned to the nearby road network for the weekday peak hours, is shown in **Figure 5** and **Figure 6**, respectively.

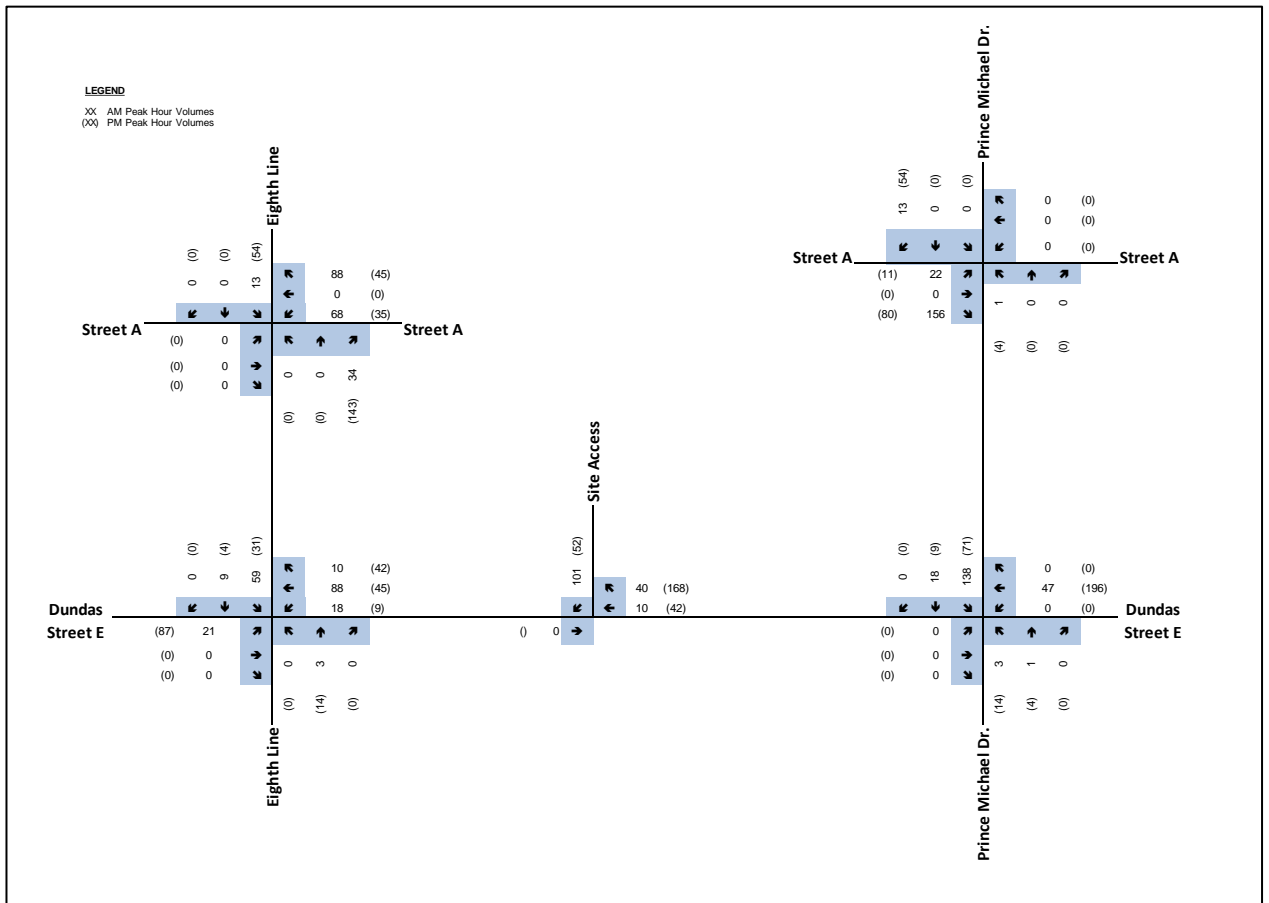


Figure 5 Site Trips with 2% Transit Modal Split



Dunoak and Bressa Draft Plans Proposed Residential Developments

Traffic Impact Study

GHD | 6705 Millcreek Drive Mississauga Ontario L5N 5M4 Canada
11194035 | 800 | Report No 2 | July 2020



Table 3 Site Trip Distribution

To/From	Road	Distribution	Inbound Route	Outbound Route
South	Ninth Line	20%	Northbound left-turn from Ninth Line onto Dundas Street E	Eastbound right-turn from Dundas Street E onto Ninth Line
East	Dundas Street East	37%	Westbound right-turn into given street from Dundas Street E	Southbound left-turn from given street onto Dundas Street E
West	Dundas Street East	43%	Eastbound left-turn into given street from Dundas Street E	Southbound right-turn from given street onto Dundas Street E
Total		100%		

The estimated site trips generated by the proposed development assigned to the adjacent road network for the weekday a.m. and p.m. peak hours are shown below in **Figure 8**.

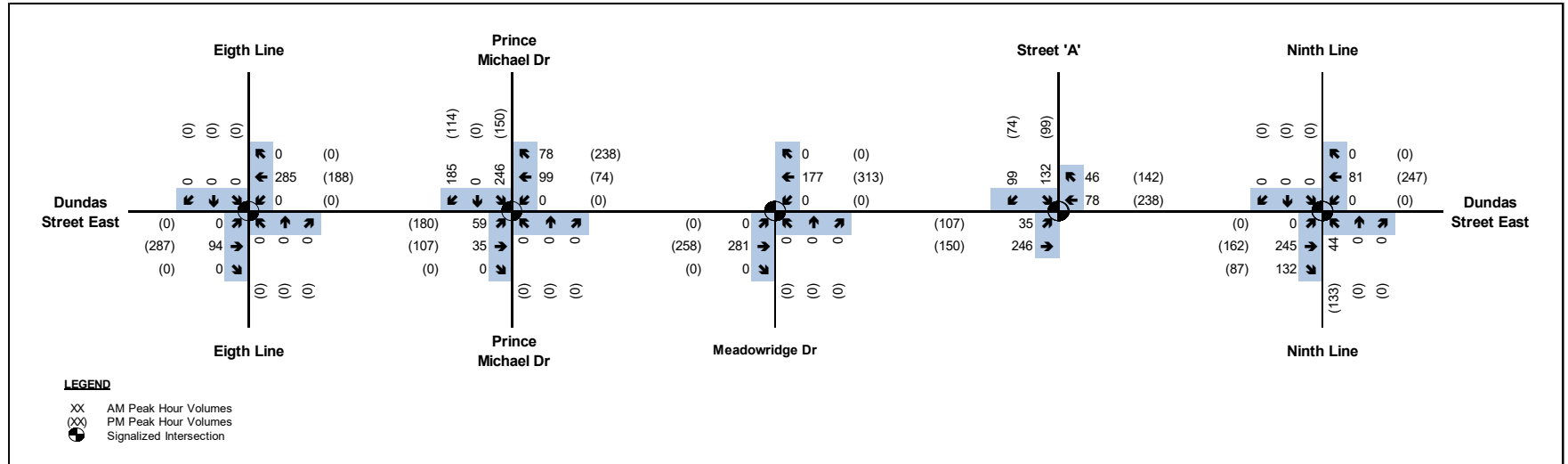
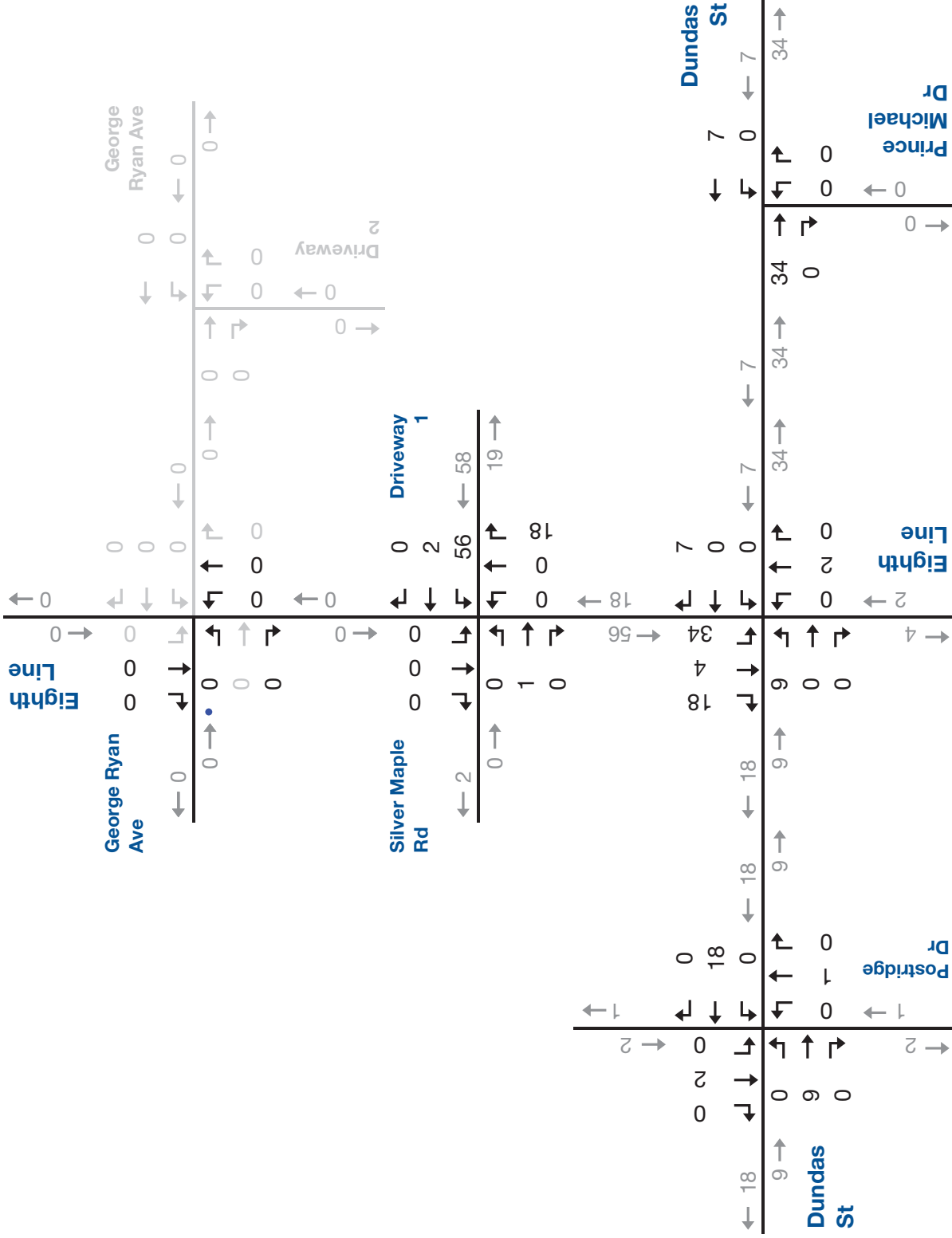
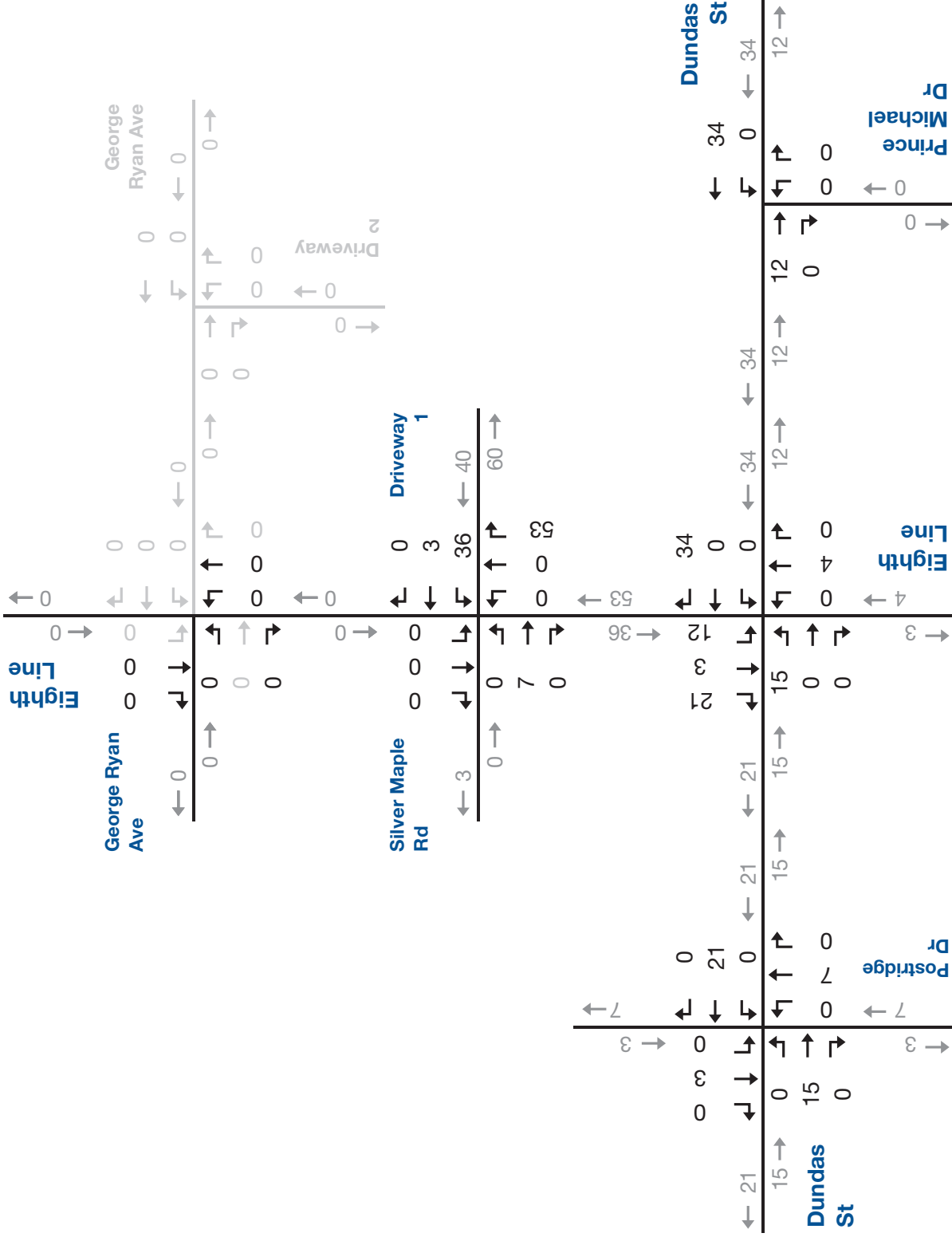


Figure 8 Site Traffic



Scenario 2 AM Peak Hour Site Generated Trip Assignment

Figure 3.3a



Scenario 2 PM Peak Hour Site Generated Trip Assignment

Figure 3.3b

Appendix D

Synchro Reports

Lanes, Volumes, Timings
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

Existing Conditions - 2022
 AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	24	7	60	209	0
Future Volume (vph)	0	24	7	60	209	0
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	0.995					
Satd. Flow (prot)	1629	0	0	1874	1883	0
Flt Permitted	0.995					
Satd. Flow (perm)	1629	0	0	1874	1883	0
Link Speed (k/h)	48			48	50	
Link Distance (m)	206.1			292.3	126.9	
Travel Time (s)	15.5			21.9	9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	24	7	60	209	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	0	67	209	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive































Existing Conditions - 2022
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	24	7	60	209	0
Future Volume (Veh/h)	0	24	7	60	209	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	24	7	60	209	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)	292					
pX, platoon unblocked						
vC, conflicting volume	283	209	209			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	283	209	209			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	99			
cM capacity (veh/h)	703	831	1362			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	24	67	209			
Volume Left	0	7	0			
Volume Right	24	0	0			
cSH	831	1362	1700			
Volume to Capacity	0.03	0.01	0.12			
Queue Length 95th (m)	0.7	0.1	0.0			
Control Delay (s)	9.5	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.5	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.9					
Intersection Capacity Utilization	21.0%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

Existing Conditions - 2022
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						  	
Traffic Volume (vph)	11	2242	119	63	1153	21	161	20	160	97	61	26
Future Volume (vph)	11	2242	119	63	1153	21	161	20	160	97	61	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	5193	1585	1825	4812	1633	1825	1830	1601	1825	1883	1633
Flt Permitted	0.181			0.060			0.717			0.744		
Satd. Flow (perm)	319	5193	1585	115	4812	1633	1377	1830	1601	1429	1883	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			67			67			120			67
Link Speed (k/h)		70			70			50				50
Link Distance (m)		651.2			600.6			206.2				292.3
Travel Time (s)		33.5			30.9			14.8				21.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Adj. Flow (vph)	11	2242	119	63	1153	21	161	20	160	97	61	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	2242	119	63	1153	21	161	20	160	97	61	26
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

Existing Conditions - 2022
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	25.0	25.0	11.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	11.7	70.2	70.2	11.7	70.2	70.2	48.1	48.1	48.1	48.1	48.1	48.1
Total Split (%)	9.0%	54.0%	54.0%	9.0%	54.0%	54.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Maximum Green (s)	7.7	63.2	63.2	7.7	63.2	63.2	41.1	41.1	41.1	41.1	41.1	41.1
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0	3.0
Recall Mode	Max	C-Min	C-Min	Max	C-Min	C-Min	Min	Min	Min	Min	Min	Min
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	100.2	65.2	65.2	100.2	65.2	65.2	23.8	23.8	23.8	23.8	23.8	23.8
Actuated g/C Ratio	0.77	0.50	0.50	0.77	0.50	0.50	0.18	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.02	0.86	0.14	0.13	0.48	0.02	0.64	0.06	0.41	0.37	0.18	0.07
Control Delay	4.6	32.8	8.5	10.9	19.3	0.0	59.8	40.9	15.9	48.9	43.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	32.8	8.5	10.9	19.3	0.0	59.8	40.9	15.9	48.9	43.6	0.4
LOS	A	C	A	B	B	A	E	D	B	D	D	A
Approach Delay		31.4			18.5			38.1			40.3	
Approach LOS		C			B			D			D	

Intersection Summary













Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 23 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 28.5 Intersection LOS: C
 Intersection Capacity Utilization 75.4% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: Eighth Line & Dundas St E



Queues
2: Eighth Line & Dundas St E

Existing Conditions - 2022
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	11	2242	119	63	1153	21	161	20	160	97	61	26
v/c Ratio	0.02	0.86	0.14	0.13	0.48	0.02	0.64	0.06	0.41	0.37	0.18	0.07
Control Delay	4.6	32.8	8.5	10.9	19.3	0.0	59.8	40.9	15.9	48.9	43.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	32.8	8.5	10.9	19.3	0.0	59.8	40.9	15.9	48.9	43.6	0.4
Queue Length 50th (m)	0.5	179.5	6.7	2.9	57.8	0.0	38.6	4.3	8.7	22.1	13.4	0.0
Queue Length 95th (m)	2.5	201.0	16.9	12.8	65.6	0.0	57.2	10.5	25.9	35.8	23.9	0.0
Internal Link Dist (m)		627.2			576.6			182.2			268.3	
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0			15.0		15.0
Base Capacity (vph)	568	2604	828	495	2413	852	467	620	622	484	638	598
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.86	0.14	0.13	0.48	0.02	0.34	0.03	0.26	0.20	0.10	0.04
Intersection Summary												

HCM Signalized Intersection Capacity Analysis
2: Eighth Line & Dundas St E

Existing Conditions - 2022
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	2242	119	63	1153	21	161	20	160	97	61	26
Future Volume (vph)	11	2242	119	63	1153	21	161	20	160	97	61	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1674	5193	1585	1825	4812	1633	1825	1830	1601	1825	1883	1633
Flt Permitted	0.18	1.00	1.00	0.06	1.00	1.00	0.72	1.00	1.00	0.74	1.00	1.00
Satd. Flow (perm)	320	5193	1585	116	4812	1633	1378	1830	1601	1430	1883	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	11	2242	119	63	1153	21	161	20	160	97	61	26
RTOR Reduction (vph)	0	0	33	0	0	10	0	0	98	0	0	21
Lane Group Flow (vph)	11	2242	86	63	1153	11	161	20	62	97	61	5
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	91.2	63.2	63.2	91.2	63.2	63.2	20.8	20.8	20.8	20.8	20.8	20.8
Effective Green, g (s)	97.2	65.2	65.2	97.2	65.2	65.2	23.8	23.8	23.8	23.8	23.8	23.8
Actuated g/C Ratio	0.75	0.50	0.50	0.75	0.50	0.50	0.18	0.18	0.18	0.18	0.18	0.18
Clearance Time (s)	4.0	7.0	7.0	4.0	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	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	562	2604	794	494	2413	819	252	335	293	261	344	298
v/s Ratio Prot	0.00	c0.43		c0.03	0.24			0.01			0.03	
v/s Ratio Perm	0.01		0.05	0.06		0.01	c0.12		0.04	0.07		0.00
v/c Ratio	0.02	0.86	0.11	0.13	0.48	0.01	0.64	0.06	0.21	0.37	0.18	0.02
Uniform Delay, d1	5.0	28.4	17.1	15.2	21.2	16.3	49.1	43.9	45.1	46.5	44.8	43.5
Progression Factor	1.00	1.00	1.00	2.13	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	4.0	0.3	0.5	0.7	0.0	5.2	0.1	0.4	0.9	0.2	0.0
Delay (s)	5.1	32.4	17.3	32.8	19.1	16.3	54.4	43.9	45.5	47.4	45.1	43.5
Level of Service	A	C	B	C	B	B	D	D	D	D	D	D
Approach Delay (s)		31.6			19.8			49.6			46.1	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			30.2				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			75.4%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

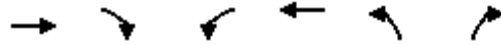
Lanes, Volumes, Timings
3: Prince Michael Dr & Dundas St E

Existing Conditions - 2022
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗
Traffic Volume (vph)	2407	113	62	1094	113	181
Future Volume (vph)	2407	113	62	1094	113	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		55.0	125.0		50.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5193	1570	1825	4725	1807	1617
Flt Permitted			0.044		0.950	
Satd. Flow (perm)	5193	1570	85	4725	1807	1617
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		57				169
Link Speed (k/h)	70			70	50	
Link Distance (m)	600.6			587.4	203.4	
Travel Time (s)	30.9			30.2	14.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	0%	11%	1%	1%
Adj. Flow (vph)	2407	113	62	1094	113	181
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2407	113	62	1094	113	181
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		

Lanes, Volumes, Timings
3: Prince Michael Dr & Dundas St E

Existing Conditions - 2022
AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	20.0	20.0	7.0	20.0	10.0	10.0
Minimum Split (s)	25.2	25.2	11.5	25.2	22.5	22.5
Total Split (s)	68.9	68.9	15.6	84.5	45.5	45.5
Total Split (%)	53.0%	53.0%	12.0%	65.0%	35.0%	35.0%
Maximum Green (s)	63.7	63.7	11.6	79.3	41.2	41.2
Yellow Time (s)	4.2	4.2	3.0	4.2	3.3	3.3
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.2	-0.2	-3.0	-0.2	-3.3	0.0
Total Lost Time (s)	5.0	5.0	1.0	5.0	1.0	4.3
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	5.5	5.5	3.5	5.5	3.5	3.5
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	97.3	97.3	110.5	106.5	17.5	14.2
Actuated g/C Ratio	0.75	0.75	0.85	0.82	0.13	0.11
v/c Ratio	0.62	0.10	0.30	0.28	0.47	0.55
Control Delay	2.4	0.4	10.6	3.2	57.5	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.4	0.4	10.6	3.2	57.5	15.9
LOS	A	A	B	A	E	B
Approach Delay	2.3			3.6	31.9	
Approach LOS	A			A	C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 60 (46%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 4.9
 Intersection Capacity Utilization 67.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
3: Prince Michael Dr & Dundas St E

Existing Conditions - 2022
AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2407	113	62	1094	113	181
v/c Ratio	0.62	0.10	0.30	0.28	0.47	0.55
Control Delay	2.4	0.4	10.6	3.2	57.5	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.4	0.4	10.6	3.2	57.5	15.9
Queue Length 50th (m)	16.5	0.3	1.8	19.0	27.2	2.8
Queue Length 95th (m)	21.3	m0.7	11.7	29.3	44.2	23.4
Internal Link Dist (m)	576.6			563.4	179.4	
Turn Bay Length (m)		55.0	125.0		50.0	
Base Capacity (vph)	3886	1189	267	3869	618	627
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.10	0.23	0.28	0.18	0.29

Intersection Summary

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







HCM Signalized Intersection Capacity Analysis
3: Prince Michael Dr & Dundas St E

Existing Conditions - 2022
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↑
Traffic Volume (vph)	2407	113	62	1094	113	181
Future Volume (vph)	2407	113	62	1094	113	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	1.0	5.0	1.0	4.3
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5193	1570	1825	4725	1807	1617
Flt Permitted	1.00	1.00	0.04	1.00	0.95	1.00
Satd. Flow (perm)	5193	1570	84	4725	1807	1617
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2407	113	62	1094	113	181
RTOR Reduction (vph)	0	15	0	0	0	151
Lane Group Flow (vph)	2407	98	62	1094	113	30
Heavy Vehicles (%)	1%	4%	0%	11%	1%	1%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Actuated Green, G (s)	96.3	96.3	106.3	106.3	14.2	14.2
Effective Green, g (s)	96.5	96.5	109.3	106.5	17.5	14.2
Actuated g/C Ratio	0.74	0.74	0.84	0.82	0.13	0.11
Clearance Time (s)	5.2	5.2	4.0	5.2	4.3	4.3
Vehicle Extension (s)	5.5	5.5	3.5	5.5	3.5	3.5
Lane Grp Cap (vph)	3854	1165	191	3870	243	176
v/s Ratio Prot	c0.46		c0.02	0.23		
v/s Ratio Perm		0.06	0.25		c0.06	0.02
v/c Ratio	0.62	0.08	0.32	0.28	0.47	0.17
Uniform Delay, d1	8.0	4.6	8.2	2.8	51.9	52.6
Progression Factor	0.23	0.11	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	1.2	0.2	1.7	0.6
Delay (s)	2.3	0.6	9.4	2.9	53.6	53.1
Level of Service	A	A	A	A	D	D
Approach Delay (s)	2.2			3.3	53.3	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			6.3		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.59			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	10.3
Intersection Capacity Utilization			67.4%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

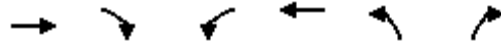
Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

Existing Conditions - 2022
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↑↑
Traffic Volume (vph)	2550	51	94	1166	53	281
Future Volume (vph)	2550	51	94	1166	53	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		60.0	135.0		25.0	0.0
Storage Lanes		1	1		1	2
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5193	1601	1807	4812	1789	2874
Flt Permitted			0.059		0.950	
Satd. Flow (perm)	5193	1601	112	4812	1789	2874
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		27				260
Link Speed (k/h)	70			70	50	
Link Distance (m)	587.4			404.7	240.3	
Travel Time (s)	30.2			20.8	17.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	9%	2%	0%
Adj. Flow (vph)	2550	51	94	1166	53	281
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2550	51	94	1166	53	281
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

Existing Conditions - 2022
AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	20.0	20.0	7.0	20.0	10.0	10.0
Minimum Split (s)	26.7	26.7	11.0	26.7	25.0	25.0
Total Split (s)	70.0	70.0	14.0	85.0	46.0	46.0
Total Split (%)	53.4%	53.4%	10.7%	64.9%	35.1%	35.1%
Maximum Green (s)	63.3	63.3	10.0	78.3	39.1	39.1
Yellow Time (s)	4.2	4.2	3.0	4.2	3.3	3.3
All-Red Time (s)	2.5	2.5	1.0	2.5	3.6	3.6
Lost Time Adjust (s)	-1.7	-1.7	-3.0	-1.7	-1.9	-1.9
Total Lost Time (s)	5.0	5.0	1.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	Max	C-Max	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	66.0	66.0	112.4	108.4	12.6	12.6
Actuated g/C Ratio	0.50	0.50	0.86	0.83	0.10	0.10
v/c Ratio	0.97	0.06	0.15	0.29	0.31	0.55
Control Delay	44.4	9.6	5.8	2.8	59.9	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	9.6	5.8	2.8	59.9	12.8
LOS	D	A	A	A	E	B
Approach Delay	43.8			3.0	20.3	
Approach LOS	D			A	C	

Intersection Summary

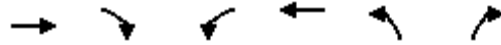
Area Type: Other
 Cycle Length: 131
 Actuated Cycle Length: 131
 Offset: 70 (53%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 29.7
 Intersection LOS: C
 Intersection Capacity Utilization 75.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 4: Meadowridge Dr & Dundas St E



4: Meadowridge Dr & Dundas St E

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2550	51	94	1166	53	281
v/c Ratio	0.97	0.06	0.15	0.29	0.31	0.55
Control Delay	44.4	9.6	5.8	2.8	59.9	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	9.6	5.8	2.8	59.9	12.8
Queue Length 50th (m)	228.8	3.0	2.5	18.9	13.1	2.8
Queue Length 95th (m)	#270.9	9.8	13.3	26.1	25.7	16.9
Internal Link Dist (m)	563.4			380.7	216.3	
Turn Bay Length (m)		60.0	135.0		25.0	
Base Capacity (vph)	2616	820	631	3981	559	1078
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.06	0.15	0.29	0.09	0.26







Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
4: Meadowridge Dr & Dundas St E

Existing Conditions - 2022
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↑↑
Traffic Volume (vph)	2550	51	94	1166	53	281
Future Volume (vph)	2550	51	94	1166	53	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	1.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5193	1601	1807	4812	1789	2874
Flt Permitted	1.00	1.00	0.06	1.00	0.95	1.00
Satd. Flow (perm)	5193	1601	111	4812	1789	2874
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2550	51	94	1166	53	281
RTOR Reduction (vph)	0	13	0	0	0	235
Lane Group Flow (vph)	2550	38	94	1166	53	46
Heavy Vehicles (%)	1%	2%	1%	9%	2%	0%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Actuated Green, G (s)	64.3	64.3	106.7	106.7	10.7	10.7
Effective Green, g (s)	66.0	66.0	109.7	108.4	12.6	12.6
Actuated g/C Ratio	0.50	0.50	0.84	0.83	0.10	0.10
Clearance Time (s)	6.7	6.7	4.0	6.7	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2616	806	628	3981	172	276
v/s Ratio Prot	c0.49		0.05	c0.24		
v/s Ratio Perm		0.02	0.08		c0.03	0.02
v/c Ratio	0.97	0.05	0.15	0.29	0.31	0.17
Uniform Delay, d1	31.7	16.5	18.4	2.6	55.1	54.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.6	0.1	0.5	0.2	1.0	0.3
Delay (s)	44.3	16.6	18.9	2.8	56.2	54.7
Level of Service	D	B	B	A	E	D
Approach Delay (s)	43.7			4.0	54.9	
Approach LOS	D			A	D	
Intersection Summary						
HCM 2000 Control Delay			32.7		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			131.0		Sum of lost time (s)	12.9
Intersection Capacity Utilization			75.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

Existing Conditions - 2022
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	2805	1200	46	131	74
Future Volume (vph)	26	2805	1200	46	131	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0			70.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	75.0				2.5	
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	5142	5142	1601	1789	1601
Flt Permitted	0.212				0.950	
Satd. Flow (perm)	399	5142	5142	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				46		74
Link Speed (k/h)		70	70		50	
Link Distance (m)		404.7	451.7		165.6	
Travel Time (s)		20.8	23.2		11.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	2805	1200	46	131	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	2805	1200	46	131	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

Existing Conditions - 2022
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	106.0	106.0	106.0	106.0	24.0	24.0
Total Split (%)	81.5%	81.5%	81.5%	81.5%	18.5%	18.5%
Maximum Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.15	0.15
v/c Ratio	0.08	0.70	0.30	0.04	0.49	0.24
Control Delay	4.0	8.0	2.4	0.4	57.6	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	8.0	2.4	0.4	57.6	12.6
LOS	A	A	A	A	E	B
Approach Delay		8.0	2.3		41.4	
Approach LOS		A	A		D	

Intersection Summary

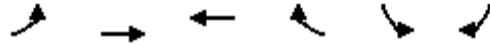
Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 8.0
 Intersection LOS: A
 Intersection Capacity Utilization 69.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 5: Dundas St E & William Cutmore Blvd



Queues
5: Dundas St E & William Cutmore Blvd

Existing Conditions - 2022
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	26	2805	1200	46	131	74
v/c Ratio	0.08	0.70	0.30	0.04	0.49	0.24
Control Delay	4.0	8.0	2.4	0.4	57.6	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	8.0	2.4	0.4	57.6	12.6
Queue Length 50th (m)	1.3	107.4	12.6	0.3	31.2	0.0
Queue Length 95th (m)	3.6	119.3	16.7	m0.2	51.6	13.5
Internal Link Dist (m)		380.7	427.7		141.6	
Turn Bay Length (m)	80.0			70.0		
Base Capacity (vph)	311	4014	4014	1260	268	303
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.70	0.30	0.04	0.49	0.24

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
5: Dundas St E & William Cutmore Blvd

Existing Conditions - 2022
AM Peak Hour

































Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑↑↑	↑↑↑	↘	↙	↘
Traffic Volume (vph)	26	2805	1200	46	131	74
Future Volume (vph)	26	2805	1200	46	131	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1789	5142	5142	1601	1789	1601
Flt Permitted	0.21	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	400	5142	5142	1601	1789	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	2805	1200	46	131	74
RTOR Reduction (vph)	0	0	0	10	0	63
Lane Group Flow (vph)	26	2805	1200	36	131	11
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	101.5	101.5	101.5	101.5	19.5	19.5
Effective Green, g (s)	101.5	101.5	101.5	101.5	19.5	19.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	4014	4014	1250	268	240
v/s Ratio Prot		c0.55	0.23		c0.07	
v/s Ratio Perm	0.07			0.02		0.01
v/c Ratio	0.08	0.70	0.30	0.03	0.49	0.05
Uniform Delay, d1	3.3	6.9	4.1	3.2	50.7	47.3
Progression Factor	1.00	1.00	0.55	0.44	1.00	1.00
Incremental Delay, d2	0.5	1.0	0.2	0.0	6.3	0.4
Delay (s)	3.9	7.9	2.4	1.4	56.9	47.7
Level of Service	A	A	A	A	E	D
Approach Delay (s)		7.9	2.4		53.6	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

Existing Conditions - 2022
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	230	2350	378	127	942	129	199	332	162	193	551	103
Future Volume (vph)	230	2350	378	127	942	129	199	332	162	193	551	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	5193	1633	1789	4812	1633	1630	3579	1585	1825	3650	1633
Flt Permitted	0.239			0.062			0.211			0.432		
Satd. Flow (perm)	459	5193	1633	117	4812	1633	362	3579	1585	830	3650	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			197			130			160			128
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		451.7			295.5			522.7			348.2	
Travel Time (s)		23.2			15.2			37.6			25.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	2%	9%	0%	12%	2%	3%	0%	0%	0%
Adj. Flow (vph)	230	2350	378	127	942	129	199	332	162	193	551	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	230	2350	378	127	942	129	199	332	162	193	551	103
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

Existing Conditions - 2022
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	12.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	20.0	69.0	69.0	12.0	61.0	61.0	14.0	35.0	35.0	14.0	35.0	35.0
Total Split (%)	15.4%	53.1%	53.1%	9.2%	46.9%	46.9%	10.8%	26.9%	26.9%	10.8%	26.9%	26.9%
Maximum Green (s)	16.0	62.7	62.7	8.0	54.7	54.7	10.0	28.5	28.5	10.0	28.5	28.5
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	83.3	67.1	67.1	78.2	62.9	62.9	43.7	26.7	26.7	43.7	26.7	26.7
Actuated g/C Ratio	0.64	0.52	0.52	0.60	0.48	0.48	0.34	0.21	0.21	0.34	0.21	0.21
v/c Ratio	0.51	0.88	0.40	0.59	0.40	0.15	0.80	0.45	0.36	0.51	0.73	0.24
Control Delay	13.8	26.0	8.5	35.2	23.0	3.9	56.2	46.8	8.6	35.8	54.4	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	26.0	8.5	35.2	23.0	3.9	56.2	46.8	8.6	35.8	54.4	4.8
LOS	B	C	A	D	C	A	E	D	A	D	D	A
Approach Delay		22.9			22.3			40.6			44.1	
Approach LOS		C			C			D			D	

Intersection Summary













Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 28.0 Intersection LOS: C
 Intersection Capacity Utilization 93.7% ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Dundas St E



Queues
6: Ninth Line & Dundas St E

Existing Conditions - 2022
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	230	2350	378	127	942	129	199	332	162	193	551	103
v/c Ratio	0.51	0.88	0.40	0.59	0.40	0.15	0.80	0.45	0.36	0.51	0.73	0.24
Control Delay	13.8	26.0	8.5	35.2	23.0	3.9	56.2	46.8	8.6	35.8	54.4	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	26.0	8.5	35.2	23.0	3.9	56.2	46.8	8.6	35.8	54.4	4.8
Queue Length 50th (m)	22.1	140.9	19.7	14.6	56.4	0.0	37.4	39.1	0.4	35.6	69.2	0.0
Queue Length 95th (m)	37.5	162.3	33.3	37.9	73.8	11.1	#59.4	52.5	17.8	53.6	87.1	9.0
Internal Link Dist (m)		427.7			271.5			498.7			324.2	
Turn Bay Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Base Capacity (vph)	493	2678	937	217	2329	857	248	825	488	378	842	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.88	0.40	0.59	0.40	0.15	0.80	0.40	0.33	0.51	0.65	0.22

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
6: Ninth Line & Dundas St E

Existing Conditions - 2022
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	2350	378	127	942	129	199	332	162	193	551	103
Future Volume (vph)	230	2350	378	127	942	129	199	332	162	193	551	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1825	5193	1633	1789	4812	1633	1630	3579	1585	1825	3650	1633
Flt Permitted	0.24	1.00	1.00	0.06	1.00	1.00	0.21	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	458	5193	1633	116	4812	1633	362	3579	1585	830	3650	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	230	2350	378	127	942	129	199	332	162	193	551	103
RTOR Reduction (vph)	0	0	95	0	0	66	0	0	127	0	0	82
Lane Group Flow (vph)	230	2350	283	127	942	63	199	332	35	193	551	21
Heavy Vehicles (%)	0%	1%	0%	2%	9%	0%	12%	2%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	78.0	65.8	65.8	69.9	61.7	61.7	35.2	25.2	25.2	35.2	25.2	25.2
Effective Green, g (s)	81.0	67.1	67.1	75.9	63.0	63.0	41.2	26.7	26.7	41.2	26.7	26.7
Actuated g/C Ratio	0.62	0.52	0.52	0.58	0.48	0.48	0.32	0.21	0.21	0.32	0.21	0.21
Clearance Time (s)	4.0	6.3	6.3	4.0	6.3	6.3	4.0	6.5	6.5	4.0	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	3.0	3.0
Lane Grp Cap (vph)	446	2680	842	211	2331	791	241	735	325	362	749	335
v/s Ratio Prot	c0.06	c0.45		c0.05	0.20		c0.08	0.09		0.05	c0.15	
v/s Ratio Perm	0.26		0.17	0.30		0.04	0.18		0.02	0.12		0.01
v/c Ratio	0.52	0.88	0.34	0.60	0.40	0.08	0.83	0.45	0.11	0.53	0.74	0.06
Uniform Delay, d1	11.5	27.8	18.4	27.0	21.5	18.0	35.7	45.2	42.0	34.1	48.3	41.6
Progression Factor	1.06	0.79	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	3.2	0.8	4.8	0.5	0.2	20.1	0.4	0.1	1.5	3.8	0.1
Delay (s)	13.0	25.1	15.9	31.7	22.0	18.1	55.8	45.7	42.1	35.6	52.1	41.7
Level of Service	B	C	B	C	C	B	E	D	D	D	D	D
Approach Delay (s)		23.0			22.6			47.7			47.1	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			29.5	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			130.0	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			93.7%	ICU Level of Service				F				
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

Existing Conditions - 2022
 PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	15	26	139	74	0
Future Volume (vph)	0	15	26	139	74	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.865					
Fl _t Protected	0.992					
Satd. Flow (prot)	1629	0	0	1868	1883	0
Fl _t Permitted	0.992					
Satd. Flow (perm)	1629	0	0	1868	1883	0
Link Speed (k/h)	48			48	50	
Link Distance (m)	195.4			292.3	127.0	
Travel Time (s)	14.7			21.9	9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	15	26	139	74	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	165	74	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.4%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive





























Existing Conditions - 2022
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	15	26	139	74	0
Future Volume (Veh/h)	0	15	26	139	74	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	15	26	139	74	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)	292					
pX, platoon unblocked						
vC, conflicting volume	265	74	74			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	265	74	74			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	98			
cM capacity (veh/h)	712	988	1526			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	15	165	74			
Volume Left	0	26	0			
Volume Right	15	0	0			
cSH	988	1526	1700			
Volume to Capacity	0.02	0.02	0.04			
Queue Length 95th (m)	0.4	0.4	0.0			
Control Delay (s)	8.7	1.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.7	1.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			25.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

Existing Conditions - 2022
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	9	1396	192	191	2595	73	174	30	118	35	13	10
Future Volume (vph)	9	1396	192	191	2595	73	174	30	118	35	13	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	5092	1601	1825	5193	1633	1807	1865	1633	1825	1921	1633
Flt Permitted	0.047			0.148			0.749			0.738		
Satd. Flow (perm)	90	5092	1601	284	5193	1633	1425	1865	1633	1418	1921	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154			65			118			63
Link Speed (k/h)		70			70			50				50
Link Distance (m)		651.2			600.6			206.2				292.3
Travel Time (s)		33.5			30.9			14.8				21.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Adj. Flow (vph)	9	1396	192	191	2595	73	174	30	118	35	13	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1396	192	191	2595	73	174	30	118	35	13	10
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

Existing Conditions - 2022
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	14.5	37.7	37.7	11.5	37.7	37.7	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	12.0	70.0	70.0	16.0	74.0	74.0	48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	9.0%	52.2%	52.2%	11.9%	55.2%	55.2%	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%
Maximum Green (s)	8.0	63.3	63.3	12.0	67.3	67.3	41.0	41.0	41.0	41.0	41.0	41.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-1.7	-1.7	-3.0	-1.7	-1.7	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5	3.5	3.5	3.5	3.5
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	98.4	84.4	84.4	103.6	97.4	97.4	25.4	25.4	25.4	25.4	25.4	25.4
Actuated g/C Ratio	0.73	0.63	0.63	0.77	0.73	0.73	0.19	0.19	0.19	0.19	0.19	0.19
v/c Ratio	0.05	0.44	0.18	0.50	0.69	0.06	0.64	0.08	0.29	0.13	0.04	0.03
Control Delay	5.8	14.5	4.0	9.2	12.9	2.7	60.4	42.1	8.7	43.3	40.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	14.5	4.0	9.2	12.9	2.7	60.4	42.1	8.7	43.3	40.7	0.1
LOS	A	B	A	A	B	A	E	D	A	D	D	A
Approach Delay		13.2			12.4			39.8			35.3	
Approach LOS		B			B			D			D	

Intersection Summary













Area Type: Other
 Cycle Length: 134
 Actuated Cycle Length: 134
 Offset: 3 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 14.7
 Intersection LOS: B
 Intersection Capacity Utilization 83.1%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 2: Eighth Line & Dundas St E



Queues
2: Eighth Line & Dundas St E

Existing Conditions - 2022
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	9	1396	192	191	2595	73	174	30	118	35	13	10
v/c Ratio	0.05	0.44	0.18	0.50	0.69	0.06	0.64	0.08	0.29	0.13	0.04	0.03
Control Delay	5.8	14.5	4.0	9.2	12.9	2.7	60.4	42.1	8.7	43.3	40.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	14.5	4.0	9.2	12.9	2.7	60.4	42.1	8.7	43.3	40.7	0.1
Queue Length 50th (m)	0.5	63.7	3.5	11.0	113.6	0.5	43.0	6.6	0.0	7.8	2.9	0.0
Queue Length 95th (m)	2.3	99.7	16.7	23.1	214.7	7.0	62.0	14.2	14.9	16.1	8.1	0.0
Internal Link Dist (m)		627.2			576.6			182.2			268.3	
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0			15.0		15.0
Base Capacity (vph)	209	3205	1065	406	3774	1204	467	612	615	465	630	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.44	0.18	0.47	0.69	0.06	0.37	0.05	0.19	0.08	0.02	0.02
Intersection Summary												

HCM Signalized Intersection Capacity Analysis
2: Eighth Line & Dundas St E

Existing Conditions - 2022
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	1396	192	191	2595	73	174	30	118	35	13	10
Future Volume (vph)	9	1396	192	191	2595	73	174	30	118	35	13	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1825	5092	1601	1825	5193	1633	1807	1865	1633	1825	1921	1633
Flt Permitted	0.05	1.00	1.00	0.15	1.00	1.00	0.75	1.00	1.00	0.74	1.00	1.00
Satd. Flow (perm)	90	5092	1601	285	5193	1633	1425	1865	1633	1417	1921	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	1396	192	191	2595	73	174	30	118	35	13	10
RTOR Reduction (vph)	0	0	57	0	0	19	0	0	96	0	0	8
Lane Group Flow (vph)	9	1396	135	191	2595	54	174	30	22	35	13	2
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	84.1	82.7	82.7	97.9	92.5	92.5	22.4	22.4	22.4	22.4	22.4	22.4
Effective Green, g (s)	90.1	84.4	84.4	100.9	94.2	94.2	25.4	25.4	25.4	25.4	25.4	25.4
Actuated g/C Ratio	0.67	0.63	0.63	0.75	0.70	0.70	0.19	0.19	0.19	0.19	0.19	0.19
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Grp Cap (vph)	117	3207	1008	377	3650	1147	270	353	309	268	364	309
v/s Ratio Prot	0.00	0.27		c0.05	c0.50			0.02			0.01	
v/s Ratio Perm	0.05		0.08	0.33		0.03	c0.12		0.01	0.02		0.00
v/c Ratio	0.08	0.44	0.13	0.51	0.71	0.05	0.64	0.08	0.07	0.13	0.04	0.01
Uniform Delay, d1	10.8	12.6	10.0	6.6	11.8	6.1	50.1	44.7	44.6	45.1	44.3	44.1
Progression 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
Incremental Delay, d2	0.3	0.4	0.3	1.3	1.2	0.1	5.4	0.1	0.1	0.3	0.0	0.0
Delay (s)	11.1	13.1	10.3	7.9	13.0	6.2	55.6	44.9	44.7	45.4	44.4	44.1
Level of Service	B	B	B	A	B	A	E	D	D	D	D	D
Approach Delay (s)		12.7			12.5			50.6			44.9	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			15.5		HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			134.0		Sum of lost time (s)			10.0				
Intersection Capacity Utilization			83.1%		ICU Level of Service			E				
Analysis Period (min)			15									
c Critical Lane Group												

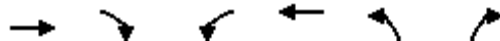
Lanes, Volumes, Timings
3: Prince Michael Dr & Dundas St E

Existing Conditions - 2022
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗
Traffic Volume (vph)	1403	159	240	2700	161	90
Future Volume (vph)	1403	159	240	2700	161	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		55.0	125.0		50.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5092	1601	1825	5193	1825	1633
Flt Permitted			0.151		0.950	
Satd. Flow (perm)	5092	1601	290	5193	1825	1633
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		137				90
Link Speed (k/h)	70			70	50	
Link Distance (m)	600.6			587.4	203.4	
Travel Time (s)	30.9			30.2	14.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	0%	1%	0%	0%
Adj. Flow (vph)	1403	159	240	2700	161	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1403	159	240	2700	161	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		

Lanes, Volumes, Timings
3: Prince Michael Dr & Dundas St E

Existing Conditions - 2022
PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	20.0	20.0	7.0	20.0	10.0	10.0
Minimum Split (s)	26.8	26.8	11.5	26.8	24.9	24.9
Total Split (s)	69.0	69.0	16.0	85.0	46.0	46.0
Total Split (%)	52.7%	52.7%	12.2%	64.9%	35.1%	35.1%
Maximum Green (s)	62.2	62.2	12.0	78.2	39.1	39.1
Yellow Time (s)	4.2	4.2	3.0	4.2	3.5	3.5
All-Red Time (s)	2.6	2.6	1.0	2.6	3.4	3.4
Lost Time Adjust (s)	-1.8	-1.8	-3.0	-1.8	-1.9	-1.9
Total Lost Time (s)	5.0	5.0	1.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	85.6	85.6	106.1	102.1	18.9	18.9
Actuated g/C Ratio	0.65	0.65	0.81	0.78	0.14	0.14
v/c Ratio	0.42	0.15	0.58	0.67	0.61	0.29
Control Delay	12.4	3.1	13.3	10.8	62.1	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	3.1	13.3	10.8	62.1	11.4
LOS	B	A	B	B	E	B
Approach Delay	11.4			11.0	43.9	
Approach LOS	B			B	D	

Intersection Summary

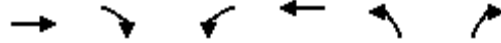
Area Type: Other
 Cycle Length: 131
 Actuated Cycle Length: 131
 Offset: 11.8 (9%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 12.9
 Intersection LOS: B
 Intersection Capacity Utilization 69.4%
 ICU Level of Service C
 Analysis Period (min) 15

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



Queues
3: Prince Michael Dr & Dundas St E

Existing Conditions - 2022
PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1403	159	240	2700	161	90
v/c Ratio	0.42	0.15	0.58	0.67	0.61	0.29
Control Delay	12.4	3.1	13.3	10.8	62.1	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	3.1	13.3	10.8	62.1	11.4
Queue Length 50th (m)	58.5	1.8	20.2	119.5	39.6	0.0
Queue Length 95th (m)	90.0	12.2	44.0	192.0	59.2	14.3
Internal Link Dist (m)	576.6			563.4	179.4	
Turn Bay Length (m)		55.0	125.0		50.0	
Base Capacity (vph)	3327	1093	434	4049	571	572
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.15	0.55	0.67	0.28	0.16
Intersection Summary						







HCM Signalized Intersection Capacity Analysis
3: Prince Michael Dr & Dundas St E

Existing Conditions - 2022
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↑
Traffic Volume (vph)	1403	159	240	2700	161	90
Future Volume (vph)	1403	159	240	2700	161	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	1.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5092	1601	1825	5193	1825	1633
Flt Permitted	1.00	1.00	0.15	1.00	0.95	1.00
Satd. Flow (perm)	5092	1601	290	5193	1825	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1403	159	240	2700	161	90
RTOR Reduction (vph)	0	47	0	0	0	77
Lane Group Flow (vph)	1403	112	240	2700	161	13
Heavy Vehicles (%)	3%	2%	0%	1%	0%	0%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Actuated Green, G (s)	83.8	83.8	100.3	100.3	17.0	17.0
Effective Green, g (s)	85.6	85.6	103.3	102.1	18.9	18.9
Actuated g/C Ratio	0.65	0.65	0.79	0.78	0.14	0.14
Clearance Time (s)	6.8	6.8	4.0	6.8	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3327	1046	410	4047	263	235
v/s Ratio Prot	0.28		0.07	c0.52		
v/s Ratio Perm		0.07	0.39		c0.09	0.01
v/c Ratio	0.42	0.11	0.59	0.67	0.61	0.06
Uniform Delay, d1	10.9	8.5	5.9	6.6	52.6	48.3
Progression Factor	1.00	1.00	1.71	1.40	1.00	1.00
Incremental Delay, d2	0.4	0.2	1.6	0.7	4.2	0.1
Delay (s)	11.3	8.7	11.6	10.0	56.8	48.4
Level of Service	B	A	B	A	E	D
Approach Delay (s)	11.0			10.1	53.8	
Approach LOS	B			B	D	
Intersection Summary						
HCM 2000 Control Delay			12.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			131.0		Sum of lost time (s)	12.9
Intersection Capacity Utilization			69.4%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

Existing Conditions - 2022
PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↵	↑↑↑	↵	↑↑
Traffic Volume (vph)	1454	75	233	2890	42	147
Future Volume (vph)	1454	75	233	2890	42	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		60.0	135.0		25.0	0.0
Storage Lanes		1	1		1	2
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5092	1633	1825	5193	1825	2874
Flt Permitted			0.147		0.950	
Satd. Flow (perm)	5092	1633	282	5193	1825	2874
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		63				147
Link Speed (k/h)	70			70	50	
Link Distance (m)	587.4			404.7	240.3	
Travel Time (s)	30.2			20.8	17.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1454	75	233	2890	42	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1454	75	233	2890	42	147
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

Existing Conditions - 2022
PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	20.0	20.0	7.0	20.0	10.0	10.0
Minimum Split (s)	36.7	36.7	11.5	36.7	43.9	43.9
Total Split (s)	64.0	64.0	21.0	85.0	46.0	46.0
Total Split (%)	48.9%	48.9%	16.0%	64.9%	35.1%	35.1%
Maximum Green (s)	57.3	57.3	17.0	78.3	39.1	39.1
Yellow Time (s)	4.2	4.2	3.0	4.2	3.3	3.3
All-Red Time (s)	2.5	2.5	1.0	2.5	3.6	3.6
Lost Time Adjust (s)	-1.7	-1.7	-3.0	-1.7	-1.9	-1.9
Total Lost Time (s)	5.0	5.0	1.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	30.0	30.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	91.3	91.3	112.8	108.8	12.2	12.2
Actuated g/C Ratio	0.70	0.70	0.86	0.83	0.09	0.09
v/c Ratio	0.41	0.06	0.53	0.67	0.25	0.37
Control Delay	13.1	4.2	8.3	5.2	58.9	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	4.2	8.3	5.2	58.9	11.0
LOS	B	A	A	A	E	B
Approach Delay	12.7			5.5	21.7	
Approach LOS	B			A	C	

Intersection Summary

Area Type: Other
 Cycle Length: 131
 Actuated Cycle Length: 131
 Offset: 75 (57%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 8.4
 Intersection Capacity Utilization 72.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 4: Meadowridge Dr & Dundas St E

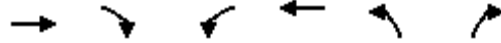


Queues

Existing Conditions - 2022

4: Meadowridge Dr & Dundas St E

PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1454	75	233	2890	42	147
v/c Ratio	0.41	0.06	0.53	0.67	0.25	0.37
Control Delay	13.1	4.2	8.3	5.2	58.9	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	4.2	8.3	5.2	58.9	11.0
Queue Length 50th (m)	92.7	7.0	6.7	80.3	10.3	0.0
Queue Length 95th (m)	119.5	10.1	22.1	97.9	21.8	11.0
Internal Link Dist (m)	563.4			380.7	216.3	
Turn Bay Length (m)		60.0	135.0		25.0	
Base Capacity (vph)	3550	1157	486	4311	571	1000
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.06	0.48	0.67	0.07	0.15
Intersection Summary						

HCM Signalized Intersection Capacity Analysis
4: Meadowridge Dr & Dundas St E

Existing Conditions - 2022
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↘	↑↑↑	↘	↗
Traffic Volume (vph)	1454	75	233	2890	42	147
Future Volume (vph)	1454	75	233	2890	42	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	1.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5092	1633	1825	5193	1825	2874
Flt Permitted	1.00	1.00	0.15	1.00	0.95	1.00
Satd. Flow (perm)	5092	1633	283	5193	1825	2874
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1454	75	233	2890	42	147
RTOR Reduction (vph)	0	19	0	0	0	133
Lane Group Flow (vph)	1454	56	233	2890	42	14
Heavy Vehicles (%)	3%	0%	0%	1%	0%	0%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Actuated Green, G (s)	89.7	89.7	107.1	107.1	10.3	10.3
Effective Green, g (s)	91.4	91.4	110.1	108.8	12.2	12.2
Actuated g/C Ratio	0.70	0.70	0.84	0.83	0.09	0.09
Clearance Time (s)	6.7	6.7	4.0	6.7	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3552	1139	430	4312	169	267
v/s Ratio Prot	0.29		0.07	c0.56		
v/s Ratio Perm		0.03	0.39		c0.02	0.00
v/c Ratio	0.41	0.05	0.54	0.67	0.25	0.05
Uniform Delay, d1	8.4	6.2	4.0	4.2	55.1	54.1
Progression Factor	1.42	1.61	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	1.4	0.8	0.8	0.1
Delay (s)	12.2	10.0	5.4	5.1	55.9	54.2
Level of Service	B	B	A	A	E	D
Approach Delay (s)	12.1			5.1	54.6	
Approach LOS	B			A	D	
Intersection Summary						
HCM 2000 Control Delay			9.3		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			131.0		Sum of lost time (s)	12.9
Intersection Capacity Utilization			72.5%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

Existing Conditions - 2022
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↑↑↑	↑↑↑	↷	↶	↷
Traffic Volume (vph)	80	1535	3099	141	98	55
Future Volume (vph)	80	1535	3099	141	98	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0			70.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	75.0				2.5	
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	5142	5142	1601	1789	1601
Flt Permitted	0.037				0.950	
Satd. Flow (perm)	70	5142	5142	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				141		31
Link Speed (k/h)		70	70		48	
Link Distance (m)		404.7	451.7		199.7	
Travel Time (s)		20.8	23.2		15.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	1535	3099	141	98	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	1535	3099	141	98	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2	2	6	6		4
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	7.0	114.0	107.0	107.0	16.0	16.0
Total Split (%)	5.4%	87.7%	82.3%	82.3%	12.3%	12.3%
Maximum Green (s)	2.5	109.5	102.5	102.5	11.5	11.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	109.5	109.5	102.5	102.5	11.5	11.5
Actuated g/C Ratio	0.84	0.84	0.79	0.79	0.09	0.09
v/c Ratio	0.87	0.35	0.76	0.11	0.62	0.33

Lanes, Volumes, Timings
 5: Dundas St E & William Cutmore Blvd

Existing Conditions - 2022
 PM Peak Hour

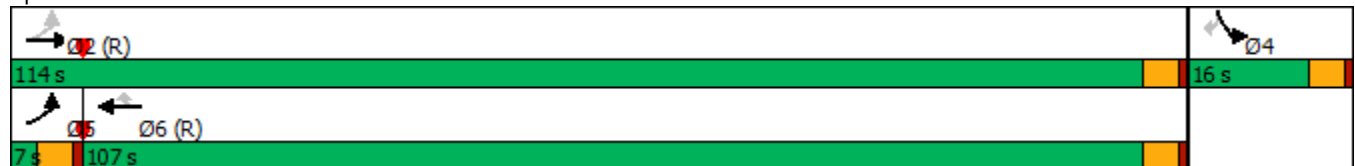


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay	81.9	2.5	4.4	0.0	74.7	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.9	2.5	4.4	0.0	74.7	34.8
LOS	F	A	A	A	E	C
Approach Delay		6.5	4.2		60.4	
Approach LOS		A	A		E	

Intersection Summary

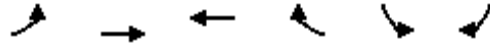
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	6.7
Intersection LOS:	A
Intersection Capacity Utilization	79.4%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 5: Dundas St E & William Cutmore Blvd



Queues
5: Dundas St E & William Cutmore Blvd

Existing Conditions - 2022
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	80	1535	3099	141	98	55
v/c Ratio	0.87	0.35	0.76	0.11	0.62	0.33
Control Delay	81.9	2.5	4.4	0.0	74.7	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.9	2.5	4.4	0.0	74.7	34.8
Queue Length 50th (m)	4.9	24.6	34.1	0.0	24.6	5.8
Queue Length 95th (m)	#25.9	28.2	m37.2	m0.0	#46.2	19.0
Internal Link Dist (m)		380.7	427.7		175.7	
Turn Bay Length (m)	80.0			70.0		
Base Capacity (vph)	92	4331	4054	1292	158	169
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.35	0.76	0.11	0.62	0.33

Intersection Summary

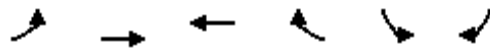
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis
5: Dundas St E & William Cutmore Blvd

Existing Conditions - 2022
PM Peak Hour

































Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↗	↑↑↑	↑↑↑	↖	↗	↖
Traffic Volume (vph)	80	1535	3099	141	98	55
Future Volume (vph)	80	1535	3099	141	98	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1789	5142	5142	1601	1789	1601
Flt Permitted	0.04	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	70	5142	5142	1601	1789	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	1535	3099	141	98	55
RTOR Reduction (vph)	0	0	0	30	0	28
Lane Group Flow (vph)	80	1535	3099	111	98	27
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2	2	6	6		4
Actuated Green, G (s)	109.5	109.5	102.5	102.5	11.5	11.5
Effective Green, g (s)	109.5	109.5	102.5	102.5	11.5	11.5
Actuated g/C Ratio	0.84	0.84	0.79	0.79	0.09	0.09
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	92	4331	4054	1262	158	141
v/s Ratio Prot	c0.02	0.30	0.60		c0.05	
v/s Ratio Perm	c0.71			0.07		0.02
v/c Ratio	0.87	0.35	0.76	0.09	0.62	0.19
Uniform Delay, d1	26.1	2.3	7.3	3.1	57.1	54.9
Progression Factor	1.00	1.00	0.54	0.00	1.00	1.00
Incremental Delay, d2	62.9	0.2	0.4	0.0	16.9	3.0
Delay (s)	89.1	2.5	4.3	0.0	74.1	57.9
Level of Service	F	A	A	A	E	E
Approach Delay (s)		6.8	4.1		68.3	
Approach LOS		A	A		E	

Intersection Summary

HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

Existing Conditions - 2022
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	136	1289	207	149	2652	141	381	740	562	110	317	206
Future Volume (vph)	136	1289	207	149	2652	141	381	740	562	110	317	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			*0.950			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	5092	1601	1789	5193	1633	1789	3614	1738	1789	3614	1633
Flt Permitted	0.060			0.148			0.453			0.165		
Satd. Flow (perm)	115	5092	1601	279	5193	1633	853	3614	1738	311	3614	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200			97			169			134
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		451.7			295.5			522.7			348.2	
Travel Time (s)		23.2			15.2			31.4			20.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	2%	1%	0%	2%	1%	5%	2%	1%	0%
Adj. Flow (vph)	136	1289	207	149	2652	141	381	740	562	110	317	206
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	1289	207	149	2652	141	381	740	562	110	317	206
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

Existing Conditions - 2022
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	45.5	47.5	47.5	14.5	47.5	47.5
Total Split (s)	13.0	70.0	70.0	13.0	70.0	70.0	12.0	39.0	39.0	8.0	35.0	35.0
Total Split (%)	10.0%	53.8%	53.8%	10.0%	53.8%	53.8%	9.2%	30.0%	30.0%	6.2%	26.9%	26.9%
Maximum Green (s)	9.0	63.7	63.7	9.0	63.7	63.7	8.0	32.5	32.5	4.0	28.5	28.5
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0	34.0	34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0		0	0
Act Effct Green (s)	80.9	65.4	65.4	81.1	65.5	65.5	46.0	34.0	34.0	41.0	30.0	30.0
Actuated g/C Ratio	0.62	0.50	0.50	0.62	0.50	0.50	0.35	0.26	0.26	0.32	0.23	0.23
v/c Ratio	0.61	0.50	0.23	0.48	1.01	0.16	1.00	0.78	0.97	0.62	0.38	0.43
Control Delay	44.0	20.3	2.2	15.1	53.2	6.7	85.1	51.4	64.2	46.2	43.8	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	20.3	2.2	15.1	53.2	6.7	85.1	51.4	64.2	46.2	43.8	18.5
LOS	D	C	A	B	D	A	F	D	E	D	D	B
Approach Delay		20.0			49.1			63.3			36.0	
Approach LOS		B			D			E			D	

Intersection Summary













Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 44.4
 Intersection LOS: D
 Intersection Capacity Utilization 103.6%
 ICU Level of Service G
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 6: Ninth Line & Dundas St E



Queues
6: Ninth Line & Dundas St E

Existing Conditions - 2022
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	136	1289	207	149	2652	141	381	740	562	110	317	206
v/c Ratio	0.61	0.50	0.23	0.48	1.01	0.16	1.00	0.78	0.97	0.62	0.38	0.43
Control Delay	44.0	20.3	2.2	15.1	53.2	6.7	85.1	51.4	64.2	46.2	43.8	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	20.3	2.2	15.1	53.2	6.7	85.1	51.4	64.2	46.2	43.8	18.5
Queue Length 50th (m)	19.4	82.7	0.1	14.4	~263.9	5.7	79.8	93.1	107.2	19.3	36.3	15.0
Queue Length 95th (m)	40.2	95.8	7.7	23.4	#290.4	16.6	#152.8	116.0	#179.7	#34.1	50.1	37.5
Internal Link Dist (m)		427.7			271.5			498.7			324.2	
Turn Bay Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Base Capacity (vph)	229	2561	904	314	2617	871	381	945	579	177	834	479
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.50	0.23	0.47	1.01	0.16	1.00	0.78	0.97	0.62	0.38	0.43

Intersection Summary

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

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

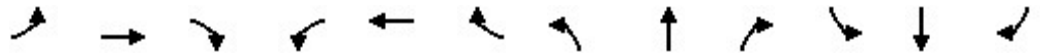
HCM Signalized Intersection Capacity Analysis
6: Ninth Line & Dundas St E

Existing Conditions - 2022
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	1289	207	149	2652	141	381	740	562	110	317	206
Future Volume (vph)	136	1289	207	149	2652	141	381	740	562	110	317	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.95	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1825	5092	1601	1789	5193	1633	1789	3614	1738	1789	3614	1633
Flt Permitted	0.06	1.00	1.00	0.15	1.00	1.00	0.45	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	115	5092	1601	279	5193	1633	852	3614	1738	310	3614	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	136	1289	207	149	2652	141	381	740	562	110	317	206
RTOR Reduction (vph)	0	0	99	0	0	48	0	0	125	0	0	103
Lane Group Flow (vph)	136	1289	108	149	2652	93	381	740	437	110	317	103
Heavy Vehicles (%)	0%	3%	2%	2%	1%	0%	2%	1%	5%	2%	1%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	72.6	64.1	64.1	72.8	64.2	64.2	40.5	32.5	32.5	32.5	28.5	28.5
Effective Green, g (s)	78.6	65.4	65.4	78.8	65.5	65.5	43.5	34.0	34.0	38.5	30.0	30.0
Actuated g/C Ratio	0.60	0.50	0.50	0.61	0.50	0.50	0.33	0.26	0.26	0.30	0.23	0.23
Clearance Time (s)	4.0	6.3	6.3	4.0	6.3	6.3	4.0	6.5	6.5	4.0	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	3.0	3.0
Lane Grp Cap (vph)	220	2561	805	303	2616	822	364	945	454	171	834	376
v/s Ratio Prot	c0.05	0.25		c0.04	c0.51		c0.09	0.20		0.03	0.09	
v/s Ratio Perm	0.32		0.07	0.25		0.06	0.26		c0.25	0.16		0.06
v/c Ratio	0.62	0.50	0.13	0.49	1.01	0.11	1.05	0.78	0.96	0.64	0.38	0.27
Uniform Delay, d1	32.0	21.5	17.2	13.1	32.2	17.0	41.5	44.6	47.4	35.7	42.2	41.1
Progression Factor	1.44	0.90	0.61	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.7	0.3	1.3	21.1	0.3	59.9	4.3	32.6	8.0	0.3	0.4
Delay (s)	50.9	20.1	10.8	14.3	53.3	17.2	101.4	48.9	80.0	43.7	42.5	41.5
Level of Service	D	C	B	B	D	B	F	D	F	D	D	D
Approach Delay (s)		21.5			49.6			71.2			42.3	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			47.5								HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			130.0								Sum of lost time (s)	12.0
Intersection Capacity Utilization			103.6%								ICU Level of Service	G
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

FB - 2027
 AM Peak Hour



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	37	28	66	106	71	12	66	40	14	231	0
Future Volume (vph)	0	37	28	66	106	71	12	66	40	14	231	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
Fr _t		0.942			0.961			0.954				
Fl _t Protected					0.987			0.995			0.997	
Satd. Flow (prot)	0	1774	0	0	1786	0	0	1788	0	0	1878	0
Fl _t Permitted					0.987			0.995			0.997	
Satd. Flow (perm)	0	1774	0	0	1786	0	0	1788	0	0	1878	0
Link Speed (k/h)		48			48			48			50	
Link Distance (m)		206.1			164.0			292.3			126.9	
Travel Time (s)		15.5			12.3			21.9			9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	37	28	66	106	71	12	66	40	14	231	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	243	0	0	118	0	0	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.0%
ICU Level of Service	A
Analysis Period (min)	15





























HCM Unsignalized Intersection Capacity Analysis
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

FB - 2027
 AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	0	37	28	66	106	71	12	66	40	14	231	0	
Future Volume (Veh/h)	0	37	28	66	106	71	12	66	40	14	231	0	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly flow rate (vph)	0	37	28	66	106	71	12	66	40	14	231	0	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None						
Median storage veh													
Upstream signal (m)							292						
pX, platoon unblocked													
vC, conflicting volume	493	389	231	416	369	86	231					106	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	493	389	231	416	369	86	231					106	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1	
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2	
p0 queue free %	100	93	97	87	81	93	99					99	
cM capacity (veh/h)	379	536	808	494	550	973	1337					1485	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1									
Volume Total	65	243	118	245									
Volume Left	0	66	12	14									
Volume Right	28	71	40	0									
cSH	627	608	1337	1485									
Volume to Capacity	0.10	0.40	0.01	0.01									
Queue Length 95th (m)	2.6	14.6	0.2	0.2									
Control Delay (s)	11.4	14.8	0.9	0.5									
Lane LOS	B	B	A	A									
Approach Delay (s)	11.4	14.8	0.9	0.5									
Approach LOS	B	B											
Intersection Summary													
Average Delay			6.8										
Intersection Capacity Utilization			42.0%	ICU Level of Service	A								
Analysis Period (min)			15										

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

FB - 2027
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	42	2552	132	111	1590	41	178	31	184	189	90	42
Future Volume (vph)	42	2552	132	111	1590	41	178	31	184	189	90	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	4565	1585	1825	4230	1633	1825	1830	1601	1825	1883	1633
Flt Permitted	0.091			0.045			0.642			0.737		
Satd. Flow (perm)	160	4565	1585	86	4230	1633	1233	1830	1601	1416	1883	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			83			67			93			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			600.6			206.2			292.3	
Travel Time (s)		33.5			30.9			14.8			21.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Adj. Flow (vph)	42	2552	132	111	1590	41	178	31	184	189	90	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	2552	132	111	1590	41	178	31	184	189	90	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

FB - 2027
AM Peak Hour

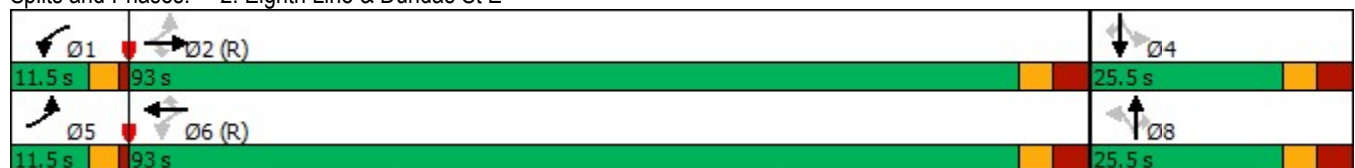


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	25.0	25.0	11.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	11.5	93.0	93.0	11.5	93.0	93.0	25.5	25.5	25.5	25.5	25.5	25.5
Total Split (%)	8.8%	71.5%	71.5%	8.8%	71.5%	71.5%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%
Maximum Green (s)	7.5	86.0	86.0	7.5	86.0	86.0	18.5	18.5	18.5	18.5	18.5	18.5
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0	3.0
Recall Mode	Max	C-Min	C-Min	Max	C-Min	C-Min	Min	Min	Min	Min	Min	Min
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	102.8	87.9	87.9	102.8	87.9	87.9	21.2	21.2	21.2	21.2	21.2	21.2
Actuated g/C Ratio	0.79	0.68	0.68	0.79	0.68	0.68	0.16	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.17	0.83	0.12	0.52	0.56	0.04	0.89	0.10	0.54	0.82	0.29	0.13
Control Delay	4.2	18.5	3.2	25.6	18.1	4.6	93.4	47.2	30.8	79.6	50.6	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.2	18.5	3.2	25.6	18.1	4.6	93.4	47.2	30.8	79.6	50.6	5.0
LOS	A	B	A	C	B	A	F	D	C	E	D	A
Approach Delay		17.6			18.2			60.4			61.7	
Approach LOS		B			B			E			E	

Intersection Summary

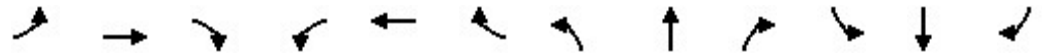
Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 23 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 23.8
 Intersection LOS: C
 Intersection Capacity Utilization 83.4%
 ICU Level of Service E
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 2: Eighth Line & Dundas St E



Queues
2: Eighth Line & Dundas St E

FB - 2027
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	42	2552	132	111	1590	41	178	31	184	189	90	42
v/c Ratio	0.17	0.83	0.12	0.52	0.56	0.04	0.89	0.10	0.54	0.82	0.29	0.13
Control Delay	4.2	18.5	3.2	25.6	18.1	4.6	93.4	47.2	30.8	79.6	50.6	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.2	18.5	3.2	25.6	18.1	4.6	93.4	47.2	30.8	79.6	50.6	5.0
Queue Length 50th (m)	1.9	183.5	3.8	19.8	102.8	1.1	45.1	6.8	20.9	47.2	20.5	0.0
Queue Length 95th (m)	4.0	207.6	10.3	m33.4	109.2	m3.5	#86.2	16.0	45.0	#85.1	36.6	4.6
Internal Link Dist (m)		627.2			576.6			182.2			268.3	
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0			15.0		15.0
Base Capacity (vph)	253	3090	1099	214	2863	1127	203	302	342	234	311	325
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.83	0.12	0.52	0.56	0.04	0.88	0.10	0.54	0.81	0.29	0.13

Intersection Summary





























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

Queue shown is maximum after two cycles.

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

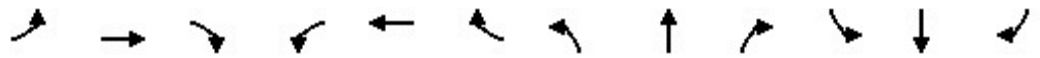
HCM Signalized Intersection Capacity Analysis
2: Eighth Line & Dundas St E

FB - 2027
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	42	2552	132	111	1590	41	178	31	184	189	90	42
Future Volume (vph)	42	2552	132	111	1590	41	178	31	184	189	90	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1674	4565	1585	1825	4230	1633	1825	1830	1601	1825	1883	1633
Flt Permitted	0.09	1.00	1.00	0.04	1.00	1.00	0.64	1.00	1.00	0.74	1.00	1.00
Satd. Flow (perm)	160	4565	1585	86	4230	1633	1233	1830	1601	1416	1883	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	42	2552	132	111	1590	41	178	31	184	189	90	42
RTOR Reduction (vph)	0	0	27	0	0	13	0	0	78	0	0	35
Lane Group Flow (vph)	42	2552	105	111	1590	28	178	31	106	189	90	7
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	93.8	85.9	85.9	93.8	85.9	85.9	18.2	18.2	18.2	18.2	18.2	18.2
Effective Green, g (s)	99.8	87.9	87.9	99.8	87.9	87.9	21.2	21.2	21.2	21.2	21.2	21.2
Actuated g/C Ratio	0.77	0.68	0.68	0.77	0.68	0.68	0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)	4.0	7.0	7.0	4.0	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	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	249	3086	1071	211	2860	1104	201	298	261	230	307	266
v/s Ratio Prot	0.01	c0.56		c0.04	0.38			0.02			0.05	
v/s Ratio Perm	0.11		0.07	0.36		0.02	c0.14		0.07	0.13		0.00
v/c Ratio	0.17	0.83	0.10	0.53	0.56	0.03	0.89	0.10	0.41	0.82	0.29	0.03
Uniform Delay, d1	5.4	15.5	7.3	30.3	10.9	6.9	53.2	46.3	48.8	52.6	47.8	45.7
Progression Factor	1.00	1.00	1.00	0.88	1.57	8.05	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	2.7	0.2	7.5	0.6	0.0	33.8	0.2	1.0	20.5	0.5	0.0
Delay (s)	6.9	18.2	7.5	34.2	17.8	55.9	87.0	46.5	49.8	73.0	48.3	45.8
Level of Service	A	B	A	C	B	E	F	D	D	E	D	D
Approach Delay (s)		17.5			19.8			66.4			62.5	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			24.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			83.4%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

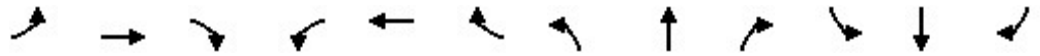
FB - 2027
 AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	2773	125	69	1376	80	128	1	200	365	14	156
Future Volume (vph)	53	2773	125	69	1376	80	128	1	200	365	14	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.851				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4565	1570	1825	4154	1601	1807	1619	0	1789	1883	1601
Flt Permitted	0.096			0.057			0.748			0.260		
Satd. Flow (perm)	181	4565	1570	110	4154	1601	1423	1619	0	490	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88			88		123				121
Link Speed (k/h)		70			70			50				48
Link Distance (m)		600.6			587.4			203.4				224.2
Travel Time (s)		30.9			30.2			14.6				16.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	53	2773	125	69	1376	80	128	1	200	365	14	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	2773	125	69	1376	80	128	201	0	365	14	156
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			8		7		4

Lanes, Volumes, Timings
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

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 AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	9.5	25.2	25.2	11.5	25.2	25.2	22.5	22.5		9.5	22.5	22.5
Total Split (s)	10.8	69.0	69.0	11.5	69.7	69.7	14.5	14.5		35.0	49.5	49.5
Total Split (%)	8.3%	53.1%	53.1%	8.8%	53.6%	53.6%	11.2%	11.2%		26.9%	38.1%	38.1%
Maximum Green (s)	6.3	63.8	63.8	7.5	64.5	64.5	10.2	10.2		30.5	45.0	45.0
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.2	-0.2	-3.0	-0.2	0.0	-3.3	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Min	Min		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0			0	0
Act Effct Green (s)	72.8	67.3	67.3	80.2	67.8	67.6	14.4	11.1		44.1	44.1	44.1
Actuated g/C Ratio	0.56	0.52	0.52	0.62	0.52	0.52	0.11	0.09		0.34	0.34	0.34
v/c Ratio	0.30	1.17	0.15	0.34	0.64	0.09	0.82	0.80		0.81	0.02	0.25
Control Delay	11.3	104.2	2.2	19.9	15.0	4.9	92.8	47.3		50.4	28.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	11.3	104.2	2.2	19.9	15.0	4.9	92.8	47.3		50.4	28.2	9.5
LOS	B	F	A	B	B	A	F	D		D	C	A
Approach Delay		98.2			14.7			65.0			37.9	
Approach LOS		F			B			E			D	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 60 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.17
 Intersection Signal Delay: 66.3
 Intersection LOS: E
 Intersection Capacity Utilization 101.5%
 ICU Level of Service G
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 3: Prince Michael Dr/John McKay Blvd & Dundas St E



Queues
3: Prince Michael Dr/John McKay Blvd & Dundas St E

FB - 2027
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	53	2773	125	69	1376	80	128	201	365	14	156
v/c Ratio	0.30	1.17	0.15	0.34	0.64	0.09	0.82	0.80	0.81	0.02	0.25
Control Delay	11.3	104.2	2.2	19.9	15.0	4.9	92.8	47.3	50.4	28.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	104.2	2.2	19.9	15.0	4.9	92.8	47.3	50.4	28.2	9.5
Queue Length 50th (m)	3.3	~368.6	0.7	6.0	57.1	1.9	32.8	19.7	76.5	2.4	6.0
Queue Length 95th (m)	m4.4	#393.6	m1.7	18.2	95.9	13.1	#68.7	#60.8	#108.9	7.0	21.1
Internal Link Dist (m)		576.6			563.4			179.4		200.2	
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		15.0		15.0
Base Capacity (vph)	179	2362	854	206	2166	874	157	250	470	651	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	1.17	0.15	0.33	0.64	0.09	0.82	0.80	0.78	0.02	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

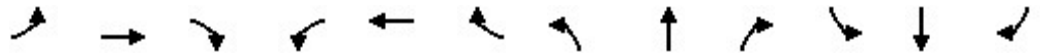
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FB - 2027
 AM Peak Hour































Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↗		↘	↑	↗
Traffic Volume (vph)	53	2773	125	69	1376	80	128	1	200	365	14	156
Future Volume (vph)	53	2773	125	69	1376	80	128	1	200	365	14	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4565	1570	1825	4154	1601	1807	1618		1789	1883	1601
Flt Permitted	0.10	1.00	1.00	0.06	1.00	1.00	0.75	1.00		0.26	1.00	1.00
Satd. Flow (perm)	182	4565	1570	110	4154	1601	1423	1618		489	1883	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	53	2773	125	69	1376	80	128	1	200	365	14	156
RTOR Reduction (vph)	0	0	43	0	0	39	0	112	0	0	0	80
Lane Group Flow (vph)	53	2773	82	69	1376	41	128	89	0	365	14	76
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	71.2	66.2	66.2	72.7	66.7	66.7	11.1	11.1		44.1	44.1	44.1
Effective Green, g (s)	71.2	66.4	66.4	78.7	66.9	66.7	14.4	11.1		44.1	44.1	44.1
Actuated g/C Ratio	0.55	0.51	0.51	0.61	0.51	0.51	0.11	0.09		0.34	0.34	0.34
Clearance Time (s)	4.5	5.2	5.2	4.0	5.2	5.2	4.3	4.3		4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.0	3.0	3.0
Lane Grp Cap (vph)	161	2331	801	185	2137	821	157	138		452	638	543
v/s Ratio Prot	0.01	c0.61		c0.03	0.33			0.05		c0.18	0.01	
v/s Ratio Perm	0.17		0.05	0.20		0.03	0.09			c0.10		0.05
v/c Ratio	0.33	1.19	0.10	0.37	0.64	0.05	0.82	0.64		0.81	0.02	0.14
Uniform Delay, d1	16.4	31.8	16.4	27.7	22.9	15.8	56.5	57.5		36.3	28.6	29.8
Progression Factor	0.74	0.66	0.32	1.28	0.59	1.61	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	88.0	0.1	1.4	1.4	0.1	27.3	10.2		10.2	0.0	0.1
Delay (s)	12.9	109.1	5.4	36.8	14.8	25.5	83.8	67.7		46.4	28.6	29.9
Level of Service	B	F	A	D	B	C	F	E		D	C	C
Approach Delay (s)		103.0			16.4			74.0			41.2	
Approach LOS		F			B			E			D	

Intersection Summary		
HCM 2000 Control Delay	70.3	HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio	1.04	
Actuated Cycle Length (s)	130.0	Sum of lost time (s) 18.3
Intersection Capacity Utilization	101.5%	ICU Level of Service G
Analysis Period (min)	15	
c Critical Lane Group		

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

FB - 2027
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	22	3155	82	104	1411	5	58	0	310	100	0	74
Future Volume (vph)	22	3155	82	104	1411	5	58	0	310	100	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		60.0	135.0		70.0	25.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4565	1601	1807	4230	1601	1789	1883	1633	1789	1883	1601
Flt Permitted	0.128			0.048			0.757			0.757		
Satd. Flow (perm)	241	4565	1601	91	4230	1601	1426	1883	1633	1426	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			70			70			69			117
Link Speed (k/h)		70			70			50				48
Link Distance (m)		587.4			404.7			240.3				182.1
Travel Time (s)		30.2			20.8			17.3				13.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	2%	1%	9%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	22	3155	82	104	1411	5	58	0	310	100	0	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	3155	82	104	1411	5	58	0	310	100	0	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

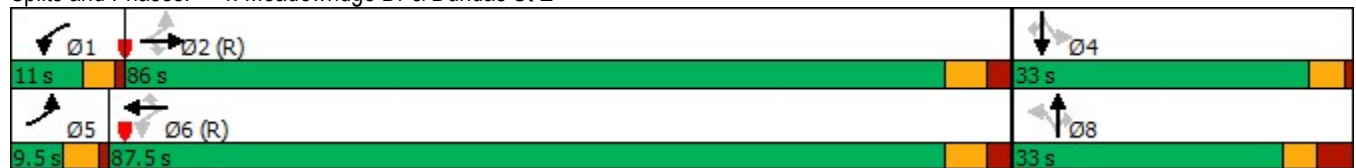
FB - 2027
AM Peak Hour

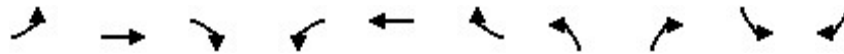
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	9.5	26.7	26.7	11.0	26.7	26.7	25.0	25.0	25.0	22.5	22.5	22.5
Total Split (s)	9.5	86.0	86.0	11.0	87.5	87.5	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	7.3%	66.2%	66.2%	8.5%	67.3%	67.3%	25.4%	25.4%	25.4%	25.4%	25.4%	25.4%
Maximum Green (s)	5.0	79.3	79.3	7.0	80.8	80.8	26.1	26.1	26.1	28.5	28.5	28.5
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	Max	C-Max	C-Max	Min	Min	Min	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	86.8	81.0	81.0	99.1	89.2	87.5	24.9		24.9	25.4		25.4
Actuated g/C Ratio	0.67	0.62	0.62	0.76	0.69	0.67	0.19		0.19	0.20		0.20
v/c Ratio	0.10	1.11	0.08	0.43	0.49	0.00	0.21		0.84	0.36		0.18
Control Delay	6.1	87.7	6.4	31.3	11.6	0.0	44.9		59.1	48.1		2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	6.1	87.7	6.4	31.3	11.6	0.0	44.9		59.1	48.1		2.6
LOS	A	F	A	C	B	A	D		E	D		A
Approach Delay		85.1			12.9			56.9				28.8
Approach LOS		F			B			E				C

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 60.7
 Intersection LOS: E
 Intersection Capacity Utilization 97.8%
 ICU Level of Service F
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 4: Meadowridge Dr & Dundas St E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	22	3155	82	104	1411	5	58	310	100	74
v/c Ratio	0.10	1.11	0.08	0.43	0.49	0.00	0.21	0.84	0.36	0.18
Control Delay	6.1	87.7	6.4	31.3	11.6	0.0	44.9	59.1	48.1	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	87.7	6.4	31.3	11.6	0.0	44.9	59.1	48.1	2.6
Queue Length 50th (m)	1.9	~395.9	5.4	17.8	44.3	0.0	12.3	59.6	21.8	0.0
Queue Length 95th (m)	m1.8	m316.4	m4.5	35.3	80.1	m0.0	24.6	#98.6	38.4	3.3
Internal Link Dist (m)		563.4			380.7					
Turn Bay Length (m)	115.0		60.0	135.0		70.0	25.0		15.0	15.0
Base Capacity (vph)	224	2844	1023	241	2903	1100	307	405	312	442
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	0.10	1.11	0.08	0.43	0.49	0.00	0.19	0.77	0.32	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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






























Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

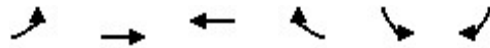
4: Meadowridge Dr & Dundas St E

FB - 2027
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  						 		
Traffic Volume (vph)	22	3155	82	104	1411	5	58	0	310	100	0	74	
Future Volume (vph)	22	3155	82	104	1411	5	58	0	310	100	0	74	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	5.0	5.0	1.0	5.0	6.7	5.0		5.0	4.5		4.5	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	
Satd. Flow (prot)	1789	4565	1601	1807	4230	1601	1789		1633	1789		1601	
Flt Permitted	0.13	1.00	1.00	0.05	1.00	1.00	0.76		1.00	0.76		1.00	
Satd. Flow (perm)	242	4565	1601	91	4230	1601	1426		1633	1426		1601	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	22	3155	82	104	1411	5	58	0	310	100	0	74	
RTOR Reduction (vph)	0	0	26	0	0	2	0	0	56	0	0	60	
Lane Group Flow (vph)	22	3155	56	104	1411	3	58	0	254	100	0	14	
Heavy Vehicles (%)	2%	1%	2%	1%	9%	2%	2%	2%	0%	2%	2%	2%	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm	
Protected Phases	5	2		1	6			8			4		
Permitted Phases	2		2	6		6	8		8	4		4	
Actuated Green, G (s)	82.4	79.3	79.3	93.4	85.8	85.8	23.0		23.0	25.4		25.4	
Effective Green, g (s)	82.4	81.0	81.0	96.4	87.5	85.8	24.9		24.9	25.4		25.4	
Actuated g/C Ratio	0.63	0.62	0.62	0.74	0.67	0.66	0.19		0.19	0.20		0.20	
Clearance Time (s)	4.5	6.7	6.7	4.0	6.7	6.7	6.9		6.9	4.5		4.5	
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)	190	2844	997	240	2847	1056	273		312	278		312	
v/s Ratio Prot	0.00	c0.69		c0.04	0.33								
v/s Ratio Perm	0.07		0.03	0.28		0.00	0.04		c0.16	0.07		0.01	
v/c Ratio	0.12	1.11	0.06	0.43	0.50	0.00	0.21		0.81	0.36		0.05	
Uniform Delay, d1	9.2	24.5	9.6	33.0	10.4	7.5	44.3		50.3	45.3		42.5	
Progression Factor	1.09	1.65	2.24	1.41	1.03	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	49.8	0.0	5.2	0.6	0.0	0.4		15.0	0.8		0.1	
Delay (s)	10.0	90.1	21.4	51.7	11.3	7.5	44.7		65.3	46.1		42.5	
Level of Service	B	F	C	D	B	A	D		E	D		D	
Approach Delay (s)		87.9			14.1			62.1			44.6		
Approach LOS		F			B			E			D		
Intersection Summary													
HCM 2000 Control Delay			63.6									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.01										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	16.4
Intersection Capacity Utilization			97.8%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

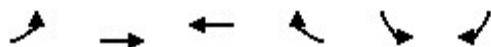
FB - 2027
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	3539	1486	55	161	74
Future Volume (vph)	26	3539	1486	55	161	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0			70.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	75.0				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Fr _t				0.850		0.850
Fl _t Protected	0.950				0.950	
Satd. Flow (prot)	1789	4520	4520	1601	1789	1601
Fl _t Permitted	0.119				0.950	
Satd. Flow (perm)	224	4520	4520	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				55		74
Link Speed (k/h)		70	70		48	
Link Distance (m)		404.7	451.7		142.5	
Travel Time (s)		20.8	23.2		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	3539	1486	55	161	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	3539	1486	55	161	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

FB - 2027
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	106.0	106.0	106.0	106.0	24.0	24.0
Total Split (%)	81.5%	81.5%	81.5%	81.5%	18.5%	18.5%
Maximum Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.15	0.15
v/c Ratio	0.15	1.00	0.42	0.04	0.60	0.24
Control Delay	1.7	15.4	1.4	0.1	61.9	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	15.4	1.4	0.1	61.9	12.6
LOS	A	B	A	A	E	B
Approach Delay		15.3	1.3		46.4	
Approach LOS		B	A		D	

Intersection Summary

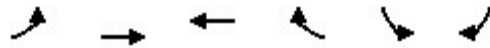
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	12.6
Intersection LOS:	B
Intersection Capacity Utilization:	84.8%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 5: Dundas St E & William Cutmore Blvd



Queues
5: Dundas St E & William Cutmore Blvd

FB - 2027
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	26	3539	1486	55	161	74
v/c Ratio	0.15	1.00	0.42	0.04	0.60	0.24
Control Delay	1.7	15.4	1.4	0.1	61.9	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	15.4	1.4	0.1	61.9	12.6
Queue Length 50th (m)	0.7	~85.1	9.0	0.0	39.0	0.0
Queue Length 95th (m)	m0.6	m49.5	m13.3	m0.1	62.4	13.5
Internal Link Dist (m)		380.7	427.7		118.5	
Turn Bay Length (m)	80.0			70.0		
Base Capacity (vph)	174	3529	3529	1262	268	303
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	1.00	0.42	0.04	0.60	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

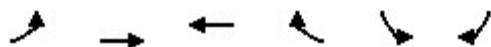
Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

5: Dundas St E & William Cutmore Blvd

FB - 2027
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	3539	1486	55	161	74
Future Volume (vph)	26	3539	1486	55	161	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1789	4520	4520	1601	1789	1601
Flt Permitted	0.12	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	224	4520	4520	1601	1789	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	3539	1486	55	161	74
RTOR Reduction (vph)	0	0	0	12	0	63
Lane Group Flow (vph)	26	3539	1486	43	161	11
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	101.5	101.5	101.5	101.5	19.5	19.5
Effective Green, g (s)	101.5	101.5	101.5	101.5	19.5	19.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	174	3529	3529	1250	268	240
v/s Ratio Prot		c0.78	0.33		c0.09	
v/s Ratio Perm	0.12			0.03		0.01
v/c Ratio	0.15	1.00	0.42	0.03	0.60	0.05
Uniform Delay, d1	3.5	14.2	4.7	3.2	51.6	47.3
Progression Factor	0.39	0.64	0.23	0.02	1.00	1.00
Incremental Delay, d2	0.2	5.2	0.3	0.0	9.6	0.4
Delay (s)	1.5	14.4	1.3	0.1	61.2	47.7
Level of Service	A	B	A	A	E	D
Approach Delay (s)		14.3	1.3		56.9	
Approach LOS		B	A		E	

Intersection Summary

HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

FB - 2027
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	2950	515	140	1167	142	255	366	179	213	609	118
Future Volume (vph)	258	2950	515	140	1167	142	255	366	179	213	609	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4565	1633	1789	4230	1633	1630	3579	1585	1825	3650	1633
Flt Permitted	0.114			0.071			0.194			0.492		
Satd. Flow (perm)	219	4565	1633	134	4230	1633	333	3579	1585	945	3650	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			166			130			159			128
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		451.7			295.5			522.7			348.2	
Travel Time (s)		23.2			15.2			37.6			25.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	2%	9%	0%	12%	2%	3%	0%	0%	0%
Adj. Flow (vph)	258	2950	515	140	1167	142	255	366	179	213	609	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	2950	515	140	1167	142	255	366	179	213	609	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

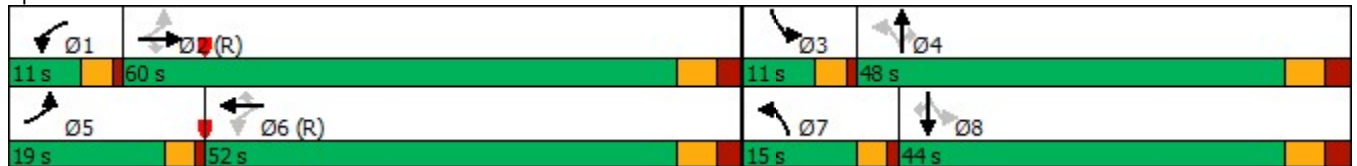
FB - 2027
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	12.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	19.0	60.0	60.0	11.0	52.0	52.0	15.0	48.0	48.0	11.0	44.0	44.0
Total Split (%)	14.6%	46.2%	46.2%	8.5%	40.0%	40.0%	11.5%	36.9%	36.9%	8.5%	33.8%	33.8%
Maximum Green (s)	15.0	53.7	53.7	7.0	45.7	45.7	11.0	41.5	41.5	7.0	37.5	37.5
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	78.8	60.9	60.9	71.5	54.7	54.7	49.2	34.2	34.2	44.2	30.2	30.2
Actuated g/C Ratio	0.61	0.47	0.47	0.55	0.42	0.42	0.38	0.26	0.26	0.34	0.23	0.23
v/c Ratio	0.70	1.38	0.60	0.59	0.66	0.19	0.96	0.39	0.34	0.55	0.72	0.25
Control Delay	30.2	204.5	23.9	35.4	33.7	6.3	78.2	39.8	8.7	34.2	50.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	204.5	23.9	35.4	33.7	6.3	78.2	39.8	8.7	34.2	50.6	6.2
LOS	C	F	C	D	C	A	E	D	A	C	D	A
Approach Delay		167.4			31.2			45.1			41.3	
Approach LOS		F			C			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.38
 Intersection Signal Delay: 107.6 Intersection LOS: F
 Intersection Capacity Utilization 110.7% ICU Level of Service H
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 6: Ninth Line & Dundas St E



Queues
6: Ninth Line & Dundas St E

FB - 2027
AM Peak Hour

































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	258	2950	515	140	1167	142	255	366	179	213	609	118
v/c Ratio	0.70	1.38	0.60	0.59	0.66	0.19	0.96	0.39	0.34	0.55	0.72	0.25
Control Delay	30.2	204.5	23.9	35.4	33.7	6.3	78.2	39.8	8.7	34.2	50.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	204.5	23.9	35.4	33.7	6.3	78.2	39.8	8.7	34.2	50.6	6.2
Queue Length 50th (m)	46.2	~423.7	69.7	17.8	101.1	1.8	47.8	40.6	3.9	38.1	76.1	0.0
Queue Length 95th (m)	m50.3	m#440.9	m68.6	#43.4	129.5	15.7	#83.9	50.8	20.1	52.4	89.6	12.0
Internal Link Dist (m)		427.7			271.5			498.7			324.2	
Turn Bay Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Base Capacity (vph)	381	2138	853	237	1778	761	265	1183	630	389	1095	579
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	1.38	0.60	0.59	0.66	0.19	0.96	0.31	0.28	0.55	0.56	0.20

Intersection Summary

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

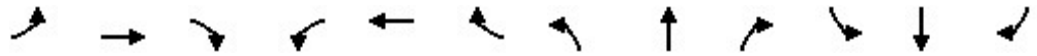
HCM Signalized Intersection Capacity Analysis
6: Ninth Line & Dundas St E

FB - 2027
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	258	2950	515	140	1167	142	255	366	179	213	609	118
Future Volume (vph)	258	2950	515	140	1167	142	255	366	179	213	609	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1825	4565	1633	1789	4230	1633	1630	3579	1585	1825	3650	1633
Flt Permitted	0.11	1.00	1.00	0.07	1.00	1.00	0.19	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	218	4565	1633	134	4230	1633	333	3579	1585	945	3650	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	258	2950	515	140	1167	142	255	366	179	213	609	118
RTOR Reduction (vph)	0	0	88	0	0	75	0	0	117	0	0	91
Lane Group Flow (vph)	258	2950	427	140	1167	67	255	366	62	213	609	27
Heavy Vehicles (%)	0%	1%	0%	2%	9%	0%	12%	2%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	73.5	59.6	59.6	63.3	53.4	53.4	43.7	32.7	32.7	35.7	28.7	28.7
Effective Green, g (s)	76.5	60.9	60.9	69.3	54.7	54.7	46.7	34.2	34.2	41.7	30.2	30.2
Actuated g/C Ratio	0.59	0.47	0.47	0.53	0.42	0.42	0.36	0.26	0.26	0.32	0.23	0.23
Clearance Time (s)	4.0	6.3	6.3	4.0	6.3	6.3	4.0	6.5	6.5	4.0	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	3.0	3.0
Lane Grp Cap (vph)	364	2138	764	235	1779	687	259	941	416	370	847	379
v/s Ratio Prot	c0.10	c0.65		0.06	0.28		c0.11	0.10		0.04	c0.17	
v/s Ratio Perm	0.31		0.26	0.26		0.04	0.25		0.04	0.14		0.02
v/c Ratio	0.71	1.38	0.56	0.60	0.66	0.10	0.98	0.39	0.15	0.58	0.72	0.07
Uniform Delay, d1	23.5	34.5	24.9	28.1	30.1	22.7	35.2	39.3	36.7	34.4	46.0	39.0
Progression Factor	1.30	1.16	1.28	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	171.7	0.8	4.0	1.9	0.3	51.2	0.3	0.2	2.2	2.9	0.1
Delay (s)	32.2	211.7	32.5	32.1	32.0	23.0	86.4	39.6	36.9	36.5	48.9	39.0
Level of Service	C	F	C	C	C	C	F	D	D	D	D	D
Approach Delay (s)		174.4			31.2			53.9			44.9	
Approach LOS		F			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			112.8	HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			130.0	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			110.7%	ICU Level of Service				H				
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

FB - 2027
 PM Peak Hour



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	149	20	41	67	44	33	154	137	45	82	0
Future Volume (vph)	0	149	20	41	67	44	33	154	137	45	82	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
Fr _t		0.984			0.961			0.943				
Fl _t Protected					0.987			0.995			0.983	
Satd. Flow (prot)	0	1853	0	0	1786	0	0	1767	0	0	1851	0
Fl _t Permitted					0.987			0.995			0.983	
Satd. Flow (perm)	0	1853	0	0	1786	0	0	1767	0	0	1851	0
Link Speed (k/h)		48			48			48			50	
Link Distance (m)		195.4			224.6			292.3			127.0	
Travel Time (s)		14.7			16.8			21.9			9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	149	20	41	67	44	33	154	137	45	82	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	169	0	0	152	0	0	324	0	0	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.7%
ICU Level of Service	A
Analysis Period (min)	15





























HCM Unsignalized Intersection Capacity Analysis
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

FB - 2027
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	149	20	41	67	44	33	154	137	45	82	0
Future Volume (Veh/h)	0	149	20	41	67	44	33	154	137	45	82	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	149	20	41	67	44	33	154	137	45	82	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	538	529	82	555	460	222	82			291		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	538	529	82	555	460	222	82			291		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	65	98	87	86	95	98			96		
cM capacity (veh/h)	366	429	978	304	470	817	1515			1271		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	169	152	324	127								
Volume Left	0	41	33	45								
Volume Right	20	44	137	0								
cSH	460	459	1515	1271								
Volume to Capacity	0.37	0.33	0.02	0.04								
Queue Length 95th (m)	12.7	10.9	0.5	0.8								
Control Delay (s)	17.3	16.7	0.9	3.0								
Lane LOS	C	C	A	A								
Approach Delay (s)	17.3	16.7	0.9	3.0								
Approach LOS	C	C										
Intersection Summary												
Average Delay			8.0									
Intersection Capacity Utilization			46.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

FB - 2027
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	94	1834	212	239	3089	150	192	67	165	80	29	27
Future Volume (vph)	94	1834	212	239	3089	150	192	67	165	80	29	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1807	1865	1633	1825	1921	1633
Flt Permitted	0.055			0.054			0.738			0.713		
Satd. Flow (perm)	106	4476	1601	104	4565	1633	1404	1865	1633	1370	1921	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115			71			132			65
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			600.6			206.2			292.3	
Travel Time (s)		33.5			30.9			14.8			21.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Adj. Flow (vph)	94	1834	212	239	3089	150	192	67	165	80	29	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	1834	212	239	3089	150	192	67	165	80	29	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

FB - 2027
PM Peak Hour

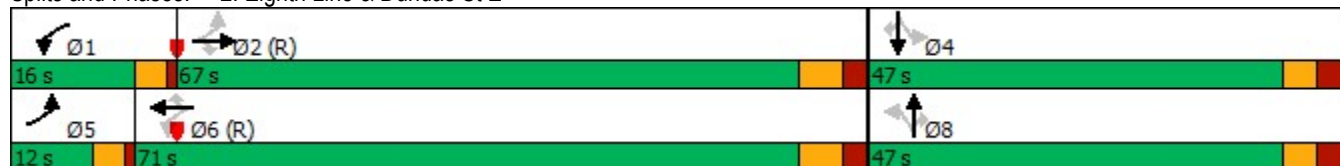


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	14.5	37.7	37.7	11.5	37.7	37.7	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	12.0	67.0	67.0	16.0	71.0	71.0	47.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	9.2%	51.5%	51.5%	12.3%	54.6%	54.6%	36.2%	36.2%	36.2%	36.2%	36.2%	36.2%
Maximum Green (s)	8.0	60.3	60.3	12.0	64.3	64.3	40.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-1.7	-1.7	-3.0	-1.7	-1.7	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5	3.5	3.5	3.5	3.5
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	87.8	72.0	72.0	97.9	81.1	81.1	27.1	27.1	27.1	27.1	27.1	27.1
Actuated g/C Ratio	0.68	0.55	0.55	0.75	0.62	0.62	0.21	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.41	0.74	0.23	0.67	1.09	0.14	0.66	0.17	0.37	0.28	0.07	0.07
Control Delay	23.0	25.9	8.6	36.3	64.2	11.4	57.0	40.8	12.6	43.7	38.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	25.9	8.6	36.3	64.2	11.4	57.0	40.8	12.6	43.7	38.3	0.3
LOS	C	C	A	D	E	B	E	D	B	D	D	A
Approach Delay		24.1			60.0			37.2			33.9	
Approach LOS		C			E			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 45.4 Intersection LOS: D
 Intersection Capacity Utilization 93.7% ICU Level of Service F
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 2: Eighth Line & Dundas St E



Queues
2: Eighth Line & Dundas St E

FB - 2027
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	94	1834	212	239	3089	150	192	67	165	80	29	27
v/c Ratio	0.41	0.74	0.23	0.67	1.09	0.14	0.66	0.17	0.37	0.28	0.07	0.07
Control Delay	23.0	25.9	8.6	36.3	64.2	11.4	57.0	40.8	12.6	43.7	38.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	25.9	8.6	36.3	64.2	11.4	57.0	40.8	12.6	43.7	38.3	0.3
Queue Length 50th (m)	6.0	146.2	11.7	51.8	~358.0	12.0	45.7	14.3	6.9	17.5	6.1	0.0
Queue Length 95th (m)	23.9	194.5	28.8	m49.0	m#348.7	m10.8	64.8	24.5	23.3	29.0	13.0	0.0
Internal Link Dist (m)		627.2			576.6			182.2			268.3	
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0			15.0		15.0
Base Capacity (vph)	234	2478	937	355	2847	1045	464	616	628	453	635	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.74	0.23	0.67	1.09	0.14	0.41	0.11	0.26	0.18	0.05	0.05

Intersection Summary

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





























HCM Signalized Intersection Capacity Analysis
2: Eighth Line & Dundas St E

FB - 2027
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	1834	212	239	3089	150	192	67	165	80	29	27
Future Volume (vph)	94	1834	212	239	3089	150	192	67	165	80	29	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1807	1865	1633	1825	1921	1633
Flt Permitted	0.05	1.00	1.00	0.05	1.00	1.00	0.74	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	105	4476	1601	103	4565	1633	1404	1865	1633	1370	1921	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	94	1834	212	239	3089	150	192	67	165	80	29	27
RTOR Reduction (vph)	0	0	51	0	0	27	0	0	104	0	0	21
Lane Group Flow (vph)	94	1834	161	239	3089	123	192	67	61	80	29	6
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	79.1	70.3	70.3	92.2	79.4	79.4	24.1	24.1	24.1	24.1	24.1	24.1
Effective Green, g (s)	85.1	72.0	72.0	95.2	81.1	81.1	27.1	27.1	27.1	27.1	27.1	27.1
Actuated g/C Ratio	0.65	0.55	0.55	0.73	0.62	0.62	0.21	0.21	0.21	0.21	0.21	0.21
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Grp Cap (vph)	224	2479	886	352	2847	1018	292	388	340	285	400	340
v/s Ratio Prot	0.04	0.41		c0.11	c0.68			0.04			0.02	
v/s Ratio Perm	0.24		0.10	0.39		0.08	c0.14		0.04	0.06		0.00
v/c Ratio	0.42	0.74	0.18	0.68	1.09	0.12	0.66	0.17	0.18	0.28	0.07	0.02
Uniform Delay, d1	27.6	21.9	14.4	36.2	24.5	9.9	47.2	42.2	42.3	43.3	41.3	40.9
Progression Factor	1.00	1.00	1.00	1.13	1.00	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	2.0	0.4	0.5	39.0	0.0	5.5	0.3	0.3	0.6	0.1	0.0
Delay (s)	29.1	23.9	14.8	41.6	63.4	16.6	52.7	42.5	42.6	43.9	41.4	40.9
Level of Service	C	C	B	D	E	B	D	D	D	D	D	D
Approach Delay (s)		23.3			59.9			47.1			42.8	
Approach LOS		C			E			D			D	
Intersection Summary												
HCM 2000 Control Delay			46.0		HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)			10.0				
Intersection Capacity Utilization			93.7%		ICU Level of Service			F				
Analysis Period (min)			15									
c Critical Lane Group												

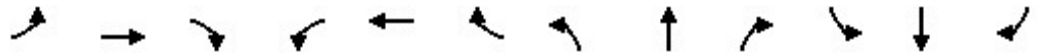
Lanes, Volumes, Timings
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FB - 2027
 PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	175	1710	175	265	3172	238	192	4	99	224	8	97
Future Volume (vph)	175	1710	175	265	3172	238	192	4	99	224	8	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.856				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4476	1601	1825	4565	1601	1825	1643	0	1789	1883	1601
Flt Permitted	0.056			0.057			0.752			0.690		
Satd. Flow (perm)	105	4476	1601	110	4565	1601	1445	1643	0	1300	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			117			121		99				103
Link Speed (k/h)		70			70			50				48
Link Distance (m)		600.6			587.4			203.4				180.8
Travel Time (s)		30.9			30.2			14.6				13.6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	175	1710	175	265	3172	238	192	4	99	224	8	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	1710	175	265	3172	238	192	103	0	224	8	97
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FB - 2027
 PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	9.5	26.8	26.8	11.5	26.8	26.8	24.9	24.9		22.5	22.5	22.5
Total Split (s)	16.0	73.0	73.0	25.0	82.0	82.0	32.0	32.0		32.0	32.0	32.0
Total Split (%)	12.3%	56.2%	56.2%	19.2%	63.1%	63.1%	24.6%	24.6%		24.6%	24.6%	24.6%
Maximum Green (s)	11.5	66.2	66.2	21.0	75.2	75.2	25.1	25.1		27.5	27.5	27.5
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	3.4	3.4		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.8	-1.8	-3.0	-1.8	0.0	-1.9	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	1.0	5.0	6.8	5.0	6.9		4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	0
Act Effct Green (s)	84.8	73.6	73.6	99.3	80.0	78.2	24.7	22.8		25.2	25.2	25.2
Actuated g/C Ratio	0.65	0.57	0.57	0.76	0.62	0.60	0.19	0.18		0.19	0.19	0.19
v/c Ratio	0.85	0.68	0.18	0.74	1.13	0.24	0.70	0.28		0.89	0.02	0.25
Control Delay	64.2	16.9	6.9	34.3	84.4	10.3	63.0	11.1		84.8	41.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	64.2	16.9	6.9	34.3	84.4	10.3	63.0	11.1		84.8	41.0	8.5
LOS	E	B	A	C	F	B	E	B		F	D	A
Approach Delay		20.1			76.0			44.9			61.2	
Approach LOS		C			E			D			E	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.13
 Intersection Signal Delay: 55.7
 Intersection LOS: E
 Intersection Capacity Utilization 102.0%
 ICU Level of Service G
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 3: Prince Michael Dr/John McKay Blvd & Dundas St E



Queues
3: Prince Michael Dr/John McKay Blvd & Dundas St E

FB - 2027
PM Peak Hour































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	175	1710	175	265	3172	238	192	103	224	8	97
v/c Ratio	0.85	0.68	0.18	0.74	1.13	0.24	0.70	0.28	0.89	0.02	0.25
Control Delay	64.2	16.9	6.9	34.3	84.4	10.3	63.0	11.1	84.8	41.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	16.9	6.9	34.3	84.4	10.3	63.0	11.1	84.8	41.0	8.5
Queue Length 50th (m)	36.5	50.2	2.0	58.4	~401.5	20.8	45.3	0.8	55.2	1.7	0.0
Queue Length 95th (m)	m#57.8	96.5	m17.2	m52.6	m#347.0	m18.6	71.5	16.0	#96.6	6.0	12.9
Internal Link Dist (m)		576.6			563.4			179.4		156.8	
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		15.0		15.0
Base Capacity (vph)	218	2533	957	400	2809	1011	300	397	275	398	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.68	0.18	0.66	1.13	0.24	0.64	0.26	0.81	0.02	0.23

Intersection Summary

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




























HCM Signalized Intersection Capacity Analysis
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FB - 2027
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	175	1710	175	265	3172	238	192	4	99	224	8	97
Future Volume (vph)	175	1710	175	265	3172	238	192	4	99	224	8	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	5.0	1.0	5.0	6.8	5.0	6.9		4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4476	1601	1825	4565	1601	1825	1643		1789	1883	1601
Flt Permitted	0.06	1.00	1.00	0.06	1.00	1.00	0.75	1.00		0.69	1.00	1.00
Satd. Flow (perm)	105	4476	1601	109	4565	1601	1446	1643		1300	1883	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	175	1710	175	265	3172	238	192	4	99	224	8	97
RTOR Reduction (vph)	0	0	51	0	0	48	0	82	0	0	0	78
Lane Group Flow (vph)	175	1710	124	265	3172	190	192	21	0	224	8	19
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	82.6	71.8	71.8	93.5	78.2	78.2	22.8	22.8		25.2	25.2	25.2
Effective Green, g (s)	82.6	73.6	73.6	96.5	80.0	78.2	24.7	22.8		25.2	25.2	25.2
Actuated g/C Ratio	0.64	0.57	0.57	0.74	0.62	0.60	0.19	0.18		0.19	0.19	0.19
Clearance Time (s)	4.5	6.8	6.8	4.0	6.8	6.8	6.9	6.9		4.5	4.5	4.5
Vehicle Extension (s)	3.0	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	2534	906	354	2809	963	274	288		252	365	310
v/s Ratio Prot	0.07	0.38		c0.12	c0.69			0.01			0.00	
v/s Ratio Perm	0.47		0.08	0.44		0.12	0.13			c0.17		0.01
v/c Ratio	0.85	0.67	0.14	0.75	1.13	0.20	0.70	0.07		0.89	0.02	0.06
Uniform Delay, d1	40.7	19.8	13.3	36.7	25.0	11.7	49.2	44.8		51.0	42.4	42.7
Progression Factor	1.20	0.75	1.16	1.03	1.00	1.64	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	20.4	1.1	0.2	0.8	58.7	0.0	7.8	0.1		29.2	0.0	0.1
Delay (s)	69.2	15.9	15.6	38.6	83.8	19.3	57.0	44.9		80.2	42.4	42.8
Level of Service	E	B	B	D	F	B	E	D		F	D	D
Approach Delay (s)		20.4			76.3			52.8			68.3	
Approach LOS		C			E			D			E	
Intersection Summary												
HCM 2000 Control Delay			56.7		HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)			16.4				
Intersection Capacity Utilization			102.0%		ICU Level of Service			G				
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

FB - 2027
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	103	1794	166	257	3652	20	46	0	162	64	0	61
Future Volume (vph)	103	1794	166	257	3652	20	46	0	162	64	0	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		60.0	135.0		70.0	25.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4476	1633	1825	4565	1601	1825	1883	1633	1789	1883	1601
Flt Permitted	0.046			0.065			0.757			0.757		
Satd. Flow (perm)	87	4476	1633	125	4565	1601	1454	1883	1633	1426	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			70			152			102
Link Speed (k/h)		70			70			50				48
Link Distance (m)		587.4			404.7			240.3				103.1
Travel Time (s)		30.2			20.8			17.3				7.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	103	1794	166	257	3652	20	46	0	162	64	0	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	1794	166	257	3652	20	46	0	162	64	0	61
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

FB - 2027
PM Peak Hour

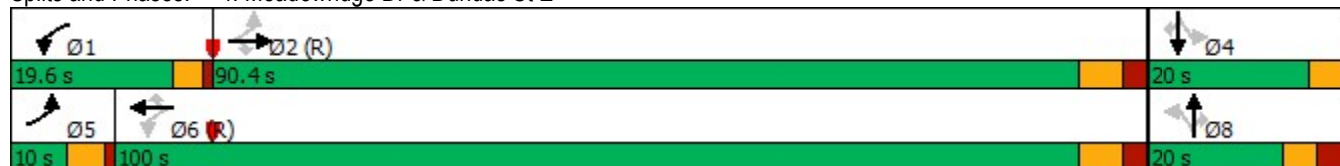


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	9.5	36.7	36.7	11.5	36.7	36.7	43.9	43.9	43.9	22.5	22.5	22.5
Total Split (s)	10.0	90.4	90.4	19.6	100.0	100.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	7.7%	69.5%	69.5%	15.1%	76.9%	76.9%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%
Maximum Green (s)	5.5	83.7	83.7	15.6	93.3	93.3	13.1	13.1	13.1	15.5	15.5	15.5
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		23.0	23.0		23.0	23.0	30.0	30.0	30.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	95.9	88.3	88.3	111.3	95.7	94.0	12.7		12.7	13.2		13.2
Actuated g/C Ratio	0.74	0.68	0.68	0.86	0.74	0.72	0.10		0.10	0.10		0.10
v/c Ratio	0.66	0.59	0.14	0.75	1.09	0.02	0.32		0.55	0.44		0.24
Control Delay	40.4	9.3	2.0	31.4	55.3	0.0	60.7		17.2	64.6		4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	40.4	9.3	2.0	31.4	55.3	0.0	60.7		17.2	64.6		4.2
LOS	D	A	A	C	E	A	E		B	E		A
Approach Delay		10.3			53.5			26.8				35.1
Approach LOS		B			D			C				D

Intersection Summary

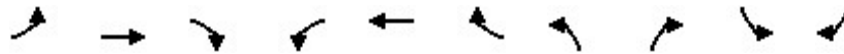
Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 38.2 Intersection LOS: D
 Intersection Capacity Utilization 99.2% ICU Level of Service F
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 4: Meadowridge Dr & Dundas St E



Queues
4: Meadowridge Dr & Dundas St E

FB - 2027
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	103	1794	166	257	3652	20	46	162	64	61
v/c Ratio	0.66	0.59	0.14	0.75	1.09	0.02	0.32	0.55	0.44	0.24
Control Delay	40.4	9.3	2.0	31.4	55.3	0.0	60.7	17.2	64.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	9.3	2.0	31.4	55.3	0.0	60.7	17.2	64.6	4.2
Queue Length 50th (m)	14.1	57.6	0.9	47.4	~437.3	0.0	11.2	2.4	15.8	0.0
Queue Length 95th (m)	m#29.2	67.2	m3.9	m40.0	m129.7	m0.0	23.4	23.0	30.0	3.2
Internal Link Dist (m)		563.4			380.7					
Turn Bay Length (m)	115.0		60.0	135.0		70.0	25.0		15.0	15.0
Base Capacity (vph)	157	3041	1160	360	3358	1176	167	322	170	280
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	0.66	0.59	0.14	0.71	1.09	0.02	0.28	0.50	0.38	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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





























Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

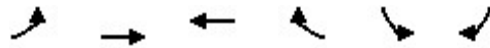
4: Meadowridge Dr & Dundas St E

FB - 2027
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  								
Traffic Volume (vph)	103	1794	166	257	3652	20	46	0	162	64	0	61	
Future Volume (vph)	103	1794	166	257	3652	20	46	0	162	64	0	61	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	5.0	5.0	1.0	5.0	6.7	5.0		5.0	4.5		4.5	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	
Satd. Flow (prot)	1789	4476	1633	1825	4565	1601	1825		1633	1789		1601	
Flt Permitted	0.05	1.00	1.00	0.07	1.00	1.00	0.76		1.00	0.76		1.00	
Satd. Flow (perm)	87	4476	1633	125	4565	1601	1455		1633	1426		1601	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	103	1794	166	257	3652	20	46	0	162	64	0	61	
RTOR Reduction (vph)	0	0	51	0	0	6	0	0	137	0	0	55	
Lane Group Flow (vph)	103	1794	115	257	3652	14	46	0	25	64	0	6	
Heavy Vehicles (%)	2%	3%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm	
Protected Phases	5	2		1	6			8			4		
Permitted Phases	2		2	6		6	8		8	4		4	
Actuated Green, G (s)	93.8	86.7	86.7	105.6	94.0	94.0	10.8		10.8	13.2		13.2	
Effective Green, g (s)	93.8	88.4	88.4	108.6	95.7	94.0	12.7		12.7	13.2		13.2	
Actuated g/C Ratio	0.72	0.68	0.68	0.84	0.74	0.72	0.10		0.10	0.10		0.10	
Clearance Time (s)	4.5	6.7	6.7	4.0	6.7	6.7	6.9		6.9	4.5		4.5	
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)	155	3043	1110	338	3360	1157	142		159	144		162	
v/s Ratio Prot	0.04	0.40		c0.10	c0.80								
v/s Ratio Perm	0.44		0.07	0.53		0.01	0.03		0.02	c0.04		0.00	
v/c Ratio	0.66	0.59	0.10	0.76	1.09	0.01	0.32		0.16	0.44		0.04	
Uniform Delay, d1	37.2	11.1	7.2	32.9	17.1	5.0	54.6		53.7	54.9		52.7	
Progression Factor	1.01	0.75	1.32	1.06	0.75	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	7.8	0.6	0.1	0.9	39.7	0.0	1.3		0.5	2.2		0.1	
Delay (s)	45.2	8.9	9.6	35.8	52.5	5.0	56.0		54.2	57.1		52.8	
Level of Service	D	A	A	D	D	A	E		D	E		D	
Approach Delay (s)		10.8			51.2			54.6			55.0		
Approach LOS		B			D			D			E		
Intersection Summary													
HCM 2000 Control Delay			38.2									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.03										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	16.4
Intersection Capacity Utilization			99.2%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

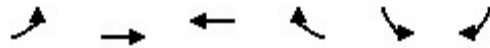
FB - 2027
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	80	1954	3991	172	116	55
Future Volume (vph)	80	1954	3991	172	116	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0			70.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	75.0				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Fr _t				0.850		0.850
Fl _t Protected	0.950				0.950	
Satd. Flow (prot)	1789	4520	4520	1601	1789	1601
Fl _t Permitted	0.038				0.950	
Satd. Flow (perm)	72	4520	4520	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				125		55
Link Speed (k/h)		70	70		48	
Link Distance (m)		404.7	451.7		199.7	
Travel Time (s)		20.8	23.2		15.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	1954	3991	172	116	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	1954	3991	172	116	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2	2	6	6		4

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

FB - 2027
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	114.0	104.0	104.0	16.0	16.0
Total Split (%)	7.7%	87.7%	80.0%	80.0%	12.3%	12.3%
Maximum Green (s)	5.5	109.5	99.5	99.5	11.5	11.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	110.0	110.0	99.9	99.9	11.0	11.0
Actuated g/C Ratio	0.85	0.85	0.77	0.77	0.08	0.08
v/c Ratio	0.60	0.51	1.15	0.14	0.77	0.30
Control Delay	41.5	2.3	89.9	0.0	88.6	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	2.3	89.9	0.0	88.6	18.2
LOS	D	A	F	A	F	B
Approach Delay		3.9	86.2		66.0	
Approach LOS		A	F		E	

Intersection Summary

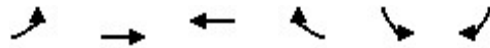
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	150
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.15
Intersection Signal Delay:	59.3
Intersection LOS:	E
Intersection Capacity Utilization:	91.0%
ICU Level of Service:	F
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 5: Dundas St E & William Cutmore Blvd



Queues
5: Dundas St E & William Cutmore Blvd

FB - 2027
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	80	1954	3991	172	116	55
v/c Ratio	0.60	0.51	1.15	0.14	0.77	0.30
Control Delay	41.5	2.3	89.9	0.0	88.6	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	2.3	89.9	0.0	88.6	18.2
Queue Length 50th (m)	9.4	30.5	~278.6	0.0	29.5	0.0
Queue Length 95th (m)	m#25.6	34.6	m47.0	m0.0	#57.9	12.8
Internal Link Dist (m)		380.7	427.7		175.7	
Turn Bay Length (m)	80.0			70.0		
Base Capacity (vph)	134	3824	3474	1259	158	191
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.51	1.15	0.14	0.73	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

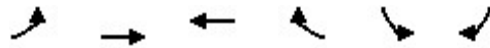
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis
5: Dundas St E & William Cutmore Blvd

FB - 2027
PM Peak Hour

































Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑↑↑	↑↑↑	↘	↙	↘
Traffic Volume (vph)	80	1954	3991	172	116	55
Future Volume (vph)	80	1954	3991	172	116	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1789	4520	4520	1601	1789	1601
Flt Permitted	0.04	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	72	4520	4520	1601	1789	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	1954	3991	172	116	55
RTOR Reduction (vph)	0	0	0	29	0	50
Lane Group Flow (vph)	80	1954	3991	143	116	5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2	2	6	6		4
Actuated Green, G (s)	110.0	110.0	99.9	99.9	11.0	11.0
Effective Green, g (s)	110.0	110.0	99.9	99.9	11.0	11.0
Actuated g/C Ratio	0.85	0.85	0.77	0.77	0.08	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	134	3824	3473	1230	151	135
v/s Ratio Prot	0.03	c0.43	c0.88		c0.06	
v/s Ratio Perm	0.48			0.09		0.00
v/c Ratio	0.60	0.51	1.15	0.12	0.77	0.03
Uniform Delay, d1	43.7	2.7	15.0	3.8	58.3	54.6
Progression Factor	1.48	0.69	1.38	0.00	1.00	1.00
Incremental Delay, d2	5.8	0.4	67.5	0.0	20.6	0.1
Delay (s)	70.6	2.3	88.3	0.0	78.8	54.7
Level of Service	E	A	F	A	E	D
Approach Delay (s)		5.0	84.6		71.1	
Approach LOS		A	F		E	

Intersection Summary			
HCM 2000 Control Delay	58.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

FB - 2027
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	153	1630	287	165	3394	155	529	817	620	121	350	240
Future Volume (vph)	153	1630	287	165	3394	155	529	817	620	121	350	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			*0.950			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4476	1601	1789	4565	1633	1789	3614	1738	1789	3614	1633
Flt Permitted	0.065			0.065			0.296			0.320		
Satd. Flow (perm)	125	4476	1601	122	4565	1633	557	3614	1738	603	3614	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			179			97			303			135
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		451.7			295.5			522.7			348.2	
Travel Time (s)		23.2			15.2			31.4			20.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	2%	1%	0%	2%	1%	5%	2%	1%	0%
Adj. Flow (vph)	153	1630	287	165	3394	155	529	817	620	121	350	240
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	1630	287	165	3394	155	529	817	620	121	350	240
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

FB - 2027
PM Peak Hour

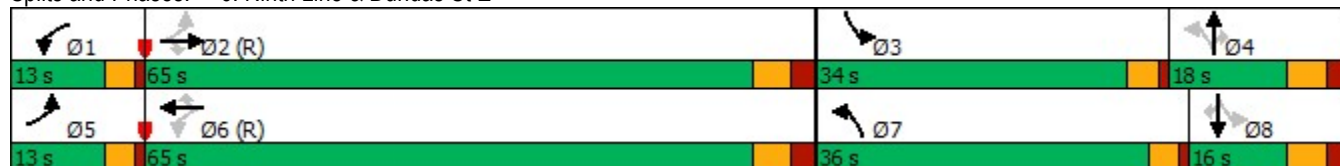


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	45.5	47.5	47.5	14.5	47.5	47.5
Total Split (s)	13.0	65.0	65.0	13.0	65.0	65.0	36.0	18.0	18.0	34.0	16.0	16.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	27.7%	13.8%	13.8%	26.2%	12.3%	12.3%
Maximum Green (s)	9.0	58.7	58.7	9.0	58.7	58.7	32.0	11.5	11.5	30.0	9.5	9.5
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0	34.0	34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0		0	0
Act Effct Green (s)	75.9	60.1	60.1	76.1	60.3	60.3	51.0	31.7	31.7	29.3	11.0	11.0
Actuated g/C Ratio	0.58	0.46	0.46	0.59	0.46	0.46	0.39	0.24	0.24	0.23	0.08	0.08
v/c Ratio	0.68	0.79	0.34	0.74	1.60	0.19	0.96	0.93	0.95	0.46	1.15	0.92
Control Delay	41.5	38.6	15.3	46.8	301.9	8.8	65.2	65.3	49.9	33.8	149.3	64.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	38.6	15.3	46.8	301.9	8.8	65.2	65.3	49.9	33.8	149.3	64.1
LOS	D	D	B	D	F	A	E	E	D	C	F	E
Approach Delay		35.6			278.4			60.4			100.9	
Approach LOS		D			F			E			F	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.60
 Intersection Signal Delay: 153.4
 Intersection LOS: F
 Intersection Capacity Utilization 128.0%
 ICU Level of Service H
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 6: Ninth Line & Dundas St E



Queues
6: Ninth Line & Dundas St E

FB - 2027
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	153	1630	287	165	3394	155	529	817	620	121	350	240
v/c Ratio	0.68	0.79	0.34	0.74	1.60	0.19	0.96	0.93	0.95	0.46	1.15	0.92
Control Delay	41.5	38.6	15.3	46.8	301.9	8.8	65.2	65.3	49.9	33.8	149.3	64.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	38.6	15.3	46.8	301.9	8.8	65.2	65.3	49.9	33.8	149.3	64.1
Queue Length 50th (m)	25.5	138.1	23.5	24.8	~519.0	8.1	115.8	108.1	90.0	20.0	~55.2	27.4
Queue Length 95th (m)	m#47.5	149.1	40.1	#55.8	#544.2	20.7	#184.3	#159.7	#173.5	33.6	#86.3	#76.4
Internal Link Dist (m)		427.7			271.5			498.7			324.2	
Turn Bay Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Base Capacity (vph)	230	2069	836	225	2115	808	550	882	653	523	305	261
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.79	0.34	0.73	1.60	0.19	0.96	0.93	0.95	0.23	1.15	0.92

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

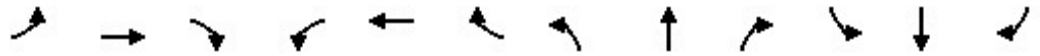
6: Ninth Line & Dundas St E

FB - 2027
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	153	1630	287	165	3394	155	529	817	620	121	350	240	
Future Volume (vph)	153	1630	287	165	3394	155	529	817	620	121	350	240	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.95	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1825	4476	1601	1789	4565	1633	1789	3614	1738	1789	3614	1633	
Flt Permitted	0.06	1.00	1.00	0.06	1.00	1.00	0.30	1.00	1.00	0.32	1.00	1.00	
Satd. Flow (perm)	124	4476	1601	122	4565	1633	558	3614	1738	603	3614	1633	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	153	1630	287	165	3394	155	529	817	620	121	350	240	
RTOR Reduction (vph)	0	0	96	0	0	52	0	0	229	0	0	124	
Lane Group Flow (vph)	153	1630	191	165	3394	103	529	817	391	121	350	116	
Heavy Vehicles (%)	0%	3%	2%	2%	1%	0%	2%	1%	5%	2%	1%	0%	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	
Protected Phases	5	2		1	6		7	4		3	8		
Permitted Phases	2		2	6		6	4		4	8		8	
Actuated Green, G (s)	67.5	58.8	58.8	67.9	59.0	59.0	45.5	30.2	30.2	20.8	9.5	9.5	
Effective Green, g (s)	73.5	60.1	60.1	73.9	60.3	60.3	48.5	31.7	31.7	26.8	11.0	11.0	
Actuated g/C Ratio	0.57	0.46	0.46	0.57	0.46	0.46	0.37	0.24	0.24	0.21	0.08	0.08	
Clearance Time (s)	4.0	6.3	6.3	4.0	6.3	6.3	4.0	6.5	6.5	4.0	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	3.0	3.0	
Lane Grp Cap (vph)	223	2069	740	221	2117	757	539	881	423	254	305	138	
v/s Ratio Prot	0.06	0.36		c0.07	c0.74		c0.26	0.23		0.05	c0.10		
v/s Ratio Perm	0.32		0.12	0.36		0.06	0.10		0.22	0.05		0.07	
v/c Ratio	0.69	0.79	0.26	0.75	1.60	0.14	0.98	0.93	0.92	0.48	1.15	0.84	
Uniform Delay, d1	32.9	29.6	21.3	31.7	34.9	19.9	36.8	48.0	48.0	44.0	59.5	58.7	
Progression Factor	1.15	1.20	1.77	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.4	2.7	0.7	12.9	273.7	0.4	33.8	15.4	25.8	1.4	97.6	35.0	
Delay (s)	45.1	38.2	38.5	44.6	308.5	20.3	70.6	63.5	73.7	45.5	157.1	93.6	
Level of Service	D	D	D	D	F	C	E	E	E	D	F	F	
Approach Delay (s)		38.7			284.8			68.6			116.7		
Approach LOS		D			F			E			F		
Intersection Summary													
HCM 2000 Control Delay			160.2									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.27										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	12.0
Intersection Capacity Utilization			128.0%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

FT - 2027
 AM Peak Hour



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	73	28	85	203	71	12	66	47	14	231	0
Future Volume (vph)	0	73	28	85	203	71	12	66	47	14	231	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
Fr _t		0.963			0.973			0.949				
Fl _t Protected					0.988			0.995			0.997	
Satd. Flow (prot)	0	1814	0	0	1811	0	0	1778	0	0	1878	0
Fl _t Permitted					0.988			0.995			0.997	
Satd. Flow (perm)	0	1814	0	0	1811	0	0	1778	0	0	1878	0
Link Speed (k/h)		48			48			48			50	
Link Distance (m)		206.1			164.0			292.3			126.9	
Travel Time (s)		15.5			12.3			21.9			9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	73	28	85	203	71	12	66	47	14	231	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	101	0	0	359	0	0	125	0	0	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.3%
ICU Level of Service	A
Analysis Period (min)	15





























HCM Unsignalized Intersection Capacity Analysis
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

FT - 2027
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	73	28	85	203	71	12	66	47	14	231	0
Future Volume (Veh/h)	0	73	28	85	203	71	12	66	47	14	231	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	73	28	85	203	71	12	66	47	14	231	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)								292				
pX, platoon unblocked												
vC, conflicting volume	545	396	231	437	372	90	231			113		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	545	396	231	437	372	90	231			113		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	86	97	81	63	93	99			99		
cM capacity (veh/h)	292	531	808	451	548	968	1337			1476		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	101	359	125	245								
Volume Left	0	85	12	14								
Volume Right	28	71	47	0								
cSH	587	568	1337	1476								
Volume to Capacity	0.17	0.63	0.01	0.01								
Queue Length 95th (m)	4.7	33.6	0.2	0.2								
Control Delay (s)	12.4	21.6	0.8	0.5								
Lane LOS	B	C	A	A								
Approach Delay (s)	12.4	21.6	0.8	0.5								
Approach LOS	B	C										
Intersection Summary												
Average Delay			11.1									
Intersection Capacity Utilization			48.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

FT - 2027
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	42	2602	132	111	1699	41	178	38	184	189	109	42
Future Volume (vph)	42	2602	132	111	1699	41	178	38	184	189	109	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	4565	1585	1825	4230	1633	1825	1830	1601	1825	1883	1633
Flt Permitted	0.076			0.045			0.591			0.732		
Satd. Flow (perm)	134	4565	1585	86	4230	1633	1135	1830	1601	1406	1883	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			67			92			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		651.2			600.6			206.2			292.3	
Travel Time (s)		33.5			30.9			14.8			21.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Adj. Flow (vph)	42	2602	132	111	1699	41	178	38	184	189	109	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	2602	132	111	1699	41	178	38	184	189	109	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

FT - 2027
AM Peak Hour

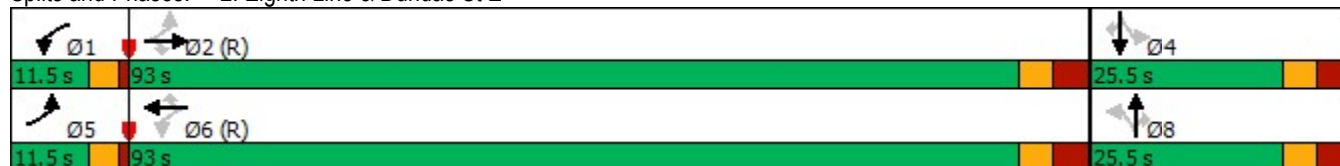


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	25.0	25.0	11.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	11.5	93.0	93.0	11.5	93.0	93.0	25.5	25.5	25.5	25.5	25.5	25.5
Total Split (%)	8.8%	71.5%	71.5%	8.8%	71.5%	71.5%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%
Maximum Green (s)	7.5	86.0	86.0	7.5	86.0	86.0	18.5	18.5	18.5	18.5	18.5	18.5
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0	3.0
Recall Mode	Max	C-Min	C-Min	Max	C-Min	C-Min	Min	Min	Min	Min	Min	Min
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	102.5	88.0	88.0	102.5	88.0	88.0	21.5	21.5	21.5	21.5	21.5	21.5
Actuated g/C Ratio	0.79	0.68	0.68	0.79	0.68	0.68	0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.18	0.84	0.12	0.53	0.59	0.04	0.95	0.13	0.54	0.81	0.35	0.13
Control Delay	4.5	19.2	3.3	49.1	4.2	0.0	107.7	47.6	30.9	78.7	51.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	19.2	3.3	49.1	4.2	0.0	107.7	47.6	30.9	78.7	51.7	4.9
LOS	A	B	A	D	A	A	F	D	C	E	D	A
Approach Delay		18.2			6.8			66.6			60.9	
Approach LOS		B			A			E			E	

Intersection Summary

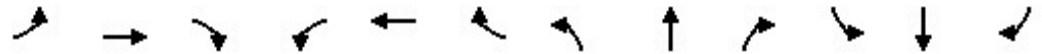
Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 23 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 20.6
 Intersection Capacity Utilization 84.4%
 Analysis Period (min) 15
 * User Entered Value
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 2: Eighth Line & Dundas St E



Queues
2: Eighth Line & Dundas St E

FT - 2027
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	42	2602	132	111	1699	41	178	38	184	189	109	42
v/c Ratio	0.18	0.84	0.12	0.53	0.59	0.04	0.95	0.13	0.54	0.81	0.35	0.13
Control Delay	4.5	19.2	3.3	49.1	4.2	0.0	107.7	47.6	30.9	78.7	51.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	19.2	3.3	49.1	4.2	0.0	107.7	47.6	30.9	78.7	51.7	4.9
Queue Length 50th (m)	1.9	191.9	3.9	13.1	22.5	0.0	45.7	8.4	21.2	47.3	25.0	0.0
Queue Length 95th (m)	4.0	217.2	10.4	m28.3	25.1	m0.0	#90.6	18.6	45.3	#85.6	42.8	4.6
Internal Link Dist (m)		627.2			576.6			182.2			268.3	
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0			15.0		15.0
Base Capacity (vph)	230	3090	1099	208	2863	1127	187	303	341	232	312	326
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.84	0.12	0.53	0.59	0.04	0.95	0.13	0.54	0.81	0.35	0.13

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Eighth Line & Dundas St E

FT - 2027
AM Peak Hour
































Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↘	↘	↑↑↑	↘	↘	↑	↘	↘	↑	↘
Traffic Volume (vph)	42	2602	132	111	1699	41	178	38	184	189	109	42
Future Volume (vph)	42	2602	132	111	1699	41	178	38	184	189	109	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1674	4565	1585	1825	4230	1633	1825	1830	1601	1825	1883	1633
Flt Permitted	0.08	1.00	1.00	0.04	1.00	1.00	0.59	1.00	1.00	0.73	1.00	1.00
Satd. Flow (perm)	135	4565	1585	86	4230	1633	1136	1830	1601	1407	1883	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	42	2602	132	111	1699	41	178	38	184	189	109	42
RTOR Reduction (vph)	0	0	26	0	0	13	0	0	77	0	0	35
Lane Group Flow (vph)	42	2602	106	111	1699	28	178	38	107	189	109	7
Heavy Vehicles (%)	9%	1%	3%	0%	9%	0%	0%	5%	2%	0%	2%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	93.5	86.0	86.0	93.5	86.0	86.0	18.5	18.5	18.5	18.5	18.5	18.5
Effective Green, g (s)	99.5	88.0	88.0	99.5	88.0	88.0	21.5	21.5	21.5	21.5	21.5	21.5
Actuated g/C Ratio	0.77	0.68	0.68	0.77	0.68	0.68	0.17	0.17	0.17	0.17	0.17	0.17
Clearance Time (s)	4.0	7.0	7.0	4.0	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	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	227	3090	1072	206	2863	1105	187	302	264	232	311	270
v/s Ratio Prot	0.01	c0.57		c0.04	0.40			0.02			0.06	
v/s Ratio Perm	0.13		0.07	0.37		0.02	c0.16		0.07	0.13		0.00
v/c Ratio	0.19	0.84	0.10	0.54	0.59	0.03	0.95	0.13	0.41	0.81	0.35	0.03
Uniform Delay, d1	6.1	15.8	7.3	31.2	11.3	6.9	53.7	46.2	48.5	52.3	48.1	45.5
Progression Factor	1.00	1.00	1.00	1.99	0.30	0.02	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	3.0	0.2	7.8	0.7	0.0	51.7	0.2	1.0	19.3	0.7	0.0
Delay (s)	7.9	18.8	7.5	69.9	4.1	0.2	105.4	46.4	49.6	71.6	48.7	45.5
Level of Service	A	B	A	E	A	A	F	D	D	E	D	D
Approach Delay (s)		18.1			8.0			74.1			61.1	
Approach LOS		B			A			E			E	

Intersection Summary

HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FT - 2027
 AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	74	2801	125	69	1440	94	128	22	200	404	32	201
Future Volume (vph)	74	2801	125	69	1440	94	128	22	200	404	32	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.865				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4565	1570	1825	4154	1601	1807	1644	0	1789	1883	1601
Flt Permitted	0.084			0.058			0.736			0.265		
Satd. Flow (perm)	158	4565	1570	111	4154	1601	1400	1644	0	499	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88			88		112				117
Link Speed (k/h)		70			70			50				48
Link Distance (m)		600.6			587.4			203.4				224.2
Travel Time (s)		30.9			30.2			14.6				16.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	74	2801	125	69	1440	94	128	22	200	404	32	201
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	2801	125	69	1440	94	128	222	0	404	32	201
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			8		7		4

Lanes, Volumes, Timings
3: Prince Michael Dr/John McKay Blvd & Dundas St E

FT - 2027
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	9.5	25.2	25.2	11.5	25.2	25.2	22.5	22.5		9.5	22.5	22.5
Total Split (s)	10.8	69.3	69.3	11.5	70.0	70.0	14.5	14.5		34.7	49.2	49.2
Total Split (%)	8.3%	53.3%	53.3%	8.8%	53.8%	53.8%	11.2%	11.2%		26.7%	37.8%	37.8%
Maximum Green (s)	6.3	64.1	64.1	7.5	64.8	64.8	10.2	10.2		30.2	44.7	44.7
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.2	-0.2	-3.0	-0.2	0.0	-3.3	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Min	Min		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0			0	0
Act Effct Green (s)	72.3	66.8	66.8	79.6	67.3	67.1	14.1	10.8		44.6	44.6	44.6
Actuated g/C Ratio	0.56	0.51	0.51	0.61	0.52	0.52	0.11	0.08		0.34	0.34	0.34
v/c Ratio	0.45	1.19	0.15	0.34	0.67	0.11	0.85	0.93		0.87	0.05	0.32
Control Delay	23.3	129.5	14.1	27.3	27.6	8.6	98.3	71.8		56.9	28.9	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	23.3	129.5	14.1	27.3	27.6	8.6	98.3	71.8		56.9	28.9	14.6
LOS	C	F	B	C	C	A	F	E		E	C	B
Approach Delay		122.1			26.5			81.5			42.1	
Approach LOS		F			C			F			D	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 83.0
 Intersection LOS: F
 Intersection Capacity Utilization 108.9%
 ICU Level of Service G
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 3: Prince Michael Dr/John McKay Blvd & Dundas St E



Queues
3: Prince Michael Dr/John McKay Blvd & Dundas St E

FT - 2027
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	74	2801	125	69	1440	94	128	222	404	32	201
v/c Ratio	0.45	1.19	0.15	0.34	0.67	0.11	0.85	0.93	0.87	0.05	0.32
Control Delay	23.3	129.5	14.1	27.3	27.6	8.6	98.3	71.8	56.9	28.9	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	129.5	14.1	27.3	27.6	8.6	98.3	71.8	56.9	28.9	14.6
Queue Length 50th (m)	11.8	~367.5	11.2	10.6	102.2	7.4	32.9	28.9	87.4	5.5	14.9
Queue Length 95th (m)	m13.6	#398.8	m16.7	23.9	85.9	10.8	#69.4	#78.8	#136.5	12.7	34.1
Internal Link Dist (m)		576.6			563.4			179.4		200.2	
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		15.0		15.0
Base Capacity (vph)	166	2345	849	206	2150	869	151	239	470	647	627
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	1.19	0.15	0.33	0.67	0.11	0.85	0.93	0.86	0.05	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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





























HCM Signalized Intersection Capacity Analysis
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FT - 2027
 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	2801	125	69	1440	94	128	22	200	404	32	201
Future Volume (vph)	74	2801	125	69	1440	94	128	22	200	404	32	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4565	1570	1825	4154	1601	1807	1643		1789	1883	1601
Flt Permitted	0.08	1.00	1.00	0.06	1.00	1.00	0.74	1.00		0.26	1.00	1.00
Satd. Flow (perm)	158	4565	1570	111	4154	1601	1401	1643		499	1883	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	74	2801	125	69	1440	94	128	22	200	404	32	201
RTOR Reduction (vph)	0	0	43	0	0	43	0	103	0	0	0	77
Lane Group Flow (vph)	74	2801	82	69	1440	51	128	119	0	404	32	124
Heavy Vehicles (%)	2%	1%	4%	0%	11%	2%	1%	2%	1%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	70.8	65.8	65.8	72.1	66.2	66.2	10.8	10.8		44.6	44.6	44.6
Effective Green, g (s)	70.8	66.0	66.0	78.1	66.4	66.2	14.1	10.8		44.6	44.6	44.6
Actuated g/C Ratio	0.54	0.51	0.51	0.60	0.51	0.51	0.11	0.08		0.34	0.34	0.34
Clearance Time (s)	4.5	5.2	5.2	4.0	5.2	5.2	4.3	4.3		4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.5	5.5	3.5	5.5	5.5	3.5	3.5		3.0	3.0	3.0
Lane Grp Cap (vph)	148	2317	797	184	2121	815	151	136		463	646	549
v/s Ratio Prot	0.02	c0.61		c0.03	0.35			0.07		c0.20	0.02	
v/s Ratio Perm	0.25		0.05	0.20		0.03	0.09			c0.10		0.08
v/c Ratio	0.50	1.21	0.10	0.38	0.68	0.06	0.85	0.88		0.87	0.05	0.23
Uniform Delay, d1	17.8	32.0	16.6	27.7	23.8	16.2	56.9	58.9		36.8	28.5	30.4
Progression Factor	1.53	1.44	2.22	1.91	1.09	2.12	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	96.4	0.1	1.4	1.6	0.1	33.9	43.1		16.4	0.0	0.2
Delay (s)	28.7	142.5	37.1	54.3	27.5	34.3	90.8	102.1		53.2	28.6	30.6
Level of Service	C	F	D	D	C	C	F	F		D	C	C
Approach Delay (s)		135.3			29.1			98.0			44.9	
Approach LOS		F			C			F			D	
Intersection Summary												
HCM 2000 Control Delay			92.2		HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)			18.3				
Intersection Capacity Utilization			108.9%		ICU Level of Service			G				
Analysis Period (min)			15									
c	Critical Lane Group											

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

FT - 2027
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	36	3208	82	104	1464	41	58	21	310	197	18	99
Future Volume (vph)	36	3208	82	104	1464	41	58	21	310	197	18	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		60.0	135.0		70.0	25.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4565	1601	1807	4230	1601	1789	1883	1633	1789	1883	1601
Flt Permitted	0.118			0.048			0.746			0.744		
Satd. Flow (perm)	222	4565	1601	91	4230	1601	1405	1883	1633	1401	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			70			70			69			99
Link Speed (k/h)		70			70			50				48
Link Distance (m)		587.4			404.7			240.3				182.1
Travel Time (s)		30.2			20.8			17.3				13.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	2%	1%	9%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	36	3208	82	104	1464	41	58	21	310	197	18	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	3208	82	104	1464	41	58	21	310	197	18	99
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

FT - 2027
AM Peak Hour

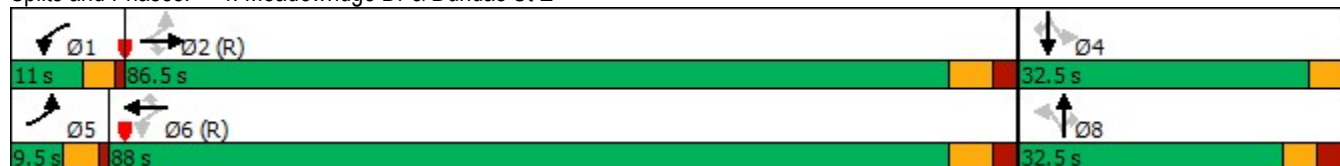


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	9.5	26.7	26.7	11.0	26.7	26.7	25.0	25.0	25.0	22.5	22.5	22.5
Total Split (s)	9.5	86.5	86.5	11.0	88.0	88.0	32.5	32.5	32.5	32.5	32.5	32.5
Total Split (%)	7.3%	66.5%	66.5%	8.5%	67.7%	67.7%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Maximum Green (s)	5.0	79.8	79.8	7.0	81.3	81.3	25.6	25.6	25.6	28.0	28.0	28.0
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	Max	C-Max	C-Max	Min	Min	Min	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	87.3	81.5	81.5	99.2	89.5	87.8	24.8	22.9	24.8	25.3	25.3	25.3
Actuated g/C Ratio	0.67	0.63	0.63	0.76	0.69	0.68	0.19	0.18	0.19	0.19	0.19	0.19
v/c Ratio	0.17	1.12	0.08	0.44	0.50	0.04	0.22	0.06	0.84	0.72	0.05	0.25
Control Delay	6.1	73.8	2.7	30.5	12.4	4.0	45.3	43.3	59.6	64.3	41.2	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	73.8	2.7	30.5	12.4	4.0	45.3	43.3	59.6	64.3	41.2	9.4
LOS	A	E	A	C	B	A	D	D	E	E	D	A
Approach Delay		71.4			13.4			56.6				45.7
Approach LOS		E			B			E				D

Intersection Summary

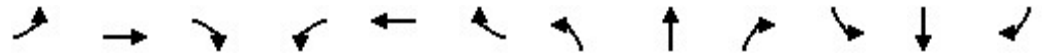
Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 52.4
 Intersection LOS: D
 Intersection Capacity Utilization 104.2%
 ICU Level of Service G
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 4: Meadowridge Dr & Dundas St E



Queues
4: Meadowridge Dr & Dundas St E

FT - 2027
AM Peak Hour
































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	36	3208	82	104	1464	41	58	21	310	197	18	99
v/c Ratio	0.17	1.12	0.08	0.44	0.50	0.04	0.22	0.06	0.84	0.72	0.05	0.25
Control Delay	6.1	73.8	2.7	30.5	12.4	4.0	45.3	43.3	59.6	64.3	41.2	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	73.8	2.7	30.5	12.4	4.0	45.3	43.3	59.6	64.3	41.2	9.4
Queue Length 50th (m)	2.2	~387.6	1.1	17.5	53.3	0.0	12.3	4.4	59.5	46.5	3.7	0.0
Queue Length 95th (m)	m1.9	m113.8	m0.8	34.4	87.4	3.8	24.8	11.8	#100.2	73.2	10.4	14.4
Internal Link Dist (m)		563.4			380.7			216.3			158.1	
Turn Bay Length (m)	115.0		60.0	135.0		70.0	25.0			15.0		15.0
Base Capacity (vph)	212	2861	1029	236	2910	1103	297	370	399	301	405	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	1.12	0.08	0.44	0.50	0.04	0.20	0.06	0.78	0.65	0.04	0.23

Intersection Summary

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

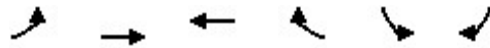
HCM Signalized Intersection Capacity Analysis
4: Meadowridge Dr & Dundas St E

FT - 2027
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	36	3208	82	104	1464	41	58	21	310	197	18	99
Future Volume (vph)	36	3208	82	104	1464	41	58	21	310	197	18	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	4565	1601	1807	4230	1601	1789	1883	1633	1789	1883	1601
Flt Permitted	0.12	1.00	1.00	0.05	1.00	1.00	0.75	1.00	1.00	0.74	1.00	1.00
Satd. Flow (perm)	222	4565	1601	91	4230	1601	1404	1883	1633	1401	1883	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	3208	82	104	1464	41	58	21	310	197	18	99
RTOR Reduction (vph)	0	0	26	0	0	14	0	0	56	0	0	80
Lane Group Flow (vph)	36	3208	56	104	1464	27	58	21	254	197	18	19
Heavy Vehicles (%)	2%	1%	2%	1%	9%	2%	2%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	82.8	79.8	79.8	93.5	86.0	86.0	22.9	22.9	22.9	25.3	25.3	25.3
Effective Green, g (s)	82.8	81.5	81.5	96.5	87.7	86.0	24.8	22.9	24.8	25.3	25.3	25.3
Actuated g/C Ratio	0.64	0.63	0.63	0.74	0.67	0.66	0.19	0.18	0.19	0.19	0.19	0.19
Clearance Time (s)	4.5	6.7	6.7	4.0	6.7	6.7	6.9	6.9	6.9	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	2861	1003	235	2853	1059	267	331	311	272	366	311
v/s Ratio Prot	0.00	c0.70		c0.04	0.35			0.01			0.01	
v/s Ratio Perm	0.12		0.03	0.29		0.02	0.04		c0.16	0.14		0.01
v/c Ratio	0.20	1.12	0.06	0.44	0.51	0.03	0.22	0.06	0.82	0.72	0.05	0.06
Uniform Delay, d1	9.2	24.2	9.4	33.4	10.5	7.6	44.4	44.6	50.4	49.1	42.6	42.7
Progression Factor	1.07	0.67	0.97	1.36	1.10	6.33	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	55.1	0.0	5.5	0.6	0.0	0.4	0.1	15.2	9.2	0.1	0.1
Delay (s)	9.9	71.4	9.1	50.8	12.2	48.0	44.8	44.7	65.6	58.3	42.6	42.8
Level of Service	A	E	A	D	B	D	D	D	E	E	D	D
Approach Delay (s)		69.2			15.6			61.4			52.5	
Approach LOS		E			B			E			D	
Intersection Summary												
HCM 2000 Control Delay			52.4		HCM 2000 Level of Service				D			
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)				16.4			
Intersection Capacity Utilization			104.2%		ICU Level of Service				G			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

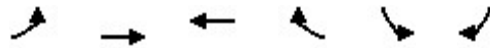
FT - 2027
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	3675	1536	83	212	113
Future Volume (vph)	40	3675	1536	83	212	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0			70.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	75.0				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	4520	4520	1601	1789	1601
Flt Permitted	0.111				0.950	
Satd. Flow (perm)	209	4520	4520	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				83		80
Link Speed (k/h)		70	70		48	
Link Distance (m)		404.7	451.7		142.5	
Travel Time (s)		20.8	23.2		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	3675	1536	83	212	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	3675	1536	83	212	113
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

FT - 2027
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	106.0	106.0	106.0	106.0	24.0	24.0
Total Split (%)	81.5%	81.5%	81.5%	81.5%	18.5%	18.5%
Maximum Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.15	0.15
v/c Ratio	0.25	1.04	0.44	0.07	0.79	0.37
Control Delay	2.3	30.0	1.3	0.1	74.6	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.3	30.0	1.3	0.1	74.6	21.2
LOS	A	C	A	A	E	C
Approach Delay		29.7	1.3		56.1	
Approach LOS		C	A		E	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle:	150
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.04
Intersection Signal Delay:	23.1
Intersection LOS:	C
Intersection Capacity Utilization:	90.3%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 5: Dundas St E & William Cutmore Blvd



Queues
5: Dundas St E & William Cutmore Blvd

FT - 2027
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	40	3675	1536	83	212	113
v/c Ratio	0.25	1.04	0.44	0.07	0.79	0.37
Control Delay	2.3	30.0	1.3	0.1	74.6	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.3	30.0	1.3	0.1	74.6	21.2
Queue Length 50th (m)	1.4	~299.7	9.1	0.0	53.1	7.4
Queue Length 95th (m)	m1.0	m61.3	m13.2	m0.1	#90.4	25.0
Internal Link Dist (m)		380.7	427.7		118.5	
Turn Bay Length (m)	80.0			70.0		
Base Capacity (vph)	163	3529	3529	1268	268	308
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	1.04	0.44	0.07	0.79	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

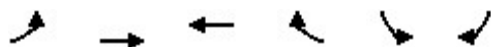
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis
5: Dundas St E & William Cutmore Blvd

FT - 2027
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑↑↑	↑↑↑	↘	↙	↘
Traffic Volume (vph)	40	3675	1536	83	212	113
Future Volume (vph)	40	3675	1536	83	212	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1789	4520	4520	1601	1789	1601
Flt Permitted	0.11	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	209	4520	4520	1601	1789	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	3675	1536	83	212	113
RTOR Reduction (vph)	0	0	0	18	0	68
Lane Group Flow (vph)	40	3675	1536	65	212	45
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	101.5	101.5	101.5	101.5	19.5	19.5
Effective Green, g (s)	101.5	101.5	101.5	101.5	19.5	19.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	163	3529	3529	1250	268	240
v/s Ratio Prot		c0.81	0.34		c0.12	
v/s Ratio Perm	0.19			0.04		0.03
v/c Ratio	0.25	1.04	0.44	0.05	0.79	0.19
Uniform Delay, d1	3.9	14.2	4.7	3.3	53.3	48.3
Progression Factor	0.43	0.57	0.22	0.01	1.00	1.00
Incremental Delay, d2	0.3	19.7	0.3	0.1	20.8	1.7
Delay (s)	2.0	27.9	1.3	0.1	74.1	50.0
Level of Service	A	C	A	A	E	D
Approach Delay (s)		27.6	1.3		65.7	
Approach LOS		C	A		E	































Intersection Summary

HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

FT - 2027
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	258	3125	515	140	1245	142	255	366	179	213	609	118
Future Volume (vph)	258	3125	515	140	1245	142	255	366	179	213	609	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4565	1633	1789	4230	1633	1630	3579	1585	1825	3650	1633
Flt Permitted	0.095			0.071			0.194			0.492		
Satd. Flow (perm)	183	4565	1633	134	4230	1633	333	3579	1585	945	3650	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			130			158			128
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		451.7			295.5			522.7			348.2	
Travel Time (s)		23.2			15.2			37.6			25.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	2%	9%	0%	12%	2%	3%	0%	0%	0%
Adj. Flow (vph)	258	3125	515	140	1245	142	255	366	179	213	609	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	3125	515	140	1245	142	255	366	179	213	609	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

FT - 2027
AM Peak Hour

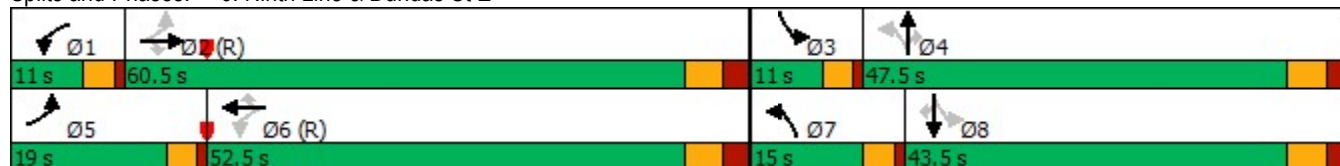


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	12.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	19.0	60.5	60.5	11.0	52.5	52.5	15.0	47.5	47.5	11.0	43.5	43.5
Total Split (%)	14.6%	46.5%	46.5%	8.5%	40.4%	40.4%	11.5%	36.5%	36.5%	8.5%	33.5%	33.5%
Maximum Green (s)	15.0	54.2	54.2	7.0	46.2	46.2	11.0	41.0	41.0	7.0	37.0	37.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	78.8	61.1	61.1	71.2	54.5	54.5	49.2	34.2	34.2	44.2	30.2	30.2
Actuated g/C Ratio	0.61	0.47	0.47	0.55	0.42	0.42	0.38	0.26	0.26	0.34	0.23	0.23
v/c Ratio	0.73	1.46	0.61	0.60	0.70	0.19	0.96	0.39	0.34	0.55	0.72	0.25
Control Delay	31.3	236.8	23.0	36.0	35.1	6.3	78.2	39.8	8.8	34.3	50.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	236.8	23.0	36.0	35.1	6.3	78.2	39.8	8.8	34.3	50.7	6.2
LOS	C	F	C	D	D	A	E	D	A	C	D	A
Approach Delay		195.0			32.5			45.1			41.4	
Approach LOS		F			C			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.46
 Intersection Signal Delay: 123.5 Intersection LOS: F
 Intersection Capacity Utilization 114.1% ICU Level of Service H
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 6: Ninth Line & Dundas St E



Queues
6: Ninth Line & Dundas St E

FT - 2027
AM Peak Hour

































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	258	3125	515	140	1245	142	255	366	179	213	609	118
v/c Ratio	0.73	1.46	0.61	0.60	0.70	0.19	0.96	0.39	0.34	0.55	0.72	0.25
Control Delay	31.3	236.8	23.0	36.0	35.1	6.3	78.2	39.8	8.8	34.3	50.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	236.8	23.0	36.0	35.1	6.3	78.2	39.8	8.8	34.3	50.7	6.2
Queue Length 50th (m)	49.4	~463.2	69.1	18.0	112.0	1.8	47.8	40.6	4.1	38.1	76.1	0.0
Queue Length 95th (m)	m50.2	m#454.0	m65.4	#46.0	140.0	15.6	#83.9	50.8	20.3	52.4	89.6	12.0
Internal Link Dist (m)		427.7			271.5			498.7			324.2	
Turn Bay Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Base Capacity (vph)	365	2145	850	234	1772	759	265	1170	624	388	1080	573
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	1.46	0.61	0.60	0.70	0.19	0.96	0.31	0.29	0.55	0.56	0.21

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
6: Ninth Line & Dundas St E

FT - 2027
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  			 			 		
Traffic Volume (vph)	258	3125	515	140	1245	142	255	366	179	213	609	118	
Future Volume (vph)	258	3125	515	140	1245	142	255	366	179	213	609	118	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1825	4565	1633	1789	4230	1633	1630	3579	1585	1825	3650	1633	
Flt Permitted	0.09	1.00	1.00	0.07	1.00	1.00	0.19	1.00	1.00	0.49	1.00	1.00	
Satd. Flow (perm)	182	4565	1633	134	4230	1633	333	3579	1585	945	3650	1633	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	258	3125	515	140	1245	142	255	366	179	213	609	118	
RTOR Reduction (vph)	0	0	83	0	0	76	0	0	116	0	0	91	
Lane Group Flow (vph)	258	3125	432	140	1245	67	255	366	63	213	609	27	
Heavy Vehicles (%)	0%	1%	0%	2%	9%	0%	12%	2%	3%	0%	0%	0%	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	
Protected Phases	5	2		1	6		7	4		3	8		
Permitted Phases	2		2	6		6	4		4	8		8	
Actuated Green, G (s)	73.5	59.8	59.8	62.9	53.2	53.2	43.7	32.7	32.7	35.7	28.7	28.7	
Effective Green, g (s)	76.5	61.1	61.1	68.9	54.5	54.5	46.7	34.2	34.2	41.7	30.2	30.2	
Actuated g/C Ratio	0.59	0.47	0.47	0.53	0.42	0.42	0.36	0.26	0.26	0.32	0.23	0.23	
Clearance Time (s)	4.0	6.3	6.3	4.0	6.3	6.3	4.0	6.5	6.5	4.0	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	3.0	3.0	
Lane Grp Cap (vph)	351	2145	767	232	1773	684	259	941	416	370	847	379	
v/s Ratio Prot	c0.11	c0.68		0.06	0.29		c0.11	0.10		0.04	c0.17		
v/s Ratio Perm	0.32		0.26	0.26		0.04	0.25		0.04	0.14		0.02	
v/c Ratio	0.74	1.46	0.56	0.60	0.70	0.10	0.98	0.39	0.15	0.58	0.72	0.07	
Uniform Delay, d1	28.9	34.5	24.8	28.1	31.1	22.9	35.2	39.3	36.8	34.4	46.0	39.0	
Progression Factor	1.20	1.12	1.23	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	205.8	0.3	4.4	2.4	0.3	51.2	0.3	0.2	2.2	2.9	0.1	
Delay (s)	35.3	244.4	30.8	32.5	33.4	23.1	86.4	39.6	36.9	36.5	48.9	39.0	
Level of Service	D	F	C	C	C	C	F	D	D	D	D	D	
Approach Delay (s)		202.4			32.4			53.9			44.9		
Approach LOS		F			C			D			D		
Intersection Summary													
HCM 2000 Control Delay			128.9	HCM 2000 Level of Service						F			
HCM 2000 Volume to Capacity ratio			1.11										
Actuated Cycle Length (s)			130.0	Sum of lost time (s)						12.0			
Intersection Capacity Utilization			114.1%	ICU Level of Service						H			
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
7: Meadowridge Drive & William Cutmore Boulevard

FT - 2027
AM Peak Hour



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	5	35	40	4	41	30	44	64	1	34	94	11
Future Volume (vph)	5	35	40	4	41	30	44	64	1	34	94	11
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
Fr _t		0.932			0.946			0.999			0.989	
Fl _t Protected		0.997			0.997			0.980			0.988	
Satd. Flow (prot)	0	1750	0	0	1776	0	0	1844	0	0	1840	0
Fl _t Permitted		0.997			0.997			0.980			0.988	
Satd. Flow (perm)	0	1750	0	0	1776	0	0	1844	0	0	1840	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		187.0			71.7			47.7			125.9	
Travel Time (s)		14.0			5.4			3.6			9.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	35	40	4	41	30	44	64	1	34	94	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	75	0	0	109	0	0	139	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)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.5%
ICU Level of Service	A
Analysis Period (min)	15

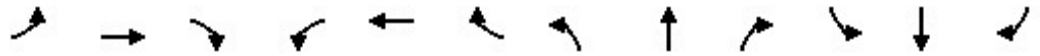
HCM Unsignalized Intersection Capacity Analysis
 7: Meadowridge Drive & William Cutmore Boulevard

FT - 2027
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	35	40	4	41	30	44	64	1	34	94	11
Future Volume (Veh/h)	5	35	40	4	41	30	44	64	1	34	94	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	35	40	4	41	30	44	64	1	34	94	11
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	370	320	100	378	326	64	105			65		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	370	320	100	378	326	64	105			65		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	94	96	99	93	97	97			98		
cM capacity (veh/h)	516	566	956	509	562	1000	1486			1537		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	80	75	109	139								
Volume Left	5	4	44	34								
Volume Right	40	30	1	11								
cSH	706	677	1486	1537								
Volume to Capacity	0.11	0.11	0.03	0.02								
Queue Length 95th (m)	2.9	2.8	0.7	0.5								
Control Delay (s)	10.8	11.0	3.2	1.9								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.8	11.0	3.2	1.9								
Approach LOS	B	B										
Intersection Summary												
Average Delay			5.7									
Intersection Capacity Utilization			22.5%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

FT - 2027
 PM Peak Hour



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	256	20	54	133	44	33	154	158	45	82	0
Future Volume (vph)	0	256	20	54	133	44	33	154	158	45	82	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
Fr _t		0.990			0.974			0.938				
Fl _t Protected					0.988			0.995			0.983	
Satd. Flow (prot)	0	1865	0	0	1812	0	0	1758	0	0	1851	0
Fl _t Permitted					0.988			0.995			0.983	
Satd. Flow (perm)	0	1865	0	0	1812	0	0	1758	0	0	1851	0
Link Speed (k/h)		48			48			48			50	
Link Distance (m)		195.4			224.6			292.3			127.0	
Travel Time (s)		14.7			16.8			21.9			9.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	256	20	54	133	44	33	154	158	45	82	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	276	0	0	231	0	0	345	0	0	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.8%
ICU Level of Service	B
Analysis Period (min)	15





























HCM Unsignalized Intersection Capacity Analysis
 1: Eighth Line/Threshing Mills Blvd & Wheatboom Drive

FT - 2027
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	256	20	54	133	44	33	154	158	45	82	0
Future Volume (Veh/h)	0	256	20	54	133	44	33	154	158	45	82	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	256	20	54	133	44	33	154	158	45	82	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	582	550	82	619	471	233	82			312		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	582	550	82	619	471	233	82			312		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	39	98	72	71	95	98			96		
cM capacity (veh/h)	299	418	978	193	463	806	1515			1248		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	276	231	345	127								
Volume Left	0	54	33	45								
Volume Right	20	44	158	0								
cSH	436	371	1515	1248								
Volume to Capacity	0.63	0.62	0.02	0.04								
Queue Length 95th (m)	32.5	30.5	0.5	0.9								
Control Delay (s)	26.5	29.4	0.9	3.0								
Lane LOS	D	D	A	A								
Approach Delay (s)	26.5	29.4	0.9	3.0								
Approach LOS	D	D										
Intersection Summary												
Average Delay			15.1									
Intersection Capacity Utilization			57.8%		ICU Level of Service				B			
Analysis Period (min)			15									

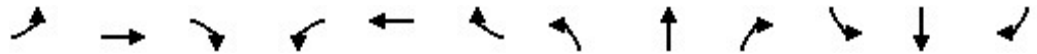
Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

FT - 2027
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	94	1944	212	239	3158	150	192	88	165	80	42	27
Future Volume (vph)	94	1944	212	239	3158	150	192	88	165	80	42	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	97.0		52.0	150.0		75.0	26.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1807	1865	1633	1825	1921	1633
Flt Permitted	0.055			0.054			0.730			0.667		
Satd. Flow (perm)	106	4476	1601	104	4565	1633	1389	1865	1633	1281	1921	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			70			131			65
Link Speed (k/h)		70			70			50				50
Link Distance (m)		651.2			600.6			206.2				292.3
Travel Time (s)		33.5			30.9			14.8				21.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Adj. Flow (vph)	94	1944	212	239	3158	150	192	88	165	80	42	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	1944	212	239	3158	150	192	88	165	80	42	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
2: Eighth Line & Dundas St E

FT - 2027
PM Peak Hour

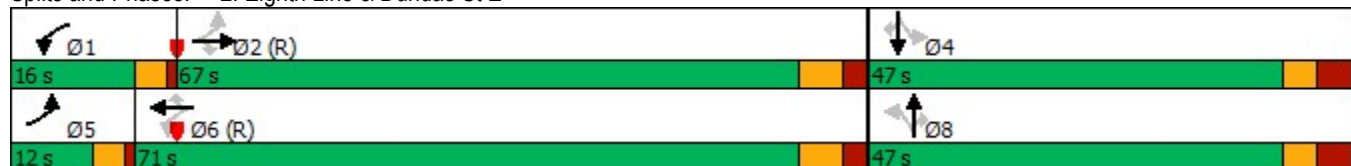


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	14.5	37.7	37.7	11.5	37.7	37.7	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	12.0	67.0	67.0	16.0	71.0	71.0	47.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	9.2%	51.5%	51.5%	12.3%	54.6%	54.6%	36.2%	36.2%	36.2%	36.2%	36.2%	36.2%
Maximum Green (s)	8.0	60.3	60.3	12.0	64.3	64.3	40.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-1.7	-1.7	-3.0	-1.7	-1.7	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5	3.5	3.5	3.5	3.5
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	87.5	71.7	71.7	97.6	80.7	80.7	27.4	27.4	27.4	27.4	27.4	27.4
Actuated g/C Ratio	0.67	0.55	0.55	0.75	0.62	0.62	0.21	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.41	0.79	0.23	0.68	1.11	0.14	0.66	0.22	0.37	0.30	0.10	0.07
Control Delay	23.0	27.8	9.1	36.6	78.2	11.9	56.8	41.7	12.6	43.9	38.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	27.8	9.1	36.6	78.2	11.9	56.8	41.7	12.6	43.9	38.8	0.3
LOS	C	C	A	D	E	B	E	D	B	D	D	A
Approach Delay		25.8			72.6			37.4			34.6	
Approach LOS		C			E			D			C	

Intersection Summary

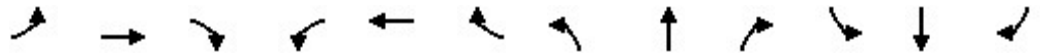
Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 52.8 Intersection LOS: D
 Intersection Capacity Utilization 95.0% ICU Level of Service F
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 2: Eighth Line & Dundas St E



Queues
2: Eighth Line & Dundas St E

FT - 2027
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	94	1944	212	239	3158	150	192	88	165	80	42	27
v/c Ratio	0.41	0.79	0.23	0.68	1.11	0.14	0.66	0.22	0.37	0.30	0.10	0.07
Control Delay	23.0	27.8	9.1	36.6	78.2	11.9	56.8	41.7	12.6	43.9	38.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	27.8	9.1	36.6	78.2	11.9	56.8	41.7	12.6	43.9	38.8	0.3
Queue Length 50th (m)	6.2	164.7	12.7	52.3	~377.1	12.1	45.3	18.8	7.1	17.4	8.7	0.0
Queue Length 95th (m)	23.9	214.5	29.8	m46.1	#329.3	m10.0	64.8	30.4	23.4	29.2	17.0	0.0
Internal Link Dist (m)		627.2			576.6			182.2			268.3	
Turn Bay Length (m)	97.0		52.0	150.0		75.0	26.0			15.0		15.0
Base Capacity (vph)	234	2467	931	354	2835	1040	459	616	627	423	635	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.79	0.23	0.68	1.11	0.14	0.42	0.14	0.26	0.19	0.07	0.05

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Eighth Line & Dundas St E

FT - 2027
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	1944	212	239	3158	150	192	88	165	80	42	27
Future Volume (vph)	94	1944	212	239	3158	150	192	88	165	80	42	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1825	4476	1601	1825	4565	1633	1807	1865	1633	1825	1921	1633
Flt Permitted	0.05	1.00	1.00	0.05	1.00	1.00	0.73	1.00	1.00	0.67	1.00	1.00
Satd. Flow (perm)	105	4476	1601	104	4565	1633	1388	1865	1633	1282	1921	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	94	1944	212	239	3158	150	192	88	165	80	42	27
RTOR Reduction (vph)	0	0	49	0	0	26	0	0	103	0	0	21
Lane Group Flow (vph)	94	1944	163	239	3158	124	192	88	62	80	42	6
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%	1%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	78.8	70.0	70.0	91.9	79.1	79.1	24.4	24.4	24.4	24.4	24.4	24.4
Effective Green, g (s)	84.8	71.7	71.7	94.9	80.8	80.8	27.4	27.4	27.4	27.4	27.4	27.4
Actuated g/C Ratio	0.65	0.55	0.55	0.73	0.62	0.62	0.21	0.21	0.21	0.21	0.21	0.21
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.5	5.5	5.5	3.5	5.5	5.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Grp Cap (vph)	224	2468	883	352	2837	1014	292	393	344	270	404	344
v/s Ratio Prot	0.04	0.43		c0.11	c0.69			0.05			0.02	
v/s Ratio Perm	0.23		0.10	0.39		0.08	c0.14		0.04	0.06		0.00
v/c Ratio	0.42	0.79	0.18	0.68	1.11	0.12	0.66	0.22	0.18	0.30	0.10	0.02
Uniform Delay, d1	27.5	23.1	14.6	36.8	24.6	10.1	47.0	42.5	42.1	43.2	41.4	40.6
Progression Factor	1.00	1.00	1.00	1.14	1.06	1.71	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	2.6	0.5	0.5	51.5	0.0	5.5	0.3	0.3	0.7	0.1	0.0
Delay (s)	29.0	25.7	15.0	42.5	77.5	17.2	52.5	42.8	42.4	43.9	41.5	40.7
Level of Service	C	C	B	D	E	B	D	D	D	D	D	D
Approach Delay (s)		24.9			72.6			46.8			42.6	
Approach LOS		C			E			D			D	
Intersection Summary												
HCM 2000 Control Delay			53.3		HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)			10.0				
Intersection Capacity Utilization			95.0%		ICU Level of Service			F				
Analysis Period (min)			15									
c Critical Lane Group												

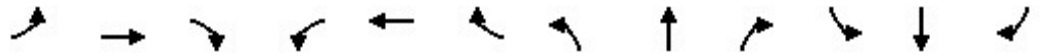
Lanes, Volumes, Timings
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FT - 2027
 PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	1775	175	265	3214	281	192	8	99	251	13	126
Future Volume (vph)	219	1775	175	265	3214	281	192	8	99	251	13	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		55.0	125.0		70.0	50.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.861				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4476	1601	1825	4565	1601	1825	1652	0	1789	1883	1601
Flt Permitted	0.057			0.054			0.749			0.688		
Satd. Flow (perm)	107	4476	1601	104	4565	1601	1439	1652	0	1296	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			111			136		99				126
Link Speed (k/h)		70			70			50				48
Link Distance (m)		600.6			587.4			203.4				180.8
Travel Time (s)		30.9			30.2			14.6				13.6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	219	1775	175	265	3214	281	192	8	99	251	13	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	1775	175	265	3214	281	192	107	0	251	13	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FT - 2027
 PM Peak Hour

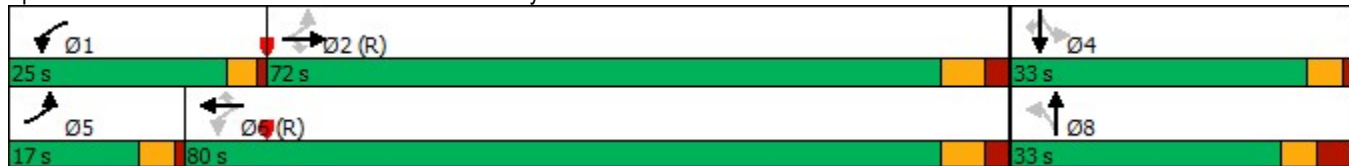


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	9.5	26.8	26.8	11.5	26.8	26.8	24.9	24.9		22.5	22.5	22.5
Total Split (s)	17.0	72.0	72.0	25.0	80.0	80.0	33.0	33.0		33.0	33.0	33.0
Total Split (%)	13.1%	55.4%	55.4%	19.2%	61.5%	61.5%	25.4%	25.4%		25.4%	25.4%	25.4%
Maximum Green (s)	12.5	65.2	65.2	21.0	73.2	73.2	26.1	26.1		28.5	28.5	28.5
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	3.4	3.4		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.8	-1.8	-3.0	-1.8	0.0	-1.9	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	1.0	5.0	6.8	5.0	6.9		4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	0
Act Effct Green (s)	84.4	71.5	71.5	96.7	76.2	74.4	26.8	24.9		27.3	27.3	27.3
Actuated g/C Ratio	0.65	0.55	0.55	0.74	0.59	0.57	0.21	0.19		0.21	0.21	0.21
v/c Ratio	0.95	0.72	0.19	0.75	1.20	0.29	0.65	0.27		0.92	0.03	0.29
Control Delay	80.8	19.1	8.4	35.5	118.0	11.8	58.2	11.6		88.2	40.4	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	80.8	19.1	8.4	35.5	118.0	11.8	58.2	11.6		88.2	40.4	8.7
LOS	F	B	A	D	F	B	E	B		F	D	A
Approach Delay		24.5			104.2			41.5			60.9	
Approach LOS		C			F			D			E	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 72.7
 Intersection LOS: E
 Intersection Capacity Utilization 106.5%
 ICU Level of Service G
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 3: Prince Michael Dr/John McKay Blvd & Dundas St E



Queues
3: Prince Michael Dr/John McKay Blvd & Dundas St E

FT - 2027
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	219	1775	175	265	3214	281	192	107	251	13	126
v/c Ratio	0.95	0.72	0.19	0.75	1.20	0.29	0.65	0.27	0.92	0.03	0.29
Control Delay	80.8	19.1	8.4	35.5	118.0	11.8	58.2	11.6	88.2	40.4	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.8	19.1	8.4	35.5	118.0	11.8	58.2	11.6	88.2	40.4	8.7
Queue Length 50th (m)	48.7	58.1	3.6	59.5	~419.2	25.8	44.9	1.7	62.8	2.7	0.0
Queue Length 95th (m)	m#76.7	103.3	m16.9	m51.5	m#348.0	m22.3	70.8	16.9	#110.1	8.3	15.9
Internal Link Dist (m)		576.6			563.4			179.4		156.8	
Turn Bay Length (m)	115.0		55.0	125.0		70.0	50.0		15.0		15.0
Base Capacity (vph)	231	2461	930	395	2677	974	309	410	284	412	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.72	0.19	0.67	1.20	0.29	0.62	0.26	0.88	0.03	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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





























HCM Signalized Intersection Capacity Analysis
 3: Prince Michael Dr/John McKay Blvd & Dundas St E

FT - 2027
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	1775	175	265	3214	281	192	8	99	251	13	126
Future Volume (vph)	219	1775	175	265	3214	281	192	8	99	251	13	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	5.0	1.0	5.0	6.8	5.0	6.9		4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4476	1601	1825	4565	1601	1825	1652		1789	1883	1601
Flt Permitted	0.06	1.00	1.00	0.05	1.00	1.00	0.75	1.00		0.69	1.00	1.00
Satd. Flow (perm)	108	4476	1601	104	4565	1601	1439	1652		1296	1883	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	219	1775	175	265	3214	281	192	8	99	251	13	126
RTOR Reduction (vph)	0	0	50	0	0	58	0	80	0	0	0	100
Lane Group Flow (vph)	219	1775	125	265	3214	223	192	27	0	251	13	26
Heavy Vehicles (%)	2%	3%	2%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	82.2	69.7	69.7	91.4	74.4	74.4	24.9	24.9		27.3	27.3	27.3
Effective Green, g (s)	82.2	71.5	71.5	94.4	76.2	74.4	26.8	24.9		27.3	27.3	27.3
Actuated g/C Ratio	0.63	0.55	0.55	0.73	0.59	0.57	0.21	0.19		0.21	0.21	0.21
Clearance Time (s)	4.5	6.8	6.8	4.0	6.8	6.8	6.9	6.9		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	229	2461	880	349	2675	916	296	316		272	395	336
v/s Ratio Prot	c0.09	0.40		c0.12	c0.70			0.02				0.01
v/s Ratio Perm	0.51		0.08	0.43		0.14	0.13			c0.19		0.02
v/c Ratio	0.96	0.72	0.14	0.76	1.20	0.24	0.65	0.09		0.92	0.03	0.08
Uniform Delay, d1	43.6	21.8	14.3	38.1	26.9	13.8	47.3	43.2		50.3	40.8	41.2
Progression Factor	1.20	0.78	1.27	1.01	1.02	1.62	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	36.9	1.3	0.2	0.9	91.0	0.1	4.8	0.1		34.6	0.0	0.1
Delay (s)	89.1	18.2	18.3	39.5	118.4	22.4	52.1	43.3		84.9	40.9	41.3
Level of Service	F	B	B	D	F	C	D	D		F	D	D
Approach Delay (s)		25.4			105.7			49.0			69.4	
Approach LOS		C			F			D			E	
Intersection Summary												
HCM 2000 Control Delay			74.7									E
HCM 2000 Volume to Capacity ratio			1.14									
Actuated Cycle Length (s)			130.0							16.4		
Intersection Capacity Utilization			106.5%									G
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

FT - 2027
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	125	1863	166	257	3721	127	46	4	162	130	5	76
Future Volume (vph)	125	1863	166	257	3721	127	46	4	162	130	5	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		60.0	135.0		70.0	25.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4476	1633	1825	4565	1601	1825	1883	1633	1789	1883	1601
Flt Permitted	0.047			0.057			0.754			0.755		
Satd. Flow (perm)	89	4476	1633	110	4565	1601	1449	1883	1633	1422	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154			82			148			102
Link Speed (k/h)		70			70			50				48
Link Distance (m)		587.4			404.7			240.3				103.1
Travel Time (s)		30.2			20.8			17.3				7.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	125	1863	166	257	3721	127	46	4	162	130	5	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	1863	166	257	3721	127	46	4	162	130	5	76
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4

Lanes, Volumes, Timings
4: Meadowridge Dr & Dundas St E

FT - 2027
PM Peak Hour

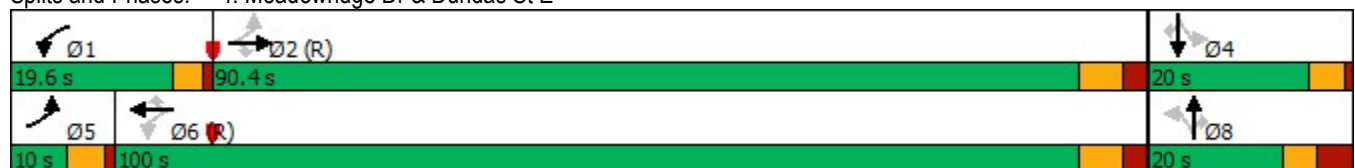


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	9.5	36.7	36.7	11.5	36.7	36.7	43.9	43.9	43.9	22.5	22.5	22.5
Total Split (s)	10.0	90.4	90.4	19.6	100.0	100.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	7.7%	69.5%	69.5%	15.1%	76.9%	76.9%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%
Maximum Green (s)	5.5	83.7	83.7	15.6	93.3	93.3	13.1	13.1	13.1	15.5	15.5	15.5
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		23.0	23.0		23.0	23.0	30.0	30.0	30.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	93.8	87.1	87.1	109.7	95.0	93.3	14.3	12.4	14.3	14.8	14.8	14.8
Actuated g/C Ratio	0.72	0.67	0.67	0.84	0.73	0.72	0.11	0.10	0.11	0.11	0.11	0.11
v/c Ratio	0.86	0.62	0.14	0.79	1.12	0.11	0.29	0.02	0.52	0.80	0.02	0.28
Control Delay	65.4	9.5	2.0	28.9	71.1	3.9	57.9	53.2	16.9	89.6	51.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	9.5	2.0	28.9	71.1	3.9	57.9	53.2	16.9	89.6	51.0	7.0
LOS	E	A	A	C	E	A	E	D	B	F	D	A
Approach Delay		12.2			66.4			26.5			58.9	
Approach LOS		B			E			C			E	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 47.4 Intersection LOS: D
 Intersection Capacity Utilization 104.4% ICU Level of Service G
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 4: Meadowridge Dr & Dundas St E



Queues
4: Meadowridge Dr & Dundas St E

FT - 2027
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	125	1863	166	257	3721	127	46	4	162	130	5	76
v/c Ratio	0.86	0.62	0.14	0.79	1.12	0.11	0.29	0.02	0.52	0.80	0.02	0.28
Control Delay	65.4	9.5	2.0	28.9	71.1	3.9	57.9	53.2	16.9	89.6	51.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	9.5	2.0	28.9	71.1	3.9	57.9	53.2	16.9	89.6	51.0	7.0
Queue Length 50th (m)	20.0	64.2	1.9	46.7	~453.0	5.7	10.9	0.9	3.3	32.8	1.2	0.0
Queue Length 95th (m)	m#39.6	68.1	m3.0	m35.5	m163.6	m3.8	23.4	4.5	24.1	#64.5	5.1	8.0
Internal Link Dist (m)		563.4			380.7			216.3			79.1	
Turn Bay Length (m)	115.0		60.0	135.0		70.0	25.0			15.0		15.0
Base Capacity (vph)	145	3000	1145	338	3335	1172	167	189	319	169	224	280
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.62	0.14	0.76	1.12	0.11	0.28	0.02	0.51	0.77	0.02	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

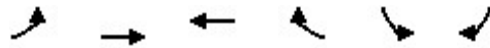
4: Meadowridge Dr & Dundas St E

FT - 2027
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	125	1863	166	257	3721	127	46	4	162	130	5	76	
Future Volume (vph)	125	1863	166	257	3721	127	46	4	162	130	5	76	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	4.5	4.5	4.5	
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1789	4476	1633	1825	4565	1601	1825	1883	1633	1789	1883	1601	
Flt Permitted	0.05	1.00	1.00	0.06	1.00	1.00	0.75	1.00	1.00	0.76	1.00	1.00	
Satd. Flow (perm)	88	4476	1633	109	4565	1601	1449	1883	1633	1422	1883	1601	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	125	1863	166	257	3721	127	46	4	162	130	5	76	
RTOR Reduction (vph)	0	0	51	0	0	23	0	0	132	0	0	67	
Lane Group Flow (vph)	125	1863	115	257	3721	104	46	4	30	130	5	9	
Heavy Vehicles (%)	2%	3%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2		1	6			8			4		
Permitted Phases	2		2	6		6	8		8	4		4	
Actuated Green, G (s)	91.7	85.5	85.5	104.0	93.3	93.3	12.4	12.4	12.4	14.8	14.8	14.8	
Effective Green, g (s)	91.7	87.2	87.2	107.0	95.0	93.3	14.3	12.4	14.3	14.8	14.8	14.8	
Actuated g/C Ratio	0.71	0.67	0.67	0.82	0.73	0.72	0.11	0.10	0.11	0.11	0.11	0.11	
Clearance Time (s)	4.5	6.7	6.7	4.0	6.7	6.7	6.9	6.9	6.9	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	143	3002	1095	320	3335	1149	159	179	179	161	214	182	
v/s Ratio Prot	0.04	0.42		c0.11	c0.82			0.00			0.00		
v/s Ratio Perm	0.57		0.07	0.55		0.06	0.03		0.02	c0.09		0.01	
v/c Ratio	0.87	0.62	0.11	0.80	1.12	0.09	0.29	0.02	0.17	0.81	0.02	0.05	
Uniform Delay, d1	41.4	12.1	7.6	36.5	17.5	5.5	53.2	53.3	52.5	56.2	51.2	51.3	
Progression Factor	1.00	0.70	1.16	0.83	0.92	1.73	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	30.9	0.7	0.1	1.4	52.5	0.0	1.0	0.1	0.4	24.8	0.0	0.1	
Delay (s)	72.5	9.2	8.9	31.9	68.7	9.6	54.2	53.4	52.9	81.0	51.2	51.4	
Level of Service	E	A	A	C	E	A	D	D	D	F	D	D	
Approach Delay (s)		12.8			64.6			53.2			69.6		
Approach LOS		B			E			D			E		
Intersection Summary													
HCM 2000 Control Delay			47.7									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.10										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	16.4
Intersection Capacity Utilization			104.4%									ICU Level of Service	G
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

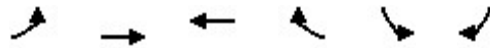
FT - 2027
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	123	2047	4141	218	146	82
Future Volume (vph)	123	2047	4141	218	146	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0			70.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	75.0				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	4520	4520	1601	1789	1601
Flt Permitted	0.038				0.950	
Satd. Flow (perm)	72	4520	4520	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				152		58
Link Speed (k/h)		70	70		48	
Link Distance (m)		404.7	451.7		199.7	
Travel Time (s)		20.8	23.2		15.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	2047	4141	218	146	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	2047	4141	218	146	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2	2	6	6		4

Lanes, Volumes, Timings
5: Dundas St E & William Cutmore Blvd

FT - 2027
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	2.5	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	7.0	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	114.0	104.0	104.0	16.0	16.0
Total Split (%)	7.7%	87.7%	80.0%	80.0%	12.3%	12.3%
Maximum Green (s)	5.5	109.5	99.5	99.5	11.5	11.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	109.5	109.5	99.5	99.5	11.5	11.5
Actuated g/C Ratio	0.84	0.84	0.77	0.77	0.09	0.09
v/c Ratio	0.92	0.54	1.20	0.17	0.92	0.42
Control Delay	89.1	1.7	109.8	0.0	112.5	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.1	1.7	109.8	0.0	112.5	28.3
LOS	F	A	F	A	F	C
Approach Delay		6.7	104.3		82.2	
Approach LOS		A	F		F	

Intersection Summary

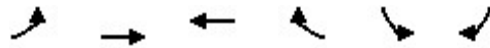
Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 72.2
 Intersection LOS: E
 Intersection Capacity Utilization 106.2%
 ICU Level of Service G
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 5: Dundas St E & William Cutmore Blvd



Queues
5: Dundas St E & William Cutmore Blvd

FT - 2027
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	123	2047	4141	218	146	82
v/c Ratio	0.92	0.54	1.20	0.17	0.92	0.42
Control Delay	89.1	1.7	109.8	0.0	112.5	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.1	1.7	109.8	0.0	112.5	28.3
Queue Length 50th (m)	19.8	18.1	~545.7	0.0	37.8	5.8
Queue Length 95th (m)	m#54.6	24.7	m34.0	m0.0	#78.2	21.6
Internal Link Dist (m)		380.7	427.7		175.7	
Turn Bay Length (m)	80.0			70.0		
Base Capacity (vph)	133	3807	3459	1261	158	194
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.54	1.20	0.17	0.92	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

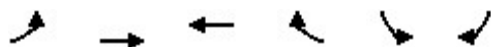
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis
5: Dundas St E & William Cutmore Blvd

FT - 2027
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑↑↑	↑↑↑	↘	↙	↘
Traffic Volume (vph)	123	2047	4141	218	146	82
Future Volume (vph)	123	2047	4141	218	146	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1789	4520	4520	1601	1789	1601
Flt Permitted	0.04	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	72	4520	4520	1601	1789	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	2047	4141	218	146	82
RTOR Reduction (vph)	0	0	0	36	0	53
Lane Group Flow (vph)	123	2047	4141	182	146	29
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2	2	6	6		4
Actuated Green, G (s)	109.5	109.5	99.5	99.5	11.5	11.5
Effective Green, g (s)	109.5	109.5	99.5	99.5	11.5	11.5
Actuated g/C Ratio	0.84	0.84	0.77	0.77	0.09	0.09
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	3807	3459	1225	158	141
v/s Ratio Prot	c0.04	0.45	c0.92		c0.08	
v/s Ratio Perm	0.73			0.11		0.02
v/c Ratio	0.92	0.54	1.20	0.15	0.92	0.21
Uniform Delay, d1	50.2	3.0	15.2	4.0	58.8	55.0
Progression Factor	1.41	0.43	1.18	0.00	1.00	1.00
Incremental Delay, d2	47.5	0.4	89.0	0.0	53.8	3.3
Delay (s)	118.4	1.7	107.0	0.0	112.6	58.3
Level of Service	F	A	F	A	F	E
Approach Delay (s)		8.3	101.6		93.1	
Approach LOS		A	F		F	

































Intersection Summary

HCM 2000 Control Delay	71.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	106.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

FT - 2027
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			  			  	
Traffic Volume (vph)	153	1752	287	165	3590	155	529	817	620	121	350	240
Future Volume (vph)	153	1752	287	165	3590	155	529	817	620	121	350	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			*0.950			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	4476	1601	1789	4565	1633	1789	3614	1738	1789	3614	1633
Flt Permitted	0.065			0.065			0.296			0.320		
Satd. Flow (perm)	125	4476	1601	122	4565	1633	557	3614	1738	603	3614	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			167			97			301			135
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		451.7			295.5			522.7			348.2	
Travel Time (s)		23.2			15.2			31.4			20.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	2%	1%	0%	2%	1%	5%	2%	1%	0%
Adj. Flow (vph)	153	1752	287	165	3590	155	529	817	620	121	350	240
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	1752	287	165	3590	155	529	817	620	121	350	240
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	

Lanes, Volumes, Timings
6: Ninth Line & Dundas St E

FT - 2027
PM Peak Hour

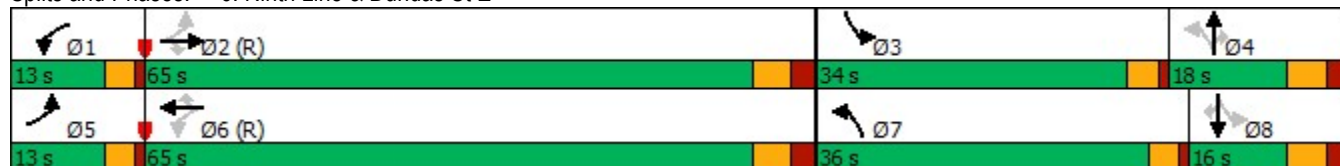


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	45.5	47.5	47.5	14.5	47.5	47.5
Total Split (s)	13.0	65.0	65.0	13.0	65.0	65.0	36.0	18.0	18.0	34.0	16.0	16.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	27.7%	13.8%	13.8%	26.2%	12.3%	12.3%
Maximum Green (s)	9.0	58.7	58.7	9.0	58.7	58.7	32.0	11.5	11.5	30.0	9.5	9.5
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0	34.0	34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0		0	0
Act Effct Green (s)	75.9	60.1	60.1	76.1	60.3	60.3	51.0	31.7	31.7	29.3	11.0	11.0
Actuated g/C Ratio	0.58	0.46	0.46	0.59	0.46	0.46	0.39	0.24	0.24	0.23	0.08	0.08
v/c Ratio	0.68	0.85	0.35	0.74	1.70	0.19	0.96	0.93	0.95	0.46	1.15	0.92
Control Delay	39.2	41.4	16.3	46.8	342.4	8.8	65.2	65.3	50.5	33.8	149.3	64.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	41.4	16.3	46.8	342.4	8.8	65.2	65.3	50.5	33.8	149.3	64.1
LOS	D	D	B	D	F	A	E	E	D	C	F	E
Approach Delay		37.9			316.7			60.6			100.9	
Approach LOS		D			F			E			F	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.70
 Intersection Signal Delay: 172.3
 Intersection Capacity Utilization 131.8%
 Analysis Period (min) 15
 * User Entered Value

Splits and Phases: 6: Ninth Line & Dundas St E



Queues
6: Ninth Line & Dundas St E

FT - 2027
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	153	1752	287	165	3590	155	529	817	620	121	350	240
v/c Ratio	0.68	0.85	0.35	0.74	1.70	0.19	0.96	0.93	0.95	0.46	1.15	0.92
Control Delay	39.2	41.4	16.3	46.8	342.4	8.8	65.2	65.3	50.5	33.8	149.3	64.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	41.4	16.3	46.8	342.4	8.8	65.2	65.3	50.5	33.8	149.3	64.1
Queue Length 50th (m)	27.3	147.8	26.1	24.8	~562.5	8.1	115.8	108.1	90.7	20.0	~55.2	27.4
Queue Length 95th (m)	m44.7	m198.5	m42.2	#55.8	#586.4	20.7	#184.3	#159.7	#174.4	33.6	#86.3	#76.4
Internal Link Dist (m)		427.7			271.5			498.7			324.2	
Turn Bay Length (m)	222.0		55.0	230.0		65.0	130.0		90.0	115.0		65.0
Base Capacity (vph)	230	2069	829	225	2115	808	550	882	651	523	305	261
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.85	0.35	0.73	1.70	0.19	0.96	0.93	0.95	0.23	1.15	0.92

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis
6: Ninth Line & Dundas St E

FT - 2027
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	1752	287	165	3590	155	529	817	620	121	350	240
Future Volume (vph)	153	1752	287	165	3590	155	529	817	620	121	350	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.95	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1825	4476	1601	1789	4565	1633	1789	3614	1738	1789	3614	1633
Flt Permitted	0.06	1.00	1.00	0.06	1.00	1.00	0.30	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	124	4476	1601	122	4565	1633	558	3614	1738	603	3614	1633
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	153	1752	287	165	3590	155	529	817	620	121	350	240
RTOR Reduction (vph)	0	0	90	0	0	52	0	0	228	0	0	124
Lane Group Flow (vph)	153	1752	197	165	3590	103	529	817	392	121	350	116
Heavy Vehicles (%)	0%	3%	2%	2%	1%	0%	2%	1%	5%	2%	1%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	67.5	58.8	58.8	67.9	59.0	59.0	45.5	30.2	30.2	20.8	9.5	9.5
Effective Green, g (s)	73.5	60.1	60.1	73.9	60.3	60.3	48.5	31.7	31.7	26.8	11.0	11.0
Actuated g/C Ratio	0.57	0.46	0.46	0.57	0.46	0.46	0.37	0.24	0.24	0.21	0.08	0.08
Clearance Time (s)	4.0	6.3	6.3	4.0	6.3	6.3	4.0	6.5	6.5	4.0	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	3.0	3.0
Lane Grp Cap (vph)	223	2069	740	221	2117	757	539	881	423	254	305	138
v/s Ratio Prot	0.06	0.39		c0.07	c0.79		c0.26	0.23		0.05	c0.10	
v/s Ratio Perm	0.32		0.12	0.36		0.06	0.10		0.23	0.05		0.07
v/c Ratio	0.69	0.85	0.27	0.75	1.70	0.14	0.98	0.93	0.93	0.48	1.15	0.84
Uniform Delay, d1	32.9	30.9	21.4	32.6	34.9	19.9	36.8	48.0	48.0	44.0	59.5	58.7
Progression Factor	1.07	1.20	1.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	3.8	0.7	12.9	315.2	0.4	33.8	15.4	26.3	1.4	97.6	35.0
Delay (s)	42.4	40.9	37.4	45.5	350.0	20.3	70.6	63.5	74.3	45.5	157.1	93.6
Level of Service	D	D	D	D	F	C	E	E	E	D	F	F
Approach Delay (s)		40.5			324.1			68.8			116.7	
Approach LOS		D			F			E			F	
Intersection Summary												
HCM 2000 Control Delay			179.3									F
HCM 2000 Volume to Capacity ratio			1.32									
Actuated Cycle Length (s)			130.0							12.0		
Intersection Capacity Utilization			131.8%									H
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
7: Meadowridge Drive & William Cutmore Boulevard

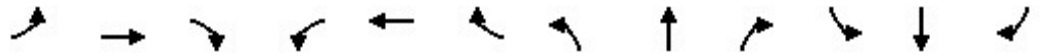
FT - 2027
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	12	12	3	11	18	12	72	4	14	49	6
Future Volume (vph)	10	12	12	3	11	18	12	72	4	14	49	6
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
Fr _t		0.952			0.924			0.994			0.988	
Fl _t Protected		0.986			0.995			0.993			0.990	
Satd. Flow (prot)	0	1768	0	0	1732	0	0	1859	0	0	1842	0
Fl _t Permitted		0.949			0.986			0.971			0.953	
Satd. Flow (perm)	0	1702	0	0	1716	0	0	1818	0	0	1773	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			18			4			6	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		172.8			78.7			58.6			145.3	
Travel Time (s)		13.0			5.9			4.4			10.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	12	12	3	11	18	12	72	4	14	49	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	32	0	0	88	0	0	69	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)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		18.0			18.0			18.0			18.0	
Actuated g/C Ratio		0.40			0.40			0.40			0.40	
v/c Ratio		0.05			0.05			0.12			0.10	
Control Delay		6.8			5.9			8.8			8.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.8			5.9			8.8			8.4	

Lanes, Volumes, Timings
 7: Meadowridge Drive & William Cutmore Boulevard

FT - 2027
 PM Peak Hour

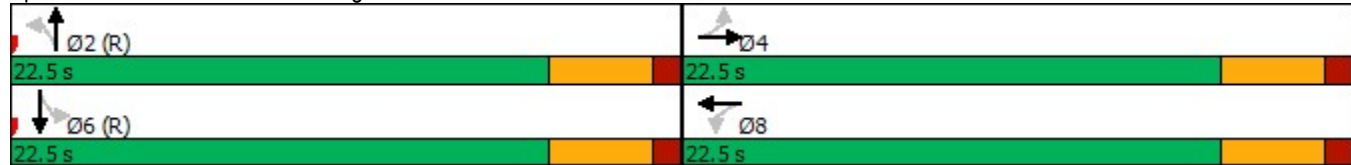


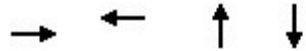
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			A			A			A	
Approach Delay		6.8			5.9			8.8			8.4	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	45
Actuated Cycle Length:	45
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.12
Intersection Signal Delay:	7.9
Intersection LOS:	A
Intersection Capacity Utilization	17.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 7: Meadowridge Drive & William Cutmore Boulevard





Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	34	32	88	69
v/c Ratio	0.05	0.05	0.12	0.10
Control Delay	6.8	5.9	8.8	8.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.8	5.9	8.8	8.4
Queue Length 50th (m)	1.0	0.6	3.9	2.9
Queue Length 95th (m)	4.5	4.0	9.9	8.1
Internal Link Dist (m)	148.8	54.7	34.6	121.3
Turn Bay Length (m)				
Base Capacity (vph)	688	697	729	712
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.05	0.12	0.10
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

7: Meadowridge Drive & William Cutmore Boulevard

FT - 2027
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	10	12	12	3	11	18	12	72	4	14	49	6
Future Volume (vph)	10	12	12	3	11	18	12	72	4	14	49	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.92			0.99			0.99	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		1768			1732			1859			1843	
Flt Permitted		0.95			0.99			0.97			0.95	
Satd. Flow (perm)		1703			1717			1817			1774	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	12	12	3	11	18	12	72	4	14	49	6
RTOR Reduction (vph)	0	7	0	0	11	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	27	0	0	21	0	0	86	0	0	65	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			18.0			18.0	
Effective Green, g (s)		18.0			18.0			18.0			18.0	
Actuated g/C Ratio		0.40			0.40			0.40			0.40	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		681			686			726			709	
v/s Ratio Prot												
v/s Ratio Perm		c0.02			0.01			c0.05			0.04	
v/c Ratio		0.04			0.03			0.12			0.09	
Uniform Delay, d1		8.2			8.2			8.5			8.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			0.1			0.3			0.3	
Delay (s)		8.3			8.3			8.8			8.7	
Level of Service		A			A			A			A	
Approach Delay (s)		8.3			8.3			8.8			8.7	
Approach LOS		A			A			A			A	

Intersection Summary

HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Appendix E

Signal Warrants

Input Data Sheet

Project No. & Description:

Intersecting roadways: Analysis Period:

Date of Signal Warrant Analysis: Analyst:

Direction of the Main Road / Street: Number of Hourly Volumes Available:

Justifications 7: Projected Volume Warrants

AM & PM Peak Hour Volumes Available

Both Roads Exist, Development is Future

- A Number of lanes on the Main Road?
- B Number of lanes on the Minor Road?
- C How many approaches?
- D What is the operating environment? Population >= 10,000 AND Speed < 70 km/hr
- E Is this an existing intersection? 120% Warrant without Combination
- F What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Minor Eastbound Approach			Main Northbound Approach			Minor Westbound Approach			Main Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
9:00	0	74	29	12	66	48	85	203	71	14	232	0	
5:15	0	256	20	34	154	159	55	134	44	45	82	0	
AHV*	0	83	12	12	55	52	35	84	29	15	79	0	0
Total 8 Hour Volumes**	0	828	121	118	550	519	350	841	289	149	788	0	0

*For Justification 7: Average Hourly Volumes = AHV = (AM Peak + PM Peak)/4

**For Justification 7: Total 8 Hour Volumes = AM Peak + PM Peak + 6 (AHV)

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Analysis Sheet

Joshua Creek Phase 3

Intersection: Threshing Mills Blvd. and Wheat Boom Drive

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

Both Intersection Roads Exists

Justification 7-1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent		
	1 Lanes		2 or More Lanes		Hour Ending											
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV				
1A	✗	✓	✗	✗	834	983	456	456	456	456	456	456	615.8%	77.0%		
	480	720	600	900	115.8%	120.0%	63.3%	63.3%	63.3%	63.3%	63.3%	63.3%				
1B	120	170	120	170	462	509	243	243	243	243	243	243	960.0%	120.0%		
	COMPLIANCE %				120.0%	120.0%	120.0%	120.0%	120.0%	120.0%	120.0%	120.0%				
Restricted Flow Signal Justification 1:					Both 1A and 1B 120% Fulfilled each of 8 hours								Yes	✗	No	✓

Justification 7-2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent		
	1 lanes		2 or More lanes		Hour Ending											
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV				
2A	✗	✓	✗	✗	372	474	213	213	213	213	213	213	295.0%	36.9%		
	480	720	600	900	51.7%	65.8%	29.6%	29.6%	29.6%	29.6%	29.6%	29.6%				
2B	50	75	50	75	288	311	119	119	119	119	119	119	960.0%	120.0%		
	COMPLIANCE %				120.0%	120.0%	120.0%	120.0%	120.0%	120.0%	120.0%	120.0%				
Restricted Flow Signal Justification 2:					Both 2A and 2B 120% Fulfilled each of 8 hours								Yes	✗	No	✓

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Results Sheet

Joshua Creek Phase 3

Intersection: Threshing Mills Blvd. and Wheat Boom Drive

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

Both Intersecting Roads Exists

Summary Results

Justification		Compliance	Signal Justified?	
			YES	NO
7-1. Minimum Vehicular Volume	A Total Volume	77.0%	✗	✓
	B Crossing Volume	120.0%		
7-2. Delay to Cross Traffic	A Main Road	36.9%	✗	✓
	B Crossing Road	120.0%		

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Input Data Sheet

Project No. & Description:

Intersecting roadways: Analysis Period:

Date of Signal Warrant Analysis: Analyst:

Direction of the Main Road / Street: Number of Hourly Volumes Available:

Justifications 7: Projected Volume Warrants

AM & PM Peak Hour Volumes Available

One Road, Both Roads and/or Intersections are Future, Development is Future

- A Number of lanes on the Main Road?
- B Number of lanes on the Minor Road?
- C How many approaches?
- D What is the operating environment? Population >= 10,000 AND Speed < 70 km/hr
- E Is this an existing intersection? 150% Warrant without Combination
- F What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Minor Eastbound Approach			Main Northbound Approach			Minor Westbound Approach			Main Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
9:00	47	36	3	9	66	10	25	157	25	49	108	93	
5:15	89	165	0	0	93	41	17	95	45	29	61	57	
AHV*	34	50	1	2	40	13	11	63	18	20	42	38	0
Total 8 Hour Volumes**	340	501	9	21	399	129	108	630	178	198	421	378	0

*For Justification 7: Average Hourly Volumes = AHV = (AM Peak + PM Peak)/4

**For Justification 7: Total 8 Hour Volumes = AM Peak + PM Peak + 6 (AHV)

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Analysis Sheet

Joshua Creek Phase 3

Intersection: John McKay Blvd and Wheat Boom Drive

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

One Road, Both Road and/or Intersection are Planned

Justification 7-1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV		
1A	✗	✓	✗	✗										
	480	720	600	900	628	692	332	332	332	332	332	332		
COMPLIANCE %					87.2%	96.1%	46.1%	46.1%	46.1%	46.1%	46.1%	46.1%	460.0%	57.5%
1B	120	170	120	170	293	411	177	177	177	177	177	177		
	COMPLIANCE %					150.0%	150.0%	104.1%	104.1%	104.1%	104.1%	104.1%	924.7%	115.6%
Restricted Flow Signal Justification 1:					Both 1A and 1B 150% Fulfilled each of 8 hours								Yes ✗	No ✓

Justification 7-2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV		
2A	✗	✓	✗	✗										
	480	720	600	900	335	281	155	155	155	155	155	155		
COMPLIANCE %					46.5%	39.0%	21.5%	21.5%	21.5%	21.5%	21.5%	21.5%	214.7%	26.8%
2B	50	75	50	75	229	271	108	108	108	108	108	108		
	COMPLIANCE %					150.0%	150.0%	144.0%	144.0%	144.0%	144.0%	144.0%	144.0%	1164.0%
Restricted Flow Signal Justification 2:					Both 2A and 2B 150% Fulfilled each of 8 hours								Yes ✗	No ✓

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Results Sheet

Joshua Creek Phase 3

Intersection: John McKay Blvd and Wheat Boom Drive

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

One Road, Both Roads and/or Intersection are Planned

Summary Results

Justification		Compliance	Signal Justified?	
			YES	NO
7-1. Minimum Vehicular Volume	A Total Volume	57.5%	✗	✓
	B Crossing Volume	115.6%		
7-2. Delay to Cross Traffic	A Main Road	26.8%	✗	✓
	B Crossing Road	145.5%		

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Input Data Sheet

Project No. & Description:

Intersecting roadways: Analysis Period:

Date of Signal Warrant Analysis: Analyst:

Direction of the Main Road / Street: Number of Hourly Volumes Available:

Justifications 7: Projected Volume Warrants

AM & PM Peak Hour Volumes Available

One Road, Both Roads and/or Intersections are Future, Development is Future

- A Number of lanes on the Main Road?
- B Number of lanes on the Minor Road?
- C How many approaches?
- D What is the operating environment? Population >= 10,000 AND Speed < 70 km/hr
- E Is this an existing intersection? 150% Warrant without Combination
- F What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Minor Eastbound Approach			Main Northbound Approach			Minor Westbound Approach			Main Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
9:00	4	7	15	9	8	9	26	3	3	8	16	4	
5:15	4	5	6	11	14	26	17	5	5	4	9	3	
AHV*	2	3	5	5	6	9	11	2	2	3	6	2	0
Total 8 Hour Volumes**	20	30	51	50	58	89	109	20	20	30	61	19	0

*For Justification 7: Average Hourly Volumes = AHV = (AM Peak + PM Peak)/4

**For Justification 7: Total 8 Hour Volumes = AM Peak + PM Peak + 6 (AHV)

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Analysis Sheet

Joshua Creek Phase 3

Intersection: John McKay Blvd and Street "F"

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

One Road, Both Road and/or Intersection are Planned

Justification 7-1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV		
1A	✗	✓	✗	✗										
	480	720	600	900	112	109	56	56	56	56	56	56		
COMPLIANCE %					15.6%	15.1%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	77.4%	9.7%
1B	120	170	120	170	58	42	25	25	25	25	25	25		
	COMPLIANCE %					34.1%	24.7%	14.7%	14.7%	14.7%	14.7%	14.7%	14.7%	147.1%
Restricted Flow Signal Justification 1:					Both 1A and 1B 150% Fulfilled each of 8 hours								Yes	No

Justification 7-2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV		
2A	✗	✓	✗	✗										
	480	720	600	900	54	67	31	31	31	31	31	31		
COMPLIANCE %					7.5%	9.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	42.6%	5.3%
2B	50	75	50	75	37	26	16	16	16	16	16	16		
	COMPLIANCE %					49.3%	34.7%	21.3%	21.3%	21.3%	21.3%	21.3%	21.3%	212.0%
Restricted Flow Signal Justification 2:					Both 2A and 2B 150% Fulfilled each of 8 hours								Yes	No

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Results Sheet

Joshua Creek Phase 3

Intersection: John McKay Blvd and Street "F"

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

One Road, Both Roads and/or Intersection are Planned

Summary Results

Justification		Compliance	Signal Justified?	
			YES	NO
7-1. Minimum Vehicular Volume	A Total Volume	9.7%	✗	✓
	B Crossing Volume	18.4%		
7-2. Delay to Cross Traffic	A Main Road	5.3%	✗	✓
	B Crossing Road	26.5%		

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Input Data Sheet

Project No. & Description:

Intersecting roadways: Analysis Period:

Date of Signal Warrant Analysis: Analyst:

Direction of the Main Road / Street: Number of Hourly Volumes Available:

Justifications 7: Projected Volume Warrants

AM & PM Peak Hour Volumes Available

One Road, Both Roads and/or Intersections are Future, Development is Future

- A Number of lanes on the Main Road?
- B Number of lanes on the Minor Road?
- C How many approaches?
- D What is the operating environment? Population >= 10,000 AND Speed < 70 km/hr
- E Is this an existing intersection? 150% Warrant without Combination
- F What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Minor Eastbound Approach			Main Northbound Approach			Minor Westbound Approach			Main Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
9:00	1	2	30	15	6	3	7	1	1	4	10	4	
5:15	4	1	17	28	5	5	4	2	2	3	4	3	
AHV*	1	1	12	11	3	2	3	1	1	2	4	2	0
Total 8 Hour Volumes**	11	9	119	109	29	20	29	9	9	19	38	19	0

*For Justification 7: Average Hourly Volumes = AHV = (AM Peak + PM Peak)/4

**For Justification 7: Total 8 Hour Volumes = AM Peak + PM Peak + 6 (AHV)

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Analysis Sheet

Joshua Creek Phase 3

Intersection: Meadowridge Drive and Street "F"

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

One Road, Both Road and/or Intersection are Planned

Justification 7-1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent		
	1 Lanes		2 or More Lanes		Hour Ending											
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV				
1A	✗	✓	✗	✗	84	78	43	43	43	43	43	43				
	480	720	600	900	11.7%	10.8%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	58.3%	7.3%		
1B	120	170	120	170	42	30	19	19	19	19	19	19				
	COMPLIANCE %				24.7%	17.6%	11.2%	11.2%	11.2%	11.2%	11.2%	11.2%	109.4%	13.7%		
Restricted Flow Signal Justification 1:					Both 1A and 1B 150% Fulfilled each of 8 hours								Yes	✗	No	✓

Justification 7-2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent		
	1 lanes		2 or More lanes		Hour Ending											
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV				
2A	✗	✓	✗	✗	42	48	24	24	24	24	24	24				
	480	720	600	900	5.8%	6.7%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	32.5%	4.1%		
2B	50	75	50	75	10	10	5	5	5	5	5	5				
	COMPLIANCE %				13.3%	13.3%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	66.7%	8.3%		
Restricted Flow Signal Justification 2:					Both 2A and 2B 150% Fulfilled each of 8 hours								Yes	✗	No	✓

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Results Sheet

Joshua Creek Phase 3

Intersection: Meadowridge Drive and Street "F"

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

One Road, Both Roads and/or Intersection are Planned

Summary Results

Justification		Compliance	Signal Justified?	
			YES	NO
7-1. Minimum Vehicular Volume	A Total Volume	7.3%	✗	✓
	B Crossing Volume	13.7%		
7-2. Delay to Cross Traffic	A Main Road	4.1%	✗	✓
	B Crossing Road	8.3%		

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Input Data Sheet

Project No. & Description:

Intersecting roadways: Analysis Period:

Date of Signal Warrant Analysis: Analyst:

Direction of the Main Road / Street: Number of Hourly Volumes Available:

Justifications 7: Projected Volume Warrants

AM & PM Peak Hour Volumes Available

One Road, Both Roads and/or Intersections are Future, Development is Future

- A Number of lanes on the Main Road?
- B Number of lanes on the Minor Road?
- C How many approaches?
- D What is the operating environment? Population >= 10,000 AND Speed < 70 km/hr
- E Is this an existing intersection? 150% Warrant without Combination
- F What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Minor Eastbound Approach			Main Northbound Approach			Minor Westbound Approach			Main Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
9:00	5	35	40	44	64	1	4	41	30	34	94	11	
5:15	10	12	12	12	72	4	3	11	18	14	49	6	
AHV*	4	12	13	14	34	1	2	13	12	12	36	4	0
Total 8 Hour Volumes**	39	119	130	140	340	11	19	130	120	120	359	41	0

*For Justification 7: Average Hourly Volumes = AHV = (AM Peak + PM Peak)/4

**For Justification 7: Total 8 Hour Volumes = AM Peak + PM Peak + 6 (AHV)

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Analysis Sheet

Joshua Creek Phase 3

Intersection: Meadowridge Drive and William Cutmore Blvd.

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

One Road, Both Road and/or Intersection are Planned

Justification 7-1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent		
	1 Lanes		2 or More Lanes		Hour Ending											
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV				
1A	✗	✓	✗	✗												
	480	720	600	900	403	223	157	157	157	157	157	157				
	COMPLIANCE %				56.0%	31.0%	21.8%	21.8%	21.8%	21.8%	21.8%	21.8%	217.8%	27.2%		
1B	120	170	120	170	155	66	56	56	56	56	56	56				
	COMPLIANCE %				91.2%	38.8%	32.9%	32.9%	32.9%	32.9%	32.9%	32.9%	327.6%	41.0%		
Restricted Flow Signal Justification 1:					Both 1A and 1B 150% Fulfilled each of 8 hours								Yes	✗	No	✓

Justification 7-2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent		
	1 lanes		2 or More lanes		Hour Ending											
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	AM	PM	AHV	AHV	AHV	AHV	AHV	AHV				
2A	✗	✓	✗	✗												
	480	720	600	900	248	157	101	101	101	101	101	101				
	COMPLIANCE %				34.4%	21.8%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	140.4%	17.6%		
2B	50	75	50	75	50	25	19	19	19	19	19	19				
	COMPLIANCE %				66.7%	33.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	252.0%	31.5%		
Restricted Flow Signal Justification 2:					Both 2A and 2B 150% Fulfilled each of 8 hours								Yes	✗	No	✓

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

Results Sheet

Joshua Creek Phase 3

Intersection: Meadowridge Drive and William Cutmore Blvd.

Analysis Period: Future Total 2026

Signal Warrant Analysis Date:

Analyst: GHD

One Road, Both Roads and/or Intersection are Planned

Summary Results

Justification		Compliance	Signal Justified?	
			YES	NO
7-1. Minimum Vehicular Volume	A Total Volume	27.2%	✗	✓
	B Crossing Volume	41.0%		
7-2. Delay to Cross Traffic	A Main Road	17.6%	✗	✓
	B Crossing Road	31.5%		

SIGNAL WARRANTS BASED ON MTO OTM BOOK 12 (2012) METHODOLOGIES

