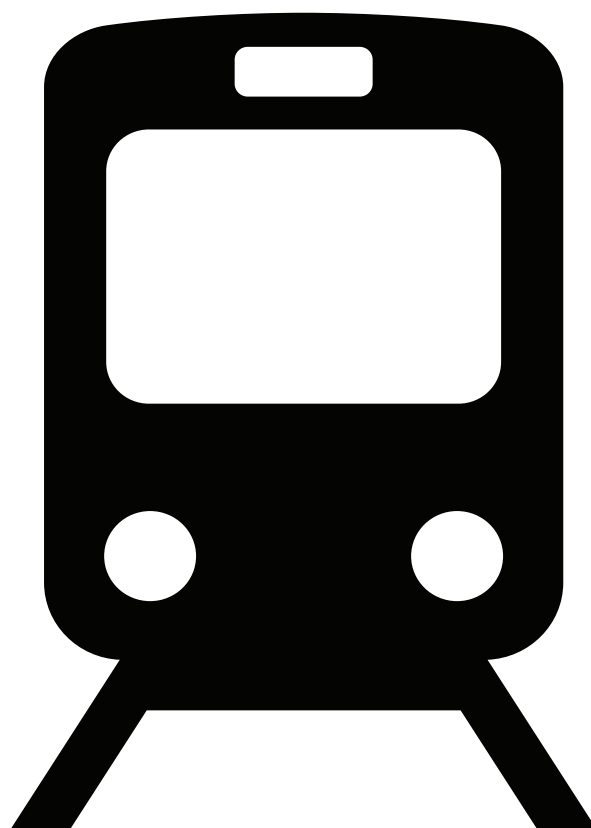


EGLINTON CROSSTOWN WEST EXTENSION

ENVIRONMENTAL PROJECT REPORT – 2020 ADDENDUM

APPENDIX H

TRAFFIC IMPACT ASSESSMENT MEMORANDUM



EGLINTON CROSSTOWN WEST EXTENSION

Transit Project Assessment Process Traffic Impact Assessment Memorandum

May 2020



Memorandum
Metrolinx
Eglinton Crosstown West Extension

Traffic Impact Assessment Memorandum

Issue and Revision Record					
Rev	Date	Originator	Checker	Approver	Description
A	May 29, 2020	Imran Salam	Altaf Hussain	Marianne Alden	For Information

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1. Introduction

1.1 Project Description

On May 17, 2010, the Minister of the Environment, Conservation and Parks (previously the Minister of the Environment; the Minister) for the Province of Ontario issued a Notice to Proceed to the Toronto Transit Commission (TTC) and the City of Toronto for the Eglinton Crosstown Light Rail Transit (ECLRT) Project, a 33-kilometre electrically-powered Light Rail Transit (LRT) line extending from the Lester B. Pearson International Airport in the City of Mississauga, to Kennedy Station in the City of Toronto. The basis for that Notice was the Environmental Project Report prepared in 2010 (2010 EPR) as part of the *Transit Project Assessment Process (TPAP)* found in Ontario Regulation (*O. Reg.*) 231/08 under the Ontario Environmental Assessment Act.

The 2010 Environmental Project Report (EPR) for the Eglinton Crosstown LRT was undertaken by the City of Toronto and the TTC as co-proponents. Subsequently, in 2012, Metrolinx became the sole proponent for the ECLRT Project and initiated an EPR Addendum for changes to the approved ECLRT Project between Keele Street to Jane Street, as well as the Maintenance and Storage Facility at Black Creek. Assessment of these changes to the 2010 EPR was documented in the 2013 EPR Addendum. After a 30-day public comment period, and the 35-day review by the Minister, the Minister issued a Notice to Allow a Change to the Transit Project in accordance to *O. Reg.* 231/08 in December 2013. Construction of the ECLRT Project is currently underway between Kennedy Station and Mount Dennis Station.

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In April 2019, the province announced a \$28.5 billion expansion to Ontario's transit network in an effort to bring relief and new opportunities to transit users and commuters. This rapid transit project plan includes the new Ontario Line (formerly the Downtown Relief Line), the Yonge North Subway Extension, the three-stop Scarborough Subway Extension, and the extension for Eglinton Crosstown West between Mount Dennis Station and Renforth Drive.

Since the completion of the 2010 EPR and 2013 EPR Addendum, a number of changes have been proposed to the segment of the ECLRT project between Mount Dennis Station in the City of Toronto and Renforth Drive in the City of Mississauga, known as the Eglinton Crosstown West Extension (ECWE) (the Project) shown in Figure 1-1. The changes to the Project, were determined to be inconsistent with a previously approved EPR and requires a reassessment of the impacts associated with the project, the identification of potentially new mitigation measures, and potentially new monitoring systems, in accordance with the addendum process prescribed in *O. Reg. 231/08*.

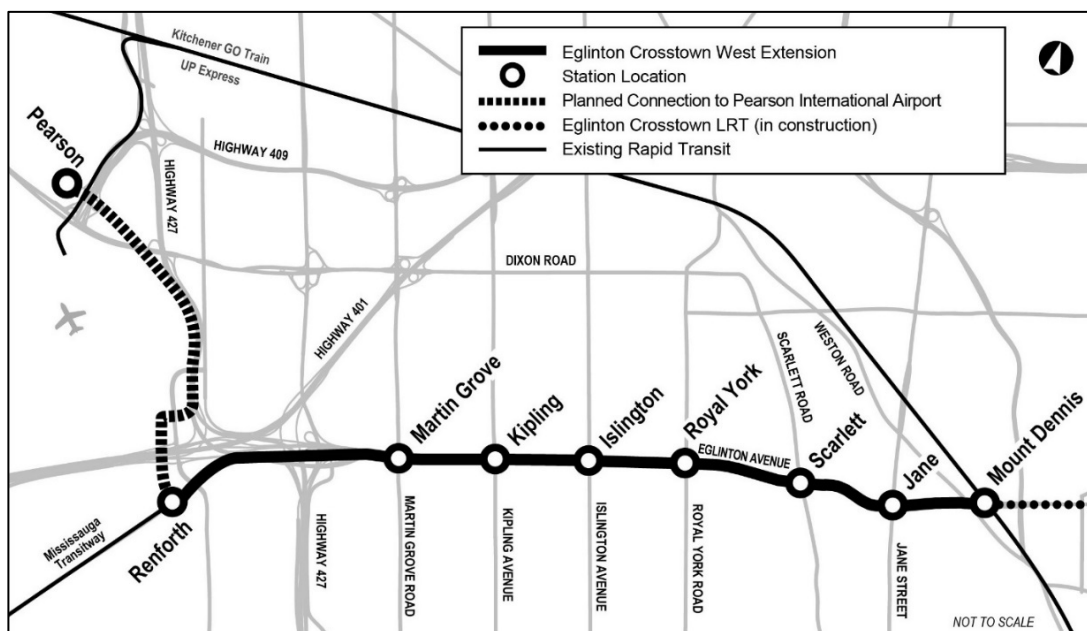


Figure 1-1: Eglinton Crosstown West Extension

A connection to Lester B. Pearson International Airport (as originally part of the 2010 ECLRT Project) is also being considered. This planned connection, between Renforth Drive and Lester B. Pearson International Airport, will be assessed separately in accordance with the addendum process prescribed in *O. Reg. 231/08*.

1.2 Summary of Proposed Design Changes

The proposed design changes currently being assessed in accordance with *O. Reg. 231/08* are as follows:

Vertical Alignment

- The Project alignment (approximately 9.2 km in length) will run mostly underground along Eglinton Avenue West from the future Mount Dennis ECLRT Station in the City of Toronto to Renforth Drive in the City of Mississauga;
- The Project will be underground from Mount Dennis Station to east of Jane Station; elevated east of Jane Street to west of Scarlett Road; underground from west of Scarlett Road to east of the Renforth portal; and transitions to partially at-grade to Renforth Station;
- The Project features three portals, which serve as approach entrances where the alignment transitions between underground and elevated, at the following locations:
 - East of Jane Street;
 - West of Scarlett Station; and
 - West of Renforth Drive.

Stations and Ancillary Features

- There will be a total of seven stations between Mount Dennis Station and Renforth Drive:
 - Scarlett and Jane Stations will be elevated;
 - Martin Grove, Kipling, Islington and Royal York Stations will be below grade and include associated ancillary features (e.g., vent shafts, Traction Power Substations (TPSSs); Emergency Exit Buildings (EEBs), Cross Passages (CPs)); and
 - The new terminal station at Renforth will be partially at-grade.

Emergency Exit Buildings

Six new EEBs are located along the underground portion of the alignment at the following locations:

- EEB-1 - located near 4000 Eglinton Avenue West, east of Royal York Road;
- EEB-2 - located west of Russell Road and Eden Valley Drive;
- EEB-3 - located east of Wincott Drive/Bemersyde Drive;
- EEB-4 - located west of Mimico Creek;
- EEB-5 - located between the on and off ramps of Highway 427; and
- EEB-6 - located immediately west of the hydro corridor at Eglinton Avenue West.

Construction

The underground section will be constructed using a Tunnel Boring Machine (TBM) between stations and a Cut-and-Cover (C&C) method at stations and portal locations. A proposed Extraction Shaft (ES), Maintenance Shaft (MS), and Launch Shaft (LS) for the TBM will be located in the following areas:

- A LS for the TBM will be located adjacent to Renforth Station;
- A MS will be located near the west end of the Islington Station. This will be removed at the end of construction; and
- An ES for the TBM will be located west of Scarlett Road.

A new bridge across the Humber River east of Scarlett Road will be constructed as part of the elevated guideway, including two elevated stations (i.e., Jane Station and Scarlett Station).

Table 1-1 compares the project components, as assessed in the 2010 EPR and 2013 EPR Addendum, against the proposed design changes currently being assessed for this Project and provides a rationale for these changes. These changes to the Project were determined to be inconsistent with the 2010 EPR and 2013 EPR Addendum. As described in Section 15 of *O. Reg. 231/08*, any change that is inconsistent with a previously approved EPR requires a reassessment of the impacts associated with the project, the identification of potentially new mitigation measures, and potentially new monitoring systems in an Addendum to the previously approved EPR. This Traffic Impact Assessment Memorandum, documents the reassessment of the impacts associated with the project, the identification of potentially new mitigation measures, and potentially new monitoring systems.

Table 1-1: Differences between 2010 EPR, 2013 EPR Addendum and 2020 EPR Addendum

Project Component	2010 EPR and 2013 EPR Addendum	2020 EPR Addendum	Rationale for Change
Vertical Alignment	The 2010 EPR proposed: - An at-grade alignment from Lester B. Pearson International Airport to Weston Road with a new bridge over Highway 401 to connect Convair Drive to Commerce Boulevard; and - Operational crossovers and storage (pocket) tracks between Commerce Boulevard and Renforth Drive and east of the Martin Grove Road stop to provide operational flexibility and allow LRT vehicles to change travel directions from one track to another. In the 2013 EPR Addendum, changes to the alignment were proposed including: - Revised LRT alignment between Jane Street and Keeleisdale Park from surface alignment with surface stops to a completely grade-separated alignment; - Revised track alignment connecting the mainline and the proposed Black Creek Maintenance and Storage Facility (MSF) from an at-grade connection to a grade-separated connection; and - New passenger tunnel connection under the GO Transit Kitchener Rail and Canadian Pacific Railway corridors.	The 2020 EPR Addendum is proposing: - Below grade alignment from Mount Dennis Station to east of Jane Street; - Elevated guideway from east of Jane Street to west of Scarlett Road; - Below grade alignment from west of Scarlett Road to west of Renforth Drive; - Partially below grade alignment from Renforth Drive to Renforth Station; - Portal located just east of Jane Street when the alignment transitions from underground to the elevated guideway; - Portal for the advanced tunnelled construction located west of Scarlett Station; and - Portal located west of Renforth Drive.	The change in alignment from at-grade to underground and elevated provides: - More reliable service due to full grade separation; - Higher level of protection from severe weather; - Increased number of Greater Toronto and Hamilton Area (GTHA) jobs accessible by transit in 45 minutes; - Greater reduction in Greenhouse Gas emissions; - Greater increase in GTHAs two-hour peak travel time savings; - Larger increase in Transitway and Crosstown weekly boarding's to reduce the connectivity gap; - Reduced property impacts; and - Reduced potential flooding impacts at the Humber River crossing.

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Project Component	2010 EPR and 2013 EPR Addendum	2020 EPR Addendum	Rationale for Change
Stations and Ancillary Features	The 2010 EPR proposed: 17 median surface stops at Jane Street, Scarlett Road, Mulham Place, Royal York Road, Russell Road/Eden Valley Drive, Islington Avenue, Wincott Drive/Bemersyde Drive, Kipling Avenue, Widdicombe Hill Boulevard/Lloyd Manor Road, Martin Grove Road, The East Mall, Rangoon Road, Renforth Drive, Commerce Boulevard, Convair Drive, Silver Dart Drive, and Lester B. Pearson International Airport. In the 2013 EPR Addendum, considerations to stops and other ancillary features included: - Consolidation of the Weston Stop and the Black Creek Stop into one new underground Mount Dennis Station located at the GO Transit Kitchener Rail corridor; - Addition of the Black Creek MSF site at Mount Dennis; and - Addition 15-bay bus terminal and Passenger Pick Up and Drop off at the Mount Dennis Station.	A total of seven stations between Mount Dennis Station and Renforth Drive: - Scarlett and Jane Stations are elevated; - Martin Grove, Kipling, Islington and Royal York Stations are below-grade with associated ancillary features (e.g., vent shafts, TPSSs, EEBs, CPs); - New terminal station at Renforth Drive is partially at-grade; and - Stations at Rangoon Road, The East Mall, Widdicombe Hill Boulevard/Lloyd Manor Road, Wincott Drive/Bemersyde Drive, Russell Road/Eden Valley Drive and Mulham Place were removed from the Project.	Change in number of stations provides benefits in terms of: - Construction complexity and cost for below-grade stations; and - Reduced property impacts.
Emergency Exit Buildings (EEB)	No emergency exits along this section in either the 2010 EPR or the 2013 EPR Addendum as the alignment was at-grade.	Six EEBs at the following approximate locations: - EEB-1 - near 4000 Eglinton Avenue West, east of Royal York Road; - EEB-2 - west of Russell Road and Eden Valley Drive; - EEB-3 - east of Wincott Drive/Bemersyde Drive; - EEB-4 - west of Mimico Creek;	Emergency exits for passengers and emergency access for fire fighters are required for tunnels under the National Fire Protection Agency Standard 130. The distance between EEBs and station platform must not exceed 762 m.

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Project Component	2010 EPR and 2013 EPR Addendum	2020 EPR Addendum	Rationale for Change
		- EEB-5 - between the on and off ramps of Highway 427; and - EEB-6 - immediately west of the hydro corridor at Eglinton Avenue West.	
Construction	The 2010 EPR proposed: - At-grade construction between Mount Dennis and Renforth Drive with dedicated runningway along the centre line of Eglinton Avenue West, Commerce Boulevard, and Convair Drive; - C&C method will be used to construct stations, portals, and special track work; - Road widening, reconstruction of curb lines and associated sidewalk modifications; - Relocation of utilities and relocation of traffic signals and provision of temporary traffic signals; - Roadway resurfacing following roadway reconstruction; - Construct LRT facilities within the LRT Right-of-Way (ROW); - Construct streetscaping and urban design elements and provide bicycle lanes on both sides of the roadway; - Widening of the existing single span bridge structure over Mimico Creek to accommodate the LRT ROW; and - Construction of a multi-span structure over Highway 401. The 2013 EPR Addendum proposed:	Elevated guideway from east of Jane Street to west of Scarlett Road; - Two elevated stations (Scarlett and Jane). There is potential for impacts to the pedestrian bridge west of Scarlett Road due to the portal; and - Underground section to be constructed using twin tunnelling method between stations and C&C method at stations and at portal locations. Underground tunnel construction approach: - A LS for the TBM will be located adjacent to Renforth Station, a MS will be located at the west end of Islington Station, and an ES for the TBM will be located west of Scarlett Road; - Install headwalls, where required, at both ends of EEBs and stations; - Tunnel structure constructed using precast concrete tunnel liner segments that are installed as the TBM progresses; - Excavated soils will be removed from work site for off-site disposal and - EEBs will be constructed once the TBM has completed the tunnelling. Construction is	Construction is required to build the alignment and new stations. Refer to the rationale for change listed under Vertical Alignment and Stations and Ancillary Features above.

Project Component	2010 EPR and 2013 EPR Addendum	2020 EPR Addendum	Rationale for Change
	C&C construction at Mount Dennis Station and locations of special track work (focused to 150 m long sections at each station), tail tracks and where the LRT emerges through a tunnel portal to match back into grade along the median of Eglinton Avenue West, and in the underground section west of Weston Road.	similar to station construction. As part of the above ground construction: - A new bridge across the Humber River east of Scarlett Road will be constructed as part of the elevated guideway, including two elevated stations (i.e., Jane Station and Scarlett Station). Construction of the new bridge will include: - Building foundations for piers; - Constructing piers; - Building and placing bridge sections; and - Installing systems and track.	

1.3 Study Area Intersections

The study area as shown in Appendix E consists of following 16 signalized intersections which have been assessed for the traffic impacts of the Project.

1. Eglinton Avenue West & Weston Road;
2. Eglinton Avenue West & Jane Street;
3. Eglinton Avenue West & Emmett Avenue;
4. Eglinton Avenue West & Scarlett Road;
5. Eglinton Avenue West & Royal York Road;
6. Eglinton Avenue West & Russell Road/Eden Valley Drive;
7. Eglinton Avenue West & Islington Avenue;
8. Eglinton Avenue West & Wincott Drive/Bemersyde Drive;
9. Eglinton Avenue West & Kipling Avenue;
10. Eglinton Avenue West & Widdicombe Hill Boulevard/Lloyd Manor Road;
11. Eglinton Avenue West & Martin Grove Road;
12. Eglinton Avenue West & Highway 401/427 Interchange;
13. Eglinton Avenue West & The East Mall;
14. Eglinton Avenue West & Matheson Boulevard East;
15. Eglinton Avenue West & Renforth Drive; and
16. Eglinton Avenue West & Commerce Boulevard.

1.4 Study Objectives

The study objectives as part of this Traffic Impact Assessment Memo include:

- Review the 2010 EPR preferred alignment and identify similarities and dissimilarities between currently proposed alignment and 2010 EPR alignment in order to determine the revised traffic analysis requirements;
- Revise existing conditions analysis to the existing (2019) conditions; and
- Conduct future conditions analysis to determine the Project's impacts and recommend potential mitigation measures.

2. Assumptions and Analysis Methodology

2.1 Overall Methodology

The proposed alignment runs underground for most of its length and as such, impacts to most existing intersections will be minimized. The existing (2019) and future conditions were analyzed for all the intersections for following reasons:

- Transportation/traffic analysis of existing (2019) and future conditions within the study area will be used to inform on the air quality assessment; and
- Assessment of existing (2019) and future conditions is required to understand conditions for the purpose of developing traffic management plans later in the project to mitigate traffic impacts resulting from construction.

Comparative review of the 2010 EPR and currently proposed alignment was conducted to determine the gap areas in the traffic study conducted for the 2010 EPR with a purpose of establishing the revised analysis requirements.

Future conditions analysis was conducted for the intersections where the Project's operations interacted with traffic operations. Potential impact of elevated stations at Scarlett Road and Jane Street intersections on existing lane configurations was also reviewed. Locations of portals were reviewed as well to assess impacts on access driveways to various properties.

2.2 Study Horizons

Two study horizons were used as part of this study's analysis including:

- **Existing Conditions:** Existing 2019 traffic conditions using existing roadway lane configurations, Signal Timing Plans (STP) and Traffic Movement Counts (TMC); and
- **Future Conditions:** Future implementation date when the Project is expected to be operational in 2031. Future TMCs have been estimated by adding trips from the planned developments within the study area as well as corridor growth. Traffic forecasts are discussed further below.

2.3 Analysis Parameters

The City of Toronto Guidelines for Using Synchro 9 were followed for Synchro intersection capacity analysis using Highway Capacity Manual (HCM) 2000. Area type "non-Central Business District (CBD)" was considered. Default Peak Hour Factor (PHF) and saturation flow values specified in the guidelines were used.

The Measures of Effectiveness (MOE) used to assess intersection capacity are the ratio of traffic demand to available capacity (V/C) and the Level of Service (LOS). HCM describes following LOS ratings, presented in Table 2-1, related to V/C ratio and average vehicular delay occurring at signalized intersection.

Table 2-1: HCM LOS Criteria, Signalized Intersection

Average Delay (seconds/vehicle)	LOS
≤ 10	A
> 10 - 20	B
> 20 - 35	C
> 35 - 55	D
> 55 - 80	E
> 80	F

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The following thresholds were applied to classify critical movements:

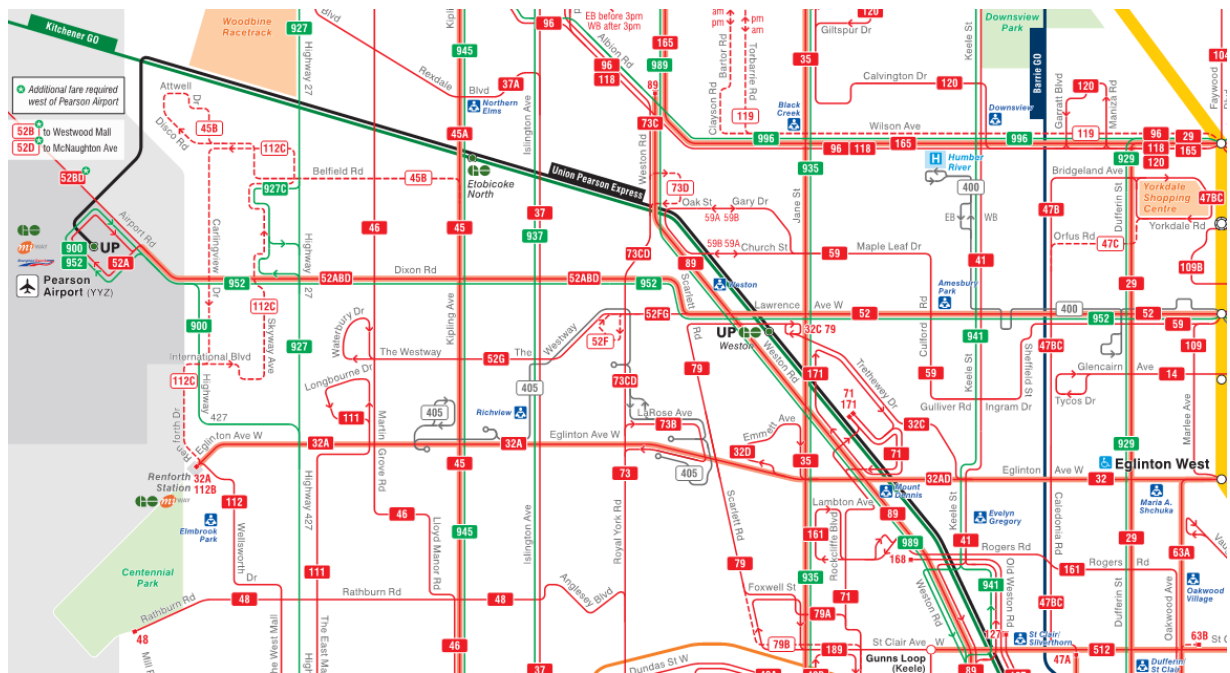
- Movements with V/C ratio of 0.9 or above; and
- Movements with Level of Service ("LOS") as "E" or worse.

3. Existing 2019 Conditions

3.1 Existing Transportation Network

3.1.1 Transit Network

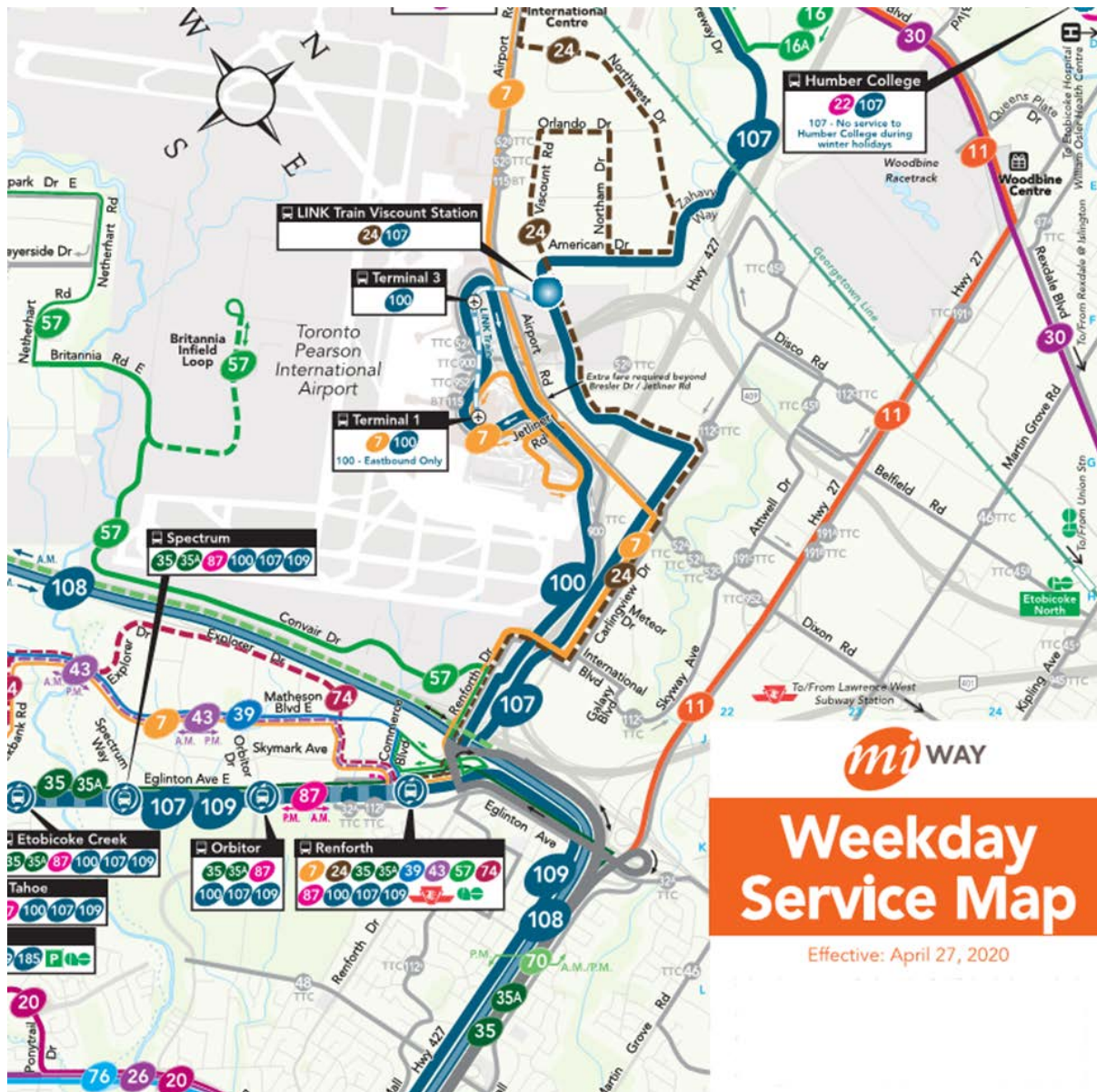
Existing TTC and Mississauga MiWay network within study area is shown in Figure 3-1 and Figure 3-2. TTC Route 32 Eglinton West operates between Eglinton Station (Line 1 Yonge-University) and the area of Eglinton Avenue West and Renforth Station, generally in east-west direction. This route operates at all times seven days a week.



Source: TTC, 2020

Figure 3-1: TTC Bus Routes along Eglinton Avenue West within Study Area

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Source: TTC, 2020

Figure 3-2: MiWay Weekday Service Map within Study Area

TTC operates bus routes, shown in Figure 3-1, on all major roads intersecting with Eglinton Avenue West within the study area. These routes are expected to continue providing connectivity to the Project. As part of Mount Dennis Mobility Hub, Weston GO station will be relocated to just east of the Eglinton Avenue West and Weston Road intersection providing regional connectivity as well as UP Express connection.

Renforth Station is a hub of MiWay providing connectivity to GO Bus and TTC. MiWay operates various local and express bus routes (Figure 3-2) on Eglinton Avenue West,

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Renforth Drive, Commerce Boulevard, Skymark Avenue, Convair Drive and Matheson Boulevard East.

3.1.2 Active Transportation Network

The Eglinton West Trail is a multi-use trail running along the south side of Eglinton Avenue West as shown in Figure 3-3. The trail provides east-west connectivity from Centennial Park in the west to Jane Street in the east. This trail provides numerous connections to other existing and planned cycling facilities shown in Figure 3-3, in the area thus providing connectivity to wider bike network. Notable connections include north-south on-street cycling facilities along Martin Grove Road, Renforth Drive and Royal York Road. At Scarlett Road, it provides connection to Humber River Trail connecting Lake Shore Boulevard and Waterfront in the south to Steeles Avenue in the north.

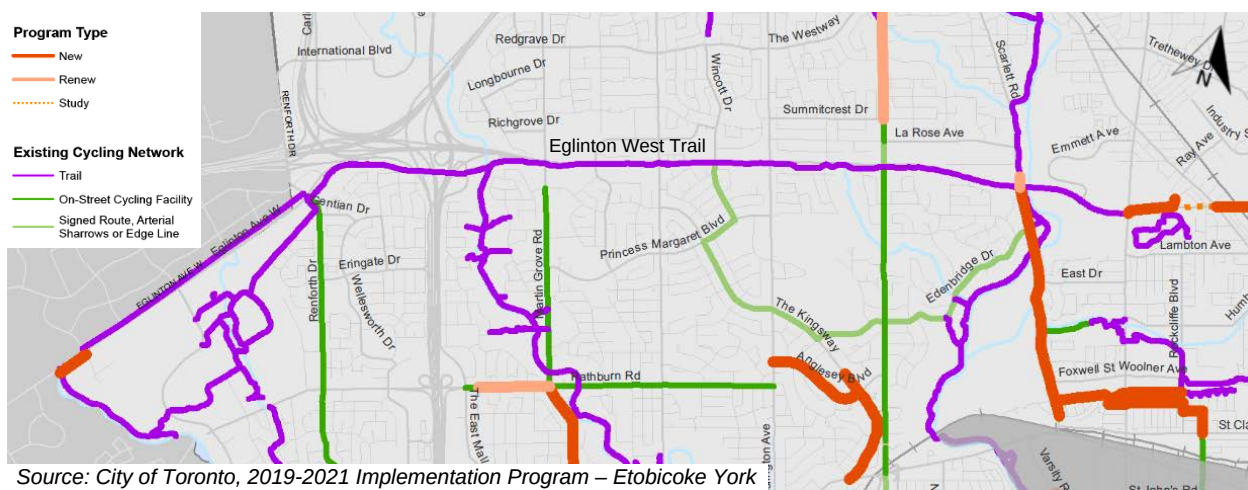


Figure 3-3: Existing and Planned Cycling Network

3.1.3 Street Network

Eglinton Avenue West is a major east-west arterial extending between 9th Line in Mississauga to the west and Yonge Street in Toronto to the east. It provides connections to Highways 401, 403 and 427 and Highway 27. Within the study area Eglinton Avenue West generally operates with two lanes in both directions.

Martin Grove Road, Kipling Avenue, Islington Avenue, Scarlett Road and Jane Street are major arterials providing north-south connectivity. Royal York Road and Weston Road are minor arterials intersecting with the Eglinton Avenue West while Renforth Drive is a major arterial north of Eglinton Avenue West and a minor arterial south of Eglinton Avenue West. Renforth Drive provides bus-only connections to Renforth Station. All the intersections with major and minor arterials have exclusive left turn lanes and some exclusive or channelized right-turn lanes.

Matheson Boulevard East is a major east-west collector. It originates from Eglinton Avenue West just east of Renforth Drive and then runs parallel to Eglinton Avenue West within the study area and has a posted speed of 50 km/h.

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Renforth Drive is a major arterial north of Eglinton Avenue West and a minor arterial south of Eglinton Avenue West. It is bounded by Carlingview Drive to the north and Bloor Street West to the south. Within the study area it has four lanes cross section with auxiliary left turn lanes. At Eglinton Avenue West, it also has southbound right turn lane. Renforth Drive provides connection to Highway 401, however there is no westbound off-ramp at Renforth Drive. Renforth Drive also provides bus-only connections to Renforth Station.

Commerce Boulevard is a minor north-south collector road connecting Eglinton Avenue West and Matheson Boulevard East. It also provides connection to Renforth Station. It has two lane cross section with auxiliary left turn lanes at Eglinton Avenue West and Matheson Boulevard East.

Existing lane configurations for the study area intersections are shown in Figure 3-4. Temporary lane restrictions exist at the Eglinton Avenue West and Weston Road intersection due to ECLRT construction. Figure 3-4 shows the lane configurations without temporary lane restrictions at the intersection.

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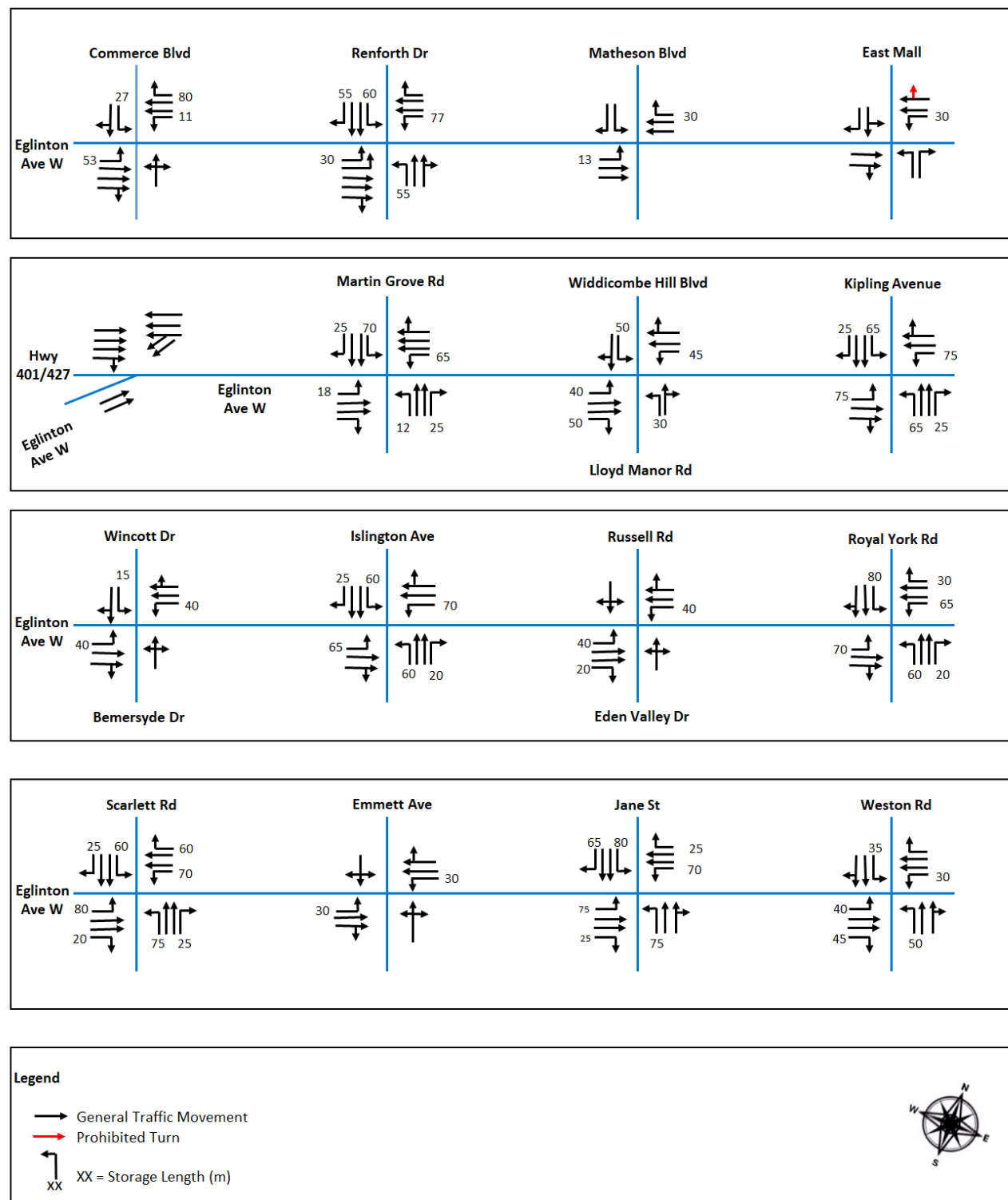


Figure 3-4: Existing Lane Configurations - Eglinton Avenue West

3.2 Traffic Data

Existing morning and afternoon peak hour TMCs and STPs for all the intersections within the study area were provided by the City of Toronto. TMCs and STPs are presented in Appendix A.

Intersections along with the count dates are listed in Table 3-1. Intersections highlighted in green have counts older than 2017 (older than two years). Traffic counts were not conducted as part of this study for intersections with older counts due to scheduling constraints associated with the Project. Standard industry practice of volume balancing and growth rates referenced from recently completed Traffic Impact Studies (TIS) in the area were employed to update the older than two years counts. The TIS reviewed are listed under planned developments in Section 4.1.

It is noted that the studies have determined negative growth rate along Eglinton Avenue West. A decline in traffic volumes was also observed when approach volumes from the intersections having TMCs recorded in 2018/2019 were compared with the approach volumes of adjacent intersections having TMCs older than two years. As such no growth was applied to the TMCs older than two year (count date highlighted in green) for volume balancing and updating the older counts.

Volume balancing was conducted for locations having unjustified volume imbalance greater than 10%, in accordance with the methodology specified in the City of Toronto *Guidelines for Using Synchro* 9.

Turning movement diagrams showing existing raw volumes and balanced (approximately) volumes are provided in Appendix B.

Table 3-1: Count Dates - Intersection TMCs

Intersection	Count Date
Eglinton Avenue West & Weston Road	June 19, 2019
Eglinton Avenue West & Jane Street	April 05, 2018
Eglinton Avenue West & Emmett Avenue	June 19, 2019
Eglinton Avenue West & Scarlett Road	December 05, 2016
Eglinton Avenue West & Royal York Road	June 04, 2015
Eglinton Avenue West & Russell Road/Eden Valley Drive	December 18, 2018
Eglinton Avenue West & Islington Avenue	April 29, 2014
Eglinton Avenue West & Wincott Drive/Bemersyde Drive	December 18, 2018
Eglinton Avenue West & Kipling Avenue	September 15, 2015
Eglinton Avenue West & Widdicombe Hill Boulevard/Lloyd Manor Road	December 18, 2018
Eglinton Avenue West & Martin Grove Road	April 18, 2016
Eglinton Avenue West & Highway 401/427 Interchange	December 20, 2018
Eglinton Avenue West & The East Mall	December 20, 2018
Eglinton Avenue West & Matheson Boulevard East	December 18, 2018
Eglinton Avenue West & Renforth Drive	January 19, 2017
Eglinton Avenue West & Commerce Boulevard	December 18, 2018

3.3 Existing Traffic Operations

Summary of Synchro results for critical movements having LOS “E” or worse and V/C ratio 0.9 or worse, is presented in Table 3-2. Intersections and movements having LOS “F” or V/C as 1 or higher have been highlighted in pink. Detailed Synchro reports are provided as Appendix C. Synchro results were found to be comparable to observed conditions during the site visit conducted on December 12, 2019.

All major arterial intersections are near capacity during both AM and PM peak hours. Both eastbound and westbound movements are at or overcapacity in most cases during AM peak hour. During PM peak hour eastbound bound movements are at or overcapacity as well while westbound movements are near capacity in most cases.

The Eglinton Avenue West and Martin Grove Road intersection adjacent to Highway 401/427 interchange is over capacity during both AM and PM peak hours and acting as bottleneck in both directions.

The south (northbound) approach of Royal York Road intersection has a single lane with a throat widening beginning approximately 115 m upstream of the intersection to create a 60 m long left turn lane and a second 60 m through curb lane besides a 20 m right turn lane. Synchro analysis reports an average queue length for all the lanes in a movement direction. As the storage capacity of the second northbound through lane is 60 m, in the event the queue length reported by Synchro is longer than 60 m, the additional vehicles would practically queue up within the inner through lane. Thus, the experienced queue would be longer than the one reported by Synchro requiring longer time to dissipate. The maximum northbound through queue lengths (95th Queue) by Synchro are 86 m and 87 m in AM and PM peak hours respectively. As the curb through lane can accommodate 60 m, the remaining approximately 25 m of the queue will add up to the queue within the inner northbound through lane, so the experienced queue will be approximately 110 m during both the AM and PM peak hours. The throat length approximately 115 m which is adequate for the aforementioned experienced queue. Similarly, the two through receiving lanes on the south approach merge into one lane within the throat and as such, a brief moving southbound queue is anticipated within the throat which is common on urban roads during peak periods.

Review of existing traffic operations suggests nearing or at capacity Eglinton Avenue West.

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Table 3-2: Existing 2019 Signalized Intersection Capacity Analysis

Intersection	AM Peak Hour									PM Peak Hour								
	Overall			Critical Movements						Overall			Critical Movements					
	V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th								50 th	95 th
1: Eglinton Avenue West & Weston Road	0.68	23	C	NBL	0.89	62	E	38	83	0.70	25	C	-	-	-	-	-	-
2: Eglinton Avenue West & Jane Street	0.91	42	D	NBL	0.92	66	E	38	82	0.93	38	D	EBL	1.03	98	F	27	74
				SBT	0.90	53	D	112	149									
3: Eglinton Avenue West & Emmett Avenue	0.63	11	B	SBT	0.66	59	E	23	47	0.74	9	A	-	-	-	-	-	-
4: Eglinton Avenue West & Scarlett Road	0.87	29	C	EBT	0.98	31	C	164	151	0.87	35	D	EBT	0.93	51	D	124	165
				-	-	-	-	-	-				WBL	0.86	55	E	22	56
5: Eglinton Avenue West & Royal York Road	0.85	58	E	EBT	1.10	95	F	208	261	0.87	56	E	EBT	1.12	104	F	209	274
				WBT	0.92	47	D	116	150				-	-	-	-	-	-
6: Eglinton Avenue West & Russell Road/Eden Valley Drive	0.54	10	A	EBR	0.01	93	F	0	0	0.51	8	A	-	-	-	-	-	-
7: Eglinton Avenue West & Islington Avenue	1.00	73	E	EBL	1.16	155	F	38	89	1.17	57	E	EBL	1.42	261	F	61	118
				EBT	1.20	129	F	234	271				EBT	1.02	55	D	186	236
				WBL	1.00	112	F	22	68				WBL	0.83	60	E	14	52
				WBT	1.02	50	D	169	218				WBT	0.99	46	D	176	223
													NBT	0.90	50	D	127	170
8: Eglinton Avenue West & Wincott Drive /Bemersyde Drive	0.60	15	B	-	-	-	-	-	-	0.62	15	B	-	-	-	-	-	-
9: Eglinton Avenue West & Kipling Avenue	0.99	55	E	EBL	1.03	77	E	41	35	1.21	53	D	EBL	1.40	272	F	60	72
				EBT	1.03	52	D	272	240				EBT	0.98	25	C	237	290
				WBL	0.87	75	E	30	69				WBL	0.95	100	F	24	66
				WBT	0.96	50	D	214	269				WBT	0.98	50	D	232	290
				NBT	0.95	74	E	113	153				NBT	0.88	62	E	112	149
10: Eglinton Avenue West & Widdicombe Hill Boulevard/Lloyd Manor Road	0.96	46	D	EBT	1.11	66	E	351	234	0.82	44	D	EBT	0.92	53	D	282	209
11: Eglinton Avenue West & Martin Grove Road	1.16	150	F	EBL	1.41	249	F	145	211	1.28	143	F	EBL	1.89	459	F	237	310
				EBT	1.38	213	F	439	478				EBT	1.35	195	F	448	487
				WBL	0.21	56	E	2	4				WBL	0.45	59	E	6	10
				WBT	1.30	196	F	251	281				WBT	1.08	94	F	195	226
				SBL	0.71	69	E	29	60				-	-	-	-	-	-
12: Eglinton Avenue West & Highway 401/427 Interchange	0.86	35	D	NBR	0.94	65	E	122	165	0.95	47	D	NBR	1.02	66	E	222	269
13: Eglinton Avenue West & The East Mall	0.96	40	D	SBR	1.12	93	F	144	236	0.76	37	D	EBT	1.03	53	D	110	167

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Intersection	AM Peak Hour									PM Peak Hour								
	Overall			Critical Movements						Overall			Critical Movements					
	V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th								50 th	95 th
14: Eglinton Avenue West & Matheson Boulevard East	0.84	11	B	-	-	-	-	-	-	0.74	25	C	SBL	1.12	122	F	122	184
15: Eglinton Avenue West & Renforth Drive	0.89	39	D	EBL	0.81	58	E	49	66	0.86	40	D	EBL	1.05	92	F	123	162
				SBL	0.56	55	E	12	30				WBL	0.58	63	E	14	29
				SBR	0.96	55	D	127	220				-	-	-	-	-	-
16: Eglinton Avenue West & Commerce Boulevard	0.59	11	B	-	-	-	-	-	-	0.91	36	D	SBL	1.00	62	E	111	185

Notes: NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound;
 L - Left Turn Movement; T - Through Movement; R - Right Turn Movement

4. 2031 Traffic Forecasts

Future traffic forecasts were estimated by adding trips from the planned developments and the general corridor growth to the existing TMCs. Planned developments and corridor growth are discussed below, while 2031 total traffic forecasts are provided in Appendix D.

4.1 Planned Developments

Planned developments within the study area along with respective TIS were sourced from the City of Toronto Application Information Centre¹. The TIS' which have identified impacts on our study area intersections are presented in Table 4-1. The trips generations from the respective TIS are also summarized in the Table 4-1.

Table 4-1: Planned Developments and Site Trips

Development	New Site Trips			
	AM Peak		PM Peak	
	In	Out	In	Out
900 The East Mall	30	185	165	90
63 Widdicombe Hill Boulevard	41	81	69	45
250 Wincott Drive & 4620 Eglinton Avenue West	295	335	380	305
4000 Eglinton Avenue West	85	210	235	165
1 Richview Road	18	55	52	33
82 Buttonwood Avenue	50	10	15	40
8 -16 Locust Street & 15 Oxford Drive	27	41	45	40

¹ <http://app.toronto.ca/AIC/index.do>

4.2 Corridor Growth

Review of existing conditions suggested nearing or at capacity conditions along Eglinton Avenue West within the study area. Traffic analysis from the 2010 EPR also assumed no growth along Eglinton Avenue West between Kennedy Station and Lester B. Pearson International Airport. TIS' for planned developments listed in Table 4-1 were also reviewed for corridor growth information. It is noted that for TIS' recently completed including 900 The East Mall, 250 Wincott Drive & 4620 Eglinton Avenue West, and 4000 Eglinton Avenue West, calculations for the growth rate along Eglinton Avenue West based on historical data and TIS results reported negative growth in general. However in order to remain conservative in their analysis, all the studies listed in Table 4-1 have applied a 0.5% - 1% growth rate for purposes of future forecasting.

Given the existing conditions analysis undertaken in Section 3.3, zero growth assumptions in the 2010 EPR, and negative growth shown in the above-noted TIS', a 0.5% annual growth is considered conservative and appropriate along the Eglinton Avenue West study area. Of note, the Project being a higher order transit line will improve ridership and mode share between transit and auto-use, within the study area.

The growth factors for other arterials within the study area were also referenced from the TIS' noted above and were applied to forecast 2031 traffic volumes.

The growth factors applied to through traffic are summarized in Table 4-2.

Table 4-2: Corridor Growth Rates

Street	Yearly Growth to 2031 Horizon
Eglinton Avenue West	0.5%
Weston Road	1%
Jane Street	1%
Scarlett Road	1%
Royal York Road	0.5%
Islington Avenue	0%
Kipling Avenue	0%
Martin Grove Road	0%
Renforth Drive	2%

5. Future Street Network

5.1 Review of 2010 EPR Traffic Report

The 2010 EPR had proposed at-grade LRT running in the median of the existing alignment of Eglinton Avenue West from Mount Dennis Station to Commerce Boulevard.

Being at-grade and within the median the 2010 EPR alignment had following significant traffic impacts along Eglinton Avenue West:

- Prohibited left-turns at existing unsignalized side-streets; redirected left-turning traffic to nearby signalized intersection;
- East-west left turns at signalized intersections required protected phases to prevent collision with LRT, thus reducing the east-west left-turn capacity; and
- Reduction in east-west through capacity due to removal of one travel lane in each direction.

To mitigate these impacts, the 2010 EPR proposed restricting east-west left turns at all major intersections including Kipling Avenue, Islington Avenue, Royal York Road, Scarlett Road and Jane Street. Mid-block U-turns were proposed downstream of the intersections to facilitate left turning traffic. At Martin Grove Road, intersection jug-handles were proposed for the east-west left turning and right turning traffic.

Future configuration of Commerce Boulevard was proposed to be widened from two to four lanes traffic lanes and a southbound bus-only lane.

5.2 2020 EPR Addendum Proposed Alignment

The currently proposed alignment is mostly underground with the select segments being elevated over Eglinton Avenue West. The Project will connect to the currently under-construction ECLRT at Mount Dennis Station, below-grade. The proposed alignment is shown in Appendix E.

- Mount Dennis Station to the east of Jane Station - this segment will have underground alignment;
- East of Jane Station to the west of Scarlett Road - this segment will have elevated guideway and elevated stations at Jane Street and Scarlett Road; and
- West of Scarlett Road to the west of Renforth Drive - this segment will have below grade alignment to Renforth Drive and partially below grade alignment from Renforth Drive to Renforth Station located west of Renforth Drive.

6. 2031 Future Traffic Impacts

Given that the proposed alignment for the Project is significantly different from the alignment that was preferred as part of the 2010 EPR, the associated traffic impacts and mitigation measures summarized in Section 5.1 are no longer applicable to the Project. Anticipated traffic impacts of the Project are discussed below.

6.1 Anticipated Traffic Impacts and Mitigation

6.1.1 Mount Dennis Station to the East of Jane Station

The alignment is underground, so no traffic impacts are envisaged. Construction method for the guideway is yet to be determined. Construction impacts depending on tunnelling or C&C construction methodology should be assessed through a supplementary traffic study as part of traffic management plan following finalization of guideway construction methodology.

6.1.2 *East of Jane Station to the West of Scarlett Road*

The alignment is elevated and as such no at-grade interaction of the Project with surface traffic is anticipated. Consequently, the Project's operations will not have any impacts on traffic operations.

Proposed Jane and Scarlett Stations will be elevated. Jane Street has been identified as Transit Corridor in the City of Toronto Official Plan and is also part of the Metrolinx Frequent Rapid Transit Network identified as Bus Rapid Transit (BRT) Corridor. It is understood that Jane Station's design will also be sensitive to future Jane BRT. Any structural elements supporting the super structure of the Jane and Scarlett Stations might necessitate any lane configuration changes at Jane Street and Scarlett Road intersections in addition to potential modifications due to BRT. Traffic impacts due to such modifications should be assessed to the extent possible following finalization of stations' design. Similarly, the elevated station structures can also restrict traffic signal visibility at both Jane Street and Scarlett Drive intersections with Eglinton Avenue West. Additional signal heads and/or advance flashing warning signs may have to be installed to mitigate the restricted visibility.

6.1.3 *West of Scarlett Road to the West of Renforth Drive*

The alignment in this segment is underground and no interaction of the Project's operations and traffic operations is anticipated so no traffic impacts are envisaged. Impacts during construction of underground stations will need to be assessed through supplementary traffic studies following the finalization of stations' design and construction staging methodology.

The alignment transfers to underground just west of Scarlett Road as shown in Figure 6-1. Minor realignment of Eglinton Avenue West to the south of the portal is proposed. Due to the proposed portal, impacts to the existing full-move driveway to the north are expected which may have to be closed in worst case scenario. The driveway serves as a combined secondary access for the residential developments whose dedicated primary full move accesses are available from Richview Road. Since it is a secondary access, no significant impacts are anticipated due to partial closure of the driveway, however in case of full closure additional access requirements for the residential complex may have to be explored. A supplementary traffic study is recommended following finalization of structural design of the portal and adjacent elevated guideway structure.

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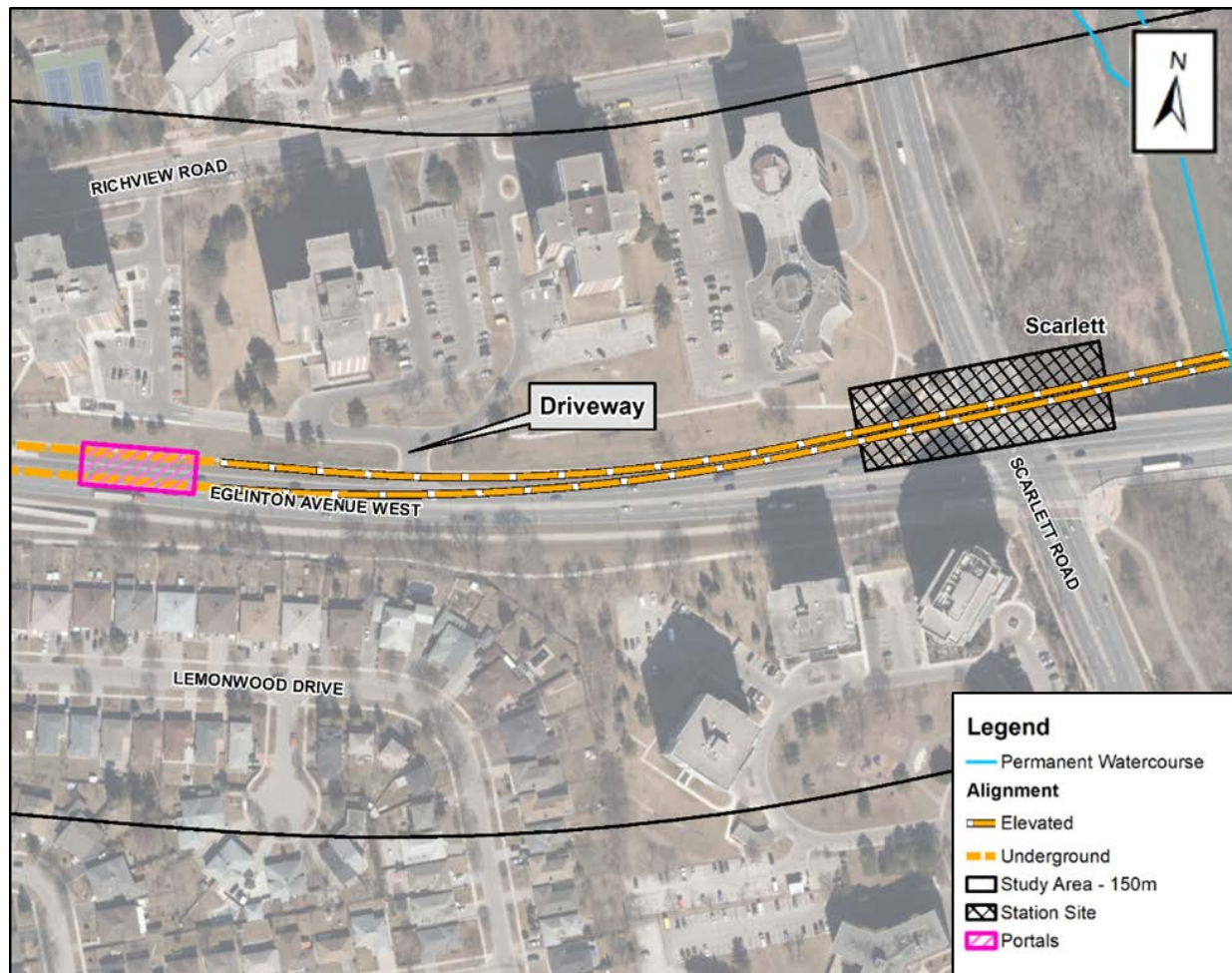


Figure 6-1: Tunnel Portal west of Scarlett Road & Adjacent Driveway

6.1.4 2031 Intersection Operations

2031 Intersection capacity analysis is summarized in Table 6-1. The analysis reflects the impact of traffic growth exclusive to the Project's operation as no impacts to traffic from the Project are anticipated. Intersections operations are forecasted to be similar to existing conditions, however, future operations are expectedly worse than that in the existing conditions. Under the existing conditions the Eglinton Avenue West and Martin Grove Road intersection adjacent to Highway 401/427 interchange is over capacity during both AM and PM peak hours and acting as bottleneck in both the directions. Under the future conditions, intersections at Kipling Avenue and Islington Avenue are also forecasted to be over capacity. As such the segment from Islington Avenue up to and including Martin Grove Road is forecasted to have congestion issues within the future scenario.

As discussed in Section 3.3 Existing Traffic Operations, the south approach of Royal York intersection has a single lane with a throat widening beginning approximately 115 m upstream of the intersection to create a 60 m long left turn lane a 60 m second through curb lane besides a 20 m right turn lane. It was also explained that since the second northbound through lane can accommodate 60 m long queue, the experienced queue within the inner

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through lane would be longer than the one reported by Synchro requiring longer time to dissipate, in case Synchro predicted the queue greater than 60 m. The maximum northbound through queue lengths (95th Queue) by Synchro are 91 m and 93 m in AM and PM peak hours respectively. As curb through lane can accommodate 60 m, the remaining approximately 30 m of the queue will be stacked within the inner northbound through lane, so the experienced queue will be approximately 120 m during both the AM and PM peak hours. The approximately 115 m long throat seems adequate for the aforementioned experienced queue within the functional area of the intersection. Similar to the existing conditions a brief moving southbound queue is anticipated on receiving lanes within the throat.

No mitigation measures have been proposed as future operations are not a result from the Project and are not within the scope of this study.

Table 6-1 presents summary of Synchro results for critical movements having LOS "E" or worse and V/C ratio 0.9 or worse. Detailed Synchro reports are provided as Appendix F.

Table 6-1: Future 2031 Signalized Intersection Capacity Analysis

Intersection	AM Peak Hour									PM Peak Hour								
	Overall			Critical Movements						Overall			Critical Movements					
	V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th								50 th	95 th
1: Eglinton Avenue West & Weston Road	0.76	26	C	NBL	1.04	101	F	45	90	0.77	27	C	NBL	0.95	72	E	44	93
2: Eglinton Avenue West & Jane Street	0.95	49	D	NBL	0.92	67	E	38	84	1.01	43	D	EBL	1.09	114	F	33	79
				SBT	1.02	75	E	139	180				EBT	0.95	52	D	112	154
3: Eglinton Avenue West & Emmett Avenue	0.67	12	B	SBT	0.69	60	E	26	50	0.87	11	B	EBL	0.93	58	E	22	43
4: Eglinton Avenue West & Scarlett Road	0.98	40	D	EBT	1.09	62	E	198	155	0.98	43	D	EBT	1.02	71	E	152	193
				SBL	0.93	65	E	38	77				WBL	0.86	56	E	22	56
													NBL	0.93	58	E	35	71
5: Eglinton Avenue West & Royal York Road	0.90	75	E	EBT	1.17	125	F	242	295	0.95	73	E	EBT	1.24	152	F	256	323
				WBT	1.04	72	E	187	233				-	-	-	-	-	-
				WBR	0.07	56	E	3	9				-	-	-	-	-	-
6: Eglinton Avenue West & Russell Road/Eden Valley Drive	0.58	10	B	EBR	0.01	101	F	0	0	0.54	9	A	-	-	-	-	-	-
7: Eglinton Avenue West & Islington Avenue	1.06	99	F	EBL	1.22	177	F	44	95	1.29	84	F	EBL	1.64	358	F	86	138
				EBT	1.33	183	F	277	314				EBT	1.14	97	F	240	279
				WBL	1.00	113	F	23	68				WBL	0.83	61	E	15	51
				WBT	1.13	87	F	210	255				WBT	1.11	84	F	227	269
				-	-	-	-	-	-				NBT	0.90	50	D	127	170
8: Eglinton Avenue West & Wincott Drive/Bemersyde Drive	0.85	23	C	EBL	0.86	63	E	16	32	1.31	31	C	EBL	1.45	280	F	18	55
				SBL	0.84	79	E	29	53				SBL	0.91	82	F	44	84
9: Eglinton Avenue	1.08	92	F	EBL	1.03	78	E	40	30	1.23	79	E	EBL	1.40	269	F	60	65

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Intersection	AM Peak Hour									PM Peak Hour								
	Overall			Critical Movements						Overall			Critical Movements					
	V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Dir	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th								50 th	95 th
West & Kipling Avenue				EBT	1.18	116	F	343	263				EBT	1.10	64	E	325	333
				WBL	0.99	109	F	38	88				WBL	1.07	135	F	32	78
				WBT	1.10	92	F	296	339				WBT	1.09	86	F	317	359
				NBT	1.00	84	F	121	164				NBT	0.97	78	E	119	161
10: Eglinton Avenue West & Widdicombe Hill Boulevard/Lloyd Manor Road	1.03	61	E	EBL	0.96	32	C	7	12	1.05	51	D	EBL	1.27	187	F	51	28
				EBT	1.18	97	F	390	234				EBT	0.98	59	E	301	208
11: Eglinton Avenue West & Martin Grove Road	1.20	179	F	EBL	1.41	249	F	145	211	1.28	166	F	EBL	1.89	459	F	237	310
				EBT	1.48	255	F	485	524				EBT	1.44	238	F	499	537
				WBL	0.29	59	E	3	5				WBL	0.47	59	E	6	10
				WBT	1.40	242	F	286	315				WBT	1.15	122	F	219	251
				SBL	0.72	70	E	29	61				-	-	-	-	-	-
12: Eglinton Avenue West & Highway 401/427 Interchange	0.91	44	D	NBR	1.08	103	F	162	207	1.00	58	E	NBR	1.11	98	F	264	310
13: Eglinton Avenue West & The East Mall	0.98	39	D	SBR	1.12	94	F	145	236	0.86	51	D	EBT	1.10	79	E	134	190
14: Eglinton Avenue West & Matheson Boulevard East	0.87	13	B	WBR	0.91	22	C	19	298	0.94	49	D	SBL	1.42	245	F	181	248
15: Eglinton Avenue West & Renforth Drive	1.03	44	D	EBL	0.81	58	E	49	66	0.95	47	D	EBL	1.05	92	F	123	162
				SBL	1.25	247	F	20	50				WBL	0.58	63	E	14	29
				SBR	0.96	55	D	127	220				SBT	1.05	88	F	157	198
16: Eglinton Avenue West & Commerce Boulevard	0.62	12	B	-	-	-	-	-	-	0.93	37	D	SBL	1.00	62	E	111	185

Notes: NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound;
 L - Left Turn Movement; T - Through Movement; R - Right Turn Movement

6.1.5 Summary of Potential Impacts, Proposed Mitigation Measures, and Future Work

Table 6-2 summarizes the potential impacts, proposed mitigation measures and monitoring process, and future work associated with the proposed changes with the Project.

Table 6-2: Summary of Potential Impacts, Mitigation Measures, and Commitment to Future Works

Environmental Issue/ Concern	Effect/Impact (During Construction/ During Operation)	Mitigation Measures	Monitoring/Future Work/ Contingency
Potential reduction in road capacity and sight distances at the elevated Jane and Scarlett Stations.	<u>Operational</u> Disruption to traffic operations and compromised traffic safety at Eglinton/Jane and Eglinton/Scarlett intersections.	- Potential mitigation measures to be confirmed during detailed design once the design of stations is finalized: - Add required number of lanes to restore the existing capacity; - Turn prohibitions to reduce the demand at the intersection; - Potential reduction in existing lane widths to maintain the required number of lanes; and - Additional signal heads and/or advance flashing warning signs to mitigate the restricted visibility	Supplementary study to identify monitoring/future work following finalization of the design.
Potential closure of the existing driveway to the north of tunnel portal located to the west of Scarlett Road. The driveway serves as a combined secondary access to residential complex.	<u>Operational</u> Being secondary access partial closure is not anticipated to have significant impacts. Additional access may be required in case of full closure.	- Potential mitigation measures to be confirmed during detailed design once the structural design of tunnel portal and adjacent elevated guideway are finalized: - Design the supporting columns of the guideway to avoid closure; - Convert the access into right-in/right-out and relocate as appropriate integrating into the supporting columns of the elevated guideway; and - Relocate the access to the west of the tunnel portal.	Supplementary study to identify monitoring/future work following finalization of the design.

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Environmental Issue/ Concern	Effect/Impact (During Construction/ During Operation)	Mitigation Measures	Monitoring/Future Work/ Contingency
Potential reduction in road capacity and/or traffic detouring during construction of guideway between the elevated segment at the Jane Station and underground Mount Dennis Station.	<u>During Construction</u> Extent of impacts will be different depending on tunnelling or C&C construction methodology. In case of C&C construction the road capacity is anticipated to be significantly reduced and partial/full closures could also be required for limited time periods.	<u>Prior to Construction</u> - Supplementary traffic study may be required following finalization of design to assess the impacts and identify mitigation measures. <u>During Construction</u> - Potential mitigation measures to be confirmed in the next design phase based on the results of the supplementary traffic study to assess the impacts: - Provide clear lane closure guidelines; - Schedule the work during off-peak and night to minimize lane closures and traffic delays; - Full road closure to reduce the construction time, providing potential detour routes to through traffic via Black Creek Drive and Jane Street. Local traffic access via Weston Road and Jane Street; - Coordinate the lane closures with the potential work zone restrictions for the adjacent Jane Station construction to avoid a sequence of lane or road closures; and - Effective work zone traffic	Supplementary study to identify monitoring/future work following finalization of the construction methodology.

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Environmental Issue/ Concern	Effect/Impact (During Construction/ During Operation)	Mitigation Measures	Monitoring/Future Work/ Contingency
		information for the local traffic to better manage their trips.	
Temporary lane restrictions, road closures, turn restrictions and traffic detouring are anticipated during construction of tunnel portals, underground and elevated stations and allied installations.	<u>During Construction</u> Disruption to traffic operations along Eglinton Avenue West.	<u>During Construction</u> - Metrolinx and their consultants/contractors will work with the City of Toronto, City of Mississauga, TTC and MiWay to develop an acceptable traffic management plan(s) and transit schedule. Truck haul routes will be identified during detail process as part of traffic management plan; and - Access to nearby land uses will be maintained to the extent possible. Potentially affected residents, tenants and business owners will be notified of initial construction schedules, as well as modifications to these schedules as they occur.	<u>During Construction</u> - Monitoring of traffic and Transit operations is part of standard operating procedures of City of Toronto, City of Mississauga, TTC and MiWay; and - Traffic impacts to be monitored in accordance with the Traffic Control and Management Plan and adjust as necessary during the construction period.

7. Summary of Conclusions

The Project's alignment is mostly underground having small elevated segment as against the surface at grade LRT preferred alignment by the 2010 EPR. Therefore, the traffic study conducted for the 2010 EPR is not applicable to the currently proposed alignment.

The Project alignment is elevated from a point east of Jane Street to a point just west of Scarlett Road. The alignment runs underground for the rest of the segment.

- No impacts to intersection operations are anticipated as the elevated and underground segments of the alignment have no interaction with traffic operations. However, existing (2019) and future (2031) intersection capacity analysis reports have been provided to inform the air quality analysis as part of the Project's EPR Addendum. Should the Project assess new areas not previously assessed as design of the Project progresses, additional assessment of traffic impacts should be undertaken;
- Stations at Jane Street and Scarlett Road are elevated. Any structural elements supporting the super structure of the stations may require lane configuration changes at both the Jane Street at Eglinton Avenue West, and Scarlett Road at Eglinton Avenue West intersections. Impacts from such modifications should be assessed as station design is advanced. Similarly, the elevated station structures may also restrict signal head visibility at the both intersections, respectively. Additional signal heads and/or advance flashing warning signs may have to be installed to mitigate the restricted visibility and will be confirmed as station design is advanced; and
- The tunnel portal just west of Scarlett Road will potentially require closure of the existing driveway to the north. The driveway serves as a combined secondary access for the residential developments whose dedicated primary full move accesses are available from Richview Road. Being a secondary access, no significant impacts are anticipated due to partial closure of the driveway, however in case of full closure additional access requirements for the residential complex may have to be explored.

8. Recommendations

Design of underground and elevated stations is currently not finalized. Similarly, the construction methodology for the Project segment from Mount Dennis Station to east of Jane Station is yet to be determined. As such the associated traffic impacts of station construction should be assessed following finalization of station design. Following additional and supplementary traffic studies are recommended:

- TIS to assess impacts of tunnelling vs. C&C construction of the Project segment from Mount Dennis Station to east of Jane Station;
- During detailed design, construction staging options for underground and elevated stations, tunnel portals and allied installations should be prepared. Metrolinx and their consultants/contractors should work with the City of Toronto, City of Mississauga, TTC and MiWay to develop an acceptable traffic management plan and transit schedule.

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Truck haul routes should be identified during detailed design process as part of traffic management plan;

- Following design finalization of the elevated Jane and Scarlett Stations, a supplementary traffic study should be conducted to assess the potential permanent impacts to the traffic and identify mitigation measures; and
- Supplementary traffic study to explore the requirements of an additional access for the residential complex to the north of the proposed tunnel portal located west of Scarlett Road, in the event the portal requires full closure of the existing driveway to the residential complex.

Attachment(s)/Enclosure

Appendix A - Existing Turning Movement Counts and Signal Timing Plans

Appendix B - Existing 2019 Raw and Balanced Traffic Volumes

Appendix C - Existing 2019 SYNCHRO Capacity Analysis Reports

Appendix D - 2031 Total Traffic Forecast

Appendix E - Proposed Alignment

Appendix F - Future 2031 SYNCHRO Capacity Analysis Reports

Appendix A

Existing Turning Movement Counts and Signal Timing Plans

Turning Movement Count Summary Report

BEMERSYDE DR AT EGLINTON AVE W & WINCOTT DR (PX 974)

Survey Date: 2018-Dec-18 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
07:30-08:30	CAR	172	11	79	32	122	1,449	50	1,368	11	1,429	106	49	87	44	180	1,174	8	1,119	43	1,170	N	4	0	0
	TRK	0	0	0	1	1	44	0	43	0	43	0	0	0	0	0	37	0	37	0	37	S	4	0	0
AM PEAK	BUS	1	0	1	0	1	13	0	13	0	13	1	0	0	0	0	12	1	12	0	13	E	13	1	0
																					W	6	0	0	
TOTAL:		173	11	80	33	124	1,506	50	1,424	11	1,485	107	49	87	44	180	1,223	9	1,168	43	1,220				
17:00-18:00	CAR	204	6	83	6	95	1,606	57	1,530	13	1,600	136	70	107	52	229	1,358	16	1,300	64	1,380	N	5	0	0
	TRK	0	0	0	0	0	20	0	20	0	20	0	0	0	0	0	32	0	32	0	32	S	3	0	0
PM PEAK	BUS	0	0	0	0	0	6	0	6	0	6	0	0	0	0	0	6	0	6	0	6	E	7	0	0
																					W	14	0	0	
TOTAL:		204	6	83	6	95	1,632	57	1,556	13	1,626	136	70	107	52	229	1,396	16	1,338	64	1,418				
OFF HR AVG	CAR	198	16	52	12	80	1,138	57	1,047	13	1,117	81	79	56	69	204	1,011	12	926	89	1,027	N	8	0	0
	TRK	3	0	0	0	0	48	1	47	0	48	0	1	0	2	3	55	0	53	2	55	S	20	0	0
	BUS	0	0	0	0	0	9	0	9	0	9	0	0	0	0	0	9	0	9	0	9	E	24	0	0
																					W	26	0	0	
TOTAL:		201	16	52	12	80	1,195	58	1,103	13	1,174	81	80	56	71	207	1,075	12	988	91	1,091				
07:30-09:30	CAR	403	33	178	74	285	2,531	104	2,341	24	2,469	228	116	183	101	400	2,242	21	2,108	121	2,250	N	15	0	0
	TRK	2	1	0	2	3	92	0	87	0	87	0	3	0	1	4	72	0	70	2	72	S	19	0	0
2 HR AM	BUS	1	0	1	0	1	26	0	26	0	26	1	0	0	0	0	26	1	26	0	27	E	32	3	0
																					W	15	1	0	
TOTAL:		406	34	179	76	289	2,649	104	2,454	24	2,582	229	119	183	102	404	2,340	22	2,204	123	2,349				
16:00-18:00	CAR	422	16	164	26	206	3,139	117	2,977	24	3,118	264	136	204	111	451	2,705	36	2,578	141	2,755	N	17	1	0
	TRK	0	0	0	0	0	51	0	51	0	51	1	0	0	0	0	74	1	74	0	75	S	23	1	0
2 HR PM	BUS	0	0	0	0	0	15	0	15	0	15	0	0	0	0	0	18	0	18	0	18	E	31	1	0
																					W	46	0	0	
TOTAL:		422	16	164	26	206	3,205	117	3,043	24	3,184	265	136	204	111	451	2,797	37	2,670	141	2,848				
07:30-18:00	CAR	1,611	113	548	148	809	10,219	447	9,504	100	10,051	814	567	609	489	1,665	8,991	105	8,389	616	9,110	N	63	2	0
	TRK	13	1	0	3	4	337	3	326	0	329	3	8	1	8	17	365	2	356	10	368	S	120	1	0
8 HR SUM	BUS	1	0	1	0	1	78	0	78	0	78	1	0	0	0	0	79	1	79	0	80	E	160	5	0
																					W	165	1	0	
TOTAL:		1,625	114	549	151	814	10,634	450	9,908	100	10,458	818	575	610	497	1,682	9,435	108	8,824	626	9,558				

Total 8 Hour Vehicle Volume: 22,512

Total 8 Hour Bicycle Volume: 9

Total 8 Hour Intersection Volume: 22,521

Comment:

Turning Movement Count Summary Report

COMMERCE BLVD AT EGLINTON AVE (PX 1481)

Survey Date: 2018-Dec-18 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
08:15-09:15 AM PEAK	CAR	341	5	2	8	15	663	29	583	20	632	180	72	14	32	118	1,303	146	1,266	310	1,722	N	42	0	0
	TRK	1	0	0	1	1	30	0	28	0	28	1	1	0	1	2	23	1	22	1	24	S	2	0	0
	BUS	0	0	0	0	0	17	0	8	0	8	0	9	0	0	9	6	0	6	0	6	E W	25 13	1 0	0 0
TOTAL:		342	5	2	9	16	710	29	619	20	668	181	82	14	33	129	1,332	147	1,294	311	1,752				
16:30-17:30 PM PEAK	CAR	64	34	5	92	131	1,879	14	1,227	5	1,246	58	560	32	49	641	705	21	622	45	688	N	38	1	0
	TRK	0	2	0	0	2	20	0	19	0	19	2	1	2	0	3	14	0	12	0	12	S	7	0	0
	BUS	0	0	0	0	0	15	0	7	0	7	0	8	0	0	8	6	0	6	0	6	E W	55 8	0 4	0 0
TOTAL:		64	36	5	92	133	1,914	14	1,253	5	1,272	60	569	34	49	652	725	21	640	45	706				
OFF HR AVG	CAR	128	19	13	20	52	752	28	608	17	653	76	124	13	41	178	596	46	536	87	669	N	8	0	0
	TRK	3	1	1	0	2	43	1	38	1	40	3	5	1	1	7	22	1	20	1	22	S	4	0	0
	BUS	0	0	0	0	0	11	0	4	0	4	0	7	0	1	8	5	0	4	0	4	E W	11 4	0 0	0 0
TOTAL:		131	20	14	20	54	806	29	650	18	697	79	136	14	43	193	623	47	560	88	695				
07:30-09:30 2 HR AM	CAR	542	8	4	15	27	1,408	54	1,245	27	1,326	245	148	22	69	239	2,351	196	2,274	484	2,954	N	76	0	0
	TRK	2	2	0	1	3	62	0	59	2	61	3	2	0	1	3	43	1	40	2	43	S	4	0	0
	BUS	0	0	0	0	0	35	0	17	0	17	1	18	0	0	18	12	1	12	0	13	E W	53 17	1 0	0 0
TOTAL:		544	10	4	16	30	1,505	54	1,321	29	1,404	249	168	22	70	260	2,406	198	2,326	486	3,010				
16:00-18:00 2 HR PM	CAR	145	52	9	135	196	3,429	24	2,378	11	2,413	92	916	44	99	1,059	1,479	37	1,328	112	1,477	N	70	1	0
	TRK	1	2	0	0	2	40	0	38	0	38	3	2	2	1	5	34	1	31	1	33	S	13	0	0
	BUS	2	0	0	0	0	30	1	13	0	14	0	17	0	0	17	10	0	10	1	11	E W	90 18	0 4	0 0
TOTAL:		148	54	9	135	198	3,499	25	2,429	11	2,465	95	935	46	100	1,081	1,523	38	1,369	114	1,521				
07:30-18:00 8 HR SUM	CAR	1,199	134	66	231	431	7,846	188	6,054	106	6,348	642	1,561	118	332	2,011	6,210	418	5,744	945	7,107	N	176	2	0
	TRK	12	7	2	2	11	272	2	248	4	254	16	22	5	5	32	164	7	152	8	167	S	33	0	0
	BUS	3	0	0	0	0	108	2	46	0	48	1	62	0	3	65	42	1	39	1	41	E W	188 52	1 5	0 0
TOTAL:		1,214	141	68	233	442	8,226	192	6,348	110	6,650	659	1,645	123	340	2,108	6,416	426	5,935	954	7,315				

Total 8 Hour Vehicle Volume: 16,515

Total 8 Hour Bicycle Volume: 8

Total 8 Hour Intersection Volume: 16,523

Comment:

Turning Movement Count Summary Report

EDEN VALLEY DR AT EGLINTON AVE & RUSSELL RD (PX 1309)

Survey Date: 2018-Dec-18 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other					
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total		
07:45-08:45 AM PEAK	CAR	63	8	17	36	61	1,205	20	1,147	7	1,174	40	22	19	67	108	1,190	14	1,115	26	1,155	N	1	0	0	
	TRK	1	0	0	0	0	42	1	42	0	43	1	0	0	0	0	27	1	27	0	28	S	6	0	0	
	BUS	1	0	0	2	2	15	1	13	0	14	1	0	0	0	0	16	1	16	0	17	E W	0 1	0 0	0 0	
TOTAL:		65	8	17	38	63	1,262	22	1,202	7	1,231	42	22	19	67	108	1,233	16	1,158	26	1,200					
16:45-17:45 PM PEAK	CAR	64	8	12	20	40	1,487	30	1,452	19	1,501	52	15	11	36	62	1,390	22	1,346	22	1,390	N	0	0	0	
	TRK	0	0	0	0	0	19	0	19	0	19	0	0	0	0	0	28	0	28	0	28	S	1	0	0	
	BUS	0	0	0	0	0	6	0	6	0	6	0	0	0	0	0	9	0	9	0	9	E W	0 2	0 0	0 0	
TOTAL:		64	8	12	20	40	1,512	30	1,477	19	1,526	52	15	11	36	62	1,427	22	1,383	22	1,427					
OFF HR AVG	CAR	51	10	9	16	35	1,063	34	1,040	13	1,087	31	7	6	27	40	976	12	939	8	959	N	1	0	0	
	TRK	0	0	0	1	1	49	0	48	0	48	1	0	0	0	0	46	1	46	0	47	S	5	0	0	
	BUS	0	0	0	0	0	10	0	10	0	10	0	0	0	0	0	9	0	9	0	9	E W	1 2	0 0	0 0	
TOTAL:		51	10	9	17	36	1,122	34	1,098	13	1,145	32	7	6	27	40	1,031	13	994	8	1,015					
07:30-09:30 2 HR AM	CAR	121	17	37	53	107	2,342	44	2,259	13	2,316	60	30	26	101	157	2,223	21	2,105	40	2,166	N	2	0	0	
	TRK	1	0	0	1	1	100	1	99	0	100	2	0	0	1	1	67	2	66	0	68	S	11	0	0	
	BUS	2	0	1	3	4	28	1	25	0	26	2	0	0	1	1	31	2	30	0	32	E W	2 3	0 0	0 0	
TOTAL:		124	17	38	57	112	2,470	46	2,383	13	2,442	64	30	26	103	159	2,321	25	2,201	40	2,266					
16:00-18:00 2 HR PM	CAR	132	11	25	31	67	2,971	68	2,917	30	3,015	103	23	33	65	121	2,709	40	2,633	39	2,712	N	0	0	0	
	TRK	0	0	0	0	0	50	0	50	0	50	0	0	0	0	0	67	0	67	0	67	S	6	0	0	
	BUS	0	0	0	0	0	13	0	13	1	14	1	0	0	0	0	17	0	17	0	17	E W	1 10	0 0	0 0	
TOTAL:		132	11	25	31	67	3,034	68	2,980	31	3,079	104	23	33	65	121	2,793	40	2,717	39	2,796					
07:30-18:00 8 HR SUM	CAR	451	66	96	148	310	9,565	246	9,336	93	9,675	284	81	83	275	439	8,834	108	8,493	109	8,710	N	4	0	0	
	TRK	1	0	0	3	3	343	1	340	1	342	6	0	0	1	1	316	5	315	0	320	S	37	0	0	
	BUS	4	0	2	3	5	79	2	76	1	79	3	0	0	1	1	85	2	84	0	86	E W	6 19	0 0	0 0	
TOTAL:		456	66	98	154	318	9,987	249	9,752	95	10,096	293	81	83	277	441	9,235	115	8,892	109	9,116					

Total 8 Hour Vehicle Volume: 19,971

Total 8 Hour Bicycle Volume: 0

Total 8 Hour Intersection Volume: 19,971

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT HIGHWAY 401/427 TCS (PX 954)

Survey Date: 2018-Dec-20 (Thursday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
07:30-08:30	CAR	0	0	0	570	570	2,130	0	1,560	665	2,225	1,281	0	0	0	0	1,972	616	1,972	0	2,588	N	0	0	0
	TRK	0	0	0	21	21	75	0	54	12	66	20	0	0	0	0	32	8	32	0	40	S	0	0	0
AM PEAK	BUS	0	0	0	17	17	18	0	1	0	1	16	0	0	0	0	2	16	2	0	18	E W	0 0	0 0	0 0
	TOTAL:	0	0	0	608	608	2,223	0	1,615	677	2,292	1,317	0	0	0	0	2,006	640	2,006	0	2,646				
16:45-17:45	CAR	0	0	0	976	976	2,523	0	1,547	256	1,803	669	0	0	0	0	1,688	413	1,688	0	2,101	N	0	0	0
	TRK	0	0	0	11	11	26	0	15	4	19	8	0	0	0	0	32	4	32	0	36	S	0	0	0
PM PEAK	BUS	0	0	0	12	12	12	0	0	0	0	10	0	0	0	0	0	10	0	0	10	E W	0 0	0 0	0 0
	TOTAL:	0	0	0	999	999	2,561	0	1,562	260	1,822	687	0	0	0	0	1,720	427	1,720	0	2,147				
OFF HR AVG	CAR	0	0	0	504	504	1,662	0	1,158	175	1,333	511	0	0	0	0	1,131	336	1,131	0	1,467	N	0	0	0
	TRK	0	0	0	14	14	65	0	51	7	58	13	0	0	0	0	57	6	57	0	63	S	0	0	0
	BUS	0	0	0	13	13	16	0	3	0	3	12	0	0	0	0	2	12	2	0	14	E W	0 0	0 0	0 0
	TOTAL:	0	0	0	531	531	1,743	0	1,212	182	1,394	536	0	0	0	0	1,190	354	1,190	0	1,544				
07:30-09:30	CAR	0	0	0	1,054	1,054	3,650	0	2,596	1,350	3,946	2,482	0	0	0	0	3,622	1,132	3,622	0	4,754	N	0	0	0
	TRK	0	0	0	35	35	136	0	101	21	122	35	0	0	0	0	63	14	63	0	77	S	0	0	0
2 HR AM	BUS	0	0	0	35	35	36	0	1	2	3	32	0	0	0	0	7	30	7	0	37	E W	0 0	0 0	0 0
	TOTAL:	0	0	0	1,124	1,124	3,822	0	2,698	1,373	4,071	2,549	0	0	0	0	3,692	1,176	3,692	0	4,868				
16:00-18:00	CAR	0	0	0	1,934	1,934	5,098	0	3,164	466	3,630	1,270	0	0	0	0	3,256	804	3,256	0	4,060	N	0	0	0
	TRK	0	0	0	22	22	55	0	33	16	49	28	0	0	0	0	70	12	70	0	82	S	0	0	0
2 HR PM	BUS	0	0	0	23	23	23	0	0	0	0	26	0	0	0	0	2	26	2	0	28	E W	0 0	0 0	0 0
	TOTAL:	0	0	0	1,979	1,979	5,176	0	3,197	482	3,679	1,324	0	0	0	0	3,328	842	3,328	0	4,170				
07:30-18:00	CAR	0	0	0	5,004	5,004	15,394	0	10,390	2,514	12,904	5,792	0	0	0	0	11,400	3,278	11,400	0	14,678	N	0	0	0
	TRK	0	0	0	112	112	448	0	336	66	402	116	0	0	0	0	362	50	362	0	412	S	0	0	0
8 HR SUM	BUS	0	0	0	109	109	121	0	12	3	15	105	0	0	0	0	16	102	16	0	118	E W	0 0	0 0	0 0
	TOTAL:	0	0	0	5,225	5,225	15,963	0	10,738	2,583	13,321	6,013	0	0	0	0	11,778	3,430	11,778	0	15,208				

Total 8 Hour Vehicle Volume: 33,754

Total 8 Hour Bicycle Volume: 0

Total 8 Hour Intersection Volume: 33,754

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT ISLINGTON AVE (PX 709)

Survey Date: 2014-Apr-29 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
07:30-08:30	CAR	1,144	52	908	175	1,135	1,492	184	1,272	54	1,510	1,092	45	888	50	983	1,174	150	1,072	52	1,274	N	46	0	0
	TRK	8	3	6	5	14	66	1	57	7	65	40	4	28	0	32	36	5	33	1	39	S	64	0	0
AM PEAK	BUS	19	0	18	1	19	14	1	13	0	14	17	0	15	0	15	13	2	13	0	15	E	37	0	0
																					W	23	0	0	
TOTAL:		1,171	55	932	181	1,168	1,572	186	1,342	61	1,589	1,149	49	931	50	1,030	1,223	157	1,118	53	1,328				
16:45-17:45	CAR	1,261	64	982	163	1,209	1,556	223	1,323	63	1,609	1,003	70	810	84	964	1,180	130	1,032	56	1,218	N	18	0	0
	TRK	10	1	5	0	6	24	4	24	0	28	8	0	5	0	5	30	3	29	1	33	S	45	0	0
PM PEAK	BUS	9	0	8	0	8	4	1	4	0	5	11	0	11	0	11	9	0	9	0	9	E	25	0	0
																					W	36	0	0	
TOTAL:		1,280	65	995	163	1,223	1,584	228	1,351	63	1,642	1,022	70	826	84	980	1,219	133	1,070	57	1,260				
OFF HR AVG	CAR	648	71	493	103	667	964	107	810	56	973	627	51	466	57	574	818	105	690	48	843	N	9	0	0
	TRK	20	4	16	4	24	57	3	51	3	57	21	2	14	2	18	48	4	42	1	47	S	21	0	0
	BUS	9	0	9	0	9	8	0	8	0	8	8	0	8	0	8	7	0	7	0	7	E	14	0	0
TOTAL:		677	75	518	107	700	1,029	110	869	59	1,038	656	53	488	59	600	873	109	739	49	897				
07:30-09:30	CAR	2,149	110	1,675	326	2,111	2,799	370	2,368	102	2,840	2,141	105	1,732	107	1,944	2,158	307	1,941	104	2,352	N	98	0	0
	TRK	38	5	29	7	41	122	5	111	8	124	55	4	36	3	43	80	11	72	4	87	S	194	0	0
2 HR AM	BUS	37	0	36	3	39	35	1	32	1	34	34	0	31	0	31	25	2	25	0	27	E	86	0	0
																					W	129	0	0	
TOTAL:		2,224	115	1,740	336	2,191	2,956	376	2,511	111	2,998	2,230	109	1,799	110	2,018	2,263	320	2,038	108	2,466				
16:00-18:00	CAR	2,419	133	1,831	306	2,270	3,028	451	2,592	120	3,163	2,005	130	1,591	145	1,866	2,382	294	2,104	137	2,535	N	25	0	0
	TRK	22	2	13	0	15	50	8	49	1	58	20	1	14	0	15	55	5	53	1	59	S	85	0	0
2 HR PM	BUS	22	1	21	0	22	14	1	14	0	15	25	0	25	0	25	21	0	20	0	20	E	38	0	0
																					W	76	0	0	
TOTAL:		2,463	136	1,865	306	2,307	3,092	460	2,655	121	3,236	2,050	131	1,630	145	1,906	2,458	299	2,177	138	2,614				
07:30-18:00	CAR	7,160	526	5,479	1,042	7,047	9,680	1,248	8,198	445	9,891	6,654	440	5,188	481	6,109	7,812	1,021	6,805	433	8,259	N	157	0	0
	TRK	141	22	106	21	149	398	25	365	21	411	160	12	106	11	129	326	33	293	10	336	S	361	0	0
8 HR SUM	BUS	93	1	91	4	96	81	2	76	1	79	90	1	87	0	88	74	2	73	0	75	E	181	0	0
																					W	286	0	0	
TOTAL:		7,394	549	5,676	1,067	7,292	10,159	1,275	8,639	467	10,381	6,904	453	5,381	492	6,326	8,212	1,056	7,171	443	8,670				

Total 8 Hour Vehicle Volume: 32,669

Total 8 Hour Bicycle Volume: 0

Total 8 Hour Intersection Volume: 32,669

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT JANE ST (PX 905)

Survey Date: 2018-Apr-05 (Thursday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
08:00-09:00	CAR	929	199	686	50	935	846	233	778	205	1,216	1,073	18	810	192	1,020	987	58	596	10	664	N	19	0	0
	TRK	15	8	12	4	24	32	3	28	6	37	26	0	17	9	26	35	3	18	0	21	S	50	0	0
AM PEAK	BUS	20	2	20	2	24	14	0	8	2	10	17	4	15	1	20	15	0	12	0	12	E	29	0	0
																					W	34	0	0	
TOTAL:		964	209	718	56	983	892	236	814	213	1,263	1,116	22	842	202	1,066	1,037	61	626	10	697				
16:45-17:45	CAR	944	203	742	79	1,024	1,016	186	917	189	1,292	1,041	20	762	187	969	1,180	90	790	16	896	N	45	0	0
	TRK	14	4	9	1	14	21	5	20	6	31	15	0	8	5	13	25	1	16	0	17	S	50	0	0
PM PEAK	BUS	19	1	19	0	20	17	0	9	0	9	19	8	19	0	27	18	0	17	0	17	E	41	0	0
																					W	62	0	0	
TOTAL:		977	208	770	80	1,058	1,054	191	946	195	1,332	1,075	28	789	192	1,009	1,223	91	823	16	930				
OFF HR AVG	CAR	606	166	479	72	717	585	109	489	128	726	619	24	438	133	595	765	53	466	18	537	N	21	0	0
	TRK	26	7	20	3	30	28	5	24	9	38	25	1	13	7	21	36	3	22	1	26	S	31	0	0
	BUS	16	0	16	0	16	11	0	7	0	7	19	4	18	1	23	14	1	13	0	14	E	31	0	0
TOTAL:		648	173	515	75	763	624	114	520	137	771	663	29	469	141	639	815	57	501	19	577				
07:30-09:30	CAR	1,807	365	1,358	102	1,825	1,660	431	1,521	386	2,338	2,000	37	1,501	361	1,899	1,814	113	1,088	18	1,219	N	32	0	0
	TRK	35	19	27	8	54	63	8	54	14	76	63	1	42	15	58	71	7	37	0	44	S	99	0	0
2 HR AM	BUS	41	2	41	3	46	25	0	14	3	17	37	8	34	2	44	35	0	31	0	31	E	74	0	0
																					W	51	0	0	
TOTAL:		1,883	386	1,426	113	1,925	1,748	439	1,589	403	2,431	2,100	46	1,577	378	2,001	1,920	120	1,156	18	1,294				
16:00-18:00	CAR	1,796	438	1,408	187	2,033	1,974	356	1,743	375	2,474	1,992	44	1,423	387	1,854	2,379	194	1,554	32	1,780	N	57	0	0
	TRK	37	10	28	2	40	34	9	32	12	53	31	0	16	9	25	55	3	36	0	39	S	104	0	0
2 HR PM	BUS	39	1	39	0	40	30	0	14	0	14	37	16	37	3	56	38	0	34	0	34	E	104	0	0
																					W	82	1	0	
TOTAL:		1,872	449	1,475	189	2,113	2,038	365	1,789	387	2,541	2,060	60	1,476	399	1,935	2,472	197	1,624	32	1,853				
07:30-18:00	CAR	6,029	1,468	4,682	577	6,727	5,971	1,224	5,219	1,273	7,716	6,470	175	4,677	1,278	6,130	7,253	520	4,507	123	5,150	N	174	0	0
	TRK	172	57	134	21	212	207	35	183	62	280	194	3	111	50	164	269	21	162	3	186	S	328	1	0
8 HR SUM	BUS	144	4	144	3	151	101	0	57	3	60	146	41	141	9	191	131	2	118	0	120	E	302	0	0
																					W	222	1	0	
TOTAL:		6,345	1,529	4,960	601	7,090	6,279	1,259	5,459	1,338	8,056	6,810	219	4,929	1,337	6,485	7,653	543	4,787	126	5,456				

Total 8 Hour Vehicle Volume: 27,087

Total 8 Hour Bicycle Volume: 2

Total 8 Hour Intersection Volume: 27,089

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT JANE ST (PX 905)

Survey Date: 2018-Apr-07 (Saturday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
08:30-09:30	CAR	431	121	331	48	500	456	83	392	125	600	592	16	429	115	560	533	38	297	17	352	N	9	0	0
	TRK	5	3	4	0	7	8	1	8	1	10	9	0	5	4	9	15	3	8	0	11	S	20	0	0
AM PEAK	BUS	12	0	12	0	12	8	0	5	0	5	14	3	14	1	18	10	0	9	0	9	E	23	0	0
																					W	8	0	0	
TOTAL:		448	124	347	48	519	472	84	405	126	615	615	19	448	120	587	558	41	314	17	372				
16:00-17:00	CAR	788	213	643	89	945	714	123	589	155	867	831	36	584	137	757	963	92	613	22	727	N	14	2	0
	TRK	7	1	6	1	8	4	1	3	0	4	2	0	2	1	3	6	0	4	0	4	S	34	0	0
PM PEAK	BUS	14	0	14	0	14	9	0	7	0	7	14	2	14	0	16	11	0	11	0	11	E	29	0	0
																					W	20	1	0	
TOTAL:		809	214	663	90	967	727	124	599	155	878	847	38	600	138	776	980	92	628	22	742				
OFF HR AVG	CAR	719	181	567	94	842	674	133	556	164	853	773	24	535	143	702	823	74	499	19	592	N	19	0	0
	TRK	10	2	6	1	9	8	3	6	2	11	7	1	4	3	8	11	1	6	1	8	S	22	1	0
	BUS	14	0	14	0	14	9	0	6	0	6	15	3	15	0	18	10	0	10	0	10	E	22	0	0
																					W	22	1	0	
TOTAL:		743	183	587	95	865	691	136	568	166	870	795	28	554	146	728	844	75	515	20	610				
07:30-09:30	CAR	752	210	583	58	851	756	145	672	213	1,030	995	26	716	203	945	939	66	526	24	616	N	26	0	0
	TRK	17	7	12	1	20	12	5	10	4	19	18	1	7	5	13	23	7	11	0	18	S	29	0	0
2 HR AM	BUS	25	0	25	0	25	16	0	11	0	11	27	5	27	1	33	17	0	16	0	16	E	24	0	0
																					W	22	0	0	
TOTAL:		794	217	620	59	896	784	150	693	217	1,060	1,040	32	750	209	991	979	73	553	24	650				
16:00-18:00	CAR	1,495	409	1,217	173	1,799	1,400	224	1,150	307	1,681	1,657	77	1,184	288	1,549	1,883	166	1,186	54	1,406	N	43	2	0
	TRK	13	2	11	2	15	7	2	5	3	10	9	0	6	2	8	10	0	6	0	6	S	65	0	0
2 HR PM	BUS	31	0	31	0	31	20	0	16	0	16	30	4	30	0	34	21	0	21	0	21	E	51	0	0
																					W	50	1	0	
TOTAL:		1,539	411	1,259	175	1,845	1,427	226	1,171	310	1,707	1,696	81	1,220	290	1,591	1,914	166	1,213	54	1,433				
07:30-18:00	CAR	5,122	1,343	4,066	608	6,017	4,850	901	4,045	1,174	6,120	5,743	197	4,041	1,064	5,302	6,116	528	3,709	155	4,392	N	143	3	0
	TRK	65	15	45	6	66	47	18	38	15	71	56	3	29	18	50	75	12	42	2	56	S	180	2	0
8 HR SUM	BUS	113	0	112	0	112	70	1	51	1	53	118	19	117	1	137	76	0	75	0	75	E	161	0	0
																					W	159	4	0	
TOTAL:		5,300	1,358	4,223	614	6,195	4,967	920	4,134	1,190	6,244	5,917	219	4,187	1,083	5,489	6,267	540	3,826	157	4,523				

Total 8 Hour Vehicle Volume: 22,451

Total 8 Hour Bicycle Volume: 9

Total 8 Hour Intersection Volume: 22,460

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT KIPLING AVE (PX 729)

Survey Date: 2015-Sep-15 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other					
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total		
08:00-09:00	CAR	967	118	664	143	925	1,515	179	1,314	50	1,543	632	58	442	36	536	1,366	140	1,212	124	1,476	N	50	2	0	
	TRK	26	1	15	8	24	82	5	68	7	80	26	6	14	1	21	33	5	31	6	42	S	40	5	0	
AM PEAK	BUS	38	0	26	1	27	21	1	16	1	18	30	4	25	0	29	22	4	22	11	37	E	48	21	0	
																					W	107	4	0		
TOTAL:		1,031	119	705	152	976	1,618	185	1,398	58	1,641	688	68	481	37	586	1,421	149	1,265	141	1,555					
16:45-17:45	CAR	959	124	710	130	964	1,694	184	1,510	83	1,777	705	54	497	56	607	1,676	125	1,496	65	1,686	N	20	0	0	
	TRK	18	2	10	3	15	35	4	29	2	35	13	3	7	0	10	41	4	39	4	47	S	82	3	0	
PM PEAK	BUS	22	0	20	0	20	12	1	11	0	12	18	1	18	1	20	10	0	9	1	10	E	40	16	0	
																					W	58	25	0		
TOTAL:		999	126	740	133	999	1,741	189	1,550	85	1,824	736	58	522	57	637	1,727	129	1,544	70	1,743					
OFF HR AVG	CAR	419	80	298	94	472	942	65	792	70	927	425	56	266	45	367	997	89	872	56	1,017	N	14	2	0	
	TRK	25	6	16	4	26	51	2	43	5	50	21	4	13	2	19	53	3	45	7	55	S	33	1	0	
	BUS	15	1	13	1	15	17	0	15	0	15	13	1	12	1	14	14	1	12	2	15	E	13	6	0	
																						W	28	4	0	
TOTAL:		459	87	327	99	513	1,010	67	850	75	992	459	61	291	48	400	1,064	93	929	65	1,087					
07:30-09:30	CAR	1,734	216	1,207	252	1,675	2,947	340	2,569	128	3,037	1,155	126	786	81	993	2,752	241	2,455	187	2,883	N	103	2	0	
	TRK	42	5	21	16	42	158	11	125	17	153	59	17	33	5	55	77	9	67	10	86	S	77	7	0	
2 HR AM	BUS	69	1	51	4	56	49	3	40	1	44	54	5	48	0	53	40	5	39	15	59	E	82	31	0	
																						W	186	9	0	
TOTAL:		1,845	222	1,279	272	1,773	3,154	354	2,734	146	3,234	1,268	148	867	86	1,101	2,869	255	2,561	212	3,028					
16:00-18:00	CAR	1,866	242	1,359	289	1,890	3,400	362	2,977	176	3,515	1,346	134	915	107	1,156	3,240	255	2,891	145	3,291	N	35	3	0	
	TRK	35	7	22	13	42	82	8	62	3	73	23	7	12	0	19	84	8	77	5	90	S	151	5	0	
2 HR PM	BUS	44	0	41	5	46	26	1	20	0	21	38	1	37	1	39	27	1	26	2	29	E	86	30	0	
																						W	104	35	0	
TOTAL:		1,945	249	1,422	307	1,978	3,508	371	3,059	179	3,609	1,407	142	964	108	1,214	3,351	264	2,994	152	3,410					
07:30-18:00	CAR	5,277	779	3,757	918	5,454	10,117	963	8,714	583	10,260	4,199	485	2,764	366	3,615	9,979	852	8,834	557	10,243	N	194	11	0	
	TRK	175	37	108	46	191	444	26	360	38	424	162	38	96	14	148	375	28	324	41	393	S	360	15	0	
8 HR SUM	BUS	170	3	142	12	157	140	5	119	2	126	144	9	132	4	145	120	10	113	23	146	E	219	85	0	
																						W	403	59	0	
TOTAL:		5,622	819	4,007	976	5,802	10,701	994	9,193	623	10,810	4,505	532	2,992	384	3,908	10,474	890	9,271	621	10,782					

Total 8 Hour Vehicle Volume: 31,302

Total 8 Hour Bicycle Volume: 170

Total 8 Hour Intersection Volume: 31,472

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT LLOYD MANOR RD & WIDDICOMBE HILL BLVD (PX 127)

Survey Date: 2018-Dec-18 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
07:30-08:30	CAR	143	194	58	40	292	1,582	80	1,519	47	1,646	187	23	85	187	295	1,486	55	1,105	5	1,165	N	19	1	0
	TRK	2	2	1	2	5	60	1	58	2	61	4	0	0	0	0	37	2	35	0	37	S	15	3	0
AM PEAK	BUS	3	0	0	0	0	13	3	13	0	16	1	0	1	0	1	12	0	12	0	12	E	1	0	0
																					W	33	0	0	
TOTAL:		148	196	59	42	297	1,655	84	1,590	49	1,723	192	23	86	187	296	1,535	57	1,152	5	1,214				
17:00-18:00	CAR	270	117	139	95	351	1,785	115	1,683	149	1,947	374	7	113	63	183	1,415	112	1,235	16	1,363	N	17	0	0
	TRK	1	1	0	0	1	20	1	20	0	21	1	0	1	1	2	25	0	23	0	23	S	37	0	0
PM PEAK	BUS	0	0	0	0	0	6	0	5	0	5	0	1	0	0	1	8	0	8	0	8	E	19	0	0
																					W	27	0	0	
TOTAL:		271	118	139	95	352	1,811	116	1,708	149	1,973	375	8	114	64	186	1,448	112	1,266	16	1,394				
OFF HR AVG	CAR	149	135	80	99	314	1,251	61	1,143	113	1,317	281	9	71	75	155	1,143	97	933	8	1,038	N	11	0	0
	TRK	2	5	1	3	9	53	0	49	5	54	10	1	1	1	3	57	4	51	1	56	S	27	0	0
	BUS	1	0	0	0	0	9	1	9	0	10	0	0	0	0	0	9	0	9	0	9	E	26	0	0
																					W	30	0	0	
TOTAL:		152	140	81	102	323	1,313	62	1,201	118	1,381	291	10	72	76	158	1,209	101	993	9	1,103				
07:30-09:30	CAR	284	354	139	113	606	2,784	130	2,640	132	2,902	475	31	218	332	581	2,758	125	2,072	15	2,212	N	35	1	0
	TRK	3	9	2	5	16	110	1	105	7	113	10	0	0	0	0	70	3	61	0	64	S	36	3	0
2 HR AM	BUS	4	0	0	0	0	24	4	24	0	28	1	0	1	0	1	26	0	26	0	26	E	16	0	0
																					W	66	0	0	
TOTAL:		291	363	141	118	622	2,918	135	2,769	139	3,043	486	31	219	332	582	2,854	128	2,159	15	2,302				
16:00-18:00	CAR	576	229	299	204	732	3,499	236	3,281	295	3,812	732	14	232	136	382	2,751	205	2,386	41	2,632	N	28	0	0
	TRK	1	1	0	0	1	45	1	45	2	48	5	0	2	2	4	71	1	68	0	69	S	74	0	0
2 HR PM	BUS	0	0	0	0	0	13	0	12	0	12	0	1	0	0	1	15	0	15	0	15	E	35	0	0
																					W	54	1	0	
TOTAL:		577	230	299	204	733	3,557	237	3,338	297	3,872	737	15	234	138	387	2,837	206	2,469	41	2,716				
07:30-18:00	CAR	1,458	1,124	759	712	2,595	11,288	610	10,494	877	11,981	2,327	82	734	769	1,585	10,082	716	8,189	89	8,994	N	106	2	0
	TRK	9	29	4	15	48	362	3	345	28	376	51	2	5	6	13	368	18	333	2	353	S	216	3	0
8 HR SUM	BUS	9	0	1	0	1	72	8	71	0	79	1	1	1	0	2	75	0	75	0	75	E	156	0	0
																					W	238	2	0	
TOTAL:		1,476	1,153	764	727	2,644	11,722	621	10,910	905	12,436	2,379	85	740	775	1,600	10,525	734	8,597	91	9,422				

Total 8 Hour Vehicle Volume: 26,102

Total 8 Hour Bicycle Volume: 7

Total 8 Hour Intersection Volume: 26,109

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT MATHESON BLVD (PX 1730)

Survey Date: 2018-Dec-18 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
08:00-09:00 AM PEAK	CAR	1,208	0	0	0	0	583	15	477	0	492	0	106	0	172	278	1,199	0	1,027	1,193	2,220	N	0	0	0
	TRK	10	0	0	0	0	19	0	14	0	14	0	5	0	7	12	22	0	15	10	25	S	0	0	0
	BUS	0	0	0	0	0	8	0	8	0	8	0	0	0	2	2	12	0	10	0	10	E W	0 2	0 0	0 0
TOTAL:		1,218	0	0	0	0	610	15	499	0	514	0	111	0	181	292	1,233	0	1,052	1,203	2,255				
16:00-17:00 PM PEAK	CAR	170	0	0	0	0	1,224	4	783	0	787	0	441	0	843	1,284	1,311	0	468	166	634	N	0	0	0
	TRK	17	0	0	0	0	7	0	6	0	6	0	1	0	10	11	28	0	18	17	35	S	0	0	0
	BUS	1	0	0	0	0	7	0	7	0	7	0	0	0	2	2	9	0	7	1	8	E W	0 0	0 0	0 0
TOTAL:		188	0	0	0	0	1,238	4	796	0	800	0	442	0	855	1,297	1,348	0	493	184	677				
OFF HR AVG	CAR	274	0	0	0	0	490	9	373	0	382	0	117	0	319	436	799	0	480	265	745	N	0	0	0
	TRK	9	0	0	0	0	11	0	8	0	8	0	3	0	12	15	27	0	15	9	24	S	0	0	0
	BUS	0	0	0	0	0	5	0	5	0	5	0	0	0	0	0	6	0	6	0	6	E W	0 0	0 0	0 0
TOTAL:		283	0	0	0	0	506	9	386	0	395	0	120	0	331	451	832	0	501	274	775				
07:30-09:30 2 HR AM	CAR	2,158	0	0	0	0	1,073	22	875	0	897	0	198	0	303	501	2,115	0	1,812	2,136	3,948	N	0	0	0
	TRK	22	0	0	0	0	38	0	28	0	28	0	10	0	22	32	50	0	28	22	50	S	0	0	0
	BUS	2	0	0	0	0	16	0	15	0	15	0	1	0	5	6	23	0	18	2	20	E W	0 2	0 0	0 0
TOTAL:		2,182	0	0	0	0	1,127	22	918	0	940	0	209	0	330	539	2,188	0	1,858	2,160	4,018				
16:00-18:00 2 HR PM	CAR	314	0	0	0	0	2,409	7	1,569	0	1,576	0	840	0	1,628	2,468	2,583	0	955	307	1,262	N	0	0	0
	TRK	30	0	0	0	0	16	0	13	0	13	0	3	0	15	18	43	0	28	30	58	S	0	0	0
	BUS	1	0	0	0	0	15	0	15	0	15	0	0	0	4	4	19	0	15	1	16	E W	0 0	0 0	0 0
TOTAL:		345	0	0	0	0	2,440	7	1,597	0	1,604	0	843	0	1,647	2,490	2,645	0	998	338	1,336				
07:30-18:00 8 HR SUM	CAR	3,568	0	0	0	0	5,442	64	3,935	0	3,999	0	1,507	0	3,207	4,714	7,893	0	4,686	3,504	8,190	N	0	0	0
	TRK	89	0	0	0	0	98	0	73	0	73	0	25	0	86	111	203	0	117	89	206	S	0	0	0
	BUS	4	0	0	0	0	49	0	48	0	48	0	1	0	10	11	67	0	57	4	61	E W	0 2	0 0	0 0
TOTAL:		3,661	0	0	0	0	5,589	64	4,056	0	4,120	0	1,533	0	3,303	4,836	8,163	0	4,860	3,597	8,457				

Total 8 Hour Vehicle Volume: 17,413

Total 8 Hour Bicycle Volume: 0

Total 8 Hour Intersection Volume: 17,413

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT ROYAL YORK RD (PX 781)

Survey Date: 2015-Jun-04 (Thursday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
07:30-08:30	CAR	698	133	556	97	786	1,322	103	1,166	91	1,360	618	59	431	82	572	1,318	96	1,103	39	1,238	N	66	7	0
	TRK	11	11	4	0	15	46	7	42	3	52	14	4	8	5	17	47	3	31	0	34	S	13	3	0
AM PEAK	BUS	12	0	12	0	12	15	0	15	0	15	12	0	10	0	10	11	2	11	0	13	E	44	0	0
																					W	21	0	0	
TOTAL:		721	144	572	97	813	1,383	110	1,223	94	1,427	644	63	449	87	599	1,376	101	1,145	39	1,285				
16:45-17:45	CAR	692	105	601	86	792	1,350	4	1,224	118	1,346	867	40	609	88	737	1,240	140	1,047	87	1,274	N	19	2	0
	TRK	12	3	7	1	11	28	4	27	1	32	9	0	2	1	3	24	6	20	1	27	S	10	1	0
PM PEAK	BUS	8	0	8	0	8	5	0	5	1	6	8	0	5	0	5	7	2	7	0	9	E	23	0	0
																					W	11	0	0	
TOTAL:		712	108	616	87	811	1,383	8	1,256	120	1,384	884	40	616	89	745	1,271	148	1,074	88	1,310				
OFF HR AVG	CAR	581	98	393	83	574	1,029	126	878	93	1,097	553	68	362	122	552	992	98	772	62	932	N	11	1	0
	TRK	17	5	8	2	15	51	7	46	7	60	16	3	7	6	16	50	2	39	2	43	S	11	1	0
	BUS	6	0	6	0	6	7	0	7	0	7	6	0	4	0	4	6	2	6	0	8	E	20	1	0
																						W	13	0	0
TOTAL:		604	103	407	85	595	1,087	133	931	100	1,164	575	71	373	128	572	1,048	102	817	64	983				
07:30-09:30	CAR	1,362	246	1,054	182	1,482	2,534	208	2,233	186	2,627	1,229	119	834	212	1,165	2,436	209	1,978	100	2,287	N	96	8	0
	TRK	24	13	11	1	25	101	12	96	6	114	29	4	17	9	30	91	6	69	1	76	S	18	6	0
2 HR AM	BUS	20	0	19	0	19	26	0	26	0	26	22	0	18	1	19	24	4	23	1	28	E	67	0	0
																						W	34	1	0
TOTAL:		1,406	259	1,084	183	1,526	2,661	220	2,355	192	2,767	1,280	123	869	222	1,214	2,551	219	2,070	102	2,391				
16:00-18:00	CAR	1,317	209	1,126	182	1,517	2,635	9	2,365	264	2,638	1,679	88	1,130	205	1,423	2,597	285	2,183	182	2,650	N	36	3	0
	TRK	27	6	13	3	22	55	9	50	2	61	16	2	5	5	12	60	9	49	5	63	S	28	5	0
2 HR PM	BUS	18	0	18	0	18	11	0	9	1	10	17	2	12	0	14	14	4	14	0	18	E	45	0	0
																						W	24	0	0
TOTAL:		1,362	215	1,157	185	1,557	2,701	18	2,424	267	2,709	1,712	92	1,147	210	1,449	2,671	298	2,246	187	2,731				
07:30-18:00	CAR	5,000	847	3,751	694	5,292	9,284	721	8,110	820	9,651	5,117	480	3,412	906	4,798	9,001	885	7,248	528	8,661	N	175	15	0
	TRK	116	40	57	12	109	358	47	328	37	412	108	18	50	38	106	350	21	272	12	305	S	90	16	0
8 HR SUM	BUS	63	0	61	0	61	65	1	63	1	65	64	2	46	2	50	63	17	61	1	79	E	190	2	0
																						W	109	1	0
TOTAL:		5,179	887	3,869	706	5,462	9,707	769	8,501	858	10,128	5,289	500	3,508	946	4,954	9,414	923	7,581	541	9,045				

Total 8 Hour Vehicle Volume: 29,589

Total 8 Hour Bicycle Volume: 34

Total 8 Hour Intersection Volume: 29,623

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT ROYAL YORK RD (PX 781)

Survey Date: 2016-Apr-16 (Saturday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
08:30-09:30	CAR	488	105	327	69	501	744	100	614	73	787	459	61	306	114	481	889	80	670	61	811	N	8	4	0
	TRK	5	1	4	1	6	14	0	13	1	14	7	0	5	0	5	13	1	12	1	14	S	12	3	0
AM PEAK	BUS	6	0	6	0	6	6	0	6	0	6	7	0	4	0	4	7	3	7	0	10	E	19	1	0
																					W	5	0	0	
TOTAL:		499	106	337	70	513	764	100	633	74	807	473	61	315	114	490	909	84	689	62	835				
16:00-17:00	CAR	701	139	452	77	668	1,471	163	1,310	136	1,609	676	84	437	119	640	1,359	103	1,101	86	1,290	N	9	7	0
	TRK	3	0	1	0	1	11	2	11	1	14	1	0	0	2	2	11	0	9	0	9	S	15	2	0
PM PEAK	BUS	7	0	7	0	7	7	0	7	0	7	7	0	5	0	5	7	2	7	0	9	E	23	0	0
																					W	9	0	0	
TOTAL:		711	139	460	77	676	1,489	165	1,328	137	1,630	684	84	442	121	647	1,377	105	1,117	86	1,308				
OFF HR AVG	CAR	652	101	420	87	608	1,121	142	949	112	1,203	619	85	402	130	617	1,140	105	909	90	1,104	N	14	6	0
	TRK	4	2	3	2	7	15	1	12	2	15	6	1	2	2	5	15	2	11	0	13	S	11	3	0
	BUS	7	0	7	0	7	8	0	8	0	8	7	0	5	0	5	7	2	7	0	9	E	26	0	0
																					W	11	0	0	
TOTAL:		663	103	430	89	622	1,144	143	969	114	1,226	632	86	409	132	627	1,162	109	927	90	1,126				
07:30-09:30	CAR	848	171	577	109	857	1,269	163	1,063	128	1,354	726	97	476	176	749	1,507	122	1,160	108	1,390	N	17	5	0
	TRK	6	2	4	1	7	28	1	26	2	29	10	1	6	0	7	26	2	24	1	27	S	16	18	0
2 HR AM	BUS	12	0	12	0	12	12	0	12	0	12	12	0	8	0	8	12	4	12	0	16	E	34	2	0
																					W	11	1	0	
TOTAL:		866	173	593	110	876	1,309	164	1,101	130	1,395	748	98	490	176	764	1,545	128	1,196	109	1,433				
16:00-18:00	CAR	1,391	254	909	152	1,315	2,715	307	2,413	259	2,979	1,333	150	863	235	1,248	2,731	211	2,242	175	2,628	N	17	11	0
	TRK	5	1	3	0	4	19	2	19	2	23	2	0	0	3	3	22	0	18	0	18	S	37	4	0
2 HR PM	BUS	12	0	12	0	12	13	0	13	0	13	12	0	9	0	9	16	3	16	0	19	E	57	0	0
																					W	15	0	0	
TOTAL:		1,408	255	924	152	1,331	2,747	309	2,445	261	3,015	1,347	150	872	238	1,260	2,769	214	2,276	175	2,665				
07:30-18:00	CAR	4,843	827	3,164	610	4,601	8,469	1,038	7,272	836	9,146	4,534	587	2,945	929	4,461	8,792	753	7,036	641	8,430	N	91	39	0
	TRK	25	9	19	7	35	102	5	92	10	107	33	3	13	9	25	102	10	84	1	95	S	95	33	0
8 HR SUM	BUS	51	0	51	1	52	56	0	55	0	55	50	0	37	0	37	55	13	55	0	68	E	195	2	0
																					W	68	1	0	
TOTAL:		4,919	836	3,234	618	4,688	8,627	1,043	7,419	846	9,308	4,617	590	2,995	938	4,523	8,949	776	7,175	642	8,593				

Total 8 Hour Vehicle Volume: 27,112

Total 8 Hour Bicycle Volume: 75

Total 8 Hour Intersection Volume: 27,187

Comment: SATURDAY COUNT

Turning Movement Count Summary Report

EGLINTON AVE AT SCARLETT RD (PX 784)

Survey Date: 2016-Dec-05 (Monday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
07:45-08:45 AM PEAK	CAR	686	209	530	235	974	1,491	23	1,031	227	1,281	922	225	625	66	916	993	70	718	133	921	N	85	2	0
	TRK	8	3	4	1	8	60	1	46	5	52	29	13	22	0	35	25	2	22	3	27	S	24	2	0
	BUS	17	0	15	1	16	15	0	13	0	13	18	1	17	6	24	19	1	13	2	16	E W	34 63	2	0
TOTAL:		711	212	549	237	998	1,566	24	1,090	232	1,346	969	239	664	72	975	1,037	73	753	138	964				
17:00-18:00 PM PEAK	CAR	732	229	479	163	871	1,411	35	999	263	1,297	1,067	249	660	64	973	1,276	144	983	218	1,345	N	13	1	0
	TRK	6	2	4	2	8	21	0	18	3	21	4	1	1	0	2	18	0	16	2	18	S	50	0	0
	BUS	7	0	7	0	7	13	0	13	0	13	10	0	10	0	10	9	0	9	0	9	E W	25 43	0	0
TOTAL:		745	231	490	165	886	1,445	35	1,030	266	1,331	1,081	250	671	64	985	1,303	144	1,008	220	1,372				
OFF HR AVG	CAR	414	188	268	100	556	772	36	553	172	761	546	119	280	44	443	796	94	564	110	768	N	14	1	0
	TRK	15	6	7	1	14	34	2	29	6	37	14	4	5	3	12	43	3	34	6	43	S	19	1	0
	BUS	5	0	5	0	5	10	0	9	0	9	5	1	5	2	8	12	0	10	0	10	E W	15 29	1	0
TOTAL:		434	194	280	101	575	816	38	591	178	807	565	124	290	49	463	851	97	608	116	821				
07:30-09:30 2 HR AM	CAR	1,249	453	938	393	1,784	2,785	46	1,978	427	2,451	1,666	414	1,070	118	1,602	2,015	169	1,444	265	1,878	N	110	2	0
	TRK	11	8	5	7	20	116	1	81	16	98	53	28	31	1	60	48	6	39	5	50	S	45	5	0
	BUS	33	0	28	1	29	32	1	29	0	30	35	2	32	9	43	32	3	23	4	30	E W	54 106	4	0
TOTAL:		1,293	461	971	401	1,833	2,933	48	2,088	443	2,579	1,754	444	1,133	128	1,705	2,095	178	1,506	274	1,958				
16:00-18:00 2 HR PM	CAR	1,458	469	968	318	1,755	2,726	73	1,941	489	2,503	1,963	467	1,168	120	1,755	2,490	306	1,901	417	2,624	N	48	4	0
	TRK	12	8	7	4	19	46	0	36	5	41	11	6	5	0	11	42	1	34	5	40	S	95	1	0
	BUS	18	2	18	0	20	21	0	19	0	19	18	2	18	3	23	27	0	22	0	22	E W	59 109	1	0
TOTAL:		1,488	479	993	322	1,794	2,793	73	1,996	494	2,563	1,992	475	1,191	123	1,789	2,559	307	1,957	422	2,686				
07:30-18:00 8 HR SUM	CAR	4,362	1,675	2,979	1,109	5,763	8,595	263	6,129	1,602	7,994	5,811	1,357	3,358	414	5,129	7,688	851	5,599	1,120	7,570	N	214	10	0
	TRK	81	40	38	15	93	295	8	231	46	285	121	49	57	11	117	261	18	210	35	263	S	215	10	0
	BUS	72	2	66	1	69	91	1	82	1	84	76	8	71	20	99	107	4	85	5	94	E W	171 331	9	0
TOTAL:		4,515	1,717	3,083	1,125	5,925	8,981	272	6,442	1,649	8,363	6,008	1,414	3,486	445	5,345	8,056	873	5,894	1,160	7,927				

Total 8 Hour Vehicle Volume: 27,560

Total 8 Hour Bicycle Volume: 39

Total 8 Hour Intersection Volume: 27,599

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT THE EAST MALL & HWY 427 NB OFF RAMP (PX 907)

Survey Date: 2018-Dec-20 (Thursday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other					
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total		
08:00-09:00	CAR	0	189	0	80	269	538	0	452	87	539	235	6	4	786	796	2,086	144	1,111	0	1,255	N	8	0	0	
	TRK	0	0	0	0	0	10	0	10	3	13	8	0	0	10	10	25	5	15	0	20	S	15	0	0	
AM PEAK	BUS	0	0	0	7	7	20	0	13	0	13	6	0	0	15	15	26	6	11	0	17	E	8	0	0	
																					W	0	0	0		
TOTAL:		0	189	0	87	276	568	0	475	90	565	249	6	4	811	821	2,137	155	1,137	0	1,292					
16:15-17:15	CAR	0	50	0	69	119	940	0	861	236	1,097	482	10	3	151	164	579	243	378	0	621	N	0	0	0	
	TRK	0	1	0	0	1	10	0	10	1	11	1	0	0	22	22	28	0	5	0	5	S	3	0	0	
PM PEAK	BUS	0	0	0	6	6	12	0	6	1	7	7	0	0	19	19	25	6	6	0	12	E	0	0	0	
																					W	0	8	0		
TOTAL:		0	51	0	75	126	962	0	877	238	1,115	490	10	3	192	205	632	249	389	0	638					
OFF HR AVG	CAR	0	51	0	79	130	515	0	423	61	484	186	13	9	294	316	785	116	440	0	556	N	1	0	0	
	TRK	0	1	0	2	3	12	0	9	0	9	2	1	0	15	16	31	2	15	0	17	S	8	0	0	
	BUS	0	0	0	5	5	13	0	8	0	8	5	0	0	11	11	19	5	8	0	13	E	1	0	0	
TOTAL:		0	52	0	86	138	540	0	440	61	501	193	14	9	320	343	835	123	463	0	586					
07:30-09:30	CAR	0	312	0	130	442	1,028	0	885	143	1,028	422	13	10	1,394	1,417	3,697	269	1,991	0	2,260	N	11	0	0	
	TRK	0	1	0	0	1	19	0	19	3	22	12	0	1	19	20	51	8	31	0	39	S	25	1	0	
2 HR AM	BUS	0	0	0	12	12	36	0	24	1	25	12	0	0	30	30	54	11	24	0	35	E	14	1	0	
																					W	0	1	0		
TOTAL:		0	313	0	142	455	1,083	0	928	147	1,075	446	13	11	1,443	1,467	3,802	288	2,046	0	2,334					
16:00-18:00	CAR	0	96	0	112	208	1,650	0	1,520	491	2,011	1,063	18	8	325	351	1,185	564	764	0	1,328	N	1	0	0	
	TRK	0	4	0	3	7	15	0	12	3	15	5	0	0	72	72	87	2	11	0	13	S	13	1	0	
2 HR PM	BUS	0	0	0	12	12	24	0	12	2	14	15	0	0	36	36	49	13	13	0	26	E	4	0	0	
																					W	0	12	0		
TOTAL:		0	100	0	127	227	1,689	0	1,544	496	2,040	1,083	18	8	433	459	1,321	579	788	0	1,367					
07:30-18:00	CAR	0	612	0	556	1,168	4,735	0	4,098	877	4,975	2,227	81	52	2,895	3,028	8,020	1,298	4,513	0	5,811	N	17	0	0	
	TRK	0	10	0	10	20	81	0	68	7	75	27	3	1	150	154	260	19	100	0	119	S	69	3	0	
8 HR SUM	BUS	0	0	0	44	44	111	0	67	4	71	48	0	0	108	108	175	44	67	0	111	E	22	1	0	
																					W	1	17	0		
TOTAL:		0	622	0	610	1,232	4,927	0	4,233	888	5,121	2,302	84	53	3,153	3,290	8,455	1,361	4,680	0	6,041					

Total 8 Hour Vehicle Volume: 15,684

Total 8 Hour Bicycle Volume: 21

Total 8 Hour Intersection Volume: 15,705

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT WESTON RD (PX 468)

Survey Date: 2019-Jun-19 (Wednesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other					
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total		
07:30-08:30	CAR	369	167	236	37	440	611	105	542	186	833	675	32	451	60	543	594	38	367	28	433	N	39	1	0	
	TRK	41	27	21	1	49	63	10	55	38	103	75	7	31	5	43	72	6	40	10	56	S	53	4	0	
AM PEAK	BUS	25	0	22	0	22	15	1	15	0	16	24	0	19	2	21	16	5	14	2	21	E	44	5	0	
																					W	118	2	0		
TOTAL:		435	194	279	38	511	689	116	612	224	952	774	39	501	67	607	682	49	421	40	510					
16:45-17:45	CAR	565	211	431	19	661	563	80	508	236	824	679	36	354	136	526	991	89	644	54	787	N	62	6	0	
	TRK	62	21	47	0	68	53	11	48	30	89	60	5	26	8	39	73	4	44	4	52	S	87	3	0	
PM PEAK	BUS	21	0	17	0	17	14	0	14	0	14	17	0	13	0	13	15	4	15	4	23	E	84	0	0	
																					W	125	2	0		
TOTAL:		648	232	495	19	746	630	91	570	266	927	756	41	393	144	578	1,079	97	703	62	862					
OFF HR AVG	CAR	343	160	224	19	403	446	70	378	160	608	415	49	239	69	357	510	16	281	49	346	N	45	2	0	
	TRK	36	26	24	3	53	57	7	48	25	80	57	6	29	4	39	63	3	33	5	41	S	59	2	0	
	BUS	15	0	11	0	11	12	1	12	1	14	17	0	12	2	14	14	4	12	3	19	E	65	2	0	
																					W	69	1	0		
TOTAL:		394	186	259	22	467	515	78	438	186	702	489	55	280	75	410	587	23	326	57	406					
07:30-09:30	CAR	818	341	529	58	928	1,156	223	1,023	362	1,608	1,212	75	791	113	979	1,150	59	696	66	821	N	87	4	0	
	TRK	73	41	36	2	79	119	20	105	65	190	133	12	57	6	75	116	11	69	17	97	S	123	10	0	
2 HR AM	BUS	61	1	51	0	52	29	4	28	1	33	45	1	36	3	40	34	8	30	6	44	E	108	5	0	
																					W	210	6	0		
TOTAL:		952	383	616	60	1,059	1,304	247	1,156	428	1,831	1,390	88	884	122	1,094	1,300	78	795	89	962					
16:00-18:00	CAR	1,110	405	831	34	1,270	1,124	163	1,005	457	1,625	1,246	85	659	258	1,002	1,928	130	1,265	116	1,511	N	132	13	0	
	TRK	123	42	88	0	130	102	25	91	46	162	101	11	48	11	70	152	7	99	10	116	S	196	4	0	
2 HR PM	BUS	35	0	28	0	28	28	0	28	0	28	34	0	27	1	28	29	7	28	7	42	E	192	0	0	
																					W	226	5	0		
TOTAL:		1,268	447	947	34	1,428	1,254	188	1,124	503	1,815	1,381	96	734	270	1,100	2,109	144	1,392	133	1,669					
07:30-18:00	CAR	3,300	1,386	2,254	168	3,808	4,063	667	3,539	1,459	5,665	4,116	356	2,404	647	3,407	5,119	253	3,086	379	3,718	N	397	26	0	
	TRK	341	186	221	15	422	449	74	389	210	673	459	45	219	31	295	518	30	301	46	377	S	554	20	0	
8 HR SUM	BUS	156	1	122	0	123	106	9	105	3	117	141	1	109	13	123	119	29	105	25	159	E	558	11	0	
																					W	712	14	0		
TOTAL:		3,797	1,573	2,597	183	4,353	4,618	750	4,033	1,672	6,455	4,716	402	2,732	691	3,825	5,756	312	3,492	450	4,254					

Total 8 Hour Vehicle Volume: 18,887

Total 8 Hour Bicycle Volume: 71

Total 8 Hour Intersection Volume: 18,958

Comment:

Turning Movement Count Summary Report

EGLINTON AVE W AT MARTIN GROVE RD (PX 786)

Survey Date: 2016-Apr-18 (Monday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
07:45-08:45 AM PEAK	CAR	1,039	294	628	28	950	2,085	371	1,966	216	2,553	668	91	444	396	931	1,996	8	1,306	40	1,354	N	265	4	0
	TRK	24	4	12	1	17	73	11	68	3	82	9	4	5	8	17	42	1	30	1	32	S	56	3	0
	BUS	16	0	9	0	9	18	7	12	1	20	10	6	9	6	21	17	0	11	0	11	E W	264 72	10 3	0 0
TOTAL:		1,079	298	649	29	976	2,176	389	2,046	220	2,655	687	101	458	410	969	2,055	9	1,347	41	1,397				
16:15-17:15 PM PEAK	CAR	1,050	152	412	22	586	2,311	526	2,197	486	3,209	946	92	437	235	764	1,762	23	1,375	112	1,510	N	13	1	0
	TRK	12	0	4	0	4	35	6	34	5	45	11	1	6	5	12	48	0	43	2	45	S	20	1	0
	BUS	11	0	7	0	7	11	4	8	0	12	7	3	7	5	15	15	0	10	0	10	E W	63 22	10 28	0 0
TOTAL:		1,073	152	423	22	597	2,357	536	2,239	491	3,266	964	96	450	245	791	1,825	23	1,428	114	1,565				
OFF HR AVG	CAR	533	93	151	9	253	1,149	309	1,055	101	1,465	283	85	154	135	374	1,121	28	893	73	994	N	21	2	0
	TRK	22	3	3	0	6	63	16	58	2	76	7	5	4	4	13	69	1	62	3	66	S	20	1	0
	BUS	10	0	4	0	4	14	6	11	0	17	5	3	5	4	12	12	0	8	0	8	E W	40 24	3 5	0 0
TOTAL:		565	96	158	9	263	1,226	331	1,124	103	1,558	295	93	163	143	399	1,202	29	963	76	1,068				
07:30-09:30 2 HR AM	CAR	1,847	532	1,001	52	1,585	3,774	751	3,524	328	4,603	1,058	198	704	727	1,629	3,843	26	2,584	95	2,705	N	333	7	0
	TRK	50	7	25	1	33	230	20	218	6	244	17	11	8	10	29	95	3	78	5	86	S	84	3	0
	BUS	40	0	24	0	24	46	16	35	1	52	21	11	20	13	44	43	0	30	0	30	E W	326 117	20 4	0 0
TOTAL:		1,937	539	1,050	53	1,642	4,050	787	3,777	335	4,899	1,096	220	732	750	1,702	3,981	29	2,692	100	2,821				
16:00-18:00 2 HR PM	CAR	2,069	300	822	34	1,156	4,564	1,013	4,353	917	6,283	1,768	177	808	411	1,396	3,309	43	2,598	234	2,875	N	30	2	0
	TRK	21	1	6	0	7	67	11	61	9	81	17	6	8	8	22	86	0	77	4	81	S	46	4	0
	BUS	24	0	13	0	13	23	10	17	0	27	15	6	15	9	30	26	0	17	1	18	E W	117 35	26 46	0 0
TOTAL:		2,114	301	841	34	1,176	4,654	1,034	4,431	926	6,391	1,800	189	831	428	1,448	3,421	43	2,692	239	2,974				
07:30-18:00 8 HR SUM	CAR	6,042	1,203	2,425	123	3,751	12,931	2,998	12,095	1,648	16,741	3,955	713	2,128	1,676	4,517	11,632	179	8,753	619	9,551	N	447	18	0
	TRK	158	18	43	1	62	548	93	512	23	628	58	35	30	35	100	454	5	401	22	428	S	209	9	0
	BUS	103	1	52	0	53	123	50	94	1	145	55	29	54	37	120	117	0	79	1	80	E W	601 247	59 70	0 0
TOTAL:		6,303	1,222	2,520	124	3,866	13,602	3,141	12,701	1,672	17,514	4,068	777	2,212	1,748	4,737	12,203	184	9,233	642	10,059				

Total 8 Hour Vehicle Volume: 36,176

Total 8 Hour Bicycle Volume: 156

Total 8 Hour Intersection Volume: 36,332

Comment:

Turning Movement Count Summary Report

EGLINTON AVE W AT MARTIN GROVE RD (PX 786)

Survey Date: 2016-May-07 (Saturday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other				
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total	
08:30-09:30	CAR	398	117	137	42	296	955	192	829	80	1,101	227	84	119	239	442	1,362	28	1,006	69	1,103	N	33	0	0
	TRK	2	0	1	0	1	12	1	12	0	13	2	0	1	4	5	25	1	21	0	22	S	8	0	0
AM PEAK	BUS	8	0	4	0	4	6	4	6	1	11	4	0	3	5	8	10	0	5	0	5	E	31	0	0
																					W	8	0	0	
TOTAL:		408	117	142	42	301	973	197	847	81	1,125	233	84	123	248	455	1,397	29	1,032	69	1,130				
16:00-17:00	CAR	669	138	218	52	408	1,772	331	1,601	159	2,091	382	119	190	245	554	1,815	33	1,432	120	1,585	N	43	2	0
	TRK	5	0	1	0	1	8	3	8	0	11	2	0	1	0	1	11	1	11	1	13	S	16	0	0
PM PEAK	BUS	7	0	2	0	2	7	5	7	0	12	4	0	4	6	10	13	0	7	0	7	E	32	0	0
																					W	19	0	0	
TOTAL:		681	138	221	52	411	1,787	339	1,616	159	2,114	388	119	195	251	565	1,839	34	1,450	121	1,605				
OFF HR AVG	CAR	582	112	181	51	344	1,474	306	1,312	135	1,753	343	111	172	290	573	1,689	36	1,287	95	1,418	N	32	0	0
	TRK	4	1	2	1	4	20	2	19	0	21	2	0	1	1	2	19	1	17	0	18	S	18	0	0
	BUS	9	0	4	0	4	8	5	8	1	14	5	0	4	4	8	10	0	6	0	6	E	26	0	0
TOTAL:		595	113	187	52	352	1,502	313	1,339	136	1,788	350	111	177	295	583	1,718	37	1,310	95	1,442				
07:30-09:30	CAR	684	188	243	75	506	1,694	306	1,472	109	1,887	334	147	186	423	756	2,401	39	1,790	135	1,964	N	52	0	0
	TRK	4	0	2	1	3	39	2	36	0	38	2	2	1	5	8	36	1	31	0	32	S	11	0	0
2 HR AM	BUS	14	0	7	0	7	12	7	12	2	21	8	0	6	6	12	17	0	11	0	11	E	48	1	0
																					W	15	0	0	
TOTAL:		702	188	252	76	516	1,745	315	1,520	111	1,946	344	149	193	434	776	2,454	40	1,832	135	2,007				
16:00-18:00	CAR	1,281	244	378	97	719	3,464	687	3,157	299	4,143	723	210	357	535	1,102	3,404	67	2,625	216	2,908	N	77	2	0
	TRK	8	0	1	0	1	13	4	13	0	17	2	0	1	1	2	22	1	21	3	25	S	35	0	0
2 HR PM	BUS	15	0	6	0	6	13	9	13	0	22	7	0	7	12	19	25	0	13	0	13	E	57	0	0
																					W	38	0	0	
TOTAL:		1,304	244	385	97	726	3,490	700	3,183	299	4,182	732	210	365	548	1,123	3,451	68	2,659	219	2,946				
07:30-18:00	CAR	4,288	881	1,343	375	2,599	11,053	2,215	9,877	947	13,039	2,428	801	1,231	2,117	4,149	12,559	250	9,561	730	10,541	N	256	2	0
	TRK	27	5	10	4	19	132	14	125	0	139	11	3	7	11	21	135	4	119	3	126	S	116	0	0
8 HR SUM	BUS	63	0	27	0	27	55	36	55	7	98	36	0	29	34	63	83	0	49	0	49	E	207	2	0
																					W	126	1	0	
TOTAL:		4,378	886	1,380	379	2,645	11,240	2,265	10,057	954	13,276	2,475	804	1,267	2,162	4,233	12,777	254	9,729	733	10,716				

Total 8 Hour Vehicle Volume: 30,870

Total 8 Hour Bicycle Volume: 5

Total 8 Hour Intersection Volume: 30,875

Comment: SATURDAY COUNT

Turning Movement Count Summary Report

EGLINTON AVE W AT RENFORTH DR (PX 926)

Survey Date: 2017-Jan-19 (Thursday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other					
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total		
08:00-09:00 AM PEAK	CAR	1,345	217	671	184	1,072	531	361	300	91	752	362	47	192	648	887	1,629	79	764	313	1,156	N	0	0	0	
	TRK	33	2	2	1	5	8	15	2	3	20	7	5	4	6	15	16	0	8	16	24	S	94	6	0	
	BUS	22	4	5	2	11	13	1	11	4	16	8	0	4	0	4	12	0	8	16	24	E W	136 0	5 0	0 0	
TOTAL:		1,400	223	678	187	1,088	552	377	313	98	788	377	52	200	654	906	1,657	79	780	345	1,204					
16:30-17:30 PM PEAK	CAR	1,834	57	245	32	334	855	784	696	631	2,111	1,457	127	773	145	1,045	517	53	315	805	1,173	N	0	0	0	
	TRK	21	1	4	0	5	3	10	3	5	18	8	0	3	1	4	24	0	22	7	29	S	19	0	0	
	BUS	18	4	4	0	8	7	1	7	4	12	7	0	3	2	5	13	0	7	13	20	E W	11 0	0 4	0 0	
TOTAL:		1,873	62	253	32	347	865	795	706	640	2,141	1,472	127	779	148	1,054	554	53	344	825	1,222					
OFF HR AVG	CAR	852	82	194	58	334	298	301	200	122	623	298	40	139	161	340	554	37	311	357	705	N	0	0	0	
	TRK	48	2	4	1	7	14	23	9	3	35	8	4	4	6	14	19	1	11	21	33	S	6	2	0	
	BUS	12	3	3	1	7	8	1	7	3	11	7	0	3	1	4	10	1	6	8	15	E W	7 1	0 1	0 0	
TOTAL:		912	87	201	60	348	320	325	216	128	669	313	44	146	168	358	583	39	328	386	753					
07:30-09:30 2 HR AM	CAR	2,340	370	1,087	261	1,718	916	661	559	180	1,400	620	96	324	1,236	1,656	3,091	116	1,485	592	2,193	N	0	0	0	
	TRK	55	2	2	3	7	15	30	6	5	41	15	6	10	17	33	44	0	25	23	48	S	143	8	0	
	BUS	39	8	7	2	17	24	4	22	9	35	17	0	8	0	8	29	0	21	28	49	E W	241 13	5 0	0 0	
TOTAL:		2,434	380	1,096	266	1,742	955	695	587	194	1,476	652	102	342	1,253	1,697	3,164	116	1,531	643	2,290					
16:00-18:00 2 HR PM	CAR	3,620	137	462	85	684	1,611	1,601	1,280	1,098	3,979	2,563	246	1,363	287	1,896	1,045	102	621	1,557	2,280	N	0	0	0	
	TRK	40	1	5	0	6	14	21	14	6	41	11	0	5	3	8	59	0	55	14	69	S	32	0	0	
	BUS	32	7	7	0	14	15	1	15	7	23	16	0	9	2	11	24	0	15	24	39	E W	27 3	0 4	0 0	
TOTAL:		3,692	145	474	85	704	1,640	1,623	1,309	1,111	4,043	2,590	246	1,377	292	1,915	1,128	102	691	1,595	2,388					
07:30-18:00 8 HR SUM	CAR	9,366	834	2,323	578	3,735	3,720	3,467	2,639	1,765	7,871	4,372	503	2,242	2,166	4,911	6,351	365	3,351	3,576	7,292	N	0	0	0	
	TRK	286	11	24	8	43	82	141	54	21	216	53	20	29	42	91	177	3	124	121	248	S	200	15	0	
	BUS	117	26	26	5	57	69	7	64	27	98	57	0	28	4	32	91	2	61	84	147	E W	296 18	5 6	0 0	
TOTAL:		9,769	871	2,373	591	3,835	3,871	3,615	2,757	1,813	8,185	4,482	523	2,299	2,212	5,034	6,619	370	3,536	3,781	7,687					

Total 8 Hour Vehicle Volume: 24,741

Total 8 Hour Bicycle Volume: 26

Total 8 Hour Intersection Volume: 24,767

Comment:

Turning Movement Count Summary Report

EGLINTON AVE AT EMMETT AVE

Survey Date: 2019-Jun-19 (Wednesday)

Survey Type: Routine Hours

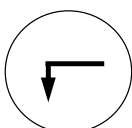
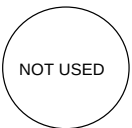
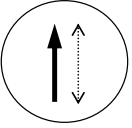
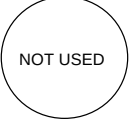
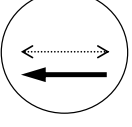
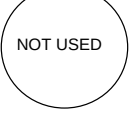
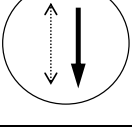
Time Period	Vehicle Type	Exits	NORTHBOUND				EASTBOUND				SOUTHBOUND				WESTBOUND				Peds	Bike	Other					
			Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left				Thru	Right	Total		
08:00-09:00 AM PEAK	CAR	200	3	1	2	6	1,195	157	1,157	13	1,327	23	36	1	115	152	949	9	831	42	882	N	3	0	0	
	TRK	25	0	0	0	0	151	16	139	0	155	0	12	0	15	27	116	0	101	9	110	S	2	0	0	
	BUS	7	0	0	0	0	14	0	13	0	13	0	1	0	1	2	11	0	10	7	17	E W	3 1	7 4	0 0	
TOTAL:		232	3	1	2	6	1,360	173	1,309	13	1,495	23	49	1	131	181	1,076	9	942	58	1,009					
16:30-17:30 PM PEAK	CAR	212	5	1	9	15	1,200	156	1,170	14	1,340	23	21	0	120	141	1,303	9	1,178	55	1,242	N	2	1	0	
	TRK	10	0	0	0	0	121	7	116	0	123	0	5	0	4	9	107	0	103	3	106	S	7	0	0	
	BUS	9	0	0	0	0	8	0	8	0	8	0	0	0	0	0	6	0	6	9	15	E W	4 2	4 5	0 0	
TOTAL:		231	5	1	9	15	1,329	163	1,294	14	1,471	23	26	0	124	150	1,416	9	1,287	67	1,363					
OFF HR AVG	CAR	124	8	1	9	18	757	91	733	5	829	15	15	1	84	100	744	9	652	32	693	N	3	1	0	
	TRK	15	0	0	0	0	113	9	110	1	120	1	3	0	6	9	103	0	97	6	103	S	5	0	0	
	BUS	6	0	0	0	0	7	0	7	0	7	0	0	0	0	0	9	0	9	6	15	E W	1 1	4 5	0 0	
TOTAL:		145	8	1	9	18	877	100	850	6	956	16	18	1	90	109	856	9	758	44	811					
07:30-09:30 2 HR AM	CAR	334	6	3	6	15	2,260	265	2,207	27	2,499	49	47	4	224	275	1,774	18	1,544	66	1,628	N	5	0	0	
	TRK	42	0	0	1	1	317	25	299	1	325	2	17	0	24	41	244	1	220	17	238	S	8	0	0	
	BUS	13	0	0	0	0	25	1	24	0	25	0	1	0	2	3	26	0	24	12	36	E W	3 2	13 11	0 0	
TOTAL:		389	6	3	7	16	2,602	291	2,530	28	2,849	51	65	4	250	319	2,044	19	1,788	95	1,902					
16:00-18:00 2 HR PM	CAR	415	6	1	16	23	2,395	310	2,339	23	2,672	37	40	0	255	295	2,533	14	2,272	104	2,390	N	5	3	0	
	TRK	23	1	0	0	1	241	16	232	0	248	0	9	0	9	18	218	0	208	7	215	S	12	0	0	
	BUS	16	0	0	0	0	15	0	15	0	15	0	0	0	0	0	17	0	17	16	33	E W	8 3	8 8	0 0	
TOTAL:		454	7	1	16	24	2,651	326	2,586	23	2,935	37	49	0	264	313	2,768	14	2,497	127	2,638					
07:30-18:00 8 HR SUM	CAR	1,245	45	7	58	110	7,684	939	7,479	68	8,486	142	147	8	815	970	7,285	66	6,425	299	6,790	N	21	5	0	
	TRK	124	1	0	2	3	1,010	78	970	4	1,052	5	38	0	55	93	873	1	817	46	864	S	39	1	0	
	BUS	52	0	0	0	0	69	2	67	0	69	0	2	0	3	5	80	0	77	50	127	E W	14 7	37 38	0 0	
TOTAL:		1,421	46	7	60	113	8,763	1,019	8,516	72	9,607	147	187	8	873	1,068	8,238	67	7,319	395	7,781					

Total 8 Hour Vehicle Volume: 18,569

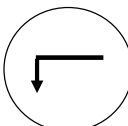
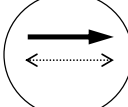
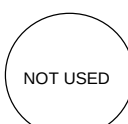
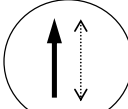
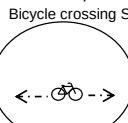
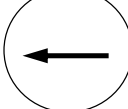
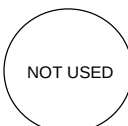
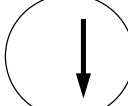
Total 8 Hour Bicycle Volume: 81

Total 8 Hour Intersection Volume: 18,650

Comment:

LOCATION:		Eglinton Ave W & Commerce Blvd				DISTRICT:		Etobicoke York		N ↑
MODE/COMMENT:		SA2-VMG with PR with 2-Wire Polara APS				COMPUTER SYSTEM:		TransSuite		
TCS:		1481				CONTROLLER/CABINET TYPE:		PEEK ATC-1000 / TS2 T1		
PREPARED/CHECKED BY:		AD / DS				CONFLICT FLASH:		Red & Red		
PREPARATION DATE:		May 3, 2018				DESIGN WALK SPEED:		1.0 m/s (FDW based on full crossing @ 1.2 m/s)		
IMPLEMENTATION DATE:		November 22, 2018				CHANNEL/DROP:		5023/3		
						FIRMWARE VERSION:		3.18.1.2976		
NEMA Phase		OFF All Other Times	AM 06:30-09:30 M-F	PM 15:30-16:30, 17:45-18:00 M-F	PM IND 16:30-17:45 M-F	Phase Mode (Fixed/Demanded or Callable)	Remarks			
	Local Plan Split Table	Pattern 1 Split 1	Pattern 2 Split 2	Pattern 3 Split 3	Pattern 4 Split 4					
1	 Eglinton Ave W	WLK 6 FDW 7 MIN 3 MAX1 1 AMB ALR SPLIT	11	11	11	11	WBLA callable/extendable 24 hours, daily by 9 m setback loop	Pedestrian Minimums: EWWK = 7 sec, EWFD = 18 sec NSWK = 7 sec, NSFD = 26 sec NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 7 seconds. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum green split. If a pedestrian call is received, the pedestrian minimum will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG. APS on during 7s of NSWK and EWWK when no arrows are displayed. Extended APS Push Activation = 3 seconds. Side Street Passage Time = 3 sec. Left-Turn Passage Time = 2 sec.		
2	 Eglinton Ave W	WLK 7 FDW 18 MIN 25 MAX1 27 AMB 5 ALR 2 SPLIT	33	48	42	34	Fixed			
3		WLK FDW MIN MAX1 AMB ALR SPLIT								
4	 Commerce Blvd	WLK 7 FDW 26 MIN 7 MAX1 33 AMB 4 ALR 3 SPLIT	41	41	47	55	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.			
5		WLK FDW MIN MAX1 AMB ALR SPLIT								
6	 Eglinton Ave W	WLK 7 FDW 18 MIN 25 MAX1 38 AMB 5 ALR 2 SPLIT	44	59	53	45	Fixed			
7		WLK FDW MIN MAX1 AMB ALR SPLIT								
8	 Commerce Blvd	WLK 7 FDW 26 MIN 7 MAX1 33 AMB 4 ALR 3 SPLIT	41	41	47	55	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.			
Overlap A							EWB Bicycle Signal on the North side served concurrently with EWG	Parent Phase 6		
		CL OF	85 1	100 31	100 80	100 88				

NOTES:

LOCATION: MODE/COMMENT: TCS: PREPARED/CHECKED BY: PREPARATION DATE: IMPLEMENTATION DATE:		Eglinton Ave and The East Mall/Hwy 427 NB Off Ramp SA2-VMG with WRM & TSP 907 AD / DS August 23, 2016 November 14, 2016				DISTRICT: COMPUTER SYSTEM: CONTROLLER/CABINET TYPE: CONFLICT FLASH: DESIGN WALK SPEED: CHANNEL/DROP: CONTROLLER FIRMWARE:		Etobicoke York TransSuite Peek ATC 1000 / TS2 T1 Red & Red 1.0 m/s (FDW based on full crossing at 1.2 m/s) 4014/4 3.018.2976		N ↑	
NEMA Phase		OFF	AM	PM	Night	Phase Mode (Fixed/Demanded or Callable)	Remarks				
		All Other Times	06:30-09:15 M-F	15:45-18:30 M-F	21:00-6:30 M-F						
	Local Plan Split Table	Pattern 1 Split 1	Pattern 2 Split 2	Pattern 3 Split 3	Pattern 4 Split 4						
1		WLK FDW MIN 6 MAX1 7 AMB 3 ALR 1 SPLIT					Callable/extendable by Overhead Detector Callable/extendable by SRM/TTC loop (Transit max. extension of 16 secs. in Green/SDW)	Pedestrian Minimums: EWWK = 7 sec, EWFD = 22 sec NSWK = 7 sec, NSFD = 19 sec NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 7 seconds. If ongoing vehicle demand exists in the detection zone, the NSG is capable of providing vehicle extensions up to the maximum green split. If a pedestrian call is received, the pedestrian minimums will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG.			
2	Eglinton Ave W 	WLK 7 FDW 22 MIN 29 MAX1 30 AMB 4 ALR 3 SPLIT					Fixed	Signal rests in EWWK and does not cycle through EWFD unless there is side street vehicle and/or side street pedestrian demand. The signal operates free at all times through Patterns 1, 2, 3 & 4 using the split values as green times for phase 2 and 6. The signal will serve the programmed WLK & FDW value following EWFD. Phase 1, 4 and 8 use the MAX1 value as green time.			
3		WLK FDW MIN MAX1 AMB ALR SPLIT						Overlap A served concurrently with EBG display. Left Turn Passage Time = 2 secs Side Street Passage Time = 3 secs See back for TSP Instructions.			
4	The West Mall 	WLK 7 FDW 19 MIN 7 MAX1 30 AMB 4 ALR 3 SPLIT					Callable by Overhead Detector and/or Pushbutton Extendable by Overhead Detector				
5	Overlap A Bicycle crossing South Leg 	WLK FDW MIN MAX1 AMB ALR SPLIT					EWBG Bicycle display running concurrently with EWG				
6	Eglinton Ave W 	WLK 7 FDW 22 MIN 29 MAX1 43 AMB 4 ALR 3 SPLIT					Fixed				
7		WLK FDW MIN MAX1 AMB ALR SPLIT									
8	Hwy 427 NB off ramp 	WLK 7 FDW 19 MIN 7 MAX1 30 AMB 4 ALR 3 SPLIT					Callable by Overhead Detector and/or Pushbutton Extendable by Overhead Detector				
		CL OF	0 Free	0 Free	0 Free	0 Free					

Notes: Prohibited Vehicle Movements: Eastbound Left-Turn, Westbound Right Turn and Northbound Thru
 Pedestrian crossing is prohibited on the west side (crossing Eglinton Ave) and north side of the intersection (crossing Hwy 427 NB Off Ramp).
 Picked up on TransSuite system on June 10, 2013 at approximately 10:20

LOC: Eglinton Ave and The East Mall/Hwy 427 NB Off Ramp
MODE: SA2-VMG with WRM & TSP
PX: 907 PREPARATION DATE (TIMING CARD): August 23, 2016

OFFSET CORRECTION PARAMETERS

2.3.4 O.C. Extend / Reduce (Max. time added & subtracted in sec.)

From page 1

Ø 1 Ø 2 Ø 3 Ø 4 Ø 5 Ø 6 Ø 7 Ø 8 [Cycle] [Slop]

OFF

Split 1	Ext.								
	Rdc.								

AM

Split 2	Ext.								
	Rdc.								

PM

Split 3	Ext.								
	Rdc.								

Night

Split 3	Ext.								
	Rdc.								

No applicable because of free operation

2.3.2.x

O.C.

Thres.

Pattern 1

□ s

#DIV/0!

Pattern 2

□ s

#DIV/0!

Pattern 3

□ s

#DIV/0!

Pattern 4

□ s

#DIV/0!

T.S.P. PARAMETERS

PREPARED: AD / DS

TSP RUN

1

WBLA

2.8.2 Transit Run Parameters

ATC Green Extend Mode (Equivalent TTC Algorithm)	Mode 2 B-2
---	---------------

2.8.3 Transit Action Plan 1 (Used for all Patterns)

Run Enable (x = Yes)	X
Run Config = 1	Recovery = 2 (O.C. with delay)

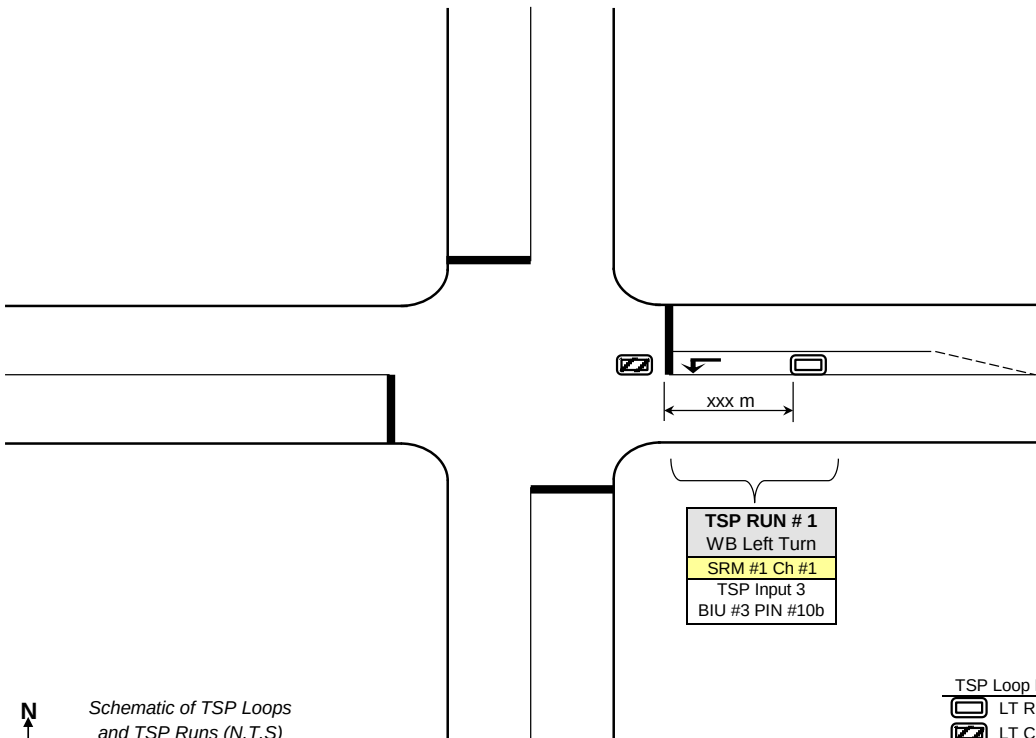
2.8.4 Transit Run Configuration 1

Delay / Extend / Fail	-- / -- / 235
CALLS (and Extends)	Ø 1
Skips	--
Reduces (Truncates)	Ø 4/8

Ø 1 Ø 2 Ø 3 Ø 4 Ø 5 Ø 6 Ø 7 Ø 8

2.8.6 TSP Split Table: 1, 2, 3 & 4

GRN EXT (SDW Extension)	16	--	--	--	--	--	--	--
GRN RDC (Reduction)	--	--	--	--	--	--	--	--
WLK EXT (Walk Extension)	--	--	--	--	--	--	--	--



Notes:

ATC Mode	0	2	3	4
TTC Algor'm	B-2	A	C	D
Extensions	SDW	Walk	W/SDW	W/SDW

TSP SUMMARY

Maximum Green Extensions:
WBLA: 16 s Green/SDW

LOCATION:		Eglinton Ave W & Emmett Ave/ Private Access			DISTRICT:		Etobicoke York		N ↑
MODE/COMMENT:		SA2-VMG with PR and 2-Wire Polara APS			COMPUTER SYSTEM:		TransSuite		
TCS:		2362			CONTROLLER/CABINET TYPE:		PEEK ATC-1000 / TS2 T1		
PREPARED/CHECKED BY:		AR / HL			CONFLICT FLASH:		Red & Red		
PREPARATION DATE:		January 25, 2018			DESIGN WALK SPEED:		1.0m/s (FDW based on full crossing at 1.2m/s)		
IMPLEMENTATION DATE:		April 24, 2018			CHANNEL/DROP:		4014/26		
					FIRMWARE VERSION:		3.018.1.2976		
NEMA Phase		OFF All Other Times	AM 06:15-09:30 M-F	PM 15:45-19:00 M-F	Phase Mode (Fixed/Demanded or Callable)	Remarks			
	Local Plan	Pattern 1	Pattern 2	Pattern 3					
	Split Table	Split 1	Split 2	Split 3					
1 NOT USED	WLK FDW MIN MAX1 AMB ALR SPLIT					Pedestrian Minimums: EWWK = 7 sec, EWFD = 15 sec NSWK = 7 sec, NSFD = 14 sec NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 7 seconds. If ongoing vehicle demand exists in the detection zone, the NSG is capable of providing vehicle extensions up to the maximum green split. If a pedestrian call is received, the pedestrian minimums will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand and unused time is allocated to the EWG.			
2 Eglinton Ave W 	WLK 7 FDW 15 MIN 22 MAX1 62 AMB 4 ALR 2 SPLIT	67	92	72	Fixed	NS pushbuttons monitored on local detector #2 and EW pushbuttons on local detector #6.			
3 NOT USED	WLK FDW MIN MAX1 AMB ALR SPLIT					Side Street Passage Time = 3 sec APS on during 7 secs of NSWK and EWWK when activated by pushbutton. Extended Push Activation = 3 secs			
4 Private Access 	WLK 7 FDW 14 MIN 7 MAX1 21 AMB 3 ALR 3 SPLIT	28	28	28	Callable by Traficam Overhead Detector and/or Push Button. Extendable by Overhead Detector				
5 NOT USED	WLK FDW MIN MAX1 AMB ALR SPLIT								
6 Eglinton Ave W 	WLK 7 FDW 15 MIN 22 MAX1 62 AMB 4 ALR 2 SPLIT	67	92	72	Fixed				
7 NOT USED	WLK FDW MIN MAX1 AMB ALR SPLIT								
8 Emmett Ave 	WLK 7 FDW 14 MIN 7 MAX1 21 AMB 3 ALR 3 SPLIT	28	28	28	Callable by Traficam Overhead Detector and/or Push Button. Extendable by Overhead Detector				
	CL OF	95 90	120 95	100 28					

Notes:

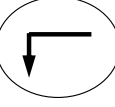
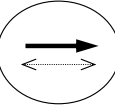
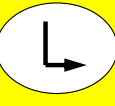
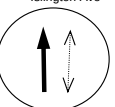
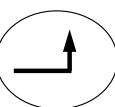
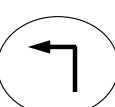
LOCATION:		Hwy 401 EB Off-Ramp & Eglinton Ave W				DISTRICT:		Etobicoke York	
MODE/COMMENT:		FXT				COMPUTER SYSTEM:		TransSuite	
TCS:		954				CONTROLLER/CABINET TYPE:		Peek ATC 1000 / TS2 T1	
PREPARED/CHECKED BY:		SQ / HL				CONFLICT FLASH:		Red & Red	
PREPARATION DATE:		August 29, 2018				DESIGN WALK SPEED:		NA (No Pedestrian Crossing Exists)	
IMPLEMENTATION DATE:		March 20, 2019				CHANNEL/DROP:		5024/26	
						CONTROLLER FIRMWARE:		3.018.1.2976	

NEMA Phase		OFF	AM	PM	NIGHT	WKND	401 Clsr.	Phase Mode (Fixed/Demanded or Callable)	Remarks
		All Other Times	06:30-10:00 M-F	15:00-19:00 M-F	22:00-06:30 Daily	10:00-19:00 Sat-Sun	Times to be determined		
		Local Plan Split Table	Pattern 1 Split 1	Pattern 2 Split 2	Pattern 3 Split 3	Pattern 4 Split 4	Pattern 5 Split 5		
1		WLK FDW MIN MAX1 AMB ALR SPLIT							Pedestrian Minimums: No Pedestrians and/or NBLT permitted
2	Hwy 401 EB Off-Ramp 	WLK FDW MIN 30 MAX1 63 AMB 5 ALR 3 SPLIT						Fixed	
3		WLK FDW MIN MAX1 AMB ALR SPLIT							
4	Eglinton Ave W 	WLK FDW MIN 30 MAX1 42 AMB 4 ALR 3 SPLIT						Fixed	
5		WLK FDW MIN MAX1 AMB ALR SPLIT							
6	Hwy 401 EB Off-Ramp 	WLK FDW MIN 30 MAX1 63 AMB 5 ALR 3 SPLIT							
7		WLK FDW MIN MAX1 AMB ALR SPLIT							
8	Eglinton Ave W 	WLK FDW MIN 30 MAX1 42 AMB 4 ALR 3 SPLIT						Fixed	
		CL OF	120 6	140 64	140 73	104 97	120 7	140 64	

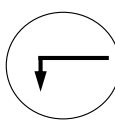
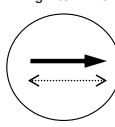
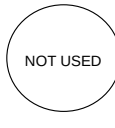
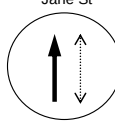
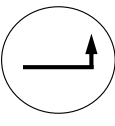
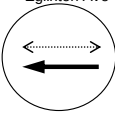
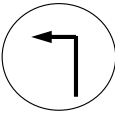
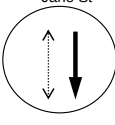
Notes:

LOCATION:	Eglinton Ave West & Islington Ave	DISTRICT:	Etobicoke York
TCS:	709	COMPUTER SYSTEM:	TransSuite
MODE/COMMENT:	FXT - Fire Hall PE - (NBLA)	CONTROLLER/CABINET TYPE:	Econolite ASC/3-2100 / M
PREPARED/CHECKED BY:	MR / SQ / HL	CONFLICT FLASH:	Red & Red
PREPARATION DATE:	August 29, 2018	DESIGN WALK SPEED:	1.0 m/s (FDW based on full crossing @ 1.2m/s)
DATE IMPLEMENTED:	March 21, 2019	CHANNEL/DROP:	5024/29
		CONTROLLER FIRMWARE:	2.47.10



NEMA Phase			OFF	AM	PM	NGHT	WKND	401 Closure	Phase Mode (Fixed, Demanded or Callable)	Remarks
			All Other Times.	6:30 - 10:00, M - F	15:00 - 19:00 M - F	22:00 - 06:30 Daily	10:00 - 19:00 Sat & Sun	Times to be determined		
			Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 16		
		Local Plan	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 16		
		System Plan	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 16		
1		WLK FDW MIN MAX1 AMB ALLR SPLIT	6 7 3 1 11	11	11			11	Callable / Extendable by 9m set-back loop	Pedestrian Minimum: EWWK = 7 sec. EWFD = 23 sec. NSWK = 7 sec. NSFD = 20 sec. Left-Turn Passage Time = 2 secs. <u>Firehall Preemption Instructions (NBLA)</u> • If preemption is received in phase 1/2/5/6: Time to Pre-emption Sequence = 0 - 36 secs. • If preemption is received in phase 3/4/7/8: Time to Pre-emption Sequence = 0 - 33 secs. Preemption Sequence "A": Serve 61.0 seconds NBLA/NBG/NSDW Serve 4.0 seconds NBY/NSDW Serve 2.0 seconds ALLR Return to normal operation in EWLT
2	Eglinton Ave West 	WLK FDW MIN MAX1 AMB ALLR SPLIT	7 23 30 34 4 2 40	52	56	56	60	56	Fixed.	
3		WLK FDW MIN MAX1 AMB ALLR SPLIT	6 7 3 1 11	11	11			11	Callable / Extendable by 9m set-back loop	
4	Islington Ave 	WLK FDW MIN MAX1 AMB ALLR SPLIT	7 20 27 28 4 2 34	46	42	34	40	42	Fixed.	
5		WLK FDW MIN MAX1 AMB ALLR SPLIT	6 7 3 1 11	11	11			11	Callable / Extendable by 9m set-back loop	
6	Eglinton Ave West 	WLK FDW MIN MAX1 AMB ALLR SPLIT	7 23 30 34 4 2 40	52	56	56	60	56	Fixed.	
7		WLK FDW MIN MAX1 AMB ALLR SPLIT	6 7 3 1 11	15	11			11	Callable / Extendable by 9m set-back loop	
8	Islington Ave 	WLK FDW MIN MAX1 AMB ALLR SPLIT	7 20 27 28 4 2 34	42	42	34	40	42	Fixed.	
		CL	96	120	120	90	100	120		
		OF	62	98	102	89	68	30		

NOTES:

LOCATION: Eglinton Ave & Jane St		DISTRICT: Etobicoke York						N		
MODE/COMMENT: FXT with TSP*		COMPUTER SYSTEM: TransSuite								
TCS: 905		CONTROLLER/CABINET TYPE: Peek ATC-1000 / TS2T1								
PREPARED BY / DATE: Parsons / October 22, 2018		CONFLICT FLASH: Red & Red								
CHECKED BY / DATE: Masoud Ramezani / Pierre Vandall / November 30, 2018		DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing @ 1.2 m/s)								
IMPLEMENTATION DATE: December 4, 2018		CHANNEL/DROP: 5023/1								
		CONTROLLER FIRMWARE: 3.018.1.2976								
NEMA Phase		OFF	AM	PM	NGHT	WKND	Special Event	Phase Mode	Remarks	
		All Other Times	06:30-09:30 M-F	15:00-19:00 M-F	22:00-06:30 Daily	10:00-19:00 Sat & Sun		(Fixed/Demanded/Callable)		
		Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4		Pattern 5		Pattern 16
		Split Table	Split 1	Split 2	Split 3	Split 4	Split 5	Split 16		
1		WLK 6 FDW 6 MIN 6 MAX1 7 AMB 3 ALR 1 SPLIT							Callable/Extendable by 9m Setback Loop	Pedestrian Minimums: EWWK = 7 sec, EWFD = 24 sec NSWK = 7 sec, NSFD = 24 sec Left-Turn Passage Time = 2 sec *See back for TSP instructions TSP enabled on September 13, 2016
2	Eglinton Ave 	WLK 7 FDW 24 MIN 31 MAX1 32 AMB 4 ALR 3 SPLIT							Fixed	As a work around with uneven Phase 1/5 split with TSP and firmware 3.18.2976, the Phase 1 and 5 splits are programmed to be equal. *Script #1 is used to limit the green time in Phase 1 during Pattern 2 so that the desired maximum split (shown in brackets) is not exceeded. The additional time will go to Phase 2 to provide the original split time, shown in brackets. Script #1 limits the Phase 1 green time by blocking the corresponding vehicle detector input in the timer once the maximum time minus the passage time (2 sec) is reached.
3		WLK FDW MIN MAX1 AMB ALR SPLIT								Script #1 limits the Phase 1 green time by blocking the corresponding vehicle detector input in the timer once the maximum time minus the passage time (2 sec) is reached.
4	Jane St 	WLK 7 FDW 24 MIN 31 MAX1 43 AMB 4 ALR 4 SPLIT							Fixed POZ activated by Request Loop (max extension of 16 secs in Green/SDW)	See page 2 for Script #4 instructions.
5		WLK 6 FDW 6 MIN 6 MAX1 6 AMB 3 ALR 1 SPLIT							Callable/Extendable by 9m Setback Loop	
6	Eglinton Ave 	WLK 7 FDW 24 MIN 31 MAX1 32 AMB 4 ALR 3 SPLIT							Fixed	
7		WLK 6 FDW 6 MIN 7 MAX1 7 AMB 3 ALR 1 SPLIT							Callable/Extendable by 9m Setback Loop	
8	Jane St 	WLK 7 FDW 24 MIN 31 MAX1 32 AMB 4 ALR 4 SPLIT							Fixed POZ activated by Request Loop (max extension of 16 secs in Green/SDW)	
		CL 90 OF 17								

Notes:

LOC: Eglington Ave & Jane St
MODE: FXT with TSP*
TCS: 905 PREPARATION DATE (TIMING CARD): October 26, 2018

OFFSET CORRECTION PARAMETERS

2.3.4 O.C. Extend / Reduce

(Max. time added & subtracted in sec.)

From page 1

2.3.2.x

O.C.

Thres.

OFF

			Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8			
Split 1	Ext.	--	20	--	21	--	20	--	21		90	3	9 S
	Rdc.	--	1	--	2	--	1	1	1				[10 %]

Pattern 1

AM

Split 2	Ext.	--	23	--	22	--	23	--	22		120	15	30 S
	Rdc.	1	3	--	11	1	3	7	4				[25 %]

Pattern 2

PM

Split 3	Ext.	--	22	--	22	--	22	--	22		106	9	18 S
	Rdc.	1	2	--	6	1	2	5	1				[17 %]

Pattern 3

NGHT

Split 4	Ext.	--	18	--	17	--	18	--	17		84	7	14 S
	Rdc.	--	6	--	1	--	6	--	1				[17 %]

Pattern 4

WKND

Split 5	Ext.	--	19	--	19	--	19	--	19		98	11	22 S
	Rdc.	--	6	--	5	--	6	2	3				[22 %]

Pattern 5

Special Event

Split 16	Ext.	--	19	--	19	--	19	--	19		100	13	25 S
	Rdc.	--	12	--	1	--	12	1	0				[25 %]

Pattern 16

Note: For Splits 1 & 4 the OC Threshold is set to 3x the OC Rdc due to limited slop.
Timer could take up to 3 cycles to get back In Sync in OC -Recovery

2.1.9.2 Advanced IO Scripts

Script 1 "TCS905Det1Limit"

See Remarks on the front page.

Script 4 TSP INPT FILTER B2 TCS0905

Blocks out TSP calls except during Phase 4/8 FDW and SDW, and Phase 2/6 WLK. The script also use elapsed time to emulate the TSP Run#4 delay of 28s and the TSP Run#8 delay of 22s because the delay times are close to, or longer than the FDW of 24s.
TSP Inputs can be checked on Screen 1.2.4 at all times.

(Script #4 was programmed on January 15, 2019)

T.S.P. PARAMETERS

PREPARED: Parsons

TSP RUN # 4	TSP RUN # 8
NB Thru	SB Thru

2.8.2 Transit Run Parameters

ATC Green Extend Mode (Equivalent TTC Algorithm)	Mode 0 B-2	Mode 0 B-2
---	---------------	---------------

2.8.3 Transit Action Plan 1 (Used for all Patterns)

Run Enable (X = Yes)	X	X
Run Config = 1	Recovery = 2 (O.C. with delay)	

2.8.4 Transit Run Configuration 1

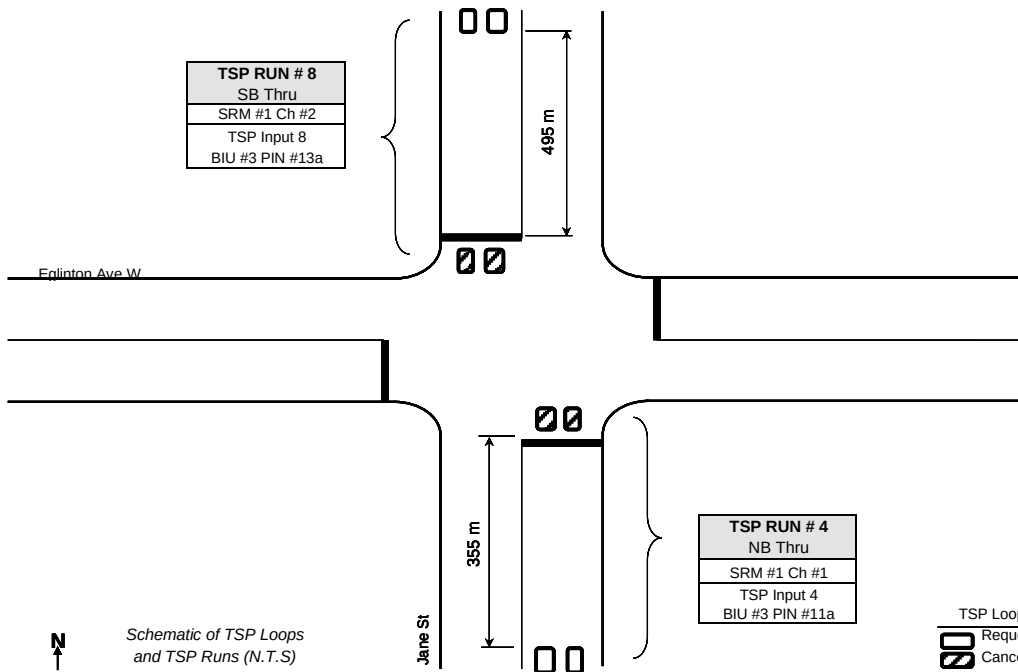
Delay / Extend / Fail	* / -- / 235	* / -- / 235
CALLS (and Extends)	Ø 4/8	Ø 4/8
Skips	--	--
Reduces (Truncates)	--	--

*Script #4 uses an ELAPSED time to emulate a 28s delay for TSP Run 4 and a 22s delay for TSP Run 8. The elapsed time is needed because the delay is longer than or close to the FDW time.

Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8
-----	-----	-----	-----	-----	-----	-----	-----

2.8.6 TSP Split Tables: 1, 2, 3, 4, 5 & 16

GRN EXT (SDW Extension)	--	--	--	16	--	--	--	16
GRN RDC (Reduction)	--	--	--	--	--	--	--	--
WLK EXT (Walk Extension)	--	--	--	--	--	--	--	--



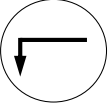
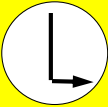
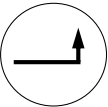
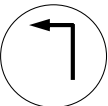
Notes:

ATC Mode	0	2	3	4
TTC Algor'm	B-2	A	C	D
Extensions	SDW	Walk	W/SDW	W/SDW

TSP SUMMARY

Maximum Green Extensions:
NSG:16 s Green/SDW

LOCATION:	Eglinton Ave W & Kipling Ave	DISTRICT:	Etobicoke & York
MODE/COMMENT:	FXT with 2-wire Polara APS	COMPUTER SYSTEM:	TransSuite
TCS:	729	CONTROLLER/CABINET TYPE:	Peek ATC-1000 / TS2 T1
PREPARED/CHECKED BY:	AD/SQ / HL	CONFLICT FLASH:	Red & Red
PREPARATION DATE:	August 29, 2018	DESIGN WALK SPEED:	1.0 m/s (FDW based on full crossing at 1.2m/s)
IMPLEMENTATION DATE:	March 22, 2019	CHANNEL/DROP:	5024/28
		CONTROLLER FIRMWARE:	3.018.1.2976

NEMA Phase		OFF All Other Times	AM 06:30-10:00 M-F	PM 15:00-19:00 M-F	NGHT 22:00-6:30 Daily	WKND 10:00 - 19:00 Sat & Sun	401 Clsr Times to be determined	Phase Mode (Fixed/Demanded or Callable)	Remarks
		Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 16		
	Local Plan Split Table	Split 1	Split 2	Split 3	Split 4	Split 5	Split 16		
1 	WLK 6 FDW 7 MIN 6 MAX 1 7 AMB 3 ALR 1 SPLIT	11	15	11	11	11	11	Callable / Extendable by 9m set-back loop	Pedestrian Minimums: EWWK = 7 sec, EWFD = 26 sec NSWK = 7 sec, NSFD = 22 sec Left-Turn Passage Time = 2 secs. APS on during Full walk periods when no arrows are displayed. Extended Push Activation = 3 secs.
2 Eglinton Ave W 	WLK 7 FDW 26 MIN 33 MAX 1 62 AMB 4 ALR 3 SPLIT	69	74	78	42	69	78	Fixed	
3 	WLK 6 FDW 6 MIN 6 MAX 1 7 AMB 3 ALR 1 SPLIT		11	11			11	Callable/Extendable by 9m set-back loop	
4 Kipling Ave 	WLK 7 FDW 22 MIN 29 MAX 1 33 AMB 4 ALR 3 SPLIT	40	40	40	37	40	40	Fixed	
5 	WLK 6 FDW 6 MIN 6 MAX 1 7 AMB 3 ALR 1 SPLIT	11	15	11		11	11	Callable/Extendable by 9m set-back loop	
6 Eglinton Ave W 	WLK 7 FDW 26 MIN 33 MAX 1 62 AMB 4 ALR 3 SPLIT	69	74	78	53	69	78	Fixed	
7 	WLK 6 FDW 6 MIN 6 MAX 1 6 AMB 3 ALR 1 SPLIT		11	11			11	Callable / Extendable by 9m long set-back loop	
8 Kipling Ave 	WLK 7 FDW 22 MIN 29 MAX 1 33 AMB 4 ALR 3 SPLIT	40	40	40	37	40	40	Fixed	
	CL	120	140	140	90	120	140		
	OF	88	3	11	44	90	7		

NOTES:

LOCATION: MODE/COMMENT: TCS: PREPARED BY/DATE: CHECKED BY/ DATE: IMPLEMENTATION DATE:		Eglinton Ave W & Martin Grove Rd FXT with EBLT TSP - RLC (WB), 2-Wire Polara APS & Bike Signal 786 Tony Zhao/ April 11, 2019 April 11, 2019		DISTRICT: COMPUTER SYSTEM: CONTROLLER/CABINET TYPE: CONFLICT FLASH: DESIGN WALK SPEED: CHANNEL/DROP: CONTROLLER FIRMWARE:		Etobicoke York TransSuite Peek ATC 1000 / TS2 T1 Red & Red 1.0 m/s (FDW based on full crossing at 1.2 m/s) 5024/25 3.018.1.2976		N ↑	
NEMA Phase		OFF	AM	PM	NIGHT	WKND	401 Clsr.	Phase Mode (Fixed/Demanded or Callable)	Remarks
		All Other Times	06:30-10:00 M-F	15:00-19:00 M-F	22:00-06:30 Daily	10:00-19:00 Sat-Sun	Times to be determined		
	Local Plan Split Table	Pattern 1 Split 1	Pattern 2 Split 2	Pattern 3 Split 3	Pattern 4 Split 4	Pattern 5 Split 5	Pattern 16 Split 16		
1		WLK FDW MIN MAX1 AMB ALR SPLIT							Pedestrian Minimums: EWWK = 7 sec, EWFD = 24 sec NSWK = 7 sec, NSFD = 29 sec Left Turn Passage = 2 sec. APS is on during FULL WALK of EWWK and NSWK when activated by pushbuttons and when no arrows are displayed Extended Push Activation =3.0 sec See back for TSP Instructions.
2	Eglinton Ave W 	WLK 7 FDW 24 MIN 31 MAX1 66 AMB 4 ALR 2 SPLIT	72	72	75	61	72	81	Fixed EBLA TSP enabled on April 11, 2019
3		WLK FDW MIN MAX1 AMB ALR SPLIT							
4	Martin Grove Rd 	WLK 7 FDW 29 MIN 36 MAX1 41 AMB 4 ALR 3 SPLIT	48	68	65	43	48	59	Fixed
5		WLK FDW MIN 6 MAX1 12 AMB 3 ALR 1 SPLIT	16	24	24	11	18	22	Callable/Extendable by setback loop and/or by Transit loop (max extension of 16 secs in Green/SDW)
6	Eglinton Ave W 	WLK 7 FDW 24 MIN 31 MAX1 50 AMB 4 ALR 2 SPLIT	56	48	51	50	54	59	Fixed
7		WLK FDW MIN 6 MAX1 6 AMB 3 ALR 1 SPLIT		25	17			11	Callable & Extendable by Setback Loop
8	Martin Grove Rd 	WLK 7 FDW 29 MIN 36 MAX1 41 AMB 4 ALR 3 SPLIT	48	43	48	43	48	48	Fixed
Overlap		WLK FDW MIN MAX1 MAX2 AMB 4 ALLR 2 SPLIT							Parent Phase 2
		CL OF	120 11	140 60	140 46	104 100	120 11	140 58	

Notes:

LOC: Eglinton Ave W & Martin Grove Rd
 MODE: FXT with EBLT TSP - RLC (WB) & 2-Wire Polara APS
 TCS: 786 PREPARATION DATE : November 12, 2018

OFFSET CORRECTION PARAMETERS

2.3.4 O 2.3.4 O.C. Extend / Reduce (Max. time added & subtracted in sec.) From page 1

		Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8	[Cycle]	[Slop]	
OFF												
Split 1	Ext.		23		22		23		22	120	15	Pattern 1
	Rdc.		10		5		10		5			30 s
												[25 %]
AM												Pattern 2
Split 2	Ext.		27		26		27		26	140	12	35 s
	Rdc.		11		1		11		1			[25 %]
PM												Pattern 3
Split 3	Ext.		27		26		27		26	140	18	35 s
	Rdc.		13		5		13		5			[25 %]
NGT												Pattern 4
Split 4	Ext.		20		20		20		20	104	13	26 s
	Rdc.		13		--		13		--			[25 %]
WKND												Pattern 4
Split 5	Ext.		23		22		23		22	120	15	30 s
	Rdc.		10		5		10		5			[25 %]
Hwy 401												Pattern 4
Split 16	Ext.		27		26		27		26	140	18	35 s
	Rdc.		13		5		13		5			[25 %]

In Pattern 2, due to limited slop on the sidestreet, the controller could take up to 3 cycles to get back in sync in -TSP recovery. Typically the controller will get back in sync in 1 to 2 cycles as the extension is only 16 sec.

OC Rdc to Phases 5 and 7 limited where feasible.

T.S.P. PARAMETERS

TSP RUN
 # 5
 EBLA

2.8.2 Transit Run Parameters

ATC Green Extend Mode Mode 0
 (Equivalent TTC Algorithm B-2)

2.8.3 Transit Action Plan 1 (Used for all Patterns)

Run Enable (X = Yes) X
 Run Config = Recovery = 2 (O.C. with delay)

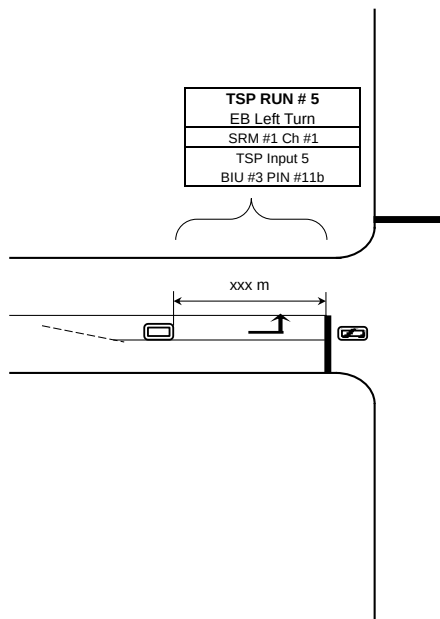
2.8.4 Transit Run Configuration 1

Delay / Extend / Fail -- / -- / 235
 CALLS (and Extends) Ø 5
 Skips --
 Reduces (Truncates) --

Ø 1 Ø 2 Ø 3 Ø 4 Ø 5 Ø 6 Ø 7 Ø 8

2.8.6 TSP Split Table: 1, 2, 3, 4, 5 & 16

GRN EXT (SDW Extension)	--	--	--	--	16	--	--	--
GRN RDC (Reduction)	--	--	--	--	--	--	--	--
WLK EXT (Walk Extension)	--	--	--	--	--	--	--	--



N
 Schematic of TSP Loops
 and TSP Runs (N.T.S)

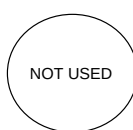
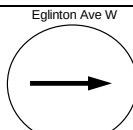
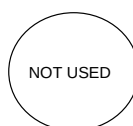
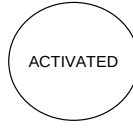
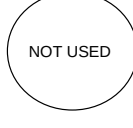
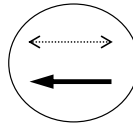
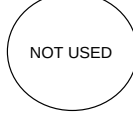
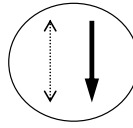
TSP Loop Legend
 LT Request
 LT Cancel

Notes:

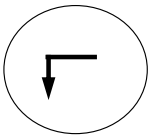
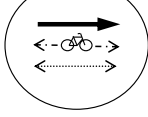
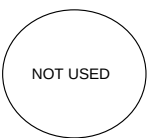
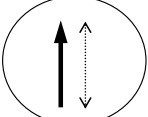
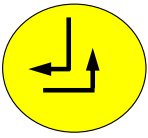
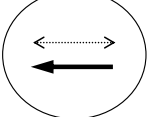
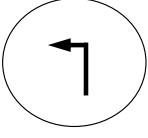
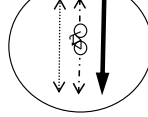
ATC Mode	0	2	3	4
TTC Algorithm	B-2	A	C	D
Extensions	SDW	Walk	W/SDW	W/SDW

TSP SUMMARY

Maximum Green Extensions:
 EBLA: 16 s Green/SDW

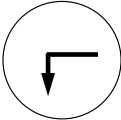
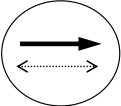
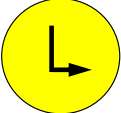
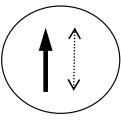
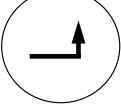
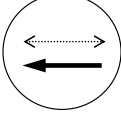
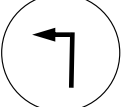
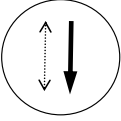
LOCATION:		Eglinton Ave W & Matheson Blvd					DISTRICT:		Etobicoke - York		↑ N
MODE/COMMENT:		SA2-VMG with PR					COMPUTER SYSTEM:		TransSuite		
TCS:		1730					CONTROLLER/CABINET TYPE:		Peek ATC 1000 / TS2T1		
PREPARED/CHECKED BY:		TZ / DS					CONFLICT FLASH:		Red & Red		
PREPARATION DATE:		October 20, 2017					DESIGN WALK SPEED:		1.0 m/s (FDW based on full crossing at 1.2 m/s)		
IMPLEMENTATION DATE:		November 22, 2018					CHANNEL/DROP:		5023/2		
							FIRMWARE VERSION:		3.018.1.2976		
NEMA Phase		OFF	AM	PM	NGHT	WKED	Phase Mode	Remarks			
		All Other Times	06:30-09:15	15:45-18:15	21:00-06:30	09:15-21:00	(Fixed/Demanded or Callable)				
			Mon.-Fri.	Mon.-Fri.	Daily	Sat.-Sun					
		Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4			Pattern 5		
	Split Table	Split 1	Split 2	Split 3	Split 4	Split 5					
1		WLK FDW MIN MAX1 AMB ALR SPLIT						Pedestrian Minimums: EWWK = 7 sec., EWFD = 18 sec. NSWK = 7 sec., NSFD = 18 sec.			
2	Eglinton Ave W 	WLK 7 FDW 18 MIN 25 MAX1 59 AMB 4 ALR 2 SPLIT					Fixed.	SB phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum SBG is 7 seconds. If ongoing vehicle demand exists on the stopbar loop, the SBG is capable of providing vehicle extensions up to the maximum green split. If a pedestrian call is received, the pedestrian minimums will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is allocated to the EWG.			
		64	79	79	49	49					
3		WLK FDW MIN MAX1 AMB ALR SPLIT						Side Street Passage Time = 3 seconds. No pedestrian crossing on east and south sides.			
								T-intersection - No south leg.			
4		WLK 7 FDW 18 MIN 7 MAX1 25 AMB 3 ALR 2 SPLIT					Phase 4 is fully programmed, activated and served concurrently with phase 8				
		31	31	31	31	31					
5		WLK FDW MIN MAX1 AMB ALR SPLIT									
6	Eglinton Ave W 	WLK 7 FDW 18 MIN 25 MAX1 59 AMB 4 ALR 2 SPLIT					Fixed.				
		64	79	79	49	49					
7		WLK FDW MIN MAX1 AMB ALR SPLIT									
8	Matheson Blvd 	WLK 7 FDW 18 MIN 7 MAX1 25 AMB 3 ALR 2 SPLIT					Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.				
		31	31	31	31	31					
	CL OF	95 14	110 51	110 48	80 67	80 67					

NOTES:

LOCATION:		Eglinton Ave W & Renforth Dr					DISTRICT:		Etobicoke - York		N ↑
TCS:		926					COMPUTER SYSTEM:		TransSuite		
MODE/COMMENT:		FXT					CONTROLLER/CABINET TYPE:		Peek ATC-1000 / TS2T1		
PREPARED BY / DATE:		RanaJamil Iftikhar / May 31, 2019					CONFLICT FLASH:		Red & Red		
CHECKED BY / DATE:		Carmen Lam / May 31, 2019					DESIGN WALK SPEED:		1.0 m/s (FDW based on full crossing at 1.2 m/s)		
IMPLEMENTATION DATE:		September 19, 2019					CHANNEL/DROP:		5018/15		
							CONTROLLER FIRMWARE		3.018.1.2976		
NEMA Phase		OFF	AM	PM	NGHT	WKND	Phase Mode (Fixed/Demanded or Callable)	Remarks			
		All Other Times	06:30-10:00 M-F	15:00-19:00 M-F	22:00-06:30 Daily	10:00-19:00 Sat & Sun					
	Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5					
	Split Table	Split 1	Split 2	Split 3	Split 4	Split 5					
1		WLK FDW MIN 6 MAX1 8 AMB 3 ALR 2 SPLIT					Callable/Extendable by Stopbar loop (Fully Protected)	Pedestrian Minimums: EWWK = 7 sec, EWFD = 24 sec NSWK = 7 sec, NSFD = 24 sec Left-Turn Passage Time = 2 sec EBLA and SBRA are displayed simultaneously.			
2	Eglinton Ave W 	WLK 7 FDW 24 MIN 31 MAX1 39 AMB 5 ALR 3 SPLIT					Fixed				
3		WLK FDW MIN MAX1 AMB ALR SPLIT									
4	Renforth Dr 	WLK 7 FDW 24 MIN 31 MAX1 32 AMB 4 ALR 4 SPLIT					Fixed				
5		WLK FDW MIN 6 MAX1 15 AMB 3 ALR 2 SPLIT					Callable/Extendable by Stopbar loop (Fully Protected Dual Left-Turn Lane)				
6	Eglinton Ave W 	WLK 7 FDW 24 MIN 31 MAX1 32 AMB 5 ALR 3 SPLIT					Fixed				
7		WLK FDW MIN 6 MAX1 6 AMB 3 ALR 1 SPLIT					Callable/Extendable by Setback loop				
8	Renforth Dr 	WLK 7 FDW 24 MIN 31 MAX1 32 AMB 4 ALR 4 SPLIT					Fixed				
	CL	100	120	126	100	100					
	OF	19	98	84	88	8					

NOTES:

LOCATION:	Eglinton Ave W & Royal York Rd	DISTRICT:	Etobicoke York
MODE/COMMENT:	FXT with WBLT TSP	COMPUTER SYSTEM:	TransSuite
TCS:	781	CONTROLLER/CABINET:	PEEK ATC-1000 / TS2T1
PREPARED BY/ DATE:	RanaJamil Iftikhar / May 8, 2019	CONFLICT FLASH:	Red & Red
CHECKED BY / DATE:	Syed Qasim- Hao Le / May 8, 2019	DESIGN WALK SPEED:	1.0 m/s (FDW based on full crossing at 1.2m/s)
IMPLEMENTATION DATE:	May 8, 2019	CHANNEL/DROP:	5025/13
		FIREWARE VERSION:	3.018.1.2976

NEMA Phase		OFF	AM	PM	NIGHT	WKND	HWY 401	Phase Mode (Fixed/Demanded or Callable)	Remarks
		All Other Times	06:30-10:00 M-F	15:00-19:00 M-F	22:00-06:30 Daily	10:00-19:00 Sat- Sun	Clsr TBD		
	Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 16		
	Split Table	Split 1	Split 2	Split 3	Split 4	Split 5	Split 16		
1		WLK FDW MIN 6 MAX1 6 AMB 3 ALR 1 SPLIT	26(11)*	26(11)*				Callable/Extendable by setback loop and/or by transit loop. (max extension of 16 secs in Green/SDW) - in future to be provide by built in TSP feature	Pedestrian Minimums: EWWK = 7 sec, EWFD = 27 sec NSWK = 7 sec, NSFDD = 29 sec Left Turn Passage Time = 2 sec See back for TSP Instructions. *As a work around with TSP and firmware 3.18.2976, 15s is reallocated from Phase 2 to Phase 1 to allow emulation of up to a 15s transit extension of Phase 1. Script 1 is used to ensure this extra 15s will only be served if there is a call on TSP Input 1.
2	Eglinton Ave W 	WLK 7 FDW 27 MIN 34 MAX1 47 AMB 4 ALR 2 SPLIT	53	40 (55)*	40 (55)*	47	46	77	Fixed Script 1 is used to limit the Phase 1 green when there is no TSP Run 1 call by disabling vehicle detector 1 after 5 sec of green time. The 5 sec of green plus the 2 sec passage time result in a maximum 7 second green time when there is no TSP call. The extension of Phase 1 is done by Script 2.
3		WLK FDW MIN 6 MAX1 6 AMB 3 ALR 1 SPLIT	11	11					Callable/Extendable by 9 m setback loop. The WBLA is intended to have a 16 second transit callable extension, but there is insufficient time for more than a 15 second extension built into the cycle.
4	Royal York Rd 	WLK 7 FDW 29 MIN 36 MAX1 36 AMB 4 ALR 3 SPLIT	43	43	43	43	54	43	Fixed Vehicle Detector 9 is programmed to call/extend Phase 1. Vehicle detector 9 is called by TSP Input 1 using Script 2, and it will provide up to a 15s transit extension. WBLT TSP on when signal is converted to TransSuite system control
5		WLK FDW MIN 6 MAX1 6 AMB 3 ALR 1 SPLIT	11	11					Callable/Extendable by setback loop.
6	Eglinton Ave W 	WLK 7 FDW 27 MIN 34 MAX1 47 AMB 4 ALR 2 SPLIT	53	55	55	47	46	77	Fixed
7		WLK FDW MIN 6 MAX1 6 AMB 3 ALR 1 SPLIT	11	11		11			Callable/Extendable by setback loop.
8	Royal York Rd 	WLK 7 FDW 29 MIN 36 MAX1 36 AMB 4 ALR 3 SPLIT	43	43	43	43	43	43	Fixed
		CL	96	120	120	90	100	120	
		OFF	5	40	43	9	10	77	

Note:

LOC: Eglinton Ave W & Royal York Blvd
MODE: FXT with WBLT TSP
TCS: 781 PREPARATION DATE : November 12, 2018

OFFSET CORRECTION PARAMETERS

2.3.4 O.C. Extend / Reduce

(Max. time added & subtracted in sec.)

From page 1

Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7 Ø8 [Cycle] [Slop]

OFF

Split 1	Ext.								
	Rdc.								

AM

Split 2	Ext.								
	Rdc.								

PM

Split 3	Ext.								
	Rdc.								

NGT

Split 4	Ext.								
	Rdc.								

WKND

Split 5	Ext.								
	Rdc.								

Hwy 401

Split 16	Ext.								
	Rdc.								

2.3.2.x

O.C.

Thres.

Pattern 1

S

#DIV/0!

Pattern 2

S

[0 %]

Pattern 3

S

[0 %]

Pattern 4

S

#DIV/0!

Pattern 4

S

#DIV/0!

Pattern 4

S

#DIV/0!

T.S.P. PARAMETERS

WBLA TSP extension temporarily built into the cycle due to firmware issue with 3.18.2976.

I/O Mapping for all TSP inputs must be done (for future use of TSP).

Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7 Ø8

2.8.6 TSP Split Table: 1, 2, 3 & 4

GRN EXT (SDW Extension)	--	--	--	--	--	--	--	--
GRN RDC (Reduction)	--	--	--	--	--	--	--	--
WLK EXT (Walk Extension)	--	--	--	--	--	--	--	--

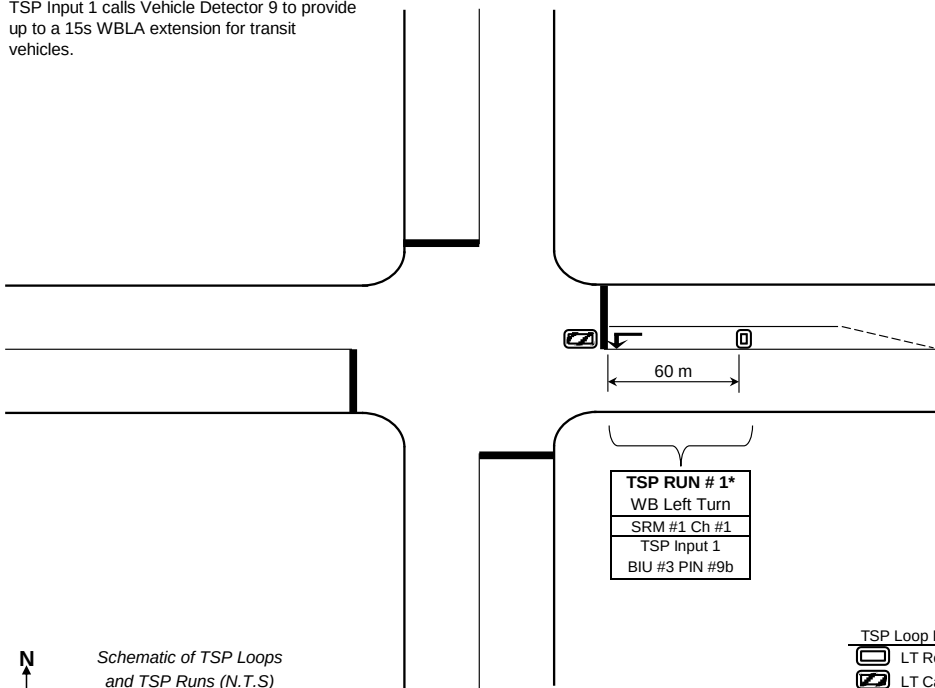
Screen 2.1.9.2

Script #1 "TCS781Det1Limit"

Turns off Vehicle Detector 1 for Phases 1 after 5 seconds. The 5 seconds + 2 second passage time allows Vehicle Detector 1 to call a maximum 7 second green.

Script #2 "TCS781CallDet9"

TSP Input 1 calls Vehicle Detector 9 to provide up to a 15s WBLA extension for transit vehicles.

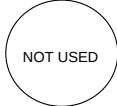
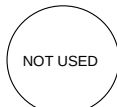
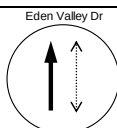
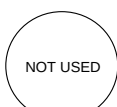
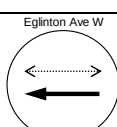
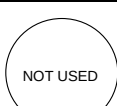
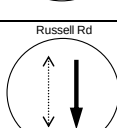


Notes:

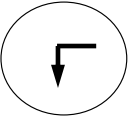
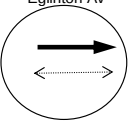
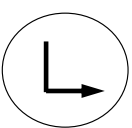
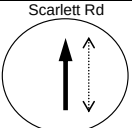
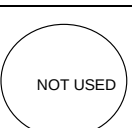
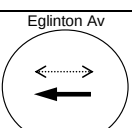
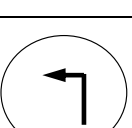
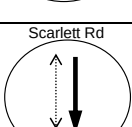
*Script 2 copies the TSP Run 1 call to Vehicle Detector 9 as a work around with firmware 3.18.2976.

ATC Mode	0	2	3	4
TTC Algor'm	B-2	A	C	D
Extensions	SDW	Walk	W/SDW	W/SDW

TSP SUMMARY

LOCATION:		Eglinton Ave W & Russell Rd/Eden Valley Dr						DISTRICT:		Etobicoke York	
TCS:		1309						COMPUTER SYSTEM:		TransSuite	
MODE/COMMENT:		SA2-VMG with PR & 2-wire Polara APS						CONTROLLER/CABINET TYPE:		Econolite ASC/3-2100 / M	
PREPARED/CHECKED BY:		BA / SQ / HL						CONFLICT FLASH:		Red & Red	
PREPARATION DATE:		August 29, 2018						DESIGN WALK SPEED:		1.0 m/s (FDW based on full crossing @ 1.2 m/s)	
IMPLEMENTATION DATE:		March 18, 2019						CHANNEL/DROP:		5024/22	
								CONTROLLER FIRMWARE:		2.47.10	
NEMA Phase		OFF	AM	PM	NIGHT	WKND	401 Clsr	Phase Mode (Fixed/Demanded or Callable)	Remarks		
		All Other Times	06:30-10:00 M-F	15:00-19:00 M-F	22:00-06:30 Daily	10:00-19:00 Sat & Sun	Times to be determined				
	Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 16				
	System Plan	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 16				
1		WLK FDW MIN MAX 1 AMB ALR SPLIT							Pedestrian Minimums: EWWK = 7 sec, EWFD = 14 sec NSWK = 7 sec, NSFD = 19 sec NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 7 seconds. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum. If a pedestrian call is received, the maximum would be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG.		
2		WLK 7 FDW 14 MIN 21 MAX 1 57 AMB 4 ALR 2 SPLIT						Fixed	Side Street Passage Time = 3 sec APS on for 7 sec during EWWK and NSWK when activated by pushbuttons.		
3		WLK FDW MIN MAX 1 AMB ALR SPLIT							Extended Push Activation = 3 sec		
4		WLK 7 FDW 19 MIN 7 MAX 1 26 AMB 4 ALR 3 SPLIT						Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.			
5		WLK FDW MIN MAX 1 AMB ALR SPLIT									
6		WLK 7 FDW 14 MIN 21 MAX 1 57 AMB 4 ALR 2 SPLIT						Fixed			
7		WLK FDW MIN MAX 1 AMB ALR SPLIT									
8		WLK 7 FDW 19 MIN 7 MAX 1 26 AMB 4 ALR 3 SPLIT						Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.			
	CL OF VP	96 94 1	120 71 1	120 74 1	90 41 1	100 99 1	120 75 1				

NOTES:

LOCATION: Eglinton Av & Scarlett Rd MODE/COMMENT: 784 TCS: FXT PREPARED BY/DATE: Tony Zhao/ June 20, 2019 CHECKED BY/DATE: Carmen Lam/ IMPLEMENTATION DATE: July 2, 2019		DISTRICT: Etobicoke - York COMPUTER SYSTEM: TransSuite CONTROLLER/CABINET TYPE: EPAC 3668 M51 / TS2 T1 CONFLICT FLASH: Red & Red DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing @ 1.2 m/s) CHANNEL/DROP: 4014 / 18 CONTROLLER FIRMWARE:						
NEMA Phase		OFF	AM	PM	NGHT	WKND	Phase Mode (Fixed/Demanded or Callable)	Remarks
		All Other Times	06:30-09:30 M-F	15:00-19:00 M-F	22:00-06:30 Daily	10:00-19:00 Sat & Sun		
		C1S1O1 Local Plan System Plan	C1S2O1 Plan 1 Plan 4	C1S3O1 Plan 7	C1S4O1 Plan 10	C1S5O1 Plan 13		
1	 WLK FDW MIN 6 MAX 1 6 AMB 3 ALR 1 SPLIT 1		11	11			Callable/Extendable by 9m setback loop	Pedestrian Minimums: EWWK = 7 sec, EWFD = 27 sec NSWK = 7 sec, NSFD = 32 sec Left-Turn passage = 2 sec
2	Eglinton Av  WLK 7 FDW 27 MIN 34 MAX 1 36 AMB 4 ALR 2 SPLIT 2	42	47	44	52	41	Fixed	
3	 WLK FDW MIN 6 MAX 1 6 AMB 3 ALR 1 SPLIT 1		11	11			Callable/Extendable by 9m setback loop	
4	Scarlett Rd  WLK 7 FDW 32 MIN 39 MAX 1 40 AMB 4 ALR 4 SPLIT 4	48	51	50	48	59	Fixed	
5	 NOT USED							
6	Eglinton Av  WLK 7 FDW 27 MIN 34 MAX 1 36 AMB 4 ALR 2 SPLIT 2	42	58	55	52	41	Fixed	
7	 WLK FDW MIN 6 MAX 1 6 AMB 3 ALR 1 SPLIT 1		14	13		11	Callable/Extendable by 5m setback loop	
8	Scarlett Rd  WLK 7 FDW 32 MIN 39 MAX 1 40 AMB 4 ALR 4 SPLIT 4	48	48	48	48	48	Fixed	
	CL	90	120	116	100	100		
	OF	1	1	1	1	18		

Note:

LOCATION:	Eglinton Ave West & Weston Rd	DISTRICT:	Etobicoke - York
MODE/COMMENT:	FXT	COMPUTER SYSTEM:	TransSuite
TCS:	468	CONTROLLER/CABINET TYPE:	Peek ATC1000 / TS2T1
PREPARED/CHECKED BY:	TZ/HL	CONFLICT FLASH:	Red & Red
PREPARATION DATE:	December 12, 2016	DESIGN WALK SPEED:	1.0 m/s (FDW based on full crossing at 1.2 m/s)
IMPLEMENTATION DATE:	June 7, 2018	CHANNEL/DROP:	4014/17
		FIRMWARE VERSION:	3.018.1.2976

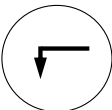
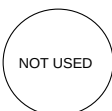
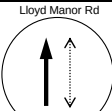
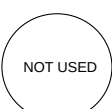
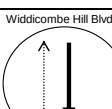


Signal handed over to Metrolinx as of May 02, 2018 - ECLRT

NEMA Phase	Local Plan Split Table	OFF	AM	PM	NIGHT	Phase Mode	Remarks
		All Other Times	06:30-09:30, M-F.	15:30-18:30, M-F.	22:00-06:00, Daily	(Fixed/Demanded or Callable)	
		Pattern 1	Pattern 2	Pattern 3	Pattern 4		
		Split 1	Split 2	Split 3	Split 4		
1 	WLK 6 FDW 6 MIN 6 MAX1 3 AMB 1 ALR SPLIT			11		callable/ extendable by 9 m setback loop (Disabled due to the construction)	Pedestrian Minimums: EWWK = 7 seconds., EWFD = 18 seconds. NSWK = 7 seconds., NSFD = 29 seconds. Left turn Passage Time = 2 secs WBLA was disabled due to the construction on June 07, 2018 and there is no left turn restriction sign on the site
2 Eglinton Ave West 	WLK 7 FDW 18 MIN 25 MAX1 29 AMB 4 ALR 2 SPLIT	35	50	39	35	Fixed.	
3 	WLK FDW MIN MAX1 AMB ALR SPLIT						
4 Weston Rd 	WLK 7 FDW 29 MIN 36 MAX1 37 AMB 4 ALR 4 SPLIT	45	50	50	45	Fixed.	
5 	WLK FDW MIN MAX1 AMB ALR SPLIT						
6 Eglinton Ave West 	WLK 7 FDW 18 MIN 25 MAX1 29 AMB 4 ALR 2 SPLIT	35	50	50	35	Fixed.	
7 	WLK FDW MIN MAX1 AMB ALR SPLIT						
8 Weston Rd 	WLK 7 FDW 29 MIN 36 MAX1 37 AMB 4 ALR 4 SPLIT	45	50	50	45	Fixed.	
	CL OF	80 7	100 18	100 32	80 7		

Notes:

LOCATION: Eglinton Ave W & Lloyd Manor Rd/ Widdicombe Hill Blvd		DISTRICT: Etobicoke York		N	
MODE/COMMENT: SAP with PR		COMPUTER SYSTEM: TransSuite			
TCS: 1278		CONTROLLER/CABINET TYPE: Econolite ASC/3-2100 / M			
PREPARED/ BY / DATE: Katerina Bisbicus / August 29, 2018		CONFLICT FLASH: Red & Red			
CHECKED BT / DATE: Syed Qasim / December 13, 2018		DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s)			
IMPLEMENTATION DATE: March 22, 2019		CHANNEL/DROP: 5024/27		CONTROLLER FIRMWARE: 2.47.10	

NEMA Phase		OFF All Other Times	AM 6:30-10:00 M - F	PM 15:00-19:00 M - F	NGHT 22:00-6:30 Daily	WKND 10:00-19:00 Sat & Sun	Hwy 401 Clsr. Time to be determined	Phase Mode (Fixed, Demanded or Callable)	Remarks
	Local Plan System Plan	Pattern 1 Plan 1	Pattern 2 Plan 2	Pattern 3 Plan 3	Pattern 4 Plan 4	Pattern 5 Plan 5	Pattern 16 Plan 16		
1 	WLK FDW MIN MAX1 AMB ALR SPLIT 6 7 3 1							Callable & Extendable by Setback Loop	Pedestrian Minimums: EWWK = 7 sec, EWFD = 16 sec NSWK = 7 sec, NSFD = 25 sec NS phase is callable by vehicle or pedestrian actuation. If a vehicle and/or pedestrian call is received, the maximum NSG is served. The NSWK & NSFD are displayed on the pedestrian signal heads if a vehicle and/or pedestrian call is received.
2 Eglinton Ave W 	WLK FDW MIN MAX1 AMB ALR SPLIT 7 16 23 63 4 3							Fixed	Side Street Passage Time = 3 sec Left-Turn Passage Time = 2 sec
3 	WLK FDW MIN MAX1 AMB ALR SPLIT								
4 Lloyd Manor Rd 	WLK WLK MAX FDW MIN MAX1 AMB ALR SPLIT 7 19 25 32 44 3 4							Callable by stopbar loop and/or pushbutton	
5 	WLK FDW MIN MAX1 AMB ALR SPLIT								
6 Eglinton Ave W 	WLK FDW MIN MAX1 AMB ALR SPLIT 7 16 23 74 4 3							Fixed	
7 	WLK FDW MIN MAX1 AMB ALR SPLIT 6 6 3 1							Callable & Extendable by Setback Loop	
8 Widdicombe Hill Blvd 	WLK WLK MAX FDW MIN MAX1 AMB ALR SPLIT 7 19 25 32 44 3 4							Callable by stopbar loop and/or pushbutton	
	CL OF	120 11	140 76	140 111	90 8	120 11	140 69		

LOCATION: Eglington Ave W & Wincott Dr/Bemersyde Dr		DISTRICT: Etobicoke & York		N ↑					
MODE/COMMENT: SA2-VMG with PR		COMPUTER SYSTEM: TransSuite							
TCS: 974		CONTROLLER/CABINET TYPE: Econolite Cobalt / TS2 T1							
PREPARED/CHECKED BY: ND/SQ/ HL		CONFLICT FLASH: Red & Red							
PREPARATION DATE: August 29, 2018		DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s)							
IMPLEMENTATION DATE: April 12, 2019		CHANNEL/DROP: 5025/14		CONTROLLER FIRMWARE: 32.63.10					
NEMA Phase		OFF	AM	PM	NGHT	WKND	401 Clsr.	Phase Mode	Remarks
		All Other Times	06:30-10:00 M-F	15:00-19:00 M-F	22:00-06:30 Daily	10:00-19:00 Sat & Sun	Times to be determined	(Fixed/Demanded/Callable)	
	Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 16		
	System Plan	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 16		
1		WLK FDW MIN MAX1 AMB ALR SPLIT							Pedestrian Minimums: EWWK = 7 seconds, EWFD = 17 seconds NSWK = 7 seconds, NSFD = 20 seconds NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 7 seconds. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum. If a pedestrian call is received, the pedestrian minimums will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG.
2		WLK 7 FDW 17 MIN 24 MAX1 56 AMB 4 ALR 2 SPLIT						Fixed	Side street passage time = 3 seconds
3		WLK FDW MIN MAX1 AMB ALR SPLIT							
4		WLK 7 FDW 20 MIN 7 MAX1 27 AMB 4 ALR 3 SPLIT						Callable by Stopbar loop and/or Pushbutton; Extendable by Stopbar loop.	
5		WLK FDW MIN MAX1 AMB ALR SPLIT							
6		WLK 7 FDW 17 MIN 24 MAX1 56 AMB 4 ALR 2 SPLIT						Fixed	
7		WLK FDW MIN MAX1 AMB ALR SPLIT							
8		WLK 7 FDW 20 MIN 7 MAX1 27 AMB 4 ALR 3 SPLIT						Callable by Stopbar loop and/or Pushbutton; Extendable by Stopbar loop.	
		CL OF VP	96 94 1	120 70 1	120 73 1	90 89 1	100 1 1	120 16 1	

NOTES:

Appendix B

Existing 2019 Raw and Balanced Traffic Volumes

Existing 2019 AM & PM Raw Traffic Volumes

Eglinton Ave	Scarlett Rd						Emmett Ave						Jane St						Weston Rd						
	(64)	(671)	(250)	↶	138	(220)	(124)	(0)	(26)	↶	58	(67)	(192)	(789)	(28)	↶	10	(16)	(144)	(393)	(41)	↶	40	(62)	
	72	664	239	←	753	(1008)	131	1	49	←	942	(1287)	202	842	22	←	626	(823)	67	501	39	←	421	(703)	
	↶	↓	↷	↷	73	(144)	↶	↓	↷	↷	9	(9)	↶	↓	↷	↷	61	(91)	↶	↓	↷	↷	49	(97)	
	(35)	24	↶	↶	↑	↷	(163)	173	↶	↶	↑	↷	(191)	236	↶	↶	↑	↷	(91)	116	↶	↶	↑	↷	
	(1030)	1090	→		212	549	237	(1294)	1309	→	3	1	2	(946)	814	→	209	718	56	(570)	612	→	194	279	38
Eglinton Ave	(266)	232	↷	(231)	(490)	(165)	(14)	13	↷	(5)	(1)	(9)	(195)	213	↷	(208)	(770)	(80)	(266)	224	↷	(232)	(495)	(19)	
	Wincott Dr						Islington Ave						Russell Rd						Royal York Rd						
	(52)	(107)	(70)	↶	43	(64)	(84)	(826)	(70)	↶	53	(57)	(36)	(11)	(15)	↶	26	(22)	(89)	(616)	(40)	↶	39	(88)	
	44	87	49	←	1168	(1338)	50	931	49	←	1118	(1070)	67	19	22	←	1158	(1383)	87	449	63	←	1145	(1074)	
	↶	↓	↷	↷	9	(16)	↶	↓	↷	↷	157	(133)	↶	↓	↷	↷	16	(22)	↶	↓	↷	↷	101	(148)	
	(57)	50	↶	↶	↑	↷	(228)	186	↶	↶	↑	↷	(30)	22	↶	↶	↑	↷	(8)	110	↶	↶	↑	↷	
Highway 401/427	(1556)	1424	→		11	80	33	(1351)	1342	→	55	932	181	(1477)	1202	→	8	17	38	(1256)	1223	→	144	572	97
	(13)	11	↷	(6)	(83)	(6)	(63)	61	↷	(65)	(995)	(163)	(19)	7	↷	(8)	(12)	(20)	(120)	94	↷	(108)	(616)	(87)	
	Bemersyde Dr						Martin Grove Rd						Widdicomb Hill Blvd						Kipling Ave						
							(245)	(450)	(96)	↶	41	(114)	(64)	(114)	(8)	↶	5	(16)	(57)	(522)	(58)	↶	141	(70)	
					←	2006	(1720)	410	458	101	←	1347	(1428)	187	86	23	←	1152	(1266)	37	481	68	←	1265	(1544)
					↷	640	(427)	↶	↓	↷	↷	9	(23)	↶	↓	↷	↷	57	(112)	↶	↓	↷	↷	149	(129)
Eglinton Ave.						↷	Eglinton Ave	(536)	389	↶	↶	↑	↷	(116)	84	↶	↶	↑	↷	(189)	185	↶	↶	↑	↷
	(1562)	1615	→			608	(2239)	2046	→	298	649	29	(1708)	1590	→	196	59	42	(1550)	1398	→	119	705	152	
	(260)	677	↷			(999)	(491)	220	↷	(152)	(423)	(22)	(149)	49	↷	(118)	(139)	(95)	(85)	58	↷	(126)	(740)	(133)	
	Eglinton Ave.						Renforth Dr						Matheson Blvd						The East Mall & Hwy 427 NB						
	(49)	(34)	(569)	↶	311	(45)	(148)	(779)	(127)	↶	345	(825)	(855)		(442)	↶	1203	(184)	(192)	(3)	(10)	↶	0	(0)	
	33	14	82	←	1294	(640)	654	200	52	←	780	(344)	181		111	←	1052	(493)	811	4	6	←	1137	(389)	
Eglinton Ave	↶	↓	↷	↷	147	(21)	↶	↓	↷	↷	79	(53)	↶		↷	↷			↶	↓	↷	↷	155	(249)	
	(14)	29	↶	↶	↑	↷	(795)	377	↶	↶	↑	↷	(4)	15	↶				(0)	0	↶	↶	↑	↷	
	(1253)	619	→		5	2	9	(706)	313	→	223	678	187	(796)	499	→			(877)	475	→	189	0	87	
	(5)	20	↷	(36)	(5)	(92)	(640)	98	↷	(62)	(253)	(32)							(238)	90	↷	(51)	(0)	(75)	



XX (XX) AM (PM)

Existing 2019 AM & PM Balanced Traffic Volumes

Eglinton Ave	Scarlett Rd						Emmett Ave						Jane St						Weston Rd									
	(64)	(671)	(250)	↕	138	(220)	(124)	(0)	(26)	↕	58	(67)	(192)	(789)	(28)	↕	10	(16)	(144)	(393)	(41)	↕	40	(62)				
	72	664	239	←	863	(1008)	131	1	49	←	942	(1287)	202	842	22	←	626	(864)	67	501	39	←	421	(703)				
	↩	↓	↪	↩	73	(144)	↩	↓	↪	↩	9	(9)	↩	↓	↪	↩	61	(91)	↩	↓	↪	↩	49	(97)				
	(35)	24	↕	↩	↑	↪	(163)	173	↕	↩	↑	↪	(191)	236	↕	↩	↑	↪	(91)	116	↕	↩	↑	↪				
	(1030)	1090	→		212	549	237	(1294)	1380	→		3	1	2	(946)	954	→		209	718	56	(570)	612	→		194	279	38
Eglinton Ave	(266)	232	↩	(231)	(490)	(165)	(14)	13	↩	(5)	(1)	(9)	(195)	213	↩	(208)	(770)	(80)	(266)	224	↩	(232)	(495)	(19)				
	Wincott Dr						Islington Ave						Russell Rd						Royal York Rd									
	(52)	(107)	(70)	↕	43	(64)	(84)	(826)	(70)	↕	53	(57)	(36)	(11)	(15)	↕	26	(22)	(89)	(616)	(40)	↕	39	(88)				
	44	87	49	←	1345	(1508)	50	931	49	←	1152	(1280)	67	19	22	←	1196	(1383)	87	449	63	←	1145	(1087)				
	↩	↓	↪	↩	9	(16)	↩	↓	↪	↩	157	(133)	↩	↓	↪	↩	16	(22)	↩	↓	↪	↩	101	(148)				
	(57)	50	↕	↩	↑	↪	(228)	186	↕	↩	↑	↪	(30)	22	↕	↩	↑	↪	(8)	110	↕	↩	↑	↪				
Highway 401/427	(1556)	1449	→		11	80	33	(1351)	1342	→		55	932	181	(1477)	1385	→		8	17	38	(1256)	1223	→		144	572	97
	(13)	11	↩	(6)	(83)	(6)	(63)	61	↩	(65)	(995)	(163)	(19)	7	↩	(8)	(12)	(20)	(120)	94	↩	(108)	(616)	(87)				
	Bemersyde Dr						Martin Grove Rd						Widdicomb Hill Blvd						Kipling Ave									
				←	2006	(1720)				↕	41	(114)				↕	5	(16)				↕	141	(70)				
				↩	640	(427)				↩	1733	(1535)				↩	1222	(1426)				↩	1265	(1544)				
										↩	9	(23)				↩	57	(112)				↩	149	(129)				
Eglinton Ave					↪	Eglinton Ave	(536)	389	↕	↩	↑	↪	(116)	84	↕	↩	↑	↪	(189)	185	↕	↩	↑	↪				
	(1992)	1929	→		726		(2239)	2046	→		298	649	29	(1856)	1825	→		196	59	42	(1550)	1458	→		119	705	152	
	(260)	677	↩		(1274)		(491)	220	↩	(152)	(423)	(22)	(149)	49	↩	(118)	(139)	(95)	(85)	58	↩	(126)	(740)	(133)				
	Eglinton Ave.						Renforth Dr						Matheson Blvd						The East Mall & Hwy 427 NB									
	(49)	(34)	(569)	↕	311	(45)	(148)	(779)	(127)	↕	345	(825)	(855)		(442)	↕	1203	(184)	(192)	(3)	(13)	↕	0	(0)				
	33	14	82	←	1294	(640)	654	200	52	←	780	(344)	181		111	←	1052	(493)	811	4	8	←	1137	(389)				
Eglinton Ave	↩	↓	↪	↩	147	(21)	↩	↓	↪	↩	79	(53)	↩		↪	↩			↩	↓	↪	↩	155	(249)				
	(14)	29	↕	↩	↑	↪	(795)	377	↕	↩	↑	↪	(4)	15	↕				(0)	0	↕	↩	↑	↪				
	(1253)	619	→		5	2	9	(706)	313	→		223	678	187	(817)	516	→		(1161)	607	→		189	0	111			
	(5)	20	↩	(36)	(5)	(92)	(640)	98	↩	(62)	(253)	(32)							(238)	90	↩	(51)	(0)	(99)				
XX (XX) AM (PM)																												

Appendix C

Existing 2019 SYNCHRO Capacity Analysis Reports

Queues
1: Weston & Eglinton

Existing 2019 Traffic Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	116	612	224	49	421	40	194	279	39	501
Future Volume (vph)	116	612	224	49	421	40	194	279	39	501
Lane Group Flow (vph)	129	680	249	54	468	44	216	352	43	631
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	2		2		6		4		8	
Permitted Phases	2	2		6	6		4	8		
Minimum Split (s)	34.0	34.0	34.0	32.0	32.0	32.0	45.0	45.0	45.0	45.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0	7.0	7.0
Lead/Lag										
Lead-Lag Optimize?										
v/c Ratio	0.39	0.47	0.40	0.25	0.33	0.08	0.89	0.26	0.12	0.46
Control Delay	22.7	20.5	13.3	21.0	18.6	3.7	65.1	17.9	18.3	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	20.5	13.3	21.0	18.6	3.7	65.1	17.9	18.3	21.0
Queue Length 50th (m)	16.2	46.9	18.6	6.3	29.9	0.0	37.7	21.1	4.9	43.2
Queue Length 95th (m)	31.8	62.2	37.7	15.5	41.5	4.6	82.6	31.1	11.8	58.4
Internal Link Dist (m)	725.8		490.7		367.2		320.1			
Turn Bay Length (m)	40.0	45.0		30.0	50.0		35.0			
Base Capacity (vph)	333	1447	628	216	1421	541	242	1330	362	1363
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	0.39	0.47	0.40	0.25	0.33	0.08	0.89	0.26	0.12	0.46

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 18 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

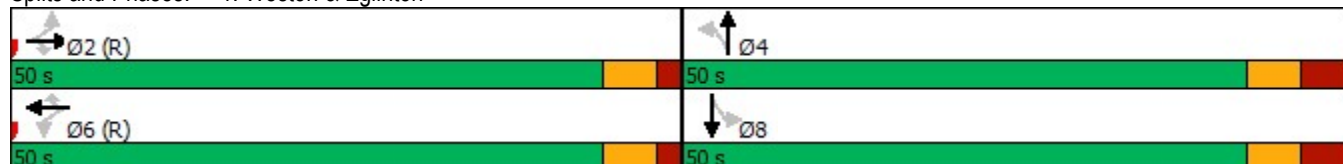
Natural Cycle: 80

Control Type: Pretimed

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston & Eglinton



HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

1: Weston & Eglinton

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	116	612	224	49	421	40	194	279	38	39	501	67
Future Volume (vph)	116	612	224	49	421	40	194	279	38	39	501	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.92	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.97	1.00	1.00	0.98	1.00	1.00	0.96	1.00		0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
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)	1587	3216	1283	1441	3159	1136	1507	3069		1479	3147	
Flt Permitted	0.44	1.00	1.00	0.32	1.00	1.00	0.36	1.00		0.54	1.00	
Satd. Flow (perm)	741	3216	1283	482	3159	1136	564	3069		842	3147	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	680	249	54	468	44	216	310	42	43	557	74
RTOR Reduction (vph)	0	0	51	0	0	24	0	11	0	0	10	0
Lane Group Flow (vph)	129	680	198	54	468	20	216	341	0	43	621	0
Confl. Peds. (#/hr)	53		39	39		53	118		44	44		118
Confl. Bikes (#/hr)			5			2			1			4
Heavy Vehicles (%)	9%	11%	17%	22%	13%	30%	14%	15%	3%	18%	10%	10%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	44.0	44.0	44.0	44.0	44.0	44.0	42.0	42.0		42.0	42.0	
Effective Green, g (s)	45.0	45.0	45.0	45.0	45.0	45.0	43.0	43.0		43.0	43.0	
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.43	0.43		0.43	0.43	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0		8.0	8.0	
Lane Grp Cap (vph)	333	1447	577	216	1421	511	242	1319		362	1353	
v/s Ratio Prot		c0.21			0.15			0.11			0.20	
v/s Ratio Perm	0.17		0.15	0.11		0.02	c0.38			0.05		
v/c Ratio	0.39	0.47	0.34	0.25	0.33	0.04	0.89	0.26		0.12	0.46	
Uniform Delay, d1	18.3	19.2	17.9	17.0	17.8	15.4	26.4	18.3		17.1	20.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	1.1	1.6	2.8	0.6	0.1	35.6	0.5		0.7	1.1	
Delay (s)	21.7	20.3	19.5	19.8	18.4	15.5	62.0	18.8		17.8	21.4	
Level of Service	C	C	B	B	B	B	E	B		B	C	
Approach Delay (s)		20.3			18.3			35.2			21.1	
Approach LOS		C			B			D			C	
Intersection Summary												
HCM 2000 Control Delay			23.0									
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			100.0									
Intersection Capacity Utilization			121.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues 2: Jane & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	236	954	213	61	626	10	209	718	22	842	202
Future Volume (vph)	236	954	213	61	626	10	209	718	22	842	202
Lane Group Flow (vph)	262	1060	237	68	696	11	232	860	24	936	224
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	7	4	8	8	8
Switch Phase											
Minimum Initial (s)	6.0	31.0	31.0	6.0	31.0	31.0	6.0	31.0	31.0	31.0	31.0
Minimum Split (s)	11.0	39.0	39.0	11.0	39.0	39.0	11.0	40.0	40.0	40.0	40.0
Total Split (s)	19.0	49.0	49.0	11.0	41.0	41.0	17.0	60.0	43.0	43.0	43.0
Total Split (%)	15.8%	40.8%	40.8%	9.2%	34.2%	34.2%	14.2%	50.0%	35.8%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max
v/c Ratio	0.75	0.82	0.38	0.38	0.68	0.02	0.89	0.58	0.15	0.90	0.40
Control Delay	38.2	45.5	22.8	24.3	41.1	0.1	62.9	26.7	34.1	53.2	9.6
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	38.2	45.5	22.8	24.3	41.1	0.1	62.9	26.7	34.1	53.2	9.6
Queue Length 50th (m)	36.2	139.2	25.1	8.6	76.8	0.0	37.7	77.4	4.1	111.5	6.4
Queue Length 95th (m)	#73.1	161.6	64.5	16.7	98.0	0.0	#82.3	97.1	11.4	#148.5	26.0
Internal Link Dist (m)		213.3			725.8			326.6		228.7	
Turn Bay Length (m)	75.0		25.0	70.0		25.0	75.0		80.0		65.0
Base Capacity (vph)	363	1298	616	185	1025	535	263	1492	156	1037	566
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	0.72	0.82	0.38	0.37	0.68	0.02	0.88	0.58	0.15	0.90	0.40

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 79 (66%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

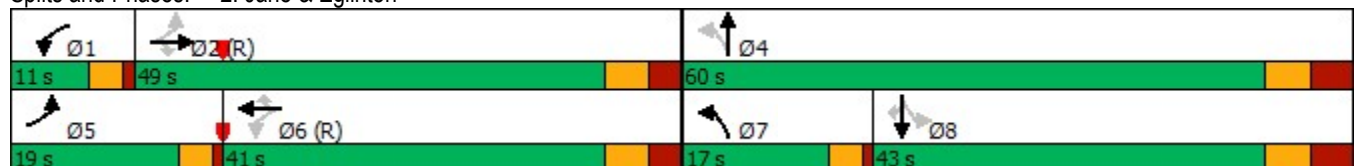
Natural Cycle: 105

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: Jane & Eglinton



HCM Signalized Intersection Capacity Analysis

2: Jane & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	954	213	61	626	10	209	718	56	22	842	202
Future Volume (vph)	236	954	213	61	626	10	209	718	56	22	842	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.93	1.00	1.00		1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		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)	1763	3433	1437	1699	3400	1416	1699	3368		1497	3433	1444
Flt Permitted	0.21	1.00	1.00	0.12	1.00	1.00	0.10	1.00		0.33	1.00	1.00
Satd. Flow (perm)	381	3433	1437	223	3400	1416	182	3368		519	3433	1444
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	262	1060	237	68	696	11	232	798	62	24	936	224
RTOR Reduction (vph)	0	0	74	0	0	8	0	5	0	0	0	130
Lane Group Flow (vph)	262	1060	163	68	696	3	232	855	0	24	936	94
Confl. Peds. (#/hr)	50		19	19		50	34		29	29		34
Heavy Vehicles (%)	1%	4%	4%	5%	5%	0%	5%	4%	11%	18%	4%	5%
Bus Blockages (#/hr)	0	0	8	0	0	12	0	0	0	0	0	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	53.0	43.6	43.6	40.6	35.2	35.2	52.0	52.0		35.3	35.3	35.3
Effective Green, g (s)	54.0	44.6	44.6	42.6	36.2	36.2	53.0	53.0		36.3	36.3	36.3
Actuated g/C Ratio	0.45	0.37	0.37	0.36	0.30	0.30	0.44	0.44		0.30	0.30	0.30
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	8.0		8.0	8.0	8.0
Vehicle Extension (s)	2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	341	1275	534	157	1025	427	253	1487		156	1038	436
v/s Ratio Prot	c0.09	c0.31		0.02	0.20		c0.10	0.25			0.27	
v/s Ratio Perm	0.25		0.11	0.13		0.00	c0.30			0.05		0.07
v/c Ratio	0.77	0.83	0.30	0.43	0.68	0.01	0.92	0.57		0.15	0.90	0.22
Uniform Delay, d1	23.5	34.3	26.7	27.8	36.8	29.3	32.1	25.1		30.6	40.1	31.2
Progression Factor	1.36	1.18	1.51	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.2	5.1	1.2	0.7	3.6	0.0	34.3	1.6		2.1	12.4	1.1
Delay (s)	39.1	45.6	41.6	28.5	40.4	29.4	66.4	26.7		32.7	52.6	32.4
Level of Service	D	D	D	C	D	C	E	C		C	D	C
Approach Delay (s)		43.9			39.2			35.1			48.3	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			42.2									
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			110.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

3: Eglinton & Emmett

Existing 2019 Traffic Conditions
AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	173	1380	9	942	3	1	49	1
Future Volume (vph)	173	1380	9	942	3	1	49	1
Lane Group Flow (vph)	192	1547	10	1111	0	6	0	201
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	22.0	22.0	22.0	22.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0
Total Split (s)	92.0	92.0	92.0	92.0	28.0	28.0	28.0	28.0
Total Split (%)	76.7%	76.7%	76.7%	76.7%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.60	0.62	0.05	0.45		0.03		0.78
Control Delay	20.4	11.5	1.7	2.1		35.4		44.3
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	20.4	11.5	1.7	2.1		35.4		44.3
Queue Length 50th (m)	20.5	89.5	0.2	8.7		0.8		23.4
Queue Length 95th (m)	m28.5	m104.7	m0.2	m10.0		4.5		47.3
Internal Link Dist (m)		241.5		156.2		47.3		107.6
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	318	2497	200	2454		279		330
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	0.62	0.05	0.45		0.02		0.61

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

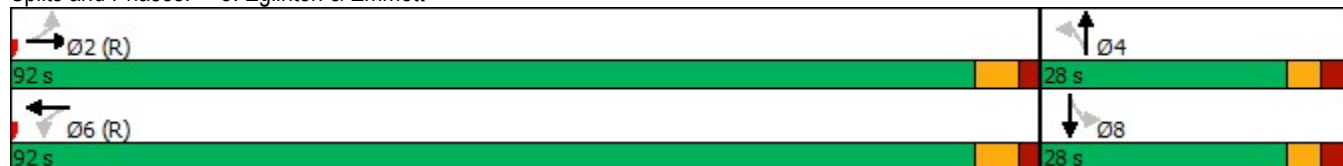
Offset: 95 (79%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Splits and Phases: 3: Eglinton & Emmett



HCM Signalized Intersection Capacity Analysis

3: Eglinton & Emmett

Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	1380	13	9	942	58	3	1	2	49	1	131
Future Volume (vph)	173	1380	13	9	942	58	3	1	2	49	1	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.95			0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1636	3185		1784	3129			1740			1426	
Flt Permitted	0.24	1.00		0.14	1.00			0.81			0.91	
Satd. Flow (perm)	407	3185		256	3129			1452			1310	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	192	1533	14	10	1047	64	3	1	2	54	1	146
RTOR Reduction (vph)	0	0	0	0	3	0	0	2	0	0	86	0
Lane Group Flow (vph)	192	1547	0	10	1108	0	0	4	0	0	115	0
Confl. Peds. (#/hr)	2		3	3		2	1		3	3		1
Confl. Bikes (#/hr)			7			4						
Heavy Vehicles (%)	9%	12%	0%	0%	12%	28%	0%	0%	0%	27%	0%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	93.0	93.0		93.0	93.0			15.0			15.0	
Effective Green, g (s)	94.0	94.0		94.0	94.0			16.0			16.0	
Actuated g/C Ratio	0.78	0.78		0.78	0.78			0.13			0.13	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0			3.0	
Lane Grp Cap (vph)	318	2494		200	2451			193			174	
v/s Ratio Prot		c0.49			0.35							
v/s Ratio Perm	0.47			0.04				0.00			c0.09	
v/c Ratio	0.60	0.62		0.05	0.45			0.02			0.66	
Uniform Delay, d1	5.3	5.5		2.9	4.4			45.2			49.4	
Progression Factor	1.87	1.71		0.28	0.34			1.00			1.00	
Incremental Delay, d2	4.1	0.6		0.4	0.4			0.0			9.1	
Delay (s)	14.1	9.9		1.2	1.9			45.2			58.5	
Level of Service	B	A		A	A			D			E	
Approach Delay (s)		10.4			1.9			45.2			58.5	
Approach LOS		B			A			D			E	
Intersection Summary												
HCM 2000 Control Delay			10.5			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			10.0			
Intersection Capacity Utilization			81.3%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

4: Scarlett & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1090	232	73	863	138	212	549	237	239	664	72
Future Volume (vph)	24	1090	232	73	863	138	212	549	237	239	664	72
Lane Group Flow (vph)	27	1211	258	81	959	153	236	610	263	266	738	80
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	34.0	34.0	34.0	6.0	34.0	34.0	6.0	39.0	39.0	6.0	39.0	39.0
Minimum Split (s)	41.0	41.0	41.0	11.0	41.0	41.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (s)	47.0	47.0	47.0	11.0	58.0	58.0	14.0	51.0	51.0	11.0	48.0	48.0
Total Split (%)	39.2%	39.2%	39.2%	9.2%	48.3%	48.3%	11.7%	42.5%	42.5%	9.2%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	4.0	4.0	1.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.19	0.97	0.46	0.47	0.64	0.22	0.73	0.48	0.42	0.77	0.64	0.16
Control Delay	10.8	29.9	8.2	36.4	20.9	3.8	32.9	30.8	12.6	39.0	36.3	4.0
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	10.8	29.9	8.2	36.4	20.9	3.8	32.9	30.8	12.6	39.0	36.3	4.0
Queue Length 50th (m)	3.1	~163.8	28.8	9.3	50.2	1.0	31.7	57.5	15.4	36.7	76.6	0.0
Queue Length 95th (m)	m3.2	m150.5	m25.7	m23.5	74.8	6.3	#51.7	74.4	37.4	#63.7	97.4	7.2
Internal Link Dist (m)		1148.9			281.3			406.4			326.9	
Turn Bay Length (m)	80.0		20.0	70.0		60.0	75.0		25.0	60.0		25.0
Base Capacity (vph)	144	1254	566	175	1501	699	325	1270	626	344	1152	504
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	0.19	0.97	0.46	0.46	0.64	0.22	0.73	0.48	0.42	0.77	0.64	0.16

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

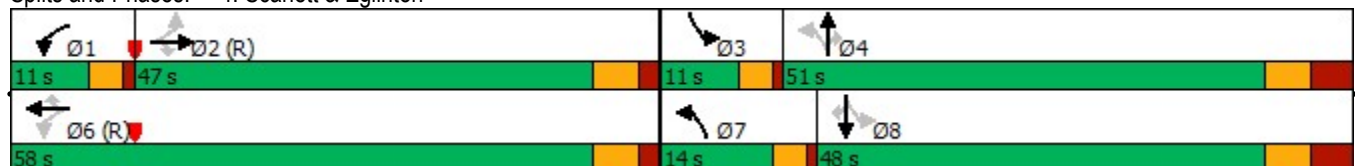
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 4: Scarlett & Eglinton



HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

4: Scarlett & Eglinton

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	24	1090	232	73	863	138	212	549	237	239	664	72
Future Volume (vph)	24	1090	232	73	863	138	212	549	237	239	664	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	7.0	7.0	3.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.90	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	0.93
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	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)	1707	3400	1334	1716	3400	1401	1762	3466	1421	1677	3368	1282
Flt Permitted	0.22	1.00	1.00	0.09	1.00	1.00	0.22	1.00	1.00	0.35	1.00	1.00
Satd. Flow (perm)	393	3400	1334	155	3400	1401	413	3466	1421	624	3368	1282
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	1211	258	81	959	153	236	610	263	266	738	80
RTOR Reduction (vph)	0	0	75	0	0	81	0	0	105	0	0	53
Lane Group Flow (vph)	27	1211	183	81	959	72	236	610	158	266	738	27
Confl. Peds. (#/hr)	24		85	85		24	63		34	34		63
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	4%	5%	2%	4%	5%	4%	1%	3%	1%	6%	6%	8%
Bus Blockages (#/hr)	0	0	13	0	0	13	0	0	15	0	0	17
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	42.5	42.5	42.5	52.0	52.0	52.0	52.9	43.0	43.0	47.1	40.1	40.1
Effective Green, g (s)	43.5	43.5	43.5	53.0	53.0	53.0	54.9	44.0	44.0	49.1	41.1	41.1
Actuated g/C Ratio	0.36	0.36	0.36	0.44	0.44	0.44	0.46	0.37	0.37	0.41	0.34	0.34
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	0.2	0.2	0.2	2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2	0.2
Lane Grp Cap (vph)	142	1232	483	153	1501	618	311	1270	521	325	1153	439
v/s Ratio Prot		c0.36		0.03	c0.28		c0.07	0.18		c0.05	0.22	
v/s Ratio Perm	0.07		0.14	0.20		0.05	0.28		0.11	c0.28		0.02
v/c Ratio	0.19	0.98	0.38	0.53	0.64	0.12	0.76	0.48	0.30	0.82	0.64	0.06
Uniform Delay, d1	26.2	37.9	28.3	26.8	26.1	19.7	22.4	29.2	27.1	28.9	33.2	26.5
Progression Factor	0.35	0.55	0.46	1.50	0.72	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	9.8	0.6	1.4	1.9	0.3	9.1	1.3	1.5	14.0	2.7	0.3
Delay (s)	10.0	30.6	13.7	41.7	20.7	16.8	31.4	30.5	28.6	42.9	36.0	26.8
Level of Service	A	C	B	D	C	B	C	C	C	D	D	C
Approach Delay (s)		27.3			21.6			30.2			37.0	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay	28.7			HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio	0.87											
Actuated Cycle Length (s)	120.0			Sum of lost time (s)					18.0			
Intersection Capacity Utilization	119.7%			ICU Level of Service					H			
Analysis Period (min)	15											
c Critical Lane Group												

Queues

5: Royal York & Eglinton

Existing 2019 Traffic Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	110	1223	101	1145	39	144	572	97	63	449
Future Volume (vph)	110	1223	101	1145	39	144	572	97	63	449
Lane Group Flow (vph)	122	1463	112	1272	43	160	636	108	70	596
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2	1	6		7	4		3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	6.0	34.0	6.0	34.0	34.0	6.0	36.0	36.0	6.0	36.0
Minimum Split (s)	11.0	40.0	11.0	42.0	42.0	11.0	43.0	43.0	11.0	43.0
Total Split (s)	11.0	40.0	26.0	55.0	55.0	11.0	43.0	43.0	11.0	43.0
Total Split (%)	9.2%	33.3%	21.7%	45.8%	45.8%	9.2%	35.8%	35.8%	9.2%	35.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
v/c Ratio	0.71	1.08	0.56	0.91	0.06	0.58	0.56	0.19	0.25	0.57
Control Delay	47.8	85.7	38.5	45.1	1.5	31.9	36.2	2.7	23.2	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	85.7	38.5	45.1	1.5	31.9	36.2	2.7	23.2	36.3
Queue Length 50th (m)	17.7	~208.4	19.6	116.3	0.0	23.6	66.6	0.0	9.7	60.0
Queue Length 95th (m)	#42.9	#261.4	m33.4	#150.2	m0.3	38.7	85.6	6.2	18.9	78.3
Internal Link Dist (m)		477.1		1148.9			96.6			124.1
Turn Bay Length (m)	70.0		65.0		30.0	60.0		20.0	80.0	
Base Capacity (vph)	174	1354	375	1404	673	278	1135	565	282	1037
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	0.70	1.08	0.30	0.91	0.06	0.58	0.56	0.19	0.25	0.57

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

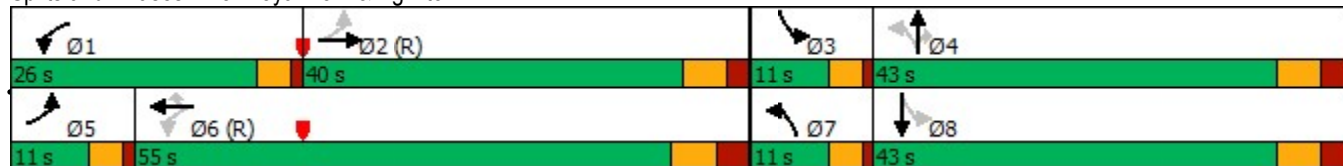
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 5: Royal York & Eglinton



HCM Signalized Intersection Capacity Analysis

5: Royal York & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1223	94	101	1145	39	144	572	97	63	449	87
Future Volume (vph)	110	1223	94	101	1145	39	144	572	97	63	449	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.94	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1684	3349		1700	3433	1488	1650	3466	1430	1677	3320	
Flt Permitted	0.08	1.00		0.08	1.00	1.00	0.29	1.00	1.00	0.29	1.00	
Satd. Flow (perm)	149	3349		148	3433	1488	499	3466	1430	515	3320	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	1359	104	112	1272	43	160	636	108	70	499	97
RTOR Reduction (vph)	0	4	0	0	0	26	0	0	73	0	13	0
Lane Group Flow (vph)	122	1459	0	112	1272	17	160	636	35	70	583	0
Confl. Peds. (#/hr)	13		66	66		13	21		44	44		21
Confl. Bikes (#/hr)									7			3
Heavy Vehicles (%)	6%	5%	3%	5%	4%	0%	8%	3%	0%	6%	4%	6%
Bus Blockages (#/hr)	0	0	15	0	0	11	0	0	12	0	0	10
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	53.5	46.6		55.9	47.3	47.3	45.3	38.3	38.3	42.3	36.8	
Effective Green, g (s)	55.5	47.6		57.9	48.3	48.3	47.3	39.3	39.3	44.3	37.8	
Actuated g/C Ratio	0.46	0.40		0.48	0.40	0.40	0.39	0.33	0.33	0.37	0.31	
Clearance Time (s)	4.0	6.0		4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	
Vehicle Extension (s)	2.0	0.2		2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2	
Lane Grp Cap (vph)	169	1328		195	1381	598	273	1135	468	253	1045	
v/s Ratio Prot	c0.05	c0.44		c0.05	0.37		c0.04	0.18		0.01	0.18	
v/s Ratio Perm	0.28			0.23		0.01	c0.19		0.02	0.09		
v/c Ratio	0.72	1.10		0.57	0.92	0.03	0.59	0.56	0.08	0.28	0.56	
Uniform Delay, d1	25.2	36.2		25.9	34.0	21.7	25.3	33.2	27.8	25.5	34.2	
Progression Factor	1.38	1.12		1.70	1.08	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.4	54.7		2.1	9.9	0.1	2.1	2.0	0.3	0.2	2.2	
Delay (s)	45.2	95.1		46.2	46.8	21.7	27.3	35.2	28.1	25.7	36.3	
Level of Service	D	F		D	D	C	C	D	C	C	D	
Approach Delay (s)		91.3			46.0			33.0			35.2	
Approach LOS		F			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			57.5			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			96.5%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: Eden Valley/Russell & Eglinton

Existing 2019 Traffic Conditions
AM Peak Hour

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	22	1385	7	16	1196	8	17	22	19
Future Volume (vph)	22	1385	7	16	1196	8	17	22	19
Lane Group Flow (vph)	24	1539	8	18	1358	0	70	0	119
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2			6		4		8
Permitted Phases	2		2	6		4		8	
Detector Phase	2	2	2	6	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	21.0	21.0	21.0	21.0	21.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	33.0	33.0	33.0	33.0
Total Split (s)	86.0	86.0	86.0	86.0	86.0	34.0	34.0	34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%	71.7%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.09	0.56	0.01	0.09	0.49		0.39		0.59
Control Delay	7.4	12.6	2.6	0.8	1.2		30.2		36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	7.4	12.6	2.6	0.8	1.2		30.2		36.5
Queue Length 50th (m)	2.1	99.7	0.0	0.1	1.1		6.2		12.2
Queue Length 95th (m)	m2.8	m86.5	m0.0	m0.1	m1.2		19.5		29.7
Internal Link Dist (m)		462.1			477.1		108.4		87.8
Turn Bay Length (m)	40.0		20.0	40.0					
Base Capacity (vph)	254	2769	1237	198	2784		392		420
Starvation Cap Reductn	0	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0		0
Reduced v/c Ratio	0.09	0.56	0.01	0.09	0.49		0.18		0.28

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

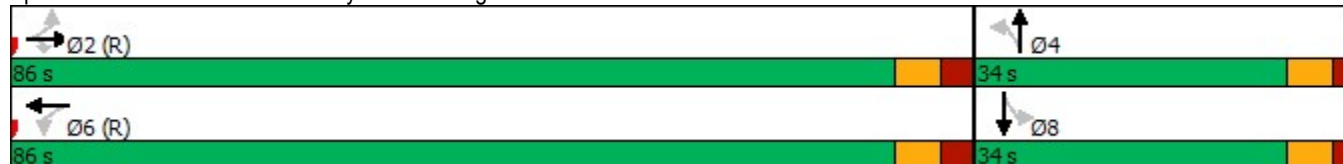
Offset: 71 (59%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

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

Splits and Phases: 6: Eden valley/Russell & Eglinton



HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

6: Eden Valley/Russell & Eglinton

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1385	7	16	1196	26	8	17	38	22	19	67
Future Volume (vph)	22	1385	7	16	1196	26	8	17	38	22	19	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99			0.99	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00			0.92			0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1622	3400	1514	1580	3417			1648			1687	
Flt Permitted	0.18	1.00	1.00	0.15	1.00			0.90			0.90	
Satd. Flow (perm)	311	3400	1514	242	3417			1493			1538	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	1539	8	18	1329	29	9	19	42	24	21	74
RTOR Reduction (vph)	0	0	1	0	1	0	0	38	0	0	59	0
Lane Group Flow (vph)	24	1539	7	18	1357	0	0	32	0	0	60	0
Confl. Peds. (#/hr)	28					28	2		4	4		2
Heavy Vehicles (%)	9%	5%	0%	13%	4%	0%	0%	0%	5%	0%	0%	0%
Bus Blockages (#/hr)	0	0	13	0	0	12	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	96.7	96.7	96.7	96.7	96.7			10.3			10.3	
Effective Green, g (s)	97.7	97.7	97.7	97.7	97.7			11.3			11.3	
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.81			0.09			0.09	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0			6.0			6.0	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2			3.0			3.0	
Lane Grp Cap (vph)	253	2768	1232	197	2782			140			144	
v/s Ratio Prot		c0.45			0.40							
v/s Ratio Perm	0.08		0.00	0.07				0.02			c0.04	
v/c Ratio	0.09	0.56	0.01	0.09	0.49			0.23			0.42	
Uniform Delay, d1	2.2	3.8	2.1	2.2	3.4			50.3			51.2	
Progression Factor	2.40	2.99	44.72	0.12	0.24			1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.5	0.3			0.8			2.0	
Delay (s)	5.5	11.4	93.1	0.7	1.1			51.1			53.2	
Level of Service	A	B	F	A	A			D			D	
Approach Delay (s)		11.7			1.1			51.1			53.2	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			9.5			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			11.0			
Intersection Capacity Utilization			58.4%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

7: Islington & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	186	1342	157	1152	55	932	181	49	931	50
Future Volume (vph)	186	1342	157	1152	55	932	181	49	931	50
Lane Group Flow (vph)	207	1559	174	1339	61	1036	201	54	1034	56
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6	7	4		3	8	
Permitted Phases	2		6		4		4	8		8
Detector Phase	5	2	1	6	7	4	4	3	8	8
Switch Phase										
Minimum Initial (s)	6.0	30.0	6.0	30.0	6.0	27.0	27.0	6.0	27.0	27.0
Minimum Split (s)	11.0	37.0	11.0	37.0	15.0	34.0	34.0	11.0	34.0	34.0
Total Split (s)	11.0	52.0	11.0	52.0	15.0	46.0	46.0	11.0	42.0	42.0
Total Split (%)	9.2%	43.3%	9.2%	43.3%	12.5%	38.3%	38.3%	9.2%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	1.13	1.18	0.98	1.00	0.35	0.83	0.36	0.33	0.85	0.10
Control Delay	133.4	118.9	95.2	46.8	24.4	42.2	16.6	24.4	44.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.4	118.9	95.2	46.8	24.4	42.2	16.6	24.4	44.6	1.2
Queue Length 50th (m)	~38.2	~233.5	21.9	~169.4	8.0	119.4	16.8	7.1	120.3	0.0
Queue Length 95th (m)	#89.3	#271.1	#67.9	#217.6	16.1	#149.3	37.0	14.7	#166.0	1.8
Internal Link Dist (m)		447.8		462.1		193.0			204.2	
Turn Bay Length (m)	65.0		70.0		60.0		20.0	60.0		25.0
Base Capacity (vph)	183	1317	178	1333	227	1255	553	171	1212	577
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	1.13	1.18	0.98	1.00	0.27	0.83	0.36	0.32	0.85	0.10

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 98 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

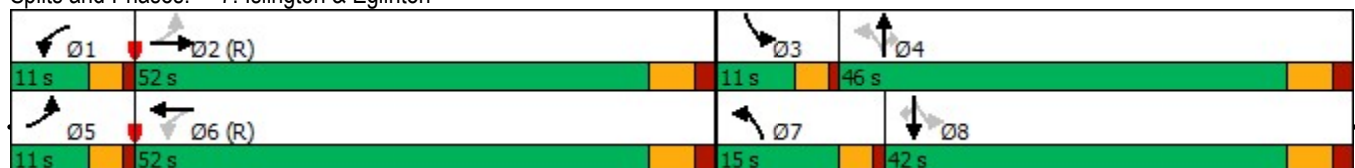
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 7: Islington & Eglinton



04/20/2020

HCM Signalized Intersection Capacity Analysis

7: Islington & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	1342	61	157	1152	53	55	932	181	49	931	50
Future Volume (vph)	186	1342	61	157	1152	53	55	932	181	49	931	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.94	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	3360		1716	3400		1700	3466	1352	1653	3400	1438
Flt Permitted	0.09	1.00		0.09	1.00		0.09	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	161	3360		156	3400		165	3466	1352	171	3400	1438
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	207	1491	68	174	1280	59	61	1036	201	54	1034	56
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	64	0	0	36
Lane Group Flow (vph)	207	1557	0	174	1336	0	61	1036	137	54	1034	20
Confl. Peds. (#/hr)	64		46	46		64	23		37	37		23
Heavy Vehicles (%)	1%	5%	11%	4%	4%	2%	5%	3%	3%	8%	5%	0%
Bus Blockages (#/hr)	0	0	13	0	0	13	0	0	18	0	0	15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	52.2	45.2		52.2	45.2		48.5	42.5	42.5	47.1	41.8	41.8
Effective Green, g (s)	54.2	46.2		54.2	46.2		50.5	43.5	43.5	49.1	42.8	42.8
Actuated g/C Ratio	0.45	0.39		0.45	0.39		0.42	0.36	0.36	0.41	0.36	0.36
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2	0.2	2.0	3.0	3.0
Lane Grp Cap (vph)	179	1293		174	1309		158	1256	490	147	1212	512
v/s Ratio Prot	c0.08	c0.46		0.07	0.39		c0.02	0.30		0.02	c0.30	
v/s Ratio Perm	0.44			0.38			0.14		0.10	0.13		0.01
v/c Ratio	1.16	1.20		1.00	1.02		0.39	0.82	0.28	0.37	0.85	0.04
Uniform Delay, d1	31.1	36.9		31.1	36.9		24.9	34.8	27.1	25.2	35.7	25.2
Progression Factor	1.45	0.84		1.50	0.56		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	109.3	98.0		65.2	29.1		0.6	6.3	1.4	0.6	7.7	0.1
Delay (s)	154.5	128.8		112.0	49.9		25.5	41.0	28.6	25.8	43.4	25.3
Level of Service	F	F		F	D		C	D	C	C	D	C
Approach Delay (s)		131.8			57.0			38.4			41.7	
Approach LOS		F			E			D			D	
Intersection Summary												
HCM 2000 Control Delay			72.8			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			93.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
8: Bermersyde/Wincott & Eglinton

Existing 2019 Traffic Conditions
AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	50	1449	9	1345	11	80	49	87
Future Volume (vph)	50	1449	9	1345	11	80	49	87
Lane Group Flow (vph)	56	1622	10	1542	0	138	54	146
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	24.0	24.0	24.0	24.0	7.0	7.0	7.0	7.0
Minimum Split (s)	31.0	31.0	31.0	31.0	35.0	35.0	35.0	35.0
Total Split (s)	85.0	85.0	85.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.30	0.63	0.07	0.60		0.50	0.36	0.50
Control Delay	12.3	9.6	13.9	17.1		45.9	49.0	43.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	12.3	9.6	13.9	17.1		45.9	49.0	43.9
Queue Length 50th (m)	3.1	68.7	1.1	101.4		28.0	11.9	28.4
Queue Length 95th (m)	14.1	136.8	m1.5	m109.0		42.7	22.1	43.5
Internal Link Dist (m)		464.9		447.8		109.2		108.2
Turn Bay Length (m)	40.0		40.0				15.0	
Base Capacity (vph)	185	2582	147	2573		422	232	443
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.30	0.63	0.07	0.60		0.33	0.23	0.33

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

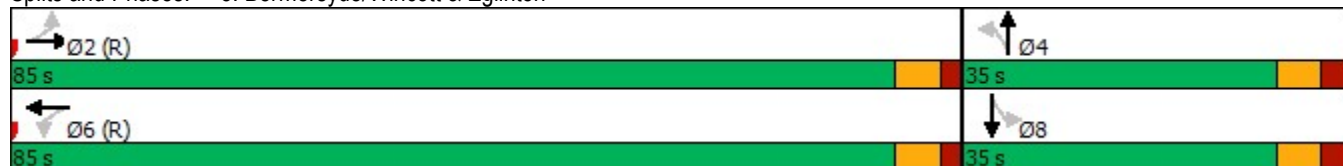
Offset: 70 (58%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

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

Splits and Phases: 8: Bermersyde/Wincott & Eglinton



HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

8: Bermersyde/Wincott & Eglinton

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1449	11	9	1345	43	11	80	33	49	87	44
Future Volume (vph)	50	1449	11	9	1345	43	11	80	33	49	87	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00			0.96		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1784	3429		1607	3417			1763		1728	1772	
Flt Permitted	0.13	1.00		0.12	1.00			0.96		0.53	1.00	
Satd. Flow (perm)	245	3429		197	3417			1705		964	1772	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	1610	12	10	1494	48	12	89	37	54	97	49
RTOR Reduction (vph)	0	0	0	0	1	0	0	12	0	0	17	0
Lane Group Flow (vph)	56	1622	0	10	1541	0	0	126	0	54	129	0
Confl. Peds. (#/hr)	4		4	4		4	6		13	13		6
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	4%	0%	11%	4%	0%	0%	1%	3%	2%	0%	0%
Bus Blockages (#/hr)	0	0	13	0	0	12	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	89.4	89.4		89.4	89.4			17.6		17.6	17.6	
Effective Green, g (s)	90.4	90.4		90.4	90.4			18.6		18.6	18.6	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.16		0.16	0.16	
Clearance Time (s)	6.0	6.0		6.0	6.0			7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0		3.0	3.0	
Lane Grp Cap (vph)	184	2583		148	2574			264		149	274	
v/s Ratio Prot		c0.47			0.45						0.07	
v/s Ratio Perm	0.23			0.05				c0.07		0.06		
v/c Ratio	0.30	0.63		0.07	0.60			0.48		0.36	0.47	
Uniform Delay, d1	4.7	6.9		3.8	6.6			46.3		45.4	46.2	
Progression Factor	1.00	1.00		2.05	2.07			1.00		1.00	1.00	
Incremental Delay, d2	4.2	1.2		0.4	0.5			1.4		1.5	1.3	
Delay (s)	9.0	8.1		8.3	14.3			47.6		46.9	47.5	
Level of Service	A	A		A	B			D		D	D	
Approach Delay (s)		8.1			14.2			47.6			47.3	
Approach LOS		A			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			14.5			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				11.0		
Intersection Capacity Utilization			69.0%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

9: Kipling & Eglinton

Existing 2019 Traffic Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	185	1458	149	1265	119	705	152	68	481	37
Future Volume (vph)	185	1458	149	1265	119	705	152	68	481	37
Lane Group Flow (vph)	206	1684	166	1563	132	783	169	76	534	41
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6	7	4		3	8	
Permitted Phases	2		6		4		4	8		8
Detector Phase	5	2	1	6	7	4	4	3	8	8
Switch Phase										
Minimum Initial (s)	6.0	33.0	6.0	33.0	6.0	29.0	29.0	6.0	29.0	29.0
Minimum Split (s)	11.0	41.0	11.0	41.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	15.0	74.0	15.0	74.0	11.0	40.0	40.0	11.0	40.0	40.0
Total Split (%)	10.7%	52.9%	10.7%	52.9%	7.9%	28.6%	28.6%	7.9%	28.6%	28.6%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	3.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	1.02	1.03	0.86	0.96	0.58	0.95	0.45	0.56	0.67	0.12
Control Delay	64.1	51.3	70.9	49.6	44.9	73.8	24.3	48.2	52.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	51.3	70.9	49.6	44.9	73.8	24.3	48.2	52.6	0.7
Queue Length 50th (m)	~40.7	~272.1	30.0	214.1	25.9	113.4	17.0	14.5	70.8	0.0
Queue Length 95th (m)	m34.8	m239.5	#69.2	#268.8	42.1	#152.6	39.5	26.6	90.5	0.0
Internal Link Dist (m)		524.4		464.9		192.6			166.1	
Turn Bay Length (m)	75.0		75.0		65.0		25.0	65.0		25.0
Base Capacity (vph)	202	1628	197	1625	227	822	374	138	802	353
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	1.02	1.03	0.84	0.96	0.58	0.95	0.45	0.55	0.67	0.12

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 3 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

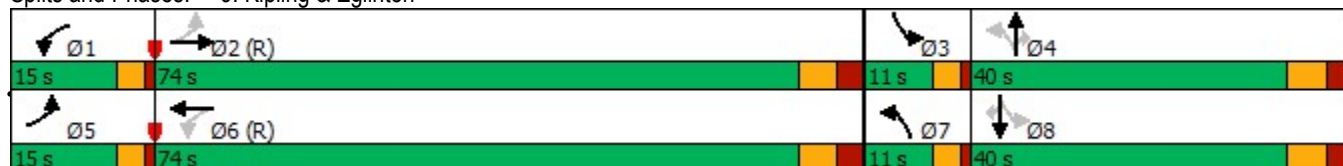
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 9: Kipling & Eglinton



HCM Signalized Intersection Capacity Analysis

9: Kipling & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	1458	58	149	1265	141	119	705	152	68	481	37
Future Volume (vph)	185	1458	58	149	1265	141	119	705	152	68	481	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3329		1684	3334		1744	3368	1240	1551	3305	1162
Flt Permitted	0.06	1.00		0.06	1.00		0.27	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	107	3329		104	3334		496	3368	1240	192	3305	1162
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	206	1620	64	166	1406	157	132	783	169	76	534	41
RTOR Reduction (vph)	0	2	0	0	6	0	0	0	71	0	0	31
Lane Group Flow (vph)	206	1682	0	166	1557	0	132	783	98	76	534	10
Confl. Peds. (#/hr)	40		50	50		40	107		48	48		107
Confl. Bikes (#/hr)			21			4			2			5
Heavy Vehicles (%)	3%	6%	14%	6%	4%	12%	1%	6%	6%	15%	8%	3%
Bus Blockages (#/hr)	0	0	16	0	0	22	0	0	26	0	0	25
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	78.4	67.4		77.6	67.0		40.2	33.2	33.2	39.8	33.0	33.0
Effective Green, g (s)	80.4	68.4		79.6	68.0		42.2	34.2	34.2	41.8	34.0	34.0
Actuated g/C Ratio	0.57	0.49		0.57	0.49		0.30	0.24	0.24	0.30	0.24	0.24
Clearance Time (s)	4.0	7.0		4.0	7.0		4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2	0.2	2.0	3.0	3.0
Lane Grp Cap (vph)	200	1626		190	1619		220	822	302	133	802	282
v/s Ratio Prot	c0.09	c0.51		0.07	0.47		c0.03	c0.23		0.03	0.16	
v/s Ratio Perm	0.50			0.42			0.15		0.08	0.14		0.01
v/c Ratio	1.03	1.03		0.87	0.96		0.60	0.95	0.32	0.57	0.67	0.04
Uniform Delay, d1	45.1	35.8		42.6	34.7		37.8	52.1	43.4	38.7	47.9	40.5
Progression Factor	1.10	0.94		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.3	18.1		32.1	14.9		2.9	21.8	2.8	3.6	4.3	0.2
Delay (s)	77.0	51.7		74.7	49.7		40.7	73.9	46.3	42.4	52.2	40.7
Level of Service	E	D		E	D		D	E	D	D	D	D
Approach Delay (s)		54.5			52.1			65.5			50.3	
Approach LOS		D			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			55.4			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			98.0%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
10: Lloyd Manor/Widdicombe Hill & Eglinton

Existing 2019 Traffic Conditions
AM Peak Hour

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	84	1825	49	57	1222	196	59	23	86
Future Volume (vph)	84	1825	49	57	1222	196	59	23	86
Lane Group Flow (vph)	93	2028	54	63	1364	218	113	26	304
Turn Type	Perm	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	NA
Protected Phases		2		1	6	7	4		8
Permitted Phases	2		2	6		4		8	
Detector Phase	2	2	2	1	6	7	4	8	8
Switch Phase									
Minimum Initial (s)	23.0	23.0	23.0	6.0	23.0	6.0	32.0	32.0	32.0
Minimum Split (s)	31.0	31.0	31.0	11.0	31.0	11.0	40.0	40.0	40.0
Total Split (s)	78.0	78.0	78.0	11.0	89.0	11.0	51.0	40.0	40.0
Total Split (%)	55.7%	55.7%	55.7%	7.9%	63.6%	7.9%	36.4%	28.6%	28.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0	3.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.69	1.10	0.07	0.44	0.66	0.67	0.21	0.09	0.39
Control Delay	17.5	63.6	0.4	17.6	21.3	48.1	27.7	42.9	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	63.6	0.4	17.6	21.3	48.1	27.7	42.9	37.1
Queue Length 50th (m)	13.9	~351.0	0.2	6.3	193.6	45.7	17.2	5.7	29.5
Queue Length 95th (m)	m6.8	m234.0	m0.0	m6.8	m205.2	68.3	32.6	13.9	43.5
Internal Link Dist (m)		416.9			524.4		91.1		85.3
Turn Bay Length (m)	40.0		50.0	45.0		30.0		50.0	
Base Capacity (vph)	135	1851	792	149	2057	327	563	311	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	1.10	0.07	0.42	0.66	0.67	0.20	0.08	0.38

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 76 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

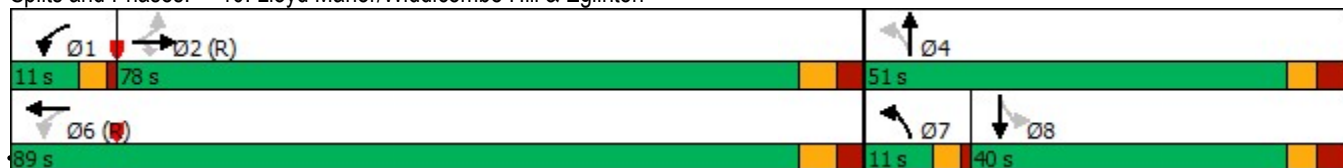
Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 10: Lloyd Manor/Widdicombe Hill & Eglinton



HCM Signalized Intersection Capacity Analysis

10: Lloyd Manor/Widdicombe Hill & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1825	49	57	1222	5	196	59	42	23	86	187
Future Volume (vph)	84	1825	49	57	1222	5	196	59	42	23	86	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	3.0	6.0		3.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	0.99		1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1694	3433	1389	1716	3430		1749	1696		1783	3069	
Flt Permitted	0.14	1.00	1.00	0.05	1.00		0.45	1.00		0.68	1.00	
Satd. Flow (perm)	251	3433	1389	93	3430		827	1696		1284	3069	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	93	2028	54	63	1358	6	218	66	47	26	96	208
RTOR Reduction (vph)	0	0	25	0	0	0	0	19	0	0	48	0
Lane Group Flow (vph)	93	2028	29	63	1364	0	218	94	0	26	256	0
Confl. Peds. (#/hr)	15		19	19		15	33		1	1		33
Confl. Bikes (#/hr)									1			3
Heavy Vehicles (%)	5%	4%	4%	4%	4%	0%	1%	2%	5%	0%	1%	0%
Bus Blockages (#/hr)	0	0	13	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	73.7	73.7	73.7	83.0	83.0		43.0	43.0		32.0	32.0	
Effective Green, g (s)	74.7	74.7	74.7	84.0	84.0		44.0	44.0		33.0	33.0	
Actuated g/C Ratio	0.53	0.53	0.53	0.60	0.60		0.31	0.31		0.24	0.24	
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0		4.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	2.0	0.2		2.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	133	1831	741	128	2058		312	533		302	723	
v/s Ratio Prot		c0.59		0.02	c0.40		c0.04	0.06			0.08	
v/s Ratio Perm	0.37		0.02	0.27			c0.18			0.02		
v/c Ratio	0.70	1.11	0.04	0.49	0.66		0.70	0.18		0.09	0.35	
Uniform Delay, d1	24.3	32.6	15.6	31.7	18.6		41.2	34.9		41.7	44.6	
Progression Factor	0.44	0.52	0.81	0.95	1.09		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	49.3	0.0	0.4	0.7		5.4	0.2		0.1	0.3	
Delay (s)	13.6	66.3	12.6	30.5	21.0		46.6	35.0		41.9	44.9	
Level of Service	B	E	B	C	C		D	D		D	D	
Approach Delay (s)		62.7			21.4			42.7			44.7	
Approach LOS		E			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			45.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			127.1%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
11: Martin Grove & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	389	2046	220	9	1733	298	649	29	101	458	410
Future Volume (vph)	389	2046	220	9	1733	298	649	29	101	458	410
Lane Group Flow (vph)	432	2273	244	10	1972	331	721	32	112	509	456
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	5	2			6	7	4			8	
Permitted Phases	2		2	6		4		4	8		7 8
Detector Phase	5	2	2	6	6	7	4	4	8	8	7 8
Switch Phase											
Minimum Initial (s)	6.0	31.0	31.0	31.0	31.0	6.0	29.0	29.0	36.0	36.0	
Minimum Split (s)	11.0	38.0	38.0	38.0	38.0	11.0	44.0	44.0	43.0	43.0	
Total Split (s)	24.0	72.0	72.0	48.0	48.0	25.0	68.0	68.0	43.0	43.0	
Total Split (%)	17.1%	51.4%	51.4%	34.3%	34.3%	17.9%	48.6%	48.6%	30.7%	30.7%	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	3.0	5.0	5.0	5.0	5.0	3.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max	Max	
v/c Ratio	1.40	1.38	0.43	0.21	1.29	0.77	0.47	0.07	0.71	0.53	0.55
Control Delay	232.8	207.9	15.1	61.1	182.3	38.2	28.7	2.1	71.9	45.9	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	232.8	207.9	15.1	61.1	182.3	38.2	28.7	2.1	71.9	45.9	8.7
Queue Length 50th (m)	~144.8	~438.8	22.6	2.2	~251.0	59.3	72.7	0.0	28.5	64.3	16.8
Queue Length 95th (m)	#210.6	#478.4	44.8	m4.2	#281.3	84.1	90.2	2.5	#59.8	82.5	47.7
Internal Link Dist (m)		224.0			416.9		322.5			292.9	
Turn Bay Length (m)	180.0			65.0		120.0		25.0	70.0		25.0
Base Capacity (vph)	308	1642	567	48	1524	443	1534	488	158	955	821
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	1.40	1.38	0.43	0.21	1.29	0.75	0.47	0.07	0.71	0.53	0.56

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 60 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

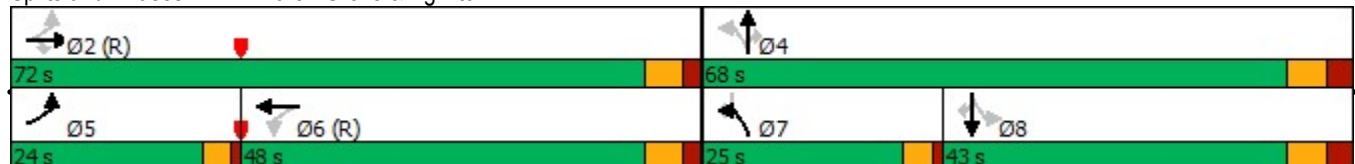
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 11: Martin Grove & Eglinton



HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

11: Martin Grove & Eglinton

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	2046	220	9	1733	41	298	649	29	101	458	410
Future Volume (vph)	389	2046	220	9	1733	41	298	649	29	101	458	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	5.0	5.0	5.0		3.0	6.0	6.0	6.0	6.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.68	1.00	1.00		1.00	1.00	0.69	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.99	1.00	1.00	0.89	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1700	3433	1065	1608	4953		1752	3466	1033	1443	3466	1368
Flt Permitted	0.09	1.00	1.00	0.09	1.00		0.30	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	156	3433	1065	157	4953		553	3466	1033	574	3466	1368
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	432	2273	244	10	1926	46	331	721	32	112	509	456
RTOR Reduction (vph)	0	0	58	0	2	0	0	0	18	0	0	195
Lane Group Flow (vph)	432	2273	186	10	1970	0	331	721	14	112	509	261
Confl. Peds. (#/hr)	56		265	265		56	72		264	264		72
Confl. Bikes (#/hr)			10			3			4			3
Heavy Vehicles (%)	5%	4%	2%	11%	3%	2%	1%	3%	3%	10%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	11	0	0	9	0	0	15
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	5	2			6		7	4			8	
Permitted Phases	2		2	6			4		4	8		7 8
Actuated Green, G (s)	66.0	66.0	66.0	42.0	42.0		61.0	61.0	61.0	37.6	37.6	61.0
Effective Green, g (s)	67.0	67.0	67.0	43.0	43.0		62.0	62.0	62.0	38.6	38.6	62.0
Actuated g/C Ratio	0.48	0.48	0.48	0.31	0.31		0.44	0.44	0.44	0.28	0.28	0.44
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	2.0	0.2	0.2	0.2	0.2		2.0	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	306	1642	509	48	1521		419	1534	457	158	955	605
v/s Ratio Prot	0.21	c0.66			0.40		c0.11	0.21			0.15	
v/s Ratio Perm	c0.46		0.17	0.06			c0.23		0.01	0.20		0.19
v/c Ratio	1.41	1.38	0.37	0.21	1.30		0.79	0.47	0.03	0.71	0.53	0.43
Uniform Delay, d1	45.2	36.5	23.1	35.9	48.5		28.1	27.4	22.0	45.6	43.0	26.9
Progression Factor	1.00	1.00	1.00	1.35	1.22		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	203.6	176.8	2.0	8.0	137.0		8.9	1.0	0.1	23.5	2.1	0.2
Delay (s)	248.9	213.3	25.1	56.4	196.3		36.9	28.5	22.2	69.2	45.2	27.0
Level of Service	F	F	C	E	F		D	C	C	E	D	C
Approach Delay (s)		202.9			195.6			30.9			40.0	
Approach LOS		F			F			C			D	
Intersection Summary												
HCM 2000 Control Delay			149.8			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.16									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			160.7%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
12: Eglinton & Highway 401

Existing 2019 Traffic Conditions
AM Peak Hour

	→	↖	↗
Lane Group	EBT	WBL	NBR
Lane Configurations	↑↑↑↑	↖↖	↗↗
Traffic Volume (vph)	1929	640	726
Future Volume (vph)	1929	640	726
Lane Group Flow (vph)	2895	711	807
Turn Type	NA	Prot	Prot
Protected Phases	2	8	4
Permitted Phases			
Minimum Split (s)	39.0	37.0	37.0
Total Split (s)	89.0	51.0	51.0
Total Split (%)	63.6%	36.4%	36.4%
Yellow Time (s)	5.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0
Total Lost Time (s)	7.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
v/c Ratio	0.81	0.66	0.94
Control Delay	24.8	44.6	64.5
Queue Delay	0.0	0.0	0.0
Total Delay	24.8	44.6	64.5
Queue Length 50th (m)	173.4	87.5	121.9
Queue Length 95th (m)	187.4	108.8	#165.3
Internal Link Dist (m)	216.8		
Turn Bay Length (m)			
Base Capacity (vph)	3564	1070	860
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.81	0.66	0.94
Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 64 (46%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 12: Eglinton & Highway 401

→ Ø2 (R)	↗ Ø4
89 s	51 s
	↖ Ø8
	51 s

HCM Signalized Intersection Capacity Analysis

12: Eglinton & Highway 401

Existing 2019 Traffic Conditions
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↙↘			↗↖
Traffic Volume (vph)	1929	677	640	0	0	726
Future Volume (vph)	1929	677	640	0	0	726
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0		6.0			6.0
Lane Util. Factor	0.86		0.97			0.88
Frt	0.96		1.00			0.85
Flt Protected	1.00		0.95			1.00
Satd. Flow (prot)	6046		3330			2652
Flt Permitted	1.00		0.95			1.00
Satd. Flow (perm)	6046		3330			2652
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2143	752	711	0	0	807
RTOR Reduction (vph)	23	0	0	0	0	8
Lane Group Flow (vph)	2872	0	711	0	0	799
Heavy Vehicles (%)	3%	2%	4%	0%	0%	6%
Turn Type	NA		Prot			Prot
Protected Phases	2		8			4
Permitted Phases						
Actuated Green, G (s)	81.0		44.0			44.0
Effective Green, g (s)	82.0		45.0			45.0
Actuated g/C Ratio	0.59		0.32			0.32
Clearance Time (s)	8.0		7.0			7.0
Lane Grp Cap (vph)	3541		1070			852
v/s Ratio Prot	c0.48		0.21			c0.30
v/s Ratio Perm						
v/c Ratio	0.81		0.66			0.94
Uniform Delay, d1	22.9		41.0			46.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.1		3.3			19.0
Delay (s)	25.0		44.2			65.1
Level of Service	C		D			E
Approach Delay (s)	25.0			44.2	65.1	
Approach LOS	C			D	E	
Intersection Summary						
HCM 2000 Control Delay			35.4		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.86			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			75.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Queues
13: East Mall & Eglinton

Existing 2019 Traffic Conditions
AM Peak Hour



Lane Group	EBT	WBL	WBT	NBL	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑	↑	↑	↑
Traffic Volume (vph)	607	155	1137	189	111	4	811
Future Volume (vph)	607	155	1137	189	111	4	811
Lane Group Flow (vph)	774	172	1263	210	123	13	901
Turn Type	NA	pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	2	1	6			8	
Permitted Phases		6		4	4		1 8
Detector Phase	2	1	6	4	4	8	1 8
Switch Phase							
Minimum Initial (s)	29.0	6.0	29.0	7.0	7.0	7.0	
Minimum Split (s)	37.0	11.0	37.0	34.0	34.0	15.0	
Total Split (s)	37.0	22.0	59.0	34.0	34.0	34.0	
Total Split (%)	39.8%	23.7%	63.4%	36.6%	36.6%	36.6%	
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	6.0	3.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes					
Recall Mode	Max	Max	Max	None	None	None	
v/c Ratio	0.69	0.36	0.63	0.50	0.24	0.02	0.99
Control Delay	30.0	10.5	15.3	31.6	6.0	23.2	49.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	10.5	15.3	31.6	6.0	23.2	49.1
Queue Length 50th (m)	61.1	12.6	74.5	30.8	0.0	1.6	144.1
Queue Length 95th (m)	81.2	21.6	95.1	52.0	12.0	5.8	#235.5
Internal Link Dist (m)	966.3		108.5			34.2	
Turn Bay Length (m)		30.0					
Base Capacity (vph)	1122	479	1994	423	509	544	906
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.36	0.63	0.50	0.24	0.02	0.99

Intersection Summary

Cycle Length: 93

Actuated Cycle Length: 93

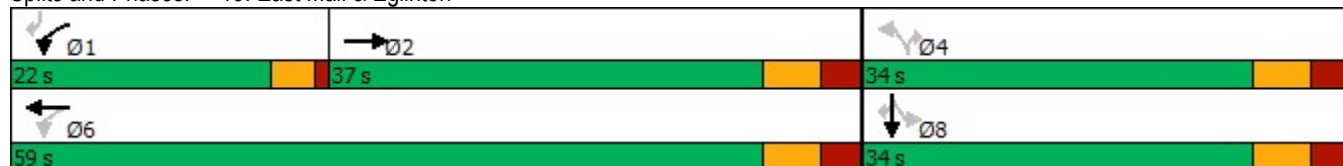
Natural Cycle: 85

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 13: East Mall & Eglinton



HCM Signalized Intersection Capacity Analysis

13: East Mall & Eglinton

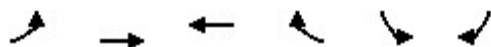
Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	607	90	155	1137	0	189	0	111	8	4	811
Future Volume (vph)	0	607	90	155	1137	0	189	0	111	8	4	811
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		3.0	6.0		6.0		6.0		6.0	3.0
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00		1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		0.98		1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00		0.99	1.00
Frt		0.98		1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00		0.97	1.00
Satd. Flow (prot)		3328		1667	3500		1785		1408		1806	1551
Flt Permitted		1.00		0.20	1.00		0.75		1.00		0.97	1.00
Satd. Flow (perm)		3328		349	3500		1407		1408		1806	1551
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	674	100	172	1263	0	210	0	123	9	4	901
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	86	0	0	26
Lane Group Flow (vph)	0	761	0	172	1263	0	210	0	37	0	13	875
Confl. Peds. (#/hr)	15		8	8		15			8	8		
Heavy Vehicles (%)	0%	5%	3%	7%	2%	0%	0%	0%	8%	0%	0%	3%
Bus Blockages (#/hr)	0	0	13	0	0	0	0	0	7	0	0	0
Turn Type		NA		pm+pt	NA		Perm		Perm	Perm	NA	custom
Protected Phases		2		1	6						8	
Permitted Phases				6			4		4	8		1 8
Actuated Green, G (s)		30.0		52.0	52.0		27.0		27.0		27.0	52.0
Effective Green, g (s)		31.0		53.0	53.0		28.0		28.0		28.0	47.0
Actuated g/C Ratio		0.33		0.57	0.57		0.30		0.30		0.30	0.51
Clearance Time (s)		7.0		4.0	7.0		7.0		7.0		7.0	
Vehicle Extension (s)		0.2		8.0	0.2		3.0		3.0		3.0	
Lane Grp Cap (vph)		1109		468	1994		423		423		543	783
v/s Ratio Prot		c0.23		0.08	0.36							
v/s Ratio Perm				0.13			0.15		0.03		0.01	c0.56
v/c Ratio		0.69		0.37	0.63		0.50		0.09		0.02	1.12
Uniform Delay, d1		26.8		11.3	13.5		26.7		23.3		22.9	23.0
Progression Factor		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		3.5		2.2	1.5		0.9		0.1		0.0	69.6
Delay (s)		30.3		13.5	15.0		27.6		23.4		22.9	92.6
Level of Service		C		B	B		C		C		C	F
Approach Delay (s)		30.3			14.8			26.1			91.6	
Approach LOS		C			B			C			F	
Intersection Summary												
HCM 2000 Control Delay			39.7			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			93.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			104.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
14: Eglinton & Matheson

Existing 2019 Traffic Conditions
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	516	1052	1203	111	181
Future Volume (vph)	15	516	1052	1203	111	181
Lane Group Flow (vph)	17	573	1169	1337	123	201
Turn Type	Perm	NA	NA	Perm	Prot	Free
Protected Phases		2	6		8	
Permitted Phases	2			6		Free
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	25.0	25.0	7.0	7.0	7.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	30.0	
Total Split (s)	79.0	79.0	79.0	79.0	31.0	
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.05	0.21	0.42	0.91	0.56	0.13
Control Delay	3.7	3.5	4.6	12.8	53.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	3.5	4.6	12.8	53.9	0.2
Queue Length 50th (m)	0.7	13.2	33.6	11.4	25.1	0.0
Queue Length 95th (m)	2.7	22.6	54.2	#288.7	41.4	0.0
Internal Link Dist (m)		209.4	286.2		108.2	
Turn Bay Length (m)	132.0			30.0		
Base Capacity (vph)	328	2706	2759	1474	417	1502
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	0.05	0.21	0.42	0.91	0.29	0.13

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 51 (46%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

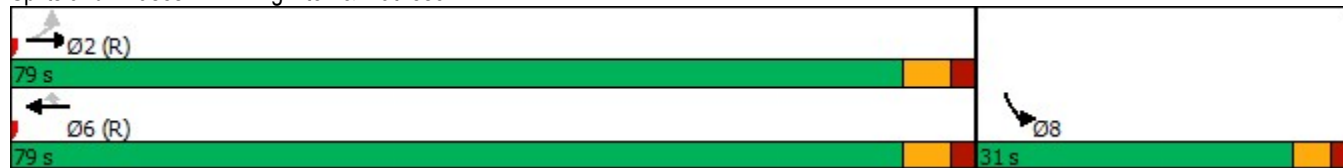
Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

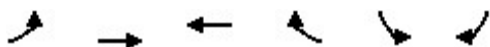
Splits and Phases: 14: Eglinton & Matheson



HCM Signalized Intersection Capacity Analysis

14: Eglinton & Matheson

Existing 2019 Traffic Conditions
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	516	1052	1203	111	181
Future Volume (vph)	15	516	1052	1203	111	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	4.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
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)	1785	3433	3500	1581	1700	1502
Flt Permitted	0.22	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	418	3433	3500	1581	1700	1502
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	573	1169	1337	123	201
RTOR Reduction (vph)	0	0	0	228	0	0
Lane Group Flow (vph)	17	573	1169	1109	123	201
Confl. Peds. (#/hr)						2
Heavy Vehicles (%)	0%	4%	2%	1%	5%	5%
Turn Type	Perm	NA	NA	Perm	Prot	Free
Protected Phases		2	6		8	
Permitted Phases	2			6		Free
Actuated Green, G (s)	85.7	85.7	85.7	85.7	13.3	110.0
Effective Green, g (s)	86.7	86.7	86.7	86.7	14.3	110.0
Actuated g/C Ratio	0.79	0.79	0.79	0.79	0.13	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	329	2705	2758	1246	221	1502
v/s Ratio Prot		0.17	0.33		c0.07	
v/s Ratio Perm	0.04			c0.70		0.13
v/c Ratio	0.05	0.21	0.42	0.89	0.56	0.13
Uniform Delay, d1	2.6	3.0	3.7	8.3	44.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2	0.5	9.8	3.0	0.2
Delay (s)	2.9	3.1	4.2	18.0	47.9	0.2
Level of Service	A	A	A	B	D	A
Approach Delay (s)		3.1	11.6		18.3	
Approach LOS		A	B		B	
Intersection Summary						
HCM 2000 Control Delay			10.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.84			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			103.7%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

Queues

15: Renforth & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	 	  		 			 		 	
Traffic Volume (vph)	377	313	79	780	345	223	678	52	200	654
Future Volume (vph)	377	313	79	780	345	223	678	52	200	654
Lane Group Flow (vph)	419	457	88	867	383	248	961	58	222	727
Turn Type	Prot	NA	Prot	NA	Free	pm+pt	NA	Perm	NA	pm+ov
Protected Phases	5	2	1	6		7	4		8	5
Permitted Phases					Free	4		8		8
Detector Phase	5	2	1	6		7	4	8	8	5
Switch Phase										
Minimum Initial (s)	6.0	31.0	6.0	31.0		6.0	31.0	31.0	31.0	6.0
Minimum Split (s)	12.0	40.0	12.0	40.0		11.0	40.0	40.0	40.0	12.0
Total Split (s)	24.0	48.0	18.0	42.0		11.0	54.0	43.0	43.0	24.0
Total Split (%)	20.0%	40.0%	15.0%	35.0%		9.2%	45.0%	35.8%	35.8%	20.0%
Yellow Time (s)	3.0	5.0	3.0	5.0		3.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	3.0	2.0	3.0		1.0	4.0	4.0	4.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	7.0	4.0	7.0		3.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max		None	Max	Max	Max	None
v/c Ratio	0.81	0.26	0.54	0.82	0.29	0.51	0.73	0.56	0.22	0.91
Control Delay	61.6	23.0	63.8	46.7	0.6	28.1	34.0	58.5	32.1	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	23.0	63.8	46.7	0.6	28.1	34.0	58.5	32.1	40.6
Queue Length 50th (m)	48.9	22.8	20.1	101.1	0.0	38.5	97.2	11.5	20.5	126.8
Queue Length 95th (m)	66.3	32.7	36.1	126.2	0.0	58.6	121.6	#30.3	30.5	#219.6
Internal Link Dist (m)		465.7		209.4			161.3		107.0	
Turn Bay Length (m)	300.0		77.0			55.0		60.0		55.0
Base Capacity (vph)	555	1771	208	1057	1317	485	1309	104	1029	811
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.26	0.42	0.82	0.29	0.51	0.73	0.56	0.22	0.90

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 98 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Green

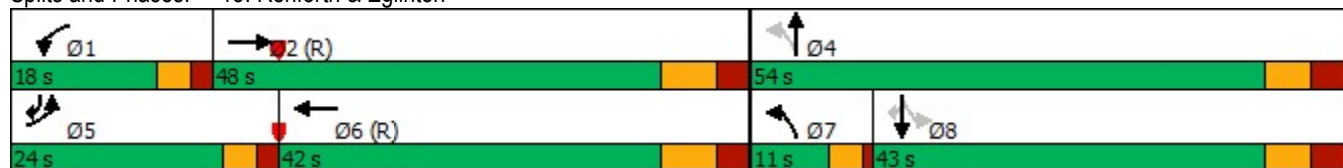
Natural Cycle: 105

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 15: Renforth & Eglinton



HCM Signalized Intersection Capacity Analysis

15: Renforth & Eglinton

Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	377	313	98	79	780	345	223	678	187	52	200	654
Future Volume (vph)	377	313	98	79	780	345	223	678	187	52	200	654
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0	3.0	3.0	7.0		7.0	7.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	0.96		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3330	4706		1785	3500	1317	1733	3289		1567	3433	1566
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.57	1.00		0.21	1.00	1.00
Satd. Flow (perm)	3330	4706		1785	3500	1317	1032	3289		348	3433	1566
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	419	348	109	88	867	383	248	753	208	58	222	727
RTOR Reduction (vph)	0	46	0	0	0	0	0	21	0	0	0	45
Lane Group Flow (vph)	419	411	0	88	867	383	248	940	0	58	222	682
Confl. Peds. (#/hr)	94					94			136	136		
Confl. Bikes (#/hr)			5									6
Heavy Vehicles (%)	4%	4%	7%	0%	2%	9%	3%	1%	2%	10%	4%	1%
Bus Blockages (#/hr)	0	0	0	0	0	16	0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6		7	4			8	5
Permitted Phases						Free	4			8		8
Actuated Green, G (s)	17.7	43.0		10.0	35.3	120.0	46.0	46.0		35.0	35.0	52.7
Effective Green, g (s)	18.7	44.0		11.0	36.3	120.0	47.0	47.0		36.0	36.0	54.7
Actuated g/C Ratio	0.16	0.37		0.09	0.30	1.00	0.39	0.39		0.30	0.30	0.46
Clearance Time (s)	5.0	8.0		5.0	8.0		4.0	8.0		8.0	8.0	5.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2		0.2	0.2	2.0
Lane Grp Cap (vph)	518	1725		163	1058	1317	450	1288		104	1029	713
v/s Ratio Prot	0.13	0.09		0.05	c0.25		0.04	c0.29			0.06	c0.15
v/s Ratio Perm						0.29	0.18			0.17		0.29
v/c Ratio	0.81	0.24		0.54	0.82	0.29	0.55	0.73		0.56	0.22	0.96
Uniform Delay, d1	48.9	26.4		52.1	38.8	0.0	27.1	31.1		35.3	31.4	31.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.6	0.3		1.7	7.1	0.6	0.8	3.7		19.8	0.5	23.2
Delay (s)	57.5	26.7		53.8	45.9	0.6	27.9	34.8		55.2	31.9	54.8
Level of Service	E	C		D	D	A	C	C		E	C	D
Approach Delay (s)		41.4			33.4			33.4			49.7	
Approach LOS		D			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			38.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				21.0		
Intersection Capacity Utilization			109.4%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
16: Eglinton & Commerce

Existing 2019 Traffic Conditions
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	29	619	147	1294	311	5	2	82	14
Future Volume (vph)	29	619	147	1294	311	5	2	82	14
Lane Group Flow (vph)	32	710	163	1438	346	0	18	91	53
Turn Type	Perm	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2	1	6			4		8
Permitted Phases	2		6		6	4		8	
Detector Phase	2	2	1	6	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	25.0	7.0	7.0	7.0	7.0
Minimum Split (s)	33.0	33.0	11.0	33.0	33.0	41.0	41.0	41.0	41.0
Total Split (s)	33.0	33.0	11.0	44.0	44.0	41.0	41.0	41.0	41.0
Total Split (%)	38.8%	38.8%	12.9%	51.8%	51.8%	48.2%	48.2%	48.2%	48.2%
Yellow Time (s)	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	3.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.20	0.28	0.31	0.61	0.30		0.05	0.32	0.14
Control Delay	23.1	14.7	9.8	14.6	2.5		12.1	26.1	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	23.1	14.7	9.8	14.6	2.5		12.1	26.1	17.0
Queue Length 50th (m)	2.2	18.7	6.0	50.8	0.0		1.1	13.8	5.8
Queue Length 95th (m)	12.5	43.1	24.9	#154.3	13.6		4.6	19.3	10.7
Internal Link Dist (m)		364.9		465.7			40.3		100.4
Turn Bay Length (m)	55.0		110.0		80.0			30.0	
Base Capacity (vph)	161	2574	535	2354	1137		615	505	675
Starvation Cap Reductn	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.20	0.28	0.30	0.61	0.30		0.03	0.18	0.08

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

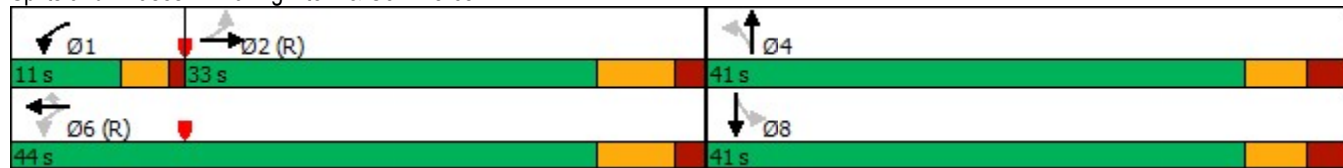
Natural Cycle: 85

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 16: Eglinton & Commerce



HCM Signalized Intersection Capacity Analysis

16: Eglinton & Commerce

Existing 2019 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	619	20	147	1294	311	5	2	9	82	14	33
Future Volume (vph)	29	619	20	147	1294	311	5	2	9	82	14	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		3.0	6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98		0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00		1.00		0.98	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.93		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1784	4811		1754	3500	1522		1578		1564	1623	
Flt Permitted	0.16	1.00		0.34	1.00	1.00		0.92		0.75	1.00	
Satd. Flow (perm)	303	4811		627	3500	1522		1480		1227	1623	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	688	22	163	1438	346	6	2	10	91	16	37
RTOR Reduction (vph)	0	3	0	0	0	124	0	8	0	0	10	0
Lane Group Flow (vph)	32	707	0	163	1438	222	0	10	0	91	43	0
Confl. Peds. (#/hr)	2		42	42		2	13		25	25		13
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	6%	0%	1%	2%	0%	0%	0%	11%	12%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6		6	4			8		
Actuated Green, G (s)	43.1	43.1		53.6	53.6	53.6		17.4		17.4	17.4	
Effective Green, g (s)	44.1	44.1		54.6	54.6	54.6		18.4		18.4	18.4	
Actuated g/C Ratio	0.52	0.52		0.64	0.64	0.64		0.22		0.22	0.22	
Clearance Time (s)	7.0	7.0		4.0	7.0	7.0		7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		2.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	157	2496		502	2248	977		320		265	351	
v/s Ratio Prot		0.15		0.03	c0.41						0.03	
v/s Ratio Perm	0.11			0.18		0.15		0.01		c0.07		
v/c Ratio	0.20	0.28		0.32	0.64	0.23		0.03		0.34	0.12	
Uniform Delay, d1	11.0	11.5		6.1	9.2	6.4		26.3		28.2	26.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	2.9	0.3		0.1	1.4	0.5		0.0		0.8	0.2	
Delay (s)	13.9	11.8		6.2	10.6	6.9		26.3		29.0	27.0	
Level of Service	B	B		A	B	A		C		C	C	
Approach Delay (s)		11.9			9.6			26.3			28.2	
Approach LOS		B			A			C			C	
Intersection Summary												
HCM 2000 Control Delay			11.3				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			90.1%				ICU Level of Service			E		
Analysis Period (min)			15									

c Critical Lane Group

Queues
1: Weston & Eglinton

Existing 2019 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	91	570	266	97	703	62	232	495	41	393
Future Volume (vph)	91	570	266	97	703	62	232	495	41	393
Lane Group Flow (vph)	96	600	280	108	740	65	244	541	43	566
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2		1	6			4		8
Permitted Phases	2		2	6		6	4		8	
Detector Phase	2	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	25.0	25.0	25.0	6.0	25.0	25.0	36.0	36.0	36.0	36.0
Minimum Split (s)	34.0	34.0	34.0	11.0	32.0	32.0	45.0	45.0	45.0	45.0
Total Split (s)	39.0	39.0	39.0	11.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	39.0%	39.0%	39.0%	11.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.47	0.55	0.45	0.34	0.50	0.11	0.85	0.40	0.15	0.41
Control Delay	35.2	29.0	6.8	18.1	20.9	4.6	54.5	20.5	19.2	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	29.0	6.8	18.1	20.9	4.6	54.5	20.5	19.2	18.4
Queue Length 50th (m)	14.5	49.1	3.0	11.5	51.9	0.0	41.5	36.6	5.0	34.1
Queue Length 95th (m)	31.1	66.1	21.6	21.3	68.1	7.2	#87.1	50.1	12.2	47.8
Internal Link Dist (m)		725.8			490.7			367.2		320.1
Turn Bay Length (m)	40.0		45.0	30.0			50.0		35.0	
Base Capacity (vph)	204	1097	618	322	1487	598	286	1354	287	1367
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	0.47	0.55	0.45	0.34	0.50	0.11	0.85	0.40	0.15	0.41

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 32 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

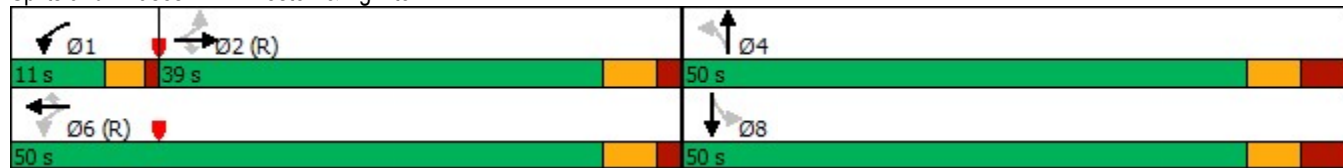
Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston & Eglinton



HCM Signalized Intersection Capacity Analysis

1: Weston & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	570	266	97	703	62	232	495	19	41	393	144
Future Volume (vph)	91	570	266	97	703	62	232	495	19	41	393	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	5.0	5.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.88	1.00	1.00		1.00	0.98	
Flpb, ped/bikes	0.96	1.00	1.00	0.99	1.00	1.00	0.98	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.96	
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)	1534	3216	1317	1643	3305	1251	1601	3145		1544	3091	
Flt Permitted	0.37	1.00	1.00	0.29	1.00	1.00	0.40	1.00		0.41	1.00	
Satd. Flow (perm)	599	3216	1317	497	3305	1251	667	3145		669	3091	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	96	600	280	108	740	65	244	521	20	43	414	152
RTOR Reduction (vph)	0	0	169	0	0	36	0	3	0	0	38	0
Lane Group Flow (vph)	96	600	111	108	740	29	244	538	0	43	528	0
Confl. Peds. (#/hr)	87		62	62		87	62		84	84		62
Confl. Bikes (#/hr)						2			6			3
Heavy Vehicles (%)	12%	11%	11%	8%	8%	13%	9%	13%	0%	12%	10%	6%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	33.1	33.1	33.1	44.0	44.0	44.0	42.0	42.0		42.0	42.0	
Effective Green, g (s)	34.1	34.1	34.1	45.0	45.0	45.0	43.0	43.0		43.0	43.0	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45	0.45	0.43	0.43		0.43	0.43	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	8.0	8.0		8.0	8.0	
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)	204	1096	449	314	1487	562	286	1352		287	1329	
v/s Ratio Prot		c0.19		0.03	c0.22			0.17			0.17	
v/s Ratio Perm	0.16		0.08	0.13		0.02	c0.37			0.06		
v/c Ratio	0.47	0.55	0.25	0.34	0.50	0.05	0.85	0.40		0.15	0.40	
Uniform Delay, d1	25.9	26.7	23.7	17.0	19.5	15.5	25.7	19.6		17.4	19.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.6	2.0	1.3	0.7	1.2	0.2	26.2	0.9		1.1	0.9	
Delay (s)	33.5	28.7	25.0	17.7	20.7	15.7	51.8	20.5		18.5	20.5	
Level of Service	C	C	C	B	C	B	D	C		B	C	
Approach Delay (s)		28.1			20.0			30.2			20.3	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			24.9									
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			100.0									
Intersection Capacity Utilization			121.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues 2: Jane & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	191	946	195	91	864	16	208	770	28	789	192
Future Volume (vph)	191	946	195	91	864	16	208	770	28	789	192
Lane Group Flow (vph)	212	996	205	101	909	17	231	895	29	831	202
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	7	4	8	8	8
Switch Phase											
Minimum Initial (s)	6.0	31.0	31.0	6.0	31.0	31.0	6.0	31.0	31.0	31.0	31.0
Minimum Split (s)	11.0	39.0	39.0	11.0	39.0	39.0	11.0	40.0	40.0	40.0	40.0
Total Split (s)	11.0	40.0	40.0	11.0	40.0	40.0	15.0	55.0	40.0	40.0	40.0
Total Split (%)	10.4%	37.7%	37.7%	10.4%	37.7%	37.7%	14.2%	51.9%	37.7%	37.7%	37.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max
v/c Ratio	1.00	0.89	0.38	0.49	0.83	0.03	0.77	0.58	0.20	0.76	0.34
Control Delay	87.0	45.5	12.4	25.5	40.9	0.1	34.8	23.1	31.4	38.3	5.7
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	87.0	45.5	12.4	25.5	40.9	0.1	34.8	23.1	31.4	38.3	5.7
Queue Length 50th (m)	~26.7	102.5	10.4	11.8	90.6	0.0	27.0	69.3	4.4	81.4	0.2
Queue Length 95th (m)	#73.9	#139.0	28.8	21.6	115.3	0.0	#55.8	88.5	12.3	104.1	15.7
Internal Link Dist (m)		213.3			725.8			326.6		228.7	
Turn Bay Length (m)	75.0		25.0	70.0		25.0	75.0		80.0		65.0
Base Capacity (vph)	211	1119	545	209	1101	538	307	1536	144	1092	590
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	1.00	0.89	0.38	0.48	0.83	0.03	0.75	0.58	0.20	0.76	0.34

Intersection Summary

Cycle Length: 106

Actuated Cycle Length: 106

Offset: 51 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

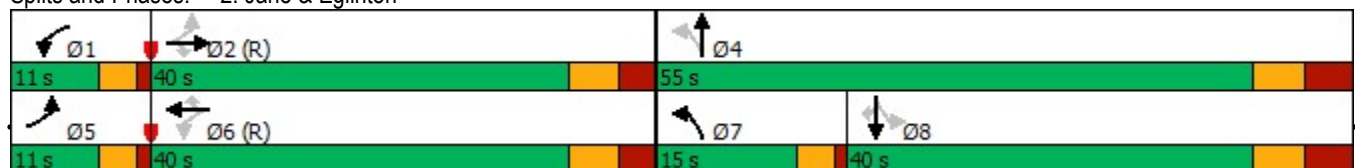
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: Jane & Eglinton



04/20/2020

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HCM Signalized Intersection Capacity Analysis

2: Jane & Eglinton

Existing 2019 Traffic Conditions

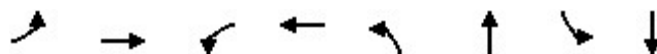
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	191	946	195	91	864	16	208	770	80	28	789	192
Future Volume (vph)	191	946	195	91	864	16	208	770	80	28	789	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		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)	1732	3466	1409	1766	3433	1396	1747	3376		1367	3466	1435
Flt Permitted	0.13	1.00	1.00	0.12	1.00	1.00	0.16	1.00		0.32	1.00	1.00
Satd. Flow (perm)	233	3466	1409	219	3433	1396	293	3376		458	3466	1435
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	996	205	101	909	17	231	811	84	29	831	202
RTOR Reduction (vph)	0	0	91	0	0	12	0	7	0	0	0	138
Lane Group Flow (vph)	212	996	114	101	909	5	231	888	0	29	831	64
Confl. Peds. (#/hr)	50		45	45		50	62		41	41		62
Heavy Vehicles (%)	3%	3%	3%	1%	4%	0%	2%	4%	1%	29%	3%	3%
Bus Blockages (#/hr)	0	0	9	0	0	17	0	0	0	0	0	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	40.2	33.2	33.2	39.8	33.0	33.0	47.0	47.0		32.4	32.4	32.4
Effective Green, g (s)	42.2	34.2	34.2	41.8	34.0	34.0	48.0	48.0		33.4	33.4	33.4
Actuated g/C Ratio	0.40	0.32	0.32	0.39	0.32	0.32	0.45	0.45		0.32	0.32	0.32
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	8.0		8.0	8.0	8.0
Vehicle Extension (s)	2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	205	1118	454	200	1101	447	291	1528		144	1092	452
v/s Ratio Prot	c0.08	0.29		0.04	0.26		c0.09	0.26			0.24	
v/s Ratio Perm	c0.33		0.08	0.16		0.00	c0.27			0.06		0.04
v/c Ratio	1.03	0.89	0.25	0.51	0.83	0.01	0.79	0.58		0.20	0.76	0.14
Uniform Delay, d1	26.1	34.1	26.5	23.6	33.3	24.5	21.1	21.5		26.5	32.7	26.0
Progression Factor	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	72.1	10.8	1.3	0.7	7.1	0.0	13.0	1.6		3.1	5.0	0.7
Delay (s)	98.2	44.9	27.8	24.3	40.4	24.6	34.0	23.2		29.7	37.7	26.7
Level of Service	F	D	C	C	D	C	C	C		C	D	C
Approach Delay (s)		50.4			38.5			25.4			35.4	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			38.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			106.0				Sum of lost time (s)			19.0		
Intersection Capacity Utilization			108.1%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

3: Eglinton & Emmett

Existing 2019 Traffic Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	163	1294	9	1287	5	1	26	0
Future Volume (vph)	163	1294	9	1287	5	1	26	0
Lane Group Flow (vph)	172	1377	9	1426	0	15	0	158
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	22.0	22.0	22.0	22.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0
Total Split (s)	72.0	72.0	72.0	72.0	28.0	28.0	28.0	28.0
Total Split (%)	72.0%	72.0%	72.0%	72.0%	28.0%	28.0%	28.0%	28.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.78	0.55	0.04	0.57		0.07		0.63
Control Delay	36.7	6.1	4.2	6.2		23.9		33.5
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	36.7	6.1	4.2	6.2		23.9		33.5
Queue Length 50th (m)	15.0	43.7	0.3	46.0		1.1		15.9
Queue Length 95th (m)	#68.7	78.4	1.9	82.3		6.3		33.9
Internal Link Dist (m)		241.5		156.2		47.3		107.6
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	221	2497	245	2515		349		391
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	0.78	0.55	0.04	0.57		0.04		0.40

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 28 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

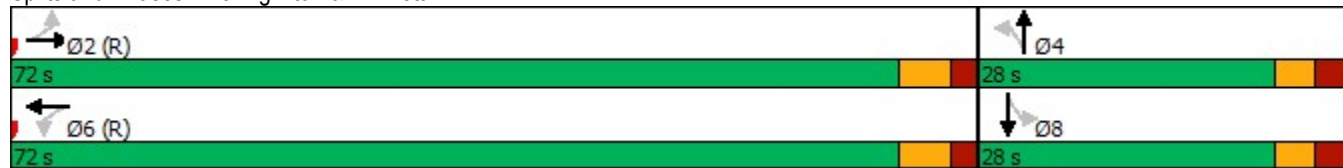
Natural Cycle: 100

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Eglinton & Emmett



HCM Signalized Intersection Capacity Analysis

3: Eglinton & Emmett

Existing 2019 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	1294	14	9	1287	67	5	1	9	26	0	124
Future Volume (vph)	163	1294	14	9	1287	67	5	1	9	26	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1713	3242		1784	3260			1678			1544	
Flt Permitted	0.16	1.00		0.17	1.00			0.87			0.94	
Satd. Flow (perm)	287	3242		319	3260			1491			1464	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	172	1362	15	9	1355	71	5	1	9	27	0	131
RTOR Reduction (vph)	0	0	0	0	3	0	0	8	0	0	62	0
Lane Group Flow (vph)	172	1377	0	9	1423	0	0	7	0	0	96	0
Confl. Peds. (#/hr)	7		2	2		7	2		4	4		2
Confl. Bikes (#/hr)			4			5			1			
Heavy Vehicles (%)	4%	10%	0%	0%	8%	18%	0%	0%	0%	19%	0%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	76.1	76.1		76.1	76.1			11.9			11.9	
Effective Green, g (s)	77.1	77.1		77.1	77.1			12.9			12.9	
Actuated g/C Ratio	0.77	0.77		0.77	0.77			0.13			0.13	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0			3.0	
Lane Grp Cap (vph)	221	2499		245	2513			192			188	
v/s Ratio Prot		0.42			0.44							
v/s Ratio Perm	c0.60			0.03				0.00			c0.07	
v/c Ratio	0.78	0.55		0.04	0.57			0.04			0.51	
Uniform Delay, d1	6.6	4.6		2.7	4.7			38.1			40.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	23.2	0.9		0.3	0.9			0.1			2.3	
Delay (s)	29.8	5.4		3.0	5.6			38.2			43.0	
Level of Service	C	A		A	A			D			D	
Approach Delay (s)		8.1			5.6			38.2			43.0	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			8.9			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			10.0			
Intersection Capacity Utilization			79.4%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

4: Scarlett & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1030	266	144	1008	220	231	490	165	250	671	64
Future Volume (vph)	35	1030	266	144	1008	220	231	490	165	250	671	64
Lane Group Flow (vph)	37	1084	280	160	1061	232	257	516	174	278	706	67
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	34.0	34.0	34.0	6.0	34.0	34.0	6.0	39.0	39.0	6.0	39.0	39.0
Minimum Split (s)	41.0	41.0	41.0	11.0	41.0	41.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (s)	44.0	44.0	44.0	11.0	55.0	55.0	13.0	50.0	50.0	11.0	48.0	48.0
Total Split (%)	37.9%	37.9%	37.9%	9.5%	47.4%	47.4%	11.2%	43.1%	43.1%	9.5%	41.4%	41.4%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	4.0	4.0	1.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.34	0.93	0.49	0.84	0.70	0.32	0.75	0.40	0.27	0.66	0.57	0.12
Control Delay	39.6	51.9	20.0	58.0	30.1	5.5	33.6	28.1	8.2	28.0	32.6	2.0
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	39.6	51.9	20.0	58.0	30.1	5.5	33.6	28.1	8.2	28.0	32.6	2.0
Queue Length 50th (m)	6.3	124.4	27.4	21.6	101.5	3.9	33.0	45.1	5.7	36.1	67.8	0.0
Queue Length 95th (m)	17.0	#165.4	52.7	#56.2	125.4	18.7	#56.6	59.6	20.5	54.5	86.6	3.7
Internal Link Dist (m)		1148.9			281.3			406.4			326.9	
Turn Bay Length (m)	80.0		20.0	70.0		60.0	75.0		25.0	60.0		25.0
Base Capacity (vph)	109	1165	572	190	1508	730	341	1297	635	423	1237	581
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	0.34	0.93	0.49	0.84	0.70	0.32	0.75	0.40	0.27	0.66	0.57	0.12

Intersection Summary

Cycle Length: 116

Actuated Cycle Length: 116

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

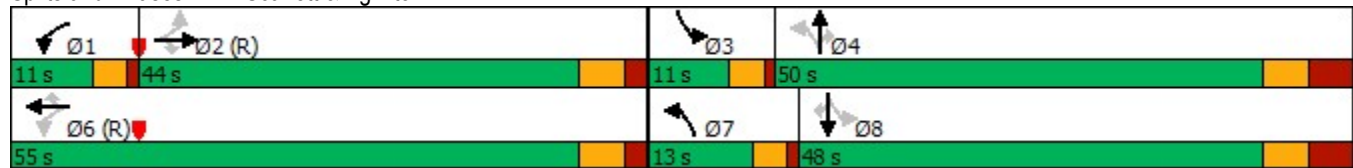
Natural Cycle: 115

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Scarlett & Eglinton



HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

4: Scarlett & Eglinton

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	35	1030	266	144	1008	220	231	490	165	250	671	64
Future Volume (vph)	35	1030	266	144	1008	220	231	490	165	250	671	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	7.0	7.0	3.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.95
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	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)	1768	3466	1461	1785	3500	1429	1763	3500	1484	1778	3500	1457
Flt Permitted	0.18	1.00	1.00	0.10	1.00	1.00	0.25	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	326	3466	1461	179	3500	1429	471	3500	1484	780	3500	1457
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95
Adj. Flow (vph)	37	1084	280	160	1061	232	257	516	174	278	706	67
RTOR Reduction (vph)	0	0	81	0	0	115	0	0	85	0	0	43
Lane Group Flow (vph)	37	1084	199	160	1061	117	257	516	89	278	706	24
Confl. Peds. (#/hr)	50		13	13		50	43		25	25		43
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	0%	3%	1%	0%	2%	1%	1%	2%	1%	0%	2%	0%
Bus Blockages (#/hr)	0	0	13	0	0	9	0	0	7	0	0	10
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	38.0	38.0	38.0	49.0	49.0	49.0	51.0	42.0	42.0	47.0	40.0	40.0
Effective Green, g (s)	39.0	39.0	39.0	50.0	50.0	50.0	53.0	43.0	43.0	49.0	41.0	41.0
Actuated g/C Ratio	0.34	0.34	0.34	0.43	0.43	0.43	0.46	0.37	0.37	0.42	0.35	0.35
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	0.2	0.2	0.2	2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2	0.2
Lane Grp Cap (vph)	109	1165	491	187	1508	615	326	1297	550	398	1237	514
v/s Ratio Prot		c0.31		c0.06	0.30		c0.07	0.15		0.05	0.20	
v/s Ratio Perm	0.11		0.14	0.31		0.08	c0.29		0.06	0.25		0.02
v/c Ratio	0.34	0.93	0.41	0.86	0.70	0.19	0.79	0.40	0.16	0.70	0.57	0.05
Uniform Delay, d1	28.8	37.2	29.6	26.6	26.9	20.5	22.3	26.9	24.4	24.9	30.4	24.6
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	8.3	14.2	2.5	28.8	2.8	0.7	11.1	0.9	0.6	4.3	1.9	0.2
Delay (s)	37.1	51.4	32.1	55.4	29.7	21.1	33.4	27.9	25.1	29.2	32.3	24.8
Level of Service	D	D	C	E	C	C	C	C	C	C	C	C
Approach Delay (s)		47.2			31.2			28.8			31.0	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			35.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			116.0			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			120.5%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

5: Royal York & Eglinton

Existing 2019 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	1256	148	1087	88	108	616	87	40	616
Future Volume (vph)	8	1256	148	1087	88	108	616	87	40	616
Lane Group Flow (vph)	9	1448	164	1144	93	120	648	92	44	742
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2	1	6		7	4		3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	6.0	34.0	6.0	34.0	34.0	6.0	36.0	36.0	6.0	36.0
Minimum Split (s)	11.0	40.0	11.0	42.0	42.0	11.0	43.0	43.0	11.0	43.0
Total Split (s)	11.0	40.0	26.0	55.0	55.0	11.0	43.0	43.0	11.0	43.0
Total Split (%)	9.2%	33.3%	21.7%	45.8%	45.8%	9.2%	35.8%	35.8%	9.2%	35.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
v/c Ratio	0.06	1.10	0.69	0.68	0.12	0.51	0.56	0.16	0.15	0.69
Control Delay	21.4	93.9	37.9	27.1	3.1	29.6	36.1	1.5	21.8	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	93.9	37.9	27.1	3.1	29.6	36.1	1.5	21.8	39.7
Queue Length 50th (m)	1.3	~208.7	21.0	102.5	0.0	17.2	67.3	0.0	6.0	79.2
Queue Length 95th (m)	m2.6	#274.1	42.9	148.7	7.4	29.6	87.2	2.5	13.2	100.4
Internal Link Dist (m)		477.1		1148.9			96.6			124.1
Turn Bay Length (m)	70.0		65.0		30.0	60.0		20.0	80.0	
Base Capacity (vph)	156	1313	376	1678	784	237	1151	582	296	1075
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	0.06	1.10	0.44	0.68	0.12	0.51	0.56	0.16	0.15	0.69

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 43 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

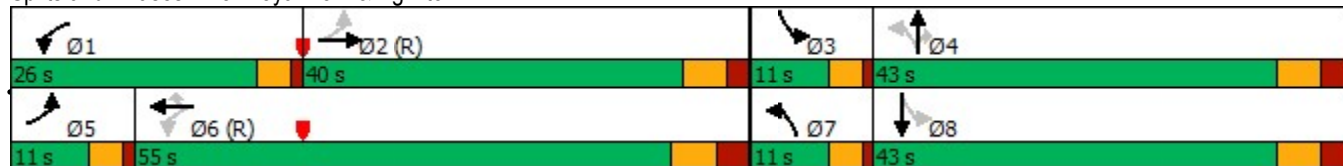
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 5: Royal York & Eglinton



HCM Signalized Intersection Capacity Analysis

5: Royal York & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1256	120	148	1087	88	108	616	87	40	616	89
Future Volume (vph)	8	1256	120	148	1087	88	108	616	87	40	616	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1190	3414		1700	3466	1503	1732	3500	1476	1781	3457	
Flt Permitted	0.15	1.00		0.08	1.00	1.00	0.20	1.00	1.00	0.29	1.00	
Satd. Flow (perm)	192	3414		152	3466	1503	359	3500	1476	537	3457	
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95
Adj. Flow (vph)	9	1322	126	164	1144	93	120	648	92	44	648	94
RTOR Reduction (vph)	0	5	0	0	0	51	0	0	62	0	10	0
Lane Group Flow (vph)	9	1443	0	164	1144	42	120	648	30	44	732	0
Confl. Peds. (#/hr)	10		19	19		10	11		23	23		11
Confl. Bikes (#/hr)									2			1
Heavy Vehicles (%)	50%	3%	2%	5%	3%	1%	3%	2%	1%	0%	1%	1%
Bus Blockages (#/hr)	0	0	5	0	0	7	0	0	8	0	0	5
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	45.4	44.2		58.3	53.1	53.1	45.4	38.5	38.5	42.0	36.8	
Effective Green, g (s)	47.4	45.2		59.3	54.1	54.1	47.4	39.5	39.5	44.0	37.8	
Actuated g/C Ratio	0.39	0.38		0.49	0.45	0.45	0.39	0.33	0.33	0.37	0.31	
Clearance Time (s)	4.0	6.0		4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	
Vehicle Extension (s)	2.0	0.2		2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2	
Lane Grp Cap (vph)	94	1285		231	1562	677	232	1152	485	261	1088	
v/s Ratio Prot	0.00	c0.42		c0.07	0.33		c0.03	0.19		0.01	c0.21	
v/s Ratio Perm	0.04			0.28		0.03	0.17		0.02	0.05		
v/c Ratio	0.10	1.12		0.71	0.73	0.06	0.52	0.56	0.06	0.17	0.67	
Uniform Delay, d1	23.4	37.4		27.5	27.0	18.6	25.3	33.1	27.6	25.2	35.7	
Progression Factor	1.43	1.05		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	64.9		7.9	3.1	0.2	0.8	2.0	0.2	0.1	3.3	
Delay (s)	33.6	104.3		35.5	30.1	18.8	26.1	35.1	27.8	25.3	39.1	
Level of Service	C	F		D	C	B	C	D	C	C	D	
Approach Delay (s)		103.9			30.0			33.1			38.3	
Approach LOS		F			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			55.9			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			98.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: Eden Valley/Russell & Eglinton

Existing 2019 Traffic Conditions
PM Peak Hour

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	30	1477	19	22	1383	8	12	15	11
Future Volume (vph)	30	1477	19	22	1383	8	12	15	11
Lane Group Flow (vph)	32	1555	20	23	1479	0	42	0	66
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2			6		4		8
Permitted Phases	2		2	6		4		8	
Detector Phase	2	2	2	6	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	21.0	21.0	21.0	21.0	21.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	33.0	33.0	33.0	33.0
Total Split (s)	86.0	86.0	86.0	86.0	86.0	34.0	34.0	34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%	71.7%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.12	0.52	0.01	0.10	0.50		0.29		0.41
Control Delay	6.7	9.5	2.7	1.5	4.6		35.9		33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	6.7	9.5	2.7	1.5	4.6		35.9		33.9
Queue Length 50th (m)	2.4	108.0	0.4	0.2	126.1		4.8		6.4
Queue Length 95th (m)	m4.1	m109.7	m0.9	m0.3	5.7		15.4		19.7
Internal Link Dist (m)		462.1			477.1		108.4		87.8
Turn Bay Length (m)	40.0		20.0	40.0					
Base Capacity (vph)	261	3012	1356	239	2975		399		414
Starvation Cap Reductn	0	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0		0
Reduced v/c Ratio	0.12	0.52	0.01	0.10	0.50		0.11		0.16

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

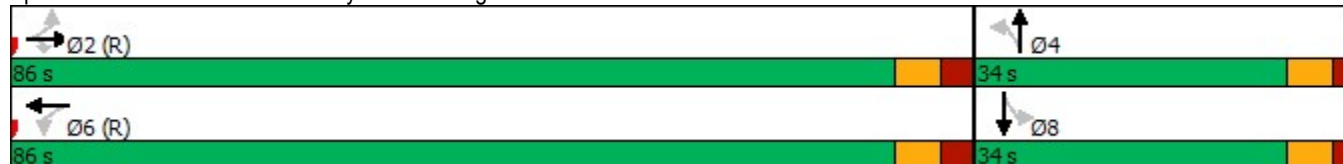
Offset: 74 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

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

Splits and Phases: 6: Eden valley/Russell & Eglinton



HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

6: Eden Valley/Russell & Eglinton

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	1477	19	22	1383	22	8	12	20	15	11	36
Future Volume (vph)	30	1477	19	22	1383	22	8	12	20	15	11	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99			0.99	
Flpb, ped/bikes	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			0.93			0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1777	3500	1572	1785	3456			1723			1696	
Flt Permitted	0.16	1.00	1.00	0.15	1.00			0.91			0.93	
Satd. Flow (perm)	303	3500	1572	278	3456			1587			1598	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	1555	20	23	1456	23	8	13	21	16	12	38
RTOR Reduction (vph)	0	0	3	0	0	0	0	20	0	0	35	0
Lane Group Flow (vph)	32	1555	17	23	1479	0	0	22	0	0	31	0
Confl. Peds. (#/hr)	16					16	3		1	1		3
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	0	9	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	99.9	99.9	99.9	99.9	99.9			7.1			7.1	
Effective Green, g (s)	100.9	100.9	100.9	100.9	100.9			8.1			8.1	
Actuated g/C Ratio	0.84	0.84	0.84	0.84	0.84			0.07			0.07	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0			6.0			6.0	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2			3.0			3.0	
Lane Grp Cap (vph)	254	2942	1321	233	2905			107			107	
v/s Ratio Prot		c0.44			0.43							
v/s Ratio Perm	0.11		0.01	0.08				0.01			c0.02	
v/c Ratio	0.13	0.53	0.01	0.10	0.51			0.21			0.29	
Uniform Delay, d1	1.7	2.7	1.5	1.7	2.7			52.9			53.2	
Progression Factor	2.58	3.10	4.37	0.34	1.44			1.00			1.00	
Incremental Delay, d2	0.4	0.3	0.0	0.7	0.5			1.0			1.5	
Delay (s)	4.8	8.8	6.7	1.2	4.4			53.9			54.7	
Level of Service	A	A	A	A	A			D			D	
Approach Delay (s)		8.7			4.3			53.9			54.7	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			8.2			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			11.0			
Intersection Capacity Utilization			57.3%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

7: Islington & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	228	1351	133	1280	65	995	163	70	826	84
Future Volume (vph)	228	1351	133	1280	65	995	163	70	826	84
Lane Group Flow (vph)	253	1488	148	1407	72	1047	172	78	869	88
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6	7	4		3	8	
Permitted Phases	2		6		4		4	8		8
Detector Phase	5	2	1	6	7	4	4	3	8	8
Switch Phase										
Minimum Initial (s)	6.0	30.0	6.0	30.0	6.0	27.0	27.0	6.0	27.0	27.0
Minimum Split (s)	11.0	37.0	11.0	37.0	11.0	34.0	34.0	11.0	34.0	34.0
Total Split (s)	11.0	56.0	11.0	56.0	11.0	42.0	42.0	11.0	42.0	42.0
Total Split (%)	9.2%	46.7%	9.2%	46.7%	9.2%	35.0%	35.0%	9.2%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	1.40	1.01	0.82	0.97	0.37	0.91	0.31	0.44	0.76	0.16
Control Delay	233.8	50.6	59.1	42.6	26.8	51.3	15.4	29.3	41.9	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	233.8	50.6	59.1	42.6	26.8	51.3	15.4	29.3	41.9	5.3
Queue Length 50th (m)	~61.4	~185.5	13.9	176.1	10.1	127.3	12.3	11.0	98.9	0.0
Queue Length 95th (m)	#118.0	#235.8	#51.5	#223.0	19.5	#170.2	30.2	20.9	123.4	9.5
Internal Link Dist (m)		447.8		462.1		193.0			204.2	
Turn Bay Length (m)	65.0		70.0		60.0		20.0	60.0		25.0
Base Capacity (vph)	181	1478	181	1450	201	1156	550	182	1147	538
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	1.40	1.01	0.82	0.97	0.36	0.91	0.31	0.43	0.76	0.16

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 102 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

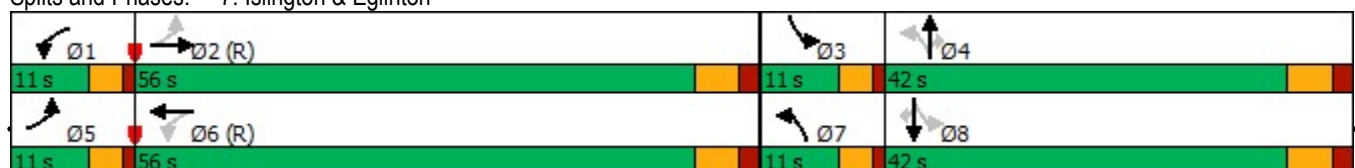
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 7: Islington & Eglinton



04/20/2020

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HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

7: Islington & Eglinton

PM Peak Hour

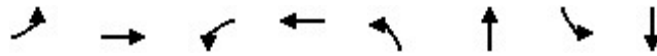
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	1351	63	133	1280	57	65	995	163	70	826	84
Future Volume (vph)	228	1351	63	133	1280	57	65	995	163	70	826	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1750	3475		1750	3404		1749	3535	1477	1785	3500	1437
Flt Permitted	0.08	1.00		0.08	1.00		0.14	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	147	3475		147	3404		257	3535	1477	191	3500	1437
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95
Adj. Flow (vph)	253	1422	66	148	1347	60	72	1047	172	78	869	88
RTOR Reduction (vph)	0	3	0	0	3	0	0	0	67	0	0	59
Lane Group Flow (vph)	253	1485	0	148	1404	0	72	1047	105	78	869	29
Confl. Peds. (#/hr)	45		18	18		45	18		25	25		36
Heavy Vehicles (%)	2%	2%	0%	2%	4%	2%	2%	1%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	4	0	0	9	0	0	8	0	0	11
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	56.2	49.2		56.2	49.2		43.8	38.3	38.3	43.8	38.3	38.3
Effective Green, g (s)	58.2	50.2		58.2	50.2		45.8	39.3	39.3	45.8	39.3	39.3
Actuated g/C Ratio	0.49	0.42		0.49	0.42		0.38	0.33	0.33	0.38	0.33	0.33
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2	0.2	2.0	3.0	3.0
Lane Grp Cap (vph)	178	1453		178	1424		178	1157	483	159	1146	470
v/s Ratio Prot	c0.09	0.43		0.06	0.41		0.02	c0.30		c0.03	0.25	
v/s Ratio Perm	c0.59			0.35			0.13		0.07	0.16		0.02
v/c Ratio	1.42	1.02		0.83	0.99		0.40	0.90	0.22	0.49	0.76	0.06
Uniform Delay, d1	32.2	34.9		27.3	34.6		26.3	38.6	29.2	28.3	36.1	27.7
Progression Factor	1.46	0.79		1.33	0.75		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	213.7	26.9		23.7	19.5		0.5	11.6	1.0	0.9	4.7	0.3
Delay (s)	260.9	54.5		60.0	45.6		26.9	50.2	30.2	29.1	40.8	27.9
Level of Service	F	D		E	D		C	D	C	C	D	C
Approach Delay (s)		84.5			47.0			46.2			38.8	
Approach LOS		F			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			56.9			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.17									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			97.5%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

8: Bermersyde/Wincott & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	57	1556	16	1508	6	83	70	107
Future Volume (vph)	57	1556	16	1508	6	83	70	107
Lane Group Flow (vph)	60	1652	17	1654	0	99	74	168
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	24.0	24.0	24.0	24.0	7.0	7.0	7.0	7.0
Minimum Split (s)	31.0	31.0	31.0	31.0	35.0	35.0	35.0	35.0
Total Split (s)	85.0	85.0	85.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.39	0.63	0.11	0.64		0.33	0.38	0.56
Control Delay	17.1	9.8	14.7	18.5		44.0	48.0	46.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	17.1	9.8	14.7	18.5		44.0	48.0	46.6
Queue Length 50th (m)	3.9	74.9	2.0	118.4		20.9	16.2	33.7
Queue Length 95th (m)	19.0	138.4	m3.1	m133.4		33.4	28.0	50.3
Internal Link Dist (m)		464.9		447.8		109.2		108.2
Turn Bay Length (m)	40.0		40.0				15.0	
Base Capacity (vph)	153	2611	154	2574		441	292	441
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.39	0.63	0.11	0.64		0.22	0.25	0.38

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

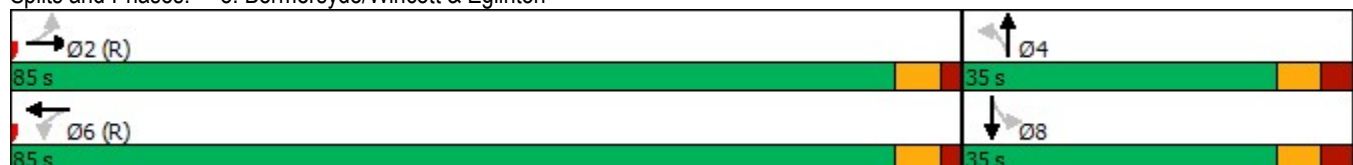
Offset: 73 (61%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Splits and Phases: 8: Bermersyde/Wincott & Eglinton



HCM Signalized Intersection Capacity Analysis

Existing 2019 Traffic Conditions

8: Bermersyde/Wincott & Eglinton

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1556	13	16	1508	64	6	83	6	70	107	52
Future Volume (vph)	57	1556	13	16	1508	64	6	83	6	70	107	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99			0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1784	3495		1784	3445			1854		1772	1769	
Flt Permitted	0.11	1.00		0.11	1.00			0.98		0.65	1.00	
Satd. Flow (perm)	205	3495		206	3445			1817		1212	1769	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	1638	14	17	1587	67	6	87	6	74	113	55
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	16	0
Lane Group Flow (vph)	60	1652	0	17	1652	0	0	96	0	74	152	0
Confl. Peds. (#/hr)	3		5	5		3	14		7	7		14
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	88.6	88.6		88.6	88.6			18.4		18.4	18.4	
Effective Green, g (s)	89.6	89.6		89.6	89.6			19.4		19.4	19.4	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.16		0.16	0.16	
Clearance Time (s)	6.0	6.0		6.0	6.0			7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0		3.0	3.0	
Lane Grp Cap (vph)	153	2609		153	2572			293		195	285	
v/s Ratio Prot		0.47			c0.48						c0.09	
v/s Ratio Perm	0.29			0.08				0.05		0.06		
v/c Ratio	0.39	0.63		0.11	0.64			0.33		0.38	0.53	
Uniform Delay, d1	5.4	7.3		4.2	7.4			44.5		44.9	46.1	
Progression Factor	1.00	1.00		2.04	2.03			1.00		1.00	1.00	
Incremental Delay, d2	7.4	1.2		0.8	0.7			0.7		1.2	1.9	
Delay (s)	12.8	8.5		9.4	15.7			45.2		46.2	48.1	
Level of Service	B	A		A	B			D		D	D	
Approach Delay (s)		8.6			15.7			45.2			47.5	
Approach LOS		A			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			15.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				11.0		
Intersection Capacity Utilization			71.5%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
9: Kipling & Eglinton

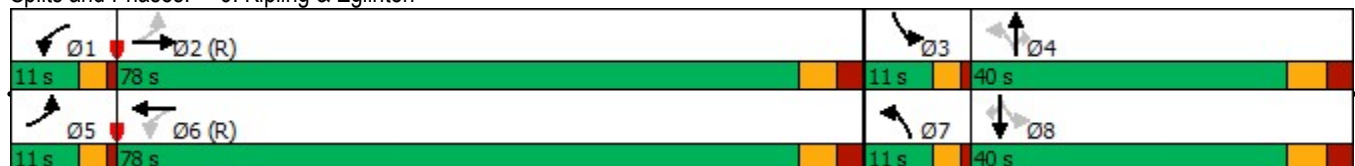
Existing 2019 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	189	1550	129	1544	126	740	133	58	522	57
Future Volume (vph)	189	1550	129	1544	126	740	133	58	522	57
Lane Group Flow (vph)	210	1721	143	1699	140	779	140	64	549	60
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6	7	4		3	8	
Permitted Phases	2		6		4		4	8		8
Detector Phase	5	2	1	6	7	4	4	3	8	8
Switch Phase										
Minimum Initial (s)	6.0	33.0	6.0	33.0	6.0	29.0	29.0	6.0	29.0	29.0
Minimum Split (s)	11.0	41.0	11.0	41.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	11.0	78.0	11.0	78.0	11.0	40.0	40.0	11.0	40.0	40.0
Total Split (%)	7.9%	55.7%	7.9%	55.7%	7.9%	28.6%	28.6%	7.9%	28.6%	28.6%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	3.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	1.37	0.97	0.93	0.97	0.63	0.88	0.34	0.44	0.67	0.15
Control Delay	224.9	24.0	88.0	47.7	48.0	62.4	18.3	41.0	52.5	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	224.9	24.0	88.0	47.7	48.0	62.4	18.3	41.0	52.5	3.0
Queue Length 50th (m)	~59.6	237.2	23.9	232.1	27.7	112.0	10.1	12.1	72.7	0.0
Queue Length 95th (m)	m#72.0	#290.3	#66.1	#289.9	44.5	#149.4	29.0	23.1	92.7	4.1
Internal Link Dist (m)		524.4		464.9		192.6			166.1	
Turn Bay Length (m)	75.0		75.0		65.0		25.0	65.0		25.0
Base Capacity (vph)	153	1767	153	1759	222	888	416	150	825	390
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	1.37	0.97	0.93	0.97	0.63	0.88	0.34	0.43	0.67	0.15

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Kipling & Eglinton



HCM Signalized Intersection Capacity Analysis

9: Kipling & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	1550	85	129	1544	70	126	740	133	58	522	57
Future Volume (vph)	189	1550	85	129	1544	70	126	740	133	58	522	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.90
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3433		1733	3419		1739	3433	1341	1667	3400	1313
Flt Permitted	0.06	1.00		0.06	1.00		0.26	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	102	3433		102	3419		467	3433	1341	208	3400	1313
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95
Adj. Flow (vph)	210	1632	89	143	1625	74	140	779	140	64	549	60
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	70	0	0	45
Lane Group Flow (vph)	210	1718	0	143	1697	0	140	779	70	64	549	15
Confl. Peds. (#/hr)	82		20	20		82	58		40	40		58
Confl. Bikes (#/hr)			16			25						3
Heavy Vehicles (%)	3%	3%	2%	3%	3%	7%	2%	4%	2%	7%	5%	2%
Bus Blockages (#/hr)	0	0	11	0	0	9	0	0	20	0	0	18
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	77.2	70.2		77.2	70.2		42.2	35.2	35.2	39.4	33.8	33.8
Effective Green, g (s)	79.2	71.2		79.2	71.2		44.2	36.2	36.2	41.4	34.8	34.8
Actuated g/C Ratio	0.57	0.51		0.57	0.51		0.32	0.26	0.26	0.30	0.25	0.25
Clearance Time (s)	4.0	7.0		4.0	7.0		4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2	0.2	2.0	3.0	3.0
Lane Grp Cap (vph)	150	1745		150	1738		220	887	346	130	845	326
v/s Ratio Prot	c0.08	0.50		0.05	0.50		c0.04	c0.23		0.02	0.16	
v/s Ratio Perm	c0.70			0.48			0.16		0.05	0.12		0.01
v/c Ratio	1.40	0.98		0.95	0.98		0.64	0.88	0.20	0.49	0.65	0.05
Uniform Delay, d1	41.8	33.9		40.8	33.6		37.3	49.8	40.6	38.3	47.1	40.0
Progression Factor	1.81	0.42		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	196.0	10.7		58.7	16.6		4.4	12.0	1.3	1.1	3.9	0.3
Delay (s)	271.9	24.9		99.6	50.2		41.7	61.8	41.9	39.3	51.0	40.2
Level of Service	F	C		F	D		D	E	D	D	D	D
Approach Delay (s)		51.8			54.0			56.5			48.9	
Approach LOS		D			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			53.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			103.4%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
10: Lloyd Manor/Widdicombe Hill & Eglinton

Existing 2019 Traffic Conditions
PM Peak Hour

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	116	1856	149	112	1426	118	139	8	114
Future Volume (vph)	116	1856	149	112	1426	118	139	8	114
Lane Group Flow (vph)	122	1954	157	124	1518	124	246	8	187
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases		2		1	6		4		8
Permitted Phases	2		2	6		4		8	
Detector Phase	2	2	2	1	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	23.0	23.0	23.0	6.0	23.0	32.0	32.0	32.0	32.0
Minimum Split (s)	31.0	31.0	31.0	11.0	31.0	40.0	40.0	40.0	40.0
Total Split (s)	89.0	89.0	89.0	11.0	100.0	40.0	40.0	40.0	40.0
Total Split (%)	63.6%	63.6%	63.6%	7.9%	71.4%	28.6%	28.6%	28.6%	28.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.84	0.92	0.17	0.79	0.64	0.46	0.57	0.05	0.23
Control Delay	56.3	53.5	20.1	40.5	32.4	52.4	48.8	42.4	32.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	53.5	20.1	40.5	32.4	52.4	48.8	42.4	32.9
Queue Length 50th (m)	33.2	281.5	28.6	24.1	199.4	29.7	55.0	1.7	16.4
Queue Length 95th (m)	m25.6	m209.3	m19.3	m25.9	m206.4	50.0	83.2	6.4	27.0
Internal Link Dist (m)		416.9			524.4		91.1		85.3
Turn Bay Length (m)	40.0		50.0	45.0		30.0		50.0	
Base Capacity (vph)	146	2121	928	157	2366	276	439	182	826
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.92	0.17	0.79	0.64	0.45	0.56	0.04	0.23

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

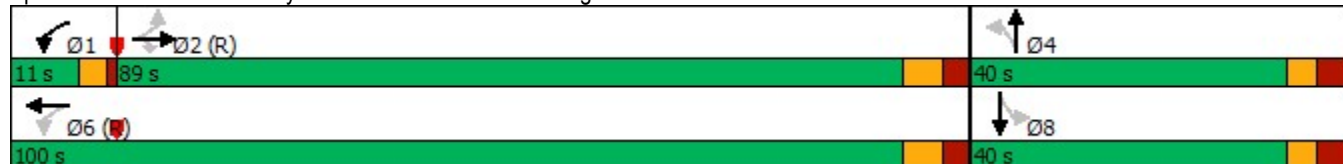
Offset: 111 (79%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

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

Splits and Phases: 10: Lloyd Manor/Widdicombe Hill & Eglinton



HCM Signalized Intersection Capacity Analysis

10: Lloyd Manor/Widdicombe Hill & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1856	149	112	1426	16	118	139	95	8	114	64
Future Volume (vph)	116	1856	149	112	1426	16	118	139	95	8	114	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	3.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00		0.97	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1753	3535	1499	1785	3490		1719	1738		1759	3256	
Flt Permitted	0.13	1.00	1.00	0.05	1.00		0.63	1.00		0.41	1.00	
Satd. Flow (perm)	243	3535	1499	86	3490		1141	1738		752	3256	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	122	1954	157	124	1501	17	124	146	100	8	120	67
RTOR Reduction (vph)	0	0	29	0	1	0	0	18	0	0	36	0
Lane Group Flow (vph)	122	1954	128	124	1517	0	124	228	0	8	151	0
Confl. Peds. (#/hr)	37		17	17		37	27		19	19		27
Heavy Vehicles (%)	1%	1%	0%	0%	2%	0%	1%	0%	0%	0%	2%	2%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	83.0	83.0	83.0	93.9	93.9		32.1	32.1		32.1	32.1	
Effective Green, g (s)	84.0	84.0	84.0	94.9	94.9		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.60	0.60	0.60	0.68	0.68		0.24	0.24		0.24	0.24	
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	2.0	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	145	2121	899	154	2365		269	410		177	769	
v/s Ratio Prot		c0.55		c0.05	0.43			c0.13			0.05	
v/s Ratio Perm	0.50		0.09	0.50			0.11			0.01		
v/c Ratio	0.84	0.92	0.14	0.81	0.64		0.46	0.56		0.05	0.20	
Uniform Delay, d1	22.6	25.0	12.2	40.8	12.9		45.8	47.0		41.3	42.8	
Progression Factor	2.11	2.09	3.04	0.90	2.44		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.5	0.9	0.0	10.8	0.5		1.3	1.6		0.1	0.1	
Delay (s)	53.2	53.3	37.3	47.7	32.0		47.1	48.6		41.4	42.9	
Level of Service	D	D	D	D	C		D	D		D	D	
Approach Delay (s)		52.2			33.1			48.1			42.9	
Approach LOS		D			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			44.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			132.5%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

11: Martin Grove & Eglinton

Existing 2019 Traffic Conditions
PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	536	2239	491	23	1535	152	423	22	96	450	245
Future Volume (vph)	536	2239	491	23	1535	152	423	22	96	450	245
Lane Group Flow (vph)	596	2357	517	24	1736	169	445	23	101	474	258
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	5	2			6	7	4			8	
Permitted Phases	2		2	6		4		4	8		5 8
Detector Phase	5	2	2	6	6	7	4	4	8	8	5 8
Switch Phase											
Minimum Initial (s)	6.0	31.0	31.0	31.0	31.0	6.0	29.0	29.0	36.0	36.0	
Minimum Split (s)	11.0	38.0	38.0	38.0	38.0	11.0	44.0	44.0	43.0	43.0	
Total Split (s)	24.0	75.0	75.0	51.0	51.0	17.0	65.0	65.0	48.0	48.0	
Total Split (%)	17.1%	53.6%	53.6%	36.4%	36.4%	12.1%	46.4%	46.4%	34.3%	34.3%	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	3.0	5.0	5.0	5.0	5.0	3.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max	Max	
v/c Ratio	1.88	1.35	0.59	0.45	1.08	0.43	0.30	0.04	0.38	0.44	0.34
Control Delay	434.5	190.7	15.6	64.7	90.6	27.8	27.6	0.1	43.6	40.5	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	434.5	190.7	15.6	64.7	90.6	27.8	27.6	0.1	43.6	40.5	14.4
Queue Length 50th (m)	~237.2	~448.0	52.9	5.8	~195.0	28.4	42.5	0.0	22.1	55.8	25.9
Queue Length 95th (m)	#309.5	#487.0	87.5	m10.1	#226.3	44.0	55.5	0.3	40.3	72.7	45.7
Internal Link Dist (m)		224.0			416.9		322.5			292.9	
Turn Bay Length (m)	180.0			65.0		120.0		25.0	70.0		25.0
Base Capacity (vph)	317	1750	882	53	1606	402	1460	630	266	1075	762
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	1.88	1.35	0.59	0.45	1.08	0.42	0.30	0.04	0.38	0.44	0.34

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 46 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

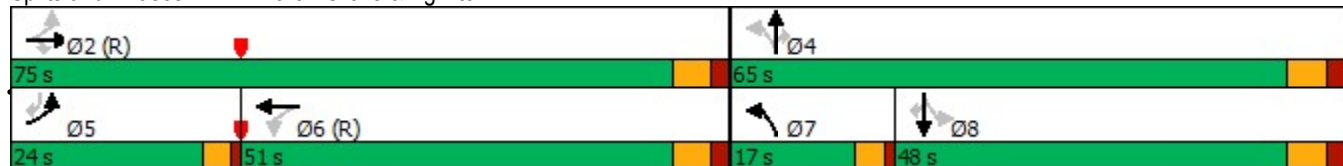
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 11: Martin Grove & Eglinton



HCM Signalized Intersection Capacity Analysis

11: Martin Grove & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	536	2239	491	23	1535	114	152	423	22	96	450	245
Future Volume (vph)	536	2239	491	23	1535	114	152	423	22	96	450	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	5.0	5.0	5.0		3.0	6.0	6.0	6.0	6.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.92	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.96	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1750	3500	1528	1785	4868		1779	3466	1421	1648	3466	1423
Flt Permitted	0.08	1.00	1.00	0.09	1.00		0.35	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	150	3500	1528	163	4868		657	3466	1421	858	3466	1423
Peak-hour factor, PHF	0.90	0.95	0.95	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	596	2357	517	24	1616	120	169	445	23	101	474	258
RTOR Reduction (vph)	0	0	118	0	6	0	0	0	13	0	0	51
Lane Group Flow (vph)	596	2357	399	24	1730	0	169	445	10	101	474	207
Confl. Peds. (#/hr)	20		13	13		20	22		63	63		22
Confl. Bikes (#/hr)			10			28			1			1
Heavy Vehicles (%)	2%	2%	1%	0%	4%	2%	0%	3%	0%	4%	3%	4%
Bus Blockages (#/hr)	0	0	0	0	0	10	0	0	7	0	0	12
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	5	2			6		7	4			8	
Permitted Phases	2		2	6			4		4	8		5 8
Actuated Green, G (s)	69.0	69.0	69.0	45.0	45.0		58.0	58.0	58.0	42.5	42.5	69.5
Effective Green, g (s)	70.0	70.0	70.0	46.0	46.0		59.0	59.0	59.0	43.5	43.5	64.5
Actuated g/C Ratio	0.50	0.50	0.50	0.33	0.33		0.42	0.42	0.42	0.31	0.31	0.46
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	2.0	0.2	0.2	0.2	0.2		2.0	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	315	1750	764	53	1599		377	1460	598	266	1076	655
v/s Ratio Prot	c0.28	0.67			0.36		c0.04	0.13			0.14	
v/s Ratio Perm	c0.66		0.26	0.15			c0.15		0.01	0.12		0.15
v/c Ratio	1.89	1.35	0.52	0.45	1.08		0.45	0.30	0.02	0.38	0.44	0.32
Uniform Delay, d1	45.7	35.0	23.7	37.1	47.0		26.6	26.9	23.6	37.7	38.5	23.8
Progression Factor	1.00	1.00	1.00	1.03	1.01		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	413.2	160.0	2.5	21.1	46.5		0.3	0.5	0.0	4.1	1.3	0.1
Delay (s)	458.9	195.0	26.2	59.4	94.1		26.9	27.4	23.6	41.8	39.8	23.9
Level of Service	F	F	C	E	F		C	C	C	D	D	C
Approach Delay (s)		215.2			93.6			27.1			35.2	
Approach LOS		F			F			C			D	
Intersection Summary												
HCM 2000 Control Delay			143.0			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.28									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			166.1%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
12: Eglinton & Highway 401

Existing 2019 Traffic Conditions
PM Peak Hour

	→	↖	↗
Lane Group	EBT	WBL	NBR
Lane Configurations	↑↑↑↑	↖↖	↗↗
Traffic Volume (vph)	1992	427	1274
Future Volume (vph)	1992	427	1274
Lane Group Flow (vph)	2371	449	1341
Turn Type	NA	Prot	Prot
Protected Phases	2	8	4
Permitted Phases			
Minimum Split (s)	39.0	37.0	37.0
Total Split (s)	67.0	73.0	73.0
Total Split (%)	47.9%	52.1%	52.1%
Yellow Time (s)	5.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0
Total Lost Time (s)	7.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
v/c Ratio	0.88	0.28	1.02
Control Delay	40.7	22.6	65.1
Queue Delay	0.0	0.0	0.0
Total Delay	40.7	22.6	65.1
Queue Length 50th (m)	170.6	37.7	~222.2
Queue Length 95th (m)	186.2	49.2	#268.5
Internal Link Dist (m)	216.8		
Turn Bay Length (m)			
Base Capacity (vph)	2709	1608	1319
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.88	0.28	1.02

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 73 (52%), Referenced to phase 2:EBT, Start of Green
Natural Cycle: 90
Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Eglinton & Highway 401

→ Ø2 (R) 67 s	↗ Ø4 73 s
	↖ Ø8 73 s

HCM Signalized Intersection Capacity Analysis

12: Eglinton & Highway 401

Existing 2019 Traffic Conditions
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↙↘			↗↖
Traffic Volume (vph)	1992	260	427	0	0	1274
Future Volume (vph)	1992	260	427	0	0	1274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0		6.0			6.0
Lane Util. Factor	0.86		0.97			0.88
Frt	0.98		1.00			0.85
Flt Protected	1.00		0.95			1.00
Satd. Flow (prot)	6281		3362			2756
Flt Permitted	1.00		0.95			1.00
Satd. Flow (perm)	6281		3362			2756
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2097	274	449	0	0	1341
RTOR Reduction (vph)	17	0	0	0	0	1
Lane Group Flow (vph)	2354	0	449	0	0	1340
Heavy Vehicles (%)	1%	2%	3%	0%	0%	2%
Turn Type	NA		Prot			Prot
Protected Phases	2		8			4
Permitted Phases						
Actuated Green, G (s)	59.0		66.0			66.0
Effective Green, g (s)	60.0		67.0			67.0
Actuated g/C Ratio	0.43		0.48			0.48
Clearance Time (s)	8.0		7.0			7.0
Lane Grp Cap (vph)	2691		1608			1318
v/s Ratio Prot	c0.37		0.13			c0.49
v/s Ratio Perm						
v/c Ratio	0.87		0.28			1.02
Uniform Delay, d1	36.6		22.0			36.5
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	4.3		0.4			29.0
Delay (s)	40.9		22.4			65.5
Level of Service	D		C			E
Approach Delay (s)	40.9			22.4	65.5	
Approach LOS	D			C	E	
Intersection Summary						
HCM 2000 Control Delay			46.8		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.95			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			88.6%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Queues
13: East Mall & Eglinton

Existing 2019 Traffic Conditions
PM Peak Hour

	→	↖	←	↙	↗	↓	↘
Lane Group	EBT	WBL	WBT	NBL	NBR	SBT	SBR
Lane Configurations	↑↑	↖	↑↑	↙	↗	↘	↘
Traffic Volume (vph)	1161	249	389	51	99	3	192
Future Volume (vph)	1161	249	389	51	99	3	192
Lane Group Flow (vph)	1473	277	409	54	104	17	202
Turn Type	NA	pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	2	1	6			8	
Permitted Phases		6		4	4		1 8
Detector Phase	2	1	6	4	4	8	1 8
Switch Phase							
Minimum Initial (s)	29.0	6.0	29.0	7.0	7.0	7.0	
Minimum Split (s)	37.0	11.0	37.0	34.0	34.0	15.0	
Total Split (s)	37.0	22.0	59.0	34.0	34.0	34.0	
Total Split (%)	39.8%	23.7%	63.4%	36.6%	36.6%	36.6%	
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	6.0	3.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes					
Recall Mode	Max	Max	Max	None	None	None	
v/c Ratio	1.03	0.50	0.17	0.31	0.38	0.07	0.28
Control Delay	54.5	12.6	3.9	34.1	11.1	28.9	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	12.6	3.9	34.1	11.1	28.9	3.0
Queue Length 50th (m)	~109.7	14.1	7.8	7.0	0.0	2.1	0.0
Queue Length 95th (m)	#167.3	38.6	14.1	16.7	12.3	7.3	9.8
Internal Link Dist (m)	966.3		108.5			34.2	
Turn Bay Length (m)		30.0					
Base Capacity (vph)	1434	552	2460	515	593	676	721
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.50	0.17	0.10	0.18	0.03	0.28

Intersection Summary

Cycle Length: 93

Actuated Cycle Length: 74.7

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

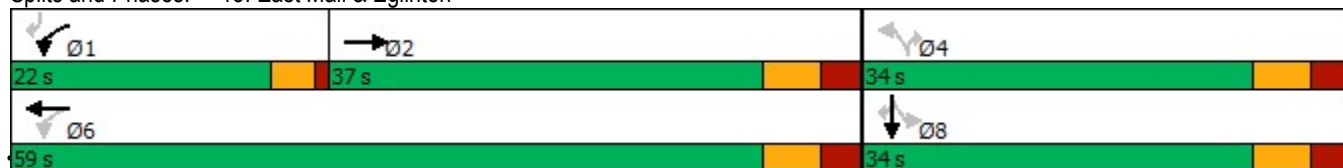
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 13: East Mall & Eglinton



HCM Signalized Intersection Capacity Analysis

13: East Mall & Eglinton

Existing 2019 Traffic Conditions

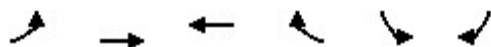
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1161	238	249	389	0	51	0	99	13	3	192
Future Volume (vph)	0	1161	238	249	389	0	51	0	99	13	3	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		3.0	6.0		6.0		6.0		6.0	3.0
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00		1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Frt		0.97		1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00		0.96	1.00
Satd. Flow (prot)		3416		1750	3466		1750		1408		1805	1320
Flt Permitted		1.00		0.12	1.00		0.75		1.00		0.96	1.00
Satd. Flow (perm)		3416		217	3466		1375		1408		1805	1320
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1222	251	277	409	0	54	0	104	14	3	202
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	90	0	0	124
Lane Group Flow (vph)	0	1457	0	277	409	0	54	0	14	0	17	78
Confl. Peds. (#/hr)	3					3						
Confl. Bikes (#/hr)						8						
Heavy Vehicles (%)	0%	2%	1%	2%	3%	0%	2%	0%	8%	0%	0%	21%
Bus Blockages (#/hr)	0	0	100	0	0	0	0	0	12	0	0	0
Turn Type		NA		pm+pt	NA		Perm		Perm	Perm	NA	custom
Protected Phases		2		1	6						8	
Permitted Phases				6			4		4	8		1 8
Actuated Green, G (s)		30.0		52.0	52.0		8.7		8.7		8.7	33.7
Effective Green, g (s)		31.0		53.0	53.0		9.7		9.7		9.7	28.7
Actuated g/C Ratio		0.41		0.71	0.71		0.13		0.13		0.13	0.38
Clearance Time (s)		7.0		4.0	7.0		7.0		7.0		7.0	
Vehicle Extension (s)		0.2		8.0	0.2		3.0		3.0		3.0	
Lane Grp Cap (vph)		1417		543	2459		178		182		234	507
v/s Ratio Prot		c0.43		c0.13	0.12							
v/s Ratio Perm				0.23			c0.04		0.01		0.01	0.06
v/c Ratio		1.03		0.51	0.17		0.30		0.07		0.07	0.15
Uniform Delay, d1		21.9		13.4	3.6		29.4		28.6		28.5	15.0
Progression Factor		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		31.3		3.4	0.1		1.0		0.2		0.1	0.1
Delay (s)		53.2		16.8	3.7		30.4		28.7		28.7	15.2
Level of Service		D		B	A		C		C		C	B
Approach Delay (s)		53.2			9.0		29.3				16.2	
Approach LOS		D			A		C				B	
Intersection Summary												
HCM 2000 Control Delay			36.6			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			74.7			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			74.6%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

14: Eglinton & Matheson

Existing 2019 Traffic Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	817	493	184	442	855
Future Volume (vph)	4	817	493	184	442	855
Lane Group Flow (vph)	4	860	519	194	491	900
Turn Type	Perm	NA	NA	Perm	Prot	Free
Protected Phases		2	6		8	
Permitted Phases	2			6		Free
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	25.0	25.0	7.0	7.0	7.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	30.0	
Total Split (s)	79.0	79.0	79.0	79.0	31.0	
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.01	0.37	0.23	0.19	1.12	0.57
Control Delay	6.0	8.3	7.2	1.3	119.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	8.3	7.2	1.3	119.4	1.5
Queue Length 50th (m)	0.3	38.1	20.3	0.0	~121.8	0.0
Queue Length 95th (m)	1.4	48.1	27.3	6.7	#184.0	0.0
Internal Link Dist (m)		209.4	286.2		108.2	
Turn Bay Length (m)	132.0			30.0		
Base Capacity (vph)	569	2354	2287	1040	438	1581
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	0.01	0.37	0.23	0.19	1.12	0.57

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

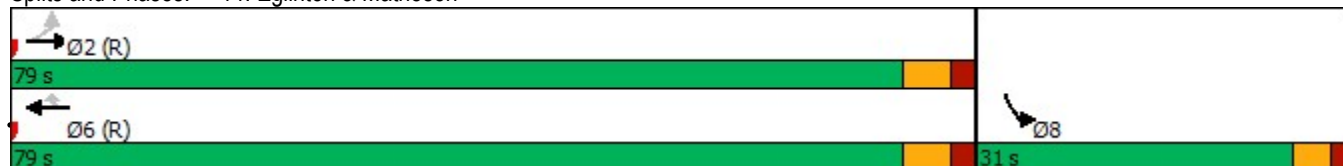
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

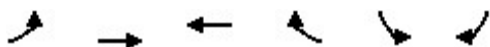
Splits and Phases: 14: Eglinton & Matheson



HCM Signalized Intersection Capacity Analysis

14: Eglinton & Matheson

Existing 2019 Traffic Conditions
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	817	493	184	442	855
Future Volume (vph)	4	817	493	184	442	855
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	4.0	3.0
Lane Util. Factor	1.00	0.95	0.95	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)	1785	3500	3400	1452	1785	1581
Flt Permitted	0.45	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	848	3500	3400	1452	1785	1581
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.90	0.95
Adj. Flow (vph)	4	860	519	194	491	900
RTOR Reduction (vph)	0	0	0	63	0	0
Lane Group Flow (vph)	4	860	519	131	491	900
Heavy Vehicles (%)	0%	2%	5%	10%	0%	1%
Turn Type	Perm	NA	NA	Perm	Prot	Free
Protected Phases		2	6		8	
Permitted Phases	2			6		Free
Actuated Green, G (s)	73.0	73.0	73.0	73.0	26.0	110.0
Effective Green, g (s)	74.0	74.0	74.0	74.0	27.0	110.0
Actuated g/C Ratio	0.67	0.67	0.67	0.67	0.25	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	570	2354	2287	976	438	1581
v/s Ratio Prot		0.25	0.15		c0.28	
v/s Ratio Perm	0.00			0.09		c0.57
v/c Ratio	0.01	0.37	0.23	0.13	1.12	0.57
Uniform Delay, d1	5.9	7.8	7.0	6.5	41.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.4	0.2	0.3	80.3	1.5
Delay (s)	5.9	8.2	7.2	6.8	121.8	1.5
Level of Service	A	A	A	A	F	A
Approach Delay (s)		8.2	7.1		44.0	
Approach LOS		A	A		D	
Intersection Summary						
HCM 2000 Control Delay			24.7		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			54.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Queues

15: Renforth & Eglinton

Existing 2019 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	 	  		 			 		 	
Traffic Volume (vph)	795	706	53	344	825	62	253	127	779	148
Future Volume (vph)	795	706	53	344	825	62	253	127	779	148
Lane Group Flow (vph)	883	1417	59	362	868	69	300	134	820	156
Turn Type	Prot	NA	Prot	NA	Free	pm+pt	NA	Perm	NA	pm+ov
Protected Phases	5	2	1	6		7	4		8	5
Permitted Phases					Free	4		8		8
Detector Phase	5	2	1	6		7	4	8	8	5
Switch Phase										
Minimum Initial (s)	6.0	31.0	6.0	31.0		6.0	31.0	31.0	31.0	6.0
Minimum Split (s)	12.0	40.0	12.0	40.0		11.0	40.0	40.0	40.0	12.0
Total Split (s)	35.0	62.0	13.0	40.0		11.0	51.0	40.0	40.0	35.0
Total Split (%)	27.8%	49.2%	10.3%	31.7%		8.7%	40.5%	31.7%	31.7%	27.8%
Yellow Time (s)	3.0	5.0	3.0	5.0		3.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	3.0	2.0	3.0		1.0	4.0	4.0	4.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	7.0	4.0	7.0		3.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max		None	Max	Max	Max	None
v/c Ratio	1.05	0.62	0.50	0.42	0.59	0.41	0.25	0.45	0.83	0.16
Control Delay	90.0	23.1	71.2	40.3	1.8	32.7	28.7	44.5	51.6	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.0	23.1	71.2	40.3	1.8	32.7	28.7	44.5	51.6	2.3
Queue Length 50th (m)	~122.5	83.8	14.3	39.3	0.0	10.9	26.5	28.2	103.2	0.0
Queue Length 95th (m)	#161.5	99.5	28.5	53.7	0.0	21.1	37.7	48.7	#136.1	9.1
Internal Link Dist (m)		465.7		209.4			161.3		107.0	
Turn Bay Length (m)	300.0		77.0			55.0		60.0		55.0
Base Capacity (vph)	843	2289	127	865	1463	172	1198	296	989	975
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	1.05	0.62	0.46	0.42	0.59	0.40	0.25	0.45	0.83	0.16

Intersection Summary

Cycle Length: 126

Actuated Cycle Length: 126

Offset: 84 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

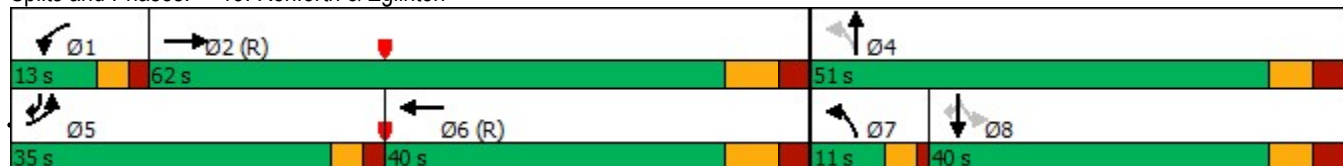
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 15: Renforth & Eglinton



HCM Signalized Intersection Capacity Analysis

15: Renforth & Eglinton

Existing 2019 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	795	706	640	53	344	825	62	253	32	127	779	148
Future Volume (vph)	795	706	640	53	344	825	62	253	32	127	779	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0	3.0	3.0	7.0		7.0	7.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3429	4716		1785	3305	1463	1653	3409		1769	3535	1566
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.12	1.00		0.57	1.00	1.00
Satd. Flow (perm)	3429	4716		1785	3305	1463	213	3409		1059	3535	1566
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	883	743	674	59	362	868	69	266	34	134	820	156
RTOR Reduction (vph)	0	128	0	0	0	0	0	8	0	0	0	74
Lane Group Flow (vph)	883	1289	0	59	362	868	69	292	0	134	820	82
Confl. Peds. (#/hr)	19					19			11	11		
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	1%	1%	1%	0%	8%	2%	8%	3%	0%	0%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	12	0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6		7	4			8	5
Permitted Phases						Free	4			8		8
Actuated Green, G (s)	30.0	55.0		6.2	31.2	126.0	43.8	43.8		34.3	34.3	64.3
Effective Green, g (s)	31.0	56.0		7.2	32.2	126.0	44.8	44.8		35.3	35.3	66.3
Actuated g/C Ratio	0.25	0.44		0.06	0.26	1.00	0.36	0.36		0.28	0.28	0.53
Clearance Time (s)	5.0	8.0		5.0	8.0		4.0	8.0		8.0	8.0	5.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2		0.2	0.2	2.0
Lane Grp Cap (vph)	843	2096		102	844	1463	150	1212		296	990	824
v/s Ratio Prot	c0.26	0.27		0.03	0.11		0.02	0.09			c0.23	0.02
v/s Ratio Perm						c0.59	0.14			0.13		0.03
v/c Ratio	1.05	0.61		0.58	0.43	0.59	0.46	0.24		0.45	0.83	0.10
Uniform Delay, d1	47.5	26.8		57.9	39.2	0.0	30.0	28.6		37.4	42.5	14.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	44.1	1.4		4.9	1.6	1.8	0.8	0.5		4.9	8.0	0.0
Delay (s)	91.6	28.1		62.8	40.8	1.8	30.8	29.1		42.3	50.5	14.9
Level of Service	F	C		E	D	A	C	C		D	D	B
Approach Delay (s)		52.5			15.5			29.4			44.5	
Approach LOS		D			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			39.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			126.0			Sum of lost time (s)				21.0		
Intersection Capacity Utilization			121.0%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
16: Eglinton & Commerce

Existing 2019 Traffic Conditions
PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	14	1253	21	640	45	36	5	569	34
Future Volume (vph)	14	1253	21	640	45	36	5	569	34
Lane Group Flow (vph)	15	1324	23	674	47	0	140	599	88
Turn Type	Perm	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2	1	6			4		8
Permitted Phases	2		6		6	4		8	
Detector Phase	2	2	1	6	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	25.0	7.0	7.0	7.0	7.0
Minimum Split (s)	33.0	33.0	11.0	33.0	33.0	41.0	41.0	41.0	41.0
Total Split (s)	34.0	34.0	11.0	45.0	45.0	55.0	55.0	55.0	55.0
Total Split (%)	34.0%	34.0%	11.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	3.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.06	0.76	0.12	0.50	0.08		0.18	1.00	0.11
Control Delay	25.9	33.2	18.4	24.7	6.2		5.8	63.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	25.9	33.2	18.4	24.7	6.2		5.8	63.5	7.0
Queue Length 50th (m)	1.8	76.4	2.6	51.2	0.0		4.2	111.4	3.5
Queue Length 95th (m)	7.2	#118.9	7.2	67.4	6.9		14.0	#185.2	11.3
Internal Link Dist (m)		364.9		465.7			40.3		100.4
Turn Bay Length (m)	55.0		110.0		80.0			30.0	
Base Capacity (vph)	237	1753	214	1351	613		764	600	836
Starvation Cap Reductn	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.06	0.76	0.11	0.50	0.08		0.18	1.00	0.11

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 88 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

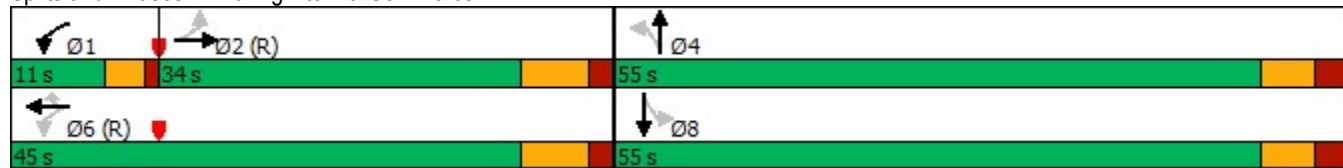
Natural Cycle: 95

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 16: Eglinton & Commerce



HCM Signalized Intersection Capacity Analysis

16: Eglinton & Commerce

Existing 2019 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (vph)	14	1253	5	21	640	45	36	5	92	569	34	49
Future Volume (vph)	14	1253	5	21	640	45	36	5	92	569	34	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		3.0	6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		0.96		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00		1.00		0.96	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.91		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1776	5025		1784	3466	1500		1580		1679	1652	
Flt Permitted	0.37	1.00		0.11	1.00	1.00		0.91		0.69	1.00	
Satd. Flow (perm)	683	5025		212	3466	1500		1461		1226	1652	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1319	5	23	674	47	38	5	97	599	36	52
RTOR Reduction (vph)	0	1	0	0	0	29	0	49	0	0	27	0
Lane Group Flow (vph)	15	1323	0	23	674	18	0	91	0	599	61	0
Confl. Peds. (#/hr)	7		38	38		7	8		55	55		8
Confl. Bikes (#/hr)						4			1			
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	6%	0%	0%	2%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6		6	4			8		
Actuated Green, G (s)	31.5	31.5		38.0	38.0	38.0		48.0		48.0	48.0	
Effective Green, g (s)	32.5	32.5		39.0	39.0	39.0		49.0		49.0	49.0	
Actuated g/C Ratio	0.32	0.32		0.39	0.39	0.39		0.49		0.49	0.49	
Clearance Time (s)	7.0	7.0		4.0	7.0	7.0		7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		2.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	221	1633		137	1351	585		715		600	809	
v/s Ratio Prot		c0.26		0.01	c0.19						0.04	
v/s Ratio Perm	0.02			0.06		0.01		0.06		c0.49		
v/c Ratio	0.07	0.81		0.17	0.50	0.03		0.13		1.00	0.08	
Uniform Delay, d1	23.3	30.9		21.3	23.1	18.8		13.9		25.5	13.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.6	4.5		0.2	1.3	0.1		0.1		36.0	0.0	
Delay (s)	23.9	35.4		21.6	24.4	18.9		13.9		61.5	13.5	
Level of Service	C	D		C	C	B		B		E	B	
Approach Delay (s)		35.3			24.0			13.9			55.4	
Approach LOS		D			C			B			E	
Intersection Summary												
HCM 2000 Control Delay			36.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			81.5%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Appendix D

2031 Total Traffic Forecast

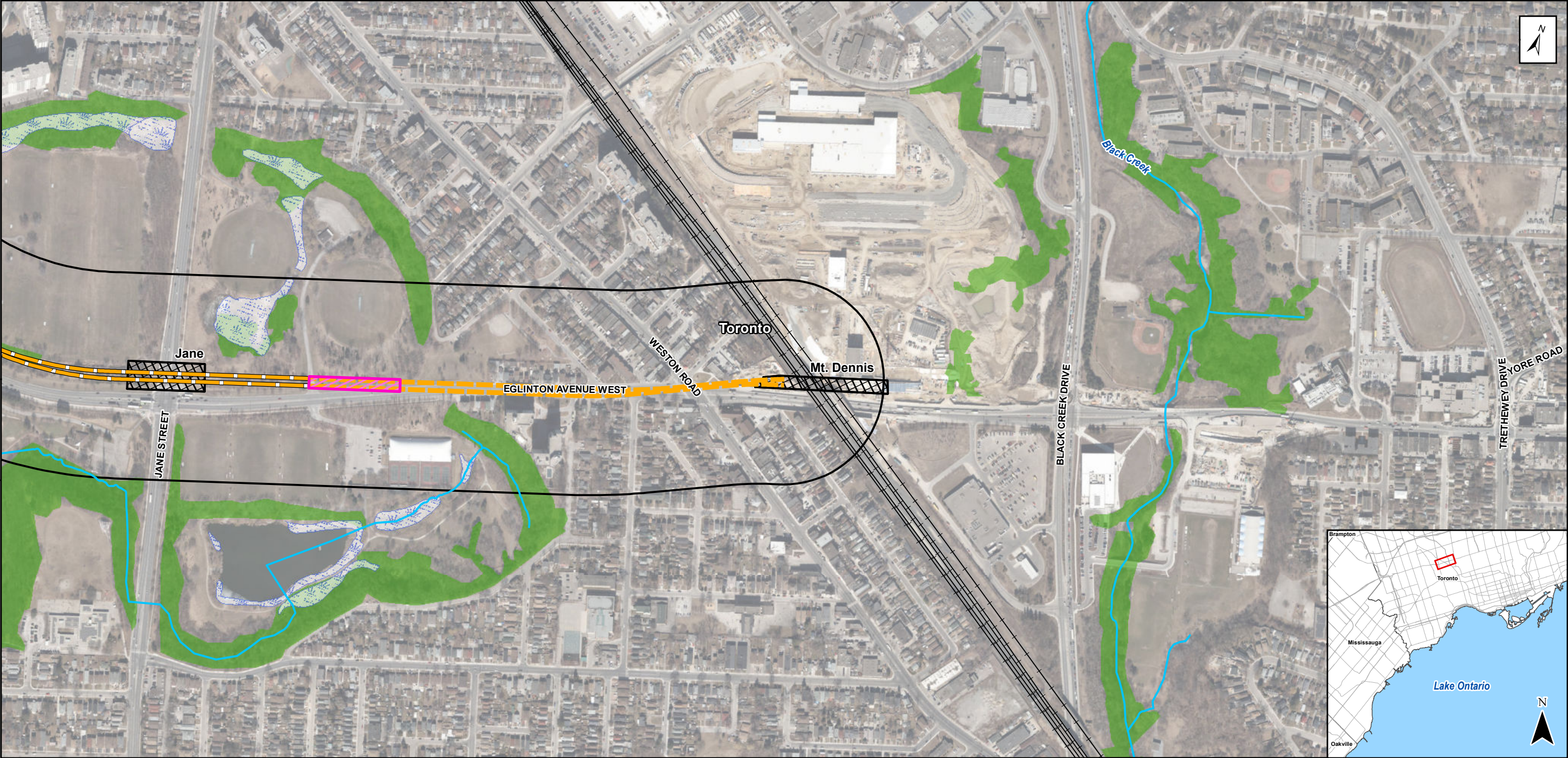
Future 2031 AM & PM Forecast Traffic Volumes

Eglinton Ave.	Commerce Blvd						Renforth Dr						Matheson Blvd						The East Mall & Hwy 427 NB					
	(49)	(34)	(569)	↕	311	(45)	(148)	(988)	(137)	↕	370	(855)	(1084)	(561)	↕	1203	(184)	(192)	(63)	(13)	↕	0	(0)	
	33	14	82	←	1374	(679)	654	254	62	←	838	(355)	230	141	←	1152	(543)	811	29	8	←	1207	(413)	
	↩	↓	↪	↩	147	(21)	↩	↓	↪	↩	79	(53)	↩	↪				↩	↓	↪	↩	175	(324)	
	(14)	29	↕	↩	↑	↪	(795)	377	↕	↩	↑	↪	(4)	15	↕			(0)	0	↕	↩	↑	↪	
	(1330)	657	→		5	2	9	(735)	312	→	223	860	187	(872)	538	→		(1233)	644	→	224	0	176	
Highway 401/427	(5)	20	↩	(36)	(5)	(92)	(640)	98	↩	(62)	(321)	(42)						(243)	80	↩	(71)	(0)	(109)	
							Martin Grove Rd						Widdicomb Hill Blvd						Kipling Ave					
				←	2016	(1730)	(245)	(450)	(103)	↕	48	(117)	(81)	(114)	(8)	↕	5	(16)	(57)	(548)	(71)	↕	152	(81)
				↩	684	(498)	410	458	102	←	1870	(1643)	228	86	23	←	1297	(1514)	37	507	81	←	1463	(1749)
				↩			↩	↓	↪	↩	13	(24)	↩	↓	↪	↩	57	(112)	↩	↓	↪	↩	174	(144)
					↪	Eglinton Ave.	(536)	389	↕	↩	↑	↪	(150)	98	↕	↩	↑	↪	(189)	185	↕	↩	↑	↪
Eglinton	(1992)	1929	→		836	(2401)	2183	→	298	649	31	(1970)	1938	→	196	59	42	(1771)	1663	→	119	737	167	
	(290)	692	↩		(1393)	(491)	220	↩	(152)	(423)	(25)	(149)	49	↩	(118)	(139)	(95)	(85)	58	↩	(126)	(774)	(158)	
							Lloyd Manor Rd						Royal York Rd											
Eglinton Ave	Wincott Dr						Islington Ave						Russell Rd						Weston Rd					
	(72)	(167)	(185)	↕	103	(179)	(124)	(826)	(70)	↕	53	(57)	(36)	(11)	(15)	↕	26	(22)	(89)	(654)	(87)	↕	92	(146)
	94	132	114	←	1448	(1621)	75	931	49	←	1278	(1444)	67	19	22	←	1270	(1468)	87	477	82	←	1311	(1224)
	↩	↓	↪	↩	9	(16)	↩	↓	↪	↩	157	(133)	↩	↓	↪	↩	16	(22)	↩	↓	↪	↩	101	(148)
	(102)	95	↕	↩	↑	↪	(263)	196	↕	↩	↑	↪	(30)	22	↕	↩	↑	↪	(8)	110	↕	↩	↑	↪
	(1657)	1548	→		11	130	33	(1509)	1485	→	55	932	181	(1568)	1470	→	8	17	38	(1427)	1337	→	144	607
Eglinton Ave	(13)	11	↩	(6)	(153)	(6)	(73)	66	↩	(65)	(995)	(173)	(19)	7	↩	(8)	(12)	(20)	(120)	94	↩	(108)	(654)	(110)
							Emmett Ave						Jane St						Weston Rd					
Eglinton Ave	Scarlett Rd						Emmett Ave						Jane St						Weston Rd					
	(81)	(765)	(254)	↕	138	(220)	(127)	(0)	(36)	↕	69	(70)	(193)	(889)	(28)	↕	11	(17)	(149)	(453)	(54)	↕	50	(75)
	76	754	245	←	936	(1130)	132	1	51	←	1000	(1366)	207	949	22	←	670	(918)	75	578	51	←	447	(746)
	↩	↓	↪	↩	73	(144)	↩	↓	↪	↩	9	(9)	↩	↓	↪	↩	61	(91)	↩	↓	↪	↩	49	(97)
	(35)	24	↕	↩	↑	↪	(166)	174	↕	↩	↑	↪	(194)	237	↕	↩	↑	↪	(101)	118	↕	↩	↑	↪
	(1133)	1205	→		215	624	237	(1374)	1465	→	3	1	2	(1009)	1014	→	211	810	56	(605)	650	→	194	318
Eglinton Ave	(281)	253	↩	(242)	(559)	(165)	(14)	13	↩	(5)	(1)	(9)	(198)	214	↩	(209)	(868)	(80)	(266)	224	↩	(232)	(571)	(19)

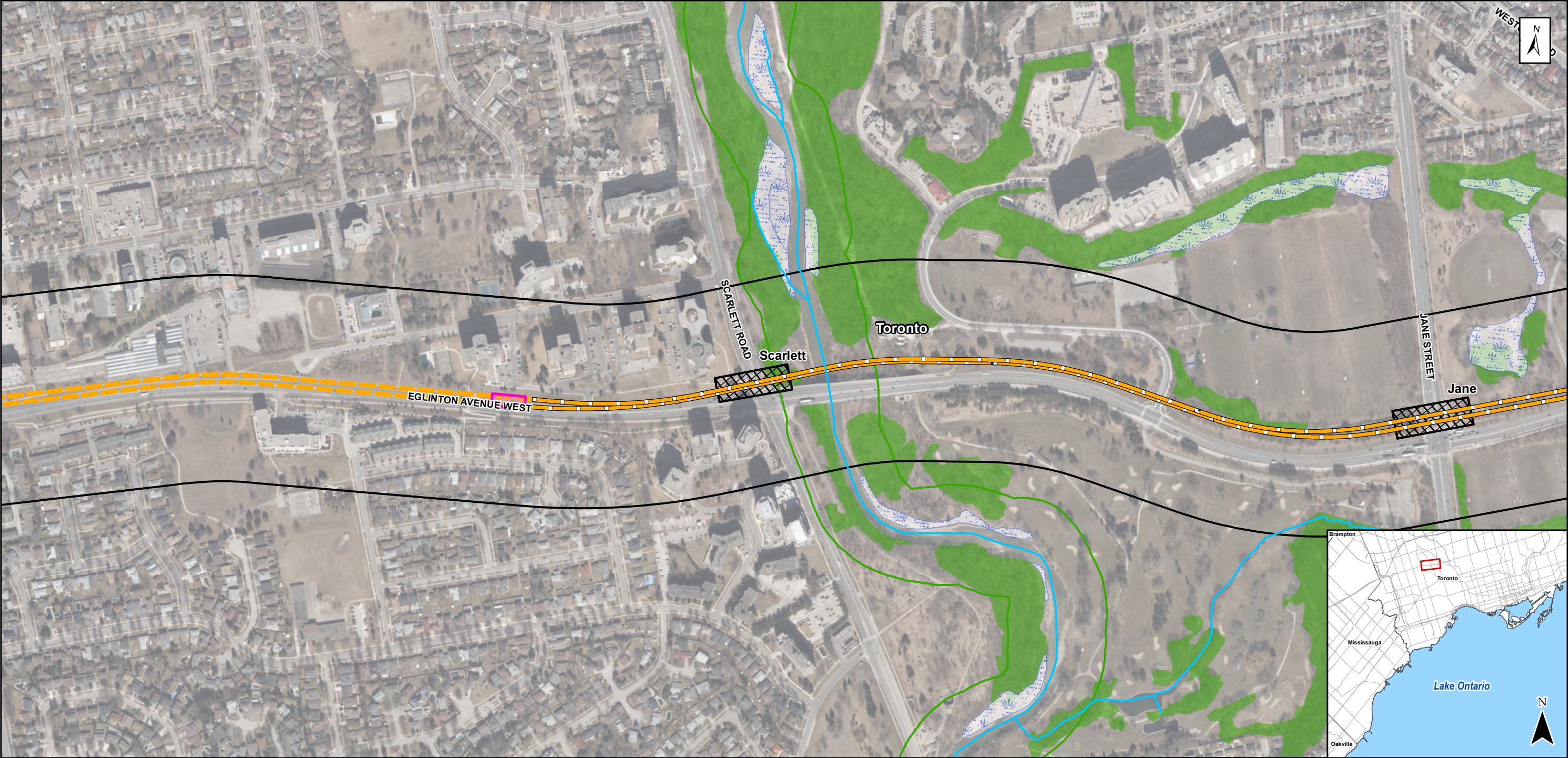
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Appendix E

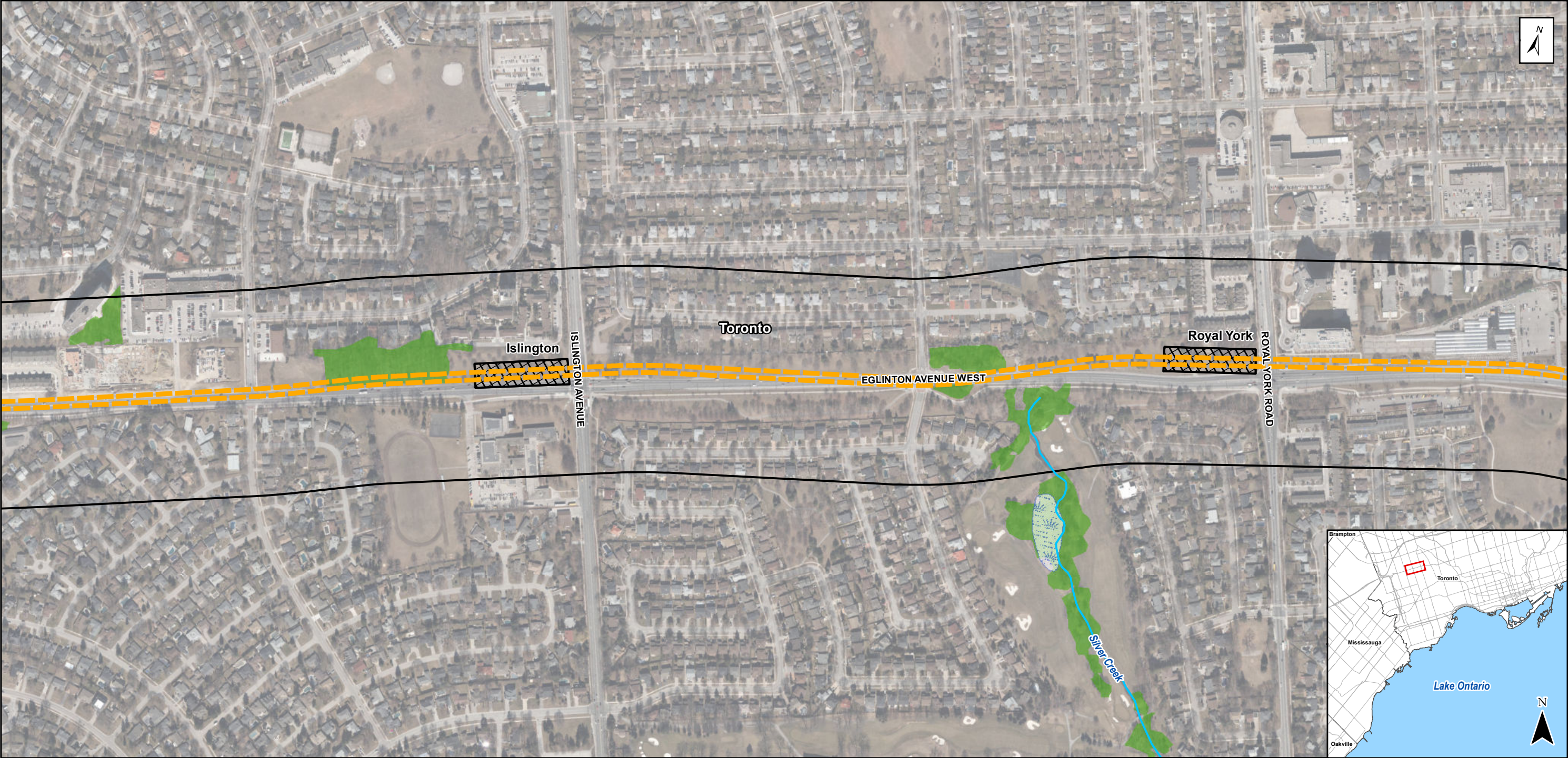
Proposed Alignment



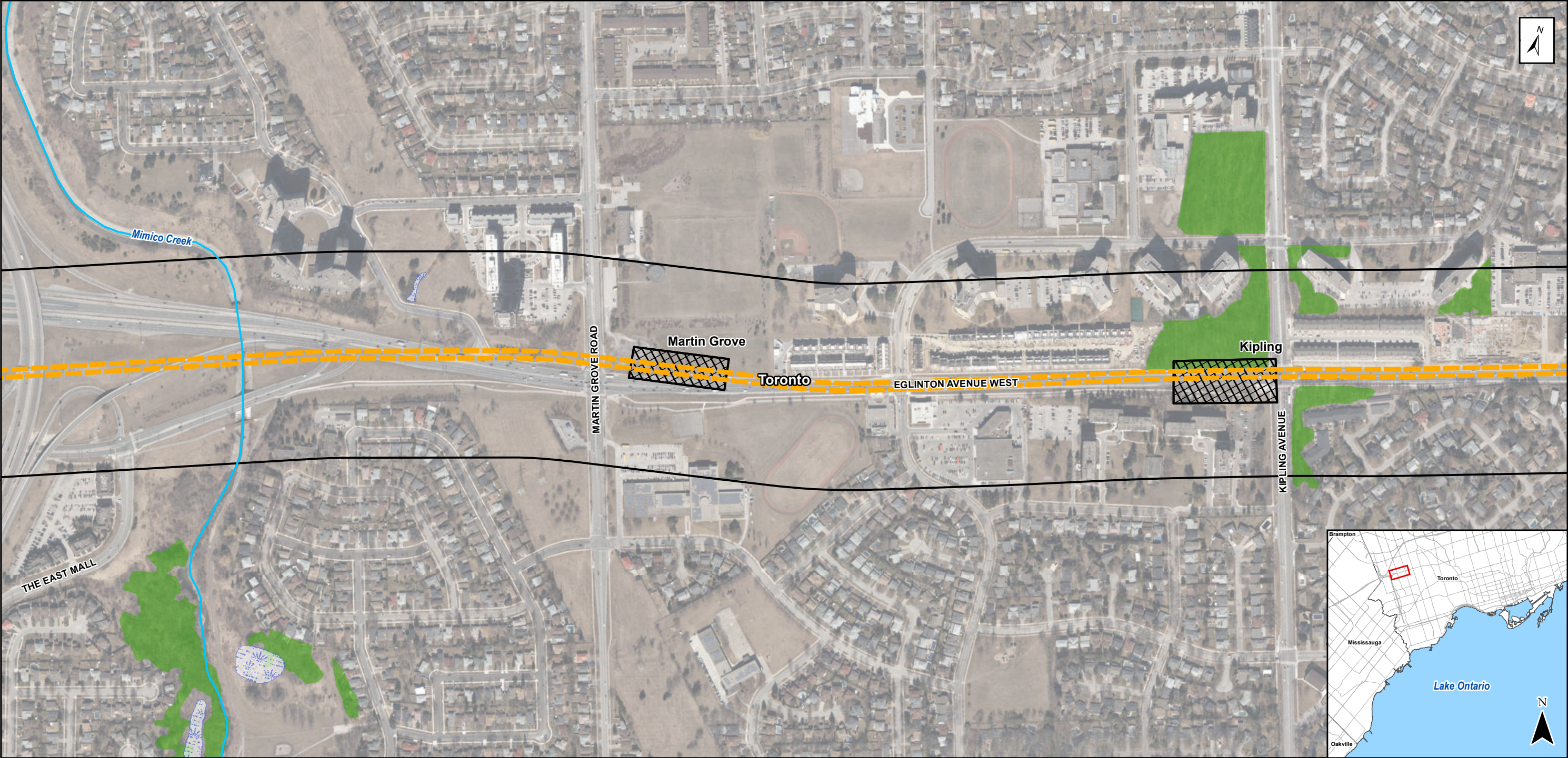
Legend + Railway — Permanent Watercourse Alignment — Elevated — Transition to at-grade — Underground — Study Area - 150m ⊠ Station Site ⬜ Renforth Laydown Area – approximate; subject to change ▨ Portals ▭ Greenbelt Area Boundary ▨ Unevaluated Wetland ▭ Wooded Area ▭ Municipal Boundary		DATA SOURCES: 1. Ontario Open Data Catalogue - Roads and Railways 2. Land Information Ontario - Greenbelt Area Boundary, Wetlands, Wooded Areas, Watercourses, Waterbodies, Municipal Boundaries 3. Toronto Region Conservation Authority - Floodplain 4. ESRI - Basemap NOTES: 1. Datum: NAD83 CSRS; Projection: MTM 10. 0 100 200 400 Metres 1:6,000		Project: Eglinton Crosstown West Extension	
				Figure Title: Eglinton Crosstown West Extension Alignment	
		Prepared By: 		Date: May 14, 2020	
		Version: 1-1		Review: 	Figure: E-1
					Page: 1 of 5



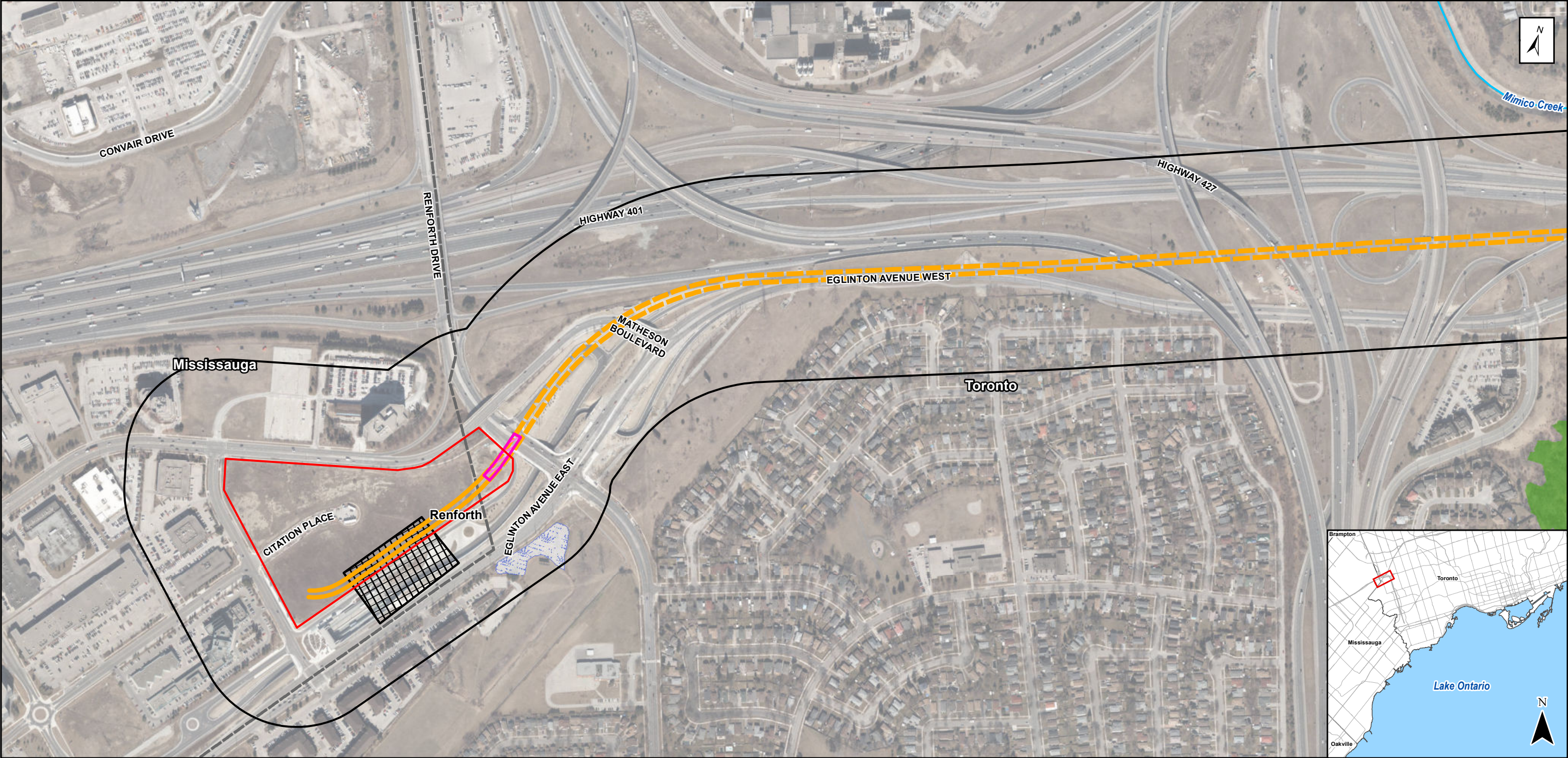
Legend + Railway Permanent Watercourse Alignment Elevated Transition to at-grade Underground Study Area - 150m Station Site Renforth Laydown Area – approximate; subject to change Portals Greenbelt Area Boundary Unevaluated Wetland Wooded Area Municipal Boundary		DATA SOURCES: 1. Ontario Open Data Catalogue - Roads and Railways 2. Land Information Ontario - Greenbelt Area Boundary, Wetlands, Wooded Areas, Watercourses, Waterbodies, Municipal Boundaries 3. Toronto Region Conservation Authority - Floodplain 4. ESRI - Basemap NOTES: 1. Datum: NAD83 CSRS; Projection: MTM 10. 0 100 200 400 Metres 1:6,000		Project: Eglinton Crosstown West Extension	
				Figure Title: Eglinton Crosstown West Extension Alignment	
		Prepared By: 4 TRANSIT PARSONS HATCH WSP		Date: May 14, 2020	
		Version: 1-1		Review: [Symbol]	Figure: E-2
					Page: 2 of 5



Legend + Railway Permanent Watercourse Alignment Elevated Transition to at-grade Underground Study Area - 150m Station Site Renforth Laydown Area – approximate; subject to change Portals Greenbelt Area Boundary Unevaluated Wetland Wooded Area Municipal Boundary		DATA SOURCES: 1. Ontario Open Data Catalogue - Roads and Railways 2. Land Information Ontario - Greenbelt Area Boundary, Wetlands, Wooded Areas, Watercourses, Waterbodies, Municipal Boundaries 3. Toronto Region Conservation Authority - Floodplain 4. ESRI - Basemap NOTES: 1. Datum: NAD83 CSRS; Projection: MTM 10. 0 100 200 400 Metres 1:6,000		Project: Eglinton Crosstown West Extension	
				Figure Title: Eglinton Crosstown West Extension Alignment	
		Prepared By: 4 TRANSIT PARSONS HATCH WSP		Date: May 14, 2020	
		Version: 1-1		Review: [Symbol]	Figure: E-3
					Page: 3 of 5



Legend + Railway Permanent Watercourse Alignment Elevated Transition to at-grade Underground Study Area - 150m Station Site		Renforth Laydown Area – approximate; subject to change Portals Greenbelt Area Boundary Unevaluated Wetland Wooded Area Municipal Boundary	
DATA SOURCES: 1. Ontario Open Data Catalogue - Roads and Railways 2. Land Information Ontario - Greenbelt Area Boundary, Wetlands, Wooded Areas, Watercourses, Waterbodies, Municipal Boundaries 3. Toronto Region Conservation Authority - Floodplain 4. ESRI - Basemap		Project: Eglinton Crosstown West Extension	
NOTES: 1. Datum: NAD83 CSRS; Projection: MTM 10.		Figure Title: Eglinton Crosstown West Extension Alignment	
0 100 200 400 Metres 1:6,000		Prepared By: 4 TRANSIT PARSONS HATCH WSP	Date: May 14, 2020
		Version: 1-1	Review: [Symbol]
		Figure: E-4	Page: 4 of 5



Legend

Railway

Permanent Watercourse

Alignment

Elevated

Transition to at-grade

Underground

Study Area - 150m

Station Site

Renforth Laydown Area – approximate; subject to change

Portals

Greenbelt Area Boundary

Unevaluated Wetland

Wooded Area

Municipal Boundary

DATA SOURCES:

1. Ontario Open Data Catalogue - Roads and Railways

2. Land Information Ontario - Greenbelt Area Boundary, Wetlands, Wooded Areas, Watercourses, Waterbodies, Municipal Boundaries

3. Toronto Region Conservation Authority - Floodplain

4. ESRI - Basemap

NOTES:

1. Datum: NAD83 CSRS; Projection: MTM 10.

0

100

200

400

Metres

1:6,000

Project:

Eglinton Crosstown West Extension

Figure Title:

Eglinton Crosstown West Extension Alignment

Prepared By:

4TRANSIT

PARSONS HATCH WSP

Date:

May 14, 2020

Version:

1-1

Review:

Figure:

E-5

Page:

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Appendix F

Future 2031 SYNCHRO Capacity Analysis Reports

Queues

1: Weston & Eglinton

2031 Traffic Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	118	650	224	49	447	50	194	318	51	578
Future Volume (vph)	118	650	224	49	447	50	194	318	51	578
Lane Group Flow (vph)	131	722	249	54	497	56	216	395	57	725
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	2		2		6		4		8	
Permitted Phases	2	2		6	6		4	8		
Minimum Split (s)	34.0	34.0	34.0	32.0	32.0	32.0	45.0	45.0	45.0	45.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0	7.0	7.0
Lead/Lag										
Lead-Lag Optimize?										
v/c Ratio	0.41	0.50	0.40	0.27	0.35	0.10	1.04	0.30	0.17	0.53
Control Delay	23.5	21.0	15.3	21.8	18.8	5.0	104.1	18.6	19.2	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	21.0	15.3	21.8	18.8	5.0	104.1	18.6	19.2	22.2
Queue Length 50th (m)	16.7	50.7	21.9	6.4	32.1	0.0	~45.4	24.5	6.6	51.8
Queue Length 95th (m)	33.0	66.8	41.5	15.8	44.2	6.7	#89.6	35.2	15.1	69.0
Internal Link Dist (m)	725.8		490.7		367.2		320.1			
Turn Bay Length (m)	40.0	45.0		30.0	50.0		35.0			
Base Capacity (vph)	319	1447	615	202	1421	542	208	1330	344	1364
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	0.41	0.50	0.40	0.27	0.35	0.10	1.04	0.30	0.17	0.53

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 18 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

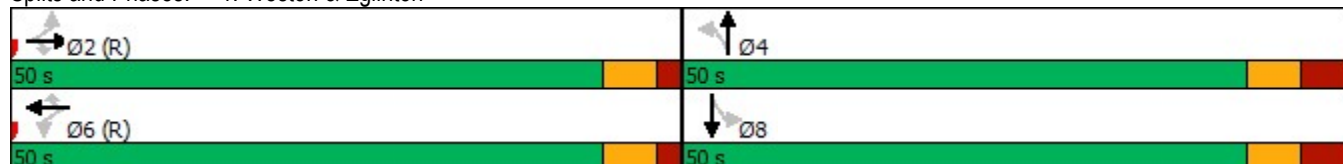
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston & Eglinton



HCM Signalized Intersection Capacity Analysis

1: Weston & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	650	224	49	447	50	194	318	38	51	578	75
Future Volume (vph)	118	650	224	49	447	50	194	318	38	51	578	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.92	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.97	1.00	1.00	0.99	1.00	1.00	0.97	1.00		0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
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)	1590	3216	1283	1443	3159	1136	1516	3073		1481	3149	
Flt Permitted	0.42	1.00	1.00	0.30	1.00	1.00	0.30	1.00		0.51	1.00	
Satd. Flow (perm)	711	3216	1283	449	3159	1136	484	3073		801	3149	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	131	722	249	54	497	56	216	353	42	57	642	83
RTOR Reduction (vph)	0	0	39	0	0	31	0	9	0	0	10	0
Lane Group Flow (vph)	131	722	211	54	497	25	216	386	0	57	715	0
Confl. Peds. (#/hr)	53		39	39		53	118		44	44		118
Confl. Bikes (#/hr)			5			2			1			4
Heavy Vehicles (%)	9%	11%	17%	22%	13%	30%	14%	15%	3%	18%	10%	10%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	44.0	44.0	44.0	44.0	44.0	44.0	42.0	42.0		42.0	42.0	
Effective Green, g (s)	45.0	45.0	45.0	45.0	45.0	45.0	43.0	43.0		43.0	43.0	
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.43	0.43		0.43	0.43	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0		8.0	8.0	
Lane Grp Cap (vph)	319	1447	577	202	1421	511	208	1321		344	1354	
v/s Ratio Prot		c0.22			0.16			0.13			0.23	
v/s Ratio Perm	0.18		0.16	0.12		0.02	c0.45			0.07		
v/c Ratio	0.41	0.50	0.36	0.27	0.35	0.05	1.04	0.29		0.17	0.53	
Uniform Delay, d1	18.6	19.5	18.1	17.2	18.0	15.5	28.5	18.6		17.5	21.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	1.2	1.8	3.2	0.7	0.2	72.8	0.6		1.0	1.5	
Delay (s)	22.4	20.7	19.9	20.4	18.6	15.7	101.3	19.1		18.5	22.5	
Level of Service	C	C	B	C	B	B	F	B		B	C	
Approach Delay (s)		20.7			18.5			48.2			22.2	
Approach LOS		C			B			D			C	
Intersection Summary												
HCM 2000 Control Delay			26.1									C
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			100.0								12.0	
Intersection Capacity Utilization			121.7%									H
Analysis Period (min)			15									
c Critical Lane Group												

Queues 2: Jane & Eglinton

2031 Traffic Conditions
AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	237	1014	214	61	670	11	211	810	22	949	207
Future Volume (vph)	237	1014	214	61	670	11	211	810	22	949	207
Lane Group Flow (vph)	263	1127	238	68	744	12	234	962	24	1054	230
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	7	4	8	8	8
Switch Phase											
Minimum Initial (s)	6.0	31.0	31.0	6.0	31.0	31.0	6.0	31.0	31.0	31.0	31.0
Minimum Split (s)	11.0	39.0	39.0	11.0	39.0	39.0	11.0	40.0	40.0	40.0	40.0
Total Split (s)	19.0	49.0	49.0	11.0	41.0	41.0	17.0	60.0	43.0	43.0	43.0
Total Split (%)	15.8%	40.8%	40.8%	9.2%	34.2%	34.2%	14.2%	50.0%	35.8%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max
v/c Ratio	0.79	0.87	0.39	0.40	0.73	0.02	0.90	0.64	0.18	1.02	0.42
Control Delay	41.3	48.6	23.5	25.1	42.9	0.1	63.6	28.4	35.6	74.2	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	48.6	23.5	25.1	42.9	0.1	63.6	28.4	35.6	74.2	12.1
Queue Length 50th (m)	39.9	150.0	27.6	8.6	83.6	0.0	38.1	90.4	4.2	~139.0	10.3
Queue Length 95th (m)	#82.2	#178.4	64.9	16.7	106.0	0.0	#83.5	112.4	11.7	#179.7	31.4
Internal Link Dist (m)		213.3			725.8			326.6		228.7	
Turn Bay Length (m)	75.0		25.0	70.0		25.0	75.0		80.0		65.0
Base Capacity (vph)	345	1298	616	177	1020	533	263	1494	132	1035	554
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	0.76	0.87	0.39	0.38	0.73	0.02	0.89	0.64	0.18	1.02	0.42

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 79 (66%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

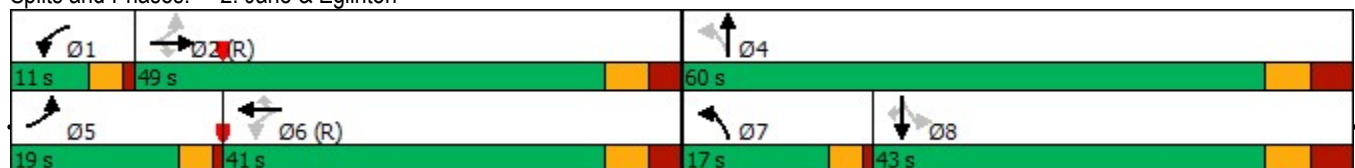
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: Jane & Eglinton



04/20/2020

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HCM Signalized Intersection Capacity Analysis

2: Jane & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	1014	214	61	670	11	211	810	56	22	949	207
Future Volume (vph)	237	1014	214	61	670	11	211	810	56	22	949	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.93	1.00	1.00		1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		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)	1764	3433	1437	1700	3400	1416	1700	3375		1500	3433	1444
Flt Permitted	0.18	1.00	1.00	0.11	1.00	1.00	0.10	1.00		0.28	1.00	1.00
Satd. Flow (perm)	328	3433	1437	199	3400	1416	183	3375		438	3433	1444
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	263	1127	238	68	744	12	234	900	62	24	1054	230
RTOR Reduction (vph)	0	0	74	0	0	8	0	4	0	0	0	119
Lane Group Flow (vph)	263	1127	164	68	744	4	234	958	0	24	1054	111
Confl. Peds. (#/hr)	50		19	19		50	34		29	29		34
Heavy Vehicles (%)	1%	4%	4%	5%	5%	0%	5%	4%	11%	18%	4%	5%
Bus Blockages (#/hr)	0	0	8	0	0	12	0	0	0	0	0	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	53.0	43.6	43.6	40.4	35.0	35.0	52.0	52.0		35.2	35.2	35.2
Effective Green, g (s)	54.0	44.6	44.6	42.4	36.0	36.0	53.0	53.0		36.2	36.2	36.2
Actuated g/C Ratio	0.45	0.37	0.37	0.35	0.30	0.30	0.44	0.44		0.30	0.30	0.30
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	8.0		8.0	8.0	8.0
Vehicle Extension (s)	2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	327	1275	534	150	1020	424	255	1490		132	1035	435
v/s Ratio Prot	c0.10	c0.33		0.02	0.22		c0.11	0.28			c0.31	
v/s Ratio Perm	0.26		0.11	0.14		0.00	0.30			0.05		0.08
v/c Ratio	0.80	0.88	0.31	0.45	0.73	0.01	0.92	0.64		0.18	1.02	0.26
Uniform Delay, d1	24.1	35.3	26.7	28.5	37.6	29.5	33.0	26.1		31.0	41.9	31.7
Progression Factor	1.35	1.20	1.56	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.7	7.1	1.1	0.8	4.6	0.0	34.3	2.1		3.0	32.7	1.4
Delay (s)	42.2	49.3	42.8	29.3	42.2	29.5	67.2	28.3		34.0	74.6	33.1
Level of Service	D	D	D	C	D	C	E	C		C	E	C
Approach Delay (s)		47.2			41.0			35.9			66.5	
Approach LOS		D			D			D			E	
Intersection Summary												
HCM 2000 Control Delay			48.5									
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			110.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

3: Eglinton & Emmett

2031 Traffic Conditions
AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	174	1465	9	1000	3	1	51	1
Future Volume (vph)	174	1465	9	1000	3	1	51	1
Lane Group Flow (vph)	193	1642	10	1188	0	6	0	205
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	22.0	22.0	22.0	22.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0
Total Split (s)	92.0	92.0	92.0	92.0	28.0	28.0	28.0	28.0
Total Split (%)	76.7%	76.7%	76.7%	76.7%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.67	0.66	0.06	0.49		0.03		0.79
Control Delay	24.0	13.8	1.8	2.4		35.0		47.0
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	24.0	13.8	1.8	2.4		35.0		47.0
Queue Length 50th (m)	24.0	105.2	0.2	9.1		0.8		25.5
Queue Length 95th (m)	m27.0	m103.6	m0.2	m10.1		4.5		50.1
Internal Link Dist (m)		241.5		156.2		47.3		107.6
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	287	2482	174	2435		283		326
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	0.67	0.66	0.06	0.49		0.02		0.63

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

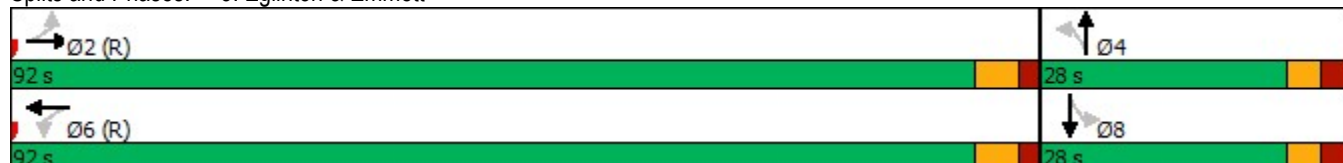
Offset: 95 (79%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Splits and Phases: 3: Eglinton & Emmett



HCM Signalized Intersection Capacity Analysis

3: Eglinton & Emmett

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	1465	13	9	1000	69	3	1	2	51	1	132
Future Volume (vph)	174	1465	13	9	1000	69	3	1	2	51	1	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.95			0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1636	3185		1784	3122			1740			1425	
Flt Permitted	0.21	1.00		0.12	1.00			0.82			0.90	
Satd. Flow (perm)	369	3185		223	3122			1470			1306	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	193	1628	14	10	1111	77	3	1	2	57	1	147
RTOR Reduction (vph)	0	0	0	0	3	0	0	2	0	0	81	0
Lane Group Flow (vph)	193	1642	0	10	1185	0	0	4	0	0	124	0
Confl. Peds. (#/hr)	2		3	3		2	1		3	3		1
Confl. Bikes (#/hr)			7			4						
Heavy Vehicles (%)	9%	12%	0%	0%	12%	28%	0%	0%	0%	27%	0%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	92.5	92.5		92.5	92.5			15.5			15.5	
Effective Green, g (s)	93.5	93.5		93.5	93.5			16.5			16.5	
Actuated g/C Ratio	0.78	0.78		0.78	0.78			0.14			0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0			3.0	
Lane Grp Cap (vph)	287	2481		173	2432			202			179	
v/s Ratio Prot		0.52			0.38							
v/s Ratio Perm	c0.52			0.04				0.00			c0.09	
v/c Ratio	0.67	0.66		0.06	0.49			0.02			0.69	
Uniform Delay, d1	6.1	6.0		3.1	4.7			44.8			49.3	
Progression Factor	1.99	1.89		0.28	0.36			1.00			1.00	
Incremental Delay, d2	4.1	0.5		0.4	0.5			0.0			11.0	
Delay (s)	16.3	11.9		1.3	2.2			44.8			60.3	
Level of Service	B	B		A	A			D			E	
Approach Delay (s)		12.4			2.2			44.8			60.3	
Approach LOS		B			A			D			E	
Intersection Summary												
HCM 2000 Control Delay			11.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			10.0			
Intersection Capacity Utilization			83.9%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

4: Scarlett & Eglinton

2031 Traffic Conditions
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1205	253	73	936	138	215	624	237	245	754	76
Future Volume (vph)	24	1205	253	73	936	138	215	624	237	245	754	76
Lane Group Flow (vph)	27	1339	281	81	1040	153	239	693	263	272	838	84
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	34.0	34.0	34.0	6.0	34.0	34.0	6.0	39.0	39.0	6.0	39.0	39.0
Minimum Split (s)	41.0	41.0	41.0	11.0	41.0	41.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (s)	47.0	47.0	47.0	11.0	58.0	58.0	14.0	51.0	51.0	11.0	48.0	48.0
Total Split (%)	39.2%	39.2%	39.2%	9.2%	48.3%	48.3%	11.7%	42.5%	42.5%	9.2%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	4.0	4.0	1.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.23	1.07	0.50	0.47	0.69	0.22	0.83	0.55	0.43	0.88	0.73	0.17
Control Delay	11.2	55.7	8.2	35.9	23.4	5.5	44.2	32.1	14.6	53.3	39.1	4.4
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	11.2	55.7	8.2	35.9	23.4	5.5	44.2	32.1	14.6	53.3	39.1	4.4
Queue Length 50th (m)	3.2	~197.8	34.1	9.3	60.3	1.0	32.1	67.3	19.0	37.7	90.4	0.0
Queue Length 95th (m)	m3.3	m155.4	m26.1	m23.6	85.5	9.8	#64.8	85.7	41.8	#77.4	113.5	8.0
Internal Link Dist (m)		1148.9			281.3			406.4			326.9	
Turn Bay Length (m)	80.0		20.0	70.0		60.0	75.0		25.0	60.0		25.0
Base Capacity (vph)	120	1254	566	175	1501	693	287	1270	613	309	1150	503
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	0.23	1.07	0.50	0.46	0.69	0.22	0.83	0.55	0.43	0.88	0.73	0.17

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

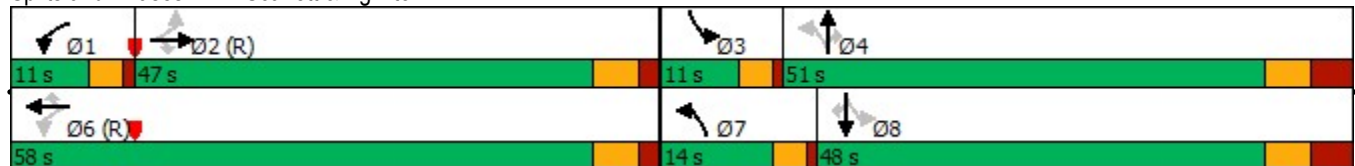
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 4: Scarlett & Eglinton



HCM Signalized Intersection Capacity Analysis

4: Scarlett & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	24	1205	253	73	936	138	215	624	237	245	754	76
Future Volume (vph)	24	1205	253	73	936	138	215	624	237	245	754	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	7.0	7.0	3.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.90	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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)	1708	3400	1334	1716	3400	1401	1764	3466	1421	1679	3368	1281
Flt Permitted	0.18	1.00	1.00	0.09	1.00	1.00	0.17	1.00	1.00	0.30	1.00	1.00
Satd. Flow (perm)	327	3400	1334	155	3400	1401	318	3466	1421	530	3368	1281
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	1339	281	81	1040	153	239	693	263	272	838	84
RTOR Reduction (vph)	0	0	75	0	0	75	0	0	92	0	0	55
Lane Group Flow (vph)	27	1339	206	81	1040	78	239	693	171	272	838	29
Confl. Peds. (#/hr)	24		85	85		24	63		34	34		63
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	4%	5%	2%	4%	5%	4%	1%	3%	1%	6%	6%	8%
Bus Blockages (#/hr)	0	0	13	0	0	13	0	0	15	0	0	17
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	42.5	42.5	42.5	52.0	52.0	52.0	53.0	43.0	43.0	47.0	40.0	40.0
Effective Green, g (s)	43.5	43.5	43.5	53.0	53.0	53.0	55.0	44.0	44.0	49.0	41.0	41.0
Actuated g/C Ratio	0.36	0.36	0.36	0.44	0.44	0.44	0.46	0.37	0.37	0.41	0.34	0.34
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	0.2	0.2	0.2	2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2	0.2
Lane Grp Cap (vph)	118	1232	483	153	1501	618	278	1270	521	293	1150	437
v/s Ratio Prot		c0.39		0.03	c0.31		c0.08	0.20		c0.06	0.25	
v/s Ratio Perm	0.08		0.15	0.20		0.06	0.32		0.12	c0.32		0.02
v/c Ratio	0.23	1.09	0.43	0.53	0.69	0.13	0.86	0.55	0.33	0.93	0.73	0.07
Uniform Delay, d1	26.6	38.2	28.8	27.5	27.0	19.8	23.5	30.1	27.3	31.2	34.6	26.6
Progression Factor	0.36	0.54	0.45	1.49	0.77	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	40.7	0.2	1.3	2.3	0.4	21.6	1.7	1.7	33.4	4.1	0.3
Delay (s)	10.1	61.5	13.4	42.2	23.1	20.9	45.1	31.8	29.0	64.6	38.7	26.9
Level of Service	B	E	B	D	C	C	D	C	C	E	D	C
Approach Delay (s)		52.4			24.1			33.8			43.8	
Approach LOS		D			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			39.5									
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			120.1%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

5: Royal York & Eglinton

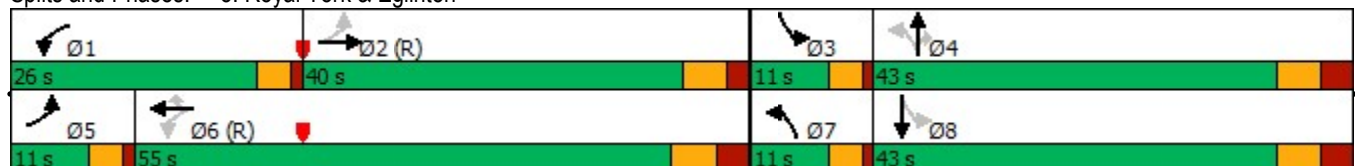
2031 Traffic Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	110	1337	101	1311	92	144	607	104	82	477
Future Volume (vph)	110	1337	101	1311	92	144	607	104	82	477
Lane Group Flow (vph)	122	1590	112	1457	102	160	674	116	91	627
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2	1	6		7	4		3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	6.0	34.0	6.0	34.0	34.0	6.0	36.0	36.0	6.0	36.0
Minimum Split (s)	11.0	40.0	11.0	42.0	42.0	11.0	43.0	43.0	11.0	43.0
Total Split (s)	11.0	40.0	26.0	55.0	55.0	11.0	43.0	43.0	11.0	43.0
Total Split (%)	9.2%	33.3%	21.7%	45.8%	45.8%	9.2%	35.8%	35.8%	9.2%	35.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
v/c Ratio	0.71	1.17	0.57	1.04	0.15	0.60	0.63	0.21	0.36	0.60
Control Delay	46.0	121.0	38.1	70.7	9.9	33.2	38.6	3.4	25.3	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	121.0	38.1	70.7	9.9	33.2	38.6	3.4	25.3	37.1
Queue Length 50th (m)	18.1	~242.1	19.3	~187.4	2.7	23.6	71.6	0.0	12.8	64.0
Queue Length 95th (m)	#44.1	#294.6	m30.6	#232.6	m9.0	38.7	91.4	7.9	23.3	83.3
Internal Link Dist (m)		477.1		1148.9			96.6			124.1
Turn Bay Length (m)	70.0		65.0		30.0	60.0		20.0	80.0	
Base Capacity (vph)	174	1356	374	1404	673	267	1074	542	254	1037
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	0.70	1.17	0.30	1.04	0.15	0.60	0.63	0.21	0.36	0.60

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 40 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Royal York & Eglinton



HCM Signalized Intersection Capacity Analysis

5: Royal York & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1337	94	101	1311	92	144	607	104	82	477	87
Future Volume (vph)	110	1337	94	101	1311	92	144	607	104	82	477	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.94	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1684	3353		1700	3433	1488	1650	3466	1430	1679	3325	
Flt Permitted	0.08	1.00		0.08	1.00	1.00	0.27	1.00	1.00	0.24	1.00	
Satd. Flow (perm)	146	3353		146	3433	1488	471	3466	1430	432	3325	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	1486	104	112	1457	102	160	674	116	91	530	97
RTOR Reduction (vph)	0	4	0	0	0	60	0	0	80	0	12	0
Lane Group Flow (vph)	122	1586	0	112	1457	42	160	674	36	91	615	0
Confl. Peds. (#/hr)	13		66	66		13	21		44	44		21
Confl. Bikes (#/hr)									7			3
Heavy Vehicles (%)	6%	5%	3%	5%	4%	0%	8%	3%	0%	6%	4%	6%
Bus Blockages (#/hr)	0	0	15	0	0	11	0	0	12	0	0	10
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	54.3	47.4		56.7	48.1	48.1	43.2	36.2	36.2	42.8	36.0	
Effective Green, g (s)	56.3	48.4		58.7	49.1	49.1	45.2	37.2	37.2	44.8	37.0	
Actuated g/C Ratio	0.47	0.40		0.49	0.41	0.41	0.38	0.31	0.31	0.37	0.31	
Clearance Time (s)	4.0	6.0		4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	
Vehicle Extension (s)	2.0	0.2		2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2	
Lane Grp Cap (vph)	169	1352		195	1404	608	256	1074	443	242	1025	
v/s Ratio Prot	c0.05	c0.47		c0.05	0.42		c0.04	c0.19		0.02	0.18	
v/s Ratio Perm	0.29			0.23		0.03	0.19		0.03	0.12		
v/c Ratio	0.72	1.17		0.57	1.04	0.07	0.62	0.63	0.08	0.38	0.60	
Uniform Delay, d1	27.0	35.8		25.8	35.5	21.6	26.7	35.5	29.3	25.9	35.2	
Progression Factor	1.28	1.12		1.64	1.10	2.58	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.1	84.9		2.1	32.4	0.2	3.4	2.8	0.4	0.4	2.6	
Delay (s)	44.8	124.8		44.3	71.5	55.9	30.1	38.2	29.7	26.2	37.8	
Level of Service	D	F		D	E	E	C	D	C	C	D	
Approach Delay (s)		119.1			68.7			35.8			36.3	
Approach LOS		F			E			D			D	
Intersection Summary												
HCM 2000 Control Delay			75.0			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			99.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: Eden Valley/Russell & Eglinton

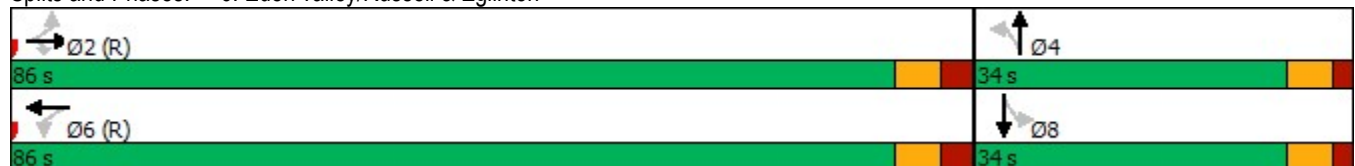
2031 Traffic Conditions
AM Peak Hour

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	22	1470	7	16	1270	8	17	22	19
Future Volume (vph)	22	1470	7	16	1270	8	17	22	19
Lane Group Flow (vph)	24	1633	8	18	1440	0	70	0	119
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2			6		4		8
Permitted Phases	2		2	6		4		8	
Detector Phase	2	2	2	6	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	21.0	21.0	21.0	21.0	21.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	33.0	33.0	33.0	33.0
Total Split (s)	86.0	86.0	86.0	86.0	86.0	34.0	34.0	34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%	71.7%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.10	0.59	0.01	0.10	0.52		0.38		0.59
Control Delay	7.9	14.8	2.7	0.8	1.6		30.6		39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	7.9	14.8	2.7	0.8	1.6		30.6		39.3
Queue Length 50th (m)	2.3	118.1	0.0	0.1	1.0		6.6		14.0
Queue Length 95th (m)	m2.7	m84.4	m0.0	m0.1	m1.1		19.8		31.5
Internal Link Dist (m)		462.1			477.1		108.4		87.8
Turn Bay Length (m)	40.0		20.0	40.0					
Base Capacity (vph)	229	2755	1232	172	2771		394		416
Starvation Cap Reductn	0	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0		0
Reduced v/c Ratio	0.10	0.59	0.01	0.10	0.52		0.18		0.29

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 71 (59%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Eden valley/Russell & Eglinton



HCM Signalized Intersection Capacity Analysis

6: Eden Valley/Russell & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1470	7	16	1270	26	8	17	38	22	19	67
Future Volume (vph)	22	1470	7	16	1270	26	8	17	38	22	19	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99			0.99	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00			0.92			0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1624	3400	1514	1580	3418			1648			1687	
Flt Permitted	0.16	1.00	1.00	0.13	1.00			0.91			0.91	
Satd. Flow (perm)	281	3400	1514	214	3418			1508			1543	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	1633	8	18	1411	29	9	19	42	24	21	74
RTOR Reduction (vph)	0	0	2	0	1	0	0	36	0	0	51	0
Lane Group Flow (vph)	24	1633	6	18	1439	0	0	34	0	0	68	0
Confl. Peds. (#/hr)	28					28	2		4	4		2
Heavy Vehicles (%)	9%	5%	0%	13%	4%	0%	0%	0%	5%	0%	0%	0%
Bus Blockages (#/hr)	0	0	13	0	0	12	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	96.3	96.3	96.3	96.3	96.3			10.7			10.7	
Effective Green, g (s)	97.3	97.3	97.3	97.3	97.3			11.7			11.7	
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.81			0.10			0.10	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0			6.0			6.0	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2			3.0			3.0	
Lane Grp Cap (vph)	227	2756	1227	173	2771			147			150	
v/s Ratio Prot		c0.48			0.42							
v/s Ratio Perm	0.09		0.00	0.08				0.02			c0.04	
v/c Ratio	0.11	0.59	0.01	0.10	0.52			0.23			0.45	
Uniform Delay, d1	2.3	4.1	2.2	2.3	3.7			50.0			51.1	
Progression Factor	2.39	3.19	46.80	0.12	0.34			1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.3	0.2			0.8			2.1	
Delay (s)	5.7	13.3	100.9	0.6	1.5			50.8			53.3	
Level of Service	A	B	F	A	A			D			D	
Approach Delay (s)		13.6			1.4			50.8			53.3	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			10.4			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			11.0			
Intersection Capacity Utilization			60.7%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

7: Islington & Eglinton

2031 Traffic Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	196	1485	157	1278	55	932	181	49	931	75
Future Volume (vph)	196	1485	157	1278	55	932	181	49	931	75
Lane Group Flow (vph)	218	1723	174	1479	61	1036	201	54	1034	83
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6	7	4		3	8	
Permitted Phases	2		6		4		4	8		8
Detector Phase	5	2	1	6	7	4	4	3	8	8
Switch Phase										
Minimum Initial (s)	6.0	30.0	6.0	30.0	6.0	27.0	27.0	6.0	27.0	27.0
Minimum Split (s)	11.0	37.0	11.0	37.0	15.0	34.0	34.0	11.0	34.0	34.0
Total Split (s)	11.0	52.0	11.0	52.0	15.0	46.0	46.0	11.0	42.0	42.0
Total Split (%)	9.2%	43.3%	9.2%	43.3%	12.5%	38.3%	38.3%	9.2%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	1.19	1.31	0.98	1.11	0.35	0.83	0.36	0.33	0.85	0.14
Control Delay	152.7	170.2	95.7	80.8	24.4	42.2	16.6	24.4	44.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.7	170.2	95.7	80.8	24.4	42.2	16.6	24.4	44.6	4.3
Queue Length 50th (m)	~44.3	~277.0	22.6	~210.0	8.0	119.4	16.8	7.1	120.3	0.0
Queue Length 95th (m)	m#94.5	#314.2	#68.1	#255.3	16.1	#149.3	37.0	14.7	#166.0	8.1
Internal Link Dist (m)		447.8		462.1		193.0			204.2	
Turn Bay Length (m)	65.0		70.0		60.0		20.0	60.0		25.0
Base Capacity (vph)	183	1319	178	1335	227	1255	553	171	1212	577
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	1.19	1.31	0.98	1.11	0.27	0.83	0.36	0.32	0.85	0.14

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 98 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

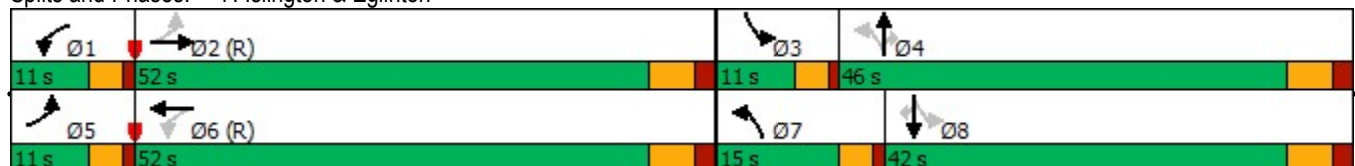
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Islington & Eglinton



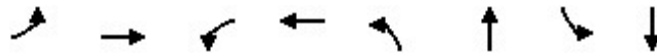
HCM Signalized Intersection Capacity Analysis

7: Islington & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	1485	66	157	1278	53	55	932	181	49	931	75
Future Volume (vph)	196	1485	66	157	1278	53	55	932	181	49	931	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.94	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	3361		1716	3403		1700	3466	1352	1653	3400	1438
Flt Permitted	0.09	1.00		0.09	1.00		0.09	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	161	3361		156	3403		165	3466	1352	171	3400	1438
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	218	1650	73	174	1420	59	61	1036	201	54	1034	83
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	64	0	0	53
Lane Group Flow (vph)	218	1721	0	174	1477	0	61	1036	137	54	1034	30
Confl. Peds. (#/hr)	64		46	46		64	23		37	37		23
Heavy Vehicles (%)	1%	5%	11%	4%	4%	2%	5%	3%	3%	8%	5%	0%
Bus Blockages (#/hr)	0	0	13	0	0	13	0	0	18	0	0	15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	52.2	45.2		52.2	45.2		48.5	42.5	42.5	47.1	41.8	41.8
Effective Green, g (s)	54.2	46.2		54.2	46.2		50.5	43.5	43.5	49.1	42.8	42.8
Actuated g/C Ratio	0.45	0.39		0.45	0.39		0.42	0.36	0.36	0.41	0.36	0.36
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2	0.2	2.0	3.0	3.0
Lane Grp Cap (vph)	179	1293		174	1310		158	1256	490	147	1212	512
v/s Ratio Prot	c0.08	c0.51		0.07	0.43		c0.02	0.30		0.02	c0.30	
v/s Ratio Perm	0.47			0.38			0.14		0.10	0.13		0.02
v/c Ratio	1.22	1.33		1.00	1.13		0.39	0.82	0.28	0.37	0.85	0.06
Uniform Delay, d1	31.1	36.9		31.1	36.9		24.9	34.8	27.1	25.2	35.7	25.4
Progression Factor	1.54	0.82		1.54	0.55		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	129.2	152.8		64.9	66.7		0.6	6.3	1.4	0.6	7.7	0.2
Delay (s)	177.3	183.0		112.9	86.9		25.5	41.0	28.6	25.8	43.4	25.6
Level of Service	F	F		F	F		C	D	C	C	D	C
Approach Delay (s)		182.4			89.6			38.4			41.3	
Approach LOS		F			F			D			D	
Intersection Summary												
HCM 2000 Control Delay			99.0			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			97.8%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	95	1548	9	1448	11	130	114	132
Future Volume (vph)	95	1548	9	1448	11	130	114	132
Lane Group Flow (vph)	106	1732	10	1723	0	193	127	251
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	24.0	24.0	24.0	24.0	7.0	7.0	7.0	7.0
Minimum Split (s)	31.0	31.0	31.0	31.0	35.0	35.0	35.0	35.0
Total Split (s)	85.0	85.0	85.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.85	0.70	0.09	0.70		0.65	0.84	0.72
Control Delay	70.1	12.3	15.4	22.8		52.6	86.7	51.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	70.1	12.3	15.4	22.8		52.6	86.7	51.6
Queue Length 50th (m)	16.0	107.2	1.2	128.6		40.5	29.1	49.9
Queue Length 95th (m)	#32.2	160.3	m1.5	m116.0		60.9	#53.1	73.2
Internal Link Dist (m)		464.9		447.8		109.2		108.2
Turn Bay Length (m)	40.0		40.0				15.0	
Base Capacity (vph)	124	2473	109	2455		380	195	443
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.85	0.70	0.09	0.70		0.51	0.65	0.57

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 70 (58%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 120

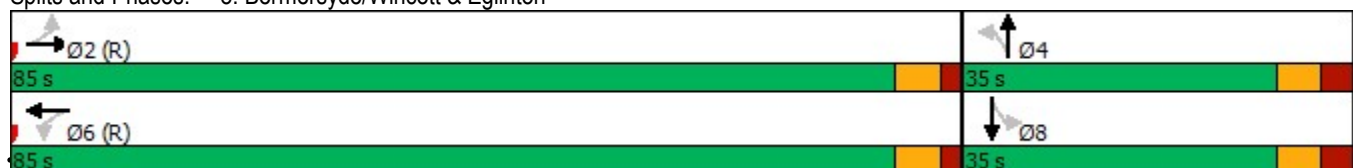
Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Bermersyde/Wincott & Eglinton



HCM Signalized Intersection Capacity Analysis

8: Bermersyde/Wincott & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1548	11	9	1448	103	11	130	33	114	132	94
Future Volume (vph)	95	1548	11	9	1448	103	11	130	33	114	132	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99			0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1785	3429		1608	3400			1790		1731	1748	
Flt Permitted	0.09	1.00		0.09	1.00			0.86		0.44	1.00	
Satd. Flow (perm)	172	3429		153	3400			1546		809	1748	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	106	1720	12	10	1609	114	12	144	37	127	147	104
RTOR Reduction (vph)	0	0	0	0	4	0	0	7	0	0	23	0
Lane Group Flow (vph)	106	1732	0	10	1719	0	0	186	0	127	228	0
Confl. Peds. (#/hr)	4		4	4		4	6		13	13		6
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	4%	0%	11%	4%	0%	0%	1%	3%	2%	0%	0%
Bus Blockages (#/hr)	0	0	13	0	0	12	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	85.5	85.5		85.5	85.5			21.5		21.5	21.5	
Effective Green, g (s)	86.5	86.5		86.5	86.5			22.5		22.5	22.5	
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.19		0.19	0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0			7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0		3.0	3.0	
Lane Grp Cap (vph)	123	2471		110	2450			289		151	327	
v/s Ratio Prot		0.50			0.51						0.13	
v/s Ratio Perm	c0.61			0.07				0.12		c0.16		
v/c Ratio	0.86	0.70		0.09	0.70			0.64		0.84	0.70	
Uniform Delay, d1	12.3	9.4		5.0	9.5			45.0		47.0	45.6	
Progression Factor	1.00	1.00		2.00	2.09			1.00		1.00	1.00	
Incremental Delay, d2	50.4	1.7		0.6	0.6			4.8		32.3	6.4	
Delay (s)	62.7	11.1		10.6	20.4			49.9		79.3	51.9	
Level of Service	E	B		B	C			D		E	D	
Approach Delay (s)		14.1			20.4			49.9			61.2	
Approach LOS		B			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			22.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				11.0		
Intersection Capacity Utilization			110.6%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

9: Kipling & Eglinton

2031 Traffic Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	185	1663	174	1463	119	737	167	81	507	37
Future Volume (vph)	185	1663	174	1463	119	737	167	81	507	37
Lane Group Flow (vph)	206	1912	193	1795	132	819	186	90	563	41
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6	7	4		3	8	
Permitted Phases	2		6		4		4	8		8
Detector Phase	5	2	1	6	7	4	4	3	8	8
Switch Phase										
Minimum Initial (s)	6.0	33.0	6.0	33.0	6.0	29.0	29.0	6.0	29.0	29.0
Minimum Split (s)	11.0	41.0	11.0	41.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	15.0	74.0	15.0	74.0	11.0	40.0	40.0	11.0	40.0	40.0
Total Split (%)	10.7%	52.9%	10.7%	52.9%	7.9%	28.6%	28.6%	7.9%	28.6%	28.6%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	3.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	1.01	1.18	0.98	1.10	0.61	1.00	0.50	0.65	0.70	0.12
Control Delay	62.8	113.8	95.8	90.6	47.0	83.7	27.2	55.6	53.9	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	113.8	95.8	90.6	47.0	83.7	27.2	55.6	53.9	0.7
Queue Length 50th (m)	~39.9	~342.9	38.4	~296.4	25.9	~120.5	21.5	17.3	75.4	0.0
Queue Length 95th (m)	m30.3	m#263.1	#87.9	#338.7	42.1	#164.2	46.0	#32.5	96.0	0.0
Internal Link Dist (m)		524.4		464.9		192.6			166.1	
Turn Bay Length (m)	75.0		75.0		65.0		25.0	65.0		25.0
Base Capacity (vph)	203	1620	197	1627	215	820	373	139	802	353
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	1.01	1.18	0.98	1.10	0.61	1.00	0.50	0.65	0.70	0.12

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 3 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

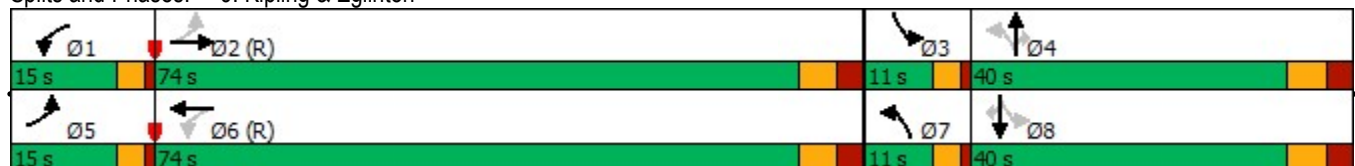
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 9: Kipling & Eglinton



HCM Signalized Intersection Capacity Analysis

9: Kipling & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	1663	58	174	1463	152	119	737	167	81	507	37
Future Volume (vph)	185	1663	58	174	1463	152	119	737	167	81	507	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3333		1684	3340		1748	3368	1240	1551	3305	1162
Flt Permitted	0.06	1.00		0.06	1.00		0.25	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	107	3333		104	3340		455	3368	1240	192	3305	1162
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	206	1848	64	193	1626	169	132	819	186	90	563	41
RTOR Reduction (vph)	0	2	0	0	6	0	0	0	71	0	0	31
Lane Group Flow (vph)	206	1910	0	193	1789	0	132	819	115	90	563	10
Confl. Peds. (#/hr)	40		50	50		40	107		48	48		107
Confl. Bikes (#/hr)			21			4			2			5
Heavy Vehicles (%)	3%	6%	14%	6%	4%	12%	1%	6%	6%	15%	8%	3%
Bus Blockages (#/hr)	0	0	16	0	0	22	0	0	26	0	0	25
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	78.0	67.0		78.0	67.0		40.1	33.1	33.1	39.9	33.0	33.0
Effective Green, g (s)	80.0	68.0		80.0	68.0		42.1	34.1	34.1	41.9	34.0	34.0
Actuated g/C Ratio	0.57	0.49		0.57	0.49		0.30	0.24	0.24	0.30	0.24	0.24
Clearance Time (s)	4.0	7.0		4.0	7.0		4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2	0.2	2.0	3.0	3.0
Lane Grp Cap (vph)	200	1618		194	1622		210	820	302	134	802	282
v/s Ratio Prot	c0.09	c0.57		0.08	0.54		0.04	c0.24		c0.04	0.17	
v/s Ratio Perm	0.50			0.48			0.15		0.09	0.16		0.01
v/c Ratio	1.03	1.18		0.99	1.10		0.63	1.00	0.38	0.67	0.70	0.04
Uniform Delay, d1	46.3	36.0		46.1	36.0		38.0	52.9	44.1	39.4	48.4	40.5
Progression Factor	1.10	0.94		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.3	82.0		62.7	56.2		4.2	31.1	3.6	9.9	5.1	0.2
Delay (s)	78.2	115.9		108.8	92.2		42.2	84.1	47.8	49.3	53.5	40.7
Level of Service	E	F		F	F		D	F	D	D	D	D
Approach Delay (s)		112.2			93.8			73.3			52.2	
Approach LOS		F			F			E			D	
Intersection Summary												
HCM 2000 Control Delay			91.6			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			105.0%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

10: Lloyd Manor/Widdicombe Hill & Eglinton

2031 Traffic Conditions
AM Peak Hour

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	98	1938	49	57	1297	196	59	23	86
Future Volume (vph)	98	1938	49	57	1297	196	59	23	86
Lane Group Flow (vph)	109	2153	54	63	1447	218	113	26	349
Turn Type	Perm	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	NA
Protected Phases		2		1	6	7	4		8
Permitted Phases	2		2	6		4		8	
Detector Phase	2	2	2	1	6	7	4	8	8
Switch Phase									
Minimum Initial (s)	23.0	23.0	23.0	6.0	23.0	6.0	32.0	32.0	32.0
Minimum Split (s)	31.0	31.0	31.0	11.0	31.0	11.0	40.0	40.0	40.0
Total Split (s)	78.0	78.0	78.0	11.0	89.0	11.0	51.0	40.0	40.0
Total Split (%)	55.7%	55.7%	55.7%	7.9%	63.6%	7.9%	36.4%	28.6%	28.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0	3.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.94	1.16	0.07	0.44	0.70	0.71	0.21	0.09	0.46
Control Delay	36.9	94.1	0.4	14.6	21.6	51.7	27.7	42.9	40.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	94.1	0.4	14.6	21.6	51.7	27.7	42.9	40.9
Queue Length 50th (m)	7.2	~389.6	0.2	6.1	215.8	45.7	17.2	5.7	37.1
Queue Length 95th (m)	m12.3	m233.5	m0.0	m6.1	m193.0	#68.8	32.6	13.9	52.6
Internal Link Dist (m)		416.9			524.4		91.1		85.3
Turn Bay Length (m)	40.0		50.0	45.0		30.0		50.0	
Base Capacity (vph)	116	1851	792	149	2057	305	563	311	778
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.16	0.07	0.42	0.70	0.71	0.20	0.08	0.45

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 76 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

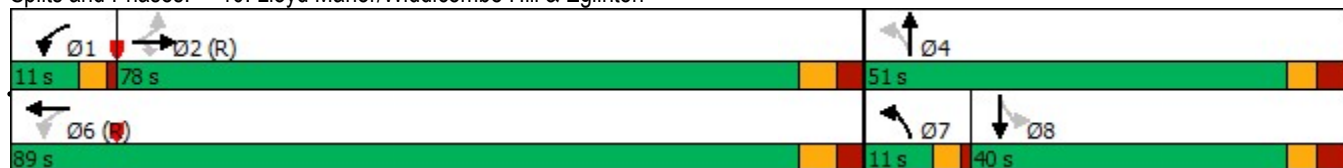
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Lloyd Manor/Widdicombe Hill & Eglinton



HCM Signalized Intersection Capacity Analysis

10: Lloyd Manor/Widdicombe Hill & Eglinton

2031 Traffic Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	1938	49	57	1297	5	196	59	42	23	86	228
Future Volume (vph)	98	1938	49	57	1297	5	196	59	42	23	86	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	3.0	6.0		3.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	0.99		1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1700	3433	1389	1716	3430		1752	1696		1783	3042	
Flt Permitted	0.12	1.00	1.00	0.05	1.00		0.40	1.00		0.68	1.00	
Satd. Flow (perm)	214	3433	1389	93	3430		746	1696		1284	3042	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	109	2153	54	63	1441	6	218	66	47	26	96	253
RTOR Reduction (vph)	0	0	25	0	0	0	0	19	0	0	41	0
Lane Group Flow (vph)	109	2153	29	63	1447	0	218	94	0	26	308	0
Confl. Peds. (#/hr)	15		19	19		15	33		1	1		33
Confl. Bikes (#/hr)									1			3
Heavy Vehicles (%)	5%	4%	4%	4%	4%	0%	1%	2%	5%	0%	1%	0%
Bus Blockages (#/hr)	0	0	13	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	73.7	73.7	73.7	83.0	83.0		43.0	43.0		32.0	32.0	
Effective Green, g (s)	74.7	74.7	74.7	84.0	84.0		44.0	44.0		33.0	33.0	
Actuated g/C Ratio	0.53	0.53	0.53	0.60	0.60		0.31	0.31		0.24	0.24	
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0		4.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	2.0	0.2		2.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	114	1831	741	128	2058		291	533		302	717	
v/s Ratio Prot		c0.63		0.02	c0.42		c0.04	0.06			0.10	
v/s Ratio Perm	0.51		0.02	0.27			c0.19			0.02		
v/c Ratio	0.96	1.18	0.04	0.49	0.70		0.75	0.18		0.09	0.43	
Uniform Delay, d1	31.1	32.6	15.6	31.7	19.4		42.1	34.9		41.7	45.5	
Progression Factor	0.49	0.52	0.82	0.94	1.09		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.8	79.7	0.0	0.1	0.2		8.9	0.2		0.1	0.4	
Delay (s)	32.1	96.8	12.7	30.0	21.2		51.0	35.0		41.9	45.9	
Level of Service	C	F	B	C	C		D	D		D	D	
Approach Delay (s)		91.8			21.6			45.5			45.6	
Approach LOS		F			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			61.2			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			130.2%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

11: Martin Grove & Eglinton

2031 Traffic Conditions
AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	389	2183	220	13	1870	298	649	31	102	458	410
Future Volume (vph)	389	2183	220	13	1870	298	649	31	102	458	410
Lane Group Flow (vph)	432	2426	244	14	2131	331	721	34	113	509	456
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	5	2			6	7	4			8	
Permitted Phases	2		2	6		4		4	8		7 8
Detector Phase	5	2	2	6	6	7	4	4	8	8	7 8
Switch Phase											
Minimum Initial (s)	6.0	31.0	31.0	31.0	31.0	6.0	29.0	29.0	36.0	36.0	
Minimum Split (s)	11.0	38.0	38.0	38.0	38.0	11.0	44.0	44.0	43.0	43.0	
Total Split (s)	24.0	72.0	72.0	48.0	48.0	25.0	68.0	68.0	43.0	43.0	
Total Split (%)	17.1%	51.4%	51.4%	34.3%	34.3%	17.9%	48.6%	48.6%	30.7%	30.7%	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	3.0	5.0	5.0	5.0	5.0	3.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max	Max	
v/c Ratio	1.40	1.48	0.43	0.29	1.40	0.77	0.47	0.07	0.72	0.53	0.55
Control Delay	232.8	248.0	15.8	64.5	225.5	38.2	28.7	2.5	72.5	45.9	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	232.8	248.0	15.8	64.5	225.5	38.2	28.7	2.5	72.5	45.9	8.7
Queue Length 50th (m)	~144.8	~485.1	24.0	3.3	~285.5	59.3	72.7	0.0	28.8	64.3	16.8
Queue Length 95th (m)	#210.6	#523.5	46.3	m5.4	#315.3	84.1	90.2	3.1	#61.0	82.5	47.7
Internal Link Dist (m)		224.0			416.9		322.5			292.9	
Turn Bay Length (m)	180.0			65.0		120.0		25.0	70.0		25.0
Base Capacity (vph)	308	1642	563	48	1522	443	1534	488	158	955	821
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	1.40	1.48	0.43	0.29	1.40	0.75	0.47	0.07	0.72	0.53	0.56

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 60 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

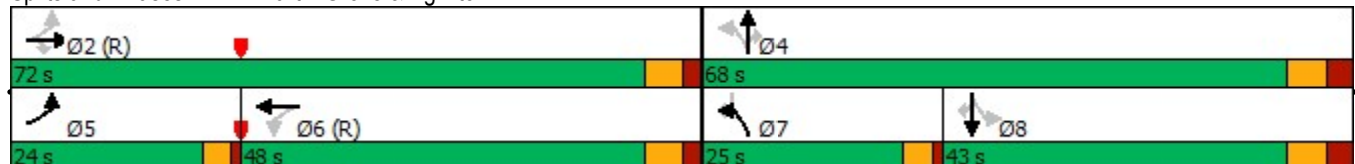
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 11: Martin Grove & Eglinton



HCM Signalized Intersection Capacity Analysis

11: Martin Grove & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	2183	220	13	1870	48	298	649	31	102	458	410
Future Volume (vph)	389	2183	220	13	1870	48	298	649	31	102	458	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	5.0	5.0	5.0		3.0	6.0	6.0	6.0	6.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.68	1.00	1.00		1.00	1.00	0.69	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.99	1.00	1.00	0.89	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1700	3433	1065	1608	4952		1752	3466	1033	1443	3466	1368
Flt Permitted	0.09	1.00	1.00	0.09	1.00		0.30	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	156	3433	1065	157	4952		553	3466	1033	574	3466	1368
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	432	2426	244	14	2078	53	331	721	34	113	509	456
RTOR Reduction (vph)	0	0	54	0	2	0	0	0	19	0	0	195
Lane Group Flow (vph)	432	2426	190	14	2129	0	331	721	15	113	509	261
Confl. Peds. (#/hr)	56		265	265		56	72		264	264		72
Confl. Bikes (#/hr)			10			3			4			3
Heavy Vehicles (%)	5%	4%	2%	11%	3%	2%	1%	3%	3%	10%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	11	0	0	9	0	0	15
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	5	2			6		7	4			8	
Permitted Phases	2		2	6			4		4	8		7 8
Actuated Green, G (s)	66.0	66.0	66.0	42.0	42.0		61.0	61.0	61.0	37.6	37.6	61.0
Effective Green, g (s)	67.0	67.0	67.0	43.0	43.0		62.0	62.0	62.0	38.6	38.6	62.0
Actuated g/C Ratio	0.48	0.48	0.48	0.31	0.31		0.44	0.44	0.44	0.28	0.28	0.44
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	2.0	0.2	0.2	0.2	0.2		2.0	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	306	1642	509	48	1520		419	1534	457	158	955	605
v/s Ratio Prot	0.21	c0.71			0.43		c0.11	0.21			0.15	
v/s Ratio Perm	0.46		0.18	0.09			c0.23		0.01	0.20		0.19
v/c Ratio	1.41	1.48	0.37	0.29	1.40		0.79	0.47	0.03	0.72	0.53	0.43
Uniform Delay, d1	45.2	36.5	23.2	36.9	48.5		28.1	27.4	22.1	45.7	43.0	26.9
Progression Factor	1.00	1.00	1.00	1.28	1.21		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	203.6	218.2	2.1	12.0	183.5		8.9	1.0	0.1	24.1	2.1	0.2
Delay (s)	248.9	254.7	25.3	59.1	242.4		36.9	28.5	22.2	69.8	45.2	27.0
Level of Service	F	F	C	E	F		D	C	C	E	D	C
Approach Delay (s)		235.8			241.2			30.9			40.1	
Approach LOS		F			F			C			D	
Intersection Summary												
HCM 2000 Control Delay			178.9			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			164.5%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

12: Eglinton & Highway 401

2031 Traffic Conditions
AM Peak Hour

	→	↖	↗
Lane Group	EBT	WBL	NBR
Lane Configurations	↑↑↑↑	↖↖	↗↗
Traffic Volume (vph)	1929	684	836
Future Volume (vph)	1929	684	836
Lane Group Flow (vph)	2912	760	929
Turn Type	NA	Prot	Prot
Protected Phases	2	8	4
Permitted Phases			
Minimum Split (s)	39.0	37.0	37.0
Total Split (s)	89.0	51.0	51.0
Total Split (%)	63.6%	36.4%	36.4%
Yellow Time (s)	5.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0
Total Lost Time (s)	7.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
v/c Ratio	0.82	0.71	1.08
Control Delay	25.2	46.2	98.8
Queue Delay	0.0	0.0	0.0
Total Delay	25.2	46.2	98.8
Queue Length 50th (m)	176.4	95.3	~161.7
Queue Length 95th (m)	190.3	117.8	#206.7
Internal Link Dist (m)	216.8		
Turn Bay Length (m)			
Base Capacity (vph)	3556	1070	860
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	0.71	1.08

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 64 (46%), Referenced to phase 2:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed

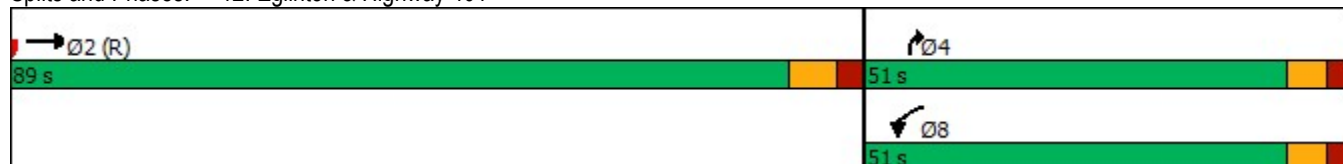
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Eglinton & Highway 401



HCM Signalized Intersection Capacity Analysis

12: Eglinton & Highway 401

2031 Traffic Conditions
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↙↘			↗↖
Traffic Volume (vph)	1929	692	684	0	0	836
Future Volume (vph)	1929	692	684	0	0	836
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0		6.0			6.0
Lane Util. Factor	0.86		0.97			0.88
Frt	0.96		1.00			0.85
Flt Protected	1.00		0.95			1.00
Satd. Flow (prot)	6042		3330			2652
Flt Permitted	1.00		0.95			1.00
Satd. Flow (perm)	6042		3330			2652
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2143	769	760	0	0	929
RTOR Reduction (vph)	19	0	0	0	0	8
Lane Group Flow (vph)	2893	0	760	0	0	921
Heavy Vehicles (%)	3%	2%	4%	0%	0%	6%
Turn Type	NA		Prot			Prot
Protected Phases	2		8			4
Permitted Phases						
Actuated Green, G (s)	81.0		44.0			44.0
Effective Green, g (s)	82.0		45.0			45.0
Actuated g/C Ratio	0.59		0.32			0.32
Clearance Time (s)	8.0		7.0			7.0
Lane Grp Cap (vph)	3538		1070			852
v/s Ratio Prot	c0.48		0.23			c0.35
v/s Ratio Perm						
v/c Ratio	0.82		0.71			1.08
Uniform Delay, d1	23.1		41.8			47.5
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.2		4.0			55.0
Delay (s)	25.3		45.8			102.5
Level of Service	C		D			F
Approach Delay (s)	25.3			45.8	102.5	
Approach LOS	C			D	F	
Intersection Summary						
HCM 2000 Control Delay			44.3		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.91			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			79.6%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Queues

13: East Mall & Eglinton

2031 Traffic Conditions
AM Peak Hour



Lane Group	EBT	WBL	WBT	NBL	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑	↑	↑	↑
Traffic Volume (vph)	644	175	1207	224	176	29	811
Future Volume (vph)	644	175	1207	224	176	29	811
Lane Group Flow (vph)	805	194	1341	249	196	41	901
Turn Type	NA	pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	2	1	6			8	
Permitted Phases		6		4	4		1 8
Detector Phase	2	1	6	4	4	8	1 8
Switch Phase							
Minimum Initial (s)	29.0	6.0	29.0	7.0	7.0	7.0	
Minimum Split (s)	37.0	11.0	37.0	34.0	34.0	15.0	
Total Split (s)	37.0	22.0	59.0	34.0	34.0	34.0	
Total Split (%)	39.8%	23.7%	63.4%	36.6%	36.6%	36.6%	
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	6.0	3.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes					
Recall Mode	Max	Max	Max	None	None	None	
v/c Ratio	0.72	0.41	0.67	0.60	0.35	0.07	1.00
Control Delay	31.0	11.2	16.1	35.0	5.7	23.8	49.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	11.2	16.1	35.0	5.7	23.8	49.8
Queue Length 50th (m)	64.6	14.4	82.1	37.9	0.0	5.2	145.1
Queue Length 95th (m)	85.6	24.3	104.4	63.2	14.7	12.6	#236.3
Internal Link Dist (m)	966.3		108.5			34.2	
Turn Bay Length (m)		30.0					
Base Capacity (vph)	1122	468	1994	413	560	558	904
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.41	0.67	0.60	0.35	0.07	1.00

Intersection Summary

Cycle Length: 93

Actuated Cycle Length: 93

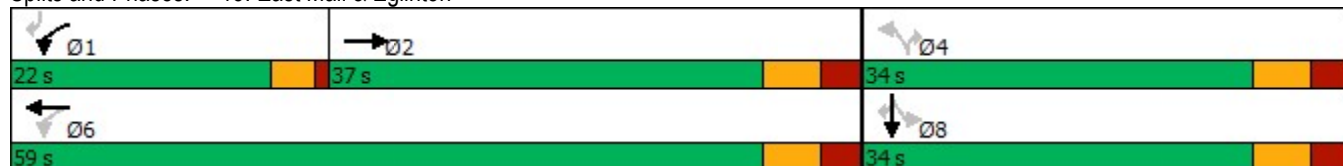
Natural Cycle: 85

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 13: East Mall & Eglinton



HCM Signalized Intersection Capacity Analysis

13: East Mall & Eglinton

2031 Traffic Conditions

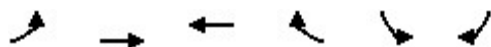
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	644	80	175	1207	0	224	0	176	8	29	811
Future Volume (vph)	0	644	80	175	1207	0	224	0	176	8	29	811
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		3.0	6.0		6.0		6.0		6.0	3.0
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00		1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		0.98		1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Frt		0.98		1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3339		1667	3500		1785		1408		1855	1551
Flt Permitted		1.00		0.18	1.00		0.73		1.00		0.99	1.00
Satd. Flow (perm)		3339		321	3500		1372		1408		1855	1551
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	716	89	194	1341	0	249	0	196	9	32	901
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	137	0	0	23
Lane Group Flow (vph)	0	795	0	194	1341	0	249	0	59	0	41	878
Confl. Peds. (#/hr)	15		8	8		15			8	8		
Heavy Vehicles (%)	0%	5%	3%	7%	2%	0%	0%	0%	8%	0%	0%	3%
Bus Blockages (#/hr)	0	0	13	0	0	0	0	0	7	0	0	0
Turn Type		NA		pm+pt	NA		Perm		Perm	Perm	NA	custom
Protected Phases		2		1	6						8	
Permitted Phases				6			4		4	8		1 8
Actuated Green, G (s)		30.0		52.0	52.0		27.0		27.0		27.0	52.0
Effective Green, g (s)		31.0		53.0	53.0		28.0		28.0		28.0	47.0
Actuated g/C Ratio		0.33		0.57	0.57		0.30		0.30		0.30	0.51
Clearance Time (s)		7.0		4.0	7.0		7.0		7.0		7.0	
Vehicle Extension (s)		0.2		8.0	0.2		3.0		3.0		3.0	
Lane Grp Cap (vph)		1113		457	1994		413		423		558	783
v/s Ratio Prot		0.24		0.09	c0.38							
v/s Ratio Perm				0.15			0.18		0.04		0.02	c0.57
v/c Ratio		0.71		0.42	0.67		0.60		0.14		0.07	1.12
Uniform Delay, d1		27.1		11.8	13.9		27.8		23.7		23.2	23.0
Progression Factor		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		3.9		2.9	1.8		2.5		0.2		0.1	70.8
Delay (s)		31.0		14.6	15.8		30.2		23.9		23.3	93.8
Level of Service		C		B	B		C		C		C	F
Approach Delay (s)		31.0			15.6			27.4			90.8	
Approach LOS		C			B			C			F	
Intersection Summary												
HCM 2000 Control Delay			39.4			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			93.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			107.9%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

14: Eglinton & Matheson

2031 Traffic Conditions
AM Peak Hour

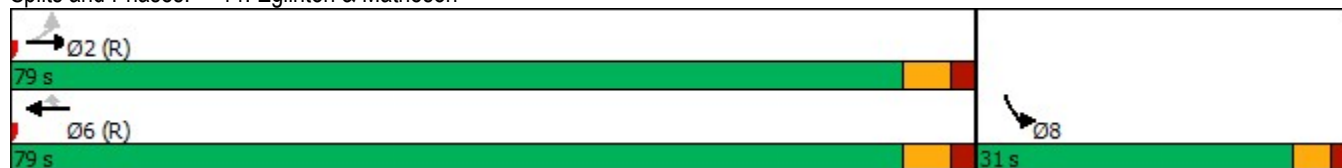


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	538	1152	1203	141	230
Future Volume (vph)	15	538	1152	1203	141	230
Lane Group Flow (vph)	17	598	1280	1337	157	256
Turn Type	Perm	NA	NA	Perm	Prot	Free
Protected Phases		2	6		8	
Permitted Phases	2			6		Free
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	25.0	25.0	7.0	7.0	7.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	30.0	
Total Split (s)	79.0	79.0	79.0	79.0	31.0	
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.06	0.23	0.48	0.93	0.62	0.17
Control Delay	4.7	4.2	5.8	16.1	53.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	4.2	5.8	16.1	53.9	0.2
Queue Length 50th (m)	0.7	15.6	43.5	18.9	32.0	0.0
Queue Length 95th (m)	3.1	26.7	70.1	#297.8	50.1	0.0
Internal Link Dist (m)		209.4	286.2		108.2	
Turn Bay Length (m)	132.0			30.0		
Base Capacity (vph)	274	2639	2690	1442	417	1502
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	0.06	0.23	0.48	0.93	0.38	0.17

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 51 (46%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

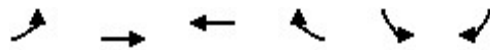
Splits and Phases: 14: Eglinton & Matheson



HCM Signalized Intersection Capacity Analysis

14: Eglinton & Matheson

2031 Traffic Conditions
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	538	1152	1203	141	230
Future Volume (vph)	15	538	1152	1203	141	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	4.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
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)	1785	3433	3500	1581	1700	1502
Flt Permitted	0.19	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	358	3433	3500	1581	1700	1502
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	598	1280	1337	157	256
RTOR Reduction (vph)	0	0	0	227	0	0
Lane Group Flow (vph)	17	598	1280	1110	157	256
Confl. Peds. (#/hr)						2
Heavy Vehicles (%)	0%	4%	2%	1%	5%	5%
Turn Type	Perm	NA	NA	Perm	Prot	Free
Protected Phases		2	6		8	
Permitted Phases	2			6		Free
Actuated Green, G (s)	83.6	83.6	83.6	83.6	15.4	110.0
Effective Green, g (s)	84.6	84.6	84.6	84.6	16.4	110.0
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.15	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	275	2640	2691	1215	253	1502
v/s Ratio Prot		0.17	0.37		c0.09	
v/s Ratio Perm	0.05			c0.70		0.17
v/c Ratio	0.06	0.23	0.48	0.91	0.62	0.17
Uniform Delay, d1	3.1	3.6	4.6	9.9	43.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2	0.6	12.0	4.7	0.2
Delay (s)	3.5	3.8	5.2	21.9	48.5	0.2
Level of Service	A	A	A	C	D	A
Approach Delay (s)		3.7	13.7		18.6	
Approach LOS		A	B		B	
Intersection Summary						
HCM 2000 Control Delay			12.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.87			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			103.7%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

Queues

15: Renforth & Eglinton

2031 Traffic Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	 	  		 			 		 	
Traffic Volume (vph)	377	312	79	838	370	223	860	62	254	654
Future Volume (vph)	377	312	79	838	370	223	860	62	254	654
Lane Group Flow (vph)	419	456	88	931	411	248	1164	69	282	727
Turn Type	Prot	NA	Prot	NA	Free	pm+pt	NA	Perm	NA	pm+ov
Protected Phases	5	2	1	6		7	4		8	5
Permitted Phases					Free	4		8		8
Detector Phase	5	2	1	6		7	4	8	8	5
Switch Phase										
Minimum Initial (s)	6.0	31.0	6.0	31.0		6.0	31.0	31.0	31.0	6.0
Minimum Split (s)	12.0	40.0	12.0	40.0		11.0	40.0	40.0	40.0	12.0
Total Split (s)	24.0	48.0	18.0	42.0		11.0	54.0	43.0	43.0	24.0
Total Split (%)	20.0%	40.0%	15.0%	35.0%		9.2%	45.0%	35.8%	35.8%	20.0%
Yellow Time (s)	3.0	5.0	3.0	5.0		3.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	3.0	2.0	3.0		1.0	4.0	4.0	4.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	7.0	4.0	7.0		3.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max		None	Max	Max	Max	None
v/c Ratio	0.81	0.26	0.54	0.88	0.31	0.54	0.88	1.25	0.27	0.91
Control Delay	61.6	23.0	63.8	51.0	0.6	29.0	42.4	242.7	32.9	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	23.0	63.8	51.0	0.6	29.0	42.4	242.7	32.9	40.6
Queue Length 50th (m)	48.9	22.7	20.1	111.4	0.0	38.5	130.1	~20.1	26.6	126.8
Queue Length 95th (m)	66.3	32.5	36.1	#148.2	0.0	58.6	#161.3	#50.0	38.1	#219.6
Internal Link Dist (m)		465.7		209.4			161.3		107.0	
Turn Bay Length (m)	300.0		77.0			55.0		60.0		55.0
Base Capacity (vph)	555	1771	208	1057	1317	459	1319	55	1029	811
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.26	0.42	0.88	0.31	0.54	0.88	1.25	0.27	0.90

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 98 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

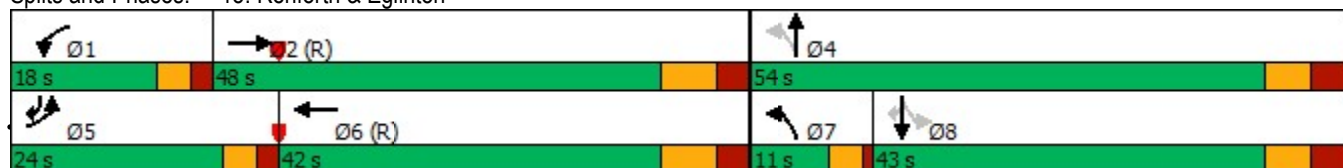
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 15: Renforth & Eglinton



HCM Signalized Intersection Capacity Analysis

15: Renforth & Eglinton

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	377	312	98	79	838	370	223	860	187	62	254	654
Future Volume (vph)	377	312	98	79	838	370	223	860	187	62	254	654
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0	3.0	3.0	7.0		7.0	7.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	0.97		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.98	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3330	4706		1785	3500	1317	1733	3331		1588	3433	1566
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.53	1.00		0.11	1.00	1.00
Satd. Flow (perm)	3330	4706		1785	3500	1317	960	3331		186	3433	1566
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	419	347	109	88	931	411	248	956	208	69	282	727
RTOR Reduction (vph)	0	46	0	0	0	0	0	15	0	0	0	45
Lane Group Flow (vph)	419	410	0	88	931	411	248	1149	0	69	282	682
Confl. Peds. (#/hr)	94					94			136	136		
Confl. Bikes (#/hr)			5									6
Heavy Vehicles (%)	4%	4%	7%	0%	2%	9%	3%	1%	2%	10%	4%	1%
Bus Blockages (#/hr)	0	0	0	0	0	16	0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6		7	4			8	5
Permitted Phases						Free	4			8		8
Actuated Green, G (s)	17.7	43.0		10.0	35.3	120.0	46.0	46.0		35.0	35.0	52.7
Effective Green, g (s)	18.7	44.0		11.0	36.3	120.0	47.0	47.0		36.0	36.0	54.7
Actuated g/C Ratio	0.16	0.37		0.09	0.30	1.00	0.39	0.39		0.30	0.30	0.46
Clearance Time (s)	5.0	8.0		5.0	8.0		4.0	8.0		8.0	8.0	5.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2		0.2	0.2	2.0
Lane Grp Cap (vph)	518	1725		163	1058	1317	427	1304		55	1029	713
v/s Ratio Prot	0.13	0.09		0.05	c0.27		0.04	c0.34			0.08	c0.15
v/s Ratio Perm						0.31	0.19			c0.37		0.29
v/c Ratio	0.81	0.24		0.54	0.88	0.31	0.58	0.88		1.25	0.27	0.96
Uniform Delay, d1	48.9	26.4		52.1	39.8	0.0	27.3	33.9		42.0	32.0	31.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.6	0.3		1.7	10.5	0.6	1.3	8.8		204.8	0.7	23.2
Delay (s)	57.5	26.7		53.8	50.2	0.6	28.6	42.7		246.8	32.7	54.8
Level of Service	E	C		D	D	A	C	D		F	C	D
Approach Delay (s)		41.4			36.2			40.2			61.3	
Approach LOS		D			D			D			E	
Intersection Summary												
HCM 2000 Control Delay			44.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				21.0		
Intersection Capacity Utilization			114.2%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
16: Eglinton & Commerce

2031 Traffic Conditions
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	29	657	147	1374	311	5	2	82	14
Future Volume (vph)	29	657	147	1374	311	5	2	82	14
Lane Group Flow (vph)	32	752	163	1527	346	0	18	91	53
Turn Type	Perm	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2	1	6			4		8
Permitted Phases	2		6		6	4		8	
Detector Phase	2	2	1	6	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	25.0	7.0	7.0	7.0	7.0
Minimum Split (s)	33.0	33.0	11.0	33.0	33.0	41.0	41.0	41.0	41.0
Total Split (s)	33.0	33.0	11.0	44.0	44.0	41.0	41.0	41.0	41.0
Total Split (%)	38.8%	38.8%	12.9%	51.8%	51.8%	48.2%	48.2%	48.2%	48.2%
Yellow Time (s)	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	3.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.23	0.29	0.32	0.65	0.30		0.05	0.32	0.14
Control Delay	25.2	14.9	10.0	15.6	2.5		12.1	26.1	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	25.2	14.9	10.0	15.6	2.5		12.1	26.1	18.1
Queue Length 50th (m)	2.3	20.1	6.0	56.4	0.0		1.1	13.8	6.2
Queue Length 95th (m)	13.4	45.8	24.9	#170.7	13.6		4.6	19.3	11.0
Internal Link Dist (m)		364.9		465.7			40.3		100.4
Turn Bay Length (m)	55.0		110.0		80.0			30.0	
Base Capacity (vph)	138	2576	516	2354	1137		615	505	673
Starvation Cap Reductn	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.23	0.29	0.32	0.65	0.30		0.03	0.18	0.08

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

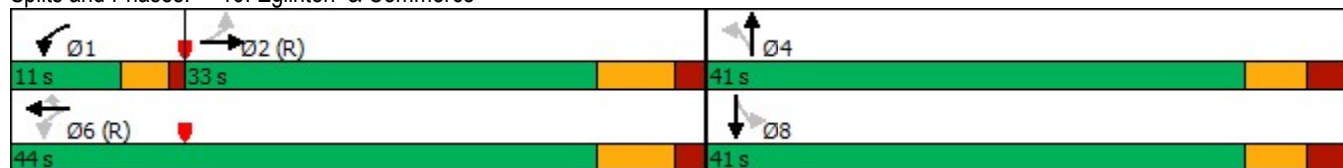
Natural Cycle: 85

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 16: Eglinton & Commerce



HCM Signalized Intersection Capacity Analysis

16: Eglinton & Commerce

2031 Traffic Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (vph)	29	657	20	147	1374	311	5	2	9	82	14	33
Future Volume (vph)	29	657	20	147	1374	311	5	2	9	82	14	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		3.0	6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98		0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00		1.00		0.98	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.93		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1784	4813		1756	3500	1522		1578		1564	1623	
Flt Permitted	0.14	1.00		0.32	1.00	1.00		0.92		0.75	1.00	
Satd. Flow (perm)	259	4813		594	3500	1522		1480		1227	1623	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	730	22	163	1527	346	6	2	10	91	16	37
RTOR Reduction (vph)	0	2	0	0	0	124	0	8	0	0	8	0
Lane Group Flow (vph)	32	750	0	163	1527	222	0	10	0	91	45	0
Confl. Peds. (#/hr)	2		42	42		2	13		25	25		13
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	6%	0%	1%	2%	0%	0%	0%	11%	12%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6		6	4			8		
Actuated Green, G (s)	43.1	43.1		53.6	53.6	53.6		17.4		17.4	17.4	
Effective Green, g (s)	44.1	44.1		54.6	54.6	54.6		18.4		18.4	18.4	
Actuated g/C Ratio	0.52	0.52		0.64	0.64	0.64		0.22		0.22	0.22	
Clearance Time (s)	7.0	7.0		4.0	7.0	7.0		7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		2.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	134	2497		484	2248	977		320		265	351	
v/s Ratio Prot		0.16		0.03	c0.44						0.03	
v/s Ratio Perm	0.12			0.19		0.15		0.01		c0.07		
v/c Ratio	0.24	0.30		0.34	0.68	0.23		0.03		0.34	0.13	
Uniform Delay, d1	11.2	11.7		6.1	9.6	6.4		26.3		28.2	26.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	4.2	0.3		0.2	1.7	0.5		0.0		0.8	0.2	
Delay (s)	15.4	12.0		6.3	11.3	6.9		26.3		29.0	27.0	
Level of Service	B	B		A	B	A		C		C	C	
Approach Delay (s)		12.1			10.2			26.3			28.2	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			11.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			92.3%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

1: Weston & Eglinton

2031 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	101	605	266	97	746	75	232	571	54	453
Future Volume (vph)	101	605	266	97	746	75	232	571	54	453
Lane Group Flow (vph)	106	637	280	108	785	79	244	621	57	634
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2		1	6			4		8
Permitted Phases	2		2	6		6	4		8	
Detector Phase	2	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	25.0	25.0	25.0	6.0	25.0	25.0	36.0	36.0	36.0	36.0
Minimum Split (s)	34.0	34.0	34.0	11.0	32.0	32.0	45.0	45.0	45.0	45.0
Total Split (s)	39.0	39.0	39.0	11.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	39.0%	39.0%	39.0%	11.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.55	0.58	0.47	0.35	0.53	0.13	0.95	0.46	0.22	0.46
Control Delay	39.6	29.7	9.1	18.5	21.5	4.3	74.9	21.5	21.0	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	29.7	9.1	18.5	21.5	4.3	74.9	21.5	21.0	19.7
Queue Length 50th (m)	16.5	53.0	7.7	11.5	56.1	0.0	44.4	43.5	6.8	40.7
Queue Length 95th (m)	35.4	70.6	28.6	21.3	73.2	7.8	#93.0	58.3	16.1	55.8
Internal Link Dist (m)		725.8			490.7			367.2		320.1
Turn Bay Length (m)	40.0		45.0	30.0			50.0		35.0	
Base Capacity (vph)	193	1097	595	308	1487	606	257	1355	254	1366
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.58	0.47	0.35	0.53	0.13	0.95	0.46	0.22	0.46

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 32 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

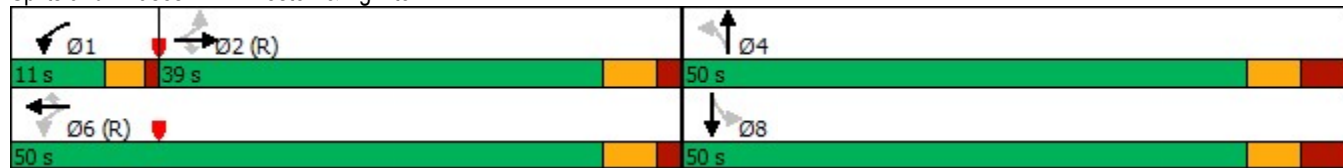
Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston & Eglinton



HCM Signalized Intersection Capacity Analysis

1: Weston & Eglinton

2031 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	101	605	266	97	746	75	232	571	19	54	453	149
Future Volume (vph)	101	605	266	97	746	75	232	571	19	54	453	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	5.0	5.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.88	1.00	1.00		1.00	0.98	
Flpb, ped/bikes	0.97	1.00	1.00	0.99	1.00	1.00	0.98	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
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)	1538	3216	1317	1644	3305	1251	1605	3147		1550	3103	
Flt Permitted	0.35	1.00	1.00	0.27	1.00	1.00	0.35	1.00		0.36	1.00	
Satd. Flow (perm)	566	3216	1317	459	3305	1251	598	3147		590	3103	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	637	280	108	785	79	244	601	20	57	477	157
RTOR Reduction (vph)	0	0	146	0	0	43	0	2	0	0	32	0
Lane Group Flow (vph)	106	637	134	108	785	36	244	619	0	57	602	0
Confl. Peds. (#/hr)	87		62	62		87	62		84	84		62
Confl. Bikes (#/hr)						2			6			3
Heavy Vehicles (%)	12%	11%	11%	8%	8%	13%	9%	13%	0%	12%	10%	6%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	33.1	33.1	33.1	44.0	44.0	44.0	42.0	42.0		42.0	42.0	
Effective Green, g (s)	34.1	34.1	34.1	45.0	45.0	45.0	43.0	43.0		43.0	43.0	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45	0.45	0.43	0.43		0.43	0.43	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	8.0	8.0		8.0	8.0	
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)	193	1096	449	300	1487	562	257	1353		253	1334	
v/s Ratio Prot		c0.20		0.03	c0.24			0.20			0.19	
v/s Ratio Perm	0.19		0.10	0.13		0.03	c0.41			0.10		
v/c Ratio	0.55	0.58	0.30	0.36	0.53	0.06	0.95	0.46		0.23	0.45	
Uniform Delay, d1	26.7	27.1	24.2	17.2	19.8	15.6	27.5	20.2		18.0	20.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.8	2.3	1.7	0.7	1.3	0.2	44.5	1.1		2.1	1.1	
Delay (s)	37.5	29.3	25.9	17.9	21.2	15.8	71.9	21.3		20.0	21.3	
Level of Service	D	C	C	B	C	B	E	C		C	C	
Approach Delay (s)		29.2			20.4			35.6			21.2	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			26.8									
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			100.0									
Intersection Capacity Utilization			121.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues 2: Jane & Eglinton

2031 Traffic Conditions
PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	194	1009	198	91	918	17	209	868	28	889	193
Future Volume (vph)	194	1009	198	91	918	17	209	868	28	889	193
Lane Group Flow (vph)	216	1062	208	101	966	18	232	998	29	936	203
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	7	4	8	8	8
Switch Phase											
Minimum Initial (s)	6.0	31.0	31.0	6.0	31.0	31.0	6.0	31.0	31.0	31.0	31.0
Minimum Split (s)	11.0	39.0	39.0	11.0	39.0	39.0	11.0	40.0	40.0	40.0	40.0
Total Split (s)	11.0	40.0	40.0	11.0	40.0	40.0	15.0	55.0	40.0	40.0	40.0
Total Split (%)	10.4%	37.7%	37.7%	10.4%	37.7%	37.7%	14.2%	51.9%	37.7%	37.7%	37.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max
v/c Ratio	1.05	0.95	0.38	0.49	0.88	0.03	0.86	0.65	0.24	0.86	0.35
Control Delay	103.3	52.9	12.6	25.5	44.5	0.1	51.9	24.6	33.6	43.9	6.7
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	103.3	52.9	12.6	25.5	44.5	0.1	51.9	24.6	33.6	43.9	6.7
Queue Length 50th (m)	~32.5	112.3	10.9	11.8	98.5	0.0	30.2	80.6	4.4	95.5	1.9
Queue Length 95th (m)	#78.6	#154.4	29.5	21.6	#133.2	0.0	#71.2	102.4	12.7	#128.4	17.9
Internal Link Dist (m)		213.3			725.8			326.6		228.7	
Turn Bay Length (m)	75.0		25.0	70.0		25.0	75.0		80.0		65.0
Base Capacity (vph)	205	1119	545	209	1101	538	273	1537	121	1085	579
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	1.05	0.95	0.38	0.48	0.88	0.03	0.85	0.65	0.24	0.86	0.35

Intersection Summary

Cycle Length: 106

Actuated Cycle Length: 106

Offset: 51 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

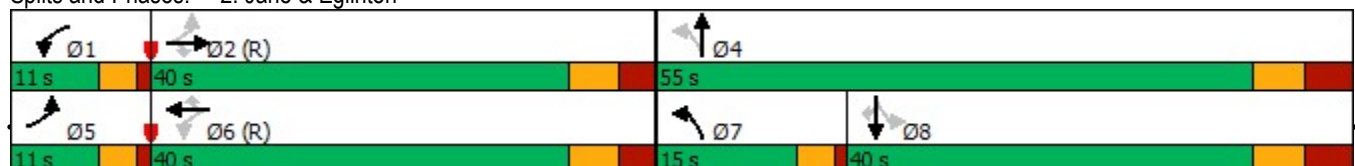
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: Jane & Eglinton



04/20/2020

Page 3

HCM Signalized Intersection Capacity Analysis

2: Jane & Eglinton

2031 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	1009	198	91	918	17	209	868	80	28	889	193
Future Volume (vph)	194	1009	198	91	918	17	209	868	80	28	889	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		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)	1732	3466	1409	1767	3433	1396	1749	3382		1370	3466	1435
Flt Permitted	0.12	1.00	1.00	0.12	1.00	1.00	0.11	1.00		0.27	1.00	1.00
Satd. Flow (perm)	213	3466	1409	219	3433	1396	203	3382		388	3466	1435
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	1062	208	101	966	18	232	914	84	29	936	203
RTOR Reduction (vph)	0	0	91	0	0	12	0	7	0	0	0	130
Lane Group Flow (vph)	216	1062	117	101	966	6	232	991	0	29	936	73
Confl. Peds. (#/hr)	50		45	45		50	62		41	41		62
Heavy Vehicles (%)	3%	3%	3%	1%	4%	0%	2%	4%	1%	29%	3%	3%
Bus Blockages (#/hr)	0	0	9	0	0	17	0	0	0	0	0	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	40.2	33.2	33.2	39.8	33.0	33.0	47.0	47.0		32.2	32.2	32.2
Effective Green, g (s)	42.2	34.2	34.2	41.8	34.0	34.0	48.0	48.0		33.2	33.2	33.2
Actuated g/C Ratio	0.40	0.32	0.32	0.39	0.32	0.32	0.45	0.45		0.31	0.31	0.31
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	8.0		8.0	8.0	8.0
Vehicle Extension (s)	2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	199	1118	454	200	1101	447	264	1531		121	1085	449
v/s Ratio Prot	c0.08	0.31		0.04	0.28		c0.10	0.29			0.27	
v/s Ratio Perm	c0.35		0.08	0.16		0.00	c0.30			0.07		0.05
v/c Ratio	1.09	0.95	0.26	0.51	0.88	0.01	0.88	0.65		0.24	0.86	0.16
Uniform Delay, d1	25.9	35.1	26.5	24.2	34.0	24.6	25.4	22.5		27.0	34.3	26.3
Progression Factor	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	88.4	17.3	1.4	0.7	9.9	0.1	25.7	2.1		4.6	9.1	0.8
Delay (s)	114.3	52.3	27.9	25.0	43.9	24.6	51.1	24.6		31.7	43.3	27.1
Level of Service	F	D	C	C	D	C	D	C		C	D	C
Approach Delay (s)		57.9			41.9			29.6			40.2	
Approach LOS		E			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			43.2									
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			106.0									
Intersection Capacity Utilization			109.2%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

3: Eglinton & Emmett

2031 Traffic Conditions
PM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	166	1374	9	1366	5	1	36	0
Future Volume (vph)	166	1374	9	1366	5	1	36	0
Lane Group Flow (vph)	175	1461	9	1512	0	15	0	172
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	22.0	22.0	22.0	22.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0
Total Split (s)	72.0	72.0	72.0	72.0	28.0	28.0	28.0	28.0
Total Split (%)	72.0%	72.0%	72.0%	72.0%	28.0%	28.0%	28.0%	28.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.93	0.60	0.04	0.61		0.07		0.67
Control Delay	66.6	7.4	5.0	7.6		22.6		37.9
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	66.6	7.4	5.0	7.6		22.6		37.9
Queue Length 50th (m)	22.4	54.1	0.4	56.8		1.0		20.5
Queue Length 95th (m)	#43.1	94.8	2.2	99.7		6.2		39.0
Internal Link Dist (m)		241.5		156.2		47.3		107.6
Turn Bay Length (m)	30.0		30.0					
Base Capacity (vph)	189	2449	211	2466		358		376
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	0.93	0.60	0.04	0.61		0.04		0.46

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 90 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

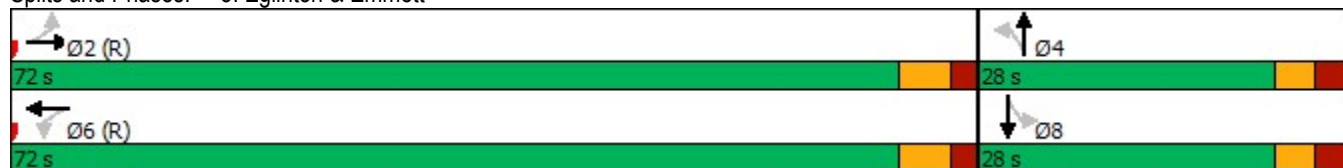
Natural Cycle: 120

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Eglinton & Emmett



HCM Signalized Intersection Capacity Analysis

3: Eglinton & Emmett

2031 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1374	14	9	1366	70	5	1	9	36	0	127
Future Volume (vph)	166	1374	14	9	1366	70	5	1	9	36	0	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1714	3243		1784	3260			1678			1541	
Flt Permitted	0.14	1.00		0.15	1.00			0.89			0.92	
Satd. Flow (perm)	250	3243		280	3260			1527			1437	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	175	1446	15	9	1438	74	5	1	9	38	0	134
RTOR Reduction (vph)	0	0	0	0	3	0	0	8	0	0	51	0
Lane Group Flow (vph)	175	1461	0	9	1509	0	0	7	0	0	121	0
Confl. Peds. (#/hr)	7		2	2		7	2		4	4		2
Confl. Bikes (#/hr)			4			5			1			
Heavy Vehicles (%)	4%	10%	0%	0%	8%	18%	0%	0%	0%	19%	0%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	74.6	74.6		74.6	74.6			13.4			13.4	
Effective Green, g (s)	75.6	75.6		75.6	75.6			14.4			14.4	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.14			0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0			3.0	
Lane Grp Cap (vph)	189	2451		211	2464			219			206	
v/s Ratio Prot		0.45			0.46							
v/s Ratio Perm	c0.70			0.03				0.00			c0.08	
v/c Ratio	0.93	0.60		0.04	0.61			0.03			0.59	
Uniform Delay, d1	9.9	5.4		3.1	5.5			36.8			40.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	48.5	1.1		0.4	1.1			0.1			4.2	
Delay (s)	58.4	6.5		3.5	6.7			36.9			44.2	
Level of Service	E	A		A	A			D			D	
Approach Delay (s)		12.0			6.7			36.9			44.2	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			11.4									
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			100.0									
Intersection Capacity Utilization			82.9%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

4: Scarlett & Eglinton

2031 Traffic Conditions
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1133	281	144	1130	220	242	559	165	254	765	81
Future Volume (vph)	35	1133	281	144	1130	220	242	559	165	254	765	81
Lane Group Flow (vph)	37	1193	296	160	1189	232	269	588	174	282	805	85
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	34.0	34.0	34.0	6.0	34.0	34.0	6.0	39.0	39.0	6.0	39.0	39.0
Minimum Split (s)	41.0	41.0	41.0	11.0	41.0	41.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (s)	44.0	44.0	44.0	11.0	55.0	55.0	13.0	50.0	50.0	11.0	48.0	48.0
Total Split (%)	37.9%	37.9%	37.9%	9.5%	47.4%	47.4%	11.2%	43.1%	43.1%	9.5%	41.4%	41.4%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	4.0	4.0	1.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.49	1.02	0.52	0.84	0.79	0.32	0.89	0.45	0.28	0.73	0.65	0.15
Control Delay	56.4	71.0	21.3	58.0	33.1	6.9	51.3	29.0	10.1	32.6	34.5	3.9
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	56.4	71.0	21.3	58.0	33.1	6.9	51.3	29.0	10.1	32.6	34.5	3.9
Queue Length 50th (m)	6.6	~152.0	30.8	21.6	120.1	6.8	34.9	52.6	8.1	36.8	80.2	0.0
Queue Length 95th (m)	#21.8	#193.3	57.7	#56.2	147.3	22.7	#70.8	68.5	23.5	#56.5	101.3	7.4
Internal Link Dist (m)		1148.9			281.3			406.4			326.9	
Turn Bay Length (m)	80.0		20.0	70.0		60.0	75.0		25.0	60.0		25.0
Base Capacity (vph)	75	1165	572	190	1508	718	302	1297	624	387	1237	581
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	0.49	1.02	0.52	0.84	0.79	0.32	0.89	0.45	0.28	0.73	0.65	0.15

Intersection Summary

Cycle Length: 116

Actuated Cycle Length: 116

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

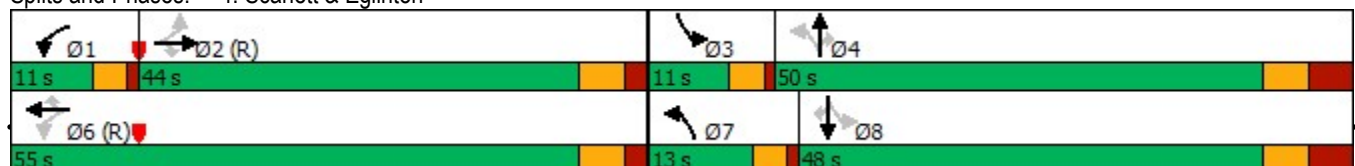
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Scarlett & Eglinton



HCM Signalized Intersection Capacity Analysis

4: Scarlett & Eglinton

2031 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	35	1133	281	144	1130	220	242	559	165	254	765	81
Future Volume (vph)	35	1133	281	144	1130	220	242	559	165	254	765	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	7.0	7.0	3.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.95
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	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)	1772	3466	1461	1785	3500	1429	1765	3500	1484	1780	3500	1457
Flt Permitted	0.12	1.00	1.00	0.10	1.00	1.00	0.20	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	225	3466	1461	179	3500	1429	374	3500	1484	685	3500	1457
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95
Adj. Flow (vph)	37	1193	296	160	1189	232	269	588	174	282	805	85
RTOR Reduction (vph)	0	0	81	0	0	102	0	0	75	0	0	55
Lane Group Flow (vph)	37	1193	215	160	1189	130	269	588	99	282	805	30
Confl. Peds. (#/hr)	50		13	13		50	43		25	25		43
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	0%	3%	1%	0%	2%	1%	1%	2%	1%	0%	2%	0%
Bus Blockages (#/hr)	0	0	13	0	0	9	0	0	7	0	0	10
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	38.0	38.0	38.0	49.0	49.0	49.0	51.0	42.0	42.0	47.0	40.0	40.0
Effective Green, g (s)	39.0	39.0	39.0	50.0	50.0	50.0	53.0	43.0	43.0	49.0	41.0	41.0
Actuated g/C Ratio	0.34	0.34	0.34	0.43	0.43	0.43	0.46	0.37	0.37	0.42	0.35	0.35
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	0.2	0.2	0.2	2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2	0.2
Lane Grp Cap (vph)	75	1165	491	187	1508	615	290	1297	550	364	1237	514
v/s Ratio Prot		c0.34		c0.06	0.34		c0.08	0.17		0.05	0.23	
v/s Ratio Perm	0.16		0.15	0.31		0.09	c0.34		0.07	0.27		0.02
v/c Ratio	0.49	1.02	0.44	0.86	0.79	0.21	0.93	0.45	0.18	0.77	0.65	0.06
Uniform Delay, d1	30.6	38.5	30.0	27.4	28.4	20.7	24.7	27.6	24.6	26.2	31.5	24.8
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	21.4	32.6	2.8	28.8	4.3	0.8	33.5	1.1	0.7	9.1	2.7	0.2
Delay (s)	52.0	71.1	32.8	56.3	32.7	21.4	58.2	28.8	25.3	35.2	34.2	25.0
Level of Service	D	E	C	E	C	C	E	C	C	D	C	C
Approach Delay (s)		63.2			33.4			35.9			33.7	
Approach LOS		E			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			42.5									
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			116.0									
Intersection Capacity Utilization			123.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

5: Royal York & Eglinton

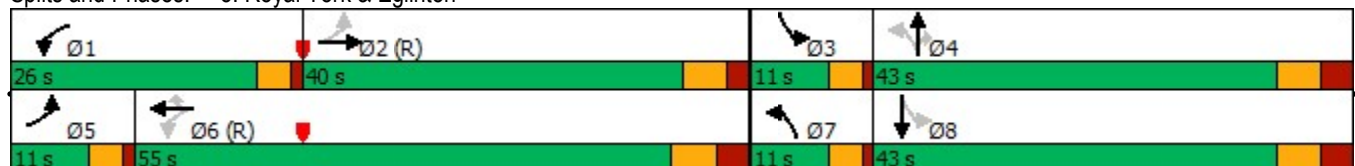
2031 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	1427	148	1224	146	108	654	110	87	654
Future Volume (vph)	8	1427	148	1224	146	108	654	110	87	654
Lane Group Flow (vph)	9	1628	164	1288	154	120	688	116	97	782
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2	1	6		7	4		3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	6.0	34.0	6.0	34.0	34.0	6.0	36.0	36.0	6.0	36.0
Minimum Split (s)	11.0	40.0	11.0	42.0	42.0	11.0	43.0	43.0	11.0	43.0
Total Split (s)	11.0	40.0	26.0	55.0	55.0	11.0	43.0	43.0	11.0	43.0
Total Split (%)	9.2%	33.3%	21.7%	45.8%	45.8%	9.2%	35.8%	35.8%	9.2%	35.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0	3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
v/c Ratio	0.07	1.24	0.70	0.77	0.20	0.55	0.64	0.21	0.37	0.73
Control Delay	21.2	147.9	38.7	29.9	7.2	31.4	38.9	3.4	25.4	41.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	147.9	38.7	29.9	7.2	31.4	38.9	3.4	25.4	41.0
Queue Length 50th (m)	1.3	~256.2	21.4	123.0	5.3	17.2	73.2	0.0	13.7	84.9
Queue Length 95th (m)	m2.5	#322.6	43.2	#178.6	19.2	29.6	93.4	7.9	24.5	107.3
Internal Link Dist (m)		477.1		1148.9			96.6			124.1
Turn Bay Length (m)	70.0		65.0		30.0	60.0		20.0	80.0	
Base Capacity (vph)	132	1315	375	1680	784	222	1080	555	264	1076
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	0.07	1.24	0.44	0.77	0.20	0.54	0.64	0.21	0.37	0.73

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 43 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Royal York & Eglinton



HCM Signalized Intersection Capacity Analysis

5: Royal York & Eglinton

2031 Traffic Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1427	120	148	1224	146	108	654	110	87	654	89
Future Volume (vph)	8	1427	120	148	1224	146	108	654	110	87	654	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	6.0	6.0	3.0	6.0	6.0	3.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1190	3420		1700	3466	1503	1732	3500	1476	1783	3461	
Flt Permitted	0.11	1.00		0.08	1.00	1.00	0.18	1.00	1.00	0.23	1.00	
Satd. Flow (perm)	133	3420		149	3466	1503	322	3500	1476	437	3461	
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95
Adj. Flow (vph)	9	1502	126	164	1288	154	120	688	116	97	688	94
RTOR Reduction (vph)	0	4	0	0	0	59	0	0	80	0	9	0
Lane Group Flow (vph)	9	1624	0	164	1288	95	120	688	36	97	773	0
Confl. Peds. (#/hr)	10		19	19		10	11		23	23		11
Confl. Bikes (#/hr)									2			1
Heavy Vehicles (%)	50%	3%	2%	5%	3%	1%	3%	2%	1%	0%	1%	1%
Bus Blockages (#/hr)	0	0	5	0	0	7	0	0	8	0	0	5
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	46.3	45.1		59.2	54.0	54.0	42.8	36.0	36.0	42.8	36.0	
Effective Green, g (s)	48.3	46.1		60.2	55.0	55.0	44.8	37.0	37.0	44.8	37.0	
Actuated g/C Ratio	0.40	0.38		0.50	0.46	0.46	0.37	0.31	0.31	0.37	0.31	
Clearance Time (s)	4.0	6.0		4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	
Vehicle Extension (s)	2.0	0.2		2.0	0.2	0.2	2.0	0.2	0.2	2.0	0.2	
Lane Grp Cap (vph)	72	1313		231	1588	688	211	1079	455	250	1067	
v/s Ratio Prot	0.00	c0.47		c0.07	0.37		c0.04	0.20		0.03	c0.22	
v/s Ratio Perm	0.05			0.28		0.06	0.17		0.02	0.12		
v/c Ratio	0.12	1.24		0.71	0.81	0.14	0.57	0.64	0.08	0.39	0.72	
Uniform Delay, d1	23.9	37.0		27.9	28.0	18.8	27.1	35.7	29.4	26.0	37.0	
Progression Factor	1.40	1.08		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	112.3		7.9	4.6	0.4	2.1	2.9	0.3	0.4	4.3	
Delay (s)	33.7	152.1		35.8	32.6	19.2	29.2	38.6	29.8	26.4	41.2	
Level of Service	C	F		D	C	B	C	D	C	C	D	
Approach Delay (s)		151.4			31.7			36.3			39.6	
Approach LOS		F			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			72.7			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			103.4%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: Eden Valley/Russell & Eglinton

2031 Traffic Conditions
PM Peak Hour

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	30	1568	19	22	1468	8	12	15	11
Future Volume (vph)	30	1568	19	22	1468	8	12	15	11
Lane Group Flow (vph)	32	1651	20	23	1568	0	42	0	66
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2			6		4		8
Permitted Phases	2		2	6		4		8	
Detector Phase	2	2	2	6	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	21.0	21.0	21.0	21.0	21.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	33.0	33.0	33.0	33.0
Total Split (s)	86.0	86.0	86.0	86.0	86.0	34.0	34.0	34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%	71.7%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.14	0.55	0.01	0.11	0.53		0.29		0.41
Control Delay	6.7	10.5	2.7	1.5	5.0		35.9		33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	6.7	10.5	2.7	1.5	5.0		35.9		33.9
Queue Length 50th (m)	2.6	114.7	0.4	0.2	145.8		4.8		6.4
Queue Length 95th (m)	m3.6	m104.7	m0.7	m0.2	4.9		15.4		19.7
Internal Link Dist (m)		462.1			477.1		108.4		87.8
Turn Bay Length (m)	40.0		20.0	40.0					
Base Capacity (vph)	234	3012	1356	212	2975		399		414
Starvation Cap Reductn	0	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0		0
Reduced v/c Ratio	0.14	0.55	0.01	0.11	0.53		0.11		0.16

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

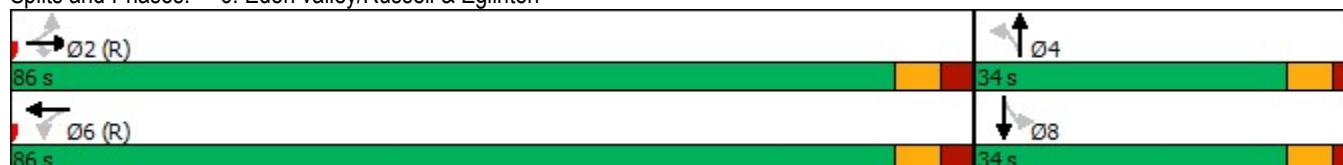
Offset: 74 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

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

Splits and Phases: 6: Eden valley/Russell & Eglinton



HCM Signalized Intersection Capacity Analysis

6: Eden Valley/Russell & Eglinton

2031 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	1568	19	22	1468	22	8	12	20	15	11	36
Future Volume (vph)	30	1568	19	22	1468	22	8	12	20	15	11	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99			0.99	
Flpb, ped/bikes	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			0.93			0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1778	3500	1572	1785	3456			1723			1696	
Flt Permitted	0.15	1.00	1.00	0.13	1.00			0.91			0.93	
Satd. Flow (perm)	272	3500	1572	247	3456			1587			1598	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	1651	20	23	1545	23	8	13	21	16	12	38
RTOR Reduction (vph)	0	0	3	0	0	0	0	20	0	0	35	0
Lane Group Flow (vph)	32	1651	17	23	1568	0	0	22	0	0	31	0
Confl. Peds. (#/hr)	16					16	3		1	1		3
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	0	9	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	99.9	99.9	99.9	99.9	99.9			7.1			7.1	
Effective Green, g (s)	100.9	100.9	100.9	100.9	100.9			8.1			8.1	
Actuated g/C Ratio	0.84	0.84	0.84	0.84	0.84			0.07			0.07	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0			6.0			6.0	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2			3.0			3.0	
Lane Grp Cap (vph)	228	2942	1321	207	2905			107			107	
v/s Ratio Prot		c0.47			0.45							
v/s Ratio Perm	0.12		0.01	0.09				0.01			c0.02	
v/c Ratio	0.14	0.56	0.01	0.11	0.54			0.21			0.29	
Uniform Delay, d1	1.7	2.9	1.5	1.7	2.8			52.9			53.2	
Progression Factor	2.62	3.31	4.44	0.29	1.49			1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.8	0.5			1.0			1.5	
Delay (s)	4.6	9.6	6.8	1.2	4.6			53.9			54.7	
Level of Service	A	A	A	A	A			D			D	
Approach Delay (s)		9.5			4.6			53.9			54.7	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			8.6			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			11.0			
Intersection Capacity Utilization			59.9%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

7: Islington & Eglinton

2031 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	263	1509	133	1444	65	995	173	70	826	124
Future Volume (vph)	263	1509	133	1444	65	995	173	70	826	124
Lane Group Flow (vph)	292	1665	148	1580	72	1047	182	78	869	131
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6	7	4		3	8	
Permitted Phases	2		6		4		4	8		8
Detector Phase	5	2	1	6	7	4	4	3	8	8
Switch Phase										
Minimum Initial (s)	6.0	30.0	6.0	30.0	6.0	27.0	27.0	6.0	27.0	27.0
Minimum Split (s)	11.0	37.0	11.0	37.0	11.0	34.0	34.0	11.0	34.0	34.0
Total Split (s)	11.0	56.0	11.0	56.0	11.0	42.0	42.0	11.0	42.0	42.0
Total Split (%)	9.2%	46.7%	9.2%	46.7%	9.2%	35.0%	35.0%	9.2%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	1.61	1.13	0.82	1.09	0.37	0.91	0.33	0.44	0.76	0.24
Control Delay	322.0	89.6	59.5	77.4	26.8	51.3	16.3	29.3	41.9	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	322.0	89.6	59.5	77.4	26.8	51.3	16.3	29.3	41.9	10.7
Queue Length 50th (m)	~85.6	~240.0	14.5	~226.9	10.1	127.3	14.1	11.0	98.9	5.2
Queue Length 95th (m)	m#137.8	#278.5	#51.2	#268.6	19.5	#170.2	33.2	20.9	123.4	19.7
Internal Link Dist (m)		447.8		462.1		193.0			204.2	
Turn Bay Length (m)	65.0		70.0		60.0		20.0	60.0		25.0
Base Capacity (vph)	181	1478	181	1449	201	1156	550	182	1147	538
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	1.61	1.13	0.82	1.09	0.36	0.91	0.33	0.43	0.76	0.24

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 102 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

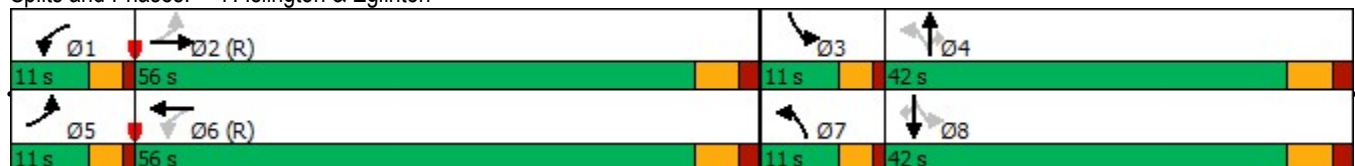
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Islington & Eglinton



HCM Signalized Intersection Capacity Analysis

7: Islington & Eglinton

2031 Traffic Conditions

PM Peak Hour

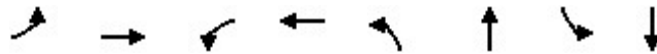
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	263	1509	73	133	1444	57	65	995	173	70	826	124
Future Volume (vph)	263	1509	73	133	1444	57	65	995	173	70	826	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1750	3473		1750	3407		1749	3535	1477	1785	3500	1437
Flt Permitted	0.08	1.00		0.08	1.00		0.14	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	147	3473		147	3407		257	3535	1477	191	3500	1437
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95
Adj. Flow (vph)	292	1588	77	148	1520	60	72	1047	182	78	869	131
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	67	0	0	67
Lane Group Flow (vph)	292	1662	0	148	1578	0	72	1047	115	78	869	64
Confl. Peds. (#/hr)	45		18	18		45	18		25	25		36
Heavy Vehicles (%)	2%	2%	0%	2%	4%	2%	2%	1%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	4	0	0	9	0	0	8	0	0	11
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	56.2	49.2		56.2	49.2		43.8	38.3	38.3	43.8	38.3	38.3
Effective Green, g (s)	58.2	50.2		58.2	50.2		45.8	39.3	39.3	45.8	39.3	39.3
Actuated g/C Ratio	0.49	0.42		0.49	0.42		0.38	0.33	0.33	0.38	0.33	0.33
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2	0.2	2.0	3.0	3.0
Lane Grp Cap (vph)	178	1452		178	1425		178	1157	483	159	1146	470
v/s Ratio Prot	c0.11	0.48		0.06	0.46		0.02	c0.30		c0.03	0.25	
v/s Ratio Perm	c0.69			0.35			0.13		0.08	0.16		0.04
v/c Ratio	1.64	1.14		0.83	1.11		0.40	0.90	0.24	0.49	0.76	0.14
Uniform Delay, d1	32.6	34.9		27.3	34.9		26.3	38.6	29.4	28.3	36.1	28.4
Progression Factor	1.64	0.74		1.36	0.73		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	304.4	71.1		23.6	57.9		0.5	11.6	1.2	0.9	4.7	0.6
Delay (s)	357.8	96.9		60.7	83.5		26.9	50.2	30.6	29.1	40.8	29.0
Level of Service	F	F		E	F		C	D	C	C	D	C
Approach Delay (s)		135.9			81.6			46.2			38.5	
Approach LOS		F			F			D			D	
Intersection Summary												
HCM 2000 Control Delay			83.8			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.29									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			103.9%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

8: Bermersyde/Wincott & Eglinton

2031 Traffic Conditions

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	102	1657	16	1621	6	153	185	167
Future Volume (vph)	102	1657	16	1621	6	153	185	167
Lane Group Flow (vph)	107	1758	17	1894	0	173	195	252
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	24.0	24.0	24.0	24.0	7.0	7.0	7.0	7.0
Minimum Split (s)	31.0	31.0	31.0	31.0	35.0	35.0	35.0	35.0
Total Split (s)	85.0	85.0	85.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	1.47	0.73	0.17	0.80		0.43	0.91	0.62
Control Delay	293.6	14.6	18.6	27.3		42.8	87.0	46.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	293.6	14.6	18.6	27.3		42.8	87.0	46.0
Queue Length 50th (m)	~18.1	133.6	2.3	157.8		34.1	43.7	48.9
Queue Length 95th (m)	#54.5	161.3	m2.9	m145.6		54.9	#83.9	75.8
Internal Link Dist (m)		464.9		447.8		109.2		108.2
Turn Bay Length (m)	40.0		40.0				15.0	
Base Capacity (vph)	73	2404	99	2354		445	235	442
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	1.47	0.73	0.17	0.80		0.39	0.83	0.57

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

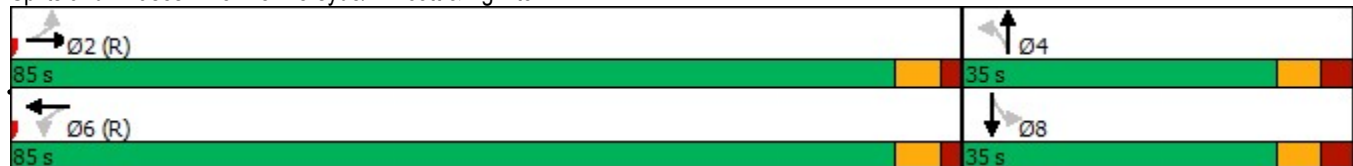
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Bermersyde/Wincott & Eglinton



HCM Signalized Intersection Capacity Analysis

8: Bermersyde/Wincott & Eglinton

2031 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	1657	13	16	1621	179	6	153	6	185	167	72
Future Volume (vph)	102	1657	13	16	1621	179	6	153	6	185	167	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99			1.00		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1785	3495		1785	3415			1865		1774	1778	
Flt Permitted	0.06	1.00		0.08	1.00			0.99		0.52	1.00	
Satd. Flow (perm)	108	3495		145	3415			1842		975	1778	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	107	1744	14	17	1706	188	6	161	6	195	176	76
RTOR Reduction (vph)	0	0	0	0	7	0	0	1	0	0	13	0
Lane Group Flow (vph)	107	1758	0	17	1887	0	0	172	0	195	239	0
Confl. Peds. (#/hr)	3		5	5		3	14		7	7		14
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	81.5	81.5		81.5	81.5			25.5		25.5	25.5	
Effective Green, g (s)	82.5	82.5		82.5	82.5			26.5		26.5	26.5	
Actuated g/C Ratio	0.69	0.69		0.69	0.69			0.22		0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0			7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0		3.0	3.0	
Lane Grp Cap (vph)	74	2402		99	2347			406		215	392	
v/s Ratio Prot		0.50			0.55						0.13	
v/s Ratio Perm	c0.99			0.12				0.09		c0.20		
v/c Ratio	1.45	0.73		0.17	0.80			0.42		0.91	0.61	
Uniform Delay, d1	18.8	11.8		6.6	13.1			40.2		45.5	42.1	
Progression Factor	1.00	1.00		1.95	1.86			1.00		1.00	1.00	
Incremental Delay, d2	261.3	2.0		1.6	1.3			0.7		36.6	2.7	
Delay (s)	280.0	13.8		14.5	25.6			40.9		82.1	44.8	
Level of Service	F	B		B	C			D		F	D	
Approach Delay (s)		29.1			25.5			40.9			61.1	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			31.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			1.31									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				11.0		
Intersection Capacity Utilization			117.4%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

9: Kipling & Eglinton

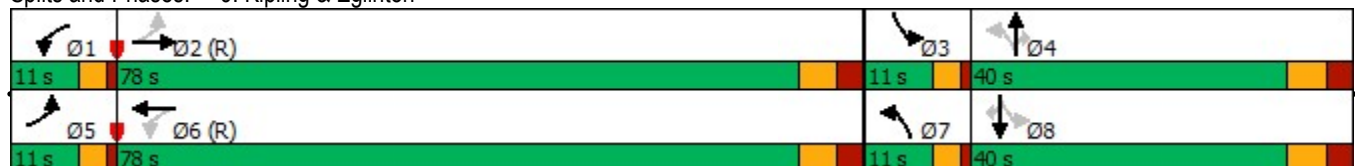
2031 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	189	1771	144	1749	126	774	158	71	548	57
Future Volume (vph)	189	1771	144	1749	126	774	158	71	548	57
Lane Group Flow (vph)	210	1953	160	1926	140	815	166	79	577	60
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6	7	4		3	8	
Permitted Phases	2		6		4		4	8		8
Detector Phase	5	2	1	6	7	4	4	3	8	8
Switch Phase										
Minimum Initial (s)	6.0	33.0	6.0	33.0	6.0	29.0	29.0	6.0	29.0	29.0
Minimum Split (s)	11.0	41.0	11.0	41.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	11.0	78.0	11.0	78.0	11.0	40.0	40.0	11.0	40.0	40.0
Total Split (%)	7.9%	55.7%	7.9%	55.7%	7.9%	28.6%	28.6%	7.9%	28.6%	28.6%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	6.0	3.0	6.0	3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	1.37	1.10	1.05	1.09	0.66	0.97	0.42	0.54	0.70	0.15
Control Delay	220.8	66.6	117.4	85.3	50.5	77.3	23.0	45.8	53.6	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	220.8	66.6	117.4	85.3	50.5	77.3	23.0	45.8	53.6	3.0
Queue Length 50th (m)	~59.8	~324.6	~31.7	~316.6	27.7	118.7	16.1	15.1	77.2	0.0
Queue Length 95th (m)	m#65.1	m#333.4	#77.7	#358.6	#45.7	#160.5	37.9	27.4	97.8	4.1
Internal Link Dist (m)		524.4		464.9		192.6			166.1	
Turn Bay Length (m)	75.0		75.0		65.0		25.0	65.0		25.0
Base Capacity (vph)	153	1769	153	1759	212	838	398	149	825	390
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	1.37	1.10	1.05	1.09	0.66	0.97	0.42	0.53	0.70	0.15

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Kipling & Eglinton



HCM Signalized Intersection Capacity Analysis

9: Kipling & Eglinton

2031 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	1771	85	144	1749	81	126	774	158	71	548	57
Future Volume (vph)	189	1771	85	144	1749	81	126	774	158	71	548	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.90
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1733	3437		1733	3418		1741	3433	1341	1667	3400	1313
Flt Permitted	0.06	1.00		0.06	1.00		0.24	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	101	3437		101	3418		431	3433	1341	206	3400	1313
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95
Adj. Flow (vph)	210	1864	89	160	1841	85	140	815	166	79	577	60
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	71	0	0	45
Lane Group Flow (vph)	210	1951	0	160	1924	0	140	815	95	79	577	15
Confl. Peds. (#/hr)	82		20	20		82	58		40	40		58
Confl. Bikes (#/hr)			16			25						3
Heavy Vehicles (%)	3%	3%	2%	3%	3%	7%	2%	4%	2%	7%	5%	2%
Bus Blockages (#/hr)	0	0	11	0	0	9	0	0	20	0	0	18
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	78.0	71.0		78.0	71.0		40.2	33.2	33.2	39.8	33.0	33.0
Effective Green, g (s)	80.0	72.0		80.0	72.0		42.2	34.2	34.2	41.8	34.0	34.0
Actuated g/C Ratio	0.57	0.51		0.57	0.51		0.30	0.24	0.24	0.30	0.24	0.24
Clearance Time (s)	4.0	7.0		4.0	7.0		4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2	0.2	2.0	3.0	3.0
Lane Grp Cap (vph)	150	1767		150	1757		204	838	327	142	825	318
v/s Ratio Prot	c0.08	0.57		0.06	0.56		c0.04	c0.24		0.03	0.17	
v/s Ratio Perm	c0.71			0.54			0.17		0.07	0.13		0.01
v/c Ratio	1.40	1.10		1.07	1.09		0.69	0.97	0.29	0.56	0.70	0.05
Uniform Delay, d1	43.0	34.0		43.0	34.0		39.1	52.4	43.0	39.0	48.3	40.6
Progression Factor	1.79	0.40		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	192.3	49.9		92.4	52.3		7.4	25.1	2.2	2.7	4.9	0.3
Delay (s)	269.4	63.7		135.4	86.3		46.5	77.5	45.3	41.6	53.2	40.9
Level of Service	F	E		F	F		D	E	D	D	D	D
Approach Delay (s)		83.6			90.1			68.9			50.9	
Approach LOS		F			F			E			D	
Intersection Summary												
HCM 2000 Control Delay			79.3			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.23									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			109.4%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

10: Lloyd Manor/Widdicombe Hill & Eglinton

2031 Traffic Conditions
PM Peak Hour

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	150	1970	149	112	1514	118	139	8	114
Future Volume (vph)	150	1970	149	112	1514	118	139	8	114
Lane Group Flow (vph)	158	2074	157	124	1611	124	246	8	205
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases		2		1	6		4		8
Permitted Phases	2		2	6		4		8	
Detector Phase	2	2	2	1	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	23.0	23.0	23.0	6.0	23.0	32.0	32.0	32.0	32.0
Minimum Split (s)	31.0	31.0	31.0	11.0	31.0	40.0	40.0	40.0	40.0
Total Split (s)	89.0	89.0	89.0	11.0	100.0	40.0	40.0	40.0	40.0
Total Split (%)	63.6%	63.6%	63.6%	7.9%	71.4%	28.6%	28.6%	28.6%	28.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	1.27	0.98	0.17	0.79	0.68	0.48	0.57	0.05	0.26
Control Delay	172.2	56.9	20.4	29.3	33.2	53.2	48.8	42.4	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	172.2	56.9	20.4	29.3	33.2	53.2	48.8	42.4	36.2
Queue Length 50th (m)	~50.5	300.6	29.4	23.4	213.7	29.8	55.0	1.7	19.7
Queue Length 95th (m)	m28.1	m207.9	m17.7	m22.8	m195.4	50.4	83.2	6.4	31.0
Internal Link Dist (m)		416.9			524.4		91.1		85.3
Turn Bay Length (m)	40.0		50.0	45.0		30.0		50.0	
Base Capacity (vph)	124	2121	927	157	2366	267	439	182	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.98	0.17	0.79	0.68	0.46	0.56	0.04	0.25

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 111 (79%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

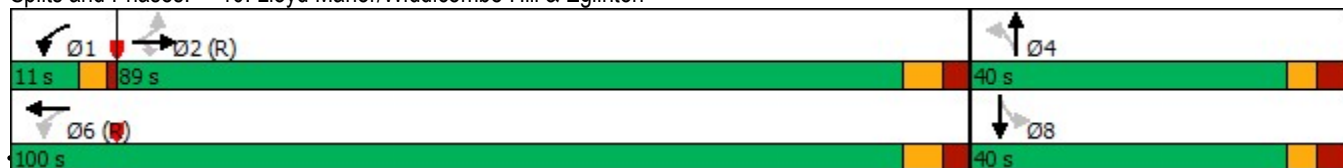
Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 10: Lloyd Manor/Widdicombe Hill & Eglinton



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Synchro 10 Report
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HCM Signalized Intersection Capacity Analysis

10: Lloyd Manor/Widdicombe Hill & Eglinton

2031 Traffic Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1970	149	112	1514	16	118	139	95	8	114	81
Future Volume (vph)	150	1970	149	112	1514	16	118	139	95	8	114	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	3.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.97	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1767	3535	1499	1785	3490		1721	1738		1759	3219	
Flt Permitted	0.11	1.00	1.00	0.05	1.00		0.61	1.00		0.41	1.00	
Satd. Flow (perm)	208	3535	1499	86	3490		1101	1738		752	3219	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2074	157	124	1594	17	124	146	100	8	120	85
RTOR Reduction (vph)	0	0	28	0	1	0	0	18	0	0	29	0
Lane Group Flow (vph)	158	2074	129	124	1610	0	124	228	0	8	176	0
Confl. Peds. (#/hr)	37		17	17		37	27		19	19		27
Heavy Vehicles (%)	1%	1%	0%	0%	2%	0%	1%	0%	0%	0%	2%	2%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	83.0	83.0	83.0	93.9	93.9		32.1	32.1		32.1	32.1	
Effective Green, g (s)	84.0	84.0	84.0	94.9	94.9		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.60	0.60	0.60	0.68	0.68		0.24	0.24		0.24	0.24	
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	2.0	0.2		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	124	2121	899	154	2365		260	410		177	761	
v/s Ratio Prot		0.59		c0.05	0.46			c0.13			0.05	
v/s Ratio Perm	c0.76		0.09	0.50			0.11			0.01		
v/c Ratio	1.27	0.98	0.14	0.81	0.68		0.48	0.56		0.05	0.23	
Uniform Delay, d1	28.0	27.1	12.3	43.3	13.5		46.0	47.0		41.3	43.2	
Progression Factor	2.05	2.06	2.96	0.90	2.41		1.00	1.00		1.00	1.00	
Incremental Delay, d2	129.2	2.7	0.0	2.7	0.1		1.4	1.6		0.1	0.2	
Delay (s)	186.7	58.5	36.3	41.6	32.7		47.4	48.6		41.4	43.3	
Level of Service	F	E	D	D	C		D	D		D	D	
Approach Delay (s)		65.5			33.3			48.2			43.3	
Approach LOS		E			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			51.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			134.9%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

11: Martin Grove & Eglinton

2031 Traffic Conditions
PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	536	2401	491	24	1643	152	423	25	103	450	245
Future Volume (vph)	536	2401	491	24	1643	152	423	25	103	450	245
Lane Group Flow (vph)	596	2527	517	25	1852	169	445	26	108	474	258
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	5	2			6	7	4			8	
Permitted Phases	2		2	6		4		4	8		5 8
Detector Phase	5	2	2	6	6	7	4	4	8	8	5 8
Switch Phase											
Minimum Initial (s)	6.0	31.0	31.0	31.0	31.0	6.0	29.0	29.0	36.0	36.0	
Minimum Split (s)	11.0	38.0	38.0	38.0	38.0	11.0	44.0	44.0	43.0	43.0	
Total Split (s)	24.0	75.0	75.0	51.0	51.0	17.0	65.0	65.0	48.0	48.0	
Total Split (%)	17.1%	53.6%	53.6%	36.4%	36.4%	12.1%	46.4%	46.4%	34.3%	34.3%	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	3.0	5.0	5.0	5.0	5.0	3.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max	Max	
v/c Ratio	1.88	1.44	0.59	0.47	1.15	0.43	0.30	0.04	0.41	0.44	0.34
Control Delay	434.5	232.7	16.5	64.7	117.1	27.8	27.6	0.8	44.4	40.5	14.5
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	434.5	232.7	16.5	64.7	117.1	27.8	27.6	0.8	44.4	40.5	14.5
Queue Length 50th (m)	~237.2	~499.4	56.5	6.1	~219.1	28.4	42.5	0.0	23.9	55.8	26.0
Queue Length 95th (m)	#309.5	#536.9	91.5	m10.1	#251.1	44.0	55.5	1.1	43.0	72.7	45.9
Internal Link Dist (m)		224.0			416.9		322.5			292.9	
Turn Bay Length (m)	180.0			65.0		120.0		25.0	70.0		25.0
Base Capacity (vph)	317	1750	874	53	1605	402	1460	630	266	1075	762
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	1.88	1.44	0.59	0.47	1.15	0.42	0.30	0.04	0.41	0.44	0.34

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 46 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

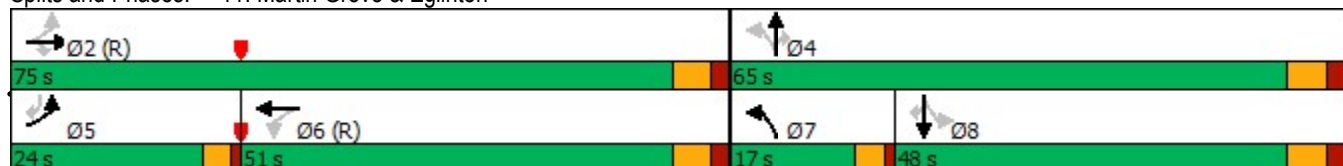
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 11: Martin Grove & Eglinton



HCM Signalized Intersection Capacity Analysis

11: Martin Grove & Eglinton

2031 Traffic Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  			 			 	
Traffic Volume (vph)	536	2401	491	24	1643	117	152	423	25	103	450	245
Future Volume (vph)	536	2401	491	24	1643	117	152	423	25	103	450	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	5.0	5.0	5.0		3.0	6.0	6.0	6.0	6.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.92	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.96	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1750	3500	1528	1785	4871		1779	3466	1421	1648	3466	1423
Flt Permitted	0.08	1.00	1.00	0.09	1.00		0.35	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	150	3500	1528	163	4871		657	3466	1421	858	3466	1423
Peak-hour factor, PHF	0.90	0.95	0.95	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	596	2527	517	25	1729	123	169	445	26	108	474	258
RTOR Reduction (vph)	0	0	110	0	5	0	0	0	15	0	0	50
Lane Group Flow (vph)	596	2527	407	25	1847	0	169	445	11	108	474	208
Confl. Peds. (#/hr)	20		13	13		20	22		63	63		22
Confl. Bikes (#/hr)			10			28			1			1
Heavy Vehicles (%)	2%	2%	1%	0%	4%	2%	0%	3%	0%	4%	3%	4%
Bus Blockages (#/hr)	0	0	0	0	0	10	0	0	7	0	0	12
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	5	2			6		7	4			8	
Permitted Phases	2		2	6			4		4	8		5 8
Actuated Green, G (s)	69.0	69.0	69.0	45.0	45.0		58.0	58.0	58.0	42.5	42.5	69.5
Effective Green, g (s)	70.0	70.0	70.0	46.0	46.0		59.0	59.0	59.0	43.5	43.5	64.5
Actuated g/C Ratio	0.50	0.50	0.50	0.33	0.33		0.42	0.42	0.42	0.31	0.31	0.46
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	2.0	0.2	0.2	0.2	0.2		2.0	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	315	1750	764	53	1600		377	1460	598	266	1076	655
v/s Ratio Prot	c0.28	0.72			0.38		c0.04	0.13			0.14	
v/s Ratio Perm	c0.66		0.27	0.15			c0.15		0.01	0.13		0.15
v/c Ratio	1.89	1.44	0.53	0.47	1.15		0.45	0.30	0.02	0.41	0.44	0.32
Uniform Delay, d1	45.7	35.0	23.9	37.3	47.0		26.6	26.9	23.6	38.1	38.5	23.8
Progression Factor	1.00	1.00	1.00	1.01	0.99		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	413.2	203.1	2.7	21.8	75.4		0.3	0.5	0.1	4.5	1.3	0.1
Delay (s)	458.9	238.1	26.5	59.4	122.1		26.9	27.4	23.7	42.6	39.8	23.9
Level of Service	F	F	C	E	F		C	C	C	D	D	C
Approach Delay (s)		244.2			121.3			27.1			35.3	
Approach LOS		F			F			C			D	
Intersection Summary												
HCM 2000 Control Delay			166.3			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.28									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			170.5%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

12: Eglinton & Highway 401

2031 Traffic Conditions
PM Peak Hour

	→	↖	↗
Lane Group	EBT	WBL	NBR
Lane Configurations	↑↑↑↑	↖↖	↗↗
Traffic Volume (vph)	1992	498	1393
Future Volume (vph)	1992	498	1393
Lane Group Flow (vph)	2402	524	1466
Turn Type	NA	Prot	Prot
Protected Phases	2	8	4
Permitted Phases			
Minimum Split (s)	39.0	37.0	37.0
Total Split (s)	67.0	73.0	73.0
Total Split (%)	47.9%	52.1%	52.1%
Yellow Time (s)	5.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0
Total Lost Time (s)	7.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
v/c Ratio	0.89	0.33	1.11
Control Delay	41.4	23.3	96.1
Queue Delay	0.0	0.0	0.0
Total Delay	41.4	23.3	96.1
Queue Length 50th (m)	174.1	45.2	~263.5
Queue Length 95th (m)	190.0	58.0	#310.2
Internal Link Dist (m)	216.8		
Turn Bay Length (m)			
Base Capacity (vph)	2706	1608	1319
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.89	0.33	1.11

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 73 (52%), Referenced to phase 2:EBT, Start of Green
 Natural Cycle: 120
 Control Type: Pretimed

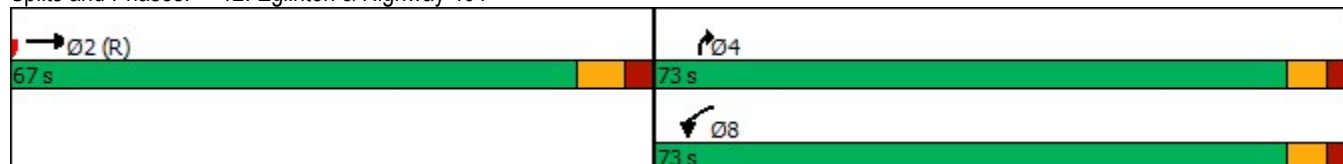
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Eglinton & Highway 401



HCM Signalized Intersection Capacity Analysis

12: Eglinton & Highway 401

2031 Traffic Conditions
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↙↘			↗↖
Traffic Volume (vph)	1992	290	498	0	0	1393
Future Volume (vph)	1992	290	498	0	0	1393
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0		6.0			6.0
Lane Util. Factor	0.86		0.97			0.88
Frt	0.98		1.00			0.85
Flt Protected	1.00		0.95			1.00
Satd. Flow (prot)	6270		3362			2756
Flt Permitted	1.00		0.95			1.00
Satd. Flow (perm)	6270		3362			2756
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2097	305	524	0	0	1466
RTOR Reduction (vph)	19	0	0	0	0	1
Lane Group Flow (vph)	2383	0	524	0	0	1465
Heavy Vehicles (%)	1%	2%	3%	0%	0%	2%
Turn Type	NA		Prot			Prot
Protected Phases	2		8			4
Permitted Phases						
Actuated Green, G (s)	59.0		66.0			66.0
Effective Green, g (s)	60.0		67.0			67.0
Actuated g/C Ratio	0.43		0.48			0.48
Clearance Time (s)	8.0		7.0			7.0
Lane Grp Cap (vph)	2687		1608			1318
v/s Ratio Prot	c0.38		0.16			c0.53
v/s Ratio Perm						
v/c Ratio	0.89		0.33			1.11
Uniform Delay, d1	36.9		22.5			36.5
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	4.8		0.5			61.3
Delay (s)	41.7		23.1			97.8
Level of Service	D		C			F
Approach Delay (s)	41.7			23.1	97.8	
Approach LOS	D			C	F	
Intersection Summary						
HCM 2000 Control Delay			58.2		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.00			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			93.3%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

Queues

13: East Mall & Eglinton

2031 Traffic Conditions
PM Peak Hour

	→	↖	←	↙	↗	↓	↘
Lane Group	EBT	WBL	WBT	NBL	NBR	SBT	SBR
Lane Configurations	↑↑	↖	↑↑	↖	↗	↖	↗
Traffic Volume (vph)	1233	324	413	71	109	63	192
Future Volume (vph)	1233	324	413	71	109	63	192
Lane Group Flow (vph)	1554	360	435	75	115	80	202
Turn Type	NA	pm+pt	NA	Perm	Perm	NA	custom
Protected Phases	2	1	6			8	
Permitted Phases		6		4	4		1 8
Detector Phase	2	1	6	4	4	8	1 8
Switch Phase							
Minimum Initial (s)	29.0	6.0	29.0	7.0	7.0	7.0	
Minimum Split (s)	37.0	11.0	37.0	34.0	34.0	15.0	
Total Split (s)	37.0	22.0	59.0	34.0	34.0	34.0	
Total Split (%)	39.8%	23.7%	63.4%	36.6%	36.6%	36.6%	
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	6.0	3.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes					
Recall Mode	Max	Max	Max	None	None	None	
v/c Ratio	1.10	0.66	0.18	0.40	0.38	0.30	0.28
Control Delay	80.9	20.1	4.4	36.1	10.1	31.9	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.9	20.1	4.4	36.1	10.1	31.9	2.9
Queue Length 50th (m)	~133.9	27.3	9.2	9.9	0.0	10.4	0.0
Queue Length 95th (m)	#189.7	60.2	16.9	21.8	12.7	21.9	9.6
Internal Link Dist (m)	966.3		108.5			34.2	
Turn Bay Length (m)		30.0					
Base Capacity (vph)	1411	543	2420	479	591	686	730
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.66	0.18	0.16	0.19	0.12	0.28

Intersection Summary

Cycle Length: 93

Actuated Cycle Length: 76

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

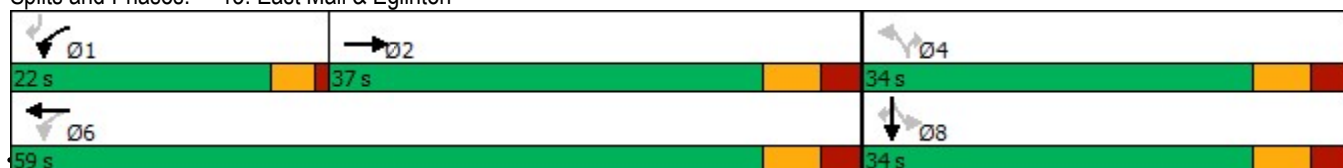
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 13: East Mall & Eglinton



HCM Signalized Intersection Capacity Analysis

13: East Mall & Eglinton

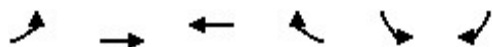
2031 Traffic Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑		↑		↑		↑	↑
Traffic Volume (vph)	0	1233	243	324	413	0	71	0	109	13	63	192
Future Volume (vph)	0	1233	243	324	413	0	71	0	109	13	63	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		3.0	6.0		6.0		6.0		6.0	3.0
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00		1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Frt		0.98		1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00		0.99	1.00
Satd. Flow (prot)		3419		1750	3466		1750		1408		1863	1320
Flt Permitted		1.00		0.12	1.00		0.70		1.00		0.99	1.00
Satd. Flow (perm)		3419		216	3466		1299		1408		1863	1320
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1298	256	360	435	0	75	0	115	14	66	202
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	99	0	0	123
Lane Group Flow (vph)	0	1539	0	360	435	0	75	0	16	0	80	79
Confl. Peds. (#/hr)	3					3						
Confl. Bikes (#/hr)						8						
Heavy Vehicles (%)	0%	2%	1%	2%	3%	0%	2%	0%	8%	0%	0%	21%
Bus Blockages (#/hr)	0	0	100	0	0	0	0	0	12	0	0	0
Turn Type		NA		pm+pt	NA		Perm		Perm	Perm	NA	custom
Protected Phases		2		1	6						8	
Permitted Phases				6			4		4	8		1 8
Actuated Green, G (s)		30.1		52.1	52.1		9.9		9.9		9.9	34.9
Effective Green, g (s)		31.1		53.1	53.1		10.9		10.9		10.9	29.9
Actuated g/C Ratio		0.41		0.70	0.70		0.14		0.14		0.14	0.39
Clearance Time (s)		7.0		4.0	7.0		7.0		7.0		7.0	
Vehicle Extension (s)		0.2		8.0	0.2		3.0		3.0		3.0	
Lane Grp Cap (vph)		1399		534	2421		186		201		267	519
v/s Ratio Prot		c0.45		c0.17	0.13							
v/s Ratio Perm				0.30			c0.06		0.01		0.04	0.06
v/c Ratio		1.10		0.67	0.18		0.40		0.08		0.30	0.15
Uniform Delay, d1		22.4		16.9	3.9		29.6		28.2		29.1	14.9
Progression Factor		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		56.2		6.7	0.2		1.4		0.2		0.6	0.1
Delay (s)		78.7		23.6	4.1		31.0		28.4		29.8	15.0
Level of Service		E		C	A		C		C		C	B
Approach Delay (s)		78.7			12.9			29.4			19.2	
Approach LOS		E			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			50.9			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			76.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			83.8%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

14: Eglinton & Matheson

2031 Traffic Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↱↱	↱↱	↰	↰	↰
Traffic Volume (vph)	4	872	543	184	561	1084
Future Volume (vph)	4	872	543	184	561	1084
Lane Group Flow (vph)	4	918	572	194	623	1141
Turn Type	Perm	NA	NA	Perm	Prot	Free
Protected Phases		2	6		8	
Permitted Phases	2			6		Free
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	25.0	25.0	7.0	7.0	7.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	30.0	
Total Split (s)	79.0	79.0	79.0	79.0	31.0	
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.01	0.39	0.25	0.19	1.42	0.72
Control Delay	6.0	8.6	7.4	1.3	236.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	8.6	7.4	1.3	236.0	2.9
Queue Length 50th (m)	0.3	41.4	22.9	0.0	~180.9	0.0
Queue Length 95th (m)	1.4	52.3	30.3	6.7	#247.6	0.0
Internal Link Dist (m)		209.4	286.2		108.2	
Turn Bay Length (m)	132.0			30.0		
Base Capacity (vph)	536	2354	2287	1040	438	1581
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	0.01	0.39	0.25	0.19	1.42	0.72

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

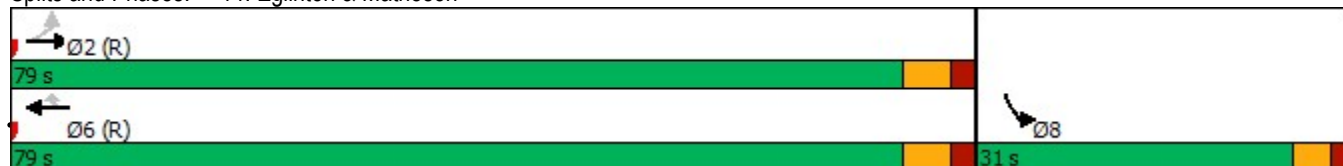
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

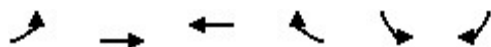
Splits and Phases: 14: Eglinton & Matheson



HCM Signalized Intersection Capacity Analysis

14: Eglinton & Matheson

2031 Traffic Conditions
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	872	543	184	561	1084
Future Volume (vph)	4	872	543	184	561	1084
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	4.0	3.0
Lane Util. Factor	1.00	0.95	0.95	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)	1785	3500	3400	1452	1785	1581
Flt Permitted	0.42	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	796	3500	3400	1452	1785	1581
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.90	0.95
Adj. Flow (vph)	4	918	572	194	623	1141
RTOR Reduction (vph)	0	0	0	63	0	0
Lane Group Flow (vph)	4	918	572	131	623	1141
Heavy Vehicles (%)	0%	2%	5%	10%	0%	1%
Turn Type	Perm	NA	NA	Perm	Prot	Free
Protected Phases		2	6		8	
Permitted Phases	2			6		Free
Actuated Green, G (s)	73.0	73.0	73.0	73.0	26.0	110.0
Effective Green, g (s)	74.0	74.0	74.0	74.0	27.0	110.0
Actuated g/C Ratio	0.67	0.67	0.67	0.67	0.25	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	535	2354	2287	976	438	1581
v/s Ratio Prot		0.26	0.17		c0.35	
v/s Ratio Perm	0.01			0.09		c0.72
v/c Ratio	0.01	0.39	0.25	0.13	1.42	0.72
Uniform Delay, d1	5.9	8.0	7.1	6.5	41.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.5	0.3	0.3	203.0	2.9
Delay (s)	5.9	8.5	7.3	6.8	244.5	2.9
Level of Service	A	A	A	A	F	A
Approach Delay (s)		8.5	7.2		88.2	
Approach LOS		A	A		F	
Intersection Summary						
HCM 2000 Control Delay			48.9		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.94			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			62.7%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Queues

15: Renforth & Eglinton

2031 Traffic Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	 	  		 			 		 	
Traffic Volume (vph)	795	735	53	355	855	62	321	137	988	148
Future Volume (vph)	795	735	53	355	855	62	321	137	988	148
Lane Group Flow (vph)	883	1448	59	374	900	69	382	144	1040	156
Turn Type	Prot	NA	Prot	NA	Free	pm+pt	NA	Perm	NA	pm+ov
Protected Phases	5	2	1	6		7	4		8	5
Permitted Phases					Free	4		8		8
Detector Phase	5	2	1	6		7	4	8	8	5
Switch Phase										
Minimum Initial (s)	6.0	31.0	6.0	31.0		6.0	31.0	31.0	31.0	6.0
Minimum Split (s)	12.0	40.0	12.0	40.0		11.0	40.0	40.0	40.0	12.0
Total Split (s)	35.0	62.0	13.0	40.0		11.0	51.0	40.0	40.0	35.0
Total Split (%)	27.8%	49.2%	10.3%	31.7%		8.7%	40.5%	31.7%	31.7%	27.8%
Yellow Time (s)	3.0	5.0	3.0	5.0		3.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	3.0	2.0	3.0		1.0	4.0	4.0	4.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	7.0	4.0	7.0		3.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	C-Max		None	Max	Max	Max	None
v/c Ratio	1.05	0.63	0.50	0.43	0.62	0.43	0.32	0.53	1.05	0.16
Control Delay	90.0	23.6	71.2	40.6	1.9	34.0	29.9	47.8	87.3	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.0	23.6	71.2	40.6	1.9	34.0	29.9	47.8	87.3	2.4
Queue Length 50th (m)	~122.5	87.3	14.3	40.7	0.0	10.9	35.1	31.0	~156.5	0.2
Queue Length 95th (m)	#161.5	103.8	28.5	55.6	0.0	21.1	48.1	53.7	#197.7	9.3
Internal Link Dist (m)		465.7		209.4			161.3		107.0	
Turn Bay Length (m)	300.0		77.0			55.0		60.0		55.0
Base Capacity (vph)	843	2286	127	865	1463	162	1198	273	989	974
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	1.05	0.63	0.46	0.43	0.62	0.43	0.32	0.53	1.05	0.16

Intersection Summary

Cycle Length: 126

Actuated Cycle Length: 126

Offset: 84 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

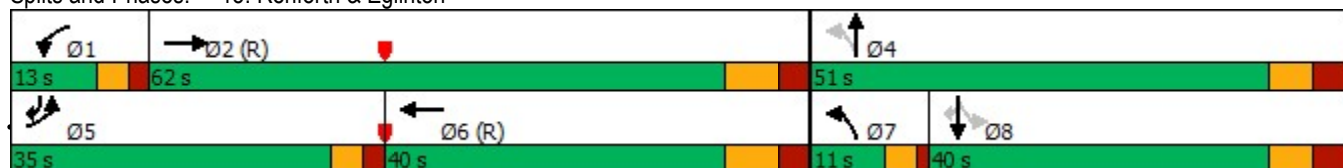
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 15: Renforth & Eglinton



HCM Signalized Intersection Capacity Analysis

15: Renforth & Eglinton

2031 Traffic Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	795	735	640	53	355	855	62	321	42	137	988	148
Future Volume (vph)	795	735	640	53	355	855	62	321	42	137	988	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.0		4.0	7.0	3.0	3.0	7.0		7.0	7.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3429	4724		1785	3305	1463	1653	3408		1771	3535	1566
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.10	1.00		0.53	1.00	1.00
Satd. Flow (perm)	3429	4724		1785	3305	1463	182	3408		980	3535	1566
Peak-hour factor, PHF	0.90	0.95	0.95	0.90	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	883	774	674	59	374	900	69	338	44	144	1040	156
RTOR Reduction (vph)	0	123	0	0	0	0	0	8	0	0	0	73
Lane Group Flow (vph)	883	1325	0	59	374	900	69	374	0	144	1040	83
Confl. Peds. (#/hr)	19					19			11	11		
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	1%	1%	1%	0%	8%	2%	8%	3%	0%	0%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	12	0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6		7	4			8	5
Permitted Phases						Free	4			8		8
Actuated Green, G (s)	30.0	55.0		6.2	31.2	126.0	43.8	43.8		34.3	34.3	64.3
Effective Green, g (s)	31.0	56.0		7.2	32.2	126.0	44.8	44.8		35.3	35.3	66.3
Actuated g/C Ratio	0.25	0.44		0.06	0.26	1.00	0.36	0.36		0.28	0.28	0.53
Clearance Time (s)	5.0	8.0		5.0	8.0		4.0	8.0		8.0	8.0	5.0
Vehicle Extension (s)	2.0	0.2		2.0	0.2		2.0	0.2		0.2	0.2	2.0
Lane Grp Cap (vph)	843	2099		102	844	1463	140	1211		274	990	824
v/s Ratio Prot	c0.26	0.28		0.03	0.11		0.03	0.11			c0.29	0.02
v/s Ratio Perm						c0.62	0.15			0.15		0.03
v/c Ratio	1.05	0.63		0.58	0.44	0.62	0.49	0.31		0.53	1.05	0.10
Uniform Delay, d1	47.5	27.0		57.9	39.4	0.0	32.2	29.4		38.3	45.4	14.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	44.1	1.5		4.9	1.7	1.9	1.0	0.7		7.0	42.8	0.0
Delay (s)	91.6	28.5		62.8	41.1	1.9	33.2	30.1		45.3	88.2	15.0
Level of Service	F	C		E	D	A	C	C		D	F	B
Approach Delay (s)		52.4			15.6			30.5			75.0	
Approach LOS		D			B			C			E	
Intersection Summary												
HCM 2000 Control Delay			47.2			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			126.0			Sum of lost time (s)				21.0		
Intersection Capacity Utilization			121.0%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
16: Eglinton & Commerce

2031 Traffic Conditions
PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		  		 			 		
Traffic Volume (vph)	14	1330	21	679	45	36	5	569	34
Future Volume (vph)	14	1330	21	679	45	36	5	569	34
Lane Group Flow (vph)	15	1405	23	715	47	0	140	599	88
Turn Type	Perm	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2	1	6			4		8
Permitted Phases	2		6		6	4		8	
Detector Phase	2	2	1	6	6	4	4	8	8
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	25.0	7.0	7.0	7.0	7.0
Minimum Split (s)	33.0	33.0	11.0	33.0	33.0	41.0	41.0	41.0	41.0
Total Split (s)	34.0	34.0	11.0	45.0	45.0	55.0	55.0	55.0	55.0
Total Split (%)	34.0%	34.0%	11.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	3.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.07	0.80	0.11	0.53	0.08		0.18	1.00	0.11
Control Delay	26.1	35.0	18.4	25.2	6.2		5.8	63.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	26.1	35.0	18.4	25.2	6.2		5.8	63.5	7.0
Queue Length 50th (m)	1.8	82.9	2.6	55.1	0.0		4.2	111.4	3.5
Queue Length 95th (m)	7.2	#131.0	7.2	72.2	6.9		14.0	#185.2	11.3
Internal Link Dist (m)		364.9		465.7			40.3		100.4
Turn Bay Length (m)	55.0		110.0		80.0			30.0	
Base Capacity (vph)	219	1752	214	1351	613		764	600	836
Starvation Cap Reductn	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.07	0.80	0.11	0.53	0.08		0.18	1.00	0.11

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 88 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

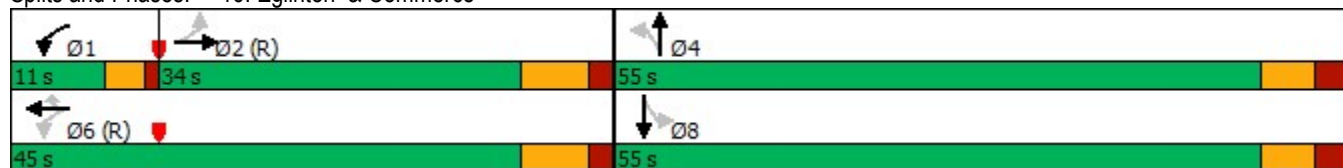
Natural Cycle: 85

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 16: Eglinton & Commerce



HCM Signalized Intersection Capacity Analysis

16: Eglinton & Commerce

2031 Traffic Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (vph)	14	1330	5	21	679	45	36	5	92	569	34	49
Future Volume (vph)	14	1330	5	21	679	45	36	5	92	569	34	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		3.0	6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		0.96		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		0.96	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.91		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1776	5025		1784	3466	1500		1580		1679	1652	
Flt Permitted	0.34	1.00		0.11	1.00	1.00		0.91		0.69	1.00	
Satd. Flow (perm)	631	5025		212	3466	1500		1461		1226	1652	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1400	5	23	715	47	38	5	97	599	36	52
RTOR Reduction (vph)	0	0	0	0	0	29	0	49	0	0	27	0
Lane Group Flow (vph)	15	1405	0	23	715	18	0	91	0	599	61	0
Confl. Peds. (#/hr)	7		38	38		7	8		55	55		8
Confl. Bikes (#/hr)						4			1			
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	6%	0%	0%	2%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6		6	4			8		
Actuated Green, G (s)	31.5	31.5		38.0	38.0	38.0		48.0		48.0	48.0	
Effective Green, g (s)	32.5	32.5		39.0	39.0	39.0		49.0		49.0	49.0	
Actuated g/C Ratio	0.32	0.32		0.39	0.39	0.39		0.49		0.49	0.49	
Clearance Time (s)	7.0	7.0		4.0	7.0	7.0		7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		2.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	205	1633		137	1351	585		715		600	809	
v/s Ratio Prot		c0.28		0.01	c0.21						0.04	
v/s Ratio Perm	0.02			0.06		0.01		0.06		c0.49		
v/c Ratio	0.07	0.86		0.17	0.53	0.03		0.13		1.00	0.08	
Uniform Delay, d1	23.3	31.6		21.8	23.4	18.8		13.9		25.5	13.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.7	6.2		0.2	1.5	0.1		0.1		36.0	0.0	
Delay (s)	24.0	37.8		22.1	24.9	18.9		13.9		61.5	13.5	
Level of Service	C	D		C	C	B		B		E	B	
Approach Delay (s)		37.7			24.5			13.9			55.4	
Approach LOS		D			C			B			E	
Intersection Summary												
HCM 2000 Control Delay			37.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			81.5%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												