November 29, 2022

Bryan Sherwood
Director
Development Planning
Tridel
4800 Dufferin Street, Toronto, ON M3H 5S9
O: 416.649.2311
bsherwood@delterra.com

RE: Regent Park Revitalization Phases 4 & 5 – Proposed Mixed-Use Development
Zoning By-law Amendment Application
Response to City Comments & Transportation Study Addendum

1.0 INTRODUCTION

BA Group is retained by Toronto Community Housing Corporation (TCHC) and their development partner Deltera Inc. (Tridel) to provide urban transportation consulting services in relation to a proposed mixed-use development pertaining to the lands generally bounded by Dreamers Way in the west, Gerrard Street East in the north, River Street in the east, and Oak Street to the south (excluding 40 Oak Street; the Fred Victor building) located in the City of Toronto (herein referred to as the "Site"). The municipal addresses are 325-433 Gerrard Street East, 295 & 325 Sackville Street, 259-267 & 266-272 Sumach Street, and 184-206 River Street.

The Site is part of a larger multi-phased development project known as the *Regent Park Revitalization*; the proposed redevelopment pertains to Phases 4 and 5 which are the final two phases. The *Regent Park Secondary Plan* established a framework to guide the phased redevelopment of the area to achieve a revitalized mixed income and mixed use neighbourhood.

1.1 STUDY BACKGROUND

In April of 2022, BA Group submitted a transportation study as part of the Zoning By-law Amendment (ZBA) application (herein referred to as the "April 2022 TIS"). The study proposed a mixed-use development inclusive of residential uses of varied tenure, ground-floor retail units, community uses and a relocated Parliament Street library branch.

Since the April 2022 TIS, comments have been received from the City of Toronto's Engineering & Construction Services Division in a memorandum dated August 15, 2022. Additionally, several changes regarding the development plan and the supporting road network within the Site lands are now being proposed.

1.2 DEVELOPMENT PLAN UPDATE

Since the April 2022 TIS, the development program has been revised. A comparison of key characteristics for each block within the previous and current development is provided in **Table 1**. Reduced architectural Site plans are included in **Appendix A** for reference.

The mixed-use development is inclusive of residential uses of varied tenure, ground-floor retail units, community uses, and a relocated library. In total, the current development program includes approximately 3,070 residential dwelling units (1,876 market units and 1,194 affordable units) and 15,490 m^2 non-residential GFA. This represents an increase of 96 residential units and 1,774 m^2 non-residential GFA in comparison to the April 2022 program.

Proposed retail/commercial non-residential space is not proposed at this time to be separated into “office” and “retail” uses. This separation – based on a 25% office and 75% retail allocation assumption – is included in this report for analytical purposes only and is subject to change at the detailed design phase.

The current development plan also includes the introduction of two additional north-south linkages which extend between Oak Street and Gerrard Street East: a private street between Dreamers Way and Sackville Street and the extension of Tubman Avenue.

1.3 THIS LETTER

This addendum letter provides responses to the received City comments, discusses and analyzes the changes to the development plans, and provides updates to the transportation study where applicable for the purposes of the ZBA submission.

TABLE 1 DEVELOPMENT PROGRAM

Block	Market Residential	Affordable Residential	Office[1]	Retail[1]	Community/ Culture Uses	Library
Previous April 2022 Submission						
Building 1A	--	201 units	233 m^2 GFA	699 m^2 GFA	1,350 m^2 GFA	--
Buildings 1B & 1C	679 units	--	328 m^2 GFA	984 m^2 GFA	--	--
Buildings 2D & 2E	503 units	--	508 m^2 GFA	1,523 m^2 GFA	--	--
Buildings 2F & 2G	--	--	--	--	1,164 m^2 GFA	2,277 m^2 GFA
Buildings 2H & 2I	--	332 units	376 m^2 GFA	1,127 m^2 GFA	554 m^2 GFA	--
Buildings 3J & 3K	610 units	--	253 m^2 GFA	760 m^2 GFA	--	--
Buildings 4L & 4M	--	648 units	181 m^2 GFA	542 m^2 GFA	860 m^2 GFA	--
Phases 4 & 5 Previous Total	**1,792 units**	**1,181 units**	**1,879 m^2 GFA**	**5,635 m^2 GFA**	**3,930 m^2 GFA**	**2,277 m^2 GFA**
	Residential Unit Count Total: 2,973 units		**Non-Residential GFA Total: 13,721 m^2 GFA**			
Current Submission						
Building 1A	--	202 units	237 m^2 GFA	711 m^2 GFA	1,358 m^2 GFA	--
Buildings 1B & 1C	713 units	--	330 m^2 GFA	989 m^2 GFA	--	--
Buildings 2D & 2E	505 units	--	511 m^2 GFA	1,532 m^2 GFA	--	--
Buildings 2F & 2G	--	--	380 m^2 GFA	1,139 m^2 GFA	1,164 m^2 GFA	2,277 m^2 GFA
Buildings 2H & 2I	--	333 units	376 m^2 GFA	1,127 m^2 GFA	572 m^2 GFA	--
Buildings 3J & 3K	657 units	--	270 m^2 GFA	809 m^2 GFA	--	--
Buildings 4L & 4M	--	659 units	199 m^2 GFA	596 m^2 GFA	916 m^2 GFA	--
Phases 4 & 5 Current Total	**1,876 units**	**1,194 units**	**2,301 m^2 GFA**	**6,902 m^2 GFA**	**4,010 m^2 GFA**	**2,277 m^2 GFA**
	Residential Unit Count Total: 3,070 units		**Non-Residential GFA Total: 15,490 m^2 GFA**			
Differences						
Building 1A	--	+1 units	+4 m^2 GFA	+12 m^2 GFA	+8 m^2 GFA	--
Buildings 1B & 1C	+34 units	--	+2 m^2 GFA	+5 m^2 GFA	--	--
Buildings 2D & 2E	+2 units	--	+3 m^2 GFA	+9 m^2 GFA	--	--
Buildings 2F & 2G	--	--	+380 m^2 GFA	+1,139 m^2 GFA	--	--
Buildings 2H & 2I	--	+1 units	--	--	+18 m^2 GFA	--
Buildings 3J & 3K	+47 units	--	+17 m^2 GFA	+49 m^2 GFA	--	--
Buildings 4L & 4M	--	+11 units	+18 m^2 GFA	+54 m^2 GFA	+56 m^2 GFA	--
Phases 4 & 5 Total Difference	**+83 units**	**+13 units**	**+424 m^2 GFA**	**+1,268 m^2 GFA**	**+82 m^2 GFA**	**--**
	Residential Unit Count Total: +96 units		**Non-Residential GFA Total: +1,774 m^2 GFA**			

Notes:

1. Proposed retail/commercial non-residential space is not proposed at this time to be separated into "office" and "retail" uses. This separation – based on a 25% office and 75% retail allocation assumption – is included in this report for analytical purposes only and is subject to change at the detailed design phase.

2.0 RESPONSES TO CITY COMMENTS

A. REVISIONS TO PLANS AND ADDITIONAL INFORMATION REQUIRED FOR PLANS, STUDIES AND DRAWINGS

Transportation Services

Comment 1.1: *Continue to consult with City Planning and Transportation Services with regards to the proposed overall site layout and previously agreed upon public rights-of-way through the proposed site area, as further discussed in Section D of this memorandum.*

Response: Noted.

Comment 1.2: *Design, in consultation with Cycling and Pedestrian Projects, and City Planning/Urban Design, and construct a bi-directional bikeway along Gerrard Street East, including the following (as further discussed in Section D of this memorandum):*

a) *Provide a raised two-way cycle track of 3.0 metres in width with:*
   - *buffer zone between the roadway and the cycle track between 0.8-1.0 metres;*
   - *A buffer zone between the cycle track and pedestrian clearway/sidewalk between 0.6-0.8 metres;*

b) *Provide TTC transit platforms in accordance with the June 2022 design specifications (pending consultation with TTC with regards to the location of transit stops);*

c) *Provide crossing conditions at the signalized intersections along Gerrard Street East in accordance with Ontario Traffic Manual Book 18 – Protected Intersections;*

d) *Provide a raised bikeway and pedestrian crossing along Gerrard Street East across its intersection with Dreamers Way, in accordance with the City's Raised Crosswalk and Intersection Guidelines;*

e) *Provide appropriate ramp/grades at the terminus points of the cycle track to be constructed within the site frontages on Gerrard Street East.*

Response: The project team will work with City staff to further refine cycling facilities along this corridor within the existing Right-of-Way.

Comment 1.3: *Provide a raised cycle track along the west side of River Street, extending from the Gerrard Street East intersection through the new signalized intersection at Oak Street, in accordance with the City's March 2022 design specification. (This specification can be provided upon request).*

Response: The rezoning application does not preclude the implementation of cycling facilities on River Street. The design of cycling facilities along the River Street corridor should be reviewed in a fulsome manner by staff, given the implications to lands further south, which are not part of this application..

Comment 1.4: *Provide raised contra-flow cycle tracks on Sackville Street and Sumach Street, extending from Gerrard Street East to Oak Street within the site lands, in accordance with the City's March 2022 design specification. (This specification can be provided upon request).*

Response: BA Group has discussed this item with City Transportation Services staff. In order to maintain fire routing requirements, the design will be maintained as shown in the initial submission.

Comment 1.5: *Label/provide minimum unobstructed/consistent 3.0 metre wide pedestrian clearway along Gerrard Street East, and identify where Pedestrian Clearway Easements will be needed to secure the required public space, as further discussed in Section D of this memorandum.*

Response: Please refer to the updated architectural plans. The Gerrard Street corridor will be refined through further discussions with City staff.

Comment 1.6: *Label/provide minimum unobstructed/consistent 2.1 metre wide pedestrian clearways along Oak Street, Sackville Street, Sumach Street, Dreamers Way, and River Street, and identify where Pedestrian Clearway Easements will be needed to secure the required public space, as further discussed in Section D of this memorandum.*

Response: Please refer to the updated current architectural plans.

Comment 1.7: *Design extensions of the public roadway for Sackville Street and Sumach Street. Revise the functional road plans as follows:*

a) Clarify the need for an R10 at the southwest corner of Gerrard Street East/Sackville Street. If possible, via a review of vehicle manoeuvring diagrams, reduce this curb radius;
b) Reduce the curb radii at the southeast corner of Gerrard Street East/Sackville Street and the southwest corner of Gerrard Street East/Sumach Street to be 3.0 metres or less, e.g. squared off as per the one-way street configuration.

Response:
a) The R10 would be required to permit an HSU and a garbage truck to turn from the eastbound curb lane into the southbound travel lane on Sackville Street without encroaching into the adjacent travel lanes on Gerrard Street East and proposed bike lanes on Sackville Street.

b) Noted. This change has been made.

Comment 1.8: *Delineate and identify unobstructed/unencumbered corner roundings on the site and landscape plans as lands to be conveyed to the City for a nominal sum at the following locations:*

a) 5.0 metre corner roundings at the southwest and southeast corners of Sackville Street/Gerrard Street East;
b) 5.0 metre corner roundings at the southwest and southeast corners of Sumach Street/Gerrard Street East;
c) 5.0 metre corner rounding at the southeast corner of Dreamers Way/Gerrard Street East;
d) 5.0 metre corner rounding at the southwest corner of River Street/Gerrard Street East.

Response: The architectural plans and functional road plan has been updated to include the specified corner roundings.

Comment 1.9: *Delineate and identify unobstructed corner roundings on the site and landscape plans as lands to be secured via Pedestrian Clearway Easements at the following locations:*

a) *5.0 metre corner roundings at the northwest and northeast corners of Sackville Street/Oak Street;*
b) *5.0 metre corner roundings at the northwest and northeast corners of Sumach Street/Oak Street;*
c) *5.0 metre corner rounding at the northwest corner of River Street/Oak Street.*

Response: The architectural plans and functional road plan has been updated to include the specified corner roundings.

Comment 1.10: *Revise the loading areas to provide Type B spaces in place of Type C spaces where appropriate. Given the scale/sharing of non-residential GFA, this includes the loading area in Buildings 1A, 2E, 2I, 3K, and 3M, as further discussed in Section D of this memorandum.*

Response: All Type C spaces have been replaced with Type B spaces in the plan for the majority of loading areas. It is noted that Building 1A operates with its own loading area and will not be shared with other buildings. Application of 569-2013 to Building 1A would require 1 Type G space and no additional Type B space.

Comment 1.11: *Provide accessible parking spaces in accordance with Zoning By-law No. 89-2022, as noted, and label these spaces with acceptable dimensions in accordance with Zoning By-law No. 579-2017, as further discussed in Section D of this memorandum.*

Response: Noted.

Comment 1.12: *Provide a preliminary assessment of the supply and location of publically accessible car-share spaces to be provided within the overall site lands.*

Response: Car-share spaces would be provided within non-residential sections of parking garages. The precise location of these would be identified within future Site Plan Applications.

Comment 1.13: *Re-locate/consolidate the proposed loading access driveways on Gerrard Street East to be provided via Sackville Street, Sumach Street, or Oak Street.*

Response: Revisions to the loading and access have been included in the Revised Proposal. The plan provided with the zoning by-law amendment application is conceptual and therefore the location of loading and access driveways will be addressed the at Site Plan Application

Comment 1.14: *Review the feasibility of consolidating the proposed vehicular and loading access driveways on River Street to be provided via one (1) curb cut.*

Response: The plan seeks to provide the Tubman Avenue extension (Street 'J') as a pedestrian-friendly environment and shifts access towards River Street for both parking and loading. These facilities have been separated to reduce impacts to building ground floor spaces.

Comment 1.15: *Re-locate the loading driveways or raised crossings on Sackville Street and Sumach Street so that they are not in conflict with each other, as further discussed in Section D of this memorandum.*

Response: Revisions to loading and access have been inclued in the Revised Proposal but details will be addressed at Site Plan Application

Solid Waste Services

Comment 2.1: *Revise drawings to indicate and annotate the following with regard to the Multi-Residential Component:*

a) *The Type G loading space is 13 metres in length, 4 metres in width*
b) *The staging pad abutting the front of the Type G loading space will be at least*
    i. *Building 1A – 20.1 square metres*
    ii. *Building 1C – 67.9 square meters*
    iii. *Building 2E – 50.3 square metres*
    iv. *Building 2I – 33.2 square metres*
    v. *Building 3K – 61 square metres*
    vi. *Building 3M – 64.8 square metres*
c) *The Type G loading space and the staging pad abutting the front of the Type G loading space has an unencumbered vertical clearance of 6.1 metres.*
d) *A bulky storage area of minimum floor area of at least 10 square metres.*
e) *A garbage storage room with a minimum floor area based on the number of units. Buildings with multiple waste rooms due to towers or other reasons will require appropriately sized waste storage rooms based on the total number of units associated with them. Detailed breakdown of units required to provide minimum requirements for waste storage room.*
f) *The ability of the collection to enter and exit the site in a forward motion with no more than a three-point turn.*
g) *All overhead doors have a minimum vertical clearance of 4.4 metres, and a minimum width of 4 metres.*

Comment 2.2: *Revise drawings to indicate and annotate the following with regard to the Non-Residential Component:*

a) *A storage space for the waste that will be generated by the non-residential component of this development. This non-residential waste room must be independent from the residential waste room and must be accessible without entering the residential waste room.*

Comment 2.3: *Revise drawings to indicate and annotate the following with regard to the Toronto Public Library Collection:*

a) *Collection of waste materials for this development will take place curbside on Gerrard St E.*
b) *A waste storage area that located within the building and is at least 12 square meters, but may need to be larger to allow storage of all waste material between collection days.*

Comment 2.4: *Revise drawings to indicate the collection vehicle, which is a length of 12 metres and a width of 2.4 metres, has a minimum turning radii of 9.5m inside and 14m outside entering, exiting and travelling throughout the site and the type G loading space in an unobstructed fashion.*

Comment 2.5: *Show on the drawings that all access driveways to be used by the collection vehicle will have:*

a) A maximum gradient of 8%;
b) A minimum vertical clearance of 4.4 metres throughout;
c) A minimum width of 4.5 metres throughout; and,
d) 6 metres wide at point of ingress and egress.

Responses: These comments will be address as part of Site Plan Applications for each building / development phase.

B. (PRELIMINARY) ZONING BY-LAW AMENDMENT CONDITIONS

Comment 1.1: *Provide and maintain parking spaces in accordance with the requirements of Zoning By-law No. 89-2022 (amended as No. 125-2022) for Parking Zone A.*

Response: The revised parking requirement calculations based on By-law 89-2022 and the currently proposed parking strategy is provided in **Section 4.0**.

Comment 1.2: *Provide and maintain accessible parking spaces in accordance with the requirements of Zoning By-law No. 89-2022 (amended as No. 125-2022) for Parking Zone A, with minimum dimensions to be provided in accordance with Zoning By-law No. 579-2017.*

Response: Noted.

Comment 1.3: *The overall development site is required to provide a minimum number of publically accessible car-share spaces within each block. This total is to be determined, as noted in Section A.*

Response: Noted.

Comment 1.4: *Include the following definitions in the Site-Specific By-law for this project:*

a) Car-share means the practice where a number of people share the use of one or more cars that are owned by a profit or non-profit car-sharing organization and where such organization may require that use of cars to be reserved in advance, charge fees based on time and/or kilometers driven, and set membership requirements of the car-sharing organization, including the payment of a membership fee that may or may not be refundable;
b) Car-share parking space means a parking space that is reserved and actively used for car-sharing.

Response: Noted.

Comment 1.5: *Provide and maintain loading spaces in accordance with the following minimums and with dimensions as per Zoning By-law No. 569-2013:*

For Block/Phase 1:

a) Two (2) Type G spaces;
b) One (1) Type B space;
c) One (1) Type C space;

For Block/Phase 2:

a) Two (2) Type G spaces;
b) Two (2) Type B spaces;

For Block/Phase 3:

a) Two (2) Type G spaces; and
b) Two (2) Type B spaces.

Response: The proposed revised loading requirements are summarized in **Section 6.0**.

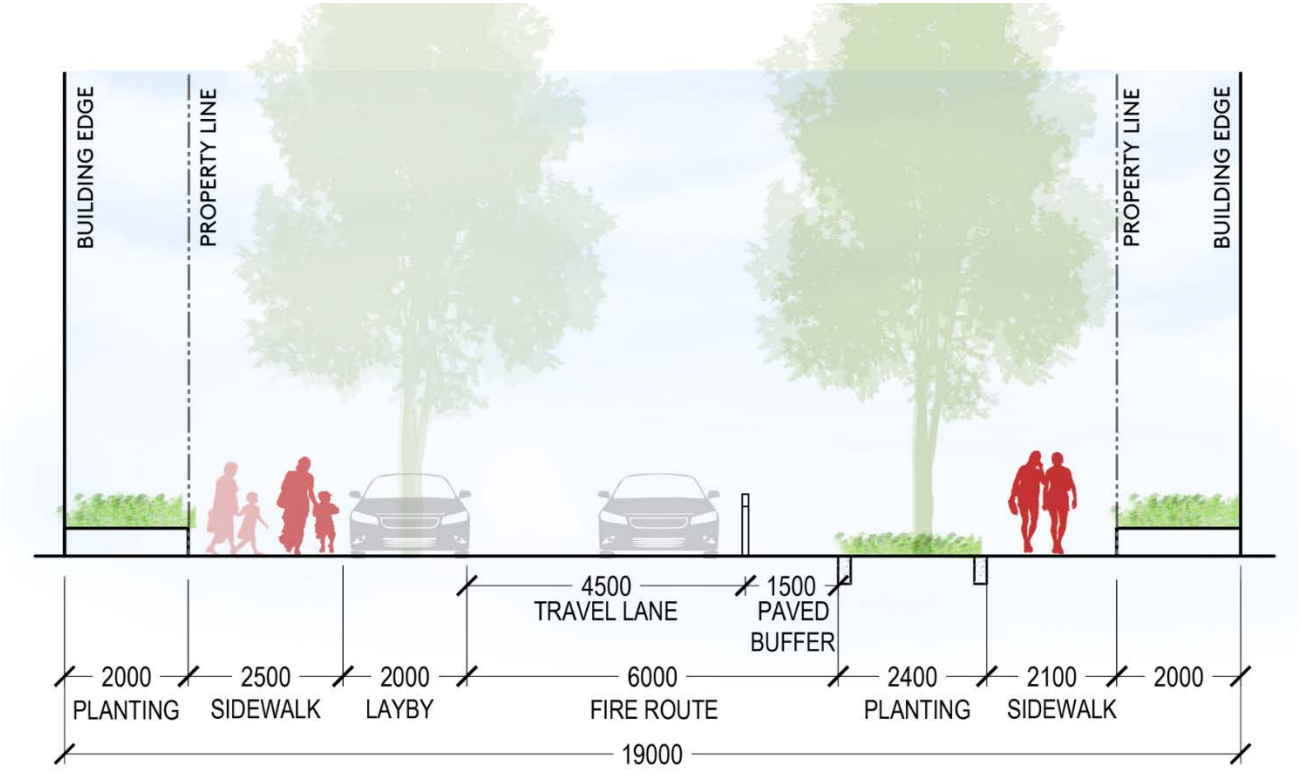
3.0 STREET NETWORK & BLOCK DESIGN UPDATES

The Regent Park Revitalization Plan for Phases 4 and 5 includes a reconfiguration of streets located within or adjacent to the Site in order to foster a more complete, balanced, and connected network. Streets that are currently privately-owned (i.e. Sackville Street and Sumach Street) will become public streets. The functional road plan is provided in **Appendix B**.

While key street design objectives remain the same as the previous submission, several road network changes listed below are now proposed. These further enhance connectivity within the plan.

3.1 TUBMAN AVENUE EXTENSION (STREET 'J')

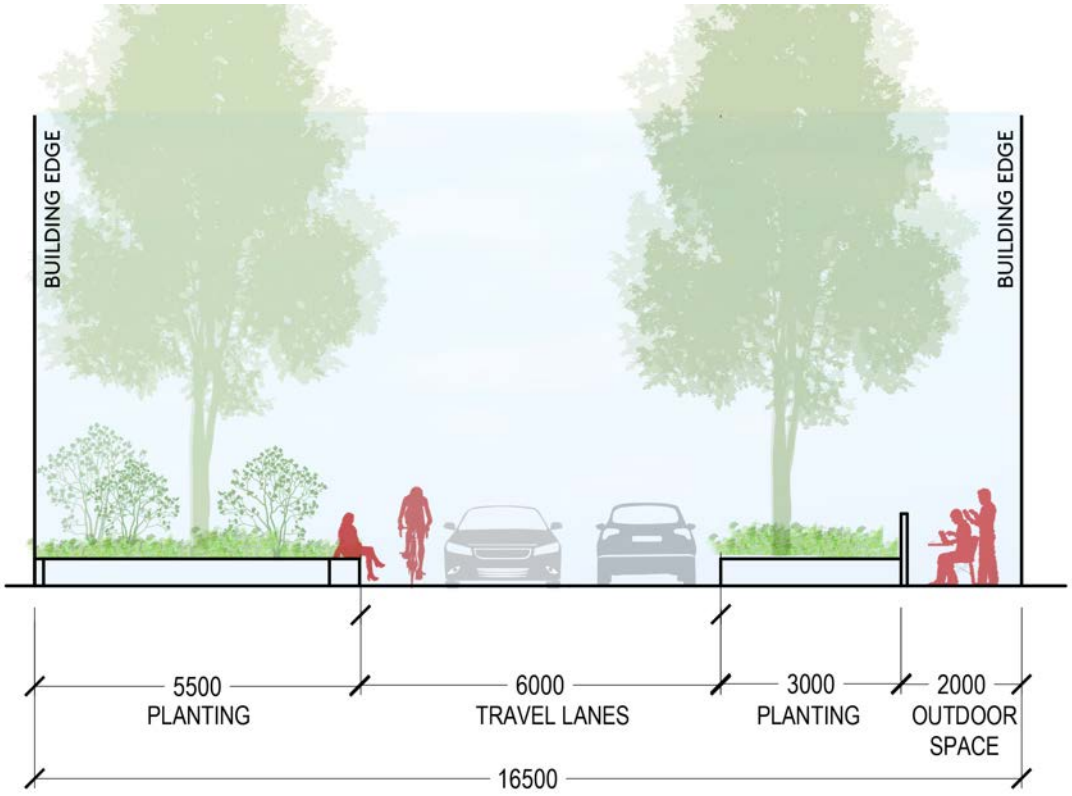
A public street extension of Tubman Avenue (Street 'J') is proposed between Gerrard Street East in the north to Oak Street in the south. The street will have a 15.0m right-of-way, including a 4.5m one-way southbound vehicle travel lane, a 1.5m paved buffer and a 2.0m parking lay-by. The paved buffer has been provided on the east side of the street to reduce the travel width the vehicular lanes and provide additional space for active travel modes. Sidewalks are provided on both sides of the street.



The fire route comprises of the 4.5m travel lane and the 1.5m paved buffer. These areas are separated by bollards. These dimensions accommodate the travel path of a fire truck and permit the fire truck to activate the stabilizing legs between the bollards as shown in the vehicle manoeuvring diagrams VMD-08 to VMD-10 provided in **Appendix E**.

3.2 NEW NORTH-SOUTH PRIVATE STREET (STREET 'G')

A new north-south private street between Building 1A and 1B (referred to as Street 'G') is proposed, extending between Gerrard Street East and Oak Street is proposed. This would be 6.0m in width accommodating two-way traffic flow. The private street has been designed to provide connectivity to loading areas within Buildings 1A, 1B and the Fred Victor Building.



3.3 FRED VICTOR SERVICING LANE

A new east-west driveway extending from Dreamers Way to the new private north-south street is also proposed. It has a width of 4.5m and is intended to operate one-way eastbound, to facilitate loading operations associated with the Fred Victor Building. This connection is shown in the Functional Road plan in **Appendix B**.

4.0 VEHICULAR PARKING CONSIDERATIONS

4.1 VEHICULAR PARKING SPACE REQUIREMENTS

4.1.1 Current Zoning Considerations

As noted in the April 2022 TIS, the Site (and much of its surrounding area) is not under the jurisdiction of current comprehensive City of Toronto Zoning By-law 569-2013; it is under the jurisdiction of former City of Toronto Zoning By-law 438-86. Area-specific By-law 141-2005 was carried forward and maintained as "Exceptions Applying to Specific Use Districts or Specific Lands" in Zoning By-law 438-86, while Area-specific By-law 275-2014 was passed in implementation of the City of Toronto Secondary Plan for the Regent Park Area.

The relevant Site-specific minimum parking requirements for the Site are the following:

- Residential: requirements outlined in By-law 275-2014
- Residential Visitor: requirements outlined in By-law 141-2005
- Social Housing: requirements outlined in By-law 141-2005
- Social Housing Visitor: By-law 141-2005 states that no visitor parking spaces shall be required in respect of dwelling units which are social housing building
- Office: requirements outlined in Zoning By-law 438-86 (Downtown Parking and Loading Zone)
- Retail: requirements outlined in Zoning By-law 438-86 (Downtown Parking and Loading Zone)
- Community/Culture Uses: requirements outlined in Zoning By-law 438-86 (Downtown Parking and Loading Zone)
- Library Uses: requirements outlined in Zoning By-law 438-86 (Downtown Parking and Loading Zone)

4.1.2 Minimum Vehicular Parking Requirements

The minimum parking space supply requirement for the entirety of Phases 4 and 5, in aggregate, is outlined in **Table 2** based upon the currently applicable minimum parking requirements. Minimum parking space requirements, per block, are included in **Appendix C**.

Application of the minimum parking requirements associated with Zoning By-law 438-86 and the area-specific parking requirements results in a total Site parking requirement of 1,616 parking spaces after the application of time-of-day sharing factors.

TABLE 2 PHASES 4 & 5 ZONING BY-LAW MINIMUM PARKING REQUIREMENTS (IN AGGREGATE)

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
1-Bedroom (Market)	1,304 units	0.41 spaces per unit	534 spaces	100%	100%	100%
2-Bedroom (Market)	453 units	0.58 spaces per unit	263 spaces			
3-Bedroom (Market)	121 units	1.04 spaces per unit	126 spaces			
Affordable Housing	1,194 units	0.40 spaces per unit	478 spaces			
Resident Sub-Total	**3,070 units**	**0.46 spaces per unit (blended)**	**1,401 spaces**	**1,401**	**1,401**	**1,401**
Non-Residential						
Market Residential Visitors	1,876 units	0.06 spaces per unit	112 spaces	0 *0%*	39 *35%*	112 *100%*
Affordable Housing Residential Visitors	1,194 units	0.00 spaces per unit	0 spaces	0 *0%*	0 *35%*	0 *100%*
Community	3,605 sm GFA	1 spaces / 175 sm GFA	20 spaces	0 *0%*	7 *35%*	20 *100%*
Library	2,277 sm GFA	1 spaces / 175 sm GFA	13 spaces	13 *100%*	13 *100%*	13 *100%*
Culture	405 sm GFA	1 spaces / 175 sm GFA	2 spaces	2 *100%*	2 *100%*	2 *100%*
Office	2,301 sm GFA	1 spaces / 300 sm GFA	8 spaces	8 *100%*	5 *60%*	0 *0%*
Retail	6,902 sm GFA	1 spaces / 100 sm GFA	68 spaces	14 *20%*	68 *100%*	68 *100%*
Non-Resident Sub-Total			**223 spaces**	**37**	**134**	**215**
TOTAL			**1,624 spaces**	**1,438**	**1,535**	**1,616**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Calculation of required parking supply is not directly based on the minimum parking requirement rates in **Table 2**; it is the aggregate of the calculation of minimum parking requirements for each block, as outlined in **Appendix C**.

4.1.3 Zoning By-law 89-2022 Parking Supply Requirements

Based on comment provided by City staff, the parking requirements resulting from Zoning By-law 569-2013, as amended by 89-2022, are also evaluated. By-laws 89-2022 and 125-2022 were passed (and now in effect as of October 12, 2022) by City Council in February 2022 to amend the vehicle parking requirements outlined in the current City of Toronto Zoning By-law 569-2013. These standards generally aim to improve the efficiency and effectiveness of local parking as the City continues to evolve. The formation of this By-law (e.g. turning minimum requirements into maximum requirements for all land uses) reflects the City's direction and intent to replace the minimum requirements of in-force Zoning By-law 569-2013, making other existing Former Zoning By-laws generally outdated.

The Site falls under Parking Zone 'A' boundaries, as governed by Zoning By-law 89-2022 (as amended by Zoning By-law 125-2022). Application of minimum and maximum parking requirements to the Site is summarized in **Table 3**. It is notable that no minimum parking spaces are required for residents, with exception to accessible parking spaces discussed in **Section 4.1.4.2**. Visitor spaces are required, but only for market buildings.

Under By-law 89-2022, the Site development requires a minimum of 53 accessible parking spaces, inclusive of 24 accessible residential visitor parking spaces and remainder distributed equitably between the proposed uses.

TABLE 3 BY-LAW 89-2022 MINIMUM AND MAXIMUM PARKING REQUIREMENTS (INCLUDING ACCESSIBLE PARKING)

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum Parking Required[3] (Spaces)	Maximum Parking Provided (Ratio)	Maximum Parking Provided[3] (Spaces)	Effective Parking Required (Ratio)	Effective Parking Required[3,4] (Spaces)
Residential							
Bachelor	0	None	0	0.30 spaces per unit	0	0.30 spaces per unit	0
1-Bedroom	1,304 units	None	0	0.50 spaces per unit	652	0.50 spaces per unit	652
2-Bedroom	453 units	None	0	0.80 spaces per unit	361	0.80 spaces per unit	361
3-Bedroom	121 units	None	0	1.00 spaces per unit	121	1.00 spaces per unit	121
Affordable Housing[1]	1,194 units	None	0	0.50 spaces per unit	596	0.20 spaces per unit	237
Resident Sub-Total	**3,070 units**	**None**	**0**	**0.56 spaces per unit** ***(blended)***	**1,730**	**0.45 spaces per unit** ***(blended)***	**1,371**
Non-Residential							
Market Residential Visitors	1,876 units	2 plus 0.01 spaces per unit	24	5 plus 0.10 spaces per unit	201	0.10 spaces per unit	186
Affordable Housing Residential Visitors[2]	1,194 units	None	0	None	0	None	0
Community	3,605 sm GFA	None	0	0.80 spaces per 100 sm GFA	27	0.40 spaces per 100 sm GFA	13
Library	2,277 sm GFA	None	0	3.50 spaces per 100 sm GFA	79	1.00 spaces per 100 sm GFA	22
Culture	405 sm GFA	None	0	0.80 spaces per 100 sm GFA	3	0.40 spaces per 100 sm GFA	1
Office	2,301 sm GFA	None	0	0.80 spaces per 100 sm GFA	16	0.40 spaces per 100 sm GFA	6
Retail	6,902 sm GFA	None	0	3.50 spaces per 100 sm GFA	237	1.00 spaces per 100 sm GFA	66
Non-Resident Sub-Total		**--**	**24**	**--**	**563**	**--**	**294**
TOTAL		**--**	**24**	**--**	**2,293**	**--**	**1,665**
Adjusted Minimum Parking Requirement[5]							
53 accessible parking spaces.							**53**

Notes:
1. By-law 89-2022 does not specify parking requirements for affordable housing uses. Instead, parking rates that were provided for alternative housing uses within the By-law were assumed to best represent the proposed affordable housing uses.
2. Visitor parking spaces are not required under By-law 89-2022 for alternative housing uses on the Site.
3. Refer to Table 200.5.10.1 of By-law 89-2022. If the number of required parking spaces results in a number with a fraction, the number is rounded down to the nearest whole number but there may not be less than one parking space.
4. Refer to Table 200.15.10.5 of By-law 89-2022. Application of "Effective" Parking Ratio and Requirement is a procedural requirement, stipulated by By-law 89-2022, intended to calculate the required quantity of parking spaces to only be used for determining the minimum number of accessible parking spaces required.
5. Based on Section 200.15.10.10 of By-law 89-2022.
6. Calculation of required parking supply is not directly based on the minimum parking requirement rates in **Table 3**; it is the aggregate of the calculation of minimum parking requirements for each block, as outlined in **Appendix C**.

4.1.4 Proposed Vehicular Parking Supply

Within the architectural plans (see **Appendix A**), vehicular parking has been provided in accordance with the following rates:

Market Housing Blocks:

- Residents: 0.40 spaces per unit
- Residential visitors: 0.06 spaces per unit (to be provided on a shared, non-exclusive basis with parking for non-residential uses)
- Non-residential uses: no dedicated parking

Affordable Housing / Municipal Blocks:

- Residents: 0.40 spaces per unit
- Residential visitors: no parking
- Non-residential uses: no parking

Notably, the proposed parking supply is compliant with Zoning By-law 569-2013, as amended by Zoning By-laws 89-2022 and 125-2022. The proposed parking supply is greater than the minimum parking requirement and lesser than the maximum parking requirement.

The provided parking supply for the entirety of Phases 4 and 5, in aggregate, is outlined in **Table 4** based upon the application of the above parking supply rates. The proposed parking supply, per block, is included in **Appendix C**.

Application of the parking supply rates results in a total Site parking supply of 1,340 parking spaces. The site is seeking to provide 1,341 parking spaces.

4.1.4.1 Non-Standard Parking Spaces

It is expected at this time that several parking spaces (number to be determined at the Site Plan Approval stage of the development process) within the proposed parking garages will not meet the parking space dimensional requirements of City of Toronto Zoning By-laws 438-86 and 569-2013.

The relevant and basic parking space dimensional requirements are 2.6 metres in width, 5.6 metres in length, 2.0 metres in height, and be accessed by a 6.0 metre drive aisle.

Parking spaces that do not meet all of the above requirements will be small car / obstructed parking spaces. As building plans will adapt to respond to City comments and the acceleration of the design process, the number of small car / obstructed spaces will change. It is expected that the number of obstructed parking spaces will not exceed 10% of the total parking space supply within the parking garages. The small car / obstructed parking spaces will be reviewed to determine functionality; this analysis will be conducted in conjunction with a subsequent submission associated with the project.

TABLE 4 PHASES 4 & 5 PARKING SUPPLY (IN AGGREGATE)

Use / Type	# of Units / GFA	Proposed Parking Supply (Ratio)	Proposed Parking Supply (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
All Market Units	1,876 units	0.40 spaces per unit	750 spaces	100%	100%	100%
All Affordable Units	1,194 units	0.40 spaces per unit	478 spaces			
Resident Sub-total	**3,070 units**	**0.40 spaces per unit**	**1,228 spaces**	**1,228**	**1,228**	**1,228**
Non-Residential						
Market Residential Visitors	1,876 units	0.06 spaces per unit	112 spaces	0 *0%*	39 *35%*	112 *100%*
Affordable Housing Residential Visitors	1,194 units	No parking	0 spaces	0 *0%*	0 *35%*	0 *100%*
Community	3,605 sm GFA	No parking	0 spaces	0 *0%*	0 *35%*	0 *100%*
Library	2,277 sm GFA	No parking	0 spaces	0 *100%*	0 *100%*	0 *100%*
Culture	405 sm GFA	No parking	0 spaces	0 *100%*	0 *100%*	0 *100%*
Office	2,301 sm GFA	No parking	0 spaces	0 *100%*	0 *60%*	0 *0%*
Retail	6,902 sm GFA	No parking	0 spaces	0 *20%*	0 *100%*	0 *100%*
Non-Resident Sub-Total			**112 spaces**	**0**	**39**	**112**
TOTAL			**1,340 spaces**	**1,228**	**1,267**	**1,340**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Calculation of proposed parking supply is not directly based on the minimum parking requirement rates in **Table 4**; it is the aggregate of the calculation of minimum parking requirements for each block, as outlined in **Appendix C**.

4.1.4.2 Accessible Parking Supply

Greater detail pertaining to accessible parking supply and functionality will be provided in subsequent redevelopment applications. It is intended for the Site to meet the accessible parking supply requirements of City of Toronto By-law 89-2022 for each Block, provided that parking supply is provided for a use on the block.

4.1.4.3 Electric Vehicle Parking

As part of the Site's Sustainability Strategy, the Proposed Development will meet Toronto Green Standard (TGS) Version 4 (V4). For electric vehicle parking, City of Toronto By-law 89-2022 further updated requirements. As a result, all resident parking spaces (1,228 parking spaces) and 25% of non-resident parking spaces (28 parking spaces) will include an energized outlet capable of providing Level 2 charging or higher to the parking space. For the 75% of non-resident parking spaces omitted from the above, rough-in conduits will be provided to permit future Electric Vehicle Supply Equipment (EVSE) installation.

5.0 BICYCLE PARKING CONSIDERATIONS

5.1 BICYCLE PARKING REQUIREMENTS

As previously noted, the Site is not under the jurisdiction of the Zoning By-law 569-2013, but rather the former Zoning By-law 438-86. The minimum bicycle parking requirements of Zoning By-law 438-86 are applicable to the Site. However, the Toronto Green Standards (TGS) Version 4.0 (V4) for Zone 1 (Tier 1) bicycle parking standards (which are based upon Zoning By-law 569-2013) represent a more progressive approach, and as such have been applied to the development.

The Site is designated as Bicycle Zone 1 under Zoning By-law 569-2013, which sets the minimum bicycle parking requirements for developments located within the zone. These bicycle parking requirements are consistent with the minimum bicycle parking requirements of the Toronto Green Standards (TGS) Version 4, Tier 1 that apply to all developments within the City of Toronto.

5.1.1 Minimum Bicycle Parking Requirements

The minimum bicycle parking space supply requirement for the entirety of Phases 4 and 5, in aggregate, is outlined in **Table 5** based upon the applicable minimum bicycle parking requirements. Minimum bicycle parking space requirements, per block, are included in **Appendix D**.

Application of the minimum bicycle parking requirements associated with TGS V4 Tier 1 (which are based upon Zoning By-law 569-2013) results in a total Site requirement of 3,175 bicycle parking spaces.

TABLE 5 PHASES 4 & 5 ZONING BY-LAW MINIMUM BICYCLE PARKING REQUIREMENTS (IN AGGREGATE)

Use / Type	Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Residential	3,070 units	Long-Term	0.90 spaces per unit	2,765 spaces
		Short-Term	0.10 spaces per unit	310 spaces
Community	3,605 sm GFA	Total	--	0 spaces
Library	2,277 sm GFA	Total	--	0 spaces
Culture	405 sm GFA	Total	--	0 spaces
Office	2,301 sm GFA	Long-Term	0.2 spaces per 100 sm GFA	8 spaces
		Short-Term	3 plus 0.2 spaces per 100 sm GFA	29 spaces
Retail	6,902 sm GFA	Long-Term	0.2 spaces per 100 sm GFA	18 spaces
		Short-Term	3 plus 0.3 spaces per 100 sm GFA	45 spaces
Long-Term Subtotal				**2,791 spaces**
Short-Term Subtotal				**384 spaces**
TOTAL				**3,175 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. In addition to the standards listed, the Toronto Green Standards require all short-term bicycle parking to be located in a highly visible location or at-grade or on the first parking level below-grade.
3. Calculation of required bicycle parking supply is not directly based on the minimum parking requirement rates in **Table 5**; it is the aggregate of the calculation of minimum parking requirements for each block, as outlined in **Appendix D**.

5.1.2 Proposed Bicycle Parking Supply

In comparison to the aforementioned minimum bicycle parking requirements, it is proposed to provide a bicycle parking supply that exceeds the requirements, as outlined in **Table 6** and as outlined in the architectural plans (**Appendix A**).

Bicycle parking has been provided in accordance with the following rates:

- Residential (Long-Term): 1.06 spaces per unit
- Residential (Short-Term): 0.17 spaces per unit
- Non-Residential Uses (Long-Term & Short-Term): 0.79 spaces per 100 m^2 GFA

The application of the rates, in aggregate across the Site, results in the provision of 3,890 bicycle parking spaces inclusive of 3,245 long-term residential bicycle parking spaces, 522 short-term residential bicycle parking spaces, and 123 non-residential bicycle parking spaces.

TABLE 6 PROPOSED BICYCLE PARKING SUPPLY (IN AGGREGATE)

Use / Type	Units / GFA	Type	Proposed Parking Supply (Ratio)	Proposed Parking Supply (Spaces)
Residential	3,070 units	Long-Term	1.06 spaces per unit	3,245 spaces
		Short-Term	0.17 spaces per unit	522 spaces
Non-Residential	15,490 sm GFA	Long-Term & Short-Term	0.79 spaces per 100 sm GFA	123 spaces
TOTAL				**3,890 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.

5.1.2.1 Bicycle Parking Location

As part of the Site's Sustainability Strategy, the Proposed Development will meet Toronto Green Standard (TGS) Version 4 (V4). To meet the requirements, all long-term bicycle parking, within all blocks, will be provided in a secure controlled-access bicycle parking facility or purpose-built bicycle locker on the first or second storey of the building or on levels below ground commencing with the first level below ground. All short-term bicycle parking, within all blocks, will be provided in a highly visible and publicly accessible location at-grade or on the first parking level of the building below grade.

5.1.2.2 Electric Bicycle Parking

As part of the Site's Sustainability Strategy, the Proposed Development will meet Toronto Green Standard (TGS) Version 4 (V4). To meet the requirements, at least 15% of required long-term bicycle parking (2,791 long-term spaces x 15% = 419 bicycle parking spaces) will include an energized outlet (120 V) adjacent to the bicycle parking space.

6.0 LOADING CONSIDERATIONS

6.1 LOADING REQUIREMENTS

6.1.1 Zoning Considerations

As previously noted, the Site (and much of its surrounding area) is not under the jurisdiction of current comprehensive City of Toronto Zoning By-law 569-2013; it is under the jurisdiction of former City of Toronto Zoning By-law 438-86. The minimum loading requirements of contemporary City of Toronto Zoning By-law 569-2013 are also considered within this section.

The library and community facilities in Block 2F (and 2G) have been conceptually shown in the plans. The programming and design of the facilities will be refined as part of a separate application process. Therefore, consideration of a future loading facility is not included in this report and as part of this application.

6.1.2 Minimum Loading Requirements – ZBL 438-86

The minimum loading requirements for each development block in Phases 4 and 5, based upon Zoning By-law 438-86, is outlined in **Table 7**.

Application of the minimum loading requirements associated with Zoning By-law 438-86 results in a total requirement of 8 loading spaces for the entire Site after the application of sharing factors.

TABLE 7 BUILDING 1A ZONING BY-LAW 438-86 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	202 units	0 spaces	0 spaces	0 spaces	1 spaces	1 spaces
Community	1,358 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
Office	237 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	711 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**0 spaces**	**1 spaces**	**2 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Section 4.8(d).
2. Shared Loading Calculations based on Section 4.8(e).

TABLE 8 BUILDINGS 1B AND 1C ZONING BY-LAW 438-86 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	713 units	0 spaces	0 spaces	0 spaces	1 spaces	1 spaces
Community	0 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Office	330 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	989 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**0 spaces**	**1 spaces**	**2 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Section 4.8(d).
2. Shared Loading Calculations based on Section 4.8(e).

TABLE 9 BUILDINGS 2D AND 2E ZONING BY-LAW 438-86 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	505 units	0 spaces	0 spaces	0 spaces	1 spaces	1 spaces
Community	0 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Office	511 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
Retail	1,532 sm GFA	0 spaces	2 spaces	0 spaces	0 spaces	2 spaces
TOTAL (with sharing)[2]		**0 spaces**	**2 spaces**	**0 spaces**	**1 spaces**	**3 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**1 spaces**	**0 spaces**	**1 spaces**	**2 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Section 4.8(d).
2. Shared Loading Calculations based on Section 4.8(e).

TABLE 10 BUILDINGS 2H AND 2I ZONING BY-LAW 438-86 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	333 units	0 spaces	0 spaces	0 spaces	1 spaces	1 spaces
Community	572 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
Office	376 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	1,127 sm GFA	0 spaces	2 spaces	0 spaces	0 spaces	2 spaces
TOTAL (with sharing)[2]		**0 spaces**	**2 spaces**	**0 spaces**	**1 spaces**	**3 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**1 spaces**	**0 spaces**	**1 spaces**	**2 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Section 4.8(d).
2. Shared Loading Calculations based on Section 4.8(e).

TABLE 11 BUILDINGS 3J AND 3K ZONING BY-LAW 438-86 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	657 units	0 spaces	0 spaces	0 spaces	1 spaces	1 spaces
Community	0 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Office	270 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	809 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**0 spaces**	**1 spaces**	**2 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Section 4.8(d).
2. Shared Loading Calculations based on Section 4.8(e).

TABLE 12 BUILDINGS 4L AND 4M ZONING BY-LAW 438-86 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	659 units	0 spaces	0 spaces	0 spaces	1 spaces	1 spaces
Community	916 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
Office	199 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	596 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**0 spaces**	**1 spaces**	**2 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Section 4.8(d).
2. Shared Loading Calculations based on Section 4.8(e).

6.1.3 Minimum Loading Requirements – ZBL 569-2013

The minimum loading requirements for each development block in Phases 4 and 5, based upon Zoning By-law 569-2013, is outlined in **Table 13**.

Application of the minimum loading requirements associated with Zoning By-law 569-2013 results in a total requirement of 10 loading spaces after the application of sharing factors.

TABLE 13 BUILDING 1A ZONING BY-LAW 569-2013 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	202 units	0 spaces	0 spaces	0 spaces	1 spaces	1 spaces
Community	1,358 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
Office	237 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	711 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**0 spaces**	**1 spaces**	**2 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Chapter 220.5.10.1(9).
3. Shared Loading Calculations based on Section 40.10.90.1.

TABLE 14 BUILDINGS 1B AND 1C ZONING BY-LAW 569-2013 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	713 units	0 spaces	0 spaces	1 spaces	1 spaces	2 spaces
Community	0 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Office	330 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	989 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**1 spaces**	**1 spaces**	**3 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**	**2 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Chapter 220.5.10.1(9).
3. Shared Loading Calculations based on Section 40.10.90.1.

TABLE 15 BUILDINGS 2D AND 2E ZONING BY-LAW 569-2013 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	505 units	0 spaces	0 spaces	1 spaces	1 spaces	2 spaces
Community	0 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Office	511 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
Retail	1,532 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**1 spaces**	**1 spaces**	**3 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**	**2 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Chapter 220.5.10.1(9).
3. Shared Loading Calculations based on Section 40.10.90.1.

TABLE 16 BUILDINGS 2H AND 2I ZONING BY-LAW 569-2013 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	333 units	0 spaces	0 spaces	0 spaces	1 spaces	1 spaces
Community	572 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	0 spaces
Office	376 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	1 spaces
Retail	1,127 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**0 spaces**	**1 spaces**	**2 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Chapter 220.5.10.1(9).
3. Shared Loading Calculations based on Section 40.10.90.1.

TABLE 17 BUILDINGS 3J AND 3K ZONING BY-LAW 569-2013 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	657 units	0 spaces	0 spaces	1 spaces	1 spaces	2 spaces
Community	0 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Office	270 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	809 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**1 spaces**	**1 spaces**	**3 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**	**2 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Chapter 220.5.10.1(9).
3. Shared Loading Calculations based on Section 40.10.90.1.

TABLE 18 BUILDINGS 4L AND 4M ZONING BY-LAW 569-2013 MINIMUM LOADING REQUIREMENTS

Use / Type	Units / GFA[1]	Type A Spaces	Type B Spaces	Type C Spaces	Type G Spaces	Total
Residential	659 units	0 spaces	0 spaces	1 spaces	1 spaces	2 spaces
Community	916 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
Office	199 sm GFA	0 spaces	0 spaces	0 spaces	0 spaces	0 spaces
Retail	596 sm GFA	0 spaces	1 spaces	0 spaces	0 spaces	1 spaces
TOTAL (with sharing)[2]		**0 spaces**	**1 spaces**	**1 spaces**	**1 spaces**	**3 spaces**
TOTAL (with sharing)[3]		**0 spaces**	**0 spaces**	**1 spaces**	**1 spaces**	**2 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022.
2. Shared Loading Calculations based on Chapter 220.5.10.1(9).
3. Shared Loading Calculations based on Section 40.10.90.1.

6.1.4 Proposed Loading Supply

Consolidated primary loading facilities are proposed for each development block included in the proposal with dedicated access off adjacent north-south streets (with the exception of Block 1A).

It is therefore proposed to modestly exceed the minimum loading requirements of Zoning By-law 569-2013 as outlined in **Table 19**.

TABLE 19 PROPOSED LOADING SUPPLY BY BLOCK

Block	Loading Supply			
	Type B	Type C	Type G	Total
Building 1A	1 spaces	-	1 space	2 spaces
Buildings 1B & 1C	1 spaces	-	1 space	2 spaces
Buildings 2D & 2E	1 spaces	-	1 space	2 spaces
Buildings 2H & 2I	1 spaces	-	1 space	2 spaces
Buildings 3J & 3K	1 spaces	-	1 space	2 spaces
Buildings 4L & 4M	1 spaces	-	1 space	2 spaces
TOTAL	**6 spaces**	**-**	**6 spaces**	**12 spaces**

Notes:
1. Development statistics based on architectural Site plans provided by Karakusevic Carson Architects, dated November 24, 2022. Blocks 2F & 2G are omitted.

For the entirety of Phases 4 and 5 in aggregate, a total supply of 12 loading spaces is proposed, inclusive of 6 Type B and 6 Type G loading spaces.

Vehicle manoeuvring is intended to be accommodated on-site such that vehicles can enter and exit each block in a forward motion. Vehicle manoeuvring diagrams for each block are included in **Appendix E**.

The staging area for each block has been sized to accommodate the minimum area required for the tower with the greatest number of residential units, based on City's "*Requirements For Garbage, Recycling And Organics Collection Services For New Developments and Redevelopments*" (March 2022).

7.0 VEHICULAR TRIP GENERATION UPDATE

Based on the updated development program, the resulting trip generation is summarized below in **Table 20**. The forecasting methodologies are analogous to those presented in the April 2022 TIS.

The Site is expected to generate in the order of 405 and 380 two-way vehicle trips during the weekday morning and afternoon peak hours, respectively, representing an increase of 10 to 15 trips in the peak hours compared to the previous submission. The impacts of these additional trips distributed across the entire Site and study area road network are expected to be minimal, and are not expected to alter the conclusions of the vehicular traffic analysis.

TABLE 20 VEHICULAR SITE TRIP GENERATION

Use	Parameter	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Current Submission							
Residential	*Selected Person Trip Rate (trips / unit)*	*0.05*	*0.45*	*0.50*	*0.30*	*0.15*	*0.45*
	Person Site Trips (3,070 residential units)	155	1380	1535	920	460	1380
	Auto Site Trips (22% of total persons)	35	305	340	205	100	305
Non-Residential	*Selected Vehicle Trip Rate (trips / spaces)*	*0.40*	*0.20*	*0.60*	*0.25*	*0.40*	*0.65*
	Auto Site Trips (113 non-residential spaces)	45	20	65	35	40	75
Total	**Auto Site Trips**	**80**	**325**	**405**	**240**	**140**	**380**
Previous Submission							
Residential	Auto Site Trips	35	295	330	195	100	295
Non-Residential	Auto Site Trips	45	20	65	30	40	70
Total	**Auto Site Trips**	**80**	**315**	**395**	**225**	**140**	**365**
Differences							
Residential	Auto Site Trips	0	+10	+10	+10	0	+10
Non-Residential	Auto Site Trips	0	0	0	+5	0	+5
Total	**Auto Site Trips**	**0**	**+10**	**+10**	**+15**	**0**	**+15**

Notes:
1. All trips are rounded to the nearest five (5).

8.0 TRAFFIC OPERATIONS ANALYSIS UPDATE

Given the minor increase in trip generation discussed in **Section 7.0**, the traffic volume forecasts and analysis methodology are consistent with those published in the April 2022 TIS. The updated analysis in the sections below are based on the changes to the proposed road network previously discussed in **Section 3.0**.

8.1 ANALYSIS SCENARIOS

The following analysis scenarios were reviewed for the weekday morning and afternoon peak hours:

1. Baseline existing traffic conditions (volumes as illustrated in **Figure 3** of **Appendix F**);
2. 2032 Future background traffic conditions on the existing road network (volumes as illustrated in **Figure 6** of **Appendix F**);
3. 2032 Future background traffic conditions on the proposed road network (volumes as illustrated in **Figure 7** of **Appendix F**);
4. 2032 Future total traffic conditions on the proposed road network (volumes as illustrated in **Figure 12** of **Appendix F**).

Future analysis scenarios are updated to incorporate the current plan that features two additional north-south linkages extending between Oak Street and Gerrard Street East: a private street between Dreamers Way and Sackville Street and the extension of Tubman Avenue. These new linkages create or modify the following intersections:

- **Oak Street / New Private Street –** a new 3-way intersection would be created. It has been assumed for this analysis that the New Private Street Driveway operates under STOP control. Two-way flow has been considered for the New Private Street.
- **Gerrard Street East / New Private Street** - a new 3-way intersection would be created. It has been assumed that the New Private Street would operate under STOP control. Two-way flow has been considered for the New Private Street.
- **Tubman Avenue / Sword Street / Gerrard Street East** – the existing intersection would be updated to become a 4-way intersection. The south leg would be the Tubman Avenue extension and operate one-way southbound. It is assumed that left turns from Gerrard Street East to Tubman Avenue, and no southbound through moves from Sword Street to Tubman Avenue would be restricted during peak periods.
- **Tubman Avenue / Oak Street** – the existing 3-way intersection would be updated to become a 4-way intersection. The north leg would be the proposed Tubman Avenue extension. It has been assumed that the southbound Tubman Avenue approach to the intersection would operate under STOP control.

All updated lane configurations and traffic volume figures are provided in **Appendix F**. All Synchro worksheets for the four scenarios above are provided in **Appendix G**.

8.2 SIGNALIZED INTERSECTION ANALYSIS

8.2.1 Parliament Street / Gerrard Street East

The intersection of Parliament Street / Gerrard Street East operates under signal control with variable cycle lengths in both peak hours due to the implementation of transit signal priority and phase extensions.

Table 21 summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.62 and 0.59 during the weekday morning and afternoon peak hours, respectively.

Under all future traffic conditions with the proposed road network, the intersection will continue to operate under capacity at overall v/c ratios of 0.72 and 0.67 or better during the weekday morning and afternoon peak hours, respectively.

Based on the foregoing, no mitigation measures or improvements are recommended at this intersection.

TABLE 21 PARLIAMENT STREET / GERRARD STREET EAST TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBLTR	0.28 (0.53)	B (C)	0.29 (0.56)	B (C)	0.29 (0.56)	B (C)	0.29 (0.58)	B (C)
WBLTR	0.68 (0.37)	C (C)	0.70 (0.40)	C (C)	0.69 (0.42)	C (C)	0.74 (0.44)	C (C)
NBLTR	0.40 (0.44)	B (B)	0.46 (0.50)	B (B)	0.46 (0.50)	B (B)	0.52 (0.54)	C (B)
SBLTR	0.39 (0.54)	B (B)	0.41 (0.56)	B (B)	0.41 (0.56)	B (B)	0.41 (0.58)	B (B)
Overall	**0.62 (0.59)**	**C (B)**	**0.67 (0.63)**	**C (C)**	**0.66 (0.64)**	**C (C)**	**0.72 (0.67)**	**C (C)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

8.2.2 Gerrard Street East / Sackville Street

The intersection of Gerrard Street East / Sackville Street operates under signal control with variable cycle lengths in both peak hours due to the implementation of transit signal priority and phase extensions.

Table 22 summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.43 and 0.50 during the weekday morning and afternoon peak hours, respectively.

Under all future traffic conditions with the proposed road network, the intersection will continue to operate under capacity at overall v/c ratios of 0.53 and 0.49 or better during the weekday morning and afternoon peak hours, respectively.

Based on the foregoing, no other mitigation measures or improvements are recommended at this intersection, aside from the one-way configuration along Sackville Street.

TABLE 22 GERRARD STREET EAST / SACKVILLE STREET TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBTR	0.19 (0.48)	A (A)	0.19 (0.48)	A (A)	0.18 (0.48)	A (A)	0.18 (0.51)	A (A)
WBLT	0.49 (0.32)	A (A)	0.50 (0.34)	A (A)	0.55 (0.37)	A (A)	0.61 (0.51)	A (A)
NBLTR	0.02 (0.02)	B (B)	0.02 (0.03)	B (B)	--(2)			
SBLTR	0.26 (0.48)	C (B)	0.27 (0.48)	C (B)	0.25 (0.39)	C (B)	0.26 (0.40)	C (C)
Overall	**0.43 (0.50)**	**A (A)**	**0.44 (0.50)**	**A (A)**	**0.48 (0.47)**	**A (A)**	**0.53 (0.49)**	**A (A)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).
2. Sackville Street is proposed to be a one-way, southbound-only travel corridor.

8.2.3 Gerrard Street East / Sumach Street

The intersection of Gerrard Street East / Sumach Street operates under signal control with variable cycle lengths in both peak hours due to the implementation of transit signal priority and phase extensions.

Table 23 summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.52 and 0.46 during the weekday morning and afternoon peak hours, respectively.

Under all future traffic conditions with the proposed road network, the intersection will continue to operate under capacity at overall v/c ratios of 0.64 and 0.57 or better during the weekday morning and afternoon peak hours, respectively.

Based on the foregoing, no other mitigation measures or improvements are recommended at this intersection, aside from the one-way configuration along Sumach Street.

TABLE 23 GERRARD STREET EAST / SUMACH STREET TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBLTR	0.20 (0.45)	A (A)	0.20 (0.48)	A (A)	--(2)			
EBLT	Lane group does not currently exist.				0.19 (0.47)	A (A)	0.21 (0.49)	A (A)
WBLTR	0.53 (0.30)	A (A)	0.53 (0.32)	A (A)	--(2)			
WBTR	Lane group does not currently exist.				0.47 (0.29)	A (A)	0.53 (0.31)	A (A)
NBLTR	0.16 (0.25)	D (D)	0.32 (0.28)	D (D)	0.39 (0.37)	D (C)	0.74 (0.62)	D (D)
Overall	**0.52 (0.46)**	**A (A)**	**0.55 (0.49)**	**A (A)**	**0.50 (0.49)**	**A (A)**	**0.64 (0.57)**	**B (A)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).
2. Sumach Street is proposed to be a one-way, northbound-only travel corridor.

8.2.4 Gerrard Street East / River Street

The intersection of Gerrard Street East / River Street operates under signal control with variable cycle lengths in both peak hours due to the implementation of transit signal priority and phase extensions.

Table 24 summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.79 and 0.96 during the weekday morning and afternoon peak hours, respectively. The eastbound movement operates at near capacity conditions in the weekday afternoon peak hour.

Under future background traffic conditions with the proposed road network, most of the intersection's movements operate under capacity at v/c ratios between 0.14 to 0.89. The eastbound movements will begin to operate over capacity at a v/c ratio of 1.04 during the weekday afternoon peak hours.

With the addition of Site traffic, most of the intersection's movements continue to operate under capacity. The eastbound movements will continue to operate over capacity at overall v/c ratios of 1.07 during the weekday afternoon peak hours. Site-related traffic impact is minimal on the eastbound lane group and in the order of 3%.

Signal timing optimization is recommended to accommodate the eastbound vehicle movements at the intersection. As post-pandemic travel conditions continue to evolve and adjust to more consistent traffic patterns, the operations at this intersection should continue to be monitored.

TABLE 24 GERRARD STREET EAST / RIVER STREET TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBLTR	0.49 (0.98)	B (D)	0.47 (1.04)	B (E)	0.46 (1.04)	B (E)	0.85 (1.07)	B (E)
WBLTR	0.86 (0.64)	C (C)	0.82 (0.73)	B (C)	0.82 (0.74)	B (C)	0.85 (0.75)	C (C)
NBL	0.12 (0.27)	B (B)	0.17 (0.32)	B (C)	0.17 (0.32)	B (C)	0.17 (0.41)	B (C)
NBTR	0.42 (0.64)	B (C)	0.61 (0.69)	C (C)	0.61 (0.69)	C (C)	0.62 (0.69)	C (C)
SBL	0.37 (0.81)	B (D)	0.55 (0.89)	C (E)	0.56 (0.89)	C (E)	0.56 (0.89)	C (E)
SBT	0.41 (0.50)	B (C)	0.49 (0.59)	B (C)	0.49 (0.59)	B (C)	0.49 (0.61)	B (C)
SBR	0.17 (0.14)	B (B)	0.18 (0.14)	B (B)	0.18 (0.14)	B (B)	0.19 (0.15)	B (B)
Overall	**0.79 (0.96)**	**B (C)**	**0.85 (1.02)**	**B (D)**	**0.86 (1.02)**	**B (D)**	**0.88 (1.04)**	**B (D)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

8.2.5 Parliament Street / Dundas Street East

The intersection of Parliament Street / Dundas Street East operates under signal control with cycle lengths of 76 seconds in both peak hours.

Table 25 summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.35 and 0.44 during the weekday morning and afternoon peak hours, respectively.

Under all future traffic conditions with the proposed road network, the intersection will continue to operate under capacity at overall v/c ratios of 0.44 and 0.51 or better during the weekday morning and afternoon peak hours, respectively.

Based on the foregoing, no mitigation measures or improvements are recommended at this intersection.

TABLE 25 PARLIAMENT STREET / DUNDAS STREET EAST TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBLTR	0.22 (0.39)	A (B)	0.25 (0.45)	A (B)	0.24 (0.45)	A (B)	0.25 (0.45)	A (B)
WBLTR	0.24 (0.22)	B (B)	0.30 (0.26)	B (B)	0.30 (0.25)	B (B)	0.34 (0.26)	B (B)
NBLTR	0.43 (0.53)	C (C)	0.45 (0.58)	C (C)	0.45 (0.58)	C (C)	0.44 (0.61)	C (C)
SBLTR	0.54 (0.42)	C (C)	0.57 (0.48)	C (C)	0.58 (0.50)	C (C)	0.60 (0.51)	C (C)
Overall	**0.35 (0.44)**	**B (B)**	**0.40 (0.50)**	**B (B)**	**0.40 (0.50)**	**B (B)**	**0.44 (0.51)**	**B (B)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

8.2.6 Dundas Street East / Sackville Street

The intersection of Dundas Street East / Sackville Street operates under signal control with cycle lengths of 76 seconds in both peak hours.

Table 26 summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.32 and 0.23 during the weekday morning and afternoon peak hours, respectively.

Under all future traffic conditions with the proposed road network, the intersection will continue to operate under capacity at overall v/c ratios of 0.47 and 0.27 or better during the weekday morning and afternoon peak hours, respectively.

Based on the foregoing, no mitigation measures or improvements are recommended at this intersection.

TABLE 26 DUNDAS STREET EAST / SACKVILLE STREET TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBTR	0.20 (0.23)	A (A)	0.22 (0.27)	A (A)	0.23 (0.27)	A (A)	0.23 (0.27)	A (A)
WBLT	0.33 (0.24)	A (A)	0.40 (0.27)	A (A)	0.40 (0.26)	A (A)	0.41 (0.26)	A (A)
NBLTR	0.13 (0.14)	C (C)	0.13 (0.14)	C (C)	0.13 (0.14)	C (C)	0.13 (0.14)	C (C)
SBLTR	0.29 (0.23)	C (C)	0.29 (0.23)	C (C)	0.49 (0.26)	C (C)	0.59 (0.26)	C (C)
Overall	**0.32 (0.23)**	**A (A)**	**0.37 (0.26)**	**A (A)**	**0.42 (0.27)**	**A (A)**	**0.47 (0.27)**	**B (A)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

8.2.7 Dundas Street East / Sumach Street

The intersection of Dundas Street East / Sumach Street operates under signal control with variable cycle lengths in both peak hours due to the implementation of transit signal priority and phase extensions.

Table 27 summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.35 and 0.43 during the weekday morning and afternoon peak hours, respectively.

Under all future traffic conditions with the proposed road network, the intersection will continue to operate under capacity at overall v/c ratios of 0.46 and 0.51 or better during the weekday morning and afternoon peak hours, respectively.

Based on the foregoing, no mitigation measures or improvements are recommended at this intersection.

TABLE 27 DUNDAS STREET EAST / SUMACH STREET TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBLTR	0.34 (0.41)	A (A)	0.42 (0.50)	A (A)	0.42 (0.51)	A (A)	0.44 (0.51)	A (A)
WBLTR	0.33 (0.26)	A (A)	0.45 (0.33)	A (A)	0.41 (0.34)	A (A)	0.47 (0.45)	A (A)
NBLTR	0.33 (0.43)	C (C)	0.23 (0.44)	C (C)	0.35 (0.45)	D (C)	0.36 (0.45)	D (C)
SBLTR	0.25 (0.12)	C (C)	0.35 (0.17)	C (C)	0.15 (0.09)	C (C)	0.27 (0.12)	D (C)
Overall	**0.35 (0.43)**	**A (B)**	**0.43 (0.50)**	**B (B)**	**0.42 (0.51)**	**A (B)**	**0.46 (0.51)**	**A (B)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

8.2.8 Dundas Street East / River Street

The intersection of Dundas Street East / River Street operates under signal control with variable cycle lengths in both peak hours due to the implementation of transit signal priority and phase extensions. **Table 28** summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.72 and 0.75 during the weekday morning and afternoon peak hours, respectively.

Under future background traffic conditions with the proposed road network, the intersection continues to operate under capacity at overall v/c ratios of 0.95 and 0.79 during the weekday morning and afternoon peak hours, respectively. However, the northbound shared through-right movement will operate near capacity at a v/c ratio of 0.99 during the weekday morning peak hours.

With the addition of Site traffic, most of the intersection's movements continue to operate under capacity. The northbound shared through-right movement will operate at capacity (i.e. v/c ratio of 1.00) during the weekday morning peak hour. Site-related traffic impact is minimal on this movement and in the order of 1%.

As post-pandemic travel conditions continue to evolve and adjust to more consistent traffic patterns, the operations at this intersection should continue to be monitored prior to any improvements such as signal timing optimization.

TABLE 28 DUNDAS STREET EAST / RIVER STREET TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBTLR	0.56 (0.59)	B (B)	0.80 (0.71)	C (C)	0.82 (0.71)	C (C)	0.89 (0.73)	D (C)
WBTLR	0.58 (0.56)	B (B)	0.86 (0.73)	C (C)	0.86 (0.73)	C (C)	0.90 (0.81)	D (C)
NBL	0.26 (0.06)	C (B)	0.44 (0.22)	C (B)	0.46 (0.22)	C (B)	0.72 (0.41)	D (B)
NBTR	0.71 (0.86)	C (D)	0.99 (0.78)	E (C)	0.99 (0.78)	E (C)	1.00 (0.79)	E (C)
SBL	0.59 (0.40)	C (B)	0.61 (0.61)	C (C)	0.56 (0.61)	C (C)	0.79 (0.71)	D (C)
SBTR	0.86 (0.56)	D (B)	0.78 (0.72)	C (C)	0.80 (0.72)	C (C)	0.93 (0.77)	D (C)
Overall	**0.72 (0.75)**	**C (C)**	**0.95 (0.79)**	**D (C)**	**0.95 (0.79)**	**D (C)**	**1.00 (0.84)**	**D (C)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

8.2.9 Dundas Street East / Regent Park Boulevard

The intersection of Dundas Street East / Regent Park Boulevard operates under signal control with cycle lengths of 76 seconds in both peak hours.

Table 29 summarizes the results of the traffic operations analysis at the intersection.

Under existing traffic conditions, the intersection operates under capacity at overall v/c ratios of 0.28 and 0.34 during the weekday morning and afternoon peak hours, respectively.

Under all future traffic conditions with the proposed road network, the intersection will continue to operate under capacity at overall v/c ratios of 0.37 and 0.41 or better during the weekday morning and afternoon peak hours, respectively.

Based on the foregoing, no mitigation measures or improvements are recommended at this intersection.

TABLE 29 DUNDAS STREET EAST / REGENT PARK BOULEVARD TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBTR	0.32 (0.38)	A (A)	0.36 (0.46)	A (A)	0.39 (0.46)	A (A)	0.41 (0.46)	A (A)
WBLT	0.28 (0.21)	A (A)	0.34 (0.24)	A (A)	0.33 (0.23)	A (A)	0.33 (0.23)	A (A)
Overall	**0.28 (0.34)**	**A (A)**	**0.31 (0.40)**	**A (A)**	**0.35 (0.41)**	**A (A)**	**0.37 (0.41)**	**A (A)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

8.3 UNSIGNALIZED INTERSECTION ANALYSIS

Table 30 summarizes the analysis results for unsignalized intersections in the study area.

Under future traffic conditions, most movements operate acceptably in both peak hours at levels-of-service (LOS) E or better.

In the analysis of baseline existing traffic volumes, the shared eastbound movement at River Street / Oak Street indicates delays of up to 86 seconds in the weekday afternoon peak hour. Under future background conditions, these delays are expected to increase to 97 seconds. With the redevelopment of the Site, drivers are expected to experience similar delays as compared to the future background condition.

Signal warrant analysis at the intersections of River Street / Oak Street in addition to the intersection of Parliament Street / Oak Street is further discussed in **Section 8.4**.

TABLE 30 UNSIGNALIZED INTERSECTION TRAFFIC OPERATIONS

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Parliament Street / Gerrard Street East (North Intersection)								
NBLT	A (A)	0.3 (0.7)	A (A)	0.3 (0.7)	A (A)	0.3 (0.7)	A (A)	0.3 (0.7)
Gerrard Street East / Gifford Street								
EBLT	A (A)	0.4 (0.4)	A (A)	0.4 (0.4)	A (A)	0.4 (0.4)	A (A)	0.5 (0.5)
SBLR	C (C)	18.1 (22.7)	C (C)	18.6 (21.9)	C (C)	19.1 (21.1)	C (C)	19.2 (22.3)
Gerrard Street East / Nasmith Avenue								
EBLT	A (A)	0.4 (0.2)	A (A)	0.4 (0.2)	A (A)	0.5 (0.2)	A (A)	0.5 (0.2)
SBLR	C (C)	19.4 (15.4)	C (C)	20.2 (15.2)	C (B)	20.6 (15.0)	C (C)	20.9 (15.8)
Gerrard Street East / Sword Street								
SBLR	C (C)	18.7 (18.5)	C (C)	19.3 (17.1)	C (C)	22.5 (20.0)	C (C)	21.9 (21.1)
Parliament Street / Oak Street[5]								
WBLR	C (C)	23.8 (17.2)	D (C)	30.7 (23.9)	D (C)	30.8 (24.1)	E (D)	49.3 (26.6)
SBLT	A (A)	1.1 (2.2)	A (A)	1.1 (2.2)	A (A)	1.1 (2.2)	A (A)	0.4 (1.4)
Oak Street / Dreamer's Way								
SBLR	A (A)	9.2 (9.2)	A (A)	9.6 (9.4)	A (A)	9.6 (9.4)	B (A)	10.2 (9.5)
Oak Street / Regent Street								
NBLR	A (A)	9.4 (9.5)	A (A)	9.4 (9.6)	A (A)	9.4 (9.6)	A (A)	9.7 (9.6)
Oak Street / Sackville Street								
EBLTR	A (A)	7.5 (7.7)	A (A)	7.5 (7.8)	-- [2]			
EBTR	Lane group does not currently exist.				A (A)	7.7 (7.8)	A (A)	8.1 (8.0)
WBLT[4]	A (A)	7.2 (7.6)	A (A)	7.3 (7.6)	A (A)	7.5 (7.4)	A (A)	8.0 (7.5)
SBLTR	A (A)	7.8 (7.7)	A (A)	7.8 (7.8)	A (A)	8.4 (8.1)	A (A)	10.0 (8.6)
Oak Street / Sumach Street								
EBLTR	A (A)	7.5 (8.0)	A (A)	7.6 (8.0)	A (A)	7.8 (8.2)	A (A)	8.2 (8.7)
NBLTR	A (A)	7.5 (7.8)	A (A)	7.9 (7.9)	A (A)	7.8 (8.0)	A (A)	8.5 (9.2)
SBLTR	A (A)	7.7 (7.7)	A (A)	7.8 (7.8)	-- [3]			
Oak Street / Tubman Avenue								
SBLT	A (A)	0.0 (0.0	A (A)	0.0 (0.0	A (A)	9.7 (9.7)	A (A)	9.8 (9.8)
River Street / Oak Street[5]								
EBLTR	C (F)	23.7 (86.0)	D (F)	27.3 (93.5)	D (F)	28.5 (97.1)	E (F)	35.6 (96.0)
WBLTR	C (C)	16.1 (21.6)	C (C)	19.0 (24.3)	C (C)	19.0 (24.3)	C (C)	23.9 (24.5)
SBLT	A (A)	1.0 (0.9)	A (A)	1.2 (1.5)	A (A)	1.2 (1.4)	A (A)	1.1 (1.5)
Parliament Street / Cole Street								

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
SBLT	A (A)	1.5 (2.0)	A (A)	1.4 (1.9)	A (A)	1.4 (1.8)	A (A)	1.4 (1.8)
Dundas Street East / Regent Street								
EBLT	A (A)	0.6 (1.8)	A (A)	0.6 (1.6)	A (A)	0.6 (1.6)	A (A)	0.8 (1.6)
WBLT	A (A)	0.5 (0.4)	A (A)	0.5 (0.4)	A (A)	0.5 (0.4)	A (A)	0.5 (0.4)
NBLTR	C (D)	21.8 (26.1)	D (D)	25.2 (28.9)	D (D)	25.7 (28.9)	D (D)	26.7 (29.0)
SBLTR	C (C)	19.1 (16.1)	C (C)	22.0 (17.0)	C (C)	22.3 (16.9)	C (C)	23.3 (17.0)
Dundas Street East / Tubman Avenue								
EBLTR	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)
WBLTR	A (A)	0.2 (0.5)	A (A)	0.2 (0.4)	A (A)	0.2 (0.4)	A (A)	0.2 (0.4)
SBLTR	A (B)	0.0 (14.4)	A (C)	0.0 (16.9)	C (C)	22.3 (19.6)	D (C)	25.9 (24.6)
Gerrard Street East / Dreamer's Way								
WBTL	A (A)	0.0 (0.0)	A (A)	0.2 (0.8)	A (A)	0.2 (0.8)	A (A)	0.2 (1.1)
Sackville Street / Site Driveway								
EBLTR	B (B)	10.8 (10.6)	B (B)	10.9 (10.7)	-- [2]			
EBTR	Lane group does not currently exist.				B (A)	10.7 (9.5)	B (B)	11.1 (10.1)
WBLTR	B (A)	10.4 (9.4)	B (A)	10.4 (9.5)	-- [2]			
WBLT	Lane group does not currently exist.				B (B)	11.7 (10.3)	C (B)	15.7 (12.8)
NBLTR	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	-- [2]			
SBLTR	A (A)	0.8 (0.4)	A (A)	0.8 (0.4)	A (A)	0.8 (0.4)	A (A)	0.9 (1.7)
Sumach Street / Site Driveway								
EBLT	Lane group does not exist.						B (B)	10.5 (10.7)
WBLR	A (A)	0.0 (9.0)	A (A)	0.0 (9.1)	-- [3]			
WBR	Lane group does not exist.				A (A)	0.0 (9.0)	-- [3]	
WBTR	Lane group does not exist.						A (A)	9.3 (9.4)
NBTR	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	Lane group does not exist.	
NBLTR	Lane group does not exist.						A (A)	0.0 (0.7)
SBLT	A (A)	0.6 (0.0)	A (A)	0.6 (0.0)	-- [3]			
Dreamer's Way / Site Driveway								
WBL	Intersection does not exist.						A (A)	8.7 (9.0)
SBLT							A (A)	0.0 (1.4)
River Street / Site Driveway[4]								
EBR	Intersection does not exist.						B (B)	14.1 (12.9)
Gerrard Street East / New Private Street								
NBR	Intersection does not exist.				A (B)	9.4 (10.1)	A (B)	9.5 (10.2)

Movement	Existing Road Network				Proposed Road Network			
	Existing		2032 Future Background		2032 Future Background		2032 Future Total	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Oak Street / New Private Street								
EBLT	Intersection does not exist.				A (A)	0.7 (0.3)	A (A)	1.4 (0.8)
SBLR					A (A)	9.1 (0.0)	A (A)	9.5 (0.0)

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).
2. Sackville Street is proposed to be a one-way, southbound-only travel corridor.
3. Sumach Street is proposed to be a one-way, northbound-only travel corridor.
4. Intersection is proposed to be a right-in / right-out configuration.
5. A pedestrian crossover (PXO) is currently provided south and north of the intersections at River Street / Oak Street and Parliament Street / Oak Street, respectively. However, the Synchro modelling software does not have an option to model a two-way stop control with a PXO. For the purposes of analysis, the intersections are assumed to be fully two-way stop controlled.

8.4 SIGNAL WARRANT REVIEW

The April 2022 TIS provided a signal warrant review at the Parliament Street / Oak Street and River Street / Oak Street intersections. The signals would be located approximately 150m from the Gerrard Street East and Dundas Street East signals to the north and south of these intersections, respectively.

Based on the updated traffic volumes under future conditions, the signal warrants have been revised. They continue to be based on the methodology prescribed in Book 12 of the Ontario Traffic Manual (OTM).

8.4.1 Signal Warrant Results

The warrant results under future conditions are summarized in **Table 31**. Detailed warrant calculations are provided in **Appendix H**.

TABLE 31 SIGNAL WARRANT RESULTS

Intersection	2032 Future Background	2032 Future Total
Parliament Street / Oak Street	• Justification 2 is close to satisfied (98% of threshold)	• Justification 2 is close to satisfied (99% of threshold) • Justification 3 is satisfied
River Street / Oak Street	• Justification 1 is close to satisfied (96% of threshold) • Justification 2, 3 and 4 are satisfied	• Justification 1 is close to satisfied (99% of threshold) • Justification 2, 3 and 4 are satisfied

The signal warrant results are analogous to those previously summarized in the April 2022 TIS.

Under future background traffic conditions, signals are close to warranted at the Parliament Street / Oak Street intersection, but is fully warranted at the River Street / Oak Street intersection.

Under future total traffic conditions, signals are warranted at both intersections.

The implementation of the traffic signals at these two Oak Street intersections will serve to support traffic operations in the area and urban design objectives by providing additional mid-block crossing opportunities and reducing drivers' reliance on courtesy gaps.

8.4.2 Analysis of the Recommended Signals

Capacity analysis at the two proposed signals is summarized in **Table 32**.

Under future total traffic conditions, both intersections are expected to operate under capacity at overall v/c ratios between 0.27 to 0.59 in the peak hours, with delays onto the major corridors of up to 28 seconds (summarized as LOS C in the table below).

TABLE 32 PROPOSED SIGNALS' TRAFFIC OPERATIONS (YEAR 2032 FUTURE TOTAL)

Movement	Proposed Road Network	
	V/C	LOS
Parliament Street / Oak Street		
WBLR	0.39 (0.26)	C (C)
NBTR	0.20 (0.28)	B (A)
SBTL	0.23 (0.22)	A (A)
Overall	**0.27 (0.28)**	**B (A)**
River Street / Oak Street		
EBTLR	0.19 (0.44)	C (C)
WBTLR	0.21 (0.11)	C (C)
NBTR	0.36 (0.44)	A (A)
SBTL	0.64 (0.64)	A (B)
Overall	**0.55 (0.59)**	**B (B)**

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

9.0 SUMMARY

BA Group is retained by Toronto Community Housing Corporation (TCHC) and their development partner Deltera Inc. (Tridel) to provide urban transportation consulting services in relation to a proposed mixed-use development pertaining to the lands generally bounded by Dreamers Way in the west, Gerrard Street East in the north, River Street in the east, and Oak Street to the south (excluding 40 Oak Street) located in the City of Toronto.

The Site is part of a larger multi-phased development project known as *Regent Park Revitalization*; the proposed redevelopment pertains to Phases 4 and 5 which are the final two phases.

A transportation study was originally submitted in April of 2022. This addendum letter provides responses to the received City comments, discusses and analyzes the changes to the development plans, and provides updates to the transportation study where applicable for the purposes of the ZBA submission.

Updated Development Plan

1. Since the April 2022 TIS, the development program has been revised. In total, the development program includes approximately 3,070 residential dwelling units (1,876 market units and 1,194 affordable units) and 15,490 m^2 non-residential GFA.

2. While key street design objectives remain the same as the previous submission, several road network changes listed below are now being proposed:
    - Tubman Avenue Extension: A public street extension of Tubman Avenue is proposed between Gerrard Street East in the north to Oak Street in the south. The street will have a 15.0 right-of-way, including a 4.5m one-way southbound vehicle travel lane, a 2.0m width for lay-by parking, and walkways on both sides.
    - A new north-south private street between Building 1A and 1B extending between Gerrard Street East and Oak Street is proposed. This would be 6.0m in width accommodating two-way traffic flow. The private street has been designed to provide connectivity to loading areas within Buildings 1A, 1B and the Fred Victor Building.
    - A new east-west driveway extending from Dreamers Way to the new private north-south street is also proposed. It has a width of 4.5m and is intended to operate one-way eastbound, to facilitate loading operations associated with the Fred Victor Building.

Vehicular Parking Considerations

3. The Site is currently subject to Zoning By-law 438-86 and related site-specific zoning by-laws. In discussion with City staff, application of the minimum vehicular parking requirements associated with Zoning By-law 89-2022 would be appropriate for the Site. By-law 89-2022 results in a total Site parking requirement of 53 accessible parking spaces.

4. Vehicular parking is proposed in accordance with the following rates:

   Market Housing Blocks:
   - Residents: 0.40 spaces per unit
   - Residential visitors: 0.06 spaces per unit (to be provided on a shared, non-exclusive basis with parking for non-residential uses)
   - Non-residential uses: no dedicated parking

   Affordable Housing / Municipal Blocks:
   - Residents: 0.40 spaces per unit
   - Residential visitors: no parking
   - Non-residential uses: no parking

5. Application of the parking supply rates results in a total proposed Site parking supply of 1,341 parking spaces to be split between each block. This supply meets the requirements set forth in By-law 89-2022.

Bicycle Parking Considerations

6. Application of the minimum bicycle parking requirements associated with TGS V4 Tier 1 (which are based upon Zoning By-law 569-2013) results in a total Site requirement of 3,466 bicycle parking spaces.

7. It is proposed to provide a bicycle parking supply that exceeds the requirements; in aggregate across the Site, the plans include 3,890 bicycle parking spaces inclusive of 3,245 long-term residential bicycle parking spaces, 522 short-term residential bicycle parking spaces, and 123 non-residential bicycle parking spaces.

8. As part of the Site's Sustainability Strategy, 15% of the required long-term bicycle parking supply include an energized outlet (120 V) adjacent to the bicycle parking space, this meeting TGS V4.

Loading Considerations

9. Application of the minimum loading requirements associated with Zoning By-law 438-86 results in a total requirement of 8 loading spaces for the entire Site after the application of sharing factors.

10. Application of the minimum loading requirements associated with Zoning By-law 569-2013 results in a total requirement of 10 loading spaces after the application of sharing factors.

11. For the entirety of Phases 4 and 5 in aggregate, a total supply of 12 loading spaces is proposed, inclusive of 6 Type B and 6 Type G loading spaces, modestly exceeding the requirements of both by-laws.

Trip Generation Update

12. The Site is expected to generate in the order of 405 and 380 two-way vehicle trips during the weekday morning and afternoon peak hours, respectively, representing an increase of 10 to 15 trips in the peak hours compared to the previous submission. The impacts of these additional trips distributed across the entire Site and study area road network are expected to be minimal, and are not expected to alter the conclusions of the vehicular traffic analysis.

Traffic Operations Analysis

13. All conclusions from the traffic operations analysis are similar to those presented in the April 2022 TIS (and are re-summarized below).

14. Under all future conditions, most of the signalized intersections operate under capacity (i.e. demonstrate volume-to-capacity ratios of less than 1.00).

15. Under future background traffic conditions with the proposed road network, most of the Gerrard Street East / River Street intersection's movements operate under capacity at v/c ratios between 0.14 to 0.89. However, the eastbound movements will begin to operate over capacity at overall v/c ratios of 1.04 during the weekday afternoon peak hours. With the addition of Site traffic, most of the intersection's movements continue to operate under capacity. The eastbound movements will continue to operate over capacity at overall v/c ratios of 1.07 during the weekday afternoon peak hours. Site-related traffic impact is minimal on the eastbound lane group and in the order of 3%. Signal timing optimization is recommended to accommodate the eastbound vehicle movements at the intersection. As post-pandemic travel conditions continue to evolve and adjust to more consistent traffic patterns, the operations at this intersection should continue to be monitored.

16. Under all future conditions, most movements operate acceptably in both peak hours at levels-of-service (LOS) E or better. In the analysis of baseline existing traffic volumes, the shared eastbound movement at River Street / Oak Street indicates delays of up to 86 seconds in the weekday afternoon peak hour. Under future background conditions, these delays are expected to increase to 97 seconds. With the redevelopment of the Site, drivers are expected to experience similar delays as compared to the future background condition.

Signal Warrant Review

17. All conclusions from the signal warrant review remain the same as those presented in the April 2022 TIS (and are re-summarized below).

18. Under future background traffic conditions, signals are close to warranted at the Parliament Street / Oak Street intersection, but is fully warranted at the River Street / Oak Street intersection.

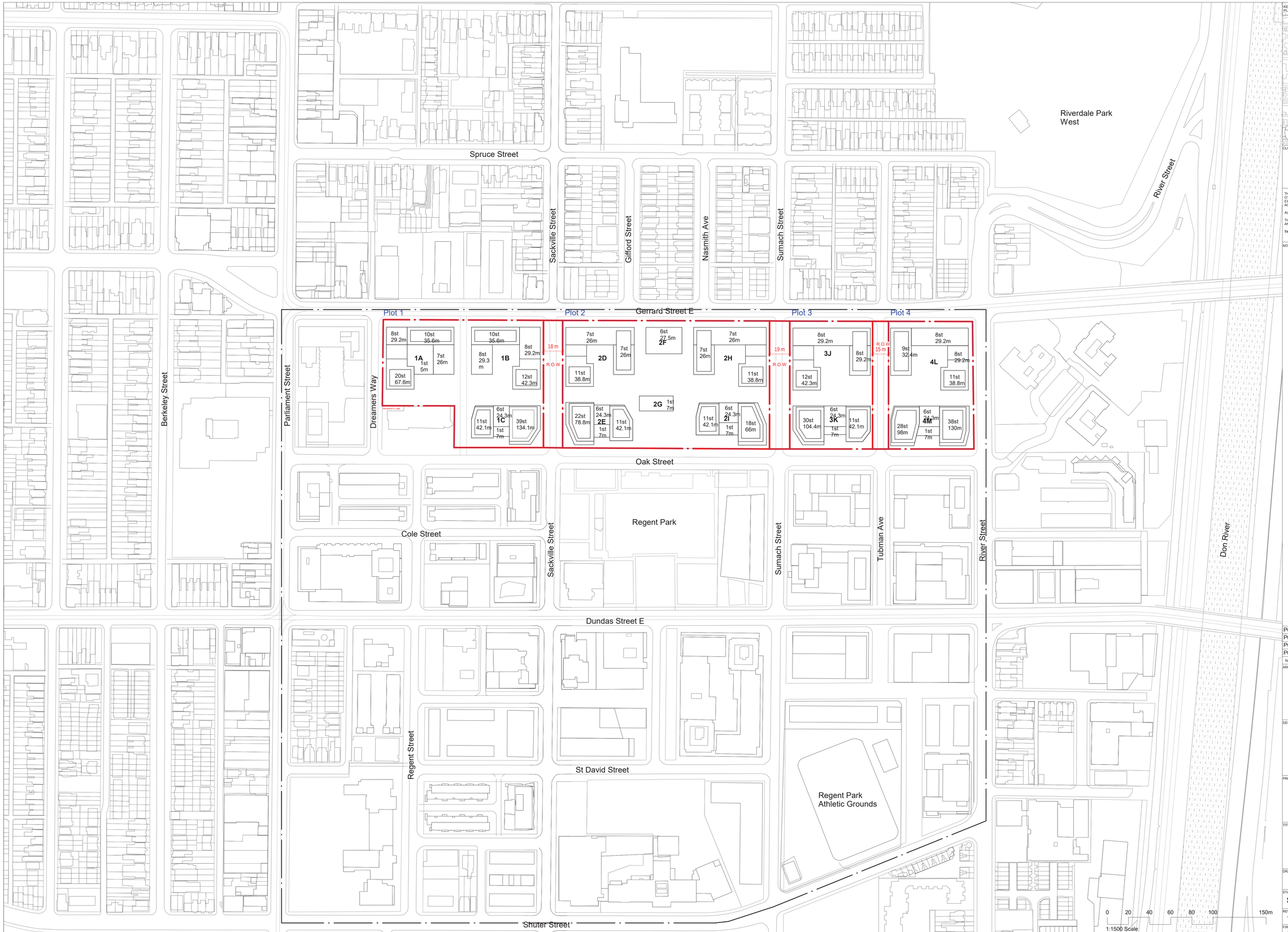
19. Under future total traffic conditions, signals are warranted at both intersections.

20. The signals would also serve to provide additional mid-block crossing opportunities and reduce driver reliance on courtesy gaps from Oak Street onto the external area road network.

21. If implemented, both intersections are expected to operate under capacity at overall v/c ratios between 0.27 to 0.59 in the peak hours, with delays onto the major corridors of up to 28 seconds.

Based on our review, the proposal is appropriate from a transportation perspective.

Appendix A:
Reduced-Scale Architectural Site Plans



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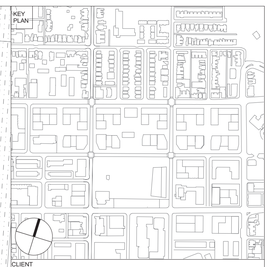


CLIENT

Toronto Community Housing Corporation (TCHC) and 2747199 Ontario Limited (Deltera Inc.)

NOTES

- Regent Park Revitalization
- Phases 4&5 Property Line
- Plot Boundary
- City of Toronto Owned Lands Right of Way
- Potential Mechanical Plant

All heights measured from established grade to top of roof slab, excluding mechanical plant and parapets.

Rev	Status	Reason for Issue	Date
P03	S4	P2 - Issued for ZBA	11/29/22
P02	S3	P2 - Draft for Client Review	11/15/22
P01	S4	P1 - Issued for ZBA	04/14/22
P00	S3	P1 - Draft for Client Review	04/01/22

ARCHITECT OF RECORD

E.R.A. Architects Inc.
625 Church St
Suite 600
Toronto
Ontario, M4Y 2G1

info@eraarch.ca | 416 963 4497

DESIGN

Karakusevic Carson Architects
Studio 501
37 Cremer St
Hackney
London E2 8HD

mail@karakusevic-carson.com | +44(0)207 566 6300

PROJECT

Regent Park Phases 4 & 5

TITLE

Context Plan

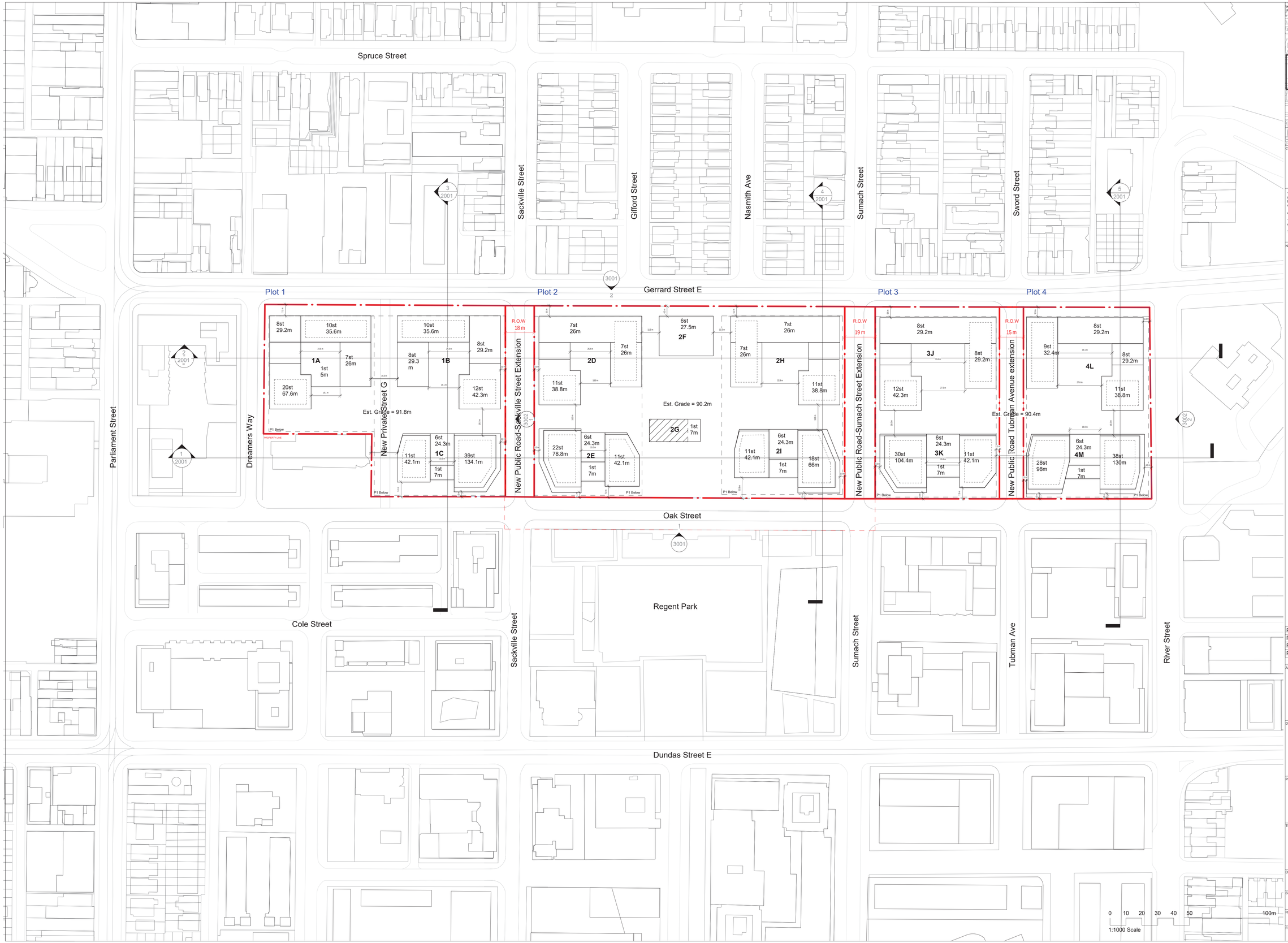
DRAWING NUMBER: 577 - KCA - XX - XX - DR - A - 0001 (CDE Project N° | Originator | Zone | Level | Type | Role | Drawing Number)

REVISION: P03

STATUS: S4 - Suitable for stage approval

STAGE: P2

REVISION DATE	DRAWN BY	SCALE
11/29/22	HA/AN	1 : 1500 @ ARCH D
FIRST ISSUED	**CHECKED BY**	**KCA PROJECT NUMBER**
04/01/22	PK/RM	577



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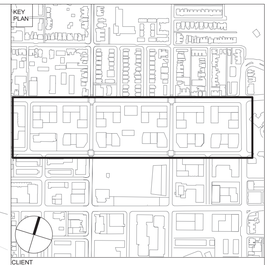


CLIENT

Toronto Community Housing Corporation (TCHC) and 2747199 Ontario Limited (Deltera Inc.)

NOTES

- Plot Boundary
- Phases 4&5 Property Line
- City of Toronto Owned Lands
- Potential Retention
- Proposed Underground Parking Layout
- Potential Mechanical Penthouse

All heights measured from established grade to penthouse, excluding mechanical plant and parapets.

Established grade measured above Canadian Geodetic Datum

Rev	Status	Reason for Issue	Date
P03	S4	P2 - Issued for ZBA	11/29/22
P02	S3	P2 - Draft for Client Review	11/15/22
P01	S4	P1 - Issued for ZBA	04/14/22
P00	S3	P1 - Draft for Client Review	04/01/22

ARCHITECT OF RECORD

E.R.A. Architects Inc.
625 Church St
Suite 600
Toronto
Ontario, M4Y 2G1
info@eraarch.ca | 416 963 4497

DESIGN

Karakusevic Carson Architects
Studio 501
37 Cremer St
Hackney
London E2 8HD
mail@karakusevic-carson.com | +44(0)207 566 6300

PROJECT

Regent Park Phases 4 & 5

TITLE

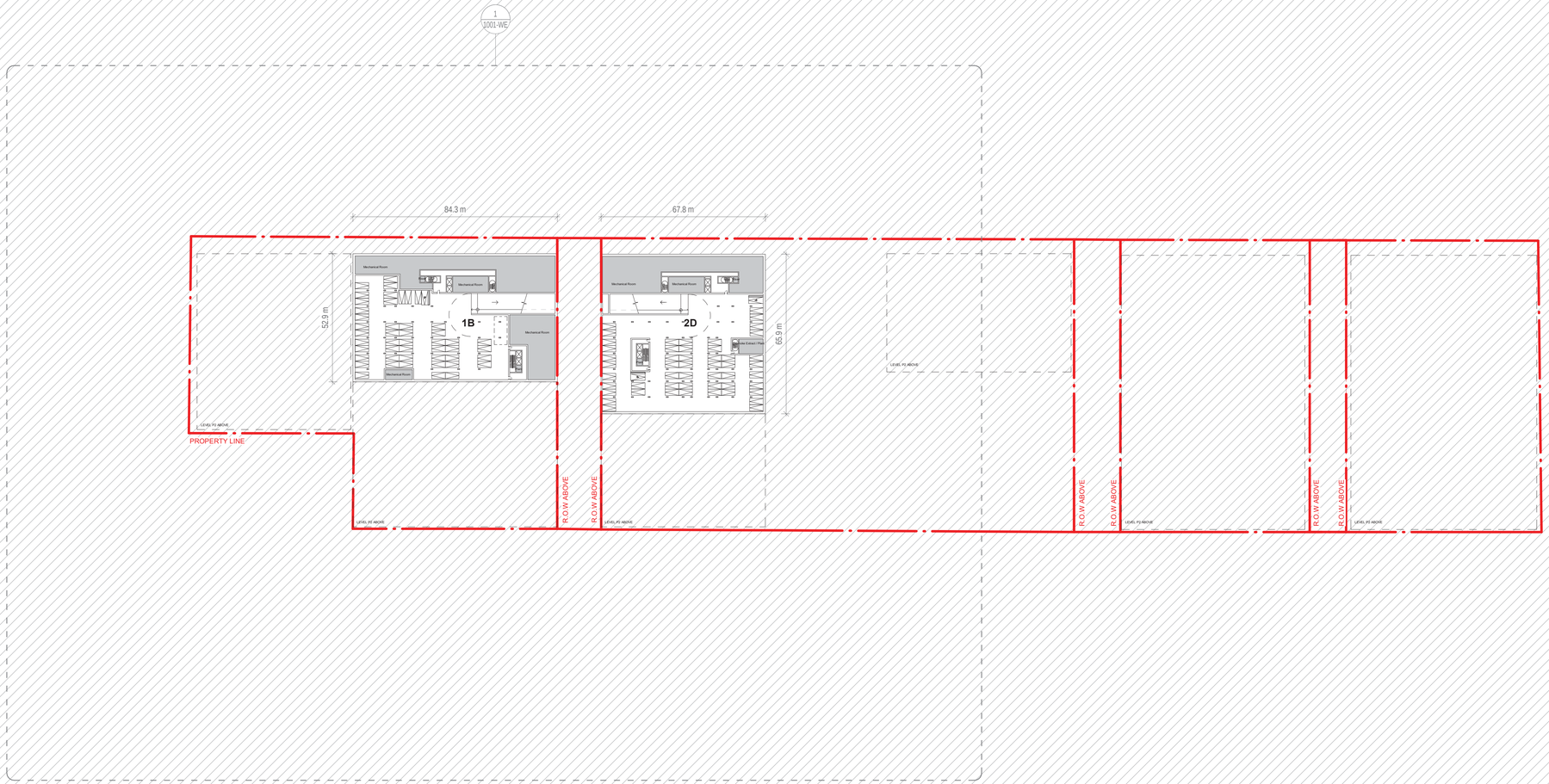
Site Plan

DRAWING NUMBER								REVISION
577	- KCA -	XX -	XX -	DR -	A -	0003		P03
CDE Project N°	Originator	Zone	Level	Type	Role	Drawing Number		

STATUS	STAGE
S4 - Suitable for stage approval	P2

REVISION DATE	DRAWN BY	SCALE
11/29/22	HA/AN	1 : 1000 @ ARCH D

FIRST ISSUED	CHECKED BY	KCA PROJECT NUMBER
04/01/22	PK/RM	577



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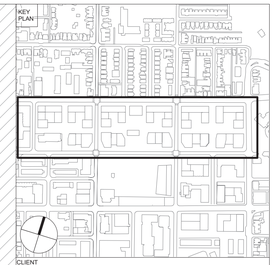

CLIENT

Toronto Community Housing Corporation (TCHC) and 2747199 Ontario Limited (Deltera Inc.)

NOTES

FOR LANDSCAPE DETAILS REFER TO DRAWINGS BY PFS.
FOR PARKING AND LOADING OPERATION REFER TO DRAWINGS BY BA GROUP.

Phases 4&5 Property Line

City of Toronto Owned Lands Right of Way

Ancillary

Rev	Status	Reason for Issue	Date
P03	S4	P2 - Issued for ZBA	11/29/22
P02	S3	P2 - Draft for Client Review	11/15/22
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P00	S3	P1 - Draft for Client Review	04/01/22

ARCHITECT OF RECORD

E.R.A. Architects Inc.
625 Church St
Suite 600
Toronto
Ontario, M4Y 2G1

info@eraarch.ca | 416 963 4497

DESIGN

Karakusevic Carson Architects

Studio 501
37 Cremer St
Hackney
London E2 8HD

mail@karakusevic-carson.com | +44(0)207 566 6300

PROJECT

Regent Park Phases 4 & 5

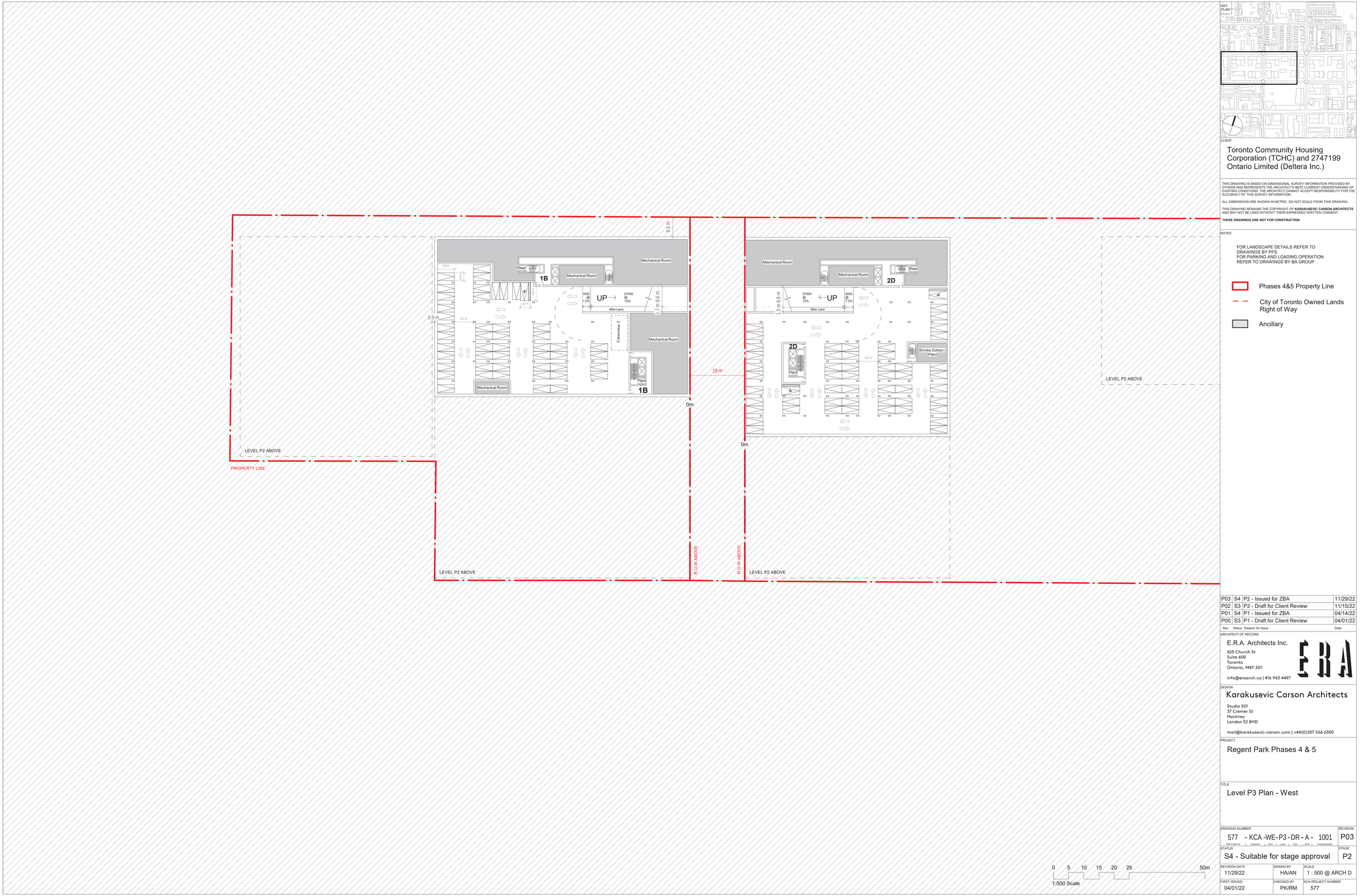
TITLE

Level P3 Plan

DRAWING NUMBER								REVISION
577	- KCA -	XX	- P3 -	DR	- A -	1001		P03
CDE Project N°		Originator	Zone	Level	Type	Role	Drawing Number	

STATUS	STAGE
S4 - Suitable for stage approval	P2

REVISION DATE	DRAWN BY	SCALE
11/29/22	HA/AN	1 : 1000 @ ARCH D
FIRST ISSUED	CHECKED BY	KCA PROJECT NUMBER
04/01/22	PK/RM	577



CLIENT

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THESE DRAWINGS ARE NOT FOR CONSTRUCTION

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Phases 4&5 Property Line

City of Toronto Owned Lands Right of Way

Ancillary

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Rev | Status | Reason for Issue | Date

ARCHITECT OF RECORD

E.R.A. Architects Inc.
625 Church St
Suite 600
Toronto
Ontario, M4Y 2G1
info@eraarch.ca | 416 963 4497

DESIGN

Karakusevic Carson Architects
Studio 501
37 Cremer St
Hackney
London E2 8HD
mail@karakusevic-carson.com | +44(0)207 566 6300

PROJECT

Regent Park Phases 4 & 5

TITLE

Level P3 Plan - West

DRAWING NUMBER								REVISION
577	- KCA -	WE	- P3 -	DR	- A -	1001		P03
CDE Project N°		Originator	Zone	Level	Type	Role	Drawing Number	

STATUS	STAGE
S4 - Suitable for stage approval	P2

REVISION DATE	DRAWN BY	SCALE
11/29/22	HA/AN	1 : 500 @ ARCH D
FIRST ISSUED	**CHECKED BY**	**KCA PROJECT NUMBER**
04/01/22	PK/RM	577

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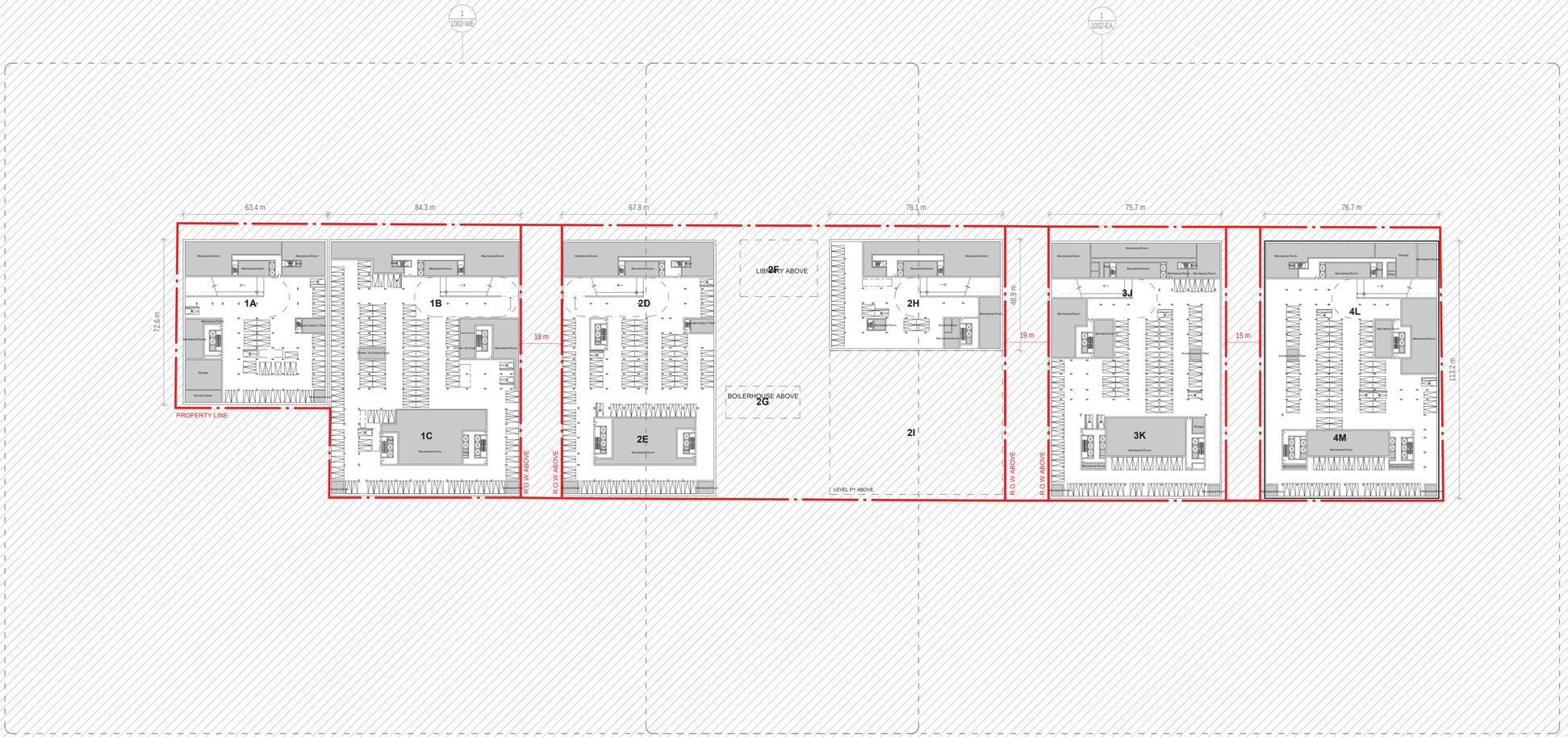

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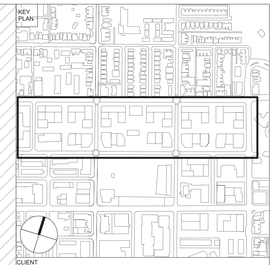

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NOTES

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Phases 4&5 Property Line

City of Toronto Owned Lands Right of Way

Ancillary

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P03	S4	P2 - Issued for ZBA	11/29/22
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ARCHITECT OF RECORD

E.R.A. Architects Inc.
625 Church St
Suite 600
Toronto
Ontario, M4Y 2G1

info@eraarch.ca | 416 963 4497

DESIGN

Karakusevic Carson Architects

Studio 501
37 Cremer St
Hackney
London E2 8HD

mail@karakusevic-carson.com | +44(0)207 566 6300

PROJECT

Regent Park Phases 4 & 5

TITLE

Level P2 Plan

DRAWING NUMBER								REVISION
577	- KCA -	XX	- P2 -	DR	- A -	1002		P03
CDE Project N°		Originator		Zone	Level	Type	Role	Drawing Number	

STATUS	STAGE
S4 - Suitable for stage approval	P2

REVISION DATE	DRAWN BY	SCALE
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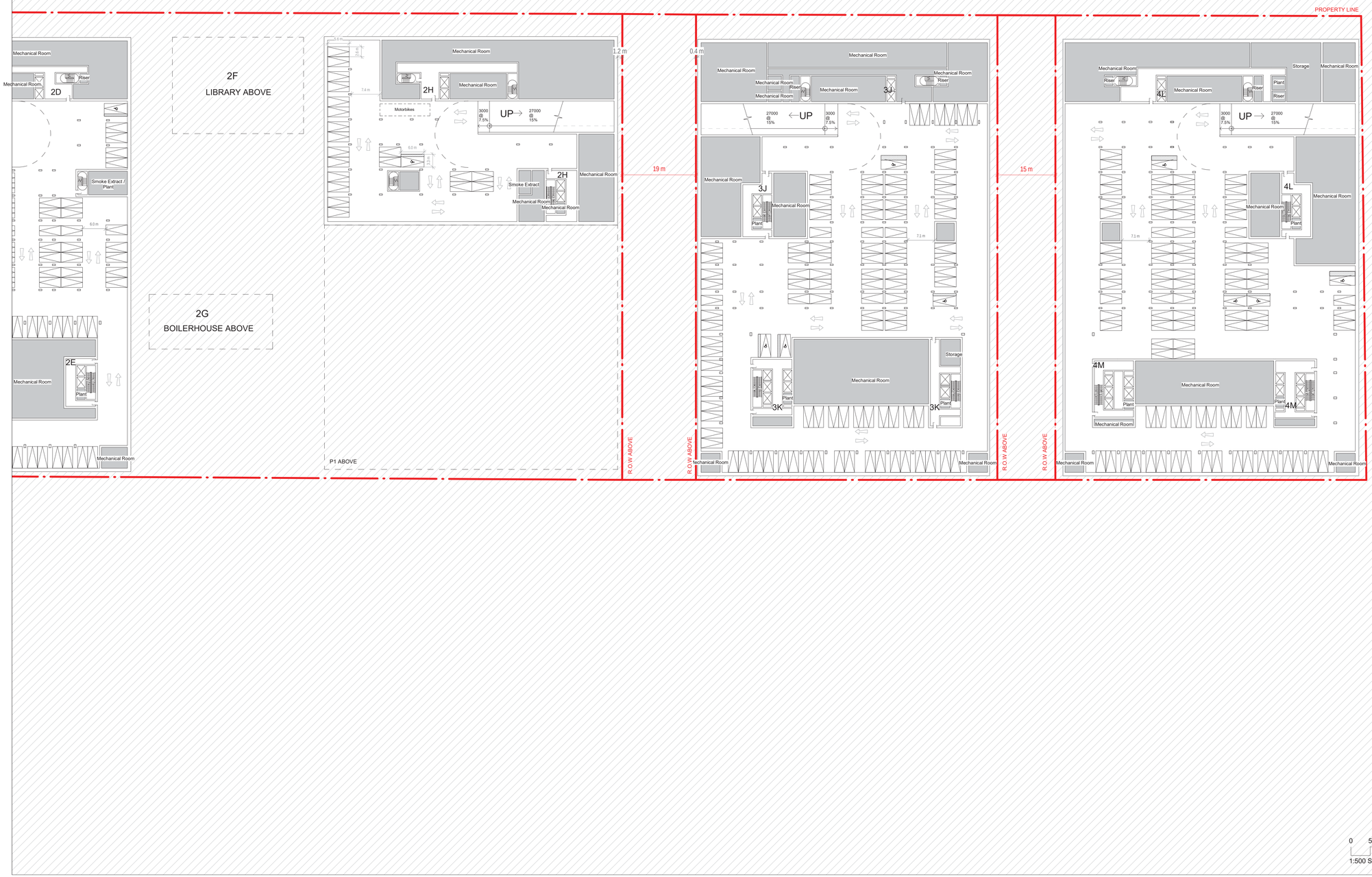

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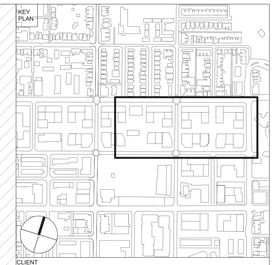

CLIENT

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NOTES

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Phases 4&5 Property Line

City of Toronto Owned Lands Right of Way

Ancillary

Rev	Status	Reason for Issue	Date
P03	S4	P2 - Issued for ZBA	11/29/22
P02	S3	P2 - Draft for Client Review	11/15/22
P01	S4	P1 - Issued for ZBA	04/14/22
P00	S3	P1 - Draft for Client Review	04/01/22

ARCHITECT OF RECORD

E.R.A. Architects Inc.
625 Church St
Suite 600
Toronto
Ontario, M4Y 2G1

info@eraarch.ca | 416 963 4497

DESIGN

Karakusevic Carson Architects

Studio 501
37 Cremer St
Hackney
London E2 8HD

mail@karakusevic-carson.com | +44(0)207 566 6300

PROJECT

Regent Park Phases 4 & 5

TITLE

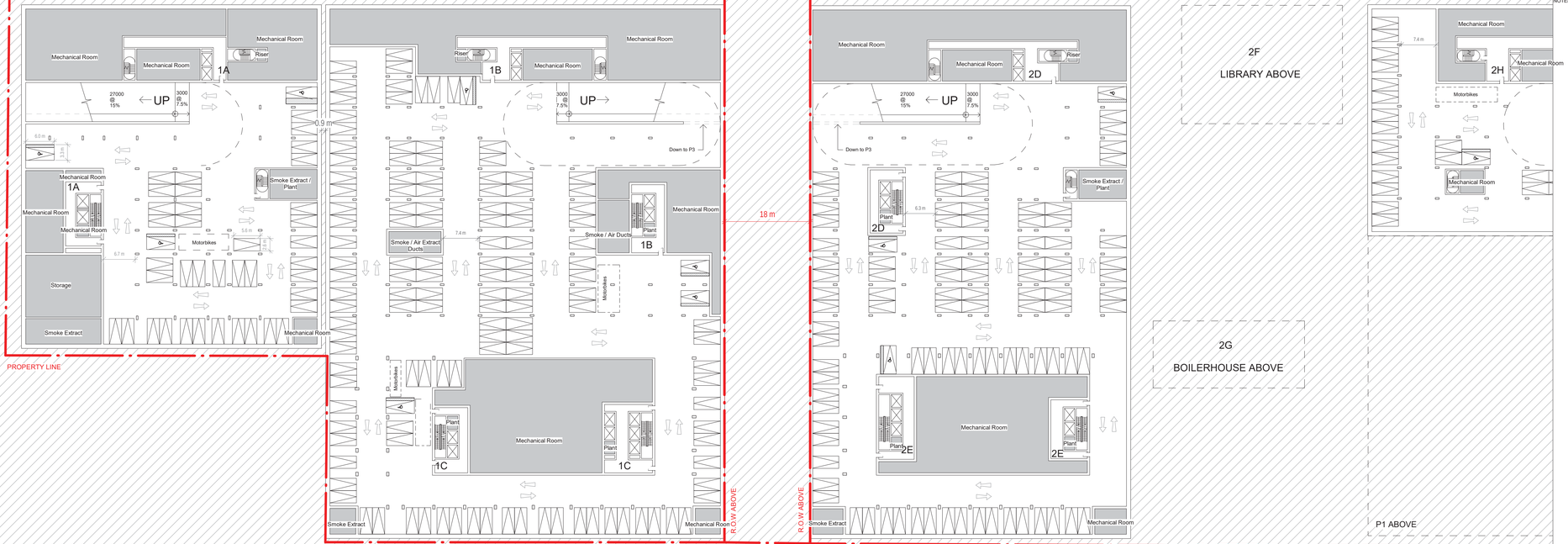
Level P2 Plan - East

DRAWING NUMBER	REVISION
577 - KCA - EA - P2 - DR - A - 1002	P03
CDE Project N° | Originator | Zone | Level | Type | Role | Drawing Number	

STATUS	STAGE
S4 - Suitable for stage approval	P2

REVISION DATE	DRAWN BY	SCALE
11/29/22	HA/AN	1 : 500 @ ARCH D

FIRST ISSUED	CHECKED BY	KCA PROJECT NUMBER
04/01/22	PK/RM	577



0 5 10 15 20 25 50m

1:500 Scale

KEY PLAN

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PROJECT

Regent Park Phases 4 & 5

TITLE

Level P2 Plan - West

DRAWING NUMBER

577 - KCA - WE - P2 - DR - A - 1002

(GIA Project N° | Originator | Zone | Level | Type | Role | Drawing Number)

REVISION: P03

STATUS: S4 - Suitable for stage approval

STAGE: P2

REVISION DATE	DRAWN BY	SCALE
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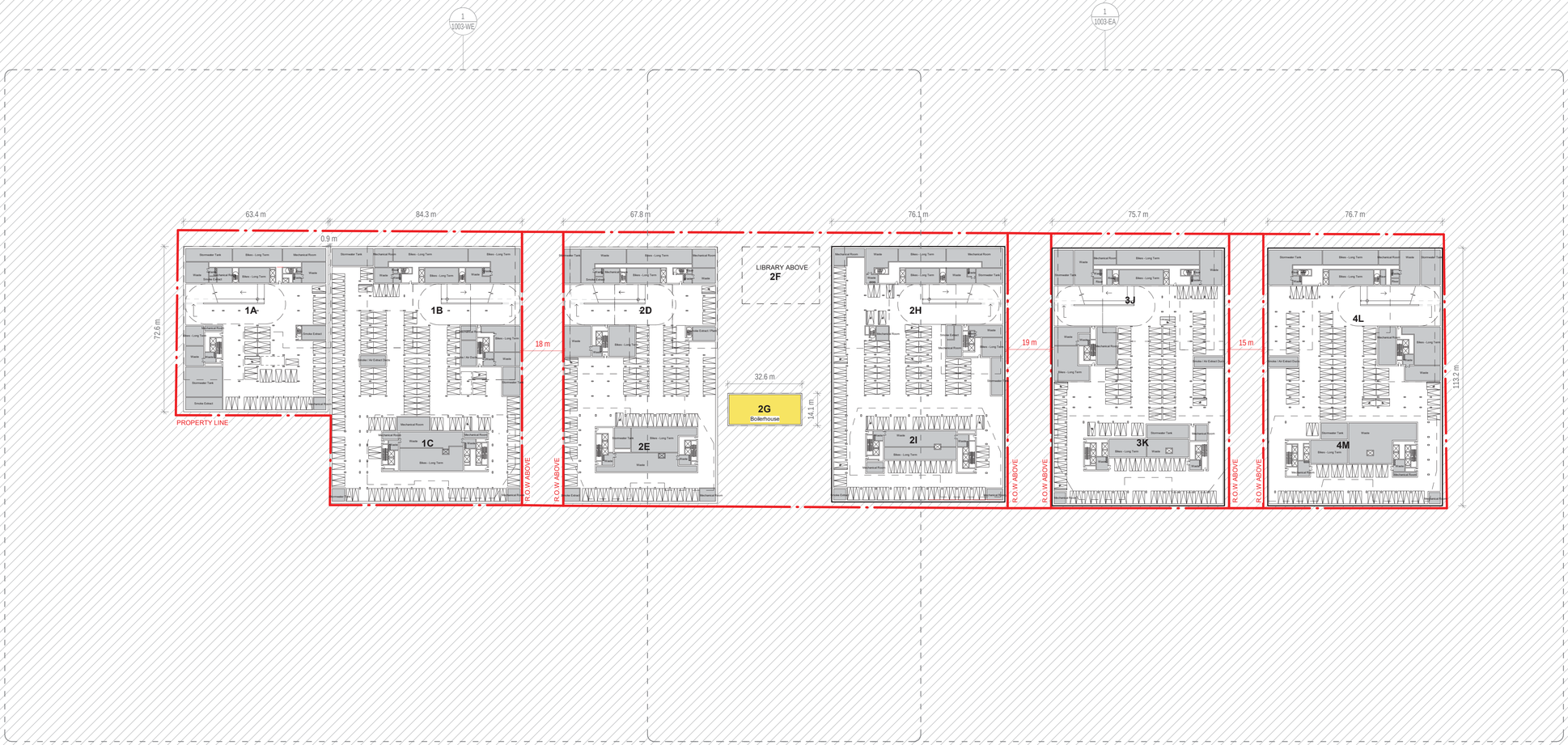

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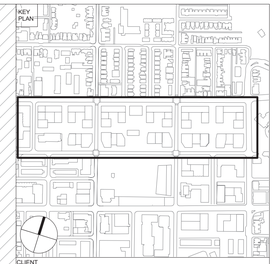

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PROJECT

Regent Park Phases 4 & 5

TITLE

Level P1 Plan

DRAWING NUMBER								REVISION
577	- KCA -	XX -	P1 -	DR -	A -	1003		P03
CDE Project N°		Originator	Zone	Level	Type	Role	Drawing Number	

STATUS	STAGE
S4 - Suitable for stage approval	P2

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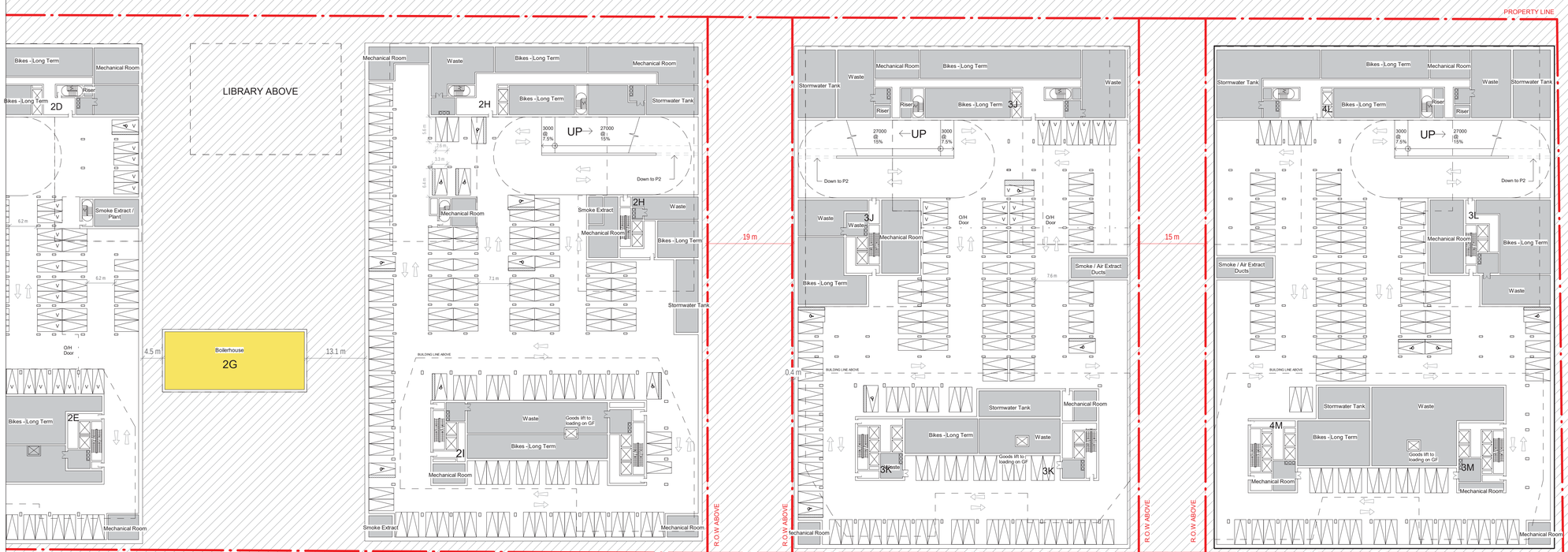
04/01/22	PK/RM	577

0 10 20 30 40 50 100m
1:1000 Scale



0 5 10 15 20 25 50m

1:500 Scale

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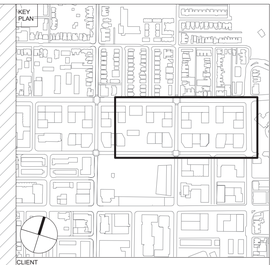

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THIS DRAWING IS BASED ON DIMENSIONAL SURVEY INFORMATION PROVIDED BY OTHERS AND REPRESENTS THE ARCHITECTS BEST CURRENT UNDERSTANDING OF EXISTING CONDITIONS. THE ARCHITECT CANNOT ACCEPT RESPONSIBILITY FOR THE ACCURACY OF THIS SURVEY INFORMATION.

ALL DIMENSIONS ARE SHOWN IN METRIC. DO NOT SCALE FROM THIS DRAWING.

THESE DRAWINGS ARE NOT FOR CONSTRUCTION

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PROJECT

Regent Park Phases 4 & 5

TITLE

Level P1 Plan - East

DRAWING NUMBER								REVISION
577	- KCA -	EA -	P1 -	DR -	A -	1003		P03
CDS Project N°	Originator	Zone	Level	Type	Role	Drawing Number		

STATUS	STAGE
S4 - Suitable for stage approval	P2

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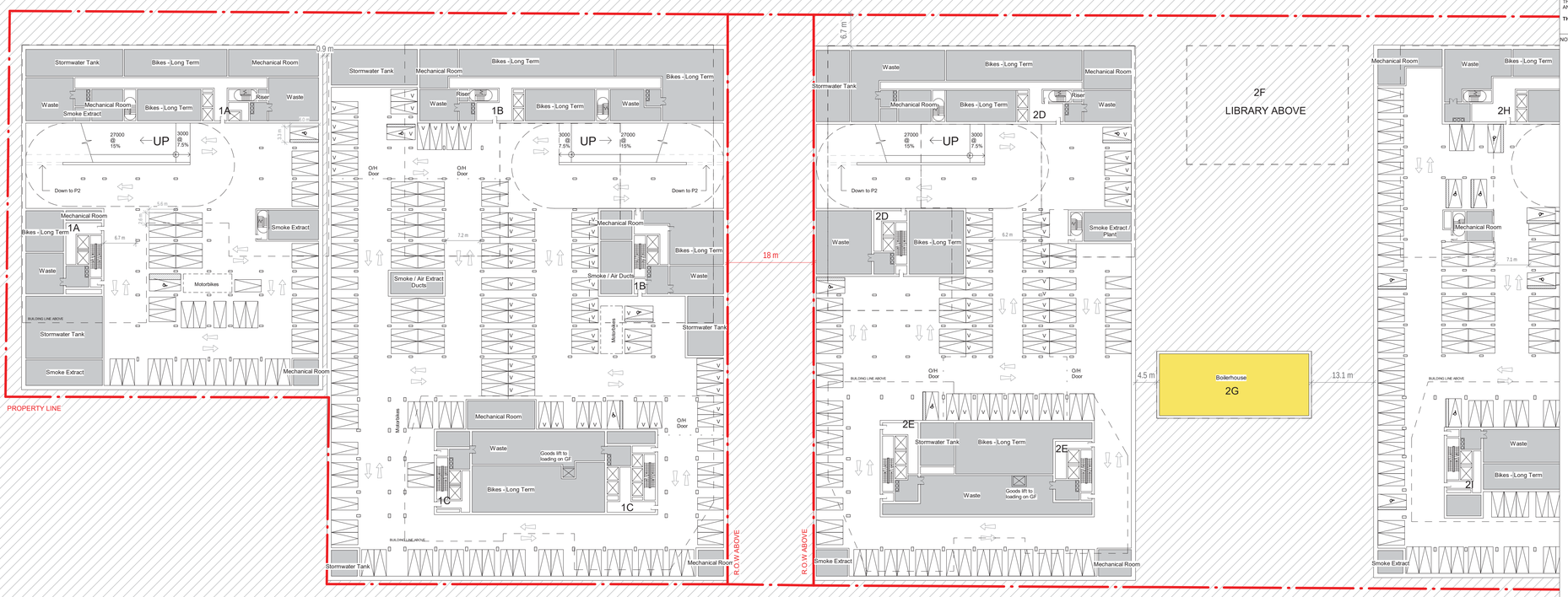

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1:500 Scale

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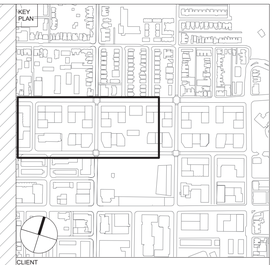

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PROJECT

Regent Park Phases 4 & 5

TITLE

Level P1 Plan - West

DRAWING NUMBER: 577 - KCA - WE - P1 - DR - A - 1003 (CDE Project N° | Originator | Zone | Level | Type | Role | Drawing Number)

REVISION: P03

STATUS: S4 - Suitable for stage approval

STAGE: P2

REVISION DATE	DRAWN BY	SCALE
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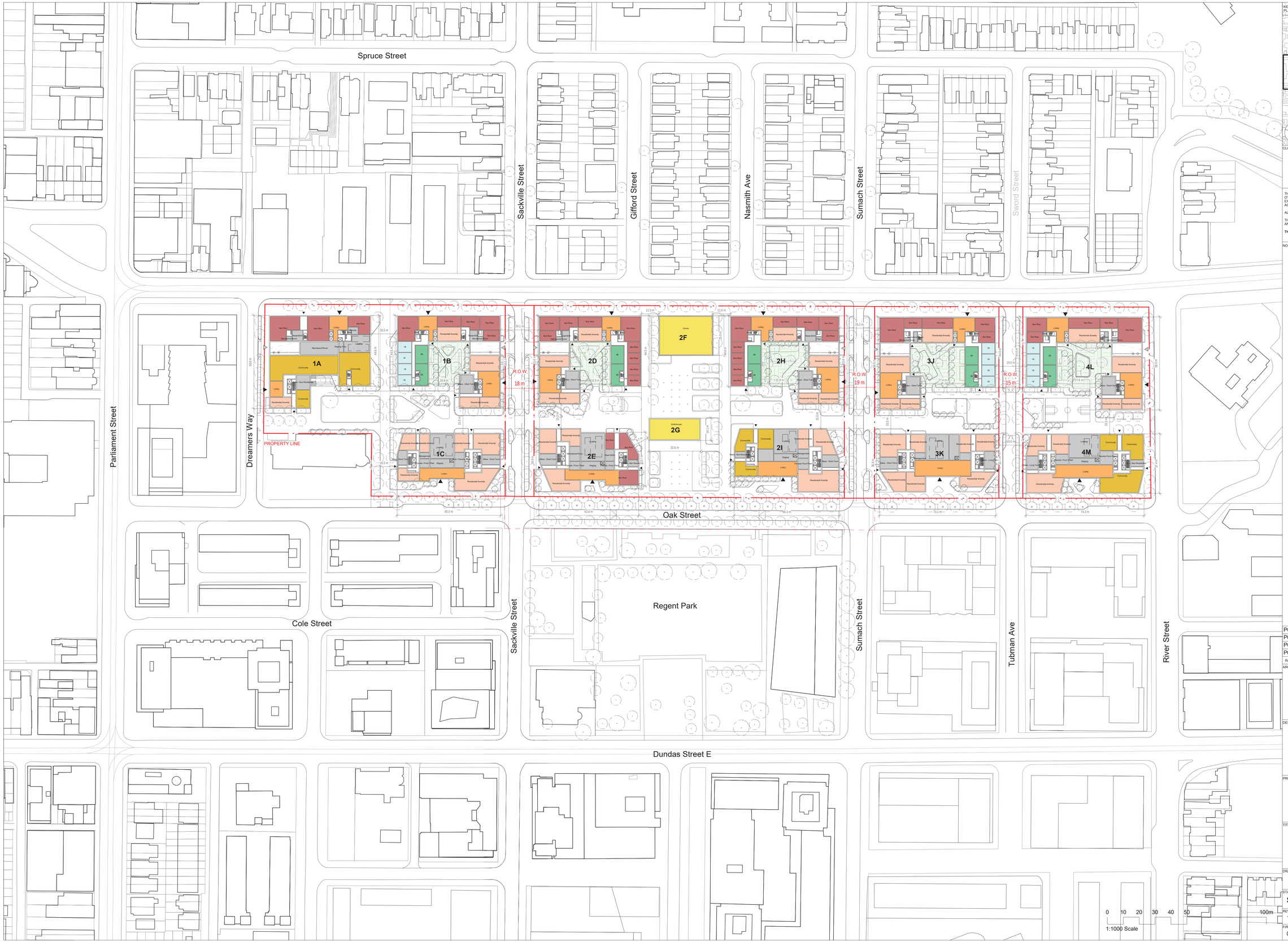

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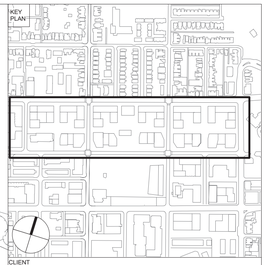

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Phases 4&5 Property Line

City of Toronto Owned Lands Right of Way

- 1B
- 1B+
- 2B
- 2B+
- 3B
- 3B+
- 4B
- 5B
- Amenity
- Ancillery
- Civic
- Community
- Lobby
- Retail
- Residential Outdoor Amenity

Bike Parking Schedule - Level GF

Plot	Building	Level	Name	Estimated No. Bikes
1	A	Level 0	Bikes - Non Residential	56
1	B	Level 0	Bikes - Short Term	71
2	D	Level 0	Bikes - Short Term	70
2	E	Level 0	Bikes - Short Term	53
2	E	Level 0	Bikes - Non Residential	20
2	H	Level 0	Bikes - Short Term	70
2	I	Level 0	Bikes - Non Residential	19
2	I	Level 0	Bikes - Short Term	58
3	J	Level 0	Bikes - Short Term	71
3	K	Level 0	Bikes - Long Term	53
3	K	Level 0	Bikes - Short Term	58
3	L	Level 0	Bikes - Short Term	71
3	M	Level 0	Bikes - Non Residential	24
3	M	Level 0	Bikes - Long Term	45
Grand total				739

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PROJECT

Regent Park Phases 4 & 5

TITLE

Ground Floor Plan

0 10 20 30 40 50 100m
1:1000 Scale

DRAWING NUMBER	REVISION
577 - KCA - XX - 01 - DR - A - 1004	P03
CDE Project N° | Organator | Zone | Level | Type | Role | Drawing Number	

STATUS	STAGE
S4 - Suitable for stage approval	P2

REVISION DATE	DRAWN BY	SCALE
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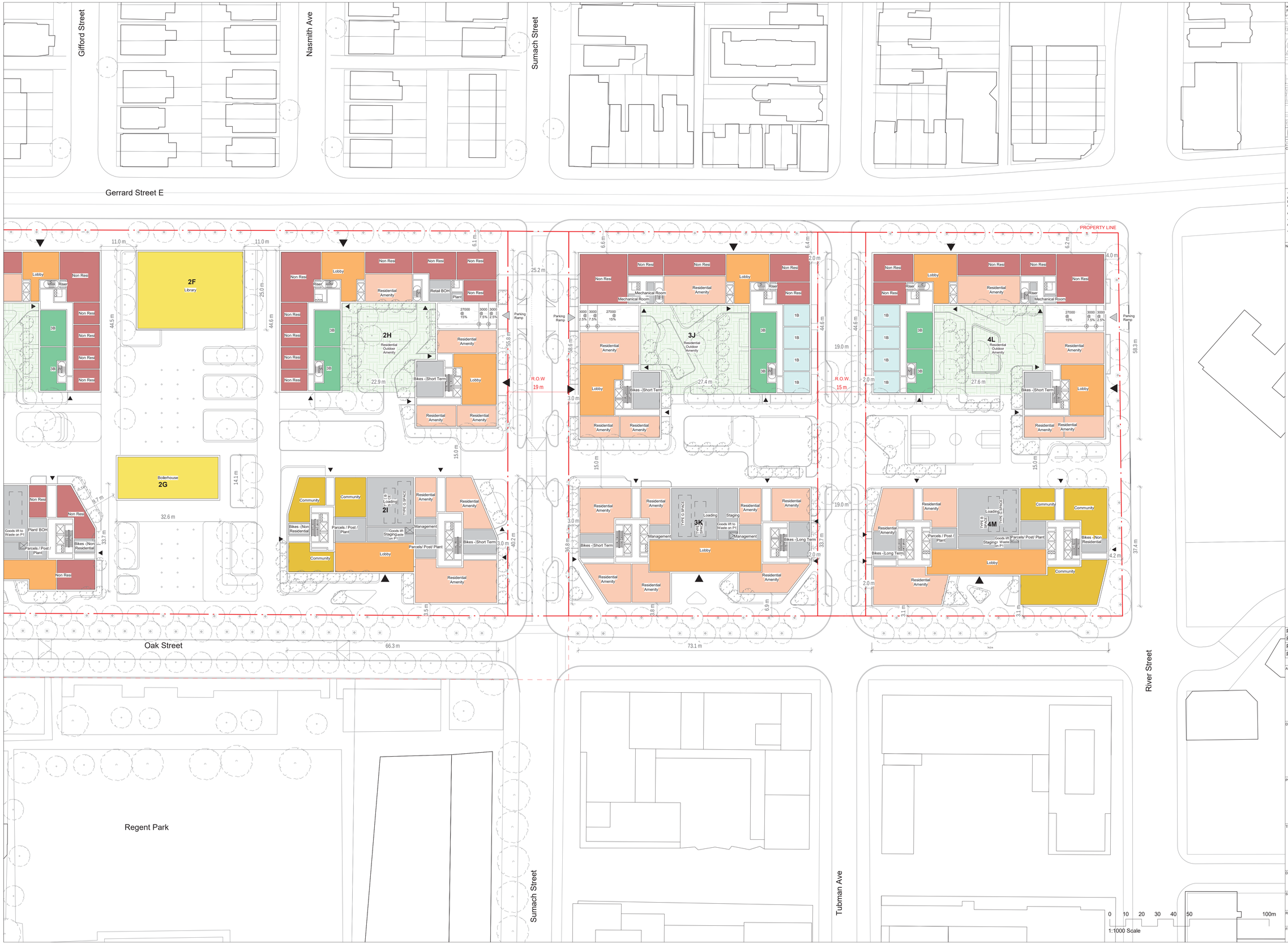

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577	- KCA -	EA -	01 -	DR -	A -	1004		P03
CDE Project N°	Originator	Zone	Level	Type	Role	Drawing Number		

STATUS	STAGE
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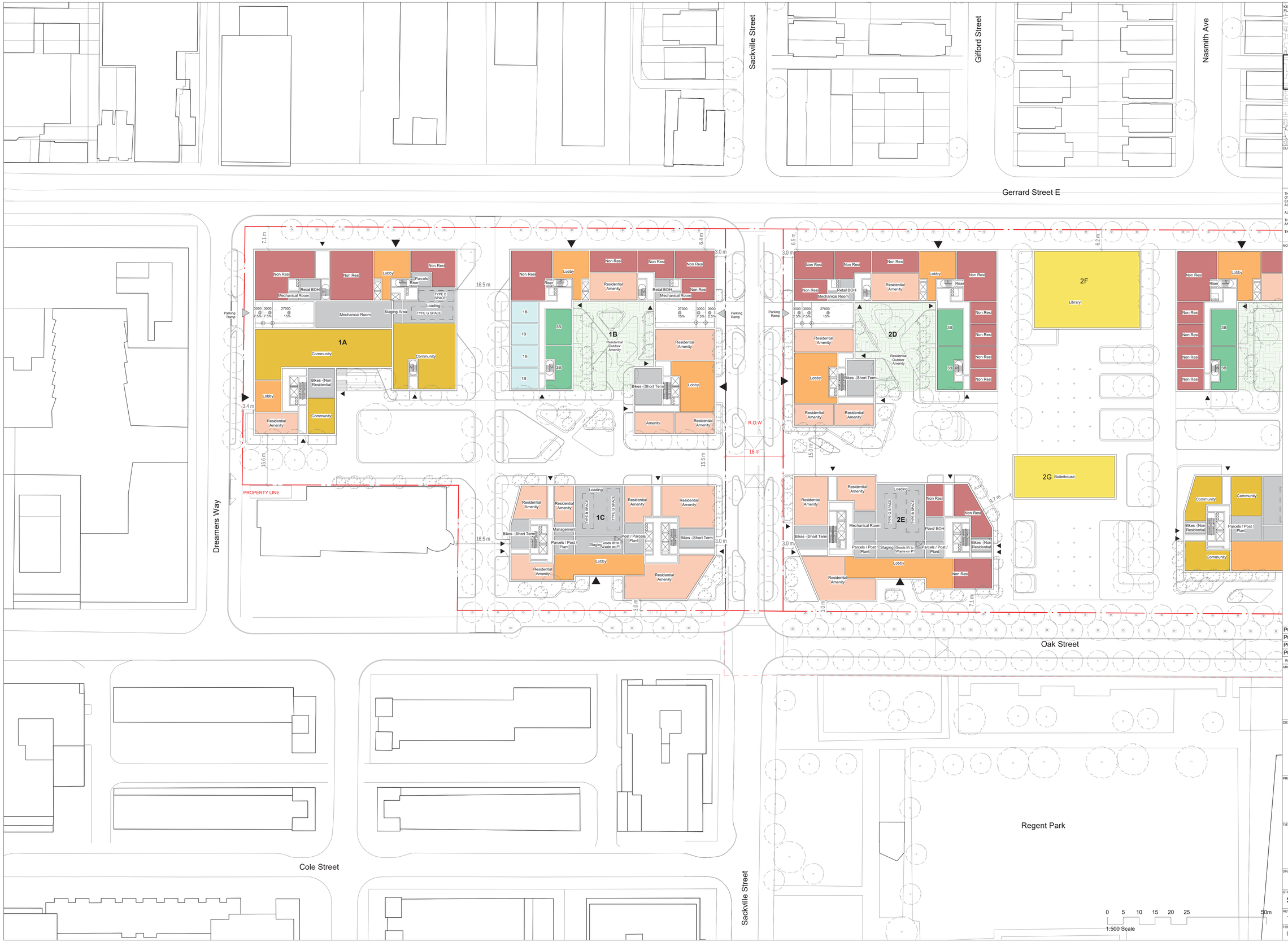

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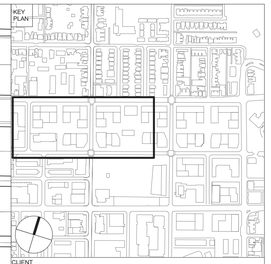

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Ground Floor Plan - West

DRAWING NUMBER: 577 - KCA - WE - 01 - DR - A - 1004 (CDE Project N° | Originator | Zone | Level | Type | Role | Drawing Number)

REVISION: P03

STATUS: S4 - Suitable for stage approval

STAGE: P2

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FIRST ISSUED	CHECKED BY	KCA PROJECT NUMBER
04/01/22	PK/RM	577

Site Areas

Gross Site Area (inc. public streets) sqm	**64405**
Net Site Area (ex. public streets) sqm	**58122**

	North (Gerrard St)	East (River St)	South (Oak St)	West (Dreamers Way)
Frontage	555.6m	120.3m	490.3m	81.3m
Existing Lot Line Setbacks (minimum)	6.1m	4.8m	0.0m	7.8m
Proposed Lot Line Setbacks (minimum)	6.1m	4m	3m	3m

	Sackville St	Sumach St	Street J	Total
Area of Public Streets (sqm)	2169	2307	1807	**6283**

	Plot 1	Plot 2	Plot 3	Plot 4
Plot Area (sqm)	17764	25796	11224	9621
Grade	91.8	90.2	90.4	90.4
Maximum Building Heights (m)	123.6	78.8	104.4	130
Below Grade GFA (sqm)	0	0	0	0

	Total
Existing Ground Floor Area (sqm)	17191
Proposed Ground Floor Area (sqm)	28810

Lot Coverage Ratio	0.50
Floor Space Index	5.22

Open Space

	Area of POPs (sqm)
Area of the central plaza	5520
Area of linear strip	9772
Total	**15292**

Total GFA Per Tenure

Tenure	Use	Gross Construction Area (sqm)	Gross Floor Area (sqm)*
TCHC	Community Space	3,835	3,605
	Non Residential	5,499	5,168
	Residential	143,919	135,283
	Total	**153,253**	**144,056**
MARKET	Non Residential	4,723	4,440
	Residential	162,169	152,439
	Total	**166,892**	**156,879**
TPL	Library	2,423	2,277
	Total	**2,423**	**2,277**
	Total	**322,568**	**303,212**

*GCA to GFA based on 94% efficiency

Total GFA Per Plot & Building

Plot	Building	Total GFA (sqm)	GFA Breakdown per Use (sqm)			
			Residential	Non Residential*	Community Space	Library
1	A	25,873	23,566	948	1,358	
	B	21,863	20,546	1,318		
	C	37,502	37,502			
2	D	17,799	16,355	1,444		
	E	25,315	24,716	599		
	F	4,554		1518	759	2277
	G	405		405		
	H	18,199	16,695	1,503		
	I	22,538	21,966		572	
3	J	21,442	20,363	1,079		
	K	32,957	32,957			
4	L	21,760	20,965	794		
	M	53,007	52,091		916	
Total		**303,212**	**287,722**	**9,608**	**3,605**	**2,277**
		303,212	**287,722**	**15,490**		

*Non residential includes retail and office

Total Unit Count per Tenure

Tenure	Type	Number
TCHC	RGI	633
	Affordable	561
	Total:	**1194**
Market	**Total:**	**1876**
	Total	**3,070**

Residential Unit Mix

Plot	Building	Tenure	Type	1 Bed	1 Bed Plus*	2 Bed	2 Bed Plus*	3 Bed	3 Bed Plus*	4 Bed	4 Bed Plus*	5 Bed	5 Bed Plus*	Total Units
			Average Size (sqm)	*48*	*58*	*71*	*82*	*89*	*103*	*111*	*134.5*	*134*	*152*	
1	A	TCHC	RGI	14	5	57	19	66	22	11	3	4	1	**202**
	B	Market		137	38	47	14	13	4					**252**
	C	Market		251	70	86	25	23	7					**461**
2	D	Market		110	30	38	11	10	3					**201**
	E	Market		166	46	57	16	15	4					**304**
	F	*Non Residential*												***0***
	G	*Non Residential*												***0***
	H	TCHC	RGI	13	4	41	14	44	15	8	2	3	1	**144**
	I	TCHC	RGI	10	3	56	19	64	22	8	3	3	1	**189**
3	J	Market		136	38	47	14	12	4					**251**
	K	Market		221	61	76	22	20	6					**406**
4	L	TCHC	RGI	5	2	17	6	35	11	12	4	5	1	**98**
			Affordable	8	2	32	11	23	8	0	0	0	0	**83**
	M	TCHC	Affordable	77	26	123	41	126	42	23	8	9	3	**478**
			Total	**1148**	**325**	**676**	**210**	**451**	**148**	**62**	**20**	**24**	**7**	**3070**
			Percentage	37.4%	10.6%	22.0%	6.8%	14.7%	4.8%	2.0%	0.6%	0.8%	0.2%	100.0%
			Total	**1473**		**886**		**598**		**82**		**31**		
			Percentage	48.0%		28.9%		19.5%		2.7%		1.0%		

*25% of units are assumed plus sized. These units are a mixture of Barrier Free/Accessible Units and Growing Up Guidelines

Residential Amenity Space

Indoor		Outdoor		Total Amenity Space (sqm)
Required Area (2 sqm per unit)	Provided Area (sqm)	*Required Area*	Provided Area (sqm)	
6140	6140	0	0	6140

Bicycle Parking

				Required				Provided*			
				Residential		*Non Residential*		Residential		Non Residential	
Plot	Building	Units	Non Residential/Community (sqm)	*Long Term (0.9 per unit)*	*Short Term (0.1 per unit)*	*Long & Short Term (0.5 per 100 sqm)*	*Total per Underground*	Long Term (0.9 per unit)	Short Term (0.1 per unit)	Long & Short Term (0.5 per 100 sqm)	Total per Underground
1	A	202	2306	*182*	*20*	*12*	*214*	215		56	271
	B	252	1318	*227*	*25*	*7*					
	C	461	0	*415*	*46*	*0*	*720*	725	71		796
2	D	201	1444	*181*	*20*	*7*					
	E	304	599	*274*	*30*	*3*	*516*	525	123	20	668
	F	0	4554	*0*	*0*	*23*					0
	G	0	405	*0*	*0*	*2*	*25*				0
	H	144	1503	*130*	*14*	*8*					
	I	189	572	*170*	*19*	*3*	*343*	429	128	19	576
3	J	251	1079	*226*	*25*	*5*					
	K	406	0	*365*	*41*	*0*	*662*	591	129		720
4	L	181	794	*163*	*18*	*4*					
	M	478	916	*430*	*48*	*5*	*668*	760	71	28	859
			Total	***2763***	***307***	***77***		**3245**	**522**	**123**	
			Total Bicycle Parking		***3148***				**3890**		

*bicycle parking estimated from illustrative scheme and subject to change at Site Plan

Loading

		Provided Loading Space			
Plot	Building	Type A	Type B	Type C	Type G
1	A	0	1	0	1
	B	0	1	0	1
	C				
2	D	0	1	0	1
	E				
	F	0	0	0	0
	G	0	0	0	0
	H	0	1	0	1
	I				
3	J	0	1	0	1
	K				
4	L	0	1	0	1
	M				
Total		**0**	**6**	**0**	**6**

Car Parking

Required		Provided	
Residential (0.4 per unit)	*Visitor (0.06 per unit - Market only)*	Residential (0.4 per unit)	Visitor (0.06 per unit - Market only)
1228	*113*	1228	113
1341		**1341**	

*parking estimated from illustrative scheme and subject to change at Site Plan

1 Key Plan - Site Statistics
1 : 2000

Toronto Green Standards (TGS)

Regent Park - Phases 4 & 5

Statistics Template – Toronto Green Standard Version 4.0

Mid to High Rise Residential and all New Non-Residential Development

The Toronto Green Standard Version 4.0 Statistics Template for stand-alone Zoning Bylaw Amendment applications must be submitted as part of the application.

City Agency, Corporation & Division-Owned Facilities

For Zoning Bylaw Amendment applications: complete General Project Description and Section 1.
For Site Plan Control applications: complete General Project Description, Section 1 and Section 2.
For further information, please visit www.toronto.ca/greendevelopment

General Project Description	Proposed
Total Gross Floor Area	303,212 m2
Breakdown of project components (m²):	
Residential	287,722 m2
Retail	9,608 m2 (including TCH space)
Commercial	916 m2 (community space)
Industrial	
Institutional/Other	2,277 m2 (library)
Total number of residential units	3,070 units

Section 1: For Stand Alone Zoning Bylaw Amendment Applications and Site Plan Control Applications

Low Emissions Transportation	Required	Proposed	Proposed %
Number of Parking Spaces	24	1341	559%
Number of EV Parking Spaces (Residential)	1341	1341	100%
Number of EV Parking Spaces (non-residential)	included above		

Cycling Infrastructure	Required	Proposed	Proposed %
Number of long-term bicycle parking spaces (all-uses)	2763	3245	117%
Number of long-term bicycle parking located on:			
a) first storey of building		Y	
b) second storey of building		N	
c) first level below-ground		Y	
d) second level below-ground		N	
e) other levels below-ground		N	

Page 1 of 3

Statistics Template – Toronto Green Standard Version 4.0

Mid to High Rise Residential and all New Non-Residential Development

Cycling Infrastructure	Required	Proposed	Proposed %
Number of short-term bicycle parking spaces	384	645	168%
Number of shower and change facilities (non-residential)	0	0	N/A

Tree Canopy	Required	Proposed	Proposed %
Total Soil Volume (40% of the site area x 66 m2 x 30 m³)	11,710 m3		
Soil volume provided within the site area (m³)		20,160 m3	172%
Soil Volume provided within the public boulevard (m³)		0	

Section 2: For Site Plan Control Applications

Cycling Infrastructure	Required	Proposed	Proposed %
Number of short-term bicycle parking spaces (all uses) at-grade or on first level below grade			
Number of publicly accessible bicycle parking spaces			
Number of energized outlets for electric bicycles			

Tree Canopy	Required	Proposed	Proposed %
Total site area (m²)			
Total Soil Volume (40% of the site area x 66 m² x 30 m³)			
Total number of trees planted			
Number of surface parking spaces (if applicable)			
Number of shade trees located in surface parking area			

Landscaping & Biodiversity	Required	Proposed	Proposed %
Total non-roof hardscape area (m²)			
Total non-roof hardscape area treated for Urban Heat Island (minimum residential 75% or non-residential 50%) (m²)			
Area of non-roof hardscape treated with: (indicate m²)			
a) high-albedo surface material			
b) open-grid pavement			
c) shade from tree canopy			

Page 2 of 3

Statistics Template – Toronto Green Standard Version 4.0

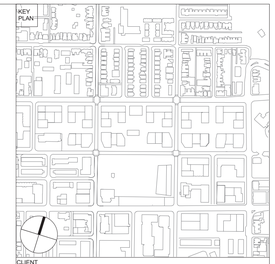
Mid to High Rise Residential and all New Non-Residential Development

Landscaping & Biodiversity	Required	Proposed	Proposed %
d) shade from high-albedo structures			
e) shade from energy generation structures			
Percentage of Lot Area as Soft Landscaping (non-residential only)			
Total number of plants			
Total number of native plants and % of total plants			
Available Roof Space (m²)			
Available Roof Space provided as Green Roof (m²)			
Available Roof Space provided as Cool Roof (m²)			
Available Roof Space provided as Solar Panels (m²)			

Bird Collision Deterrence	Required	Proposed	Proposed %
Total area of glazing of all elevations within 16m above grade			
Total area of treated glazing (minimum 85% of total area of glazing within 16m above grade) (m²)			
Percentage of glazing within 16m above grade treated with:			
a) Visual markers			
b) non-reflective glass			
c) Building integrated structures			

Page 3 of 3

KEY PLAN



CLIENT

Toronto Community Housing Corporation (TCHC) and 2747199 Ontario Limited (Deltera Inc.)

NOTES

Rev	Status	Reason for Issue	Date
P03	S4	P2 - Issued for ZBA	11/29/22
P02	S3	P2 - Draft for Client Review	11/15/22
P01	S4	P1 - Issued for ZBA	04/14/22
P00	S3	P1 - Draft for Client Review	04/01/22

ARCHITECT OF RECORD

E.R.A. Architects Inc.
625 Church St
Suite 600
Toronto
Ontario, M4Y 2G1

info@eraarch.co | 416 963 4497

DESIGN

Karakusevic Carson Architects
Studio 501
37 Cremer St
Hackney
London E2 8HD

mail@karakusevic-carson.com | +44(0)207 566 6300

PROJECT

Regent Park Phases 4 & 5

TITLE

Site Statistics

DRAWING NUMBER: 577 - KCA - XX - XX - DR - A - 8001 (CDE Project N° | Originator | Zone | Level | Type | Role | Drawing Number)

REVISION: P03

STATUS: S4 - Suitable for stage approval

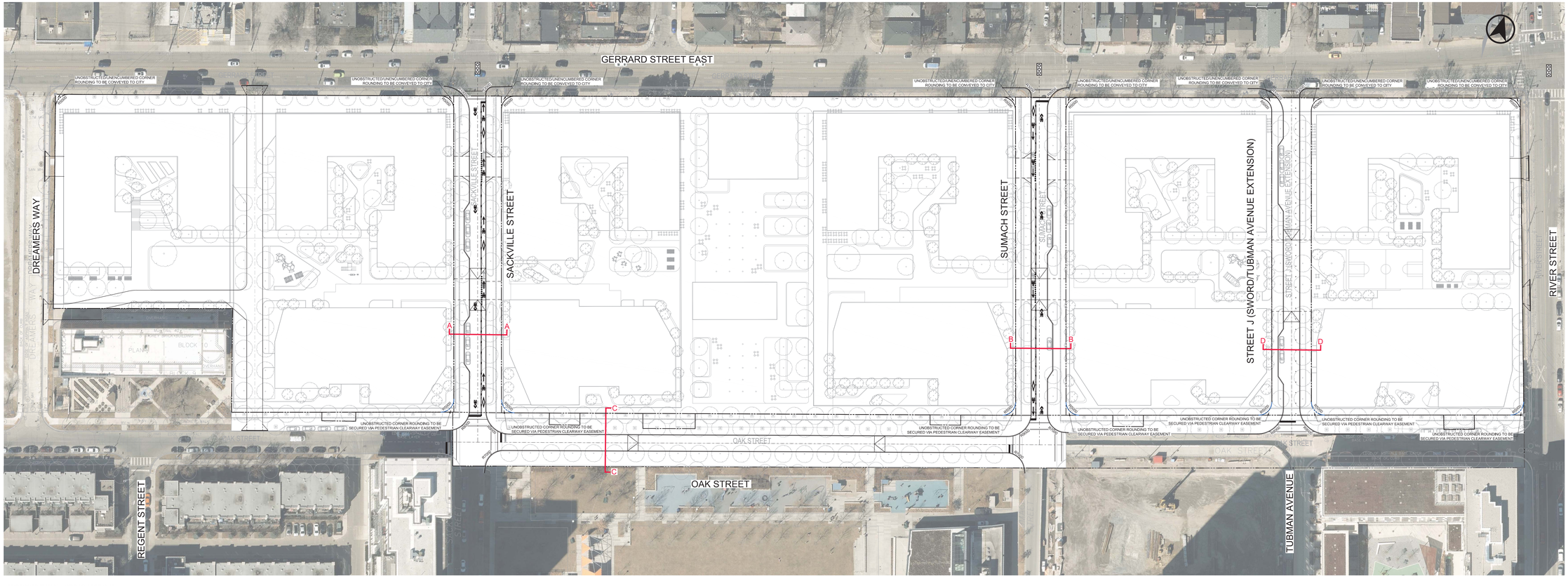
STAGE: P2

REVISION DATE: 11/29/22

DRAWN BY: RM

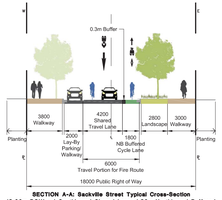
SCALE: 1 : 2000 @ ARCH D

Appendix B:
Functional Road Plan



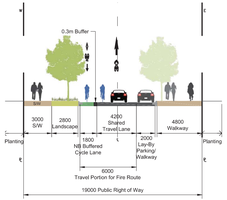
PROPOSED TYPICAL CROSS-SECTIONS

SACKVILLE STREET



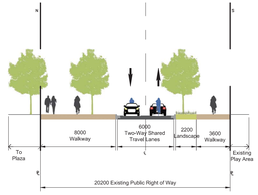
SECTION A-A: Sackville Street Typical Cross-Section
18.00m ROW - 1 Southbound Shared Lane, 1.80m Northbound Buffered Bike Lane, 2.00m One-Sided Lay-By Parking/ Walkway, Varying Landscaped Areas, and Minimum 2.10m Sidewalks

SUMACH STREET



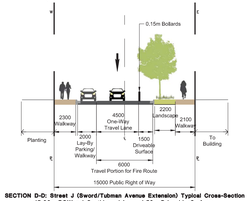
SECTION B-B: Sumach Street Typical Cross-Section
19.00m ROW - 1 Northbound Shared Lane, 1.80m Southbound Buffered Bike Lane, 2.00m One-Sided Parking Lay-By/ Walkway, Varying Landscaped Areas, and Minimum 2.10m Sidewalks

OAK STREET



SECTION C-C: Oak Street Typical Cross-Section
20.00-20.20m ROW - Two-way Shared Travel Lanes, Varying Walkway Widths (minimum 2.10m sidewalk provided), and 2.20m Landscaped Area on South Side

STREET J (SWORD/TUBMAN AVENUE EXTENSION)



SECTION D-D: Street J (Sword/Tubman Avenue Extension) Typical Cross-Section
15.00m ROW - 1 Southbound Lane, 1.50m Driveable Surface, 2.00m One-Sided Lay-By Parking/ Walkway, Varying Landscaped Areas, and Minimum 2.10m Sidewalks

GENERAL NOTES

1. BASE SURVEY PLAN 21-15-128-00 DATED AUGUST 18, 2021, PREPARED BY J.D. BARNES LTD.
2. ARCHITECTURAL SITE PLAN DATED NOVEMBER 7, 2022 PREPARED BY KAMAJISEVIC CARSON ARCHITECTS.

GENERAL LEGEND

- EXISTING SIGNALIZED INTERSECTION
- PROPOSED CURB
- PROPOSED CENTRELINE
- PEDESTRIAN CLEARWAY EASEMENT

03	11-28-22	KIC	RE-ISSUED TO CLIENT FOR SUBMISSION
02	11-17-22	KIC	RE-ISSUED TO CLIENT FOR SUBMISSION
01	11-10-22	KIC	RE-ISSUED TO CLIENT FOR SUBMISSION
00	11-07-22	KIC	ISSUED TO CLIENT FOR SUBMISSION

BA Group
BA Consulting Group Ltd.
300-45 St. Clair Ave. W.
Toronto ON M4V 1K9
Ph. 416 961 7110
mail. toplan@bagroup.com
MOVEMENT IN URBAN ENVIRONMENTS
BAGROUP.COM

REGENT PARK PHASES 4 & 5

FUNCTIONAL ROAD PLAN

Date: April 13, 2022

Project No.: 7575-46

Scale: 1:500 (0 5 10 15 20m)

RP-01

Date Plotted: November 28, 2022 - Filename: \\ba\toronto\7575-46\BA\Road Plan\2022\8. November 28-22 - Functional Plan\BA-Regent Park Phase4&5-FCA\no-24-22-7575-46.dwg

Appendix C:
Minimum and Proposed Vehicle Parking Supply Requirements

Site Specific Minimum Vehicle Parking Requirement

BLOCKS 1A - TCHC * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
Social	202 units	0.40 spaces per unit	81	100%	100%	100%
Resident Sub-total	202 units	0.40 spaces per unit (blended)	81	81	81	81
Non-Residential						
Social Residential Visitors	202 units	0.00 spaces per unit	0	0 0%	0 35%	0 100%
Community	1358 sm GFA	1 spaces / 175 sm GFA	8	2 25%	8 100%	8 100%
Office	237 sm GFA	1 spaces / 300 sm GFA	1	1 100%	1 60%	0 0%
Retail	711 sm GFA	1 spaces / 100 sm GFA	7	1 20%	7 100%	7 100%
Non-Residential Sub-total			16	4	16	15
TOTAL			97	85	97	96

BLOCKS 1B & 1C - MARKET * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
1-bedroom	496 units	0.41 spaces per unit	203	100%	100%	100%
2-bedroom	172 units	0.58 spaces per unit	100			
3-bedroom	47 units	1.04 spaces per unit	49			
Resident Sub-total	713 units	0.49 spaces per unit (blended)	352	352	352	352
Non-Residential						
Residential Visitors	713 units	0.06 spaces per unit	43	0 0%	15 35%	43 100%
Office	330 sm GFA	1 spaces / 300 sm GFA	1	1 100%	1 60%	0 0%
Retail	989 sm GFA	1 spaces / 100 sm GFA	10	2 20%	10 100%	10 100%
Non-Residential Sub-total			54	3	26	53
TOTAL			406	355	378	405

*overwrite

BLOCKS 2D & 2E - MARKET * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
1-bedroom	352 units	0.41 spaces per unit	144	100%	100%	100%
2-bedroom	122 units	0.58 spaces per unit	71			
3-bedroom	32 units	1.04 spaces per unit	33			
Resident Sub-total	505 units	0.49 spaces per unit (blended)	248	248	248	248
Non-Residential						
Residential Visitors	505 units	0.06 spaces per unit	30	0 0%	11 35%	30 100%
Office	511 sm GFA	1 spaces / 300 sm GFA	2	2 100%	1 60%	0 0%
Retail	1532 sm GFA	1 spaces / 100 sm GFA	15	3 20%	15 100%	15 100%
Non-Residential Sub-total			47	5	27	45
TOTAL			295	253	275	293

*overwrite

BLOCKS 2F & 2G - TCHC / MARKET * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Non-Residential						
Community	759 sm GFA	1 spaces / 175 sm GFA	4	0 0%	1 35%	4 100%
Library	2277 sm GFA	1 spaces / 175 sm GFA	13	13 100%	13 100%	13 100%
Culture	405 sm GFA	1 spaces / 175 sm GFA	2	2 100%	2 100%	2 100%
Office	380 sm GFA	1 spaces / 300 sm GFA	1	1 100%	1 60%	0 0%
Retail	1139 sm GFA	1 spaces / 100 sm GFA	11	2 20%	11 100%	11 100%
Non-Residential Sub-total			19	18	28	30
TOTAL			19	18	28	30

BLOCKS 2H & 2I - TCHC * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
Social	333 units	0.40 spaces per unit	133	100%	100%	100%
Resident Sub-total	333 units	0.40 spaces per unit (blended)	133	133	133	133
Non-Residential						
Social Residential Visitors	333 units	0.00 spaces per unit	0	0 0%	0 35%	0 100%
Community	572 sm GFA	1 spaces / 175 sm GFA	3	1 25%	3 100%	3 100%
Office	376 sm GFA	1 spaces / 300 sm GFA	1	1 100%	1 60%	0 0%
Retail	1127 sm GFA	1 spaces / 100 sm GFA	11	2 20%	11 100%	11 100%
Non-Residential Sub-total			15	4	15	14
TOTAL			148	137	148	147

BLOCKS 3J & 3K- MARKET * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
1-bedroom	456 units	0.41 spaces per unit	187	100%	100%	100%
2-bedroom	159 units	0.58 spaces per unit	92			
3-bedroom	42 units	1.04 spaces per unit	44			
Resident Sub-total	657 units	0.49 spaces per unit (blended)	323	323	323	323
Non-Residential						
Residential Visitors	657 units	0.06 spaces per unit	39	0 0%	14 35%	39 100%
Community	0 sm GFA	1 spaces / 175 sm GFA	0	0 100%	0 100%	0 100%
Office	270 sm GFA	1 spaces / 300 sm GFA	1	1 100%	1 60%	0 0%
Retail	809 sm GFA	1 spaces / 100 sm GFA	8	2 20%	8 100%	8 100%
Non-Residential Sub-total			48	3	23	47
TOTAL			371	326	346	370

BLOCKS 4L & 4M - TCHC * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
Social	659 units	0.40 spaces per unit	264	100%	100%	100%
Resident Sub-total	659 units	0.40 spaces per unit (blended)	264	264	264	264
Non-Residential						
Social Residential Visitors	659 units	0.00 spaces per unit	0	0 0%	0 35%	0 100%
Community	916 sm GFA	1 spaces / 175 sm GFA	5	1 25%	5 100%	5 100%
Office	199 sm GFA	1 spaces / 300 sm GFA	1	1 100%	1 60%	0 0%
Retail	596 sm GFA	1 spaces / 100 sm GFA	6	1 20%	6 100%	6 100%
Non-Residential Sub-total			12	3	12	11
TOTAL			276	267	276	275

SITE TOTAL * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
1-bedroom (Market)	848 units	0.41 spaces per unit	347 spaces	100%	100%	100%
2-bedroom (Market)	294 units	0.58 spaces per unit	171 spaces			
3-bedroom (Market)	79 units	1.04 spaces per unit	82 spaces			
Social	202 units	0.40 spaces per unit	81 spaces			
Residential Sub-total	3070 units	0.22 spaces per unit (blended)	681	681	681	681
Non-Residential						
Market Residential Visitors	1878 units	0.06 spaces per unit	73 spaces	0 spaces 0%	26 spaces 35%	73 spaces 100%
Social Residential Visitors	202 units	0.00 spaces per unit	0 spaces	0 spaces 0%	0 spaces 35%	0 spaces 100%
Community	2117 sm GFA	1 spaces / 175 sm GFA	12 spaces	0 spaces 0%	4 spaces 35%	12 spaces 100%
Library	2277 sm GFA	1 spaces / 175 sm GFA	13 spaces	13 spaces 100%	13 spaces 100%	13 spaces 100%
Culture	405 sm GFA	1 spaces / 175 sm GFA	2 spaces	2 spaces 100%	2 spaces 100%	2 spaces 100%
Office	2301 sm GFA	1 spaces / 300 sm GFA	5 spaces	5 spaces 100%	3 spaces 60%	0 spaces 0%
Retail	6902 sm GFA	1 spaces / 100 sm GFA	43 spaces	9 spaces 20%	43 spaces 100%	43 spaces 100%
Non-Residential Sub-total			148	29	91	143
TOTAL			829	710	772	824

BUILDING 1A

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum	Maximum Parking Provided (Ratio)	Maximum Parking Provided[4] (Spaces)	Effective Parking Required	Effective Parking Required
Residential							
Bachelor		None	0	0.30	0	0.30	0
1-Bedroom		None	0	0.50	0	0.50	0
2-Bedroom		None	0	0.80	0	0.80	0
3-Bedroom		None	0	1.00	0	1.00	0
Affordable Housing[1]	202	None	0	0.50	101	0.20	40
Resident Sub-Total	**202**	**None**	**0**	**0.50**	**101**	**0.20**	**40**
Non-Residential							
Market Residential Visitors	0	2 plus 0.01 spaces per unit	0	5 plus 0.10 spaces per unit	0	0.10 spaces per unit	0
Affordable Housing Residential Visitors[2]	202	None	0	None	0	None	0
Community	1,358	None	0	0.80 spaces per 100 sm GFA	10	0.40 spaces per 100 sm GFA	5
Library		None	0	3.50 spaces per 100 sm GFA	0	1.00 spaces per 100 sm GFA	0
Culture		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Office	237	None	0	0.80 spaces per 100 sm GFA	1	0.40 spaces per 100 sm GFA	0
Retail	711	None	0	3.50 spaces per 100 sm GFA	24	1.00 spaces per 100 sm GFA	7
Non-Resident Sub-Total		--	**0**	--	**35**	--	**12**
TOTAL		--	**0**	--	**136**	--	**52**
Accessible Parking Requirement[3]							
B) If the number of effective parking spaces is 13 to 100, a minimum of 1 accessible parking space for every 25 effective parking spaces or part thereof must comply with all regulations for an accessible parking space in Section 200.15.							**3**
Adjusted Minimum Parking Requirement[4]							
3 accessible parking spaces.							**3**

BUILDINGS 1B & 1C

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum	Maximum Parking Provided (Ratio)	Maximum Parking Provided[4] (Spaces)	Effective Parking Required	Effective Parking Required
Residential							
Bachelor		None	0	0.30	0	0.30	0
1-Bedroom	496	None	0	0.50	248	0.50	248
2-Bedroom	172	None	0	0.80	137	0.80	137
3-Bedroom	47	None	0	1.00	47	1.00	47
Affordable Housing[1]		None	0	0.50	0	0.20	0
Resident Sub-Total	**715**	**None**	**0**	**0.60**	**432**	**0.60**	**432**
Non-Residential							
Market Residential Visitors	715	2 plus 0.01 spaces per unit	9	5 plus 0.10 spaces per unit	76	0.10 spaces per unit	71
Affordable Housing Residential Visitors[2]	0	None	0	None	0	None	0
Community		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Library		None	0	3.50 spaces per 100 sm GFA	0	1.00 spaces per 100 sm GFA	0
Culture		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Office	330	None	0	0.80 spaces per 100 sm GFA	2	0.40 spaces per 100 sm GFA	1
Retail	989	None	0	3.50 spaces per 100 sm GFA	34	1.00 spaces per 100 sm GFA	9
Non-Resident Sub-Total		--	**9**	--	**112**	--	**81**
TOTAL		--	**9**	--	**544**	--	**513**
Accessible Parking Requirement[3]							
C) If the number of effective parking spaces is more than 100, a minimum of 5 accessible parking spaces plus 1 accessible parking space for every 50 effective parking spaces or part thereof in excess of 100 parking spaces must comply with all regulations for an accessible parking space in Section 200.15.							**14**
Adjusted Minimum Parking Requirement[4]							
14 accessible parking spaces.							**14**

BUILDINGS 2D & 2E

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum	Maximum Parking Provided (Ratio)	Maximum Parking Provided[4] (Spaces)	Effective Parking Required	Effective Parking Required
Residential							
Bachelor		None	0	0.30	0	0.30	0
1-Bedroom	352	None	0	0.50	176	0.50	176
2-Bedroom	122	None	0	0.80	97	0.80	97
3-Bedroom	32	None	0	1.00	32	1.00	32
Affordable Housing[1]		None	0	0.50	0	0.20	0
Resident Sub-Total	**506**	**None**	**0**	**0.60**	**305**	**0.60**	**305**
Non-Residential							
Market Residential Visitors	506	2 plus 0.01 spaces per unit	7	5 plus 0.10 spaces per unit	55	0.10 spaces per unit	50
Affordable Housing Residential Visitors[2]	0	None	0	None	0	None	0
Community		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Library		None	0	3.50 spaces per 100 sm GFA	0	1.00 spaces per 100 sm GFA	0
Culture		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Office	511	None	0	0.80 spaces per 100 sm GFA	4	0.40 spaces per 100 sm GFA	2
Retail	1532	None	0	3.50 spaces per 100 sm GFA	53	1.00 spaces per 100 sm GFA	15
Non-Resident Sub-Total		--	**7**	--	**112**	--	**67**
TOTAL		--	**7**	--	**417**	--	**372**
Accessible Parking Requirement[3]							
C) If the number of effective parking spaces is more than 100, a minimum of 5 accessible parking spaces plus 1 accessible parking space for every 50 effective parking spaces or part thereof in excess of 100 parking spaces must comply with all regulations for an accessible parking space in Section 200.15.							**11**
Adjusted Minimum Parking Requirement[4]							
11 accessible parking spaces.							**11**

BUILDINGS 2F & 2G

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum	Maximum Parking Provided (Ratio)	Maximum Parking Provided[4] (Spaces)	Effective Parking Required	Effective Parking Required
Residential							
Bachelor		None	0	0.30	0	0.30	0
1-Bedroom		None	0	0.50	0	0.50	0
2-Bedroom		None	0	0.80	0	0.80	0
3-Bedroom		None	0	1.00	0	1.00	0
Affordable Housing[1]		None	0	0.50	0	0.20	0
Resident Sub-Total	**0**	**None**	**0**	**#DIV/0!**	**0**	**#DIV/0!**	**0**
Non-Residential							
Market Residential Visitors	0	2 plus 0.01 spaces per unit	0	5 plus 0.10 spaces per unit	0	0.10 spaces per unit	0
Affordable Housing Residential Visitors[2]	0	None	0	None	0	None	0
Community	759	None	0	0.80 spaces per 100 sm GFA	6	0.40 spaces per 100 sm GFA	3
Library	2277	None	0	3.50 spaces per 100 sm GFA	79	1.00 spaces per 100 sm GFA	22
Culture	405	None	0	0.80 spaces per 100 sm GFA	3	0.40 spaces per 100 sm GFA	1
Office	380	None	0	0.80 spaces per 100 sm GFA	3	0.40 spaces per 100 sm GFA	1
Retail	1139	None	0	3.50 spaces per 100 sm GFA	39	1.00 spaces per 100 sm GFA	11
Non-Resident Sub-Total		--	**0**	--	**130**	--	**38**
TOTAL		--	**0**	--	**130**	--	**38**
Accessible Parking Requirement[3]							
B) If the number of effective parking spaces is 13 to 100, a minimum of 1 accessible parking space for every 25 effective parking spaces or part thereof must comply with all regulations for an accessible parking space in Section 200.15.							**2**
Adjusted Minimum Parking Requirement[4]							
2 accessible parking spaces.							**2**

BUILDINGS 2H & 2I

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum	Maximum Parking Provided (Ratio)	Maximum Parking Provided[4] (Spaces)	Effective Parking Required	Effective Parking Required
Residential							
Bachelor		None	0	0.30	0	0.30	0
1-Bedroom		None	0	0.50	0	0.50	0
2-Bedroom		None	0	0.80	0	0.80	0
3-Bedroom		None	0	1.00	0	1.00	0
Affordable Housing[1]	333	None	0	0.50	166	0.20	66
Resident Sub-Total	**333**	**None**	**0**	**0.50**	**166**	**0.20**	**66**
Non-Residential							
Market Residential Visitors	0	2 plus 0.01 spaces per unit	0	5 plus 0.10 spaces per unit	0	0.10 spaces per unit	0
Affordable Housing Residential Visitors[2]	333	None	0	None	0	None	0
Community	572	None	0	0.80 spaces per 100 sm GFA	4	0.40 spaces per 100 sm GFA	2
Library		None	0	3.50 spaces per 100 sm GFA	0	1.00 spaces per 100 sm GFA	0
Culture		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Office	376	None	0	0.80 spaces per 100 sm GFA	3	0.40 spaces per 100 sm GFA	1
Retail	1127	None	0	3.50 spaces per 100 sm GFA	39	1.00 spaces per 100 sm GFA	11
Non-Resident Sub-Total		--	**0**	--	**46**	--	**14**
TOTAL		--	**0**	--	**212**	--	**80**
Accessible Parking Requirement[3]							
B) If the number of effective parking spaces is 13 to 100, a minimum of 1 accessible parking space for every 25 effective parking spaces or part thereof must comply with all regulations for an accessible parking space in Section 200.15.							**4**
Adjusted Minimum Parking Requirement[4]							
4 accessible parking spaces.							**4**

BUILDINGS 3J & 3K

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum	Maximum Parking Provided (Ratio)	Maximum Parking Provided[4] (Spaces)	Effective Parking Required	Effective Parking Required
Residential							
Bachelor		None	0	0.30	0	0.30	0
1-Bedroom	456	None	0	0.50	228	0.50	228
2-Bedroom	159	None	0	0.80	127	0.80	127
3-Bedroom	42	None	0	1.00	42	1.00	42
Affordable Housing[1]		None	0	0.50	0	0.20	0
Resident Sub-Total	**657**	**None**	**0**	**0.60**	**397**	**0.60**	**397**
Non-Residential							
Market Residential Visitors	657	2 plus 0.01 spaces per unit	8	5 plus 0.10 spaces per unit	70	0.10 spaces per unit	65
Affordable Housing Residential Visitors[2]	0	None	0	None	0	None	0
Community		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Library		None	0	3.50 spaces per 100 sm GFA	0	1.00 spaces per 100 sm GFA	0
Culture		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Office	270	None	0	0.80 spaces per 100 sm GFA	2	0.40 spaces per 100 sm GFA	1
Retail	809	None	0	3.50 spaces per 100 sm GFA	28	1.00 spaces per 100 sm GFA	8
Non-Resident Sub-Total		--	**8**	--	**100**	--	**74**
TOTAL		--	**8**	--	**497**	--	**471**
Accessible Parking Requirement[3]							
C) If the number of effective parking spaces is more than 100, a minimum of 5 accessible parking spaces plus 1 accessible parking space for every 50 effective parking spaces or part thereof in excess of 100 parking spaces must comply with all regulations for an accessible parking space in Section 200.15.							**13**
Adjusted Minimum Parking Requirement[4]							
13 accessible parking spaces.							**13**

BUILDINGS 4L & 4M

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum	Maximum Parking Provided (Ratio)	Maximum Parking Provided[4] (Spaces)	Effective Parking Required	Effective Parking Required
Residential							
Bachelor		None	0	0.30	0	0.30	0
1-Bedroom		None	0	0.50	0	0.50	0
2-Bedroom		None	0	0.80	0	0.80	0
3-Bedroom		None	0	1.00	0	1.00	0
Affordable Housing[1]	659	None	0	0.50	329	0.20	131
Resident Sub-Total	**659**	**None**	**0**	**0.50**	**329**	**0.20**	**131**
Non-Residential							
Market Residential Visitors	0	2 plus 0.01 spaces per unit	0	5 plus 0.10 spaces per unit	0	0.10 spaces per unit	0
Affordable Housing Residential Visitors[2]	659	None	0	None	0	None	0
Community	916	None	0	0.80 spaces per 100 sm GFA	7	0.40 spaces per 100 sm GFA	3
Library		None	0	3.50 spaces per 100 sm GFA	0	1.00 spaces per 100 sm GFA	0
Culture		None	0	0.80 spaces per 100 sm GFA	0	0.40 spaces per 100 sm GFA	0
Office	199	None	0	0.80 spaces per 100 sm GFA	1	0.40 spaces per 100 sm GFA	0
Retail	596	None	0	3.50 spaces per 100 sm GFA	20	1.00 spaces per 100 sm GFA	5
Non-Resident Sub-Total		--	**0**	--	**28**	--	**8**
TOTAL		--	**0**	--	**357**	--	**139**
Accessible Parking Requirement[3]							
C) If the number of effective parking spaces is more than 100, a minimum of 5 accessible parking spaces plus 1 accessible parking space for every 50 effective parking spaces or part thereof in excess of 100 parking spaces must comply with all regulations for an accessible parking space in Section 200.15.							**6**
Adjusted Minimum Parking Requirement[4]							
6 accessible parking spaces.							**6**

COMPOSITE SITE

Use	Units / GFA	Minimum Parking Required (Ratio)	Minimum	Maximum Parking Provided (Ratio)	Maximum Parking Provided[4] (Spaces)	Effective Parking Required	Effective Parking Required
Residential							
Bachelor	0	None	0	0.30	0	0.30	0
1-Bedroom	1304	None	0	0.50	652	0.50	652
2-Bedroom	453	None	0	0.80	361	0.80	361
3-Bedroom	121	None	0	1.00	121	1.00	121
Affordable Housing[1]	1194	None	0	0.50	596	0.20	237
Resident Sub-Total	**3070**	**None**	**0**	**0.56**	**1730**	**0.45**	**1371**
Non-Residential							
Market Residential Visitors	**1876**	2 plus 0.01 spaces per unit	24	5 plus 0.10 spaces per unit	201	0.10 spaces per unit	186
Affordable Housing Residential Visitors[2]	1194	None	0	None	0	None	0
Community	3605	None	0	0.80 spaces per 100 sm GFA	27	0.40 spaces per 100 sm GFA	13
Library	2277	None	0	3.50 spaces per 100 sm GFA	79	1.00 spaces per 100 sm GFA	22
Culture	405	None	0	0.80 spaces per 100 sm GFA	3	0.40 spaces per 100 sm GFA	1
Office	**2301**	None	0	0.80 spaces per 100 sm GFA	16	0.40 spaces per 100 sm GFA	6
Retail	**6902**	None	0	3.50 spaces per 100 sm GFA	237	1.00 spaces per 100 sm GFA	66
Non-Resident Sub-Total		--	**24**	--	**563**	--	**294**
TOTAL		--	**24**	--	**2293**	--	**1665**
Adjusted Minimum Parking Requirement[5]							
53 accessible parking spaces.							**53**

***check if each block's accessible req't > minimum parking req't**

Proposed Vehicle Parking Supply

BLOCKS 1A - TCHC * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
All TCHC Units	202 units	0.40 spaces per unit	81	100%	100%	100%
Resident Sub-total	202 units	0.40 spaces per unit (blended)	81	81	81	81
Non-Residential						
Social Residential Visitors	202 units	0.00 spaces per unit	0	0 0%	0 35%	0 100%
Community	1358 sm GFA	0 spaces / 175 sm GFA	0	0 25%	0 100%	0 100%
Office	237 sm GFA	0 spaces / 300 sm GFA	0	0 100%	0 60%	0 0%
Retail	711 sm GFA	0 spaces / 100 sm GFA	0	0 20%	0 100%	0 100%
Non-Residential Sub-total			0	0	0	0
TOTAL			81	81	81	81

BLOCKS 1B & 1C - MARKET * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
All Market Units	713 units	0.40 spaces per unit	285	100%	100%	100%
Resident Sub-total	713 units	0.40 spaces per unit (blended)	285	285	285	285
Non-Residential						
Residential Visitors	713 units	0.06 spaces per unit	43	0 0%	15 35%	43 100%
Office	330 sm GFA	0 spaces / 300 sm GFA	0	0 100%	0 60%	0 0%
Retail	989 sm GFA	0 spaces / 100 sm GFA	0	0 20%	0 100%	0 100%
Non-Residential Sub-total			43	0	15	43
TOTAL			328	285	300	328

BLOCKS 2D & 2E - MARKET * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
All Market Units	505 units	0.40 spaces per unit	202	100%	100%	100%
Resident Sub-total	505 units	0.40 spaces per unit (blended)	202	202	202	202
Non-Residential						
Residential Visitors	505 units	0.06 spaces per unit	30	0 0%	11 35%	30 100%
Office	511 sm GFA	0 spaces / 300 sm GFA	0	0 100%	0 60%	0 0%
Retail	1532 sm GFA	0 spaces / 100 sm GFA	0	0 20%	0 100%	0 100%
Non-Residential Sub-total			30	0	11	30
TOTAL			232	202	213	232

BLOCKS 2F & 2G - TCHC / MARKET * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Non-Residential						
Community	759 sm GFA	0 spaces / 175 sm GFA	0	0 0%	0 35%	0 100%
Library	2277 sm GFA	0 spaces / 175 sm GFA	0	0 100%	0 100%	0 100%
Culture	405 sm GFA	0 spaces / 175 sm GFA	0	0 100%	0 100%	0 100%
Office	380 sm GFA	0 spaces / 300 sm GFA	0	0 100%	0 60%	0 0%
Retail	1139 sm GFA	0 spaces / 100 sm GFA	0	0 20%	0 100%	0 100%
Non-Residential Sub-total			0	0	0	0
TOTAL			0	0	0	0

BLOCKS 2H & 2I - TCHC * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
All TCHC Units	333 units	0.40 spaces per unit	133	100%	100%	100%
Resident Sub-total	333 units	0.40 spaces per unit (blended)	133	133	133	133
Non-Residential						
Social Residential Visitors	333 units	0.00 spaces per unit	0	0 0%	0 35%	0 100%
Community	572 sm GFA	0 spaces / 175 sm GFA	0	0 25%	0 100%	0 100%
Office	376 sm GFA	0 spaces / 300 sm GFA	0	0 100%	0 60%	0 0%
Retail	1127 sm GFA	0 spaces / 100 sm GFA	0	0 20%	0 100%	0 100%
Non-Residential Sub-total			0	0	0	0
TOTAL			133	133	133	133

BLOCKS 3J & 3K- MARKET * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
All Market Units	657 units	0.40 spaces per unit	263	100%	100%	100%
Resident Sub-total	657 units	0.40 spaces per unit (blended)	263	263	263	263
Non-Residential						
Residential Visitors	657 units	0.06 spaces per unit	39	0 0%	14 35%	39 100%
Community	0 sm GFA	0 spaces / 175 sm GFA	0	0 100%	0 100%	0 100%
Office	270 sm GFA	0 spaces / 175 sm GFA	0	0 100%	0 60%	0 0%
Retail	809 sm GFA	0 spaces / 175 sm GFA	0	0 20%	0 100%	0 100%
Non-Residential Sub-total			39	0	14	39
TOTAL			302	263	277	302

BLOCKS 4L & 4M - TCHC * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
All TCHC Units	659 units	0.40 spaces per unit	264	100%	100%	100%
Resident Sub-total	659 units	0.40 spaces per unit (blended)	264	264	264	264
Non-Residential						
Social Residential Visitors	659 units	0.00 spaces per unit	0	0 0%	0 35%	0 100%
Community	916 sm GFA	0 spaces / 175 sm GFA	0	0 25%	0 100%	0 100%
Office	199 sm GFA	0 spaces / 300 sm GFA	0	0 100%	0 60%	0 0%
Retail	596 sm GFA	0 spaces / 100 sm GFA	0	0 20%	0 100%	0 100%
Non-Residential Sub-total			0	0	0	0
TOTAL			264	264	264	264

SITE TOTAL * bylaw uses normal rounding

Use / Type	# of Units / GFA	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)	Shared Parking		
				AM	PM	Evening
Residential						
All Market Units	1876 units	0.40 spaces per unit	487 spaces	100%	100%	100%
All TCHC Units	202 units	0.40 spaces per unit	81 spaces			
Residential Sub-total	2078 units	0.27 spaces per unit (blended)	568	568	568	568
Non-Residential						
Market Residential Visitors	1876 units	0.06 spaces per unit	73 spaces	0 spaces 0%	26 spaces 35%	73 spaces 100%
Social Residential Visitors	202 units	0.00 spaces per unit	0 spaces	0 spaces 0%	0 spaces 35%	0 spaces 100%
Community	2117 sm GFA	0 spaces / 175 sm GFA	0 spaces	0 spaces 0%	0 spaces 35%	0 spaces 100%
Library	2277 sm GFA	0 spaces / 175 sm GFA	0 spaces	0 spaces 100%	0 spaces 100%	0 spaces 100%
Culture	405 sm GFA	0 spaces / 175 sm GFA	0 spaces	0 spaces 100%	0 spaces 100%	0 spaces 100%
Office	2301 sm GFA	0 spaces / 300 sm GFA	0 spaces	0 spaces 100%	0 spaces 60%	0 spaces 0%
Retail	6902 sm GFA	0 spaces / 100 sm GFA	0 spaces	0 spaces 20%	0 spaces 100%	0 spaces 100%
Non-Residential Sub-total			73	0	26	73
TOTAL			641	568	594	641

Appendix D:
Minimum and Proposed Bicycle Parking Supply Requirements

Minimum Bicycle Parking Requirement TGS v3 Zone 1

BLOCKS 1A - TCHC

Use / Type	# of Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Residential	202 units	Occupant	0.90 spaces per unit	182 spaces
		Visitor	0.10 spaces per unit	21 spaces
		Total	1.00 spaces per unit	203 spaces
Community	1358 sm GFA	Total	--	0 spaces
Office	237 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	1 spaces
		Short-Term	3 plus 0.2 spaces / 100 sqm GFA	4 spaces
		Total		5 spaces
Retail	711 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	2 spaces
		Short-Term	3 plus 0.3 spaces / 100 sqm GFA	6 spaces
		Total		8 spaces
TOTAL				216 spaces

BLOCKS 1B & 1C - MARKET

Use / Type	# of Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Residential	713 units	Occupant	0.90 spaces per unit	642 spaces
		Visitor	0.10 spaces per unit	72 spaces
		Total	1.00 spaces per unit	714 spaces
Community	0 sm GFA	Total	--	0 spaces
Office	330 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	1 spaces
		Short-Term	3 plus 0.2 spaces / 100 sqm GFA	4 spaces
		Total		5 spaces
Retail	989 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	2 spaces
		Short-Term	3 plus 0.3 spaces / 100 sqm GFA	6 spaces
		Total		8 spaces
TOTAL				727 spaces

BLOCKS 2D & 2E - MARKET

Use / Type	# of Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Residential	505 units	Occupant	0.90 spaces per unit	455 spaces
		Visitor	0.10 spaces per unit	51 spaces
		Total	1.00 spaces per unit	506 spaces
Community	0 sm GFA	Total	--	0 spaces
Office	511 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	2 spaces
		Short-Term	3 plus 0.2 spaces / 100 sqm GFA	5 spaces
		Total		7 spaces
Retail	1532 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	4 spaces
		Short-Term	3 plus 0.3 spaces / 100 sqm GFA	8 spaces
		Total		12 spaces
TOTAL				525 spaces

BLOCKS 2F & 2G - TCHC / MARKET

Use / Type	# of Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Community	759 sm GFA	Total	--	0 spaces
Library	2277 sm GFA	Total	--	0 spaces
Culture	405 sm GFA	Total	--	0 spaces
Office	380 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	1 spaces
		Short-Term	3 plus 0.2 spaces / 100 sqm GFA	4 spaces
		Total		5 spaces
Retail	1139 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	3 spaces
		Short-Term	3 plus 0.3 spaces / 100 sqm GFA	7 spaces
		Total		10 spaces
TOTAL				15 spaces

BLOCKS 2H & 2I - TCHC

Use / Type	# of Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Residential	333 units	Occupant	0.90 spaces per unit	300 spaces
		Visitor	0.10 spaces per unit	34 spaces
		Total	1.00 spaces per unit	334 spaces
Community	572 sm GFA	Total	--	0 spaces
Office	376 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	1 spaces
		Short-Term	3 plus 0.2 spaces / 100 sqm GFA	4 spaces
		Total		5 spaces
Retail	1127 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	3 spaces
		Short-Term	3 plus 0.3 spaces / 100 sqm GFA	7 spaces
		Total		10 spaces
TOTAL				349 spaces

BLOCKS 3J & 3K- MARKET

Use / Type	# of Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Residential	657 units	Occupant	0.90 spaces per unit	592 spaces
		Visitor	0.10 spaces per unit	66 spaces
		Total	1.00 spaces per unit	658 spaces
Community	0 sm GFA	Total	--	0 spaces
Office	270 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	1 spaces
		Short-Term	3 plus 0.2 spaces / 100 sqm GFA	4 spaces
		Total		5 spaces
Retail	809 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	2 spaces
		Short-Term	3 plus 0.3 spaces / 100 sqm GFA	6 spaces
		Total		8 spaces
TOTAL				671 spaces

BLOCKS 4L & 4M - TCHC

Use / Type	# of Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Residential	659 units	Occupant	0.90 spaces per unit	594 spaces
		Visitor	0.10 spaces per unit	66 spaces
		Total	1.00 spaces per unit	660 spaces
Community	916 sm GFA	Total	--	0 spaces
Office	199 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	1 spaces
		Short-Term	3 plus 0.2 spaces / 100 sqm GFA	4 spaces
		Total		5 spaces
Retail	596 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	2 spaces
		Short-Term	3 plus 0.3 spaces / 100 sqm GFA	5 spaces
		Total		7 spaces
TOTAL				672 spaces

SITE TOTAL

Use / Type	# of Units / GFA	Type	Minimum Parking Requirement (Ratio)	Minimum Parking Requirement (Spaces)
Residential	3070 units	Occupant	0.90 spaces per unit	1279 spaces
		Visitor	0.10 spaces per unit	144 spaces
		Total	1.00 spaces per unit	1423 spaces
Community	2117 sm GFA	Total	--	0 spaces
Library	2277 sm GFA	Total	--	0 spaces
Culture	405 sm GFA	Total	--	0 spaces
Office	2301 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	5 spaces
		Short-Term	3 plus 0.2 spaces / 100 sqm GFA	17 spaces
		Total		22 spaces
Retail	6902 sm GFA	Long-Term	0.2 spaces / 100 sqm GFA	11 spaces
		Short-Term	3 plus 0.3 spaces / 100 sqm GFA	27 spaces
		Total		38 spaces
Long-Term Subtotal				1295 spaces
Short-Term Subtotal				188 spaces
TOTAL				1483 spaces

Appendix E:
Vehicle Manoeuvring Diagrams

INBOUND

Lobby

Residential Amenity

Residential Amenity

Residential Amenity

Residential Amenity

Residential Amenity

Residential Amenity

Loading

TYPE 'G' SPACE

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

0m(W) x 13.0m(L) x6.1m(H) Max 2% SLOPE
(REINFORCED CONCRETE PAD)

1C

Management

Post / Parcels/ Plant

Bikes - Short Term

Parcels / Post / Plant

Staging

OUTBOUND

Residential Amenity

Residential Amenity

Residential Amenity

Loading

TYPE 'G' SPACE

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

4.0m(W) x 13.0m(L) x6.1m(H) Max 2% SLOPE
(REINFORCED CONCRETE PAD)

1C

Management

Post / Parcels/ Plant

Bikes - Short Term

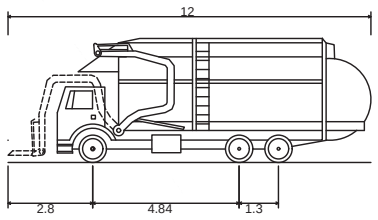
Parcels / Post / Plant

Staging

Lobby

Residential Amenity

Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)



Overall Length (Forks Down)	12.00m
Overall Length (Forks Up)	10.00m*
Overall Width	2.45m
Overall Body Height	4.10m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)

* Field measured by BA Group, Aug. 8/11

Date Plotted: November 29, 2022 Filename: \\barp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 1B & 1C
City of Toronto Front Loading Garbage Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-01A

INBOUND

Bikes - Short Term

Lobby

Residential Amenity

TYPE 'G' SPACE
6.1m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
REINFORCED CONCRETE

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

1C

Residential Amenity

Residential Amenity

Residential Amenity

Lobby

Management

Post / Parcels/ Plant

Bikes - Short Term

Parcels / Post / Plant

Staging

OUTBOUND

TYPE 'G' SPACE
6.1m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
REINFORCED CONCRETE

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

1C

Residential Amenity

Residential Amenity

Residential Amenity

Lobby

Management

Post / Parcels/ Plant

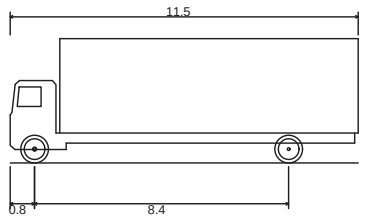
Bikes - Short Term

Parcels / Post / Plant

Staging

Residential Amenity

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 1B & 1C
TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-01B

INBOUND

Bikes - Short Term

Lobby

Residential Amenity

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

1C

Residential Amenity

Residential Amenity

Residential Amenity

Lobby

Management

Post / Parcels/ Plant

Bikes - Short Term

Parcels / Post / Plant

Staging

OUTBOUND

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

1C

Residential Amenity

Residential Amenity

Residential Amenity

Lobby

Management

Post / Parcels/ Plant

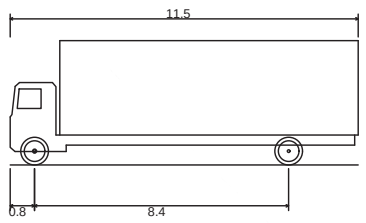
Bikes - Short Term

Parcels / Post / Plant

Staging

Residential Amenity

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 1B & 1C
TAC Heavy Single Unit (SU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-01C

INBOUND

GERRARD STREET

Non Resi

Lobby

Parcels Riser

Non Resi

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

Staging Area

Plant

1A

Community

1B

1B

1B

OUTBOUND

GERRARD STREET

Non Resi

Lobby

Parcels Riser

Non Resi

Lobby

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

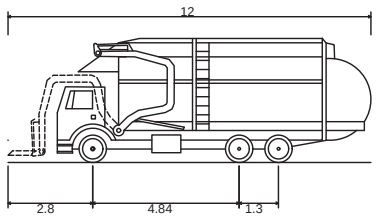
Staging Area

Community

1B

1B

Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)



Overall Length (Forks Down)	12.00m
Overall Length (Forks Up)	10.00m*
Overall Width	2.45m
Overall Body Height	4.10m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)

* Field measured by BA Group, Aug. 8/11

Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

Date Plotted: November 29, 2022

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Building 1A
City of Toronto Front Loading Garbage Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-02A

INBOUND

GERRARD STREET

MH

WV

LS

Non Resi

Lobby

Parcels Riser

Non Resi

Riser

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(6" REINFORCED CONCRETE PAD)

Staging Area

Plant

1A

Community

1B

1B

1B

OUTBOUND

GERRARD STREET

CB

HMH

LS

Lobby

Non Resi

Parcels Riser

Non Resi

Lobby

Riser

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(6" REINFORCED CONCRETE PAD)

Staging Area

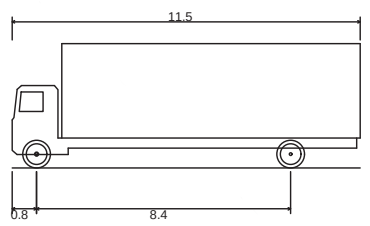
Community

1B

1B

1B

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Building 1A
TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-02B

INBOUND

GERRARD STREET

Non Resi

Lobby

Parcels Riser

Non Resi

Riser

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

Staging Area

Plant

1A

Community

1B

1B

1B

3B

OUTBOUND

GERRARD STREET

Lobby

Non Resi

Parcels Riser

Non Resi

Lobby

Riser

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

Staging Area

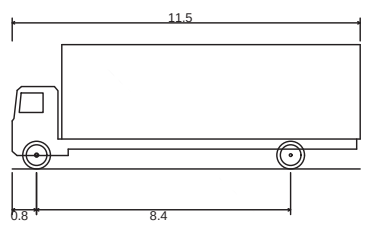
Community

1B

1B

1B

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

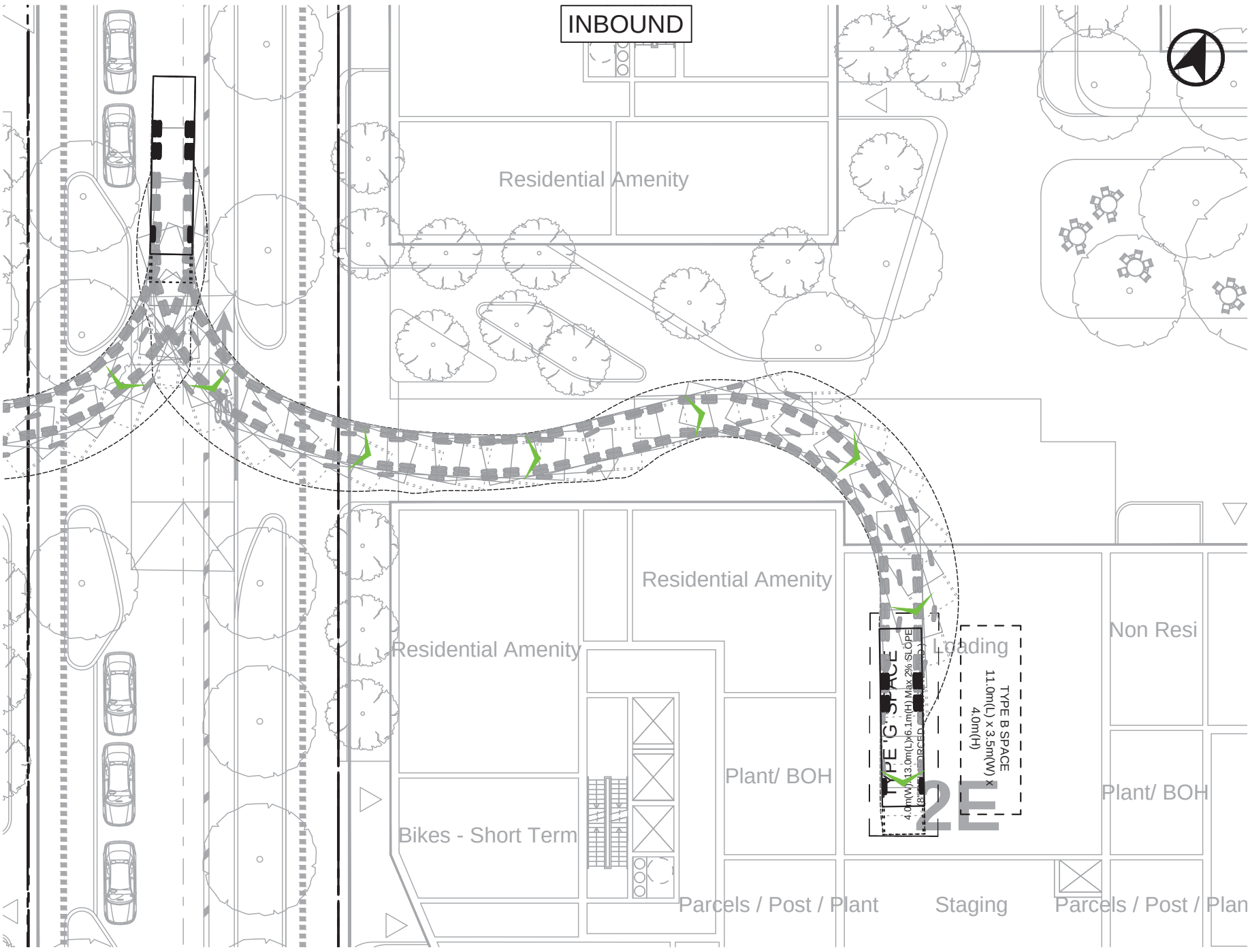
REGENT PARK PHASES 4 & 5

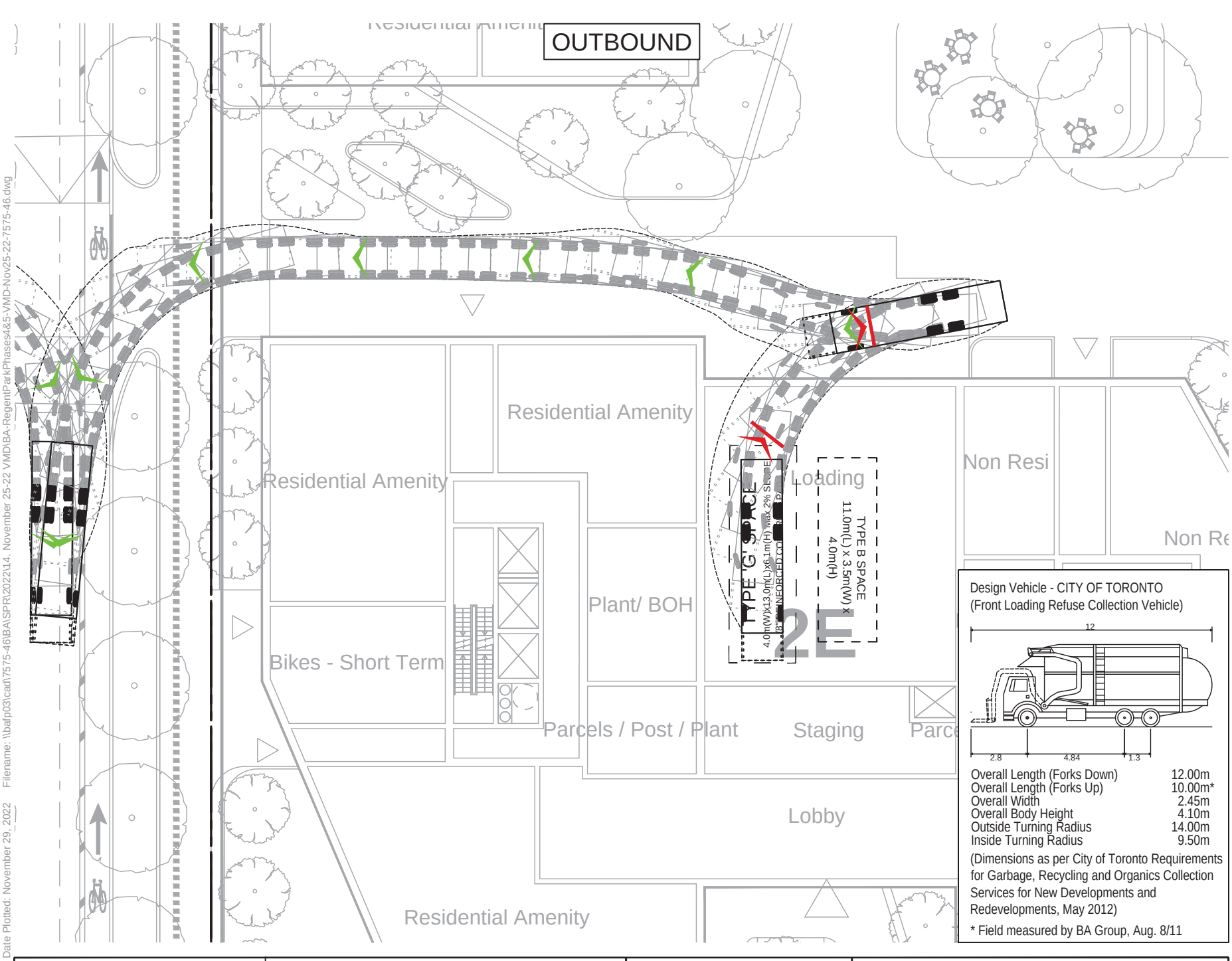
VEHICULAR MANOEUVRING DIAGRAM
Buildings 1A
TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-02C





Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)

Overall Length (Forks Down)	12.00m
Overall Length (Forks Up)	10.00m*
Overall Width	2.45m
Overall Body Height	4.10m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)

* Field measured by BA Group, Aug. 8/11

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

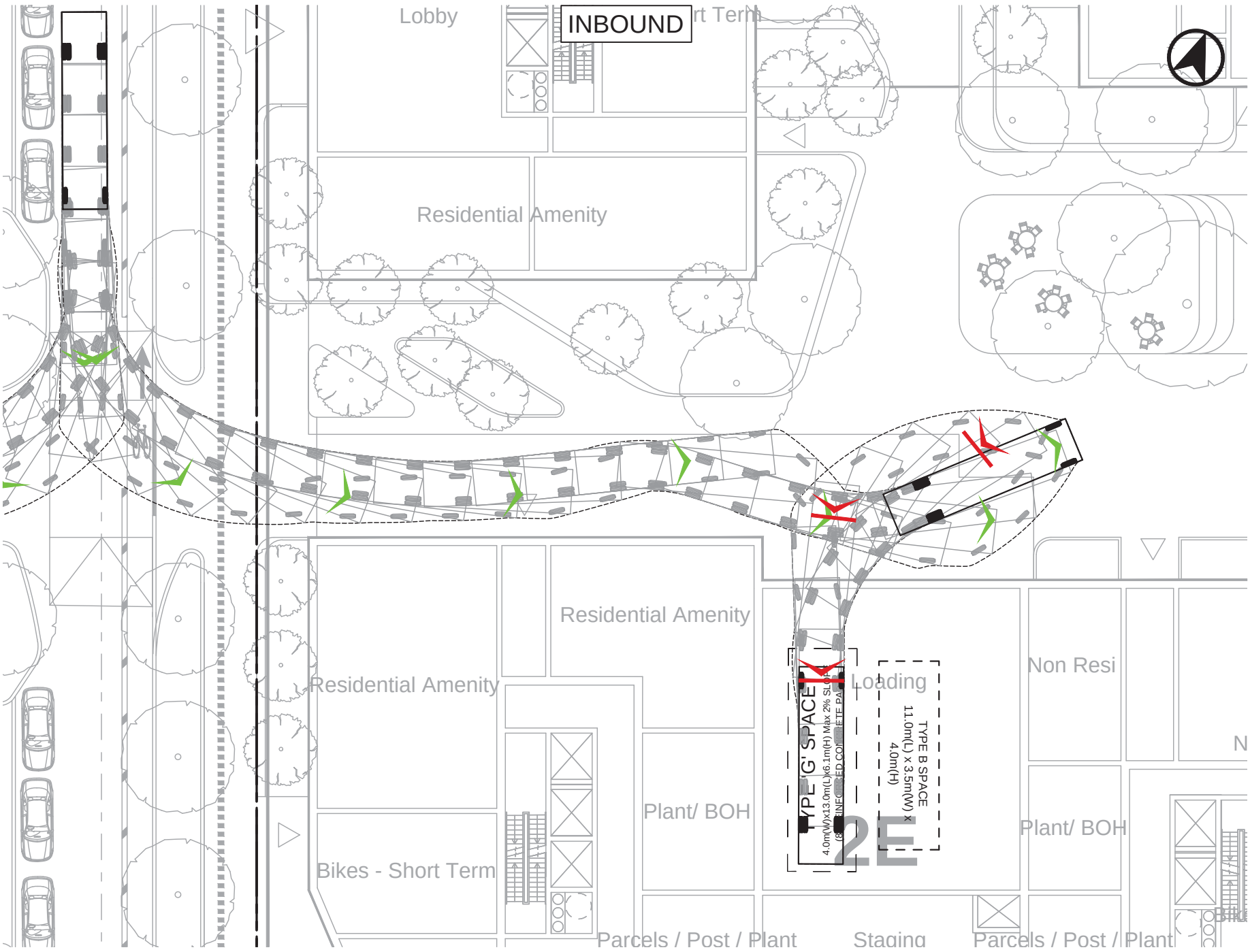
REGENT PARK PHASES 4 & 5

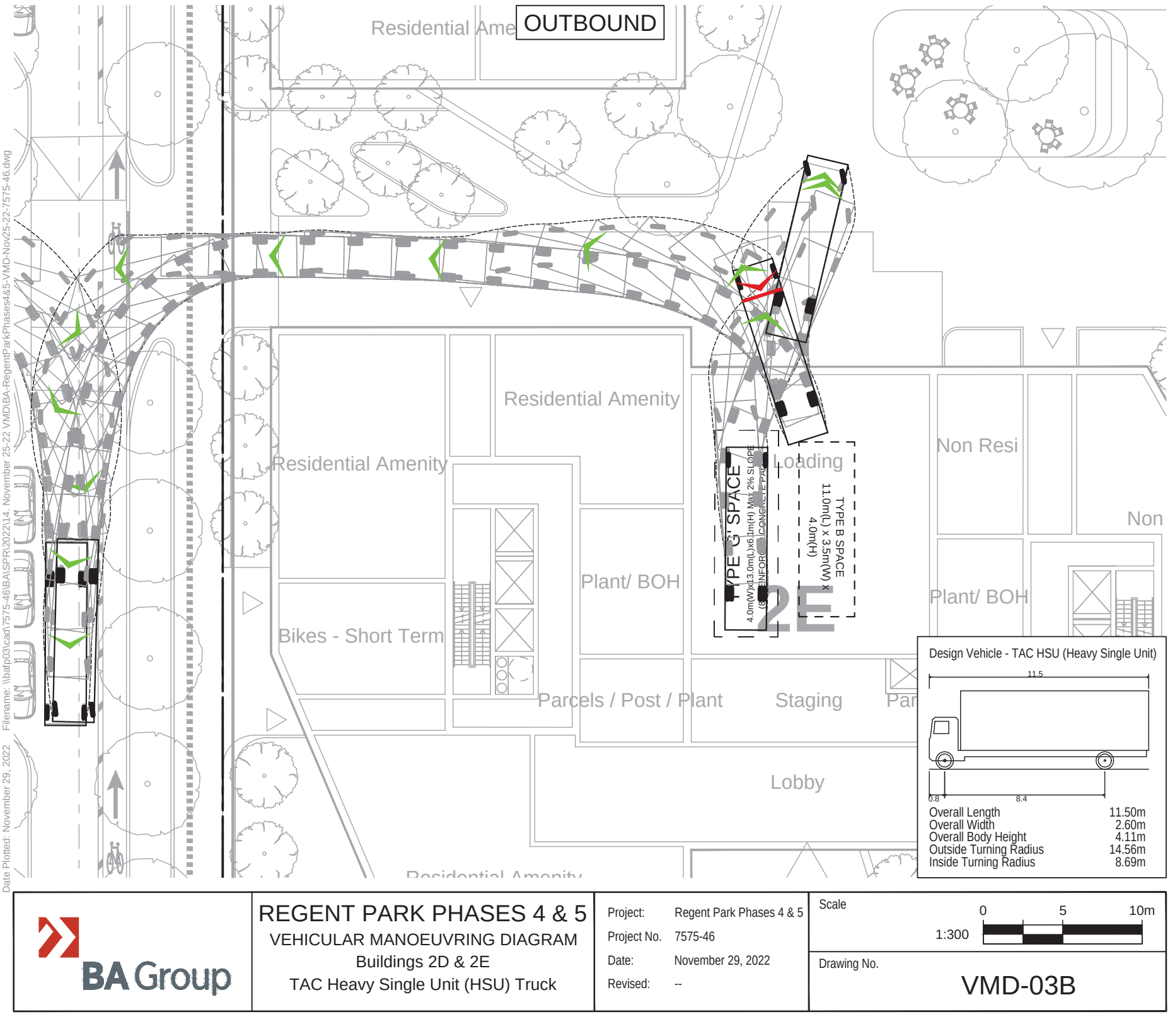
VEHICULAR MANOEUVRING DIAGRAM
Buildings 2D & 2E
City of Toronto Front Loading Garbage Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-03A





Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 2D & 2E
TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-03B

INBOUND

Residential Amenity

Residential Amenity

Residential Amenity

Loading

Non Resi

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
REINFORCED CONCRETE PAD)

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

2E

Plant/ BOH

Plant/ BOH

Bikes - Short Term

Parcels / Post / Plant

Staging

Parcels / Post / Plant

OUTBOUND

Residential Amenity

Residential Amenity

Residential Amenity

Loading

Non Resi

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
REINFORCED CONCRETE PAD)

TYPE B SPACE
11.0m(L) x 3.5m(W) x 4.0m(H)

2E

Plant/ BOH

Plant/ BOH

Bikes - Short Term

Parcels / Post / Plant

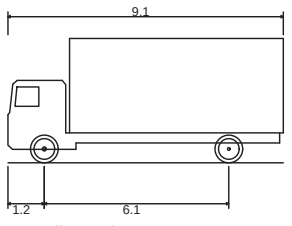
Staging

Parcels / Post / Pla

Lobby

Residential Amenity

Design Vehicle - TAC SU (Single Unit Truck)



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

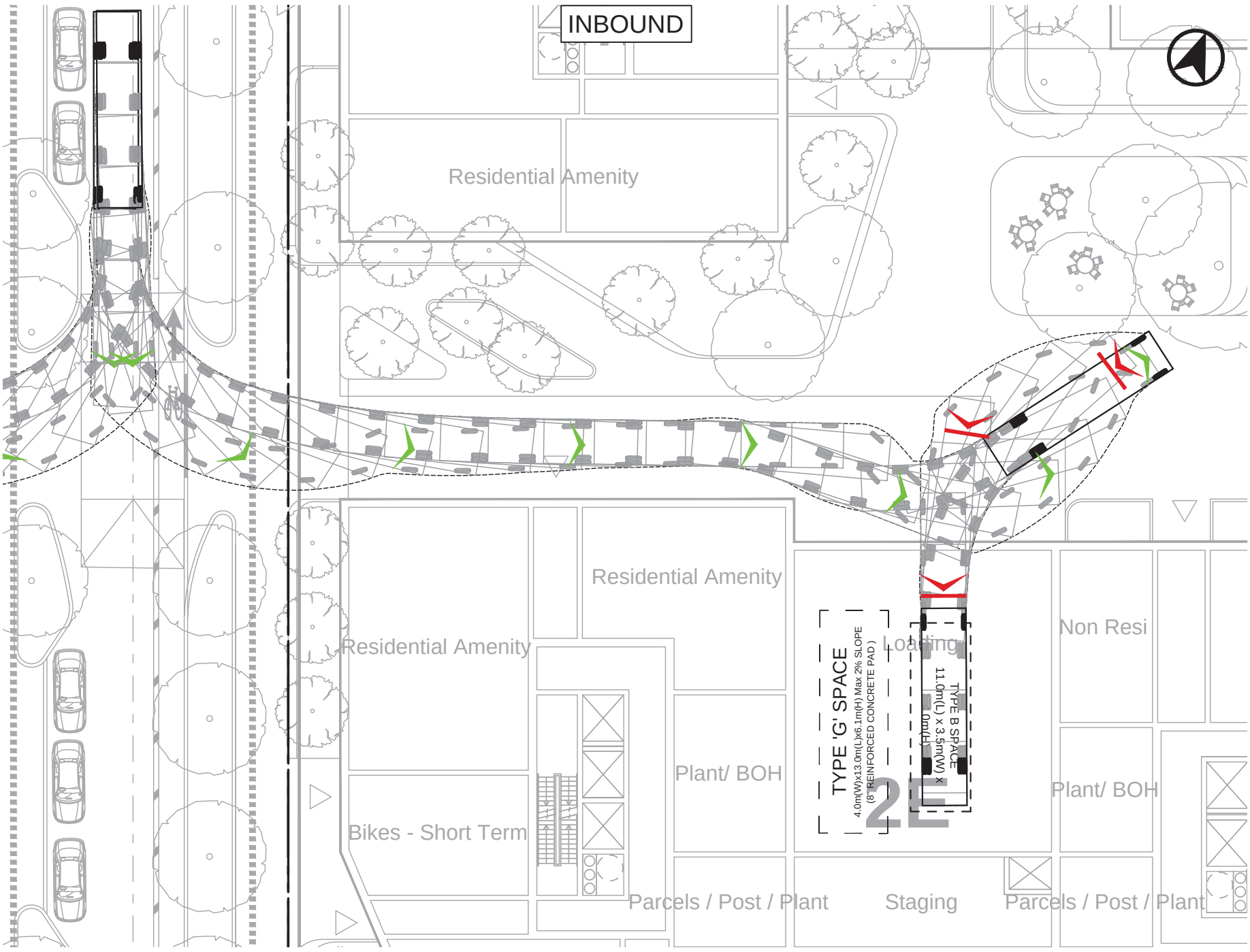
REGENT PARK PHASES 4 & 5

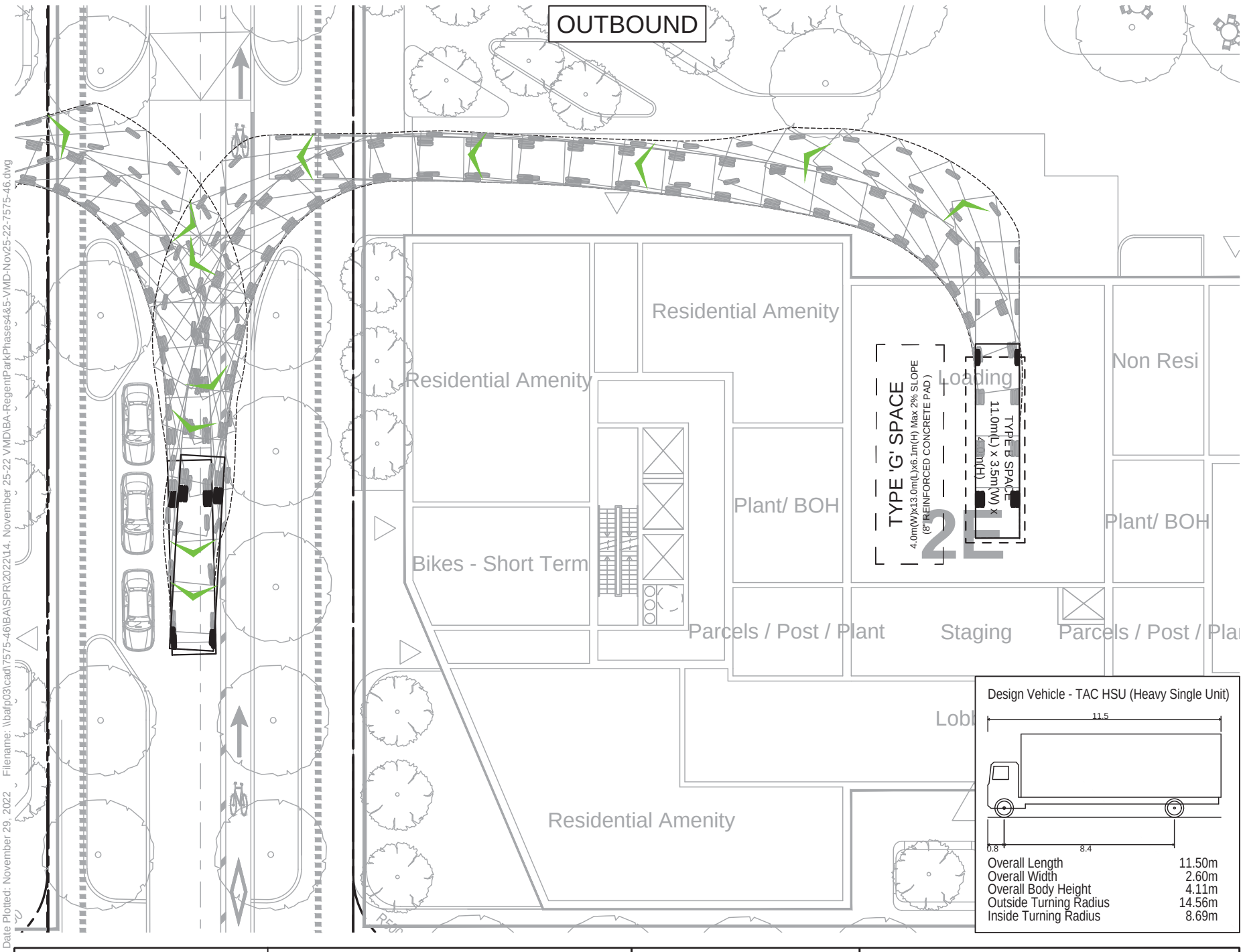
VEHICULAR MANOEUVRING DIAGRAM
Buildings 2D & 2E
TAC Single Unit (SU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-03C





Design Vehicle - TAC HSU (Heavy Single Unit)

Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 2D & 2E
TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-03C

INBOUND

Residential Amenity

Residential Amenity

Community

Residential Amenity

Residential Amenity

Management

Staging

Management

Parcels/ Post/ Plant

Lobby

Bikes - Short Term

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

TYPE G SPACE
4.0m(W) x 13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

OUTBOUND

Bikes - S

Lobby

Residential Amenity

Residential Amenity

Community

Residential Amenity

Residential Amenity

Management

Staging

Management

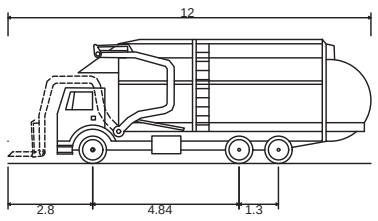
Parcels/ Post/ Plant

Bikes - Short Term

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

TYPE G SPACE
4.0m(W) x 13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)



Overall Length (Forks Down)	12.00m
Overall Length (Forks Up)	10.00m*
Overall Width	2.45m
Overall Body Height	4.10m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)

* Field measured by BA Group, Aug. 8/11

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 2H & 2I
City of Toronto Front Loading Garbage Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-04A

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

INBOUND

Residential Amenity

Residential Amenity

Community

Loading

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
REINFORCED CONCRETE

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

2I

Residential Amenity

Residential Amenity

Management

Management

Staging

Parcels/ Post/ Plant

Bikes - Short Term

Lobby

OUTBOUND

Bikes - Short Term

Lobby

Residential Amenity

Residential Amenity

Community

Loading

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
REINFORCED CONCRETE

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

2I

Residential Amenity

Residential Amenity

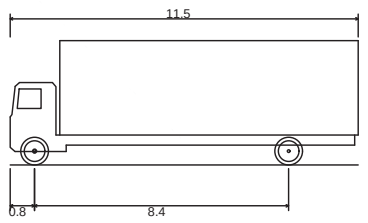
Management

Management

Staging

Bikes - Short Term

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM

Buildings 2H & 2I

TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-04B

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

INBOUND

Residential Amenity

Residential Amenity

Community

Residential Amenity

Residential Amenity

Management

Staging

Management

Bikes - Short Term

Parcels/ Post/ Plant

Lobby

nity

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

2I

OUTBOUND

Bikes - Short Term

Lobby

R.O.W

Residential Amenity

Residential Amenity

Community

Residential Amenity

Residential Amenity

nagement

Staging

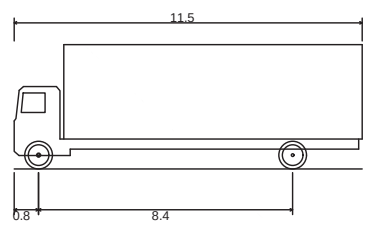
Management

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

2I

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

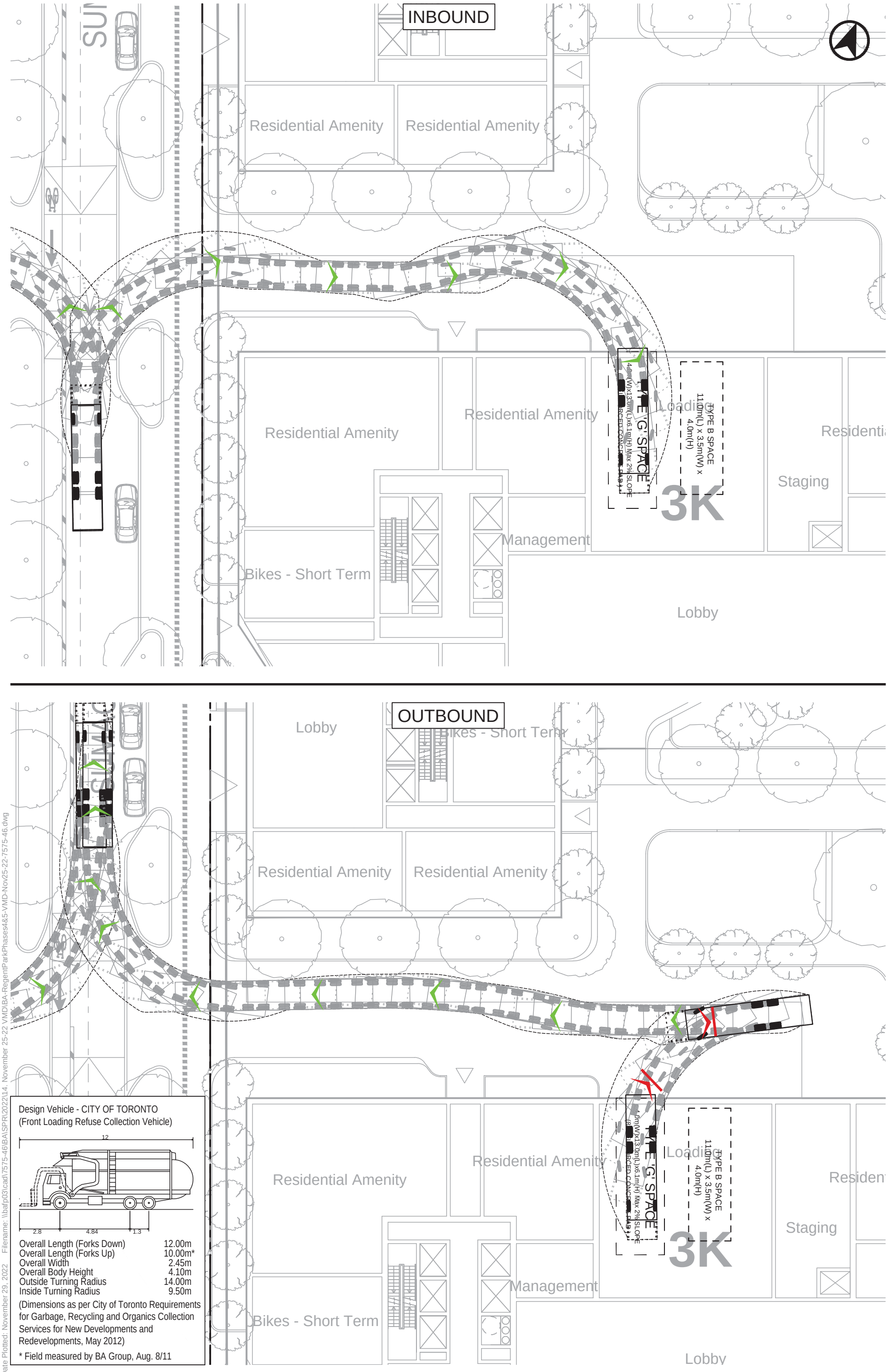
REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 2H & 2I
TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-04C



Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)

Overall Length (Forks Down)	12.00m
Overall Length (Forks Up)	10.00m*
Overall Width	2.45m
Overall Body Height	4.10m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)

* Field measured by BA Group, Aug. 8/11

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\20221114- November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 3J & 3K
City of Toronto Front Loading Garbage Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-05A

INBOUND

Residential Amenity

Residential Amenity

Residential Amenity

Residential Amenity

Loading

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

3K

Residentia

Staging

Management

Bikes - Short Term

Lobby

Residential Amenity

OUTBOUND

Lobby

Bikes - Short Term

Residential Amenity

Residential Amenity

Residential Amenity

Residential Amenity

Loading

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

3K

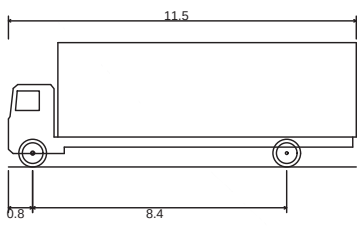
Residenti

Staging

Management

Bikes - Short Term

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM

Buildings 3J & 3K

TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-05B

INBOUND

Residential Amenity

Residential Amenity

Residential Amenity

Residential Amenity

Residential A

Loading

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

TYPE 'B' SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

3K

Staging

Management

Bikes - Short Term

Lobby

OUTBOUND

Lobby

Bikes - Short Term

Residential Amenity

Residential Amenity

Residential Amenity

Residential Amenity

Residential A

Loading

TYPE 'G' SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

TYPE 'B' SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

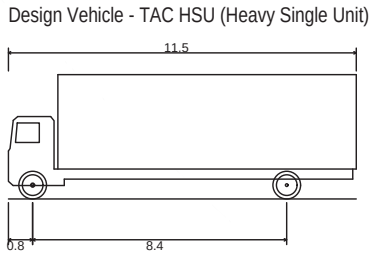
3K

Staging

Management

Bikes - Short Term

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM
Buildings 3J & 3K
TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-05C

INBOUND

Bikes - Short Term

Lobby

Residential Amenity

Residential Amenity

RIVER STREET

HP

BACK OF CURB

ASPHALT EDGE

Loading

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

3M

G SPACE

Community

Community

ntial Amenity

els / Post / Plant

Staging

Parcels/ Post/ Plant

Bikes - Non Residential

OUTBOUND

dential Amenity

Loading

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

3M

G SPACE

Community

Community

rcels / Post / Plant

Staging

Parcels/ Post/ Plant

Bikes - Non Residential

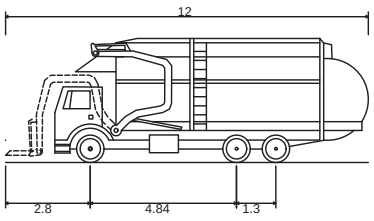
Lobby

Community

R500

PB

Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)



Overall Length (Forks Down)	12.00m
Overall Length (Forks Up)	10.00m*
Overall Width	2.45m
Overall Body Height	4.10m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)

* Field measured by BA Group, Aug. 8/11

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\20221114_November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM

Buildings 3L & 3M

City of Toronto Front Loading Garbage Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 (0, 5, 10m)

Drawing No. VMD-06A

INBOUND

Bikes - Short Term

Lobby

Residential Amenity

Residential Amenity

RIVER STREET

BACK OF CURB

ASPHALT EDGE

Loading

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

TYPE 'G' SPACE
4.0m(W) x 7.0m(L) x 6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

3M

Community

Community

al Amenity

/ Post / Plant

Staging

Parcels/ Post/ Plant

Bikes - Non Residential

OUTBOUND

Residential Amenity

RIVER S

Loading

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

TYPE 'G' SPACE
4.0m(W) x 7.0m(L) x 6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE PAD)

3M

Community

Community

tial Amenity

s / Post / Plant

Staging

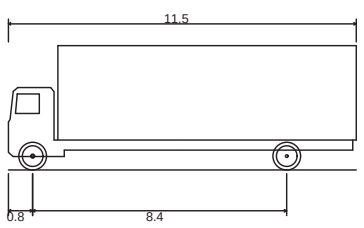
Parcels/ Post/ Plant

Bikes - Non Residential

bby

Community

Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM

Buildings 3L & 3M

TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 0 5 10m

Drawing No. VMD-06B

INBOUND

Bikes - Short Term

Lobby

Residential Amenity

Residential Amenity

RIVER STREET

Hp

CB

ASPHALT EDGE

BACK OF CURB

Loading

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

TYPE G SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
(8" REINFORCED CONCRETE SLAB)

3M

Community

Community

al Amenity

/ Post / Plant

Staging

Parcels/ Post/ Plant

Bikes - Non Residential

OUTBOUND

Reside

Residential Amenity

RIVER

RIVER S

Loading

TYPE B SPACE
11.0m(L) x 3.5m(W) x
4.0m(H)

TYPE G SPACE
4.0m(W)x13.0m(L)x6.1m(H) Max 2% SLOPE
8" REINFORCED CONCRETE P

3M

Community

Community

ial Amenity

s / Post / Plant

Staging

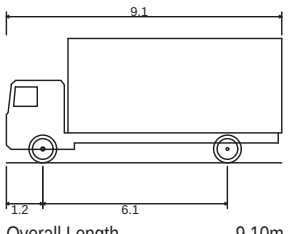
Parcels/ Post/ Plant

Bikes - Non Residential

obby

Community

Design Vehicle - TAC SU (Single Unit Truck)



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM

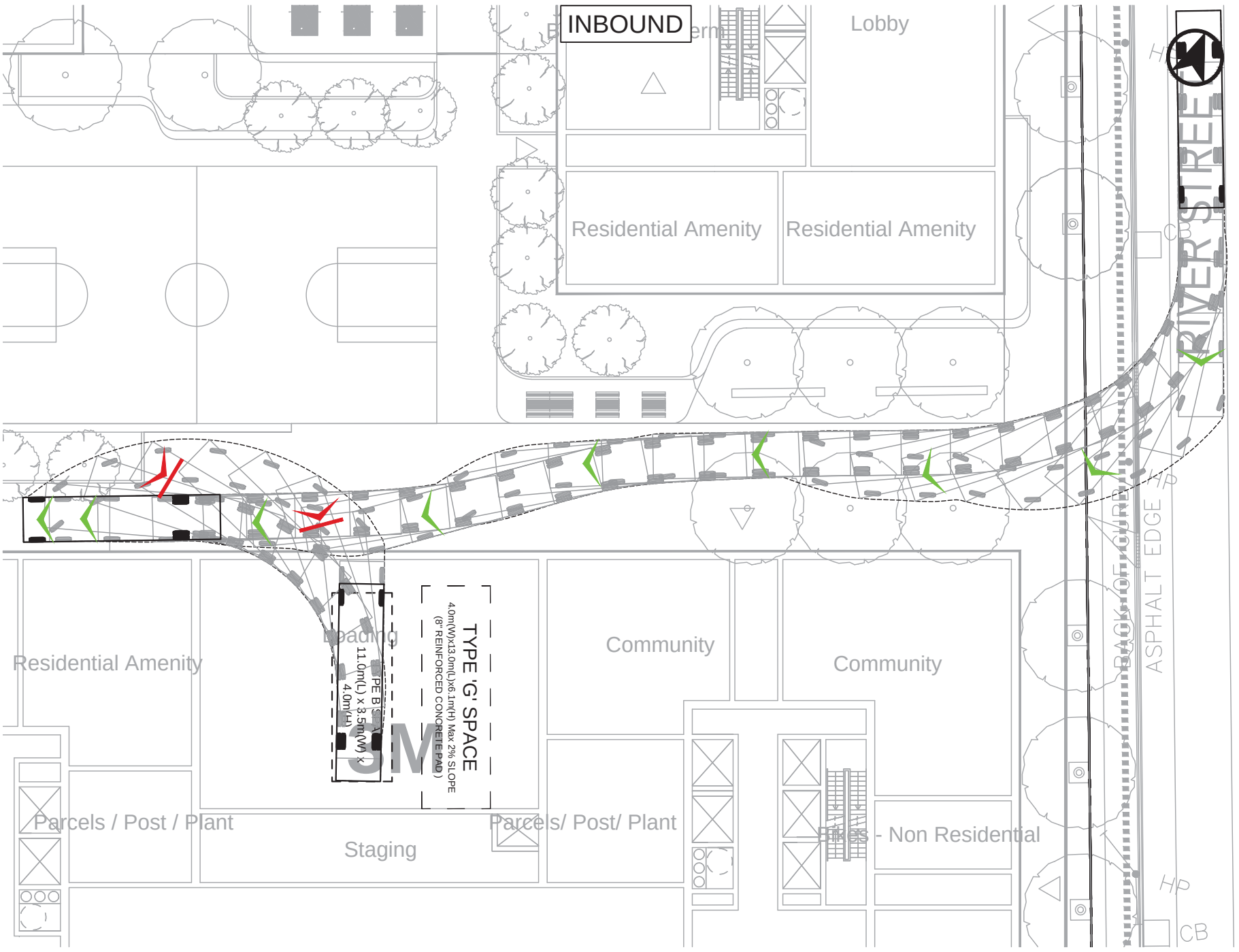
Buildings 3L & 3M

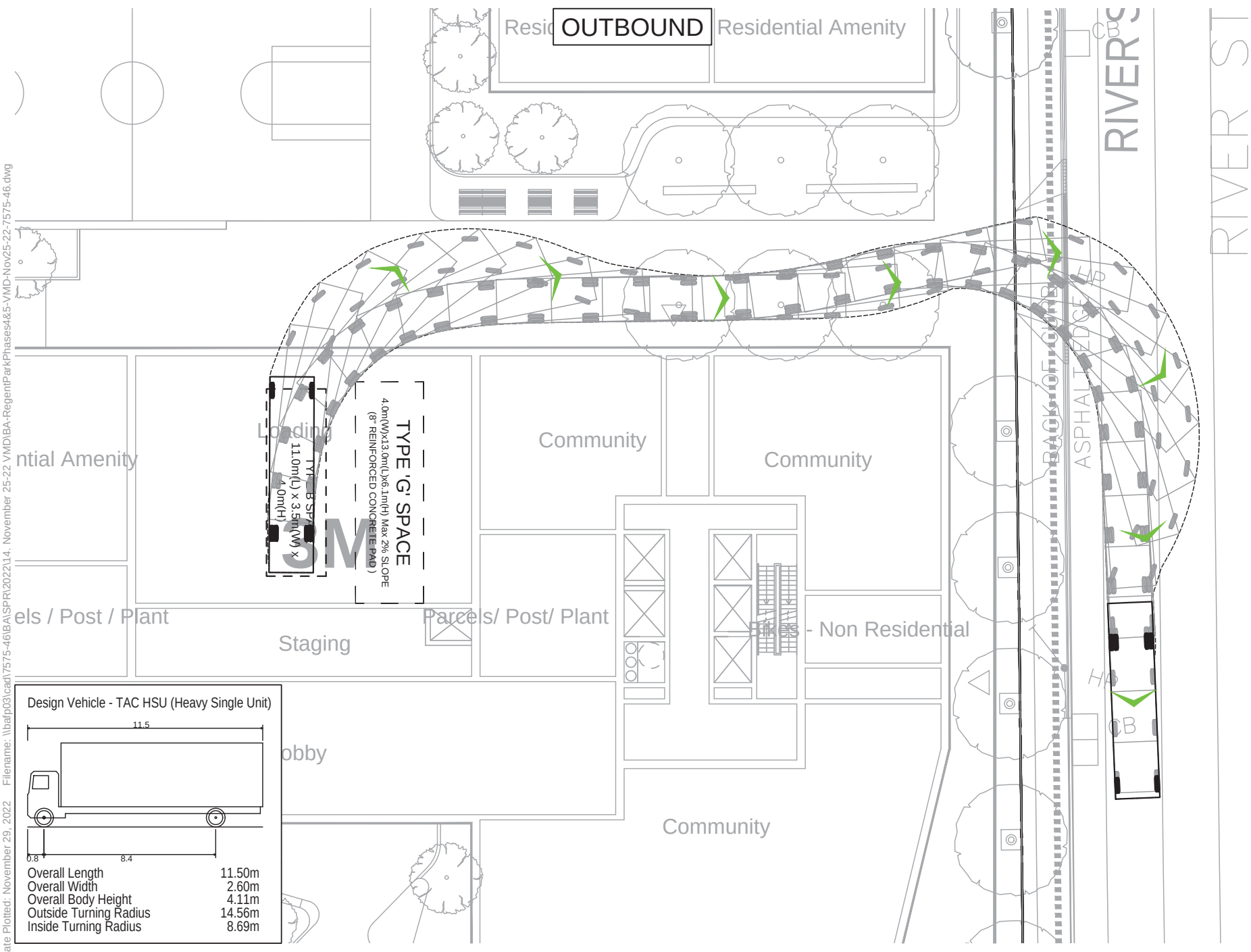
TAC Single Unit (SU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:300 0 5 10m

Drawing No. VMD-06B





Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg

BA Group

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM

Buildings 3L & 3M

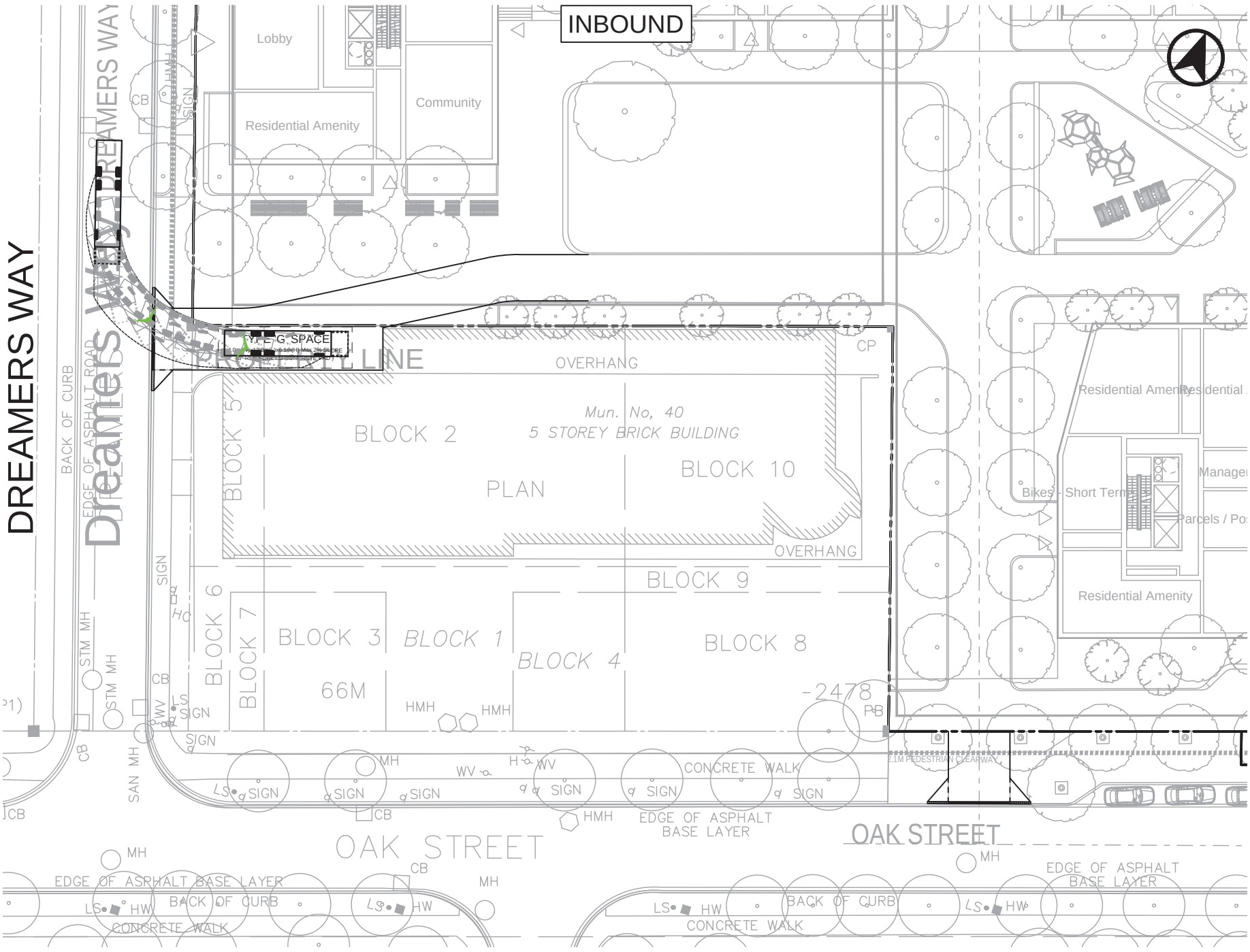
TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

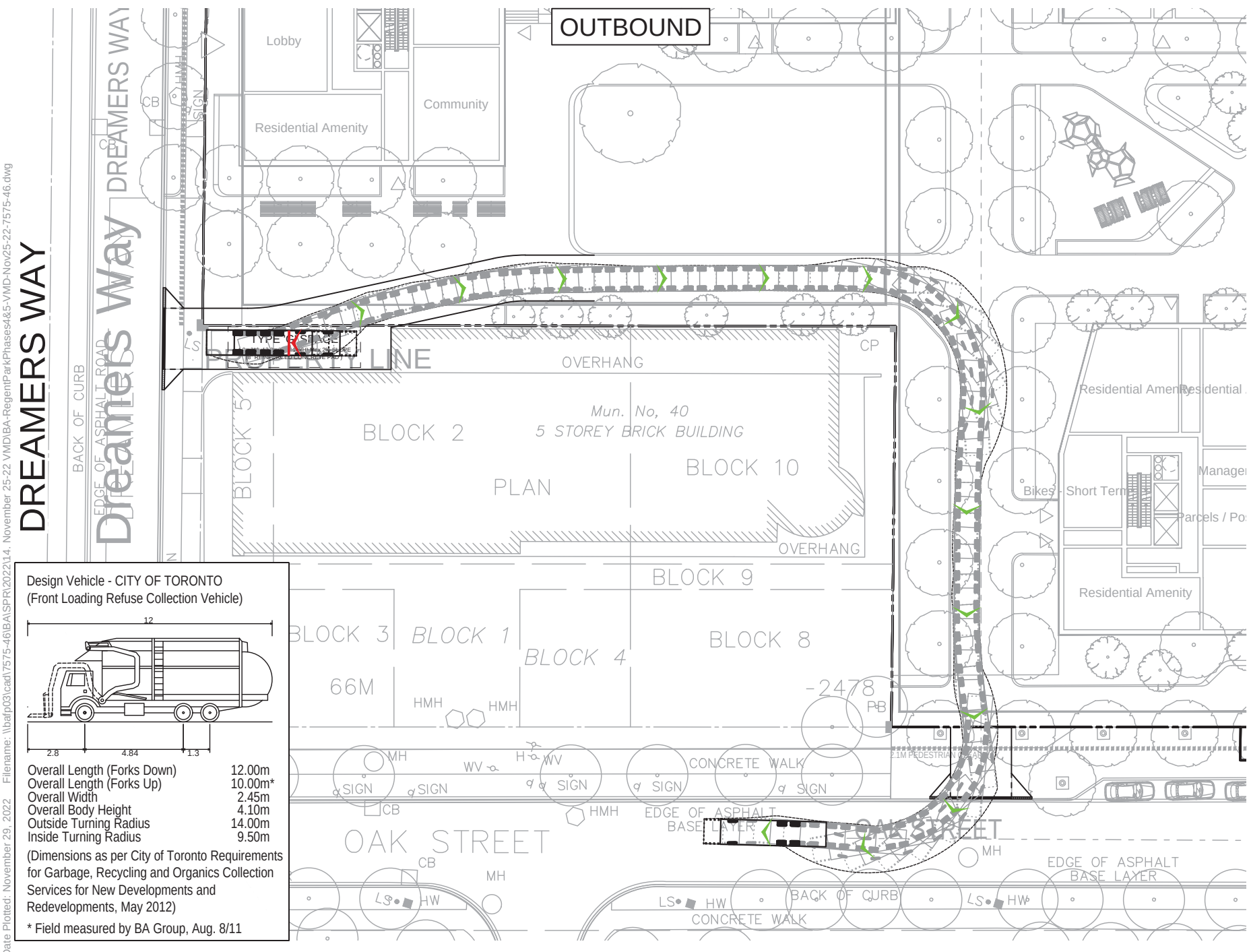
Scale 1:300 (0, 5, 10m)

Drawing No. VMD-06C

INBOUND



OUTBOUND



Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)

Overall Length (Forks Down)	12.00m
Overall Length (Forks Up)	10.00m*
Overall Width	2.45m
Overall Body Height	4.10m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)

* Field measured by BA Group, Aug. 8/11

BA Group

REGENT PARK PHASES 4 & 5

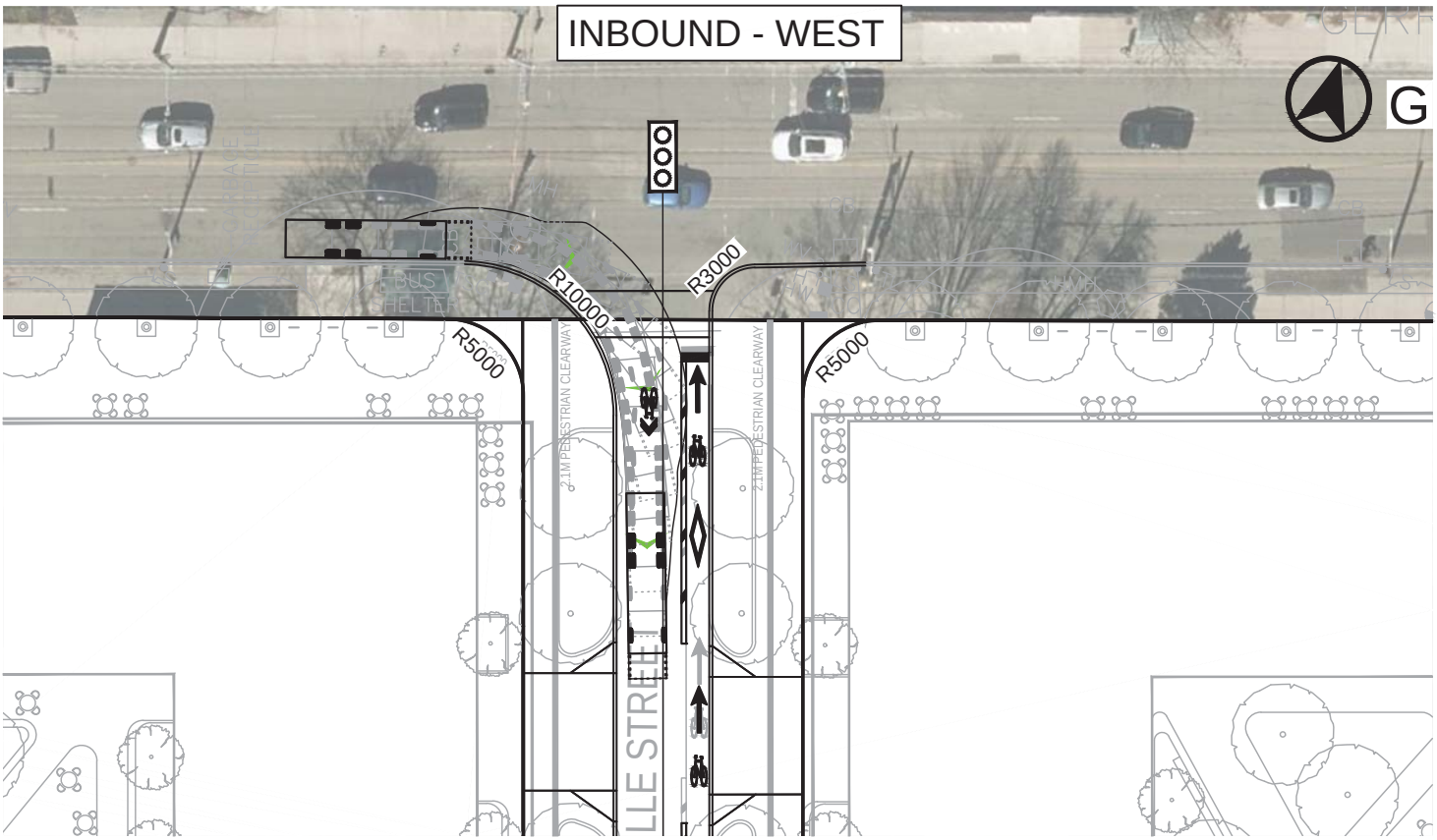
VEHICULAR MANOEUVRING DIAGRAM
Fred Victor Housing
City of Toronto Front Loading Garbage Truck

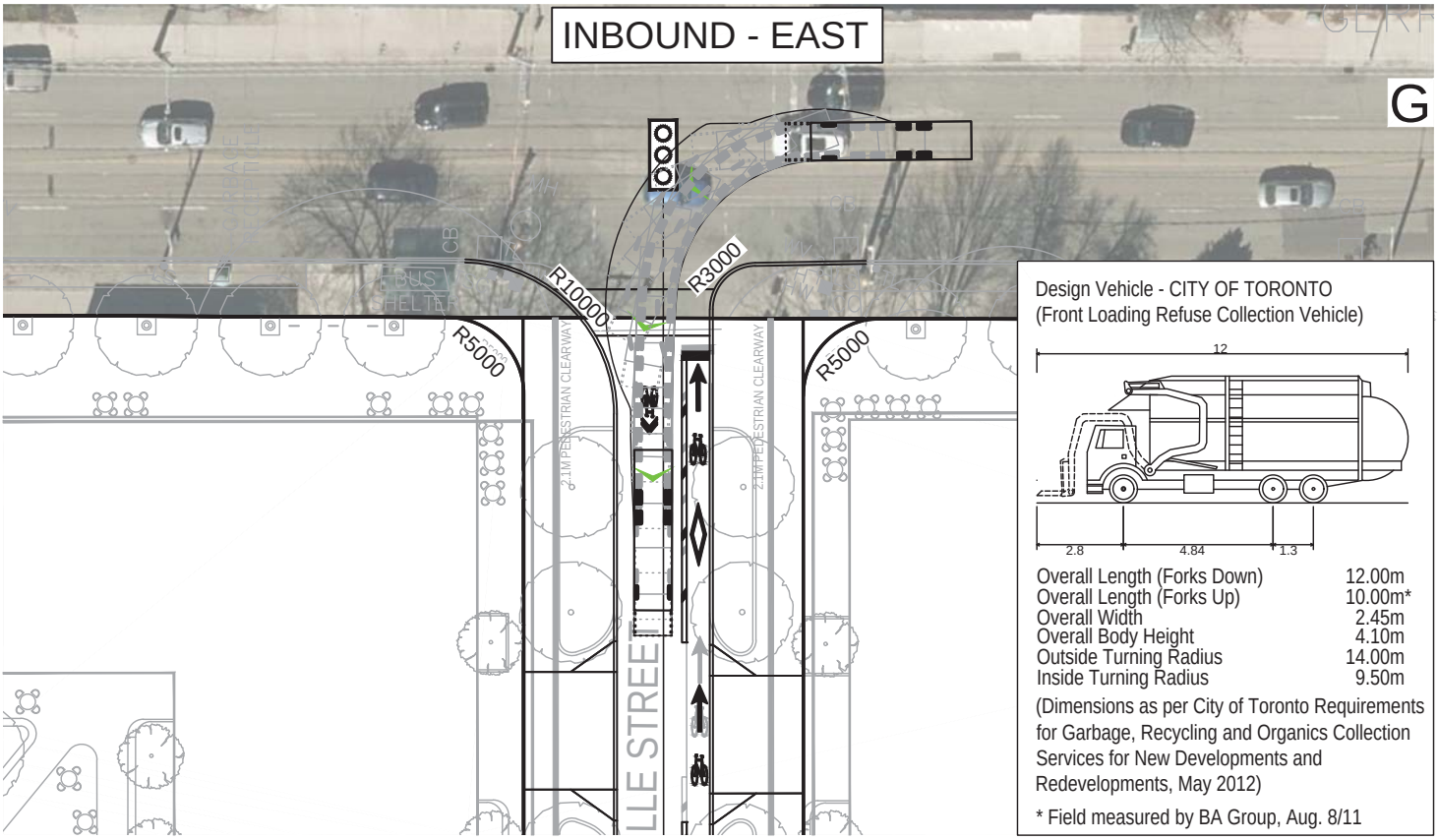
Project:	Regent Park Phases 4 & 5
Project No.	7575-46
Date:	November 29, 2022
Revised:	--

Scale 1:500 (0, 5, 10, 15, 20m)

Drawing No. VMD-07

Date Plotted: November 29, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-RegentParkPhases4&5-VMD-Nov25-22-7575-46.dwg





Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)

Overall Length (Forks Down)	12.00m
Overall Length (Forks Up)	10.00m*
Overall Width	2.45m
Overall Body Height	4.10m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)

* Field measured by BA Group, Aug. 8/11

1:500

Date Plotted: November 28, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-Regent Park Phase4&5-FD-Nov23-22-7575-46 - Gerrard VMDs.dwg

BA Group

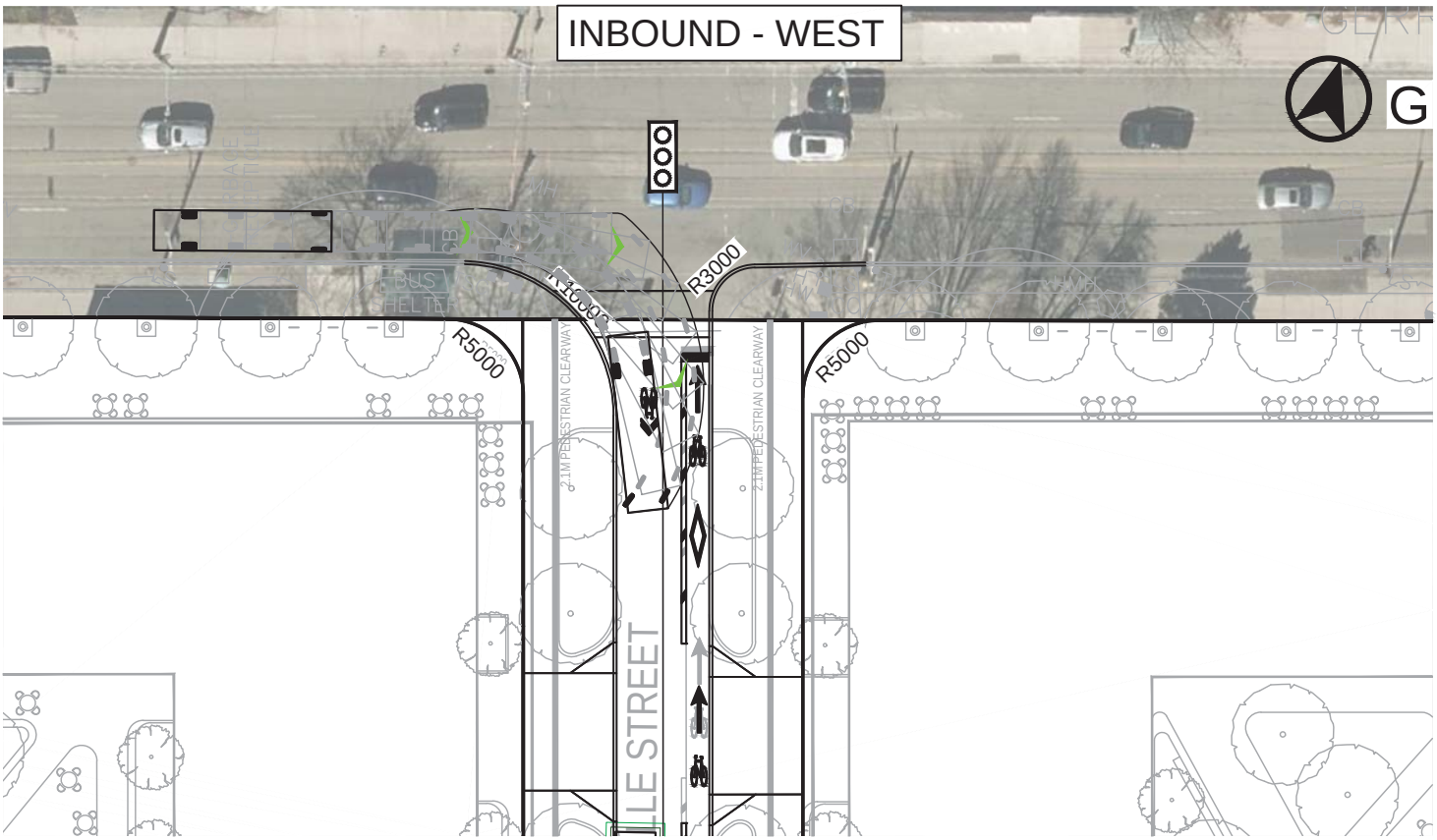
REGENT PARK PHASES 4 & 5

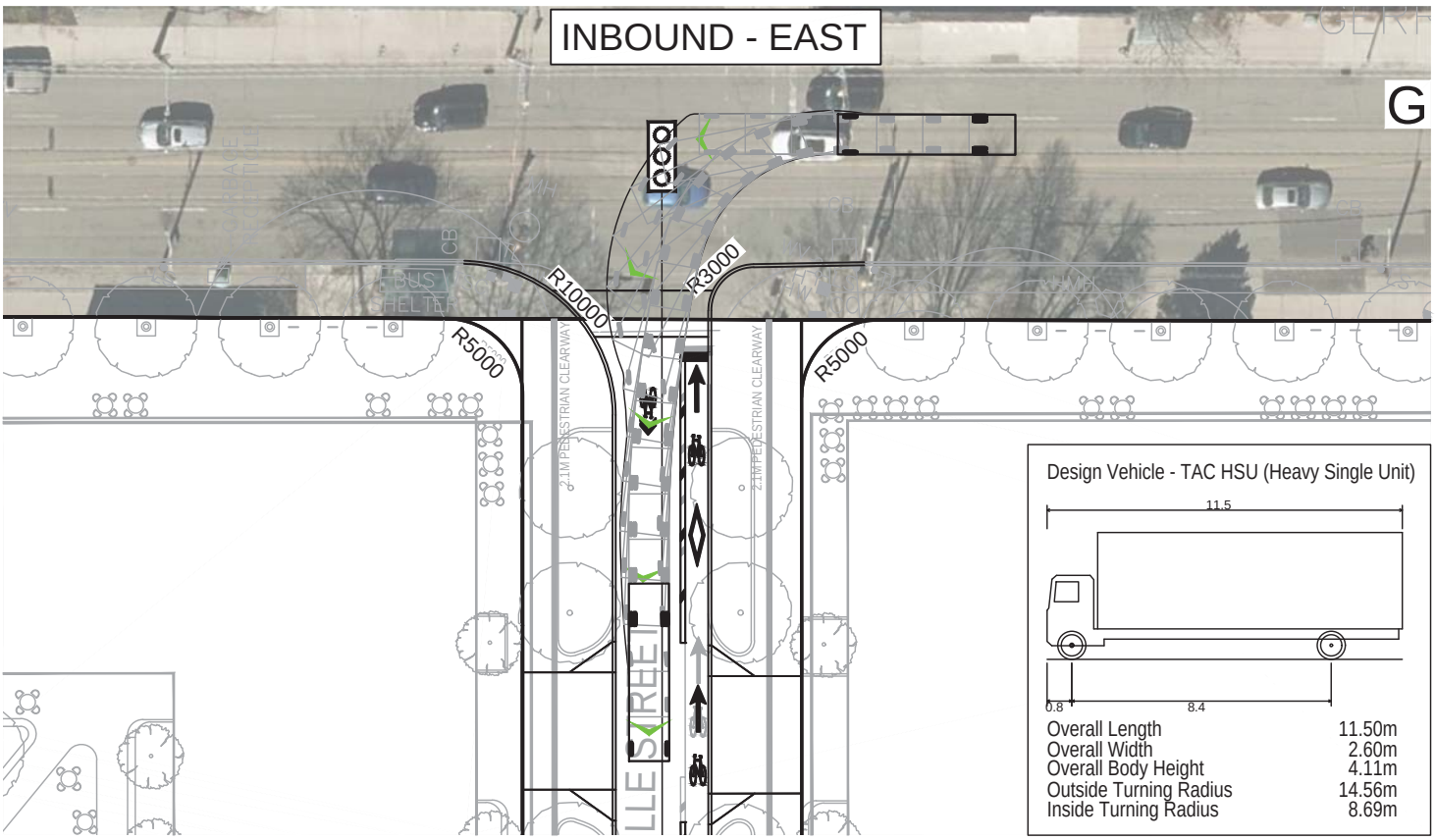
VEHICULAR MANOEUVRING DIAGRAM

Gerrard Ave to Sackville St

City of Toronto Front Loading Garbage Truck

Project:	Regent Park Phases 4&5
Project No.	7575-46
Date:	November 23, 2022
Revised:	--
Drawing No.	VMD-08

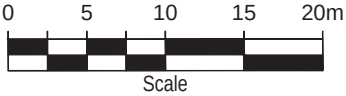




Design Vehicle - TAC HSU (Heavy Single Unit)

Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

1:500



Date Plotted: November 28, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-Regent Park Phase4&5-FD-Nov23-22-7575-46 - Gerrard VMDs.dwg

BA Group

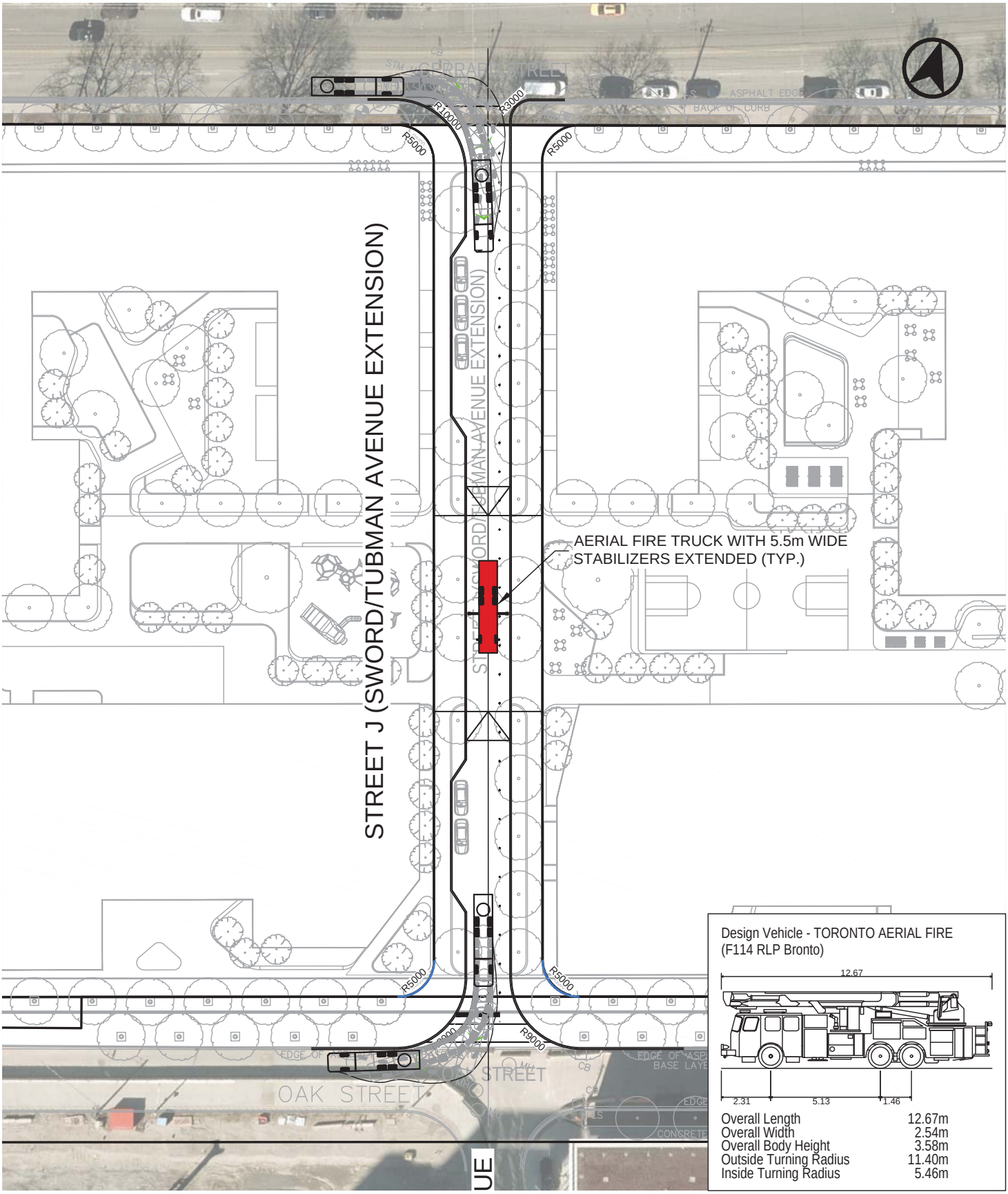
REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM

Gerrard Ave to Sackville St

TAC Heavy Single Unit (HSU) Truck

Project:	Regent Park Phases 4&5
Project No.	7575-46
Date:	November 23, 2022
Revised:	--
Drawing No.	VMD-09



Design Vehicle - TORONTO AERIAL FIRE (F114 RLP Bronto)

Overall Length	12.67m
Overall Width	2.54m
Overall Body Height	3.58m
Outside Turning Radius	11.40m
Inside Turning Radius	5.46m

1:750 Scale: 0 15 30m

REGENT PARK PHASES 4 & 5

VEHICULAR MANOEUVRING DIAGRAM

Gerrard Ave to Street J (Sword/Tubman Ave Extension)

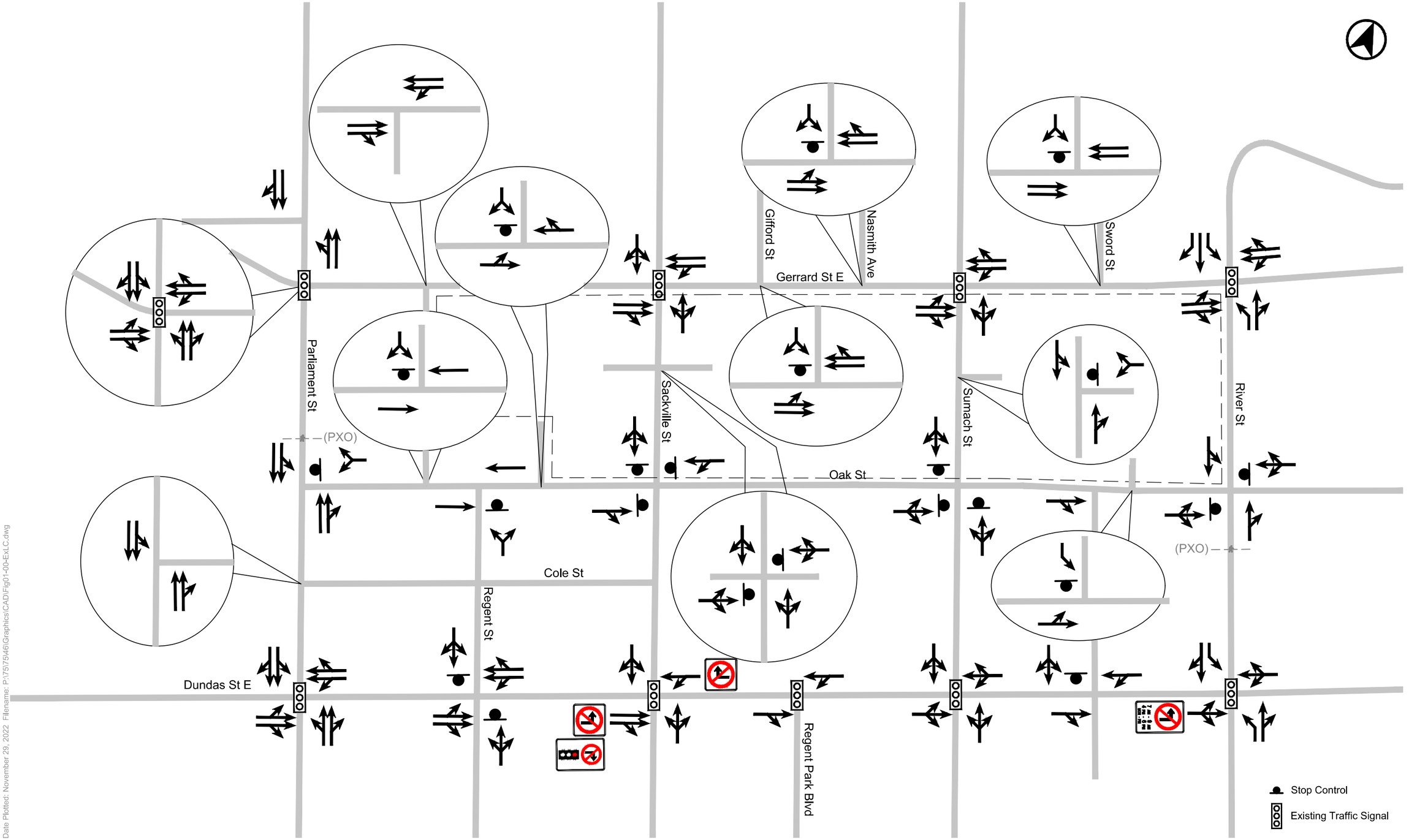
City of Toronto Aerial Fire Truck

BA Group

Project:	Regent Park Phases 4&5
Project No.	7575-46
Date:	November 28, 2022
Revised:	--
Drawing No.	VMD-10

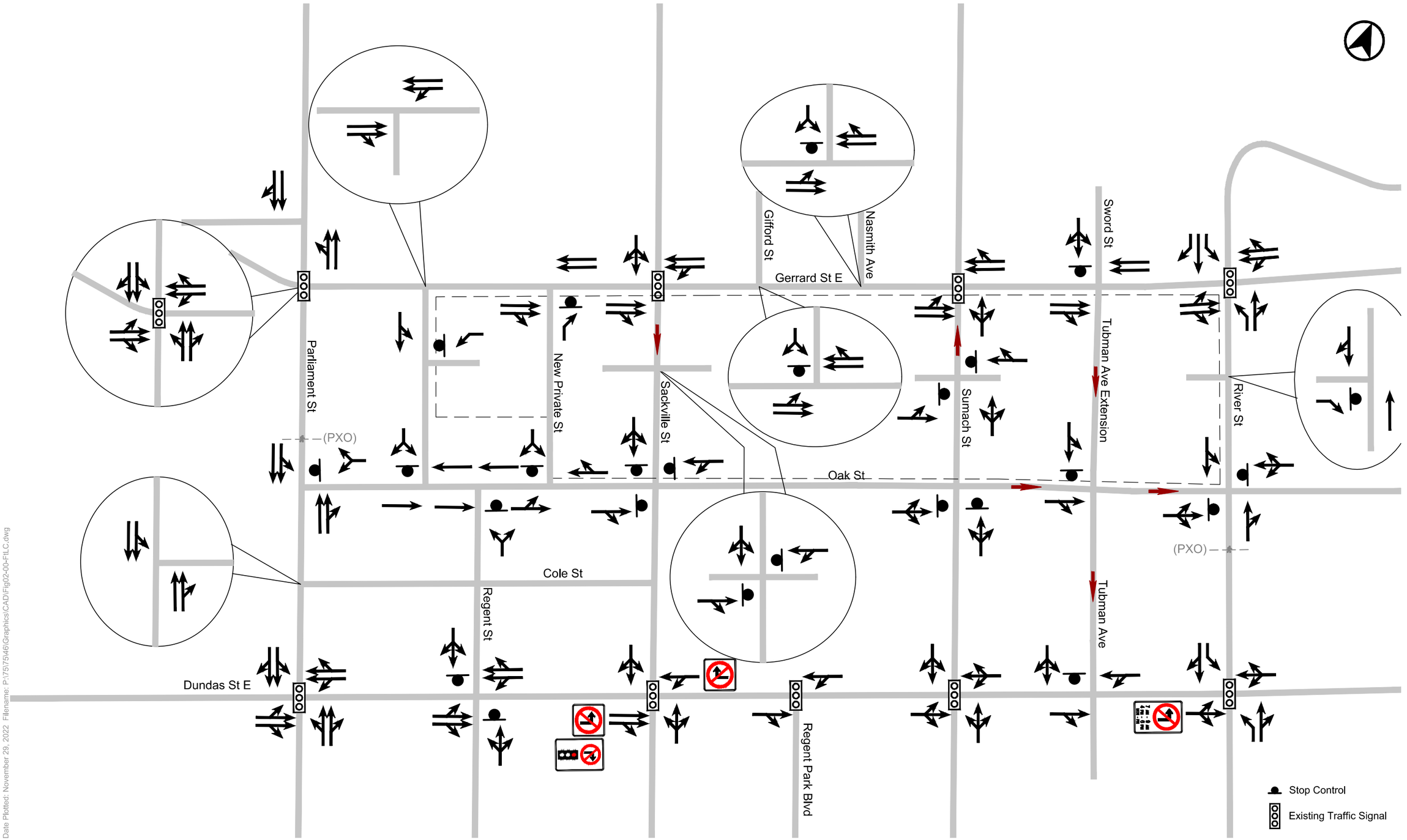
Date Plotted: November 28, 2022 Filename: \\bafp03\cad\7575-46\BA\SPR\2022\14. November 25-22 VMD\BA-Regent Park Phase4&5-FD-Nov23-22-7575-46 - Gerrard VMDs.dwg

Appendix F:
Updated Lane Configuration and Traffic Volume Figures



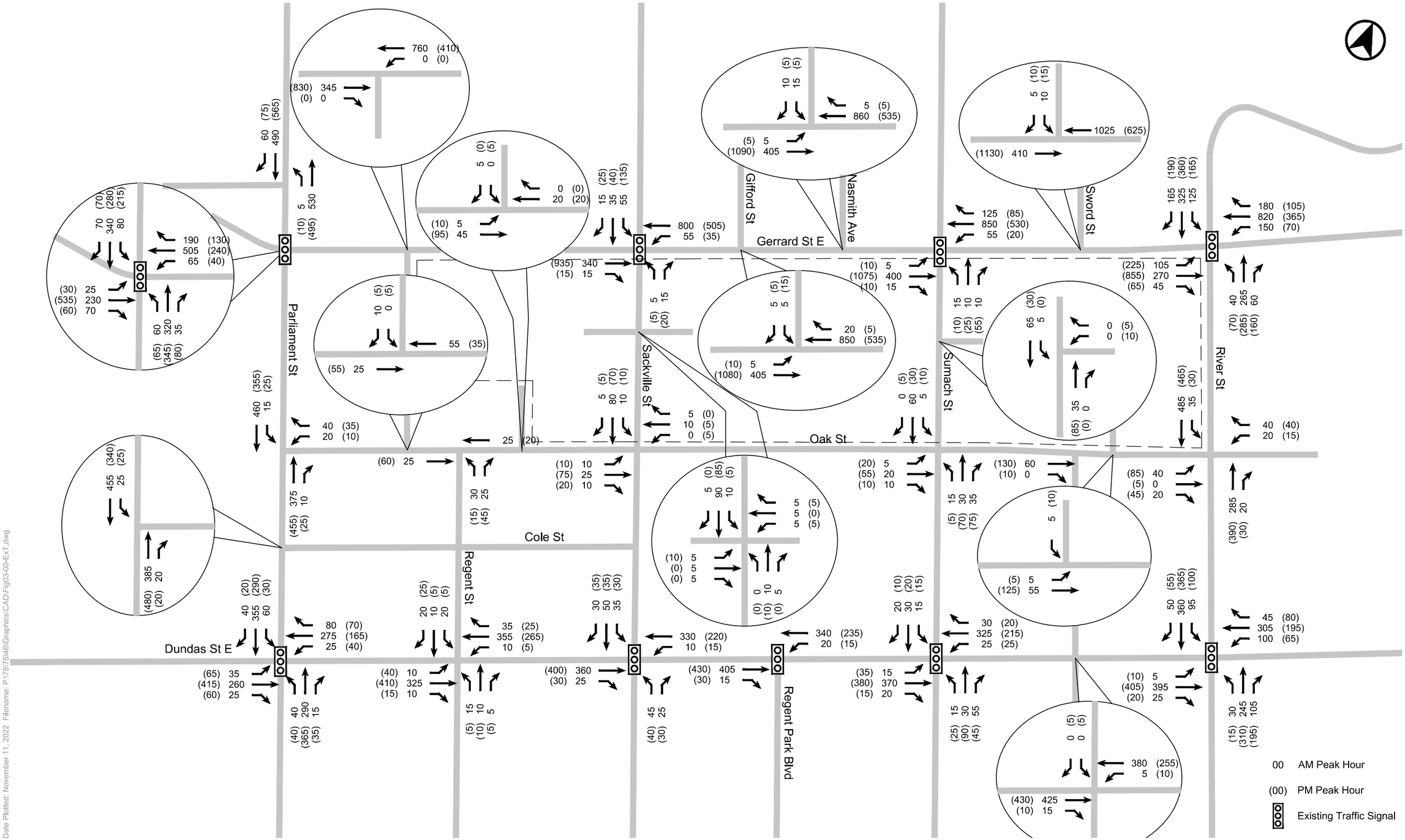
Date Plotted: November 29, 2022 Filename: P:\7575\7546\Graphics\CAD\Fig01-00-ExLC.dwg

FIGURE 1 EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL



Date Plotted: November 29, 2022 Filename: P:\7575\7546\Graphics\CAD\Fig02-00-FILC.dwg

FIGURE 2 PROPOSED LANE CONFIGURATION AND TRAFFIC CONTROL



Date Plotted: November 11, 2022 Filename: P:\75\7546\Graphics\CAD\Fig03-00-ExT.dwg

FIGURE 3 BASELINE EXISTING TRAFFIC VOLUMES

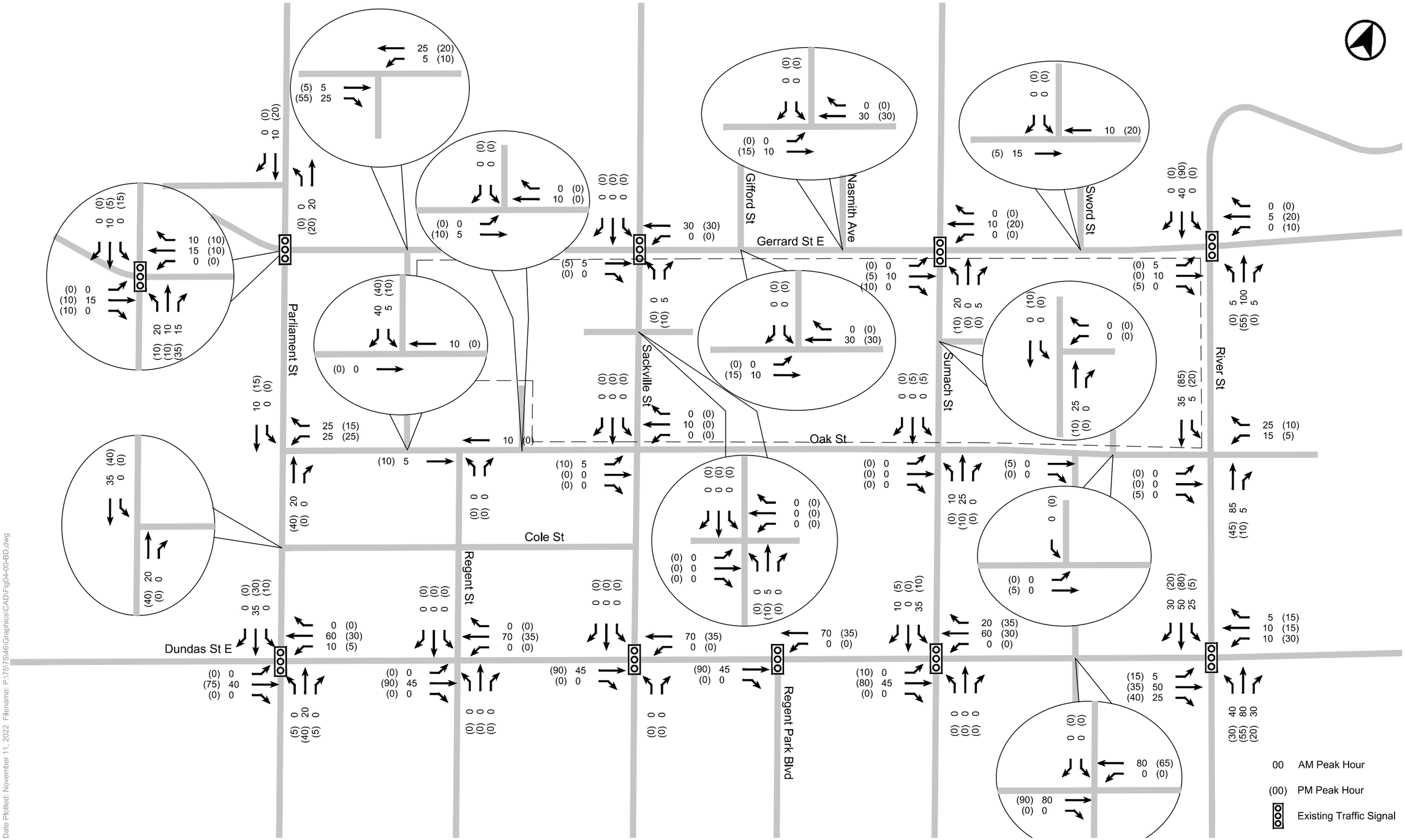
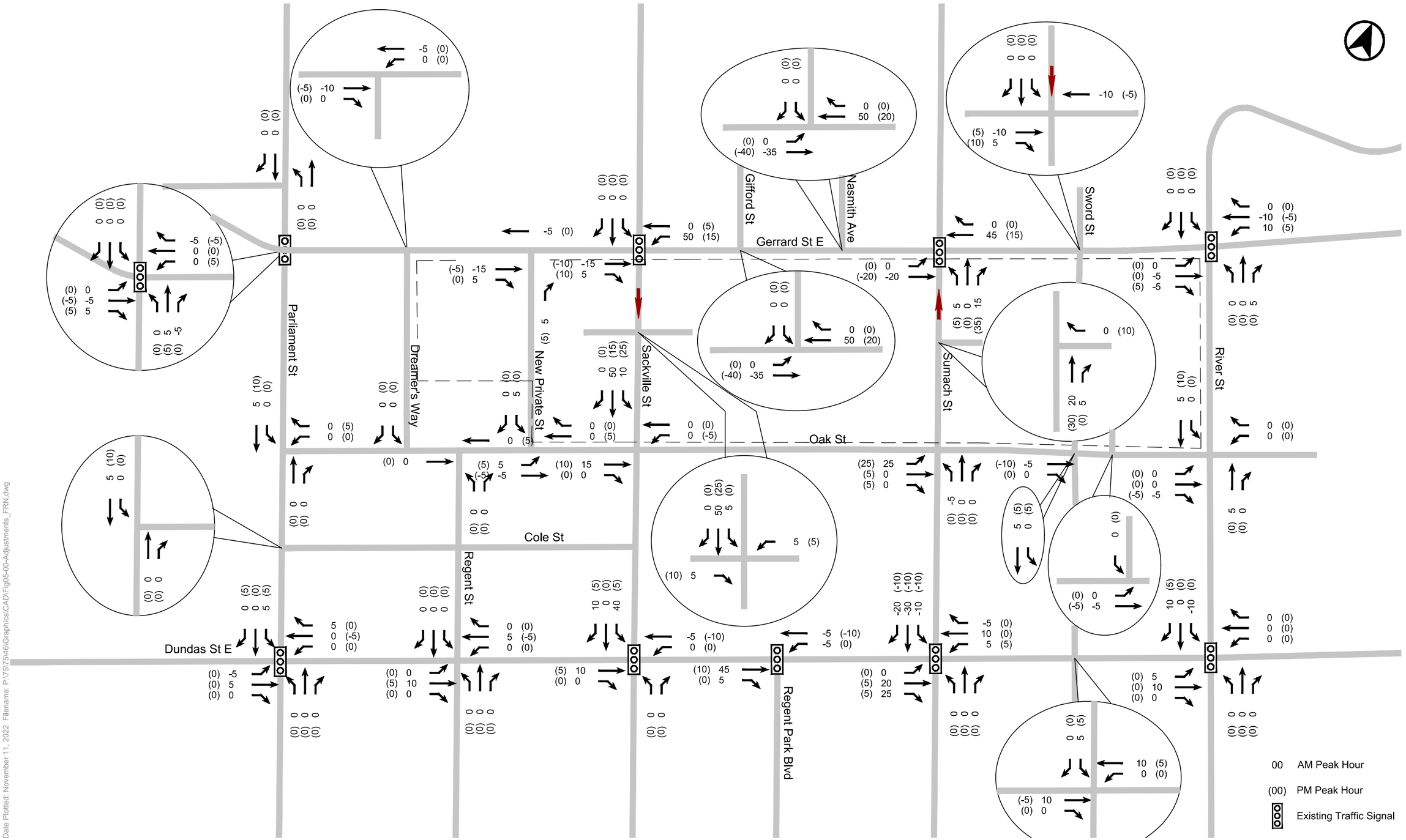


FIGURE 4 BACKGROUND DEVELOPMENT TRAFFIC ALLOWANCES



Date Plotted: November 11, 2022 Filename: P:\7575\46\Graphics\CAD\Fig05-00-Adjustments_FRN.dwg

FIGURE 5 PROPOSED ROAD NETWORK TRAFFIC VOLUME ADJUSTMENTS
(PROPOSED ROAD NETWORK)

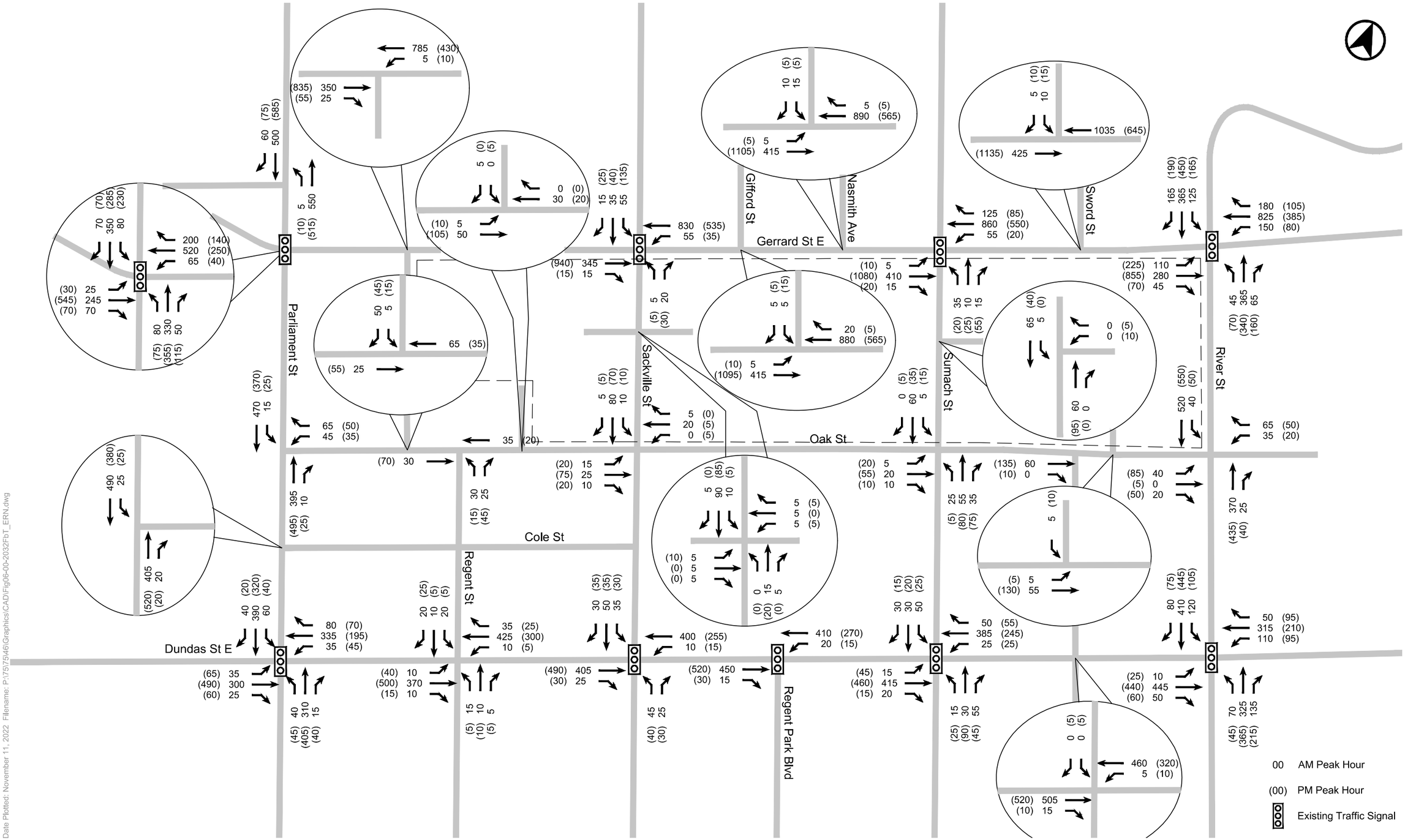
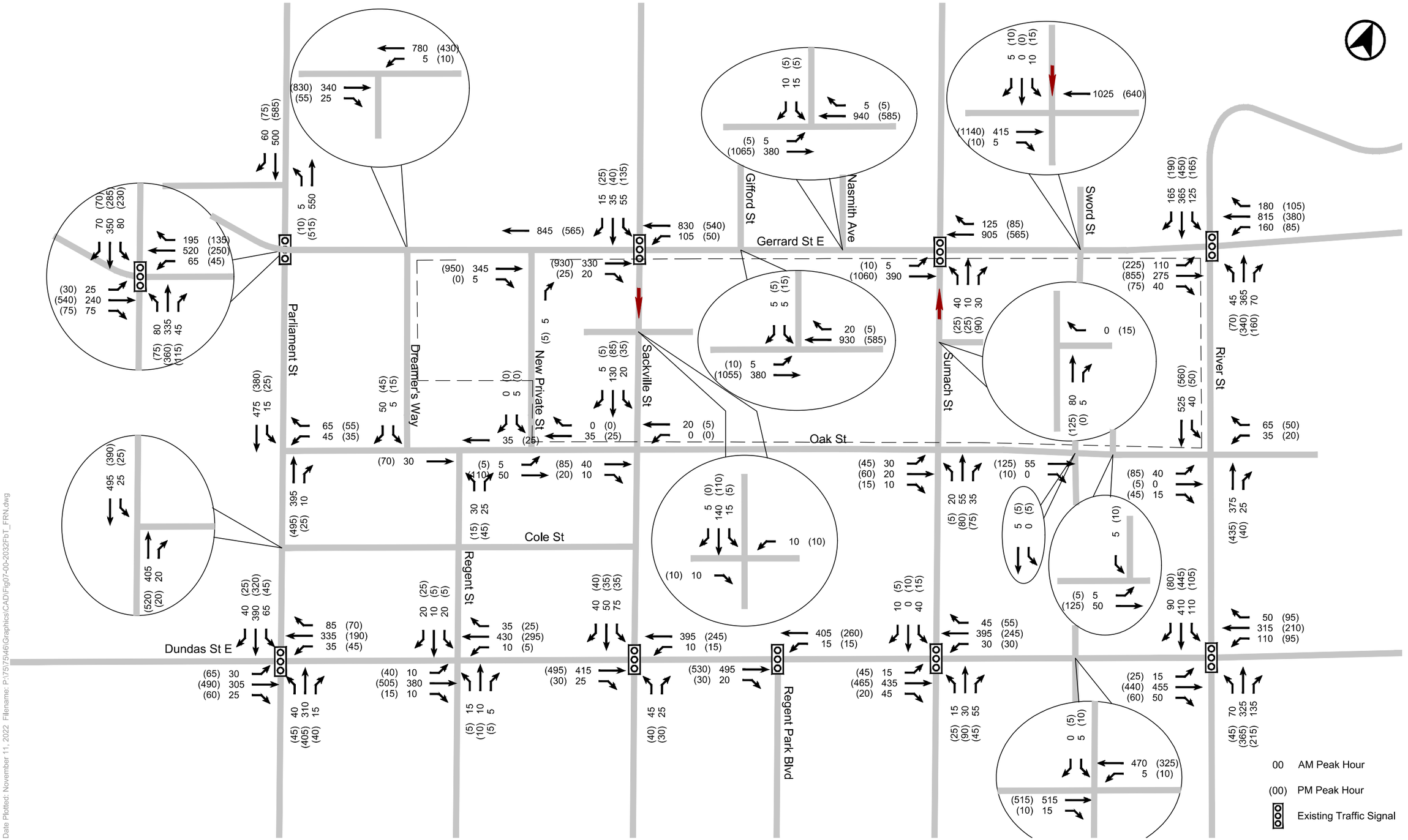
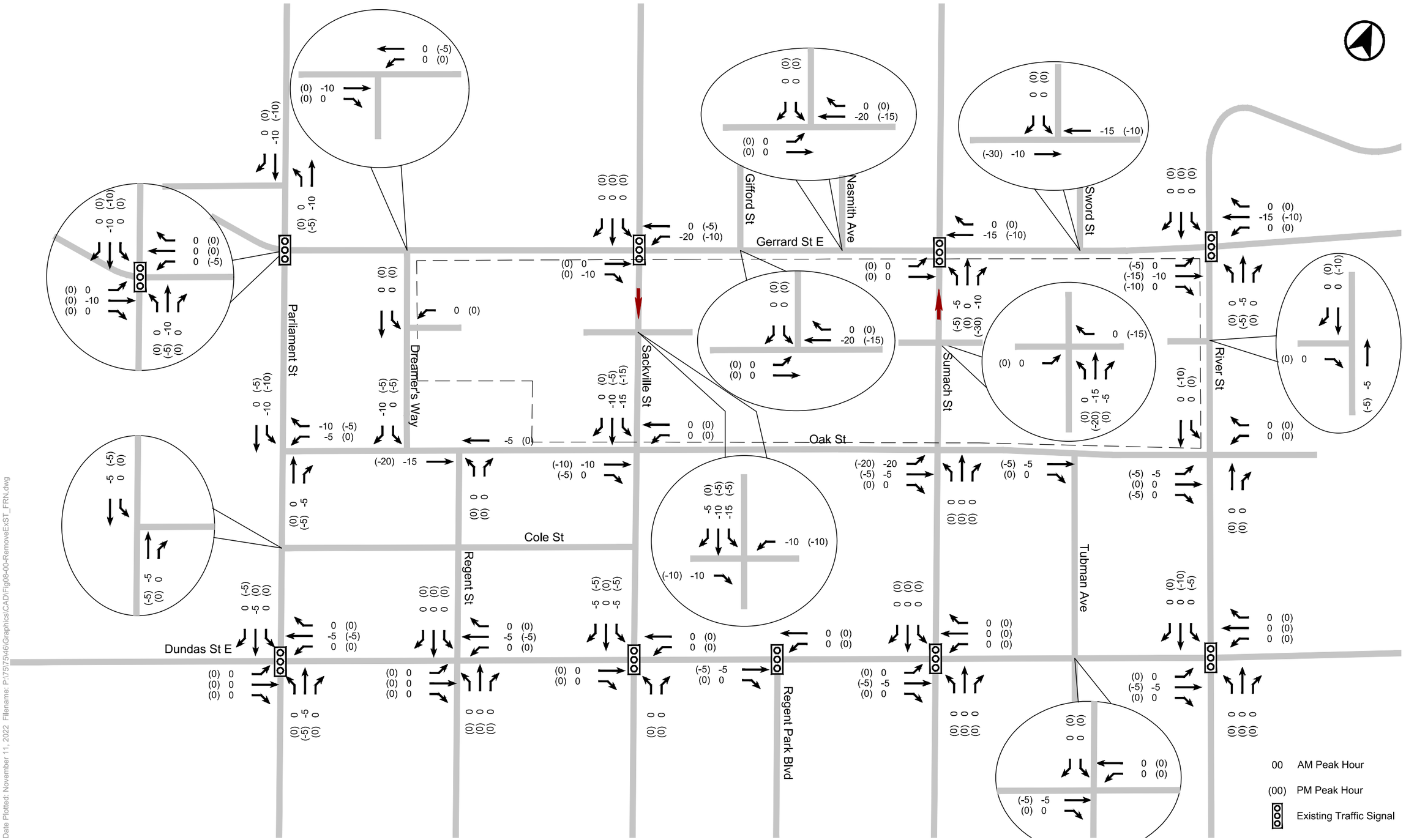


FIGURE 6 2032 FUTURE BACKGROUND TRAFFIC VOLUMES
(EXISTING ROAD NETWORK)



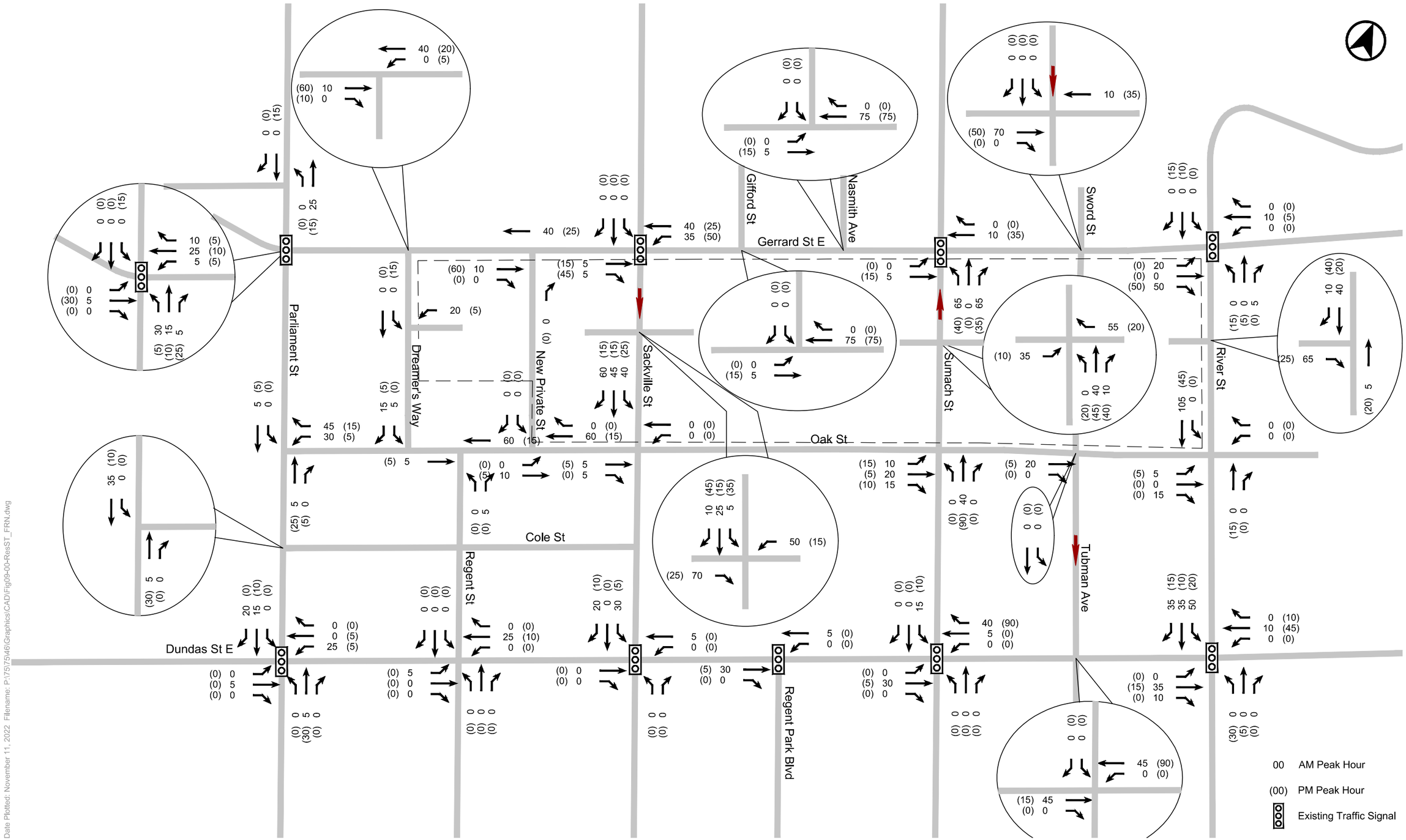
Date Plotted: November 11, 2022 Filename: P:\75\7546\Graphics\CAD\Fig07-00-2032FbT_FRN.dwg

FIGURE 7 2032 FUTURE BACKGROUND TRAFFIC VOLUMES
(PROPOSED ROAD NETWORK)



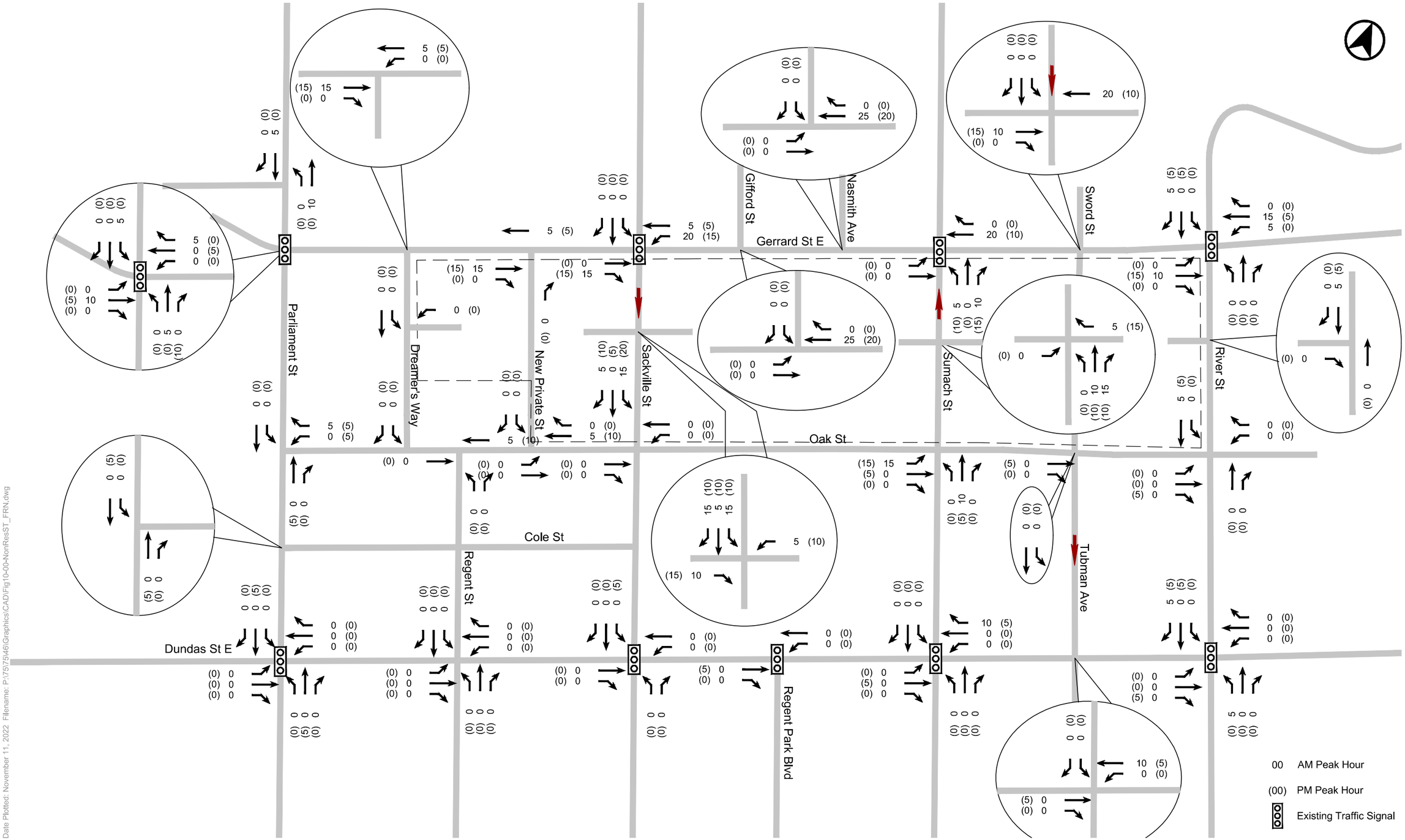
Date Plotted: November 11, 2022 Filename: P:\7575\46\Graphics\CAD\Fig08-00-RemoveExST_FRN.dwg

FIGURE 8 EXISTING SITE TRAFFIC VOLUMES (TO BE REMOVED)



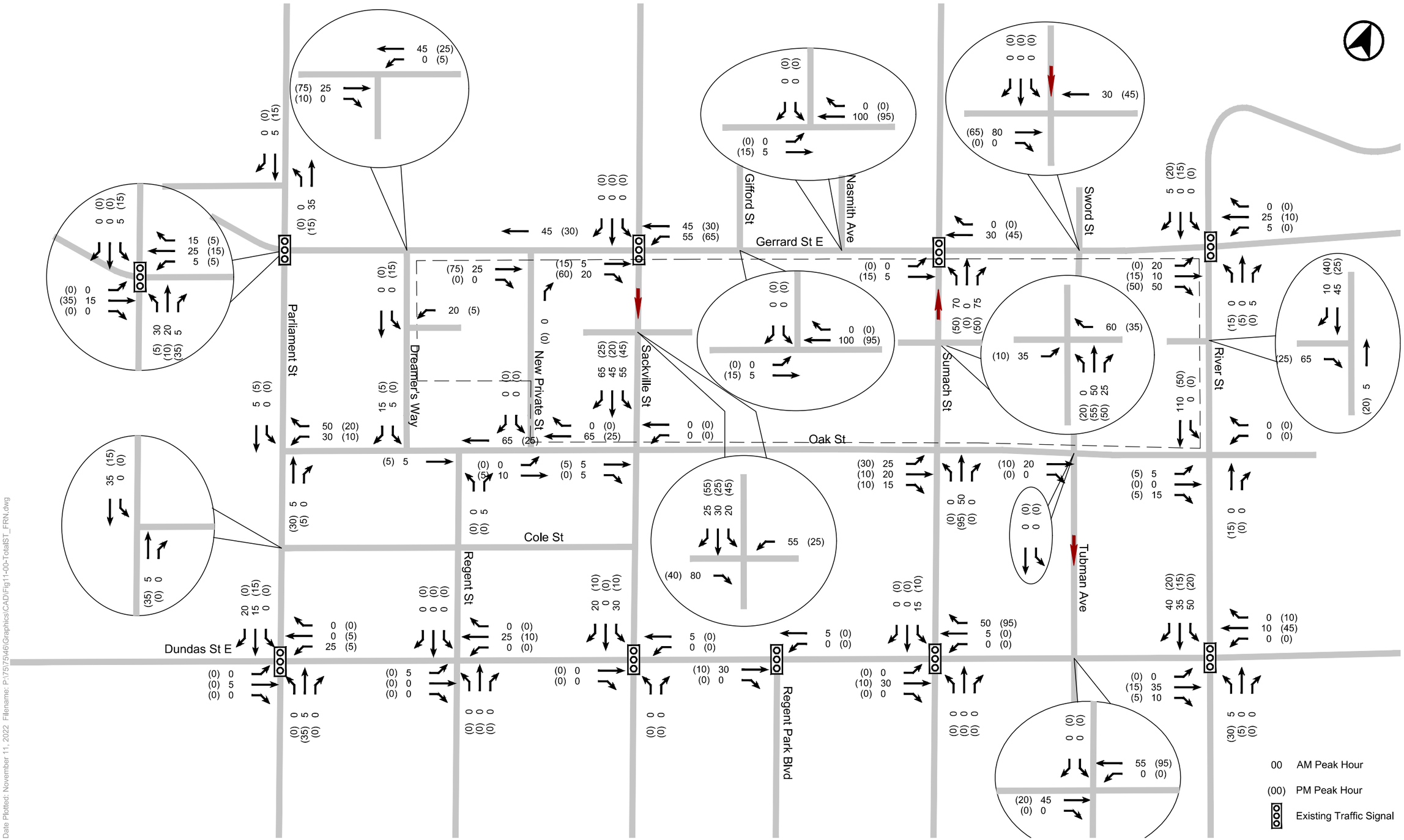
Date Plotted: November 11, 2022 Filename: P:\75\7546\Graphics\CAD\Fig09-00-ResST_FRN.dwg

FIGURE 9 RESIDENTIAL SITE TRAFFIC VOLUMES
(PROPOSED ROAD NETWORK)



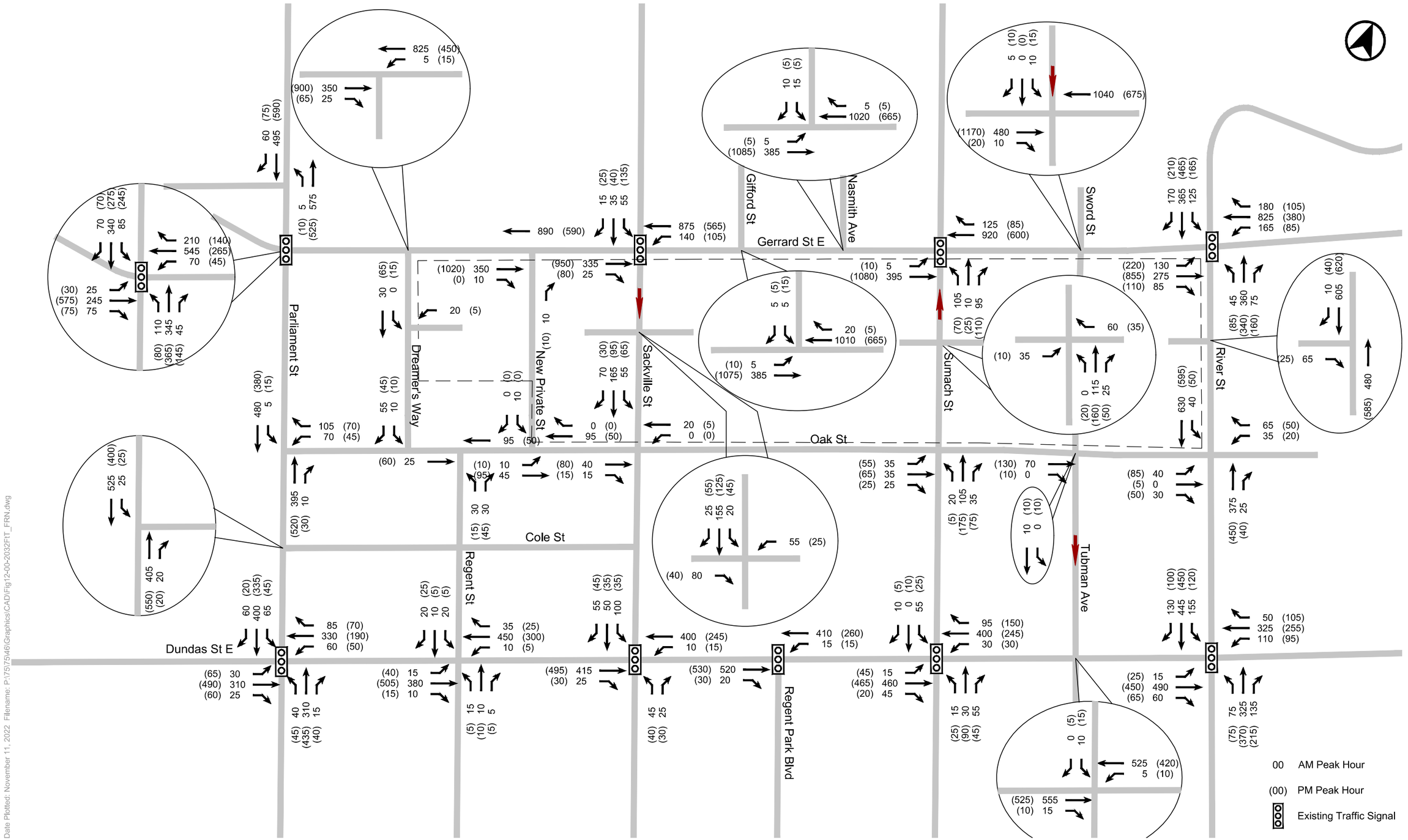
Date Plotted: November 11, 2022 Filename: P:\75\7546\Graphics\CAD\Fig10-00-NonResST_FRN.dwg

FIGURE 10 NON-RESIDENTIAL SITE TRAFFIC VOLUMES
(PROPOSED ROAD NETWORK)



Date Plotted: November 11, 2022 Filename: P:\7575\7546\Graphics\CAD\Fig11-00-TotalST_FRN.dwg

FIGURE 11 TOTAL SITE TRAFFIC VOLUMES
(PROPOSED ROAD NETWORK)



Date Plotted: November 11, 2022 Filename: P:\7575\46\Graphics\CAD\Fig12-00-2032FrT_FRN.dwg

FIGURE 12 2032 FUTURE TOTAL TRAFFIC VOLUMES
(PROPOSED ROAD NETWORK)

Appendix G:
Updated Synchro Worksheets

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	5	530	490	60
Future Volume (Veh/h)	0	0	5	530	490	60
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	5	576	533	65
Pedestrians	80				5	
Lane Width (m)	0.0				3.5	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				39		
pX, platoon unblocked	0.94					
vC, conflicting volume	948	379	678			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	808	379	678			
tC, single (s)	6.8	6.9	4.5			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	100	100	99			
cM capacity (veh/h)	299	625	799			

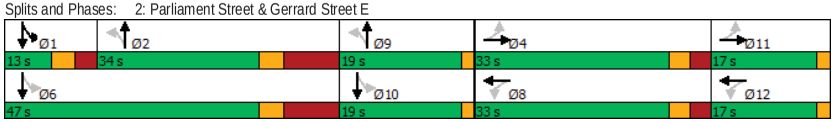
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	197	384	355	243
Volume Left	5	0	0	0
Volume Right	0	0	0	65
cSH	799	1700	1700	1700
Volume to Capacity	0.01	0.23	0.21	0.14
Queue Length 95th (m)	0.1	0.0	0.0	0.0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		21.5%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø4	Ø6	Ø8
Lane Configurations												
Traffic Volume (vph)	25	230	65	505	60	320	80	340				
Future Volume (vph)	25	230	65	505	60	320	80	340				
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA				
Protected Phases		4 11		8 12		2 9	1	1 6 10	2	4	6	8
Permitted Phases	4 11		8 12		2 9		6 10					
Detector Phase	4	4	8	8	2	2	1	1 6				
Switch Phase												
Minimum Initial (s)							6.0		22.0	21.0	22.0	21.0
Minimum Split (s)							12.5		33.2	31.8	33.2	31.8
Total Split (s)							13.0		34.0	33.0	47.0	33.0
Total Split (%)							11.2%		29%	28%	41%	28%
Yellow Time (s)							3.3		3.3	3.0	3.3	3.0
All-Red Time (s)							3.2		7.9	2.8	7.9	2.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead		Lag			
Lead-Lag Optimize?							Yes		Yes			
Recall Mode							None		Min	Min	Min	Min
Act Effct Green (s)		32.8		32.8		30.3		48.7				
Actuated g/C Ratio		0.36		0.36		0.33		0.53				
v/c Ratio		0.33		0.78		0.53		0.36				
Control Delay		20.6		31.2		27.7		13.3				
Queue Delay		0.0		0.0		0.0		0.0				
Total Delay		20.6		31.2		27.7		13.3				
LOS		C		C		C		B				
Approach Delay		20.6		31.2		27.7		13.3				
Approach LOS		C		C		C		B				

Intersection Summary
Cycle Length: 116
Actuated Cycle Length: 92.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 24.3 — Intersection LOS: C
Intersection Capacity Utilization 98.8% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: Parliament Street & Gerrard Street E



Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	19.0	19.0	17.0	17.0
Total Split (s)	19.0	19.0	17.0	17.0
Total Split (%)	16%	16%	15%	15%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	342	800	437	516
v/c Ratio	0.33	0.78	0.53	0.36
Control Delay	20.6	31.2	27.7	13.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.6	31.2	27.7	13.3
Queue Length 50th (m)	17.2	52.2	28.8	20.9
Queue Length 95th (m)	36.2	98.3	53.7	43.1
Internal Link Dist (m)	33.0	63.9	119.2	15.0
Turn Bay Length (m)				
Base Capacity (vph)	1058	1082	839	1459
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.74	0.52	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	230	70	65	505	190	60	320	35	80	340	70
Future Volume (vph)	25	230	70	65	505	190	60	320	35	80	340	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.8			4.8			10.2			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.97			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.99	
Frt		0.97			0.96			0.99			0.98	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		3310			3202			3198			3197	
Flt Permitted		0.86			0.88			0.78			0.82	
Satd. Flow (perm)		2867			2827			2503			2627	
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)	26	242	74	68	532	200	63	337	37	84	358	74
RTOR Reduction (vph)	0	21	0	0	27	0	0	5	0	0	13	0
Lane Group Flow (vph)	0	321	0	0	773	0	0	432	0	0	503	0
Confl. Peds. (#/hr)	80		85	85		80	85		120	120		85
Confl. Bikes (#/hr)			5			20			5			10
Heavy Vehicles (%)	13%	0%	2%	1%	1%	11%	6%	8%	0%	11%	6%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4 11			8 12			2 9		1	1 6 10	
Permitted Phases	4 11			8 12			2 9			6 10		
Actuated Green, G (s)		37.2			37.2			40.3			53.6	
Effective Green, g (s)		38.2			38.2			41.3			44.4	
Actuated g/C Ratio		0.40			0.40			0.44			0.47	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1155			1139			1090			1277	
v/s Ratio Prot											c0.03	
v/s Ratio Perm		0.11			c0.27			c0.17			0.15	
v/c Ratio		0.28			0.68			0.40			0.39	
Uniform Delay, d1		19.0			23.3			18.2			16.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			1.6			0.2			0.2	
Delay (s)		19.2			24.9			18.5			16.6	
Level of Service		B			C			B			B	
Approach Delay (s)		19.2			24.9			18.5			16.6	
Approach LOS		B			C			B			B	

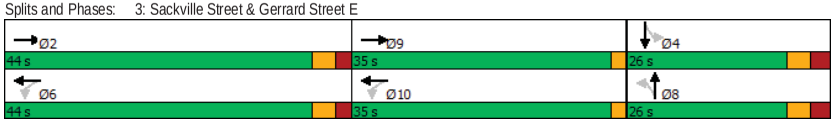
Intersection Summary				
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	94.8	Sum of lost time (s)	22.5	
Intersection Capacity Utilization	98.8%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations											
Traffic Volume (vph)	340	55	800	5	0	55	35				
Future Volume (vph)	340	55	800	5	0	55	35				
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases	2 9		6 10		8		4	2	6	9	10
Permitted Phases		6 10		8		4					
Detector Phase	2	6	6	8	8	4	4				
Switch Phase											
Minimum Initial (s)				20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)				25.7	25.7	25.7	25.7	21.0	21.0	35.0	35.0
Total Split (s)				26.0	26.0	26.0	26.0	44.0	44.0	35.0	35.0
Total Split (%)				24.8%	24.8%	24.8%	24.8%	42%	42%	33%	33%
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				2.7	2.7	2.7	2.7	2.0	2.0	0.0	0.0
Lost Time Adjust (s)					-1.0		-1.0				
Total Lost Time (s)					4.7		4.7				
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode				Min	Min	Min	Min	Min	Min	None	None
Act Effct Green (s)	43.6		43.6		23.0		23.0				
Actuated g/C Ratio	0.57		0.57		0.30		0.30				
v/c Ratio	0.21		0.54		0.05		0.28				
Control Delay	6.5		9.7		4.2		29.6				
Queue Delay	0.0		0.0		0.0		0.0				
Total Delay	6.5		9.7		4.2		29.6				
LOS	A		A		A		C				
Approach Delay	6.5		9.7		4.2		29.6				
Approach LOS	A		A		A		C				

Intersection Summary			
Cycle Length: 105			
Actuated Cycle Length: 76.1			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Sackville Street & Gerrard Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	390	939	21	114
v/c Ratio	0.21	0.54	0.05	0.28
Control Delay	6.5	9.7	4.2	29.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.5	9.7	4.2	29.6
Queue Length 50th (m)	11.3	35.7	0.0	15.3
Queue Length 95th (m)	16.2	46.6	2.7	33.6
Internal Link Dist (m)	139.8	47.8	34.3	15.3
Turn Bay Length (m)				
Base Capacity (vph)	2331	2221	427	412
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.17	0.42	0.05	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	15	55	800	0	5	0	15	55	35	15
Future Volume (vph)	0	340	15	55	800	0	5	0	15	55	35	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			4.7			4.7	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		0.99			1.00			0.87			0.99	
Flpb, ped/bikes		1.00			0.99			0.99			0.92	
Frt		0.99			1.00			0.90			0.98	
Flt Protected		1.00			1.00			0.99			0.97	
Satd. Flow (prot)		3215			3393			1432			1585	
Flt Permitted		1.00			0.90			0.95			0.85	
Satd. Flow (perm)		3215			3066			1376			1382	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	374	16	60	879	0	5	0	16	60	38	16
RTOR Reduction (vph)	0	4	0	0	0	0	0	15	0	0	5	0
Lane Group Flow (vph)	0	386	0	0	939	0	0	6	0	0	109	0
Confl. Peds. (#/hr)	40		60	60		40	60		140	140		60
Confl. Bikes (#/hr)			15			75						5
Heavy Vehicles (%)	0%	10%	0%	9%	4%	0%	0%	0%	0%	0%	6%	6%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases				6 10			8			4		
Actuated Green, G (s)		46.8			46.8			21.9			21.9	
Effective Green, g (s)		47.8			47.8			22.9			22.9	
Actuated g/C Ratio		0.63			0.63			0.30			0.30	
Clearance Time (s)								5.7			5.7	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		2011			1918			412			414	
v/s Ratio Prot		0.12										
v/s Ratio Perm					c0.31			0.00			c0.08	
v/c Ratio		0.19			0.49			0.02			0.26	
Uniform Delay, d1		6.1			7.7			18.8			20.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			0.2			0.0			0.3	
Delay (s)		6.1			7.9			18.8			20.7	
Level of Service		A			A			B			C	
Approach Delay (s)		6.1			7.9			18.8			20.7	
Approach LOS		A			A			B			C	

Intersection Summary					
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.43				
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	9.7		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C		
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	405	850	20	5	5
Future Volume (Veh/h)	5	405	850	20	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	422	885	21	5	5
Pedestrians		5	5		50	
Lane Width (m)		3.5	3.5		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		4	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		72	141			
pX, platoon unblocked	0.93				0.94	0.93
vC, conflicting volume	956				1172	508
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	801				935	319
tC, single (s)	4.1				7.5	7.3
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.5
p0 queue free %	99				97	99
cM capacity (veh/h)	743				192	558

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	146	281	590	316	10
Volume Left	5	0	0	0	5
Volume Right	0	0	0	21	5
cSH	743	1700	1700	1700	285
Volume to Capacity	0.01	0.17	0.35	0.19	0.04
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.8
Control Delay (s)	0.4	0.0	0.0	0.0	18.1
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		18.1
Approach LOS					C

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization	35.8%	ICU Level of Service		A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	405	860	5	15	10
Future Volume (Veh/h)	5	405	860	5	15	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	418	887	5	15	10
Pedestrians					75	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		145	68			
pX, platoon unblocked	0.90				0.90	0.90
vC, conflicting volume	967				1184	521
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	742				983	247
tC, single (s)	4.1				6.9	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	99				93	98
cM capacity (veh/h)	742				200	619

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	144	279	591	301	25
Volume Left	5	0	0	0	15
Volume Right	0	0	0	5	10
cSH	742	1700	1700	1700	275
Volume to Capacity	0.01	0.16	0.35	0.18	0.09
Queue Length 95th (m)	0.2	0.0	0.0	0.0	2.3
Control Delay (s)	0.4	0.0	0.0	0.0	19.4
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		19.4
Approach LOS					C

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization	34.0%	ICU Level of Service		A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBL	WBT	NBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations									
Traffic Volume (vph)	5	400	55	850	10				
Future Volume (vph)	5	400	55	850	10				
Turn Type	Perm	NA	Perm	NA	NA				
Protected Phases		2 9		6 10	8	2	6	9	10
Permitted Phases	2 9		6 10						
Detector Phase	2	2	6	6	8				
Switch Phase									
Minimum Initial (s)					15.0	11.0	11.0	5.0	5.0
Minimum Split (s)					25.4	26.2	26.2	72.0	72.0
Total Split (s)					27.0	43.0	43.0	72.0	72.0
Total Split (%)					19.0%	30%	30%	51%	51%
Yellow Time (s)					3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					7.4	7.2	7.2	0.0	0.0
Lost Time Adjust (s)					-1.0				
Total Lost Time (s)					9.4				
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode					None	Min	Min	None	None
Act Effct Green (s)		72.1		72.1	19.4				
Actuated g/C Ratio		0.74		0.74	0.20				
v/c Ratio		0.21		0.56	0.13				
Control Delay		6.1		9.3	39.9				
Queue Delay		0.0		0.2	0.0				
Total Delay		6.1		9.4	39.9				
LOS		A		A	D				
Approach Delay		6.1		9.4	39.9				
Approach LOS		A		A	D				

Intersection Summary			
Cycle Length: 142			
Actuated Cycle Length: 98			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 78.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Sumach Street & Gerrard Street E

Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	483	1184	39
v/c Ratio	0.21	0.56	0.13
Control Delay	6.1	9.3	39.9
Queue Delay	0.0	0.2	0.0
Total Delay	6.1	9.4	39.9
Queue Length 50th (m)	17.8	62.4	3.7
Queue Length 95th (m)	22.2	71.8	17.8
Internal Link Dist (m)	44.0	75.7	33.2
Turn Bay Length (m)			
Base Capacity (vph)	2181	1990	326
Starvation Cap Reductn	0	181	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.22	0.65	0.12

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	400	15	55	850	125	15	10	10	0	0	0
Future Volume (vph)	5	400	15	55	850	125	15	10	10	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.2			9.2			9.4				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		0.99			0.97			0.96				
Flpb, ped/bikes		1.00			0.99			0.91				
Frt		0.99			0.98			0.96				
Flt Protected		1.00			1.00			0.98				
Satd. Flow (prot)		3352			3251			1548				
Flt Permitted		0.94			0.89			0.98				
Satd. Flow (perm)		3148			2887			1548				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	460	17	63	977	144	17	11	11	0	0	0
RTOR Reduction (vph)	0	2	0	0	7	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	481	0	0	1177	0	0	29	0	0	0	0
Confl. Peds. (#/hr)	65		85	85		65	100		65	65		100
Confl. Bikes (#/hr)			15			120			5			
Heavy Vehicles (%)	0%	5%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		2 9			6 10			8				
Permitted Phases	2 9			6 10			8					
Actuated Green, G (s)		76.5			76.5			11.2				
Effective Green, g (s)		77.5			77.5			12.2				
Actuated g/C Ratio		0.77			0.77			0.12				
Clearance Time (s)								10.4				
Vehicle Extension (s)								3.0				
Lane Grp Cap (vph)		2437			2235			188				
v/s Ratio Prot												
v/s Ratio Perm		0.15			c0.41			0.02				
v/c Ratio		0.20			0.53			0.16				
Uniform Delay, d1		3.0			4.3			39.3				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			0.2			0.4				
Delay (s)		3.1			4.5			39.7				
Level of Service		A			A			D				
Approach Delay (s)		3.1			4.5			39.7			0.0	
Approach LOS		A			A			D			A	

Intersection Summary				
HCM 2000 Control Delay	4.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	100.1	Sum of lost time (s)	19.6	
Intersection Capacity Utilization	78.6%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	410	1025	0	10	5
Future Volume (Veh/h)	0	410	1025	0	10	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	432	1079	0	11	5
Pedestrians					75	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		100	91			
pX, platoon unblocked	0.78				0.79	0.78
vC, conflicting volume	1154				1370	614
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	643				880	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	703				216	806

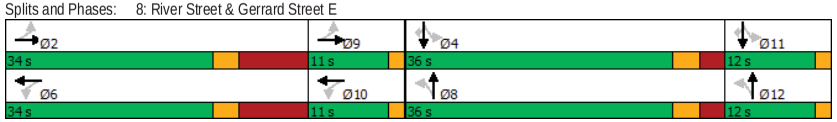
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	216	216	540	540	16
Volume Left	0	0	0	0	11
Volume Right	0	0	0	0	5
cSH	1700	1700	1700	1700	279
Volume to Capacity	0.13	0.13	0.32	0.32	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	0.0	0.0	18.7
Lane LOS					C
Approach Delay (s)	0.0		0.0		18.7
Approach LOS					C

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	38.3%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø2	Ø4	Ø6
Lane Configurations												
Traffic Volume (vph)	105	270	150	820	40	265	125	325	165			
Future Volume (vph)	105	270	150	820	40	265	125	325	165			
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm			
Protected Phases		2 9		6 10		8 12		4 11		2	4	6
Permitted Phases	2 9		6 10		8 12		4 11		4 11			
Detector Phase	2	2	6	6	8	8	4	4	4			
Switch Phase												
Minimum Initial (s)										23.0	19.0	23.0
Minimum Split (s)										33.8	30.0	33.8
Total Split (s)										34.0	36.0	34.0
Total Split (%)										37%	39%	37%
Yellow Time (s)										3.0	3.0	3.0
All-Red Time (s)										7.8	3.0	7.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode										Min	Min	Min
Act Effct Green (s)		30.8		30.8	29.4	29.4	29.4	29.4	29.4			
Actuated g/C Ratio		0.41		0.41	0.39	0.39	0.39	0.39	0.39			
v/c Ratio		0.63		1.10	0.14	0.50	0.43	0.47	0.28			
Control Delay		23.3		84.0	16.6	19.5	22.4	19.8	7.3			
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		23.3		84.0	16.6	19.5	22.4	19.8	7.3			
LOS		C		F	B	B	C	B	A			
Approach Delay		23.3		84.0		19.2		17.0				
Approach LOS		C		F		B		B				

Intersection Summary			
Cycle Length: 93			
Actuated Cycle Length: 75.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 48.6		Intersection LOS: D	
Intersection Capacity Utilization 113.0%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 8: River Street & Gerrard Street E



Lane Group	Ø8	Ø9	Ø10	Ø11	Ø12
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Turn Type					
Protected Phases	8	9	10	11	12
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	19.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	11.0	11.0	12.0	12.0
Total Split (s)	36.0	11.0	11.0	12.0	12.0
Total Split (%)	39%	12%	12%	13%	13%
Yellow Time (s)	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	3.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	None	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	437	1198	42	339	130	339	172
v/c Ratio	0.63	1.10	0.14	0.50	0.43	0.47	0.28
Control Delay	23.3	84.0	16.6	19.5	22.4	19.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	84.0	16.6	19.5	22.4	19.8	7.3
Queue Length 50th (m)	21.2	80.7	4.1	37.1	14.5	38.6	5.5
Queue Length 95th (m)	49.8	#175.6	10.3	58.5	28.8	59.3	16.9
Internal Link Dist (m)	67.0	81.6		126.5		61.7	
Turn Bay Length (m)			30.0		30.0		
Base Capacity (vph)	695	1086	353	803	352	840	701
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	0.63	1.10	0.12	0.42	0.37	0.40	0.25

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	270	45	150	820	180	40	265	60	125	325	165
Future Volume (vph)	105	270	45	150	820	180	40	265	60	125	325	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.8			9.8		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.98			0.98		1.00	0.98		1.00	1.00	0.95
Flpb, ped/bikes		1.00			0.99		0.98	1.00		0.95	1.00	1.00
Frt		0.98			0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3181			3268		1526	1730		1560	1860	1425
Flt Permitted		0.52			0.80		0.48	1.00		0.48	1.00	1.00
Satd. Flow (perm)		1684			2638		769	1730		787	1860	1425
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	109	281	47	156	854	188	42	276	62	130	339	172
RTOR Reduction (vph)	0	8	0	0	12	0	0	9	0	0	0	63
Lane Group Flow (vph)	0	429	0	0	1186	0	42	330	0	130	339	109
Confl. Peds. (#/hr)	50		95	95		50	40		85	85		40
Confl. Bikes (#/hr)			10			75			15			10
Heavy Vehicles (%)	4%	8%	4%	0%	3%	1%	8%	4%	2%	3%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2 9			6 10			8 12			4 11	
Permitted Phases	2 9			6 10			8 12			4 11		4 11
Actuated Green, G (s)		39.5			39.5		33.8	33.8		33.8	33.8	33.8
Effective Green, g (s)		40.5			40.5		34.8	34.8		34.8	34.8	34.8
Actuated g/C Ratio		0.52			0.52		0.45	0.45		0.45	0.45	0.45
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		882			1382		346	778		354	837	641
v/s Ratio Prot								c0.19			0.18	
v/s Ratio Perm		0.25			c0.45		0.05			0.17		0.08
v/c Ratio		0.49			0.86		0.12	0.42		0.37	0.41	0.17
Uniform Delay, d1		11.8			15.9		12.4	14.4		14.0	14.3	12.6
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4			5.5		0.2	0.4		0.6	0.3	0.1
Delay (s)		12.2			21.4		12.5	14.8		14.6	14.6	12.8
Level of Service		B			C		B	B		B	B	B
Approach Delay (s)		12.2			21.4			14.6			14.1	
Approach LOS		B			C			B			B	

Intersection Summary					
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.79				
Actuated Cycle Length (s)	77.3	Sum of lost time (s)		16.8	
Intersection Capacity Utilization	113.0%	ICU Level of Service		H	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	5	0	10	5	10	90	5
Future Volume (Veh/h)	5	5	5	5	5	5	0	10	5	10	90	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	6	6	6	6	6	6	0	13	6	13	117	6
Pedestrians		70			40			15			10	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		6			4			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											58	
pX, platoon unblocked												
vC, conflicting volume	251	275	205	226	275	66	193			59		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	251	275	205	226	275	66	193			59		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	99	100			99		
cM capacity (veh/h)	597	570	778	633	570	959	1306			1503		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	18	19	136
Volume Left	6	6	0	13
Volume Right	6	6	6	6
cSH	636	686	1306	1503
Volume to Capacity	0.03	0.03	0.00	0.01
Queue Length 95th (m)	0.7	0.6	0.0	0.2
Control Delay (s)	10.8	10.4	0.0	0.8
Lane LOS	B	B		A
Approach Delay (s)	10.8	10.4	0.0	0.8
Approach LOS	B	B		

Intersection Summary					
Average Delay		2.5			
Intersection Capacity Utilization	27.2%	ICU Level of Service	A		
Analysis Period (min)	15				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	40	375	10	15	460
Future Volume (Veh/h)	20	40	375	10	15	460
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	42	395	11	16	484
Pedestrians	260		5			175
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	20		0			15
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			151			143
pX, platoon unblocked	0.99					
vC, conflicting volume	940	638			666	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	914	638			666	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	85			98	
cM capacity (veh/h)	214	280			749	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	63	263	143	177	323
Volume Left	21	0	0	16	0
Volume Right	42	0	11	0	0
cSH	254	1700	1700	749	1700
Volume to Capacity	0.25	0.15	0.08	0.02	0.19
Queue Length 95th (m)	7.2	0.0	0.0	0.5	0.0
Control Delay (s)	23.8	0.0	0.0	1.1	0.0
Lane LOS	C			A	
Approach Delay (s)	23.8	0.0		0.4	
Approach LOS	C				

Intersection Summary					
Average Delay		1.8			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A		
Analysis Period (min)	15				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	25	55	0	0	10
Future Volume (Veh/h)	0	25	55	0	0	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	30	67	0	0	12
Pedestrians		15			40	
Lane Width (m)		3.5			3.0	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		1			3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	107				137	122
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	107				137	122
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	100				100	99
cM capacity (veh/h)	1451				835	864

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	30	67	12
Volume Left	0	0	0
Volume Right	0	0	12
cSH	1700	1700	864
Volume to Capacity	0.02	0.04	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary				
Average Delay		1.0		
Intersection Capacity Utilization		26.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	25	0	0	25	30	25
Future Volume (Veh/h)	25	0	0	25	30	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	32	0	0	32	38	32
Pedestrians	15			10	30	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	1			1	2	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			62		109	72
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			62		109	72
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	97
cM capacity (veh/h)			1519		852	954

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	32	70
Volume Left	0	0	38
Volume Right	0	0	32
cSH	1700	1700	896
Volume to Capacity	0.02	0.02	0.08
Queue Length 95th (m)	0.0	0.0	1.9
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary				
Average Delay		4.9		
Intersection Capacity Utilization		26.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	45	20	0	0	5
Future Volume (Veh/h)	5	45	20	0	0	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	7	63	28	0	0	7
Pedestrians			110		25	
Lane Width (m)			3.5		3.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			10		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	53				240	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	53				240	53
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1536				664	1001

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	70	28	7
Volume Left	7	0	0
Volume Right	0	0	7
cSH	1536	1700	1001
Volume to Capacity	0.00	0.02	0.01
Queue Length 95th (m)	0.1	0.0	0.2
Control Delay (s)	0.8	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.8	0.0	8.6
Approach LOS			A

Intersection Summary				
Average Delay		1.1		
Intersection Capacity Utilization		19.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	25	10	0	10	5	0	0	0	10	80	5
Future Volume (vph)	10	25	10	0	10	5	0	0	0	10	80	5
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	31	12	0	12	6	0	0	0	12	99	6

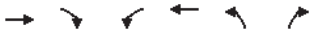
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	55	18	117
Volume Left (vph)	12	0	12
Volume Right (vph)	12	6	6
Hadj (s)	-0.01	-0.09	0.07
Departure Headway (s)	4.2	4.1	4.1
Degree Utilization, x	0.06	0.02	0.13
Capacity (veh/h)	835	841	848
Control Delay (s)	7.5	7.2	7.8
Approach Delay (s)	7.5	7.2	7.8
Approach LOS	A	A	A

Intersection Summary				
Delay		7.6		
Level of Service		A		
Intersection Capacity Utilization		32.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	20	10	0	0	0	15	30	35	5	60	0
Future Volume (vph)	5	20	10	0	0	0	15	30	35	5	60	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	7	27	13	0	0	0	20	40	47	7	80	0

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	47	107	87
Volume Left (vph)	7	20	7
Volume Right (vph)	13	47	0
Hadj (s)	-0.07	-0.10	0.13
Departure Headway (s)	4.2	4.0	4.2
Degree Utilization, x	0.06	0.12	0.10
Capacity (veh/h)	808	877	834
Control Delay (s)	7.5	7.5	7.7
Approach Delay (s)	7.5	7.5	7.7
Approach LOS	A	A	A

Intersection Summary				
Delay		7.6		
Level of Service		A		
Intersection Capacity Utilization	30.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	60	0	0	0	0	0
Future Volume (Veh/h)	60	0	0	0	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	80	0	0	0	0	0
Pedestrians	40			10	45	
Lane Width (m)	3.5			0.0	0.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	4			0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			125		165	135
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			125		165	135
tC, single (s)			4.1		6.4	6.7
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.8
p0 queue free %			100		100	100
cM capacity (veh/h)			1474		801	800

Direction, Lane #	EB 1
Volume Total	80
Volume Left	0
Volume Right	0
cSH	1700
Volume to Capacity	0.05
Queue Length 95th (m)	0.0
Control Delay (s)	0.0
Lane LOS	
Approach Delay (s)	0.0
Approach LOS	

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	23.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	55	0	0	5	0
Future Volume (Veh/h)	5	55	0	0	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	61	0	0	6	0
Pedestrians			10		10	
Lane Width (m)			0.0		3.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	10				93	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	10				93	10
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1610				902	1069

Direction, Lane #	EB 1	SB 1
Volume Total	67	6
Volume Left	6	6
Volume Right	0	0
cSH	1610	902
Volume to Capacity	0.00	0.01
Queue Length 95th (m)	0.1	0.2
Control Delay (s)	0.7	9.0
Lane LOS	A	A
Approach Delay (s)	0.7	9.0
Approach LOS		A

Intersection Summary				
Average Delay		1.4		
Intersection Capacity Utilization	17.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	0	20	20	0	40	0	285	20	35	485	0
Future Volume (Veh/h)	40	0	20	20	0	40	0	285	20	35	485	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	44	0	22	22	0	44	0	313	22	38	533	0
Pedestrians		75			65			35			5	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		7			6			3			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								143			151	
pX, platoon unblocked	0.93	0.93	0.88	0.93	0.93	0.90	0.88			0.90		
vC, conflicting volume	1057	1084	643	1055	1073	394	608			400		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	789	818	529	787	806	275	489			282		
tC, single (s)	7.2	6.5	6.2	7.1	7.0	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.5	3.3	2.2			2.2		
p0 queue free %	79	100	95	90	100	93	100			97		
cM capacity (veh/h)	213	247	442	218	211	647	894			1100		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	66	66	335	571
Volume Left	44	22	0	38
Volume Right	22	44	22	0
cSH	258	391	1700	1100
Volume to Capacity	0.26	0.17	0.20	0.03
Queue Length 95th (m)	7.5	4.6	0.0	0.8
Control Delay (s)	23.7	16.1	0.0	1.0
Lane LOS	C	C		A
Approach Delay (s)	23.7	16.1	0.0	1.0
Approach LOS	C	C		

Intersection Summary				
Average Delay		3.1		
Intersection Capacity Utilization	65.5%	ICU Level of Service		C
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	385	20	25	455
Future Volume (Veh/h)	0	0	385	20	25	455
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	418	22	27	495
Pedestrians	250		10			15
Lane Width (m)	0.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			214
pX, platoon unblocked	0.95	0.95			0.95	
vC, conflicting volume	990	485			690	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	875	340			557	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	266	617			942	

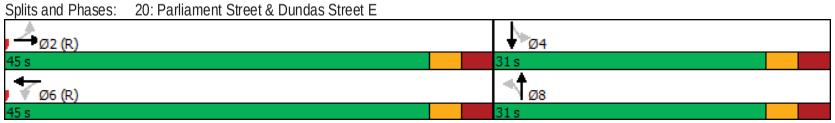
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	279	161	192	330
Volume Left	0	0	27	0
Volume Right	0	22	0	0
cSH	1700	1700	942	1700
Volume to Capacity	0.16	0.09	0.03	0.19
Queue Length 95th (m)	0.0	0.0	0.7	0.0
Control Delay (s)	0.0	0.0	1.5	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.6	
Approach LOS				

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			43.9%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	260	25	275	40	290	60	355
Future Volume (vph)	35	260	25	275	40	290	60	355
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	45.0	45.0	45.0	45.0	31.0	31.0	31.0	31.0
Total Split (%)	59.2%	59.2%	59.2%	59.2%	40.8%	40.8%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	Min	Min	Min	Min
Act Effct Green (s)		41.7		41.7		24.3		24.3
Actuated g/C Ratio		0.55		0.55		0.32		0.32
v/c Ratio		0.22		0.26		0.43		0.54
Control Delay		8.9		12.5		21.8		23.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		8.9		12.5		21.8		23.1
LOS		A		B		C		C
Approach Delay		8.9		12.5		21.8		23.1
Approach LOS		A		B		C		C

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 54 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.54		
Intersection Signal Delay: 17.1	Intersection LOS: B	
Intersection Capacity Utilization 87.0%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 20: Parliament Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	341	405	368	485
v/c Ratio	0.22	0.26	0.43	0.54
Control Delay	8.9	12.5	21.8	23.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.9	12.5	21.8	23.1
Queue Length 50th (m)	11.3	20.2	21.4	28.9
Queue Length 95th (m)	18.8	29.1	32.0	41.7
Internal Link Dist (m)	85.0	103.5	45.0	56.1
Turn Bay Length (m)				
Base Capacity (vph)	1541	1579	911	958
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.26	0.40	0.51

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	260	25	25	275	80	40	290	15	60	355	40
Future Volume (vph)	35	260	25	25	275	80	40	290	15	60	355	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.99			0.96			0.99			0.99	
Flpb, ped/bikes		0.99			1.00			0.99			0.99	
Frt		0.99			0.97			0.99			0.99	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		3155			3068			3104			3260	
Flt Permitted		0.88			0.92			0.85			0.84	
Satd. Flow (perm)		2798			2825			2653			2772	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	37	277	27	27	293	85	43	309	16	64	378	43
RTOR Reduction (vph)	0	8	0	0	30	0	0	4	0	0	10	0
Lane Group Flow (vph)	0	333	0	0	375	0	0	364	0	0	475	0
Confl. Peds. (#/hr)	155		110	110		155	140		160	160		140
Confl. Bikes (#/hr)			10			25						5
Heavy Vehicles (%)	6%	10%	4%	22%	5%	13%	18%	11%	13%	2%	5%	5%
Parking (#/hr)			0						0			0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		40.7			40.7			23.3			23.3	
Effective Green, g (s)		41.7			41.7			24.3			24.3	
Actuated g/C Ratio		0.55			0.55			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1535			1550			848			886	
v/s Ratio Prot												
v/s Ratio Perm		0.12			c0.13			0.14			c0.17	
v/c Ratio		0.22			0.24			0.43			0.54	
Uniform Delay, d1		8.8			8.9			20.4			21.2	
Progression Factor		1.00			1.59			1.00			1.00	
Incremental Delay, d2		0.3			0.4			0.4			0.6	
Delay (s)		9.1			14.5			20.7			21.8	
Level of Service		A			B			C			C	
Approach Delay (s)		9.1			14.5			20.7			21.8	
Approach LOS		A			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.35				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	87.0%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	325	10	10	355	35	15	10	5	20	10	20
Future Volume (Veh/h)	10	325	10	10	355	35	15	10	5	20	10	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	353	11	11	386	38	16	11	5	22	11	22
Pedestrians		20			5			70			80	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			0			6			7	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		127			124							
pX, platoon unblocked												
vC, conflicting volume	504			434			713	976	257	721	963	312
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	504			434			713	976	257	721	963	312
tC, single (s)	4.1			4.1			7.6	6.7	6.9	7.6	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.3	3.5	4.0	3.4
p0 queue free %	99			99			93	95	99	91	95	96
cM capacity (veh/h)	995			1066			235	200	699	242	220	603

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	188	188	204	231	32	55
Volume Left	11	0	11	0	16	22
Volume Right	0	11	0	38	5	22
cSH	995	1700	1066	1700	246	310
Volume to Capacity	0.01	0.11	0.01	0.14	0.13	0.18
Queue Length 95th (m)	0.3	0.0	0.2	0.0	3.4	4.8
Control Delay (s)	0.6	0.0	0.5	0.0	21.8	19.1
Lane LOS	A		A		C	C
Approach Delay (s)	0.3		0.3		21.8	19.1
Approach LOS					C	C

Intersection Summary						
Average Delay	2.2					
Intersection Capacity Utilization	33.9%	ICU Level of Service	A			
Analysis Period (min)	15					

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	360	10	330	45	0	35	50
Future Volume (vph)	360	10	330	45	0	35	50
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2		6		8		4
Permitted Phases		6		8		4	
Detector Phase	2	6	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	17.0	17.0	17.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	26.0
Total Split (s)	50.0	50.0	50.0	26.0	26.0	26.0	26.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)	5.0		5.0		5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.6		47.6		18.4		18.4
Actuated g/C Ratio	0.63		0.63		0.24		0.24
v/c Ratio	0.20		0.33		0.22		0.32
Control Delay	6.8		5.5		12.9		20.2
Queue Delay	0.0		0.3		0.0		0.0
Total Delay	6.8		5.8		12.9		20.2
LOS	A		A		B		C
Approach Delay	6.8		5.8		12.9		20.2
Approach LOS	A		A		B		C

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 11 (14%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Sackville Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	405	358	73	122
v/c Ratio	0.20	0.33	0.22	0.32
Control Delay	6.8	5.5	12.9	20.2
Queue Delay	0.0	0.3	0.0	0.0
Total Delay	6.8	5.8	12.9	20.2
Queue Length 50th (m)	8.7	23.8	3.2	11.0
Queue Length 95th (m)	19.8	8.8	12.5	23.9
Internal Link Dist (m)	99.8	79.6	36.2	126.8
Turn Bay Length (m)				
Base Capacity (vph)	2015	1073	376	426
Starvation Cap Reductn	0	272	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.20	0.45	0.19	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	360	25	10	330	0	45	0	25	35	50	30
Future Volume (vph)	0	360	25	10	330	0	45	0	25	35	50	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			1.00			0.95			0.98	
Flpb, ped/bikes		1.00			1.00			0.96			0.97	
Frt		0.99			1.00			0.95			0.96	
Flt Protected		1.00			1.00			0.97			0.99	
Satd. Flow (prot)		3220			1735			1545			1630	
Flt Permitted		1.00			0.99			0.78			0.89	
Satd. Flow (perm)		3220			1714			1250			1481	
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)	0	379	26	11	347	0	47	0	26	37	53	32
RTOR Reduction (vph)	0	0	0	0	0	0	0	33	0	0	17	0
Lane Group Flow (vph)	0	405	0	0	358	0	0	40	0	0	105	0
Confl. Peds. (#/hr)	65		85	85		65	65		60	60		65
Confl. Bikes (#/hr)			10			25						
Heavy Vehicles (%)	0%	8%	13%	0%	8%	0%	0%	0%	8%	6%	2%	4%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases				6			8			4		
Actuated Green, G (s)		46.6			46.6			17.4			17.4	
Effective Green, g (s)		47.6			47.6			18.4			18.4	
Actuated g/C Ratio		0.63			0.63			0.24			0.24	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2016			1073			302			358	
v/s Ratio Prot		0.13										
v/s Ratio Perm					c0.21			0.03			c0.07	
v/c Ratio		0.20			0.33			0.13			0.29	
Uniform Delay, d1		6.1			6.7			22.6			23.5	
Progression Factor		0.96			0.60			1.00			1.00	
Incremental Delay, d2		0.2			0.8			0.2			0.5	
Delay (s)		6.0			4.9			22.8			23.9	
Level of Service		A			A			C			C	
Approach Delay (s)		6.0			4.9			22.8			23.9	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.32				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBT	WBL	WBT	Ø4
Lane Configurations				
Traffic Volume (vph)	405	20	340	
Future Volume (vph)	405	20	340	
Turn Type	NA	Perm	NA	
Protected Phases	2		6	4
Permitted Phases		6		
Detector Phase	2	6	6	
Switch Phase				
Minimum Initial (s)	18.0	18.0	18.0	20.0
Minimum Split (s)	23.9	23.9	23.9	23.0
Total Split (s)	53.0	53.0	53.0	23.0
Total Split (%)	69.7%	69.7%	69.7%	30%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	-1.0		-1.0	
Total Lost Time (s)	4.9		4.9	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Min	C-Min	C-Min	None
Act Effct Green (s)	64.8		64.8	
Actuated g/C Ratio	0.85		0.85	
v/c Ratio	0.30		0.26	
Control Delay	3.5		4.3	
Queue Delay	0.0		0.0	
Total Delay	3.5		4.3	
LOS	A		A	
Approach Delay	3.5		4.3	
Approach LOS	A		A	

Intersection Summary	
Cycle Length: 76	
Actuated Cycle Length: 76	
Offset: 8 (11%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.30	
Intersection Signal Delay: 3.9	Intersection LOS: A
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 23: Regent Park Boulevard & Dundas Street E

Lane Group	EBT	WBT
Lane Group Flow (vph)	438	375
v/c Ratio	0.30	0.26
Control Delay	3.5	4.3
Queue Delay	0.0	0.0
Total Delay	3.5	4.3
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	22.1	36.3
Internal Link Dist (m)	79.6	86.0
Turn Bay Length (m)		
Base Capacity (vph)	1466	1429
Starvation Cap Reductn	54	121
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.31	0.29

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	405	15	20	340	0	0
Future Volume (vph)	405	15	20	340	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.0	3.0	3.5	3.0	3.0
Total Lost time (s)	4.9			4.9		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	0.99			1.00		
Flpb, ped/bikes	1.00			0.99		
Frt	1.00			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1718			1720		
Flt Permitted	1.00			0.97		
Satd. Flow (perm)	1718			1673		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	422	16	21	354	0	0
RTOR Reduction (vph)	1	0	0	0	0	0
Lane Group Flow (vph)	437	0	0	375	0	0
Confl. Peds. (#/hr)		125	125		40	60
Heavy Vehicles (%)	8%	0%	9%	8%	0%	0%
Turn Type	NA		Perm	NA		
Protected Phases	2			6		
Permitted Phases			6			
Actuated Green, G (s)	59.1			59.1		
Effective Green, g (s)	60.1			60.1		
Actuated g/C Ratio	0.79			0.79		
Clearance Time (s)	5.9			5.9		
Vehicle Extension (s)	3.0			3.0		
Lane Grp Cap (vph)	1358			1322		
v/s Ratio Prot	c0.25					
v/s Ratio Perm				0.22		
v/c Ratio	0.32			0.28		
Uniform Delay, d1	2.2			2.1		
Progression Factor	0.74			1.00		
Incremental Delay, d2	0.6			0.5		
Delay (s)	2.3			2.7		
Level of Service	A			A		
Approach Delay (s)	2.3			2.7	0.0	
Approach LOS	A			A	A	

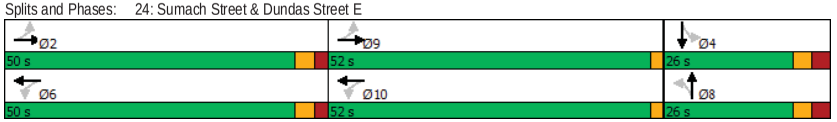
Intersection Summary				
HCM 2000 Control Delay	2.5	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.28			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	7.9	
Intersection Capacity Utilization	53.6%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	15	370	25	325	15	30	15	30				
Future Volume (vph)	15	370	25	325	15	30	15	30				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)					26.0	26.0	26.0	26.0	21.0	21.0	52.0	52.0
Total Split (s)					26.0	26.0	26.0	26.0	50.0	50.0	52.0	52.0
Total Split (%)					20.3%	20.3%	20.3%	20.3%	39%	39%	41%	41%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)						-1.0		-1.0				
Total Lost Time (s)						5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	None	None	Min	Min	None	None
Act Effct Green (s)		67.7		67.7		25.0		25.0				
Actuated g/C Ratio		0.76		0.76		0.28		0.28				
v/c Ratio		0.35		0.34		0.27		0.18				
Control Delay		6.4		6.3		26.0		29.9				
Queue Delay		0.9		0.0		0.0		0.0				
Total Delay		7.4		6.3		26.0		29.9				
LOS		A		A		C		C				
Approach Delay		7.4		6.3		26.0		29.9				
Approach LOS		A		A		C		C				

Intersection Summary			
Cycle Length: 128			
Actuated Cycle Length: 88.6			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 24: Sumach Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	440	413	109	71
v/c Ratio	0.35	0.34	0.27	0.18
Control Delay	6.4	6.3	26.0	29.9
Queue Delay	0.9	0.0	0.0	0.0
Total Delay	7.4	6.3	26.0	29.9
Queue Length 50th (m)	30.0	27.4	11.1	9.0
Queue Length 95th (m)	44.4	41.4	27.9	22.3
Internal Link Dist (m)	86.0	75.5	76.2	121.5
Turn Bay Length (m)				
Base Capacity (vph)	1263	1218	400	393
Starvation Cap Reductn	544	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.34	0.27	0.18

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	370	20	25	325	30	15	30	55	15	30	20
Future Volume (vph)	15	370	20	25	325	30	15	30	55	15	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.98			0.93			0.91	
Flpb, ped/bikes		1.00			0.99			0.97			0.98	
Frt		0.99			0.99			0.93			0.96	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		1691			1669			1432			1523	
Flt Permitted		0.98			0.96			0.95			0.92	
Satd. Flow (perm)		1665			1608			1370			1419	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	402	22	27	353	33	16	33	60	16	33	22
RTOR Reduction (vph)	0	1	0	0	2	0	0	34	0	0	13	0
Lane Group Flow (vph)	0	439	0	0	411	0	0	75	0	0	58	0
Confl. Peds. (#/hr)	70		135	135		70	120		50	50		120
Confl. Bikes (#/hr)			5			30						
Heavy Vehicles (%)	13%	7%	14%	9%	8%	3%	11%	3%	10%	0%	3%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		68.2			68.2			13.9			13.9	
Effective Green, g (s)		69.2			69.2			14.9			14.9	
Actuated g/C Ratio		0.77			0.77			0.17			0.17	
Clearance Time (s)								6.0			6.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		1278			1235			226			234	
v/s Ratio Prot												
v/s Ratio Perm		c0.26			0.26			c0.05			0.04	
v/c Ratio		0.34			0.33			0.33			0.25	
Uniform Delay, d1		3.3			3.3			33.2			32.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.2			0.9			0.6	
Delay (s)		3.5			3.4			34.1			33.3	
Level of Service		A			A			C			C	
Approach Delay (s)		3.5			3.4			34.1			33.3	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio	0.35				
Actuated Cycle Length (s)	90.1	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	53.7%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	425	15	5	380	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	425	15	5	380	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	472	17	6	422	0	0	0	0	0	0	0
Pedestrians		5			5			115			45	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			0			4	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		99			98							
pX, platoon unblocked	0.89			0.94			0.93	0.93	0.94	0.93	0.93	0.89
vC, conflicting volume	467			604			1034	1074	600	964	1083	472
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	344			543			842	885	539	766	894	350
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	100	100	100
cM capacity (veh/h)	1052			970			255	253	509	275	250	596

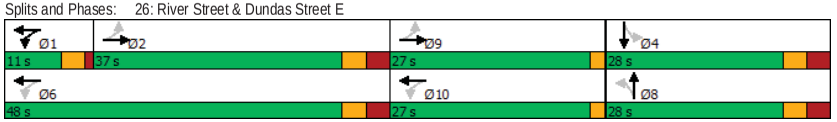
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	489	428	0
Volume Left	0	6	0
Volume Right	17	0	0
cSH	1052	970	1700
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.2	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	0.0
Approach LOS			A

Intersection Summary					
Average Delay			0.1		
Intersection Capacity Utilization			35.5%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	5	395	100	305	30	245	95	360				
Future Volume (vph)	5	395	100	305	30	245	95	360				
Turn Type	Perm	NA	custom	NA	Perm	NA	Perm	NA				
Protected Phases		2 9	1	1 6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	1	1 6	8	8	4	4				
Switch Phase												
Minimum Initial (s)			6.0		21.0	21.0	21.0	21.0	21.0	21.0	5.0	5.0
Minimum Split (s)			10.0		27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)			11.0		28.0	28.0	28.0	28.0	37.0	48.0	27.0	27.0
Total Split (%)			10.7%		27.2%	27.2%	27.2%	27.2%	36%	47%	26%	26%
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)			1.0		3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0
Lost Time Adjust (s)					-1.0	-1.0	-1.0	-1.0				
Total Lost Time (s)					5.0	5.0	5.0	5.0				
Lead/Lag			Lead						Lag			
Lead-Lag Optimize?			Yes						Yes			
Recall Mode			None		Min	Min	Min	Min	Min	Min	None	None
Act Effct Green (s)		29.7		43.1	23.7	23.7	23.7	23.7				
Actuated g/C Ratio		0.40		0.57	0.32	0.32	0.32	0.32				
v/c Ratio		0.66		0.55	0.26	0.71	0.58	0.85				
Control Delay		22.5		11.4	31.8	33.6	42.9	43.6				
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay		22.5		11.4	31.8	33.6	42.9	43.6				
LOS		C		B	C	C	D	D				
Approach Delay		22.5		11.4		33.5		43.5				
Approach LOS		C		B		C		D				

Intersection Summary			
Cycle Length: 103			
Actuated Cycle Length: 75			
Natural Cycle: 95			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 28.1		Intersection LOS: C	
Intersection Capacity Utilization 103.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 26: River Street & Dundas Street E



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	452	478	32	373	101	436
v/c Ratio	0.66	0.55	0.26	0.71	0.58	0.85
Control Delay	22.5	11.4	31.8	33.6	42.9	43.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.5	11.4	31.8	33.6	42.9	43.6
Queue Length 50th (m)	48.7	33.8	2.9	37.8	10.3	48.7
Queue Length 95th (m)	72.1	50.0	15.2	#130.4	#49.2	#164.7
Internal Link Dist (m)	73.4	80.5		131.0		118.9
Turn Bay Length (m)			20.0		25.0	
Base Capacity (vph)	843	997	124	523	173	514
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	0.54	0.48	0.26	0.71	0.58	0.85

Intersection Summary

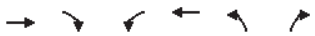
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	395	25	100	305	45	30	245	105	95	360	50
Future Volume (vph)	5	395	25	100	305	45	30	245	105	95	360	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			3.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	0.97		1.00	0.98	
Flpb, ped/bikes		1.00			0.99		0.95	1.00		0.96	1.00	
Frt		0.99			0.99		1.00	0.95		1.00	0.98	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1725			1702		1474	1633		1543	1625	
Flt Permitted		1.00			0.84		0.25	1.00		0.34	1.00	
Satd. Flow (perm)		1717			1448		394	1633		551	1625	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	420	27	106	324	48	32	261	112	101	383	53
RTOR Reduction (vph)	0	3	0	0	6	0	0	13	0	0	4	0
Lane Group Flow (vph)	0	449	0	0	472	0	32	360	0	101	432	0
Confl. Peds. (#/hr)	65		90	90		65	65		45	45		65
Confl. Bikes (#/hr)			5			30						15
Heavy Vehicles (%)	0%	7%	4%	3%	7%	0%	9%	9%	1%	5%	12%	7%
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2 9		1	1 6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		34.5			45.7		22.6	22.6		22.6	22.6	
Effective Green, g (s)		35.5			41.7		23.6	23.6		23.6	23.6	
Actuated g/C Ratio		0.47			0.55		0.31	0.31		0.31	0.31	
Clearance Time (s)							6.0	6.0		6.0	6.0	
Vehicle Extension (s)							3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		798			818		121	505		170	502	
v/s Ratio Prot					c0.06			0.22			c0.27	
v/s Ratio Perm		c0.26			c0.25		0.08			0.18		
v/c Ratio		0.56			0.58		0.26	0.71		0.59	0.86	
Uniform Delay, d1		14.8			11.5		19.8	23.3		22.3	24.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9			1.0		1.2	4.7		5.5	14.0	
Delay (s)		15.7			12.5		21.0	28.1		27.8	38.8	
Level of Service		B			B		C	C		C	D	
Approach Delay (s)		15.7			12.5			27.5			36.7	
Approach LOS		B			B			C			D	

Intersection Summary

HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	345	0	0	760	0	0
Future Volume (Veh/h)	345	0	0	760	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	383	0	0	844	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	88			164		
pX, platoon unblocked			0.98		0.90	0.98
vC, conflicting volume			383		805	192
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			330		467	134
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1216		478	878

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	255	128	281	563
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1216	1700
Volume to Capacity	0.15	0.08	0.00	0.33
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	35	0	5	65
Future Volume (Veh/h)	0	0	35	0	5	65
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	39	0	6	72
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						57
pX, platoon unblocked						
vC, conflicting volume	123	39			39	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	123	39			39	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	874	1038			1584	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	39	78
Volume Left	0	0	6
Volume Right	0	0	0
cSH	1700	1700	1584
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	0.6
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	0.6
Approach LOS	A		

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	10.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	10	495	565	75
Future Volume (Veh/h)	0	0	10	495	565	75
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	11	556	635	84
Pedestrians	150			5	10	
Lane Width (m)	0.0			3.5	3.5	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				39		
pX, platoon unblocked	0.93					
vC, conflicting volume	1137	514	869			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1005	514	869			
tC, single (s)	6.8	6.9	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	98			
cM capacity (veh/h)	220	508	717			

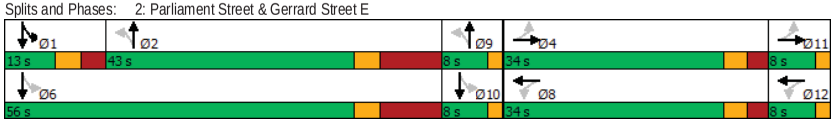
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	196	371	423	296
Volume Left	11	0	0	0
Volume Right	0	0	0	84
cSH	717	1700	1700	1700
Volume to Capacity	0.02	0.22	0.25	0.17
Queue Length 95th (m)	0.4	0.0	0.0	0.0
Control Delay (s)	0.7	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.3		0.0	
Approach LOS				

Intersection Summary				
Average Delay			0.1	
Intersection Capacity Utilization			32.3%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø4	Ø6	Ø8
Lane Configurations												
Traffic Volume (vph)	30	535	40	240	65	345	215	280				
Future Volume (vph)	30	535	40	240	65	345	215	280				
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA				
Protected Phases		4 11		8 12		2 9	1	1 6 10	2	4	6	8
Permitted Phases	4 11		8 12		2 9		6 10					
Detector Phase	4	4	8	8	2	2	1	1 6				
Switch Phase												
Minimum Initial (s)							6.0		22.0	21.0	22.0	21.0
Minimum Split (s)							12.5		33.2	31.8	33.2	31.8
Total Split (s)							13.0		43.0	34.0	56.0	34.0
Total Split (%)							12.3%		41%	32%	53%	32%
Yellow Time (s)							3.3		3.3	3.0	3.3	3.0
All-Red Time (s)							3.2		7.9	2.8	7.9	2.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead		Lag			
Lead-Lag Optimize?							Yes		Yes			
Recall Mode							None		Min	Min	Min	Min
Act Effct Green (s)		31.4		31.4		27.0		51.1				
Actuated g/C Ratio		0.34		0.34		0.29		0.55				
v/c Ratio		0.61		0.45		0.70		0.49				
Control Delay		28.3		21.3		35.0		13.3				
Queue Delay		0.0		0.0		0.0		0.0				
Total Delay		28.3		21.3		35.0		13.3				
LOS		C		C		C		B				
Approach Delay		28.3		21.3		35.0		13.3				
Approach LOS		C		C		C		B				

Intersection Summary		
Cycle Length: 106		
Actuated Cycle Length: 93		
Natural Cycle: 95		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.70		
Intersection Signal Delay: 24.4	Intersection LOS: C	
Intersection Capacity Utilization 98.0%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 2: Parliament Street & Gerrard Street E



Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	8.0	8.0	8.0	8.0
Total Split (%)	8%	8%	8%	8%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	645	422	505	583
v/c Ratio	0.61	0.45	0.70	0.49
Control Delay	28.3	21.3	35.0	13.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.3	21.3	35.0	13.3
Queue Length 50th (m)	49.4	24.7	43.7	29.6
Queue Length 95th (m)	73.6	41.6	63.4	42.1
Internal Link Dist (m)	33.0	65.6	119.2	15.0
Turn Bay Length (m)				
Base Capacity (vph)	1096	957	895	1236
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.44	0.56	0.47

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	535	60	40	240	130	65	345	80	215	280	70
Future Volume (vph)	30	535	60	40	240	130	65	345	80	215	280	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.8			4.8			10.2			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.99			0.95			0.95			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.97	
Frt		0.99			0.95			0.98			0.98	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3414			3105			3183			3164	
Flt Permitted		0.92			0.84			0.77			0.62	
Satd. Flow (perm)		3133			2627			2459			1992	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	552	62	41	247	134	67	356	82	222	289	72
RTOR Reduction (vph)	0	7	0	0	49	0	0	12	0	0	12	0
Lane Group Flow (vph)	0	638	0	0	373	0	0	493	0	0	571	0
Confl. Peds. (#/hr)	130		120	120		130	125		235	235		125
Confl. Bikes (#/hr)			25			10			15			5
Heavy Vehicles (%)	10%	0%	5%	0%	0%	10%	4%	2%	2%	6%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4 11			8 12			2 9		1	1 6 10	
Permitted Phases	4 11			8 12			2 9			6 10		
Actuated Green, G (s)		35.1			35.1			41.9			55.0	
Effective Green, g (s)		36.1			36.1			42.9			45.8	
Actuated g/C Ratio		0.38			0.38			0.46			0.49	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1201			1007			1121			1064	
v/s Ratio Prot											c0.04	
v/s Ratio Perm		c0.20			0.14			c0.20			c0.22	
v/c Ratio		0.53			0.37			0.44			0.54	
Uniform Delay, d1		22.4			20.8			17.4			16.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			0.2			0.3			0.5	
Delay (s)		22.9			21.1			17.7			17.3	
Level of Service		C			C			B			B	
Approach Delay (s)		22.9			21.1			17.7			17.3	
Approach LOS		C			C			B			B	

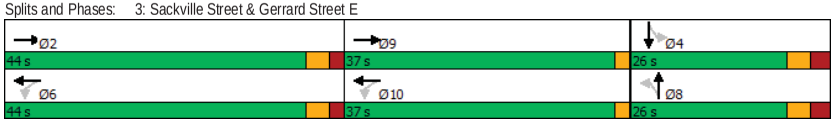
Intersection Summary				
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	22.5	
Intersection Capacity Utilization	98.0%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations											
Traffic Volume (vph)	935	35	505	5	0	135	40				
Future Volume (vph)	935	35	505	5	0	135	40				
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases	2 9		6 10		8		4	2	6	9	10
Permitted Phases		6 10		8		4					
Detector Phase	2	6	6	8	8	4	4				
Switch Phase											
Minimum Initial (s)				20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)				25.7	25.7	25.7	25.7	21.0	21.0	37.0	37.0
Total Split (s)				26.0	26.0	26.0	26.0	44.0	44.0	37.0	37.0
Total Split (%)				24.3%	24.3%	24.3%	24.3%	41%	41%	35%	35%
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				2.7	2.7	2.7	2.7	2.0	2.0	0.0	0.0
Lost Time Adjust (s)					-1.0		-1.0				
Total Lost Time (s)					4.7		4.7				
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode				Min	Min	Min	Min	Min	Min	None	None
Act Effct Green (s)	37.2		37.2		21.7		21.7				
Actuated g/C Ratio	0.55		0.55		0.32		0.32				
v/c Ratio	0.52		0.35		0.06		0.49				
Control Delay	10.1		8.6		5.0		26.2				
Queue Delay	0.0		0.0		0.0		0.0				
Total Delay	10.1		8.6		5.0		26.2				
LOS	B		A		A		C				
Approach Delay	10.1		8.6		5.0		26.2				
Approach LOS	B		A		A		C				

Intersection Summary			
Cycle Length: 107			
Actuated Cycle Length: 67.8			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Sackville Street & Gerrard Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	990	562	26	209
v/c Ratio	0.52	0.35	0.06	0.49
Control Delay	10.1	8.6	5.0	26.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.1	8.6	5.0	26.2
Queue Length 50th (m)	36.4	18.3	0.0	22.0
Queue Length 95th (m)	49.3	26.7	3.8	47.6
Internal Link Dist (m)	138.2	47.8	34.3	15.3
Turn Bay Length (m)				
Base Capacity (vph)	2215	1862	470	430
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.45	0.30	0.06	0.49

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	935	15	35	505	0	5	0	20	135	40	25
Future Volume (vph)	0	935	15	35	505	0	5	0	20	135	40	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			4.7			4.7	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.94			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.96	
Frt		1.00			1.00			0.89			0.98	
Flt Protected		1.00			1.00			0.99			0.97	
Satd. Flow (prot)		3448			3363			1480			1682	
Flt Permitted		1.00			0.86			0.95			0.78	
Satd. Flow (perm)		3448			2901			1416			1359	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	974	16	36	526	0	5	0	21	141	42	26
RTOR Reduction (vph)	0	2	0	0	0	0	0	18	0	0	4	0
Lane Group Flow (vph)	0	988	0	0	562	0	0	8	0	0	205	0
Confl. Peds. (#/hr)	85		70	70		85	90		60	60		90
Confl. Bikes (#/hr)			60			15			5			10
Heavy Vehicles (%)	0%	3%	0%	0%	6%	0%	0%	0%	5%	1%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases				6 10			8			4		
Actuated Green, G (s)		39.7			39.7			20.6			20.6	
Effective Green, g (s)		40.7			40.7			21.6			21.6	
Actuated g/C Ratio		0.60			0.60			0.32			0.32	
Clearance Time (s)								5.7			5.7	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		2063			1736			449			431	
v/s Ratio Prot		c0.29										
v/s Ratio Perm					0.19			0.01			c0.15	
v/c Ratio		0.48			0.32			0.02			0.48	
Uniform Delay, d1		7.7			6.8			15.9			18.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.1			0.0			0.8	
Delay (s)		7.9			6.9			15.9			19.5	
Level of Service		A			A			B			B	
Approach Delay (s)		7.9			6.9			15.9			19.5	
Approach LOS		A			A			B			B	

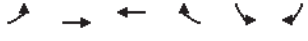
Intersection Summary					
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio	0.50				
Actuated Cycle Length (s)	68.0	Sum of lost time (s)		9.7	
Intersection Capacity Utilization	66.1%	ICU Level of Service		C	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	1080	535	5	15	5
Future Volume (Veh/h)	10	1080	535	5	15	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	1271	629	6	18	6
Pedestrians		5			65	
Lane Width (m)		3.5			3.0	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		72	141			
pX, platoon unblocked	0.99				0.84	0.99
vC, conflicting volume	700				1356	388
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	685				1014	370
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				90	99
cM capacity (veh/h)	867				188	595

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	436	847	419	216	24
Volume Left	12	0	0	0	18
Volume Right	0	0	0	6	6
cSH	867	1700	1700	1700	227
Volume to Capacity	0.01	0.50	0.25	0.13	0.11
Queue Length 95th (m)	0.3	0.0	0.0	0.0	2.7
Control Delay (s)	0.4	0.0	0.0	0.0	22.7
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		22.7
Approach LOS					C

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1090	535	5	5	5
Future Volume (Veh/h)	5	1090	535	5	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	6	1253	615	6	6	6
Pedestrians					60	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		145	68			
pX, platoon unblocked	0.96				0.87	0.96
vC, conflicting volume	681				1316	370
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	588				868	266
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	99
cM capacity (veh/h)	915				244	678

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	424	835	410	211	12
Volume Left	6	0	0	0	6
Volume Right	0	0	0	6	6
cSH	915	1700	1700	1700	359
Volume to Capacity	0.01	0.49	0.24	0.12	0.03
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.8
Control Delay (s)	0.2	0.0	0.0	0.0	15.4
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		15.4
Approach LOS					C

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations									
Traffic Volume (vph)	10	1075	20	530	25				
Future Volume (vph)	10	1075	20	530	25				
Turn Type	Perm	NA	Perm	NA	NA				
Protected Phases		2 9		6 10	8	2	6	9	10
Permitted Phases	2 9		6 10						
Detector Phase	2 9	2 9	6 10	6 10	8				
Switch Phase									
Minimum Initial (s)					15.0	11.0	11.0	5.0	5.0
Minimum Split (s)					25.4	26.2	26.2	72.0	72.0
Total Split (s)					27.0	43.0	43.0	72.0	72.0
Total Split (%)					19.0%	30%	30%	51%	51%
Yellow Time (s)					3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					7.4	7.2	7.2	0.0	0.0
Lost Time Adjust (s)					-1.0				
Total Lost Time (s)					9.4				
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode					None	Min	Min	None	None
Act Effct Green (s)		65.7		65.7	16.4				
Actuated g/C Ratio		0.72		0.72	0.18				
v/c Ratio		0.48		0.32	0.29				
Control Delay		8.9		7.1	24.2				
Queue Delay		0.0		0.0	0.0				
Total Delay		8.9		7.1	24.2				
LOS		A		A	C				
Approach Delay		8.9		7.1	24.2				
Approach LOS		A		A	C				

Intersection Summary			
Cycle Length: 142			
Actuated Cycle Length: 91.6			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Sumach Street & Gerrard Street E

Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	1128	655	93
v/c Ratio	0.48	0.32	0.29
Control Delay	8.9	7.1	24.2
Queue Delay	0.0	0.0	0.0
Total Delay	8.9	7.1	24.2
Queue Length 50th (m)	54.3	25.3	7.9
Queue Length 95th (m)	69.3	34.6	22.2
Internal Link Dist (m)	44.0	75.7	30.7
Turn Bay Length (m)			
Base Capacity (vph)	3215	2669	343
Starvation Cap Reductn	267	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.38	0.25	0.27

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1075	10	20	530	85	10	25	55	0	0	0
Future Volume (vph)	10	1075	10	20	530	85	10	25	55	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.2			9.2			9.4				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			0.96			0.95				
Flpb, ped/bikes		1.00			1.00			0.98				
Frt		1.00			0.98			0.92				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3482			3235			1600				
Flt Permitted		0.95			0.89			0.99				
Satd. Flow (perm)		3301			2885			1600				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1108	10	21	546	88	10	26	57	0	0	0
RTOR Reduction (vph)	0	0	0	0	8	0	0	40	0	0	0	0
Lane Group Flow (vph)	0	1128	0	0	647	0	0	53	0	0	0	0
Confl. Peds. (#/hr)	95		95	95		95	80		35	35		80
Confl. Bikes (#/hr)			75			35			5			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		2 9			6 10			8				
Permitted Phases	2 9			6 10			8					
Actuated Green, G (s)		70.2			70.2			11.2				
Effective Green, g (s)		71.2			71.2			12.2				
Actuated g/C Ratio		0.76			0.76			0.13				
Clearance Time (s)								10.4				
Vehicle Extension (s)								3.0				
Lane Grp Cap (vph)		2505			2189			208				
v/s Ratio Prot												
v/s Ratio Perm		c0.34			0.22			0.03				
v/c Ratio		0.45			0.30			0.25				
Uniform Delay, d1		4.1			3.5			36.7				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.1			0.1			0.6				
Delay (s)		4.3			3.6			37.4				
Level of Service		A			A			D				
Approach Delay (s)		4.3			3.6			37.4			0.0	
Approach LOS		A			A			D			A	

Intersection Summary				
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.46			
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	19.6	
Intersection Capacity Utilization	66.4%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1130	625	0	15	10
Future Volume (Veh/h)	0	1130	625	0	15	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1256	694	0	17	11
Pedestrians					65	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		100	91			
pX, platoon unblocked	0.95				0.91	0.95
vC, conflicting volume	759				1387	412
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	638				972	273
tC, single (s)	4.1				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	100				92	98
cM capacity (veh/h)	862				219	638

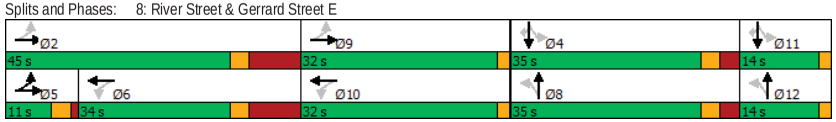
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	628	628	347	347	28
Volume Left	0	0	0	0	17
Volume Right	0	0	0	0	11
cSH	1700	1700	1700	1700	295
Volume to Capacity	0.37	0.37	0.20	0.20	0.09
Queue Length 95th (m)	0.0	0.0	0.0	0.0	2.4
Control Delay (s)	0.0	0.0	0.0	0.0	18.5
Lane LOS					C
Approach Delay (s)	0.0		0.0		18.5
Approach LOS					C

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø2	Ø4	Ø6
Lane Configurations												
Traffic Volume (vph)	225	855	70	365	70	285	165	360	190			
Future Volume (vph)	225	855	70	365	70	285	165	360	190			
Turn Type	custom	NA	Perm	NA	Perm	NA	Perm	NA	Perm			
Protected Phases	5	5 2 9		6 10		8 12		4 11		2	4	6
Permitted Phases	2 9		6 10		8 12		4 11		4 11			
Detector Phase	5	5 2	6	6	8	8	4	4	4			
Switch Phase												
Minimum Initial (s)	6.0									23.0	19.0	23.0
Minimum Split (s)	10.0									33.8	30.0	33.8
Total Split (s)	11.0									45.0	35.0	34.0
Total Split (%)	8.7%									36%	28%	27%
Yellow Time (s)	3.0									3.0	3.0	3.0
All-Red Time (s)	1.0									7.8	3.0	7.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag	Lead											Lag
Lead-Lag Optimize?	Yes											Yes
Recall Mode	None									Min	Min	Min
Act Effct Green (s)		51.9		33.5	32.9	32.9	32.9	32.9	32.9			
Actuated g/C Ratio		0.56		0.36	0.35	0.35	0.35	0.35	0.35			
v/c Ratio		0.85		0.82	0.30	0.74	0.92	0.57	0.31			
Control Delay		22.7		35.6	29.5	35.4	82.5	30.4	5.3			
Queue Delay		0.8		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		23.6		35.6	29.5	35.4	82.5	30.4	5.3			
LOS		C		D	C	D	F	C	A			
Approach Delay		23.6		35.6		34.6		35.8				
Approach LOS		C		D		C		D				

Intersection Summary			
Cycle Length: 126			
Actuated Cycle Length: 93			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 30.7		Intersection LOS: C	
Intersection Capacity Utilization 113.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 8: River Street & Gerrard Street E



Lane Group	Ø8	Ø9	Ø10	Ø11	Ø12
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Turn Type					
Protected Phases	8	9	10	11	12
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	19.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	32.0	32.0	14.0	14.0
Total Split (s)	35.0	32.0	32.0	14.0	14.0
Total Split (%)	28%	25%	25%	11%	11%
Yellow Time (s)	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	3.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	None	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1193	562	73	464	172	375	198
v/c Ratio	0.85	0.82	0.30	0.74	0.92	0.57	0.31
Control Delay	22.7	35.6	29.5	35.4	82.5	30.4	5.3
Queue Delay	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	35.6	29.5	35.4	82.5	30.4	5.3
Queue Length 50th (m)	64.8	41.9	7.6	55.4	23.7	43.7	0.0
Queue Length 95th (m)	111.9	74.3	24.9	127.8	#80.9	99.8	15.1
Internal Link Dist (m)	67.0	81.6		126.5		61.7	
Turn Bay Length (m)			30.0		30.0		
Base Capacity (vph)	1409	688	240	624	187	658	629
Starvation Cap Reductn	60	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	0.88	0.82	0.30	0.74	0.92	0.57	0.31

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	855	65	70	365	105	70	285	160	165	360	190
Future Volume (vph)	225	855	65	70	365	105	70	285	160	165	360	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		3.0			9.8		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			0.98		1.00	0.98		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.98	1.00	1.00
Frt		0.99			0.97		1.00	0.95		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3387			3270		1622	1729		1639	1860	1426
Flt Permitted		0.69			0.57		0.40	1.00		0.31	1.00	1.00
Satd. Flow (perm)		2365			1865		681	1729		527	1860	1426
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	234	891	68	73	380	109	73	297	167	172	375	198
RTOR Reduction (vph)	0	4	0	0	16	0	0	15	0	0	0	118
Lane Group Flow (vph)	0	1189	0	0	546	0	73	449	0	172	375	80
Confl. Peds. (#/hr)	40		80	80		40	15		40	40		15
Confl. Bikes (#/hr)			35			15			15			10
Heavy Vehicles (%)	3%	2%	3%	0%	4%	0%	3%	0%	1%	1%	1%	2%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	5 2 9			6 10			8 12			4 11	
Permitted Phases	2 9			6 10			8 12			4 11		4 11
Actuated Green, G (s)		54.0			42.8		37.5	37.5		37.5	37.5	37.5
Effective Green, g (s)		45.2			43.8		38.5	38.5		38.5	38.5	38.5
Actuated g/C Ratio		0.47			0.46		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1207			855		274	697		212	749	574
v/s Ratio Prot		c0.08						0.26			0.20	
v/s Ratio Perm		c0.38			c0.29		0.11			c0.33		0.06
v/c Ratio		0.98			0.64		0.27	0.64		0.81	0.50	0.14
Uniform Delay, d1		24.8			19.8		19.1	23.0		25.3	21.3	18.0
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		22.1			1.6		0.5	2.1		20.5	0.5	0.1
Delay (s)		46.9			21.4		19.6	25.0		45.8	21.8	18.1
Level of Service		D			C		B	C		D	C	B
Approach Delay (s)		46.9			21.4			24.3			26.4	
Approach LOS		D			C			C			C	

Intersection Summary					
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.96				
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	19.8		
Intersection Capacity Utilization	113.3%	ICU Level of Service	H		
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	0	5	0	5	0	10	0	5	85	0
Future Volume (Veh/h)	10	0	0	5	0	5	0	10	0	5	85	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	0	0	6	0	6	0	12	0	6	100	0
Pedestrians		60			35			5			15	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		5			3			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											58	
pX, platoon unblocked												
vC, conflicting volume	205	219	165	164	219	62	160			47		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	205	219	165	164	219	62	160			47		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	99	100	99	100			100		
cM capacity (veh/h)	657	624	834	726	624	964	1356			1525		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	12	12	106
Volume Left	12	6	0	6
Volume Right	0	6	0	0
cSH	657	828	1356	1525
Volume to Capacity	0.02	0.01	0.00	0.00
Queue Length 95th (m)	0.4	0.3	0.0	0.1
Control Delay (s)	10.6	9.4	0.0	0.4
Lane LOS	B	A		A
Approach Delay (s)	10.6	9.4	0.0	0.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	26.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	35	455	25	25	355
Future Volume (Veh/h)	10	35	455	25	25	355
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	41	535	29	29	418
Pedestrians	220		5			55
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	17		0			5
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			151			143
pX, platoon unblocked	0.95	0.95			0.95	
vC, conflicting volume	1042	557			784	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	934	422			662	
tC, single (s)	6.8	6.9			4.3	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	94	91			96	
cM capacity (veh/h)	202	440			678	

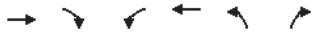
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	53	357	207	168	279
Volume Left	12	0	0	29	0
Volume Right	41	0	29	0	0
cSH	347	1700	1700	678	1700
Volume to Capacity	0.15	0.21	0.12	0.04	0.16
Queue Length 95th (m)	4.0	0.0	0.0	1.0	0.0
Control Delay (s)	17.2	0.0	0.0	2.2	0.0
Lane LOS	C			A	
Approach Delay (s)	17.2	0.0		0.8	
Approach LOS	C				

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Traffic Volume (veh/h)	0	55	35	0	5	5
Future Volume (Veh/h)	0	55	35	0	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	59	38	0	5	5
Pedestrians		25	10		40	
Lane Width (m)		3.5	3.5		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		2	1		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	78				147	103
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78				147	103
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1487				817	908

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	59	38	10
Volume Left	0	0	5
Volume Right	0	0	5
cSH	1700	1700	860
Volume to Capacity	0.03	0.02	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		26.4%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	Y	
Traffic Volume (veh/h)	60	0	0	20	15	45
Future Volume (Veh/h)	60	0	0	20	15	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	72	0	0	24	18	54
Pedestrians	15			15	40	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	1			1	3	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			112		151	127
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			112		151	127
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	94
cM capacity (veh/h)			1445		809	889

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	72	24	72
Volume Left	0	0	18
Volume Right	0	0	54
cSH	1700	1700	867
Volume to Capacity	0.04	0.01	0.08
Queue Length 95th (m)	0.0	0.0	2.1
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

Intersection Summary				
Average Delay		4.1		
Intersection Capacity Utilization		26.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	95	20	0	5	0
Future Volume (Veh/h)	10	95	20	0	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	12	114	24	0	6	0
Pedestrians			65		35	
Lane Width (m)			3.5		3.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			6		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	59				262	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	59				262	59
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1516				666	986

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	126	24	6
Volume Left	12	0	6
Volume Right	0	0	0
cSH	1516	1700	666
Volume to Capacity	0.01	0.01	0.01
Queue Length 95th (m)	0.2	0.0	0.2
Control Delay (s)	0.8	0.0	10.5
Lane LOS	A		B
Approach Delay (s)	0.8	0.0	10.5
Approach LOS			B

Intersection Summary				
Average Delay		1.0		
Intersection Capacity Utilization		22.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	75	20	5	5	0	0	0	0	10	70	5
Future Volume (vph)	10	75	20	5	5	0	0	0	0	10	70	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	83	22	6	6	0	0	0	0	11	78	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	116	12	95
Volume Left (vph)	11	6	11
Volume Right (vph)	22	0	6
Hadj (s)	-0.07	0.27	0.03
Departure Headway (s)	4.1	4.5	4.2
Degree Utilization, x	0.13	0.01	0.11
Capacity (veh/h)	864	775	824
Control Delay (s)	7.7	7.6	7.7
Approach Delay (s)	7.7	7.6	7.7
Approach LOS	A	A	A

Intersection Summary				
Delay		7.7		
Level of Service		A		
Intersection Capacity Utilization		32.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	55	10	0	0	0	5	70	75	10	30	5
Future Volume (vph)	20	55	10	0	0	0	5	70	75	10	30	5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	22	60	11	0	0	0	5	77	82	11	33	5

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	93	164	49
Volume Left (vph)	22	5	11
Volume Right (vph)	11	82	5
Hadj (s)	0.05	-0.22	0.11
Departure Headway (s)	4.4	4.0	4.4
Degree Utilization, x	0.11	0.18	0.06
Capacity (veh/h)	779	882	795
Control Delay (s)	8.0	7.8	7.7
Approach Delay (s)	8.0	7.8	7.7
Approach LOS	A	A	A

Intersection Summary				
Delay		7.8		
Level of Service		A		
Intersection Capacity Utilization		32.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	130	10	0	0	0	0
Future Volume (Veh/h)	130	10	0	0	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	140	11	0	0	0	0
Pedestrians	20			5	30	
Lane Width (m)	3.5			0.0	0.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	2			0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			181		196	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			181		196	180
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1407		784	867

Direction, Lane #	EB 1
Volume Total	151
Volume Left	0
Volume Right	11
cSH	1700
Volume to Capacity	0.09
Queue Length 95th (m)	0.0
Control Delay (s)	0.0
Lane LOS	
Approach Delay (s)	0.0
Approach LOS	

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		22.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	125	0	0	10	0
Future Volume (Veh/h)	5	125	0	0	10	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	142	0	0	11	0
Pedestrians		5	5		25	
Lane Width (m)		3.5	0.0		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	25				184	30
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				184	30
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1572				792	1026

Direction, Lane #	EB 1	SB 1
Volume Total	148	11
Volume Left	6	11
Volume Right	0	0
cSH	1572	792
Volume to Capacity	0.00	0.01
Queue Length 95th (m)	0.1	0.3
Control Delay (s)	0.3	9.6
Lane LOS	A	A
Approach Delay (s)	0.3	9.6
Approach LOS		A

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	22.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	5	45	15	0	40	0	390	30	30	465	0
Future Volume (Veh/h)	85	5	45	15	0	40	0	390	30	30	465	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	5	49	16	0	43	0	424	33	33	505	0
Pedestrians		75			45			50			5	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		7			4			4			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								143			151	
pX, platoon unblocked	0.85	0.85	0.85	0.85	0.85		0.85					
vC, conflicting volume	1134	1148	630	1158	1132	490	580			502		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1069	1084	473	1096	1065	490	414			502		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	30	97	89	86	100	92	100			97		
cM capacity (veh/h)	131	161	442	117	165	556	914			1030		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	146	59	457	538
Volume Left	92	16	0	33
Volume Right	49	43	33	0
cSH	173	275	1700	1030
Volume to Capacity	0.84	0.21	0.27	0.03
Queue Length 95th (m)	44.8	6.0	0.0	0.8
Control Delay (s)	86.0	21.6	0.0	0.9
Lane LOS	F	C		A
Approach Delay (s)	86.0	21.6	0.0	0.9
Approach LOS	F	C		

Intersection Summary				
Average Delay	11.9			
Intersection Capacity Utilization	71.4%	ICU Level of Service		C
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	480	20	25	340
Future Volume (Veh/h)	0	0	480	20	25	340
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	571	24	30	405
Pedestrians	255		25			15
Lane Width (m)	0.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		2			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			214
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	1126	568			850	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	938	325			635	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	229	607			871	

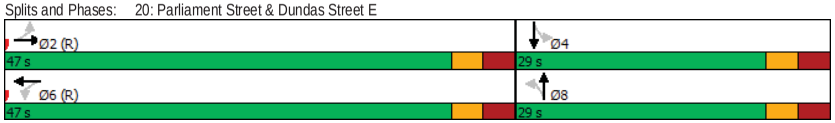
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	381	214	165	270
Volume Left	0	0	30	0
Volume Right	0	24	0	0
cSH	1700	1700	871	1700
Volume to Capacity	0.22	0.13	0.03	0.16
Queue Length 95th (m)	0.0	0.0	0.8	0.0
Control Delay (s)	0.0	0.0	2.0	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.7	
Approach LOS				

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			41.6%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	65	415	40	165	40	365	30	290
Future Volume (vph)	65	415	40	165	40	365	30	290
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	47.0	47.0	47.0	47.0	29.0	29.0	29.0	29.0
Total Split (%)	61.8%	61.8%	61.8%	61.8%	38.2%	38.2%	38.2%	38.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	Min	Min	Min	Min
Act Effct Green (s)		41.8		41.8		24.2		24.2
Actuated g/C Ratio		0.55		0.55		0.32		0.32
v/c Ratio		0.39		0.23		0.53		0.42
Control Delay		10.3		10.8		23.1		21.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		10.3		10.8		23.1		21.6
LOS		B		B		C		C
Approach Delay		10.3		10.8		23.1		21.6
Approach LOS		B		B		C		C

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 9 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.53		
Intersection Signal Delay: 16.3	Intersection LOS: B	
Intersection Capacity Utilization 93.3%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 20: Parliament Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	606	309	494	382
v/c Ratio	0.39	0.23	0.53	0.42
Control Delay	10.3	10.8	23.1	21.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.3	10.8	23.1	21.6
Queue Length 50th (m)	22.8	8.5	29.6	22.0
Queue Length 95th (m)	34.0	22.1	42.1	32.5
Internal Link Dist (m)	85.0	103.5	45.0	56.1
Turn Bay Length (m)				
Base Capacity (vph)	1544	1374	930	904
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.22	0.53	0.42

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	415	60	40	165	70	40	365	35	30	290	20
Future Volume (vph)	65	415	60	40	165	70	40	365	35	30	290	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.93			0.98			0.99	
Flpb, ped/bikes		0.98			0.99			0.99			0.99	
Frt		0.98			0.96			0.99			0.99	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		3179			2971			3273			3209	
Flt Permitted		0.87			0.82			0.88			0.88	
Satd. Flow (perm)		2772			2466			2896			2823	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	73	466	67	45	185	79	45	410	39	34	326	22
RTOR Reduction (vph)	0	13	0	0	11	0	0	8	0	0	6	0
Lane Group Flow (vph)	0	593	0	0	298	0	0	486	0	0	376	0
Confl. Peds. (#/hr)	260		155	155		260	165		225	225		165
Confl. Bikes (#/hr)			25			20			5			10
Heavy Vehicles (%)	3%	6%	5%	5%	6%	6%	3%	5%	0%	3%	8%	10%
Parking (#/hr)			0						0			0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		40.8			40.8			23.2			23.2	
Effective Green, g (s)		41.8			41.8			24.2			24.2	
Actuated g/C Ratio		0.55			0.55			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1524			1356			922			898	
v/s Ratio Prot												
v/s Ratio Perm		c0.21			0.12			c0.17			0.13	
v/c Ratio		0.39			0.22			0.53			0.42	
Uniform Delay, d1		9.8			8.8			21.2			20.4	
Progression Factor		1.00			1.27			1.00			1.00	
Incremental Delay, d2		0.8			0.4			0.5			0.3	
Delay (s)		10.5			11.5			21.8			20.7	
Level of Service		B			B			C			C	
Approach Delay (s)		10.5			11.5			21.8			20.7	
Approach LOS		B			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.44				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	93.3%	ICU Level of Service	F		
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	410	15	5	265	25	5	10	5	5	5	25
Future Volume (Veh/h)	40	410	15	5	265	25	5	10	5	5	5	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	43	441	16	5	285	27	5	11	5	5	5	27
Pedestrians		30			10			125			135	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		3			1			11			12	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		127			124							
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	447			582			872	1117	364	770	1112	321
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	447			546			840	1089	324	737	1083	321
tC, single (s)	4.1			4.4			7.5	6.5	7.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.5	4.0	3.8	3.5	4.0	3.3
p0 queue free %	96			99			97	93	99	98	97	95
cM capacity (veh/h)	990			814			167	159	477	201	161	584

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	264	236	148	170	21	37
Volume Left	43	0	5	0	5	5
Volume Right	0	16	0	27	5	27
cSH	990	1700	814	1700	192	362
Volume to Capacity	0.04	0.14	0.01	0.10	0.11	0.10
Queue Length 95th (m)	1.0	0.0	0.1	0.0	2.8	2.6
Control Delay (s)	1.8	0.0	0.4	0.0	26.1	16.1
Lane LOS	A		A		D	C
Approach Delay (s)	1.0		0.2		26.1	16.1
Approach LOS					D	C

Intersection Summary					
Average Delay	1.9				
Intersection Capacity Utilization	46.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	400	15	220	40	0	30	35
Future Volume (vph)	400	15	220	40	0	30	35
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2		6		8		4
Permitted Phases		6		8		4	
Detector Phase	2	6	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	17.0	17.0	17.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	26.0
Total Split (s)	50.0	50.0	50.0	26.0	26.0	26.0	26.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)	5.0		5.0		5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.6		47.6		18.4		18.4
Actuated g/C Ratio	0.63		0.63		0.24		0.24
v/c Ratio	0.23		0.24		0.23		0.28
Control Delay	5.0		6.1		13.2		17.1
Queue Delay	0.0		0.0		0.0		0.0
Total Delay	5.0		6.1		13.2		17.1
LOS	A		A		B		B
Approach Delay	5.0		6.1		13.2		17.1
Approach LOS	A		A		B		B

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 25 (33%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Sackville Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	462	253	75	108
v/c Ratio	0.23	0.24	0.23	0.28
Control Delay	5.0	6.1	13.2	17.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.0	6.1	13.2	17.1
Queue Length 50th (m)	10.3	15.7	3.4	7.8
Queue Length 95th (m)	13.5	15.3	12.9	19.6
Internal Link Dist (m)	99.8	79.6	36.2	126.8
Turn Bay Length (m)				
Base Capacity (vph)	2046	1061	369	434
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.24	0.20	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	400	30	15	220	0	40	0	30	30	35	35
Future Volume (vph)	0	400	30	15	220	0	40	0	30	30	35	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.97			1.00			0.95			0.97	
Flpb, ped/bikes		1.00			0.99			0.96			0.97	
Frt		0.99			1.00			0.94			0.95	
Flt Protected		1.00			1.00			0.97			0.99	
Satd. Flow (prot)		3265			1750			1494			1618	
Flt Permitted		1.00			0.97			0.80			0.90	
Satd. Flow (perm)		3265			1694			1226			1478	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	430	32	16	237	0	43	0	32	32	38	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	33	0	0	27	0
Lane Group Flow (vph)	0	462	0	0	253	0	0	42	0	0	81	0
Confl. Peds. (#/hr)	105		175	175		105	70		55	55		70
Confl. Bikes (#/hr)			35			20						5
Heavy Vehicles (%)	0%	5%	6%	0%	6%	0%	0%	0%	12%	0%	2%	5%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases				6			8			4		
Actuated Green, G (s)		46.6			46.6			17.4			17.4	
Effective Green, g (s)		47.6			47.6			18.4			18.4	
Actuated g/C Ratio		0.63			0.63			0.24			0.24	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2044			1060			296			357	
v/s Ratio Prot		0.14										
v/s Ratio Perm					c0.15			0.03			c0.05	
v/c Ratio		0.23			0.24			0.14			0.23	
Uniform Delay, d1		6.2			6.2			22.6			23.1	
Progression Factor		0.68			0.77			1.00			1.00	
Incremental Delay, d2		0.2			0.5			0.2			0.3	
Delay (s)		4.5			5.3			22.8			23.4	
Level of Service		A			A			C			C	
Approach Delay (s)		4.5			5.3			22.8			23.4	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.23				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBT	WBL	WBT	Ø4
Lane Configurations				
Traffic Volume (vph)	430	15	235	
Future Volume (vph)	430	15	235	
Turn Type	NA	Perm	NA	
Protected Phases	2		6	4
Permitted Phases		6		
Detector Phase	2	6	6	
Switch Phase				
Minimum Initial (s)	18.0	18.0	18.0	20.0
Minimum Split (s)	23.9	23.9	23.9	23.0
Total Split (s)	53.0	53.0	53.0	23.0
Total Split (%)	69.7%	69.7%	69.7%	30%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	-1.0		-1.0	
Total Lost Time (s)	4.9		4.9	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Min	C-Min	C-Min	None
Act Effct Green (s)	64.8		64.8	
Actuated g/C Ratio	0.85		0.85	
v/c Ratio	0.36		0.19	
Control Delay	2.5		3.9	
Queue Delay	0.0		0.0	
Total Delay	2.5		3.9	
LOS	A		A	
Approach Delay	2.5		3.9	
Approach LOS	A		A	

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.36		
Intersection Signal Delay: 3.0	Intersection LOS: A	
Intersection Capacity Utilization 44.6%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 23: Regent Park Boulevard & Dundas Street E

Lane Group	EBT	WBT
Lane Group Flow (vph)	517	281
v/c Ratio	0.36	0.19
Control Delay	2.5	3.9
Queue Delay	0.0	0.0
Total Delay	2.5	3.9
Queue Length 50th (m)	0.1	0.0
Queue Length 95th (m)	12.9	25.8
Internal Link Dist (m)	79.6	86.0
Turn Bay Length (m)		
Base Capacity (vph)	1450	1448
Starvation Cap Reductn	27	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.36	0.19

Intersection Summary

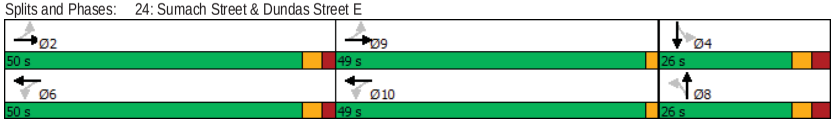
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	430	30	15	235	0	0
Future Volume (vph)	430	30	15	235	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.0	3.0	3.5	3.0	3.0
Total Lost time (s)	4.9			4.9		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	0.97			1.00		
Flpb, ped/bikes	1.00			0.99		
Frt	0.99			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1698			1748		
Flt Permitted	1.00			0.97		
Satd. Flow (perm)	1698			1694		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	483	34	17	264	0	0
RTOR Reduction (vph)	2	0	0	0	0	0
Lane Group Flow (vph)	515	0	0	281	0	0
Confl. Peds. (#/hr)		235	235		60	65
Heavy Vehicles (%)	6%	6%	0%	6%	0%	0%
Turn Type	NA		Perm	NA		
Protected Phases	2			6		
Permitted Phases			6			
Actuated Green, G (s)	59.1			59.1		
Effective Green, g (s)	60.1			60.1		
Actuated g/C Ratio	0.79			0.79		
Clearance Time (s)	5.9			5.9		
Vehicle Extension (s)	3.0			3.0		
Lane Grp Cap (vph)	1342			1339		
v/s Ratio Prot	c0.30					
v/s Ratio Perm				0.17		
v/c Ratio	0.38			0.21		
Uniform Delay, d1	2.4			2.0		
Progression Factor	0.43			1.00		
Incremental Delay, d2	0.8			0.4		
Delay (s)	1.9			2.4		
Level of Service	A			A		
Approach Delay (s)	1.9			2.4	0.0	
Approach LOS	A			A	A	

Intersection Summary				
HCM 2000 Control Delay	2.0	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.34			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	7.9	
Intersection Capacity Utilization	44.6%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	35	380	25	215	25	90	15	20				
Future Volume (vph)	35	380	25	215	25	90	15	20				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)					26.0	26.0	26.0	26.0	21.0	21.0	49.0	49.0
Total Split (s)					26.0	26.0	26.0	26.0	50.0	50.0	49.0	49.0
Total Split (%)					20.8%	20.8%	20.8%	20.8%	40%	40%	39%	39%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)						-1.0		-1.0				
Total Lost Time (s)						5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	None	None	Min	Min	None	None
Act Effct Green (s)		58.1		58.1		22.6		22.6				
Actuated g/C Ratio		0.64		0.64		0.25		0.25				
v/c Ratio		0.45		0.28		0.45		0.14				
Control Delay		8.3		6.4		37.1		29.2				
Queue Delay		1.3		0.0		0.0		0.0				
Total Delay		9.5		6.4		37.1		29.2				
LOS		A		A		D		C				
Approach Delay		9.5		6.4		37.1		29.2				
Approach LOS		A		A		D		C				

Intersection Summary			
Cycle Length: 125			
Actuated Cycle Length: 90.4			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 24: Sumach Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	463	280	172	49
v/c Ratio	0.45	0.28	0.45	0.14
Control Delay	8.3	6.4	37.1	29.2
Queue Delay	1.3	0.0	0.0	0.0
Total Delay	9.5	6.4	37.1	29.2
Queue Length 50th (m)	32.6	16.6	26.9	6.0
Queue Length 95th (m)	48.5	26.3	51.5	16.8
Internal Link Dist (m)	86.0	75.5	76.2	121.5
Turn Bay Length (m)				
Base Capacity (vph)	1196	1136	380	356
Starvation Cap Reductn	503	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.67	0.25	0.45	0.14

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	380	15	25	215	20	25	90	45	15	20	10
Future Volume (vph)	35	380	15	25	215	20	25	90	45	15	20	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.98			0.96			0.94	
Flpb, ped/bikes		0.99			0.98			0.97			0.98	
Frt		1.00			0.99			0.96			0.97	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1691			1639			1587			1586	
Flt Permitted		0.96			0.94			0.95			0.89	
Satd. Flow (perm)		1628			1550			1522			1433	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	38	409	16	27	231	22	27	97	48	16	22	11
RTOR Reduction (vph)	0	1	0	0	3	0	0	10	0	0	8	0
Lane Group Flow (vph)	0	462	0	0	277	0	0	162	0	0	41	0
Confl. Peds. (#/hr)	100		185	185		100	105		50	50		105
Confl. Bikes (#/hr)			25			20						
Heavy Vehicles (%)	12%	6%	8%	0%	9%	5%	4%	5%	6%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		60.7			60.7			21.5			21.5	
Effective Green, g (s)		61.7			61.7			22.5			22.5	
Actuated g/C Ratio		0.68			0.68			0.25			0.25	
Clearance Time (s)								6.0			6.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		1113			1060			379			357	
v/s Ratio Prot												
v/s Ratio Perm		c0.28			0.18			c0.11			0.03	
v/c Ratio		0.41			0.26			0.43			0.12	
Uniform Delay, d1		6.3			5.5			28.4			26.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.1			0.8			0.1	
Delay (s)		6.5			5.6			29.2			26.3	
Level of Service		A			A			C			C	
Approach Delay (s)		6.5			5.6			29.2			26.3	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.43				
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A		
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	430	10	10	255	0	0	0	0	5	0	5
Future Volume (Veh/h)	0	430	10	10	255	0	0	0	0	5	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	453	11	11	268	0	0	0	0	5	0	5
Pedestrians		10			10			130			50	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			1			0			4	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		99			98							
pX, platoon unblocked				0.90			0.90	0.90	0.90	0.90	0.90	
vC, conflicting volume	318			594			894	928	598	808	934	328
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	318			496			828	867	501	734	873	328
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	98	100	99
cM capacity (veh/h)	1198			973			249	250	514	277	248	680

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	464	279	10
Volume Left	0	11	5
Volume Right	11	0	5
cSH	1198	973	394
Volume to Capacity	0.00	0.01	0.03
Queue Length 95th (m)	0.0	0.3	0.6
Control Delay (s)	0.0	0.5	14.4
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	14.4
Approach LOS			B

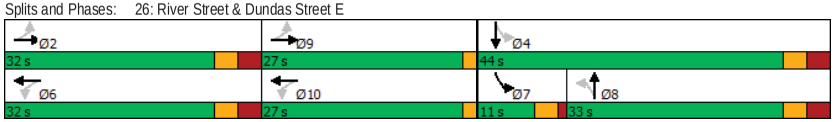
Intersection Summary			
Average Delay			0.4
Intersection Capacity Utilization			37.9%
Analysis Period (min)			15

	ICU Level of Service	A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	10	405	65	195	15	310	100	365				
Future Volume (vph)	10	405	65	195	15	310	100	365				
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA				
Protected Phases		2 9		6 10		8	7	4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	7	4				
Switch Phase												
Minimum Initial (s)					21.0	21.0	6.0	21.0	21.0	21.0	5.0	5.0
Minimum Split (s)					27.0	27.0	10.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)					33.0	33.0	11.0	44.0	32.0	32.0	27.0	27.0
Total Split (%)					32.0%	32.0%	10.7%	42.7%	31%	31%	26%	26%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	1.0	3.0	3.0	3.0	0.0	0.0
Lost Time Adjust (s)					-1.0	-1.0	-1.0	-1.0				
Total Lost Time (s)					5.0	5.0	3.0	5.0				
Lead/Lag					Lag	Lag	Lead					
Lead-Lag Optimize?					Yes	Yes	Yes					
Recall Mode					Min	Min	None	Min	Min	Min	None	None
Act Effct Green (s)		29.3		29.3	28.9	28.9	39.4	37.4				
Actuated g/C Ratio		0.38		0.38	0.38	0.38	0.51	0.49				
v/c Ratio		0.69		0.66	0.05	0.86	0.34	0.56				
Control Delay		25.6		24.6	22.5	40.2	15.9	19.5				
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay		25.6		24.6	22.5	40.2	15.9	19.5				
LOS		C		C	C	D	B	B				
Approach Delay		25.6		24.6		39.7		18.8				
Approach LOS		C		C		D		B				

Intersection Summary		
Cycle Length: 103		
Actuated Cycle Length: 77		
Natural Cycle: 95		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay: 27.5	Intersection LOS: C	
Intersection Capacity Utilization 100.4%	ICU Level of Service G	
Analysis Period (min) 15		

Splits and Phases: 26: River Street & Dundas Street E



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	458	357	16	531	105	442
v/c Ratio	0.69	0.66	0.05	0.86	0.34	0.56
Control Delay	25.6	24.6	22.5	40.2	15.9	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	24.6	22.5	40.2	15.9	19.5
Queue Length 50th (m)	55.9	40.5	1.4	64.6	6.7	37.7
Queue Length 95th (m)	82.4	64.5	7.8	#186.2	24.7	109.1
Internal Link Dist (m)	73.4	80.5		131.0		118.9
Turn Bay Length (m)			20.0		25.0	
Base Capacity (vph)	723	587	292	616	308	851
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	0.63	0.61	0.05	0.86	0.34	0.52

Intersection Summary

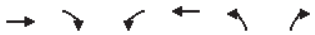
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	405	20	65	195	80	15	310	195	100	365	55
Future Volume (vph)	10	405	20	65	195	80	15	310	195	100	365	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0		5.0	5.0		3.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.97		1.00	0.94		1.00	0.98	
Flpb, ped/bikes		1.00			0.99		0.92	1.00		0.99	1.00	
Frt		0.99			0.97		1.00	0.94		1.00	0.98	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1638		1482	1626		1643	1633	
Flt Permitted		0.99			0.85		0.51	1.00		0.19	1.00	
Satd. Flow (perm)		1745			1402		790	1626		324	1633	
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)	11	426	21	68	205	84	16	326	205	105	384	58
RTOR Reduction (vph)	0	2	0	0	13	0	0	19	0	0	4	0
Lane Group Flow (vph)	0	456	0	0	344	0	16	512	0	105	438	0
Confl. Peds. (#/hr)	55		75	75		55	75		75	75		75
Confl. Bikes (#/hr)			25			20			10			5
Heavy Vehicles (%)	9%	5%	0%	1%	9%	0%	5%	3%	0%	2%	12%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		2 9			6 10			8		7	4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		33.9			33.9		27.8	27.8		37.2	37.2	
Effective Green, g (s)		34.9			34.9		28.8	28.8		38.2	38.2	
Actuated g/C Ratio		0.44			0.44		0.36	0.36		0.48	0.48	
Clearance Time (s)							6.0	6.0		4.0	6.0	
Vehicle Extension (s)							3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		769			618		287	592		263	788	
v/s Ratio Prot								c0.31		0.03	c0.27	
v/s Ratio Perm		c0.26			0.25		0.02			0.16		
v/c Ratio		0.59			0.56		0.06	0.86		0.40	0.56	
Uniform Delay, d1		16.7			16.4		16.3	23.3		13.9	14.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2			1.1		0.1	12.5		1.0	0.9	
Delay (s)		18.0			17.5		16.4	35.9		14.9	15.3	
Level of Service		B			B		B	D		B	B	
Approach Delay (s)		18.0			17.5			35.3			15.2	
Approach LOS		B			B			D			B	

Intersection Summary

HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	830	0	0	410	0	0
Future Volume (Veh/h)	830	0	0	410	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	874	0	0	432	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	90			162		
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			874		1090	437
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			570		817	70
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			886		279	861

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	583	291	144	288
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	886	1700
Volume to Capacity	0.34	0.17	0.00	0.17
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	26.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	5	85	0	0	30
Future Volume (Veh/h)	10	5	85	0	0	30
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	5	89	0	0	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						55
pX, platoon unblocked						
vC, conflicting volume	121	89			89	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	89			89	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	879	975			1519	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	89	32
Volume Left	11	0	0
Volume Right	5	0	0
cSH	907	1700	1519
Volume to Capacity	0.02	0.05	0.00
Queue Length 95th (m)	0.4	0.0	0.0
Control Delay (s)	9.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.0	0.0	0.0
Approach LOS	A		

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	14.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	5	550	500	60
Future Volume (Veh/h)	0	0	5	550	500	60
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	5	598	543	65
Pedestrians	80				5	
Lane Width (m)	0.0				3.5	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				39		
pX, platoon unblocked	0.93					
vC, conflicting volume	970	384	688			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	822	384	688			
tC, single (s)	6.8	6.9	4.5			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	100	100	99			
cM capacity (veh/h)	292	620	791			

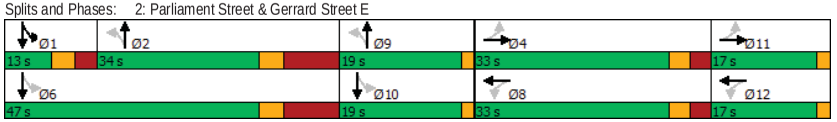
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	204	399	362	246
Volume Left	5	0	0	0
Volume Right	0	0	0	65
cSH	791	1700	1700	1700
Volume to Capacity	0.01	0.23	0.21	0.14
Queue Length 95th (m)	0.1	0.0	0.0	0.0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary				
Average Delay			0.1	
Intersection Capacity Utilization			22.0%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø4	Ø6	Ø8
Lane Configurations												
Traffic Volume (vph)	25	245	65	520	80	330	80	350				
Future Volume (vph)	25	245	65	520	80	330	80	350				
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA				
Protected Phases		4 11		8 12		2 9	1	1 6 10	2	4	6	8
Permitted Phases	4 11		8 12		2 9		6 10					
Detector Phase	4	4	8	8	2	2	1	1 6				
Switch Phase												
Minimum Initial (s)							6.0		22.0	21.0	22.0	21.0
Minimum Split (s)							12.5		33.2	31.8	33.2	31.8
Total Split (s)							13.0		34.0	33.0	47.0	33.0
Total Split (%)							11.2%		29%	28%	41%	28%
Yellow Time (s)							3.3		3.3	3.0	3.3	3.0
All-Red Time (s)							3.2		7.9	2.8	7.9	2.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead		Lag			
Lead-Lag Optimize?							Yes		Yes			
Recall Mode							None		Min	Min	Min	Min
Act Effct Green (s)		33.1		33.1		30.3		48.7				
Actuated g/C Ratio		0.36		0.36		0.33		0.53				
v/c Ratio		0.34		0.80		0.62		0.37				
Control Delay		21.0		32.0		29.8		13.4				
Queue Delay		0.0		0.0		0.0		0.0				
Total Delay		21.0		32.0		29.8		13.4				
LOS		C		C		C		B				
Approach Delay		21.0		32.0		29.8		13.4				
Approach LOS		C		C		C		B				

Intersection Summary		
Cycle Length: 116		
Actuated Cycle Length: 92.5		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.80		
Intersection Signal Delay: 25.3	Intersection LOS: C	
Intersection Capacity Utilization 99.9%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 2: Parliament Street & Gerrard Street E



Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	19.0	19.0	17.0	17.0
Total Split (s)	19.0	19.0	17.0	17.0
Total Split (%)	16%	16%	15%	15%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	358	826	484	526
v/c Ratio	0.34	0.80	0.62	0.37
Control Delay	21.0	32.0	29.8	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.0	32.0	29.8	13.4
Queue Length 50th (m)	18.3	54.6	32.9	21.4
Queue Length 95th (m)	38.2	102.6	60.8	43.9
Internal Link Dist (m)	33.0	63.9	119.2	15.0
Turn Bay Length (m)				
Base Capacity (vph)	1055	1078	798	1445
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.77	0.61	0.36

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	245	70	65	520	200	80	330	50	80	350	70
Future Volume (vph)	25	245	70	65	520	200	80	330	50	80	350	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.8			4.8			10.2			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.97			0.98			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.99	
Frt		0.97			0.96			0.98			0.98	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		3321			3197			3171			3203	
Flt Permitted		0.86			0.88			0.74			0.81	
Satd. Flow (perm)		2877			2820			2381			2604	
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)	26	258	74	68	547	211	84	347	53	84	368	74
RTOR Reduction (vph)	0	20	0	0	29	0	0	7	0	0	13	0
Lane Group Flow (vph)	0	338	0	0	797	0	0	477	0	0	513	0
Confl. Peds. (#/hr)	80		85	85		80	85		120	120		85
Confl. Bikes (#/hr)			5			20			5			10
Heavy Vehicles (%)	13%	0%	2%	1%	1%	11%	6%	8%	0%	11%	6%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4 11			8 12			2 9		1	1 6 10	
Permitted Phases	4 11			8 12			2 9			6 10		
Actuated Green, G (s)		37.6			37.6			40.3			53.6	
Effective Green, g (s)		38.6			38.6			41.3			44.4	
Actuated g/C Ratio		0.41			0.41			0.43			0.47	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1166			1143			1032			1263	
v/s Ratio Prot											c0.03	
v/s Ratio Perm		0.12			c0.28			c0.20			0.16	
v/c Ratio		0.29			0.70			0.46			0.41	
Uniform Delay, d1		19.1			23.5			19.1			16.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			1.9			0.3			0.2	
Delay (s)		19.2			25.3			19.4			16.9	
Level of Service		B			C			B			B	
Approach Delay (s)		19.2			25.3			19.4			16.9	
Approach LOS		B			C			B			B	

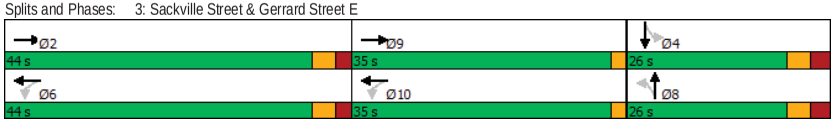
Intersection Summary				
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	95.2	Sum of lost time (s)	22.5	
Intersection Capacity Utilization	99.9%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations											
Traffic Volume (vph)	345	55	830	5	0	55	35				
Future Volume (vph)	345	55	830	5	0	55	35				
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases	2 9		6 10		8		4	2	6	9	10
Permitted Phases		6 10		8		4					
Detector Phase	2	6	6	8	8	4	4				
Switch Phase											
Minimum Initial (s)				20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)				25.7	25.7	25.7	25.7	21.0	21.0	35.0	35.0
Total Split (s)				26.0	26.0	26.0	26.0	44.0	44.0	35.0	35.0
Total Split (%)				24.8%	24.8%	24.8%	24.8%	42%	42%	33%	33%
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				2.7	2.7	2.7	2.7	2.0	2.0	0.0	0.0
Lost Time Adjust (s)					-1.0		-1.0				
Total Lost Time (s)					4.7		4.7				
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode				Min	Min	Min	Min	Min	Min	None	None
Act Effct Green (s)	44.7		44.7		22.9		22.9				
Actuated g/C Ratio	0.58		0.58		0.30		0.30				
v/c Ratio	0.21		0.55		0.07		0.29				
Control Delay	6.5		9.7		6.2		30.1				
Queue Delay	0.0		0.0		0.0		0.0				
Total Delay	6.5		9.7		6.2		30.1				
LOS	A		A		A		C				
Approach Delay	6.5		9.7		6.2		30.1				
Approach LOS	A		A		A		C				

Intersection Summary			
Cycle Length: 105			
Actuated Cycle Length: 77.1			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 65.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Sackville Street & Gerrard Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	395	972	27	114
v/c Ratio	0.21	0.55	0.07	0.29
Control Delay	6.5	9.7	6.2	30.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.5	9.7	6.2	30.1
Queue Length 50th (m)	11.5	37.5	0.0	15.5
Queue Length 95th (m)	16.4	48.7	4.5	34.0
Internal Link Dist (m)	139.8	47.8	34.3	15.3
Turn Bay Length (m)				
Base Capacity (vph)	2313	2207	417	404
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.17	0.44	0.06	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	345	15	55	830	0	5	0	20	55	35	15
Future Volume (vph)	0	345	15	55	830	0	5	0	20	55	35	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			4.7			4.7	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		0.99			1.00			0.86			0.99	
Flpb, ped/bikes		1.00			0.99			0.99			0.92	
Frt		0.99			1.00			0.89			0.98	
Flt Protected		1.00			1.00			0.99			0.97	
Satd. Flow (prot)		3215			3394			1410			1583	
Flt Permitted		1.00			0.90			0.96			0.85	
Satd. Flow (perm)		3215			3070			1366			1375	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	379	16	60	912	0	5	0	22	60	38	16
RTOR Reduction (vph)	0	4	0	0	0	0	0	19	0	0	5	0
Lane Group Flow (vph)	0	391	0	0	972	0	0	8	0	0	109	0
Confl. Peds. (#/hr)	40		60	60		40	60		140	140		60
Confl. Bikes (#/hr)			15			75						5
Heavy Vehicles (%)	0%	10%	0%	9%	4%	0%	0%	0%	0%	0%	6%	6%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases				6 10			8			4		
Actuated Green, G (s)		48.0			48.0			21.8			21.8	
Effective Green, g (s)		49.0			49.0			22.8			22.8	
Actuated g/C Ratio		0.63			0.63			0.29			0.29	
Clearance Time (s)								5.7			5.7	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		2032			1941			401			404	
v/s Ratio Prot		0.12										
v/s Ratio Perm					c0.32			0.01			c0.08	
v/c Ratio		0.19			0.50			0.02			0.27	
Uniform Delay, d1		6.0			7.7			19.4			21.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			0.2			0.0			0.4	
Delay (s)		6.0			7.9			19.4			21.3	
Level of Service		A			A			B			C	
Approach Delay (s)		6.0			7.9			19.4			21.3	
Approach LOS		A			A			B			C	

Intersection Summary					
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.44				
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	9.7		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C		
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	415	880	20	5	5
Future Volume (Veh/h)	5	415	880	20	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	432	917	21	5	5
Pedestrians		5	5		50	
Lane Width (m)		3.5	3.5		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		4	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		72	141			
pX, platoon unblocked	0.93				0.94	0.93
vC, conflicting volume	988				1208	524
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	825				963	323
tC, single (s)	4.1				7.5	7.3
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.5
p0 queue free %	99				97	99
cM capacity (veh/h)	725				182	551

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	149	288	611	327	10
Volume Left	5	0	0	0	5
Volume Right	0	0	0	21	5
cSH	725	1700	1700	1700	274
Volume to Capacity	0.01	0.17	0.36	0.19	0.04
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.9
Control Delay (s)	0.4	0.0	0.0	0.0	18.6
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		18.6
Approach LOS					C

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization	36.6%	ICU Level of Service		A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	415	890	5	15	10
Future Volume (Veh/h)	5	415	890	5	15	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	428	918	5	15	10
Pedestrians					75	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		145	68			
pX, platoon unblocked	0.90				0.90	0.90
vC, conflicting volume	998				1220	536
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	769				1016	255
tC, single (s)	4.1				6.9	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	99				92	98
cM capacity (veh/h)	723				190	610

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	148	285	612	311	25
Volume Left	5	0	0	0	15
Volume Right	0	0	0	5	10
cSH	723	1700	1700	1700	262
Volume to Capacity	0.01	0.17	0.36	0.18	0.10
Queue Length 95th (m)	0.2	0.0	0.0	0.0	2.4
Control Delay (s)	0.4	0.0	0.0	0.0	20.2
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		20.2
Approach LOS					C

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization	34.8%	ICU Level of Service		A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBL	WBT	NBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations									
Traffic Volume (vph)	5	410	55	860	10				
Future Volume (vph)	5	410	55	860	10				
Turn Type	Perm	NA	Perm	NA	NA				
Protected Phases		2 9		6 10	8	2	6	9	10
Permitted Phases	2 9		6 10						
Detector Phase	2	2	6	6	8				
Switch Phase									
Minimum Initial (s)					15.0	11.0	11.0	5.0	5.0
Minimum Split (s)					25.4	26.2	26.2	72.0	72.0
Total Split (s)					27.0	43.0	43.0	72.0	72.0
Total Split (%)					19.0%	30%	30%	51%	51%
Yellow Time (s)					3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					7.4	7.2	7.2	0.0	0.0
Lost Time Adjust (s)					-1.0				
Total Lost Time (s)					9.4				
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode					None	Min	Min	None	None
Act Effct Green (s)		73.1		73.1	18.4				
Actuated g/C Ratio		0.73		0.73	0.18				
v/c Ratio		0.22		0.57	0.26				
Control Delay		6.2		9.6	45.1				
Queue Delay		0.0		0.1	0.0				
Total Delay		6.2		9.7	45.1				
LOS		A		A	D				
Approach Delay		6.2		9.7	45.1				
Approach LOS		A		A	D				

Intersection Summary			
Cycle Length: 142			
Actuated Cycle Length: 100.1			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 78.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Sumach Street & Gerrard Street E

Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	494	1196	68
v/c Ratio	0.22	0.57	0.26
Control Delay	6.2	9.6	45.1
Queue Delay	0.0	0.1	0.0
Total Delay	6.2	9.7	45.1
Queue Length 50th (m)	18.3	63.6	7.4
Queue Length 95th (m)	24.0	76.9	29.4
Internal Link Dist (m)	44.0	75.7	33.2
Turn Bay Length (m)			
Base Capacity (vph)	2293	2086	287
Starvation Cap Reductn	0	176	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.22	0.63	0.24

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	410	15	55	860	125	35	10	15	0	0	0
Future Volume (vph)	5	410	15	55	860	125	35	10	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.2			9.2			9.4				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		0.99			0.97			0.96				
Flpb, ped/bikes		1.00			0.99			0.88				
Frt		0.99			0.98			0.97				
Flt Protected		1.00			1.00			0.97				
Satd. Flow (prot)		3352			3251			1492				
Flt Permitted		0.94			0.88			0.97				
Satd. Flow (perm)		3148			2882			1492				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	471	17	63	989	144	40	11	17	0	0	0
RTOR Reduction (vph)	0	2	0	0	7	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	492	0	0	1189	0	0	59	0	0	0	0
Confl. Peds. (#/hr)	65		85	85		65	100		65	65		100
Confl. Bikes (#/hr)			15			120			5			
Heavy Vehicles (%)	0%	5%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		2 9			6 10			8				
Permitted Phases	2 9			6 10			8					
Actuated Green, G (s)		78.6			78.6			11.8				
Effective Green, g (s)		79.6			79.6			12.8				
Actuated g/C Ratio		0.77			0.77			0.12				
Clearance Time (s)								10.4				
Vehicle Extension (s)								3.0				
Lane Grp Cap (vph)		2437			2231			185				
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.41			0.04				
v/c Ratio		0.20			0.53			0.32				
Uniform Delay, d1		3.1			4.5			41.0				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			0.2			1.0				
Delay (s)		3.1			4.7			42.0				
Level of Service		A			A			D				
Approach Delay (s)		3.1			4.7			42.0			0.0	
Approach LOS		A			A			D			A	

Intersection Summary				
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	102.8	Sum of lost time (s)	19.6	
Intersection Capacity Utilization	78.9%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	425	1035	0	10	5
Future Volume (Veh/h)	0	425	1035	0	10	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	447	1089	0	11	5
Pedestrians					75	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		100	91			
pX, platoon unblocked	0.80				0.80	0.80
vC, conflicting volume	1164				1388	620
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	696				928	13
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	683				205	804

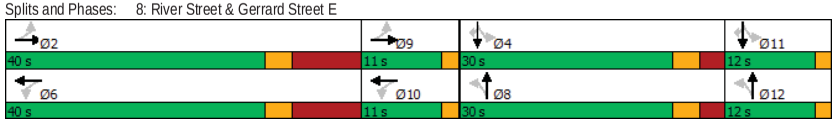
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	224	224	544	544	16
Volume Left	0	0	0	0	11
Volume Right	0	0	0	0	5
cSH	1700	1700	1700	1700	267
Volume to Capacity	0.13	0.13	0.32	0.32	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	0.0	0.0	19.3
Lane LOS					C
Approach Delay (s)	0.0		0.0		19.3
Approach LOS					C

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	38.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø2	Ø4	Ø6
Lane Configurations												
Traffic Volume (vph)	110	280	150	825	45	365	125	365	165			
Future Volume (vph)	110	280	150	825	45	365	125	365	165			
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm			
Protected Phases		2 9		6 10		8 12		4 11		2	4	6
Permitted Phases	2 9		6 10		8 12		4 11		4 11			
Detector Phase	2	2	6	6	8	8	4	4	4			
Switch Phase												
Minimum Initial (s)										23.0	19.0	23.0
Minimum Split (s)										33.8	30.0	33.8
Total Split (s)										40.0	30.0	40.0
Total Split (%)										43%	32%	43%
Yellow Time (s)										3.0	3.0	3.0
All-Red Time (s)										7.8	3.0	7.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode										Min	Min	Min
Act Effct Green (s)		36.8		36.8	29.9	29.9	29.9	29.9	29.9			
Actuated g/C Ratio		0.45		0.45	0.37	0.37	0.37	0.37	0.37			
v/c Ratio		0.59		1.01	0.19	0.70	0.63	0.56	0.29			
Control Delay		21.1		53.3	20.8	28.3	37.4	24.6	8.6			
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		21.1		53.3	20.8	28.3	37.4	24.6	8.6			
LOS		C		D	C	C	D	C	A			
Approach Delay		21.1		53.3		27.6		23.0				
Approach LOS		C		D		C		C				

Intersection Summary			
Cycle Length: 93			
Actuated Cycle Length: 81.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 36.4		Intersection LOS: D	
Intersection Capacity Utilization 117.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 8: River Street & Gerrard Street E



Lane Group	Ø8	Ø9	Ø10	Ø11	Ø12
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Turn Type					
Protected Phases	8	9	10	11	12
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	19.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	11.0	11.0	12.0	12.0
Total Split (s)	30.0	11.0	11.0	12.0	12.0
Total Split (%)	32%	12%	12%	13%	13%
Yellow Time (s)	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	3.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	None	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	454	1203	47	448	130	380	172
v/c Ratio	0.59	1.01	0.19	0.70	0.63	0.56	0.29
Control Delay	21.1	53.3	20.8	28.3	37.4	24.6	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	53.3	20.8	28.3	37.4	24.6	8.6
Queue Length 50th (m)	27.3	99.5	5.4	61.8	17.8	50.4	6.3
Queue Length 95th (m)	46.6	#160.8	13.2	94.4	38.6	76.7	19.2
Internal Link Dist (m)	67.0	81.6		126.5		61.7	
Turn Bay Length (m)			30.0		30.0		
Base Capacity (vph)	735	1188	252	670	216	708	609
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	0.62	1.01	0.19	0.67	0.60	0.54	0.28

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	280	45	150	825	180	45	365	65	125	365	165
Future Volume (vph)	110	280	45	150	825	180	45	365	65	125	365	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.8			9.8		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.98			0.98		1.00	0.98		1.00	1.00	0.94
Flpb, ped/bikes		1.00			0.99		0.98	1.00		0.96	1.00	1.00
Frt		0.98			0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3180			3265		1528	1742		1576	1860	1420
Flt Permitted		0.52			0.80		0.41	1.00		0.34	1.00	1.00
Satd. Flow (perm)		1684			2617		665	1742		570	1860	1420
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	115	292	47	156	859	188	47	380	68	130	380	172
RTOR Reduction (vph)	0	8	0	0	13	0	0	7	0	0	0	67
Lane Group Flow (vph)	0	446	0	0	1190	0	47	441	0	130	380	105
Confl. Peds. (#/hr)	50		95	95		50	40		85	85		40
Confl. Bikes (#/hr)			10			75			15			10
Heavy Vehicles (%)	4%	8%	4%	0%	3%	1%	8%	4%	2%	3%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2 9			6 10			8 12			4 11	
Permitted Phases	2 9			6 10			8 12			4 11		4 11
Actuated Green, G (s)		45.5			45.5		33.8	33.8		33.8	33.8	33.8
Effective Green, g (s)		46.5			46.5		34.8	34.8		34.8	34.8	34.8
Actuated g/C Ratio		0.56			0.56		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		940			1460		277	727		238	777	593
v/s Ratio Prot								c0.25			0.20	
v/s Ratio Perm		0.27			c0.45		0.07			0.23		0.07
v/c Ratio		0.47			0.82		0.17	0.61		0.55	0.49	0.18
Uniform Delay, d1		11.1			14.9		15.2	18.9		18.3	17.7	15.2
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4			3.6		0.3	1.4		2.6	0.5	0.1
Delay (s)		11.4			18.5		15.5	20.4		20.8	18.2	15.4
Level of Service		B			B		B	C		C	B	B
Approach Delay (s)		11.4			18.5			19.9			18.0	
Approach LOS		B			B			B			B	

Intersection Summary

HCM 2000 Control Delay	17.5	HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio	0.85					
Actuated Cycle Length (s)	83.3	Sum of lost time (s)		16.8		
Intersection Capacity Utilization	117.2%	ICU Level of Service		H		
Analysis Period (min)	15					

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	5	5	5	5	0	15	5	10	90	5
Future Volume (Veh/h)	5	5	5	5	5	5	0	15	5	10	90	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	6	6	6	6	6	6	0	19	6	13	117	6
Pedestrians		70			40			15			10	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		6			4			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											58	
pX, platoon unblocked												
vC, conflicting volume	257	281	205	232	281	72	193			65		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	257	281	205	232	281	72	193			65		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	99	99	99	100			99		
cM capacity (veh/h)	591	566	778	628	566	952	1306			1495		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	18	25	136
Volume Left	6	6	0	13
Volume Right	6	6	6	6
cSH	632	680	1306	1495
Volume to Capacity	0.03	0.03	0.00	0.01
Queue Length 95th (m)	0.7	0.6	0.0	0.2
Control Delay (s)	10.9	10.4	0.0	0.8
Lane LOS	B	B		A
Approach Delay (s)	10.9	10.4	0.0	0.8
Approach LOS	B	B		

Intersection Summary					
Average Delay		2.5			
Intersection Capacity Utilization	27.2%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	65	395	10	15	470
Future Volume (Veh/h)	45	65	395	10	15	470
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	47	68	416	11	16	495
Pedestrians	260		5			175
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	20		0			15
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			151			143
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	966	648			687	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	894	627			666	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	76			98	
cM capacity (veh/h)	219	282			742	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	115	277	150	181	330
Volume Left	47	0	0	16	0
Volume Right	68	0	11	0	0
cSH	252	1700	1700	742	1700
Volume to Capacity	0.46	0.16	0.09	0.02	0.19
Queue Length 95th (m)	16.9	0.0	0.0	0.5	0.0
Control Delay (s)	30.7	0.0	0.0	1.1	0.0
Lane LOS	D			A	
Approach Delay (s)	30.7	0.0		0.4	
Approach LOS	D				

Intersection Summary					
Average Delay		3.5			
Intersection Capacity Utilization	43.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Traffic Volume (veh/h)	0	25	65	0	5	50
Future Volume (Veh/h)	0	25	65	0	5	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	30	79	0	6	61
Pedestrians		15			40	
Lane Width (m)		3.5			3.0	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		1			3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	119				149	134
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119				149	134
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	100				99	93
cM capacity (veh/h)	1437				822	851

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	30	79	67
Volume Left	0	0	6
Volume Right	0	0	61
cSH	1700	1700	848
Volume to Capacity	0.02	0.05	0.08
Queue Length 95th (m)	0.0	0.0	2.0
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary				
Average Delay		3.7		
Intersection Capacity Utilization		26.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	Y	
Traffic Volume (veh/h)	30	0	0	35	30	25
Future Volume (Veh/h)	30	0	0	35	30	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	38	0	0	45	38	32
Pedestrians	15			10	30	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	1			1	2	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			68		128	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			68		128	78
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	97
cM capacity (veh/h)			1511		831	947

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	38	45	70
Volume Left	0	0	38
Volume Right	0	0	32
cSH	1700	1700	880
Volume to Capacity	0.02	0.03	0.08
Queue Length 95th (m)	0.0	0.0	2.0
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary				
Average Delay		4.3		
Intersection Capacity Utilization		26.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	50	30	0	0	5
Future Volume (Veh/h)	5	50	30	0	0	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	7	70	42	0	0	7
Pedestrians			110		25	
Lane Width (m)			3.5		3.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			10		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	67				261	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	67				261	67
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1518				646	983

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	77	42	7
Volume Left	7	0	0
Volume Right	0	0	7
cSH	1518	1700	983
Volume to Capacity	0.00	0.02	0.01
Queue Length 95th (m)	0.1	0.0	0.2
Control Delay (s)	0.7	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.7
Approach LOS			A

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		19.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	25	10	0	20	5	0	0	0	10	80	5
Future Volume (vph)	15	25	10	0	20	5	0	0	0	10	80	5
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	19	31	12	0	25	6	0	0	0	12	99	6

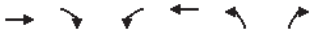
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	62	31	117
Volume Left (vph)	19	0	12
Volume Right (vph)	12	6	6
Hadj (s)	0.02	-0.05	0.07
Departure Headway (s)	4.2	4.2	4.2
Degree Utilization, x	0.07	0.04	0.14
Capacity (veh/h)	827	832	836
Control Delay (s)	7.5	7.3	7.8
Approach Delay (s)	7.5	7.3	7.8
Approach LOS	A	A	A

Intersection Summary				
Delay		7.7		
Level of Service		A		
Intersection Capacity Utilization		32.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	20	10	0	0	0	25	55	35	5	60	0
Future Volume (vph)	5	20	10	0	0	0	25	55	35	5	60	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	7	27	13	0	0	0	33	73	47	7	80	0

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	47	153	87
Volume Left (vph)	7	33	7
Volume Right (vph)	13	47	0
Hadj (s)	-0.07	-0.04	0.13
Departure Headway (s)	4.3	4.1	4.3
Degree Utilization, x	0.06	0.17	0.10
Capacity (veh/h)	782	865	823
Control Delay (s)	7.6	7.9	7.8
Approach Delay (s)	7.6	7.9	7.8
Approach LOS	A	A	A

Intersection Summary				
Delay		7.8		
Level of Service		A		
Intersection Capacity Utilization	30.6%	ICU Level of Service		A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	60	0	0	0	0	0
Future Volume (Veh/h)	60	0	0	0	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	80	0	0	0	0	0
Pedestrians	40			10	45	
Lane Width (m)	3.5			0.0	0.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	4			0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			125		165	135
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			125		165	135
tC, single (s)			4.1		6.4	6.7
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.8
p0 queue free %			100		100	100
cM capacity (veh/h)			1474		801	800

Direction, Lane #	EB 1
Volume Total	80
Volume Left	0
Volume Right	0
cSH	1700
Volume to Capacity	0.05
Queue Length 95th (m)	0.0
Control Delay (s)	0.0
Lane LOS	
Approach Delay (s)	0.0
Approach LOS	

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	23.9%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	55	0	0	5	0
Future Volume (Veh/h)	5	55	0	0	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	61	0	0	6	0
Pedestrians			10		10	
Lane Width (m)			0.0		3.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	10				93	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	10				93	10
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1610				902	1069

Direction, Lane #	EB 1	SB 1
Volume Total	67	6
Volume Left	6	6
Volume Right	0	0
cSH	1610	902
Volume to Capacity	0.00	0.01
Queue Length 95th (m)	0.1	0.2
Control Delay (s)	0.7	9.0
Lane LOS	A	A
Approach Delay (s)	0.7	9.0
Approach LOS		A

Intersection Summary				
Average Delay		1.4		
Intersection Capacity Utilization	17.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	0	20	35	0	65	0	370	25	40	520	0
Future Volume (Veh/h)	40	0	20	35	0	65	0	370	25	40	520	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	44	0	22	38	0	71	0	407	27	44	571	0
Pedestrians		75			65			35			5	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		7			6			3			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								143			151	
pX, platoon unblocked	0.87	0.87	0.85	0.87	0.87	0.79	0.85			0.79		
vC, conflicting volume	1230	1233	681	1202	1220	490	646			499		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	797	800	536	764	784	223	494			234		
tC, single (s)	7.2	6.5	6.2	7.1	7.0	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.5	3.3	2.2			2.2		
p0 queue free %	76	100	95	82	100	88	100			96		
cM capacity (veh/h)	184	234	422	209	200	606	856			1003		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	66	109	434	615
Volume Left	44	38	0	44
Volume Right	22	71	27	0
cSH	227	364	1700	1003
Volume to Capacity	0.29	0.30	0.26	0.04
Queue Length 95th (m)	8.8	9.4	0.0	1.0
Control Delay (s)	27.3	19.0	0.0	1.2
Lane LOS	D	C		A
Approach Delay (s)	27.3	19.0	0.0	1.2
Approach LOS	D	C		

Intersection Summary				
Average Delay		3.8		
Intersection Capacity Utilization	72.3%	ICU Level of Service		C
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	405	20	25	490
Future Volume (Veh/h)	0	0	405	20	25	490
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	440	22	27	533
Pedestrians	250		10			15
Lane Width (m)	0.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			214
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	1032	496			712	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	902	331			562	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	254	621			931	

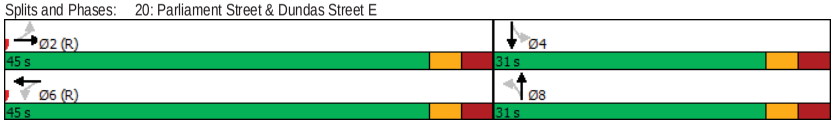
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	293	169	205	355
Volume Left	0	0	27	0
Volume Right	0	22	0	0
cSH	1700	1700	931	1700
Volume to Capacity	0.17	0.10	0.03	0.21
Queue Length 95th (m)	0.0	0.0	0.7	0.0
Control Delay (s)	0.0	0.0	1.4	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.5	
Approach LOS				

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			44.9%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	300	35	335	40	310	60	390
Future Volume (vph)	35	300	35	335	40	310	60	390
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	45.0	45.0	45.0	45.0	31.0	31.0	31.0	31.0
Total Split (%)	59.2%	59.2%	59.2%	59.2%	40.8%	40.8%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	Min	Min	Min	Min
Act Effct Green (s)		41.4		41.4		24.6		24.6
Actuated g/C Ratio		0.54		0.54		0.32		0.32
v/c Ratio		0.25		0.31		0.45		0.57
Control Delay		9.5		12.9		21.8		23.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		9.5		12.9		21.8		23.5
LOS		A		B		C		C
Approach Delay		9.5		12.9		21.8		23.5
Approach LOS		A		B		C		C

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 54 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.57		
Intersection Signal Delay: 17.2	Intersection LOS: B	
Intersection Capacity Utilization 91.4%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 20: Parliament Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	383	478	389	522
v/c Ratio	0.25	0.31	0.45	0.57
Control Delay	9.5	12.9	21.8	23.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.5	12.9	21.8	23.5
Queue Length 50th (m)	13.2	26.5	22.8	31.8
Queue Length 95th (m)	22.7	35.4	32.6	43.7
Internal Link Dist (m)	85.0	103.5	45.0	56.1
Turn Bay Length (m)				
Base Capacity (vph)	1539	1559	919	971
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.31	0.42	0.54

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	300	25	35	335	80	40	310	15	60	390	40
Future Volume (vph)	35	300	25	35	335	80	40	310	15	60	390	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.99			0.97			0.99			0.99	
Flpb, ped/bikes		0.99			1.00			0.99			0.99	
Frt		0.99			0.97			0.99			0.99	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		3167			3100			3112			3271	
Flt Permitted		0.88			0.90			0.85			0.85	
Satd. Flow (perm)		2800			2806			2654			2787	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	37	319	27	37	356	85	43	330	16	64	415	43
RTOR Reduction (vph)	0	7	0	0	23	0	0	4	0	0	9	0
Lane Group Flow (vph)	0	376	0	0	455	0	0	385	0	0	513	0
Confl. Peds. (#/hr)	155		110	110		155	140		160	160		140
Confl. Bikes (#/hr)			10			25						5
Heavy Vehicles (%)	6%	10%	4%	22%	5%	13%	18%	11%	13%	2%	5%	5%
Parking (#/hr)			0						0			0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		40.4			40.4			23.6			23.6	
Effective Green, g (s)		41.4			41.4			24.6			24.6	
Actuated g/C Ratio		0.54			0.54			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1525			1528			859			902	
v/s Ratio Prot												
v/s Ratio Perm		0.13			c0.16			0.15			c0.18	
v/c Ratio		0.25			0.30			0.45			0.57	
Uniform Delay, d1		9.1			9.4			20.3			21.3	
Progression Factor		1.00			1.42			1.00			1.00	
Incremental Delay, d2		0.4			0.5			0.4			0.8	
Delay (s)		9.5			13.9			20.7			22.1	
Level of Service		A			B			C			C	
Approach Delay (s)		9.5			13.9			20.7			22.1	
Approach LOS		A			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.40				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	91.4%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	370	10	10	425	35	15	10	5	20	10	20
Future Volume (Veh/h)	10	370	10	10	425	35	15	10	5	20	10	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	402	11	11	462	38	16	11	5	22	11	22
Pedestrians		20			5			70			80	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			0			6			7	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		127			124							
pX, platoon unblocked												
vC, conflicting volume	580			483			800	1102	282	822	1088	350
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	580			483			800	1102	282	822	1088	350
tC, single (s)	4.1			4.1			7.6	6.7	6.9	7.6	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.3	3.5	4.0	3.4
p0 queue free %	99			99			92	93	99	89	94	96
cM capacity (veh/h)	933			1023			201	168	674	202	185	569

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	212	212	242	269	32	55
Volume Left	11	0	11	0	16	22
Volume Right	0	11	0	38	5	22
cSH	933	1700	1023	1700	210	266
Volume to Capacity	0.01	0.12	0.01	0.16	0.15	0.21
Queue Length 95th (m)	0.3	0.0	0.2	0.0	4.0	5.8
Control Delay (s)	0.6	0.0	0.5	0.0	25.2	22.0
Lane LOS	A		A		D	C
Approach Delay (s)	0.3		0.2		25.2	22.0
Approach LOS					D	C

Intersection Summary						
Average Delay	2.2					
Intersection Capacity Utilization	35.7%	ICU Level of Service	A			
Analysis Period (min)	15					

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	405	10	400	45	0	35	50
Future Volume (vph)	405	10	400	45	0	35	50
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2		6		8		4
Permitted Phases		6		8		4	
Detector Phase	2	6	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	17.0	17.0	17.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	26.0
Total Split (s)	50.0	50.0	50.0	26.0	26.0	26.0	26.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)	5.0		5.0		5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.6		47.6		18.4		18.4
Actuated g/C Ratio	0.63		0.63		0.24		0.24
v/c Ratio	0.22		0.40		0.22		0.32
Control Delay	6.6		5.6		12.9		20.2
Queue Delay	0.0		0.3		0.0		0.0
Total Delay	6.6		5.9		12.9		20.2
LOS	A		A		B		C
Approach Delay	6.6		5.9		12.9		20.2
Approach LOS	A		A		B		C

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 11 (14%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.40		
Intersection Signal Delay: 8.3	Intersection LOS: A	
Intersection Capacity Utilization 53.1%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 22: Sackville Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	452	432	73	122
v/c Ratio	0.22	0.40	0.22	0.32
Control Delay	6.6	5.6	12.9	20.2
Queue Delay	0.0	0.3	0.0	0.0
Total Delay	6.6	5.9	12.9	20.2
Queue Length 50th (m)	8.9	30.5	3.2	11.0
Queue Length 95th (m)	30.1	8.4	12.5	23.9
Internal Link Dist (m)	99.8	79.6	36.2	126.8
Turn Bay Length (m)				
Base Capacity (vph)	2020	1075	376	426
Starvation Cap Reductn	0	217	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.50	0.19	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	405	25	10	400	0	45	0	25	35	50	30
Future Volume (vph)	0	405	25	10	400	0	45	0	25	35	50	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			1.00			0.95			0.98	
Flpb, ped/bikes		1.00			1.00			0.96			0.97	
Frt		0.99			1.00			0.95			0.96	
Flt Protected		1.00			1.00			0.97			0.99	
Satd. Flow (prot)		3229			1736			1545			1630	
Flt Permitted		1.00			0.99			0.78			0.89	
Satd. Flow (perm)		3229			1717			1250			1481	
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)	0	426	26	11	421	0	47	0	26	37	53	32
RTOR Reduction (vph)	0	0	0	0	0	0	0	33	0	0	17	0
Lane Group Flow (vph)	0	452	0	0	432	0	0	40	0	0	105	0
Confl. Peds. (#/hr)	65		85	85		65	65		60	60		65
Confl. Bikes (#/hr)			10			25						
Heavy Vehicles (%)	0%	8%	13%	0%	8%	0%	0%	0%	8%	6%	2%	4%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases				6			8			4		
Actuated Green, G (s)		46.6			46.6			17.4			17.4	
Effective Green, g (s)		47.6			47.6			18.4			18.4	
Actuated g/C Ratio		0.63			0.63			0.24			0.24	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2022			1075			302			358	
v/s Ratio Prot		0.14										
v/s Ratio Perm					c0.25			0.03			c0.07	
v/c Ratio		0.22			0.40			0.13			0.29	
Uniform Delay, d1		6.2			7.1			22.6			23.5	
Progression Factor		0.92			0.56			1.00			1.00	
Incremental Delay, d2		0.3			1.1			0.2			0.5	
Delay (s)		5.9			5.0			22.8			23.9	
Level of Service		A			A			C			C	
Approach Delay (s)		5.9			5.0			22.8			23.9	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.37				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBT	WBL	WBT	Ø4
Lane Configurations				
Traffic Volume (vph)	450	20	410	
Future Volume (vph)	450	20	410	
Turn Type	NA	Perm	NA	
Protected Phases	2		6	4
Permitted Phases		6		
Detector Phase	2	6	6	
Switch Phase				
Minimum Initial (s)	18.0	18.0	18.0	20.0
Minimum Split (s)	23.9	23.9	23.9	23.0
Total Split (s)	53.0	53.0	53.0	23.0
Total Split (%)	69.7%	69.7%	69.7%	30%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	-1.0		-1.0	
Total Lost Time (s)	4.9		4.9	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Min	C-Min	C-Min	None
Act Effct Green (s)	64.8		64.8	
Actuated g/C Ratio	0.85		0.85	
v/c Ratio	0.33		0.31	
Control Delay	3.9		4.6	
Queue Delay	0.0		0.0	
Total Delay	3.9		4.7	
LOS	A		A	
Approach Delay	3.9		4.7	
Approach LOS	A		A	

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 8 (11%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.33		
Intersection Signal Delay: 4.3	Intersection LOS: A	
Intersection Capacity Utilization 57.3%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 23: Regent Park Boulevard & Dundas Street E

Lane Group	EBT	WBT
Lane Group Flow (vph)	485	448
v/c Ratio	0.33	0.31
Control Delay	3.9	4.6
Queue Delay	0.0	0.0
Total Delay	3.9	4.7
Queue Length 50th (m)	6.9	0.0
Queue Length 95th (m)	26.3	45.4
Internal Link Dist (m)	79.6	86.0
Turn Bay Length (m)		
Base Capacity (vph)	1469	1434
Starvation Cap Reductn	36	112
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.34	0.34

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	450	15	20	410	0	0
Future Volume (vph)	450	15	20	410	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.0	3.0	3.5	3.0	3.0
Total Lost time (s)	4.9			4.9		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	0.99			1.00		
Flpb, ped/bikes	1.00			0.99		
Frt	1.00			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1720			1724		
Flt Permitted	1.00			0.97		
Satd. Flow (perm)	1720			1680		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	469	16	21	427	0	0
RTOR Reduction (vph)	1	0	0	0	0	0
Lane Group Flow (vph)	484	0	0	448	0	0
Confl. Peds. (#/hr)		125	125		40	60
Heavy Vehicles (%)	8%	0%	9%	8%	0%	0%
Turn Type	NA		Perm	NA		
Protected Phases	2			6		
Permitted Phases			6			
Actuated Green, G (s)	59.1			59.1		
Effective Green, g (s)	60.1			60.1		
Actuated g/C Ratio	0.79			0.79		
Clearance Time (s)	5.9			5.9		
Vehicle Extension (s)	3.0			3.0		
Lane Grp Cap (vph)	1360			1328		
v/s Ratio Prot	c0.28					
v/s Ratio Perm				0.27		
v/c Ratio	0.36			0.34		
Uniform Delay, d1	2.3			2.3		
Progression Factor	0.80			1.00		
Incremental Delay, d2	0.7			0.7		
Delay (s)	2.6			3.0		
Level of Service	A			A		
Approach Delay (s)	2.6			3.0	0.0	
Approach LOS	A			A	A	

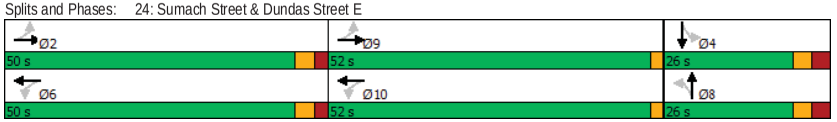
Intersection Summary				
HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.31			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	7.9	
Intersection Capacity Utilization	57.3%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	15	415	25	385	15	30	50	30				
Future Volume (vph)	15	415	25	385	15	30	50	30				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)					26.0	26.0	26.0	26.0	21.0	21.0	52.0	52.0
Total Split (s)					26.0	26.0	26.0	26.0	50.0	50.0	52.0	52.0
Total Split (%)					20.3%	20.3%	20.3%	20.3%	39%	39%	41%	41%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)						-1.0		-1.0				
Total Lost Time (s)						5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	None	None	Min	Min	None	None
Act Effct Green (s)		61.4		61.4		22.9		22.9				
Actuated g/C Ratio		0.65		0.65		0.24		0.24				
v/c Ratio		0.45		0.48		0.31		0.39				
Control Delay		8.0		8.3		27.8		38.6				
Queue Delay		1.4		0.3		0.0		0.0				
Total Delay		9.5		8.6		27.8		38.6				
LOS		A		A		C		D				
Approach Delay		9.5		8.6		27.8		38.6				
Approach LOS		A		A		C		D				

Intersection Summary			
Cycle Length: 128			
Actuated Cycle Length: 94.1			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 13.6		Intersection LOS: B	
Intersection Capacity Utilization 58.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 24: Sumach Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	489	499	109	120
v/c Ratio	0.45	0.48	0.31	0.39
Control Delay	8.0	8.3	27.8	38.6
Queue Delay	1.4	0.3	0.0	0.0
Total Delay	9.5	8.6	27.8	38.6
Queue Length 50th (m)	34.6	35.6	11.5	18.8
Queue Length 95th (m)	50.5	52.5	29.3	39.6
Internal Link Dist (m)	86.0	75.5	76.2	121.5
Turn Bay Length (m)				
Base Capacity (vph)	1248	1194	353	311
Starvation Cap Reductn	544	246	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	0.53	0.31	0.39

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	415	20	25	385	50	15	30	55	50	30	30
Future Volume (vph)	15	415	20	25	385	50	15	30	55	50	30	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.97			0.93			0.92	
Flpb, ped/bikes		1.00			0.99			0.97			0.96	
Frt		0.99			0.99			0.93			0.96	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1698			1659			1433			1504	
Flt Permitted		0.98			0.96			0.95			0.84	
Satd. Flow (perm)		1668			1603			1373			1295	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	451	22	27	418	54	16	33	60	54	33	33
RTOR Reduction (vph)	0	2	0	0	5	0	0	31	0	0	10	0
Lane Group Flow (vph)	0	487	0	0	494	0	0	78	0	0	110	0
Confl. Peds. (#/hr)	70		135	135		70	120		50	50		120
Confl. Bikes (#/hr)			5			30						
Heavy Vehicles (%)	13%	7%	14%	9%	8%	3%	11%	3%	10%	0%	3%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		63.9			63.9			21.8			21.8	
Effective Green, g (s)		64.9			64.9			22.8			22.8	
Actuated g/C Ratio		0.69			0.69			0.24			0.24	
Clearance Time (s)								6.0			6.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		1155			1110			334			315	
v/s Ratio Prot												
v/s Ratio Perm		0.29			c0.31			0.06			c0.09	
v/c Ratio		0.42			0.45			0.23			0.35	
Uniform Delay, d1		6.3			6.4			28.4			29.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.3			0.4			0.7	
Delay (s)		6.5			6.7			28.8			30.0	
Level of Service		A			A			C			C	
Approach Delay (s)		6.5			6.7			28.8			30.0	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.43				
Actuated Cycle Length (s)	93.7	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	58.7%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	505	15	5	460	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	505	15	5	460	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	561	17	6	511	0	0	0	0	0	0	0
Pedestrians		5			5			115			45	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			0			4	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		99			98							
pX, platoon unblocked	0.84			0.89			0.90	0.90	0.89	0.90	0.90	0.84
vC, conflicting volume	556			693			1212	1252	690	1142	1261	561
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	378			590			895	940	586	817	949	384
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	100	100	100
cM capacity (veh/h)	963			883			227	228	454	246	225	537

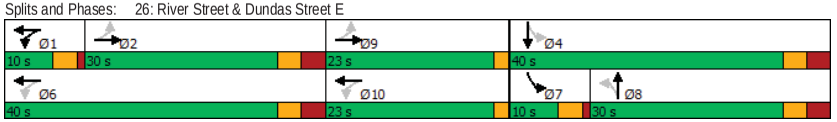
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	578	517	0
Volume Left	0	6	0
Volume Right	17	0	0
cSH	963	883	1700
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.2	0.0
Control Delay (s)	0.0	0.2	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	0.0
Approach LOS			A

Intersection Summary					
Average Delay			0.1		
Intersection Capacity Utilization			39.7%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	10	445	110	315	70	325	120	410				
Future Volume (vph)	10	445	110	315	70	325	120	410				
Turn Type	Perm	NA	custom	NA	Perm	NA	pm+pt	NA				
Protected Phases		2 9	1	1 6 10		8	7	4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	1	1 6	8	8	7	4				
Switch Phase												
Minimum Initial (s)			6.0		21.0	21.0	5.0	21.0	21.0	21.0	5.0	5.0
Minimum Split (s)			10.0		27.0	27.0	9.0	27.0	27.0	27.0	23.0	23.0
Total Split (s)			10.0		30.0	30.0	10.0	40.0	30.0	40.0	23.0	23.0
Total Split (%)			9.7%		29.1%	29.1%	9.7%	38.8%	29%	39%	22%	22%
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)			1.0		3.0	3.0	1.0	3.0	3.0	3.0	0.0	0.0
Lost Time Adjust (s)					-1.0	-1.0	-1.0	-1.0				
Total Lost Time (s)					5.0	5.0	3.0	5.0				
Lead/Lag			Lead		Lag	Lag	Lead		Lag			
Lead-Lag Optimize?			Yes		Yes	Yes	Yes		Yes			
Recall Mode			None		Min	Min	None	Min	Min	Min	None	None
Act Effct Green (s)		28.4		40.5	25.3	25.3	37.4	35.4				
Actuated g/C Ratio		0.34		0.48	0.30	0.30	0.45	0.42				
v/c Ratio		0.94		0.82	0.43	0.98	0.58	0.77				
Control Delay		52.7		29.0	36.4	66.5	29.5	31.6				
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay		52.7		29.0	36.4	66.5	29.5	31.6				
LOS		D		C	D	E	C	C				
Approach Delay		52.7		29.0		62.6		31.2				
Approach LOS		D		C		E		C				

Intersection Summary			
Cycle Length: 103			
Actuated Cycle Length: 84			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 43.7		Intersection LOS: D	
Intersection Capacity Utilization 114.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 26: River Street & Dundas Street E



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	537	505	74	490	128	521
v/c Ratio	0.94	0.82	0.43	0.98	0.58	0.77
Control Delay	52.7	29.0	36.4	66.5	29.5	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	29.0	36.4	66.5	29.5	31.6
Queue Length 50th (m)	~82.8	54.5	8.8	69.6	10.9	62.2
Queue Length 95th (m)	118.9	80.7	#30.4	#179.1	#37.1	#164.4
Internal Link Dist (m)	73.4	80.5		131.0		118.9
Turn Bay Length (m)			20.0		25.0	
Base Capacity (vph)	583	624	171	500	220	678
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.81	0.43	0.98	0.58	0.77

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	445	50	110	315	50	70	325	135	120	410	80
Future Volume (vph)	10	445	50	110	315	50	70	325	135	120	410	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			3.0		5.0	5.0		3.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.99		1.00	0.97		1.00	0.97	
Flpb, ped/bikes		1.00			0.99		0.94	1.00		1.00	1.00	
Frt		0.99			0.99		1.00	0.96		1.00	0.98	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1701			1705		1459	1630		1601	1605	
Flt Permitted		0.99			0.68		0.37	1.00		0.14	1.00	
Satd. Flow (perm)		1681			1176		570	1630		238	1605	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	11	473	53	117	335	53	74	346	144	128	436	85
RTOR Reduction (vph)	0	4	0	0	5	0	0	13	0	0	6	0
Lane Group Flow (vph)	0	533	0	0	500	0	74	477	0	128	515	0
Confl. Peds. (#/hr)	65		90	90		65	65		45	45		65
Confl. Bikes (#/hr)			5			30						15
Heavy Vehicles (%)	0%	7%	4%	3%	7%	0%	9%	9%	1%	5%	12%	7%
Turn Type	Perm	NA		custom	NA		Perm	NA		pm+pt	NA	
Protected Phases		2 9		1	1 6 10			8		7	4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		33.1			43.2		24.3	24.3		34.4	34.4	
Effective Green, g (s)		34.1			39.2		25.3	25.3		35.4	35.4	
Actuated g/C Ratio		0.40			0.46		0.30	0.30		0.41	0.41	
Clearance Time (s)							6.0	6.0		4.0	6.0	
Vehicle Extension (s)							3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		669			582		168	481		211	663	
v/s Ratio Prot					c0.07			c0.29		0.05	c0.32	
v/s Ratio Perm		c0.32			c0.32		0.13			0.20		
v/c Ratio		0.80			0.86		0.44	0.99		0.61	0.78	
Uniform Delay, d1		22.7			20.7		24.4	30.0		18.9	21.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.5			12.0		1.8	38.5		4.9	5.7	
Delay (s)		29.2			32.7		26.3	68.6		23.8	27.4	
Level of Service		C			C		C	E		C	C	
Approach Delay (s)		29.2			32.7			63.0			26.7	
Approach LOS		C			C			E			C	

Intersection Summary

HCM 2000 Control Delay	37.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	114.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	350	25	5	785	0	0
Future Volume (Veh/h)	350	25	5	785	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	389	28	6	872	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	88			164		
pX, platoon unblocked			0.97		0.90	0.97
vC, conflicting volume			417		851	208
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			345		471	130
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1192		471	877

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	259	158	297	581
Volume Left	0	0	6	0
Volume Right	0	28	0	0
cSH	1700	1700	1192	1700
Volume to Capacity	0.15	0.09	0.01	0.34
Queue Length 95th (m)	0.0	0.0	0.1	0.0
Control Delay (s)	0.0	0.0	0.2	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.1	
Approach LOS				

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	28.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	60	0	5	65
Future Volume (Veh/h)	0	0	60	0	5	65
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	67	0	6	72
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						57
pX, platoon unblocked						
vC, conflicting volume	151	67			67	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	151	67			67	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	842	1002			1547	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	67	78
Volume Left	0	0	6
Volume Right	0	0	0
cSH	1700	1700	1547
Volume to Capacity	0.00	0.04	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	0.6
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	0.6
Approach LOS	A		

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	10.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	5	550	500	60
Future Volume (Veh/h)	0	0	5	550	500	60
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	5	598	543	65
Pedestrians	80				5	
Lane Width (m)	0.0				3.5	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				39		
pX, platoon unblocked	0.93					
vC, conflicting volume	970	384	688			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	817	384	688			
tC, single (s)	6.8	6.9	4.5			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	100	100	99			
cM capacity (veh/h)	293	620	791			

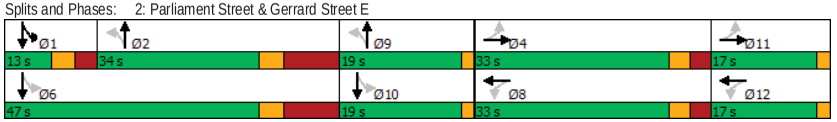
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	204	399	362	246
Volume Left	5	0	0	0
Volume Right	0	0	0	65
cSH	791	1700	1700	1700
Volume to Capacity	0.01	0.23	0.21	0.14
Queue Length 95th (m)	0.1	0.0	0.0	0.0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		22.0%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø4	Ø6	Ø8
Lane Configurations												
Traffic Volume (vph)	25	240	65	520	80	335	80	350				
Future Volume (vph)	25	240	65	520	80	335	80	350				
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA				
Protected Phases		4 11		8 12		2 9	1	1 6 10	2	4	6	8
Permitted Phases	4 11		8 12		2 9		6 10					
Detector Phase	4	4	8	8	2	2	1	1 6				
Switch Phase												
Minimum Initial (s)							6.0		22.0	21.0	22.0	21.0
Minimum Split (s)							12.5		33.2	31.8	33.2	31.8
Total Split (s)							13.0		34.0	33.0	47.0	33.0
Total Split (%)							11.2%		29%	28%	41%	28%
Yellow Time (s)							3.3		3.3	3.0	3.3	3.0
All-Red Time (s)							3.2		7.9	2.8	7.9	2.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead		Lag			
Lead-Lag Optimize?							Yes		Yes			
Recall Mode							None		Min	Min	Min	Min
Act Effct Green (s)		33.1		33.1		30.3		48.7				
Actuated g/C Ratio		0.36		0.36		0.33		0.53				
v/c Ratio		0.34		0.79		0.62		0.37				
Control Delay		20.7		31.9		29.8		13.4				
Queue Delay		0.0		0.0		0.0		0.0				
Total Delay		20.7		31.9		29.8		13.4				
LOS		C		C		C		B				
Approach Delay		20.7		31.9		29.8		13.4				
Approach LOS		C		C		C		B				

Intersection Summary		
Cycle Length: 116		
Actuated Cycle Length: 92.5		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.79		
Intersection Signal Delay: 25.2	Intersection LOS: C	
Intersection Capacity Utilization 99.7%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 2: Parliament Street & Gerrard Street E



Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	19.0	19.0	17.0	17.0
Total Split (s)	19.0	19.0	17.0	17.0
Total Split (%)	16%	16%	15%	15%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	358	820	484	526
v/c Ratio	0.34	0.79	0.62	0.37
Control Delay	20.7	31.9	29.8	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.7	31.9	29.8	13.4
Queue Length 50th (m)	18.1	54.3	33.0	21.4
Queue Length 95th (m)	37.8	101.8	61.0	43.9
Internal Link Dist (m)	33.0	63.9	119.2	15.0
Turn Bay Length (m)				
Base Capacity (vph)	1055	1078	800	1446
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.76	0.60	0.36

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	240	75	65	520	195	80	335	45	80	350	70
Future Volume (vph)	25	240	75	65	520	195	80	335	45	80	350	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.8			4.8			10.2			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.97			0.98			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.99	
Frt		0.97			0.96			0.99			0.98	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		3308			3203			3181			3203	
Flt Permitted		0.86			0.88			0.74			0.81	
Satd. Flow (perm)		2867			2825			2389			2604	
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)	26	253	79	68	547	205	84	353	47	84	368	74
RTOR Reduction (vph)	0	22	0	0	27	0	0	6	0	0	13	0
Lane Group Flow (vph)	0	336	0	0	793	0	0	478	0	0	513	0
Confl. Peds. (#/hr)	80		85	85		80	85		120	120		85
Confl. Bikes (#/hr)			5			20			5			10
Heavy Vehicles (%)	13%	0%	2%	1%	1%	11%	6%	8%	0%	11%	6%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4 11			8 12			2 9		1	1 6 10	
Permitted Phases	4 11			8 12			2 9			6 10		
Actuated Green, G (s)		37.5			37.5			40.3			53.6	
Effective Green, g (s)		38.5			38.5			41.3			44.4	
Actuated g/C Ratio		0.40			0.40			0.43			0.47	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1160			1143			1037			1264	
v/s Ratio Prot											c0.03	
v/s Ratio Perm		0.12			c0.28			c0.20			0.16	
v/c Ratio		0.29			0.69			0.46			0.41	
Uniform Delay, d1		19.1			23.4			19.0			16.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			1.8			0.3			0.2	
Delay (s)		19.2			25.3			19.4			16.9	
Level of Service		B			C			B			B	
Approach Delay (s)		19.2			25.3			19.4			16.9	
Approach LOS		B			C			B			B	

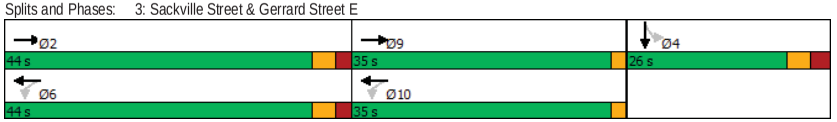
Intersection Summary				
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	95.1	Sum of lost time (s)	22.5	
Intersection Capacity Utilization	99.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	330	105	830	35				
Future Volume (vph)	330	105	830	35				
Turn Type	NA	Perm	NA	NA				
Protected Phases	2 9		6 10	4	2	6	9	10
Permitted Phases		6 10						
Detector Phase	2	6	6	4				
Switch Phase								
Minimum Initial (s)				20.0	16.0	16.0	5.0	5.0
Minimum Split (s)				25.7	21.0	21.0	35.0	35.0
Total Split (s)				26.0	44.0	44.0	35.0	35.0
Total Split (%)				24.8%	42%	42%	33%	33%
Yellow Time (s)				3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				2.7	2.0	2.0	0.0	0.0
Lost Time Adjust (s)				-1.0				
Total Lost Time (s)				4.7				
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode				Min	Min	Min	None	None
Act Effct Green (s)	48.9		48.9	22.9				
Actuated g/C Ratio	0.60		0.60	0.28				
v/c Ratio	0.20		0.60	0.26				
Control Delay	6.0		10.2	31.6				
Queue Delay	0.0		0.0	0.0				
Total Delay	6.0		10.2	31.6				
LOS	A		B	C				
Approach Delay	6.0		10.2	31.6				
Approach LOS	A		B	C				

Intersection Summary			
Cycle Length: 105			
Actuated Cycle Length: 81.2			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Sackville Street & Gerrard Street E



Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	385	1027	114
v/c Ratio	0.20	0.60	0.26
Control Delay	6.0	10.2	31.6
Queue Delay	0.0	0.0	0.0
Total Delay	6.0	10.2	31.6
Queue Length 50th (m)	11.0	42.2	16.3
Queue Length 95th (m)	15.6	54.8	35.3
Internal Link Dist (m)	56.3	47.8	15.3
Turn Bay Length (m)			
Base Capacity (vph)	2278	2026	439
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.51	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	330	20	105	830	0	0	0	0	55	35	15
Future Volume (vph)	0	330	20	105	830	0	0	0	0	55	35	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0						4.7	
Lane Util. Factor		0.95			0.95						1.00	
Frpb, ped/bikes		0.99			1.00						0.99	
Flpb, ped/bikes		1.00			0.99						0.91	
Frt		0.99			1.00						0.98	
Flt Protected		1.00			0.99						0.97	
Satd. Flow (prot)		3202			3361						1569	
Flt Permitted		1.00			0.84						0.97	
Satd. Flow (perm)		3202			2854						1569	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	363	22	115	912	0	0	0	0	60	38	16
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	380	0	0	1027	0	0	0	0	0	109	0
Confl. Peds. (#/hr)	40		60	60		40	60		140	140		60
Confl. Bikes (#/hr)			15			75						5
Heavy Vehicles (%)	0%	10%	0%	9%	4%	0%	0%	0%	0%	0%	6%	6%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2 9			6 10						4	
Permitted Phases				6 10						4		
Actuated Green, G (s)		52.1			52.1						21.8	
Effective Green, g (s)		53.1			53.1						22.8	
Actuated g/C Ratio		0.65			0.65						0.28	
Clearance Time (s)											5.7	
Vehicle Extension (s)											3.0	
Lane Grp Cap (vph)		2083			1857						438	
v/s Ratio Prot		0.12										
v/s Ratio Perm					c0.36						0.07	
v/c Ratio		0.18			0.55						0.25	
Uniform Delay, d1		5.6			7.8						22.8	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.0			0.4						0.3	
Delay (s)		5.7			8.1						23.1	
Level of Service		A			A						C	
Approach Delay (s)		5.7			8.1			0.0			23.1	
Approach LOS		A			A			A			C	

Intersection Summary					
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio	0.48				
Actuated Cycle Length (s)	81.6	Sum of lost time (s)		9.7	
Intersection Capacity Utilization	66.6%	ICU Level of Service		C	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	380	930	20	5	5
Future Volume (Veh/h)	5	380	930	20	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	396	969	21	5	5
Pedestrians		5	5		50	
Lane Width (m)		3.5	3.5		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		4	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		72	141			
pX, platoon unblocked	0.91				0.92	0.91
vC, conflicting volume	1040				1242	550
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	841				981	301
tC, single (s)	4.1				7.5	7.3
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.5
p0 queue free %	99				97	99
cM capacity (veh/h)	701				173	560

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	137	264	646	344	10
Volume Left	5	0	0	0	5
Volume Right	0	0	0	21	5
cSH	701	1700	1700	1700	265
Volume to Capacity	0.01	0.16	0.38	0.20	0.04
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.9
Control Delay (s)	0.4	0.0	0.0	0.0	19.1
Lane LOS	A				C
Approach Delay (s)	0.2		0.0		19.1
Approach LOS					C

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization	38.0%	ICU Level of Service		A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	380	940	5	15	10
Future Volume (Veh/h)	5	380	940	5	15	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	392	969	5	15	10
Pedestrians					75	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		145	68			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	1049				1252	562
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	797				1027	248
tC, single (s)	4.1				6.9	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	99				92	98
cM capacity (veh/h)	696				184	609

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	136	261	646	328	25
Volume Left	5	0	0	0	15
Volume Right	0	0	0	5	10
cSH	696	1700	1700	1700	255
Volume to Capacity	0.01	0.15	0.38	0.19	0.10
Queue Length 95th (m)	0.2	0.0	0.0	0.0	2.4
Control Delay (s)	0.5	0.0	0.0	0.0	20.6
Lane LOS	A				C
Approach Delay (s)	0.2		0.0		20.6
Approach LOS					C

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization	36.2%	ICU Level of Service		A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	NBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	5	390	905	10				
Future Volume (vph)	5	390	905	10				
Turn Type	Perm	NA	NA	NA				
Protected Phases		2 9	6 10	8	2	6	9	10
Permitted Phases	2 9							
Detector Phase	2	2	6	8				
Switch Phase								
Minimum Initial (s)				15.0	11.0	11.0	5.0	5.0
Minimum Split (s)				25.4	26.2	26.2	72.0	72.0
Total Split (s)				27.0	43.0	43.0	72.0	72.0
Total Split (%)				19.0%	30%	30%	51%	51%
Yellow Time (s)				3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				7.4	7.2	7.2	0.0	0.0
Lost Time Adjust (s)				-1.0				
Total Lost Time (s)				9.4				
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode				None	Min	Min	None	None
Act Effct Green (s)		69.1	69.1	19.0				
Actuated g/C Ratio		0.71	0.71	0.20				
v/c Ratio		0.20	0.51	0.32				
Control Delay		6.6	8.9	43.2				
Queue Delay		0.0	0.1	0.0				
Total Delay		6.6	9.0	43.2				
LOS		A	A	D				
Approach Delay		6.6	9.0	43.2				
Approach LOS		A	A	D				

Intersection Summary	
Cycle Length: 142	
Actuated Cycle Length: 96.8	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Sumach Street & Gerrard Street E

Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	454	1184	91
v/c Ratio	0.20	0.51	0.32
Control Delay	6.6	8.9	43.2
Queue Delay	0.0	0.1	0.0
Total Delay	6.6	9.0	43.2
Queue Length 50th (m)	16.8	57.4	8.0
Queue Length 95th (m)	22.2	68.8	36.5
Internal Link Dist (m)	44.0	75.7	33.2
Turn Bay Length (m)			
Base Capacity (vph)	2276	2325	307
Starvation Cap Reductn	0	255	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.20	0.57	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	390	0	0	905	125	40	10	30	0	0	0
Future Volume (vph)	5	390	0	0	905	125	40	10	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.2			9.2			9.4				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			0.97			0.95				
Flpb, ped/bikes		1.00			1.00			0.90				
Frt		1.00			0.98			0.95				
Flt Protected		1.00			1.00			0.98				
Satd. Flow (prot)		3398			3277			1482				
Flt Permitted		0.94			1.00			0.98				
Satd. Flow (perm)		3188			3277			1482				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	448	0	0	1040	144	46	11	34	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	454	0	0	1177	0	0	76	0	0	0	0
Confl. Peds. (#/hr)	65		85	85		65	100		65	65		100
Confl. Bikes (#/hr)			15			120			5			
Heavy Vehicles (%)	0%	5%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2 9			6 10			8				
Permitted Phases	2 9						8					
Actuated Green, G (s)		74.3			74.3			12.2				
Effective Green, g (s)		75.3			75.3			13.2				
Actuated g/C Ratio		0.76			0.76			0.13				
Clearance Time (s)								10.4				
Vehicle Extension (s)								3.0				
Lane Grp Cap (vph)		2427			2495			197				
v/s Ratio Prot					c0.36							
v/s Ratio Perm		0.14						0.05				
v/c Ratio		0.19			0.47			0.39				
Uniform Delay, d1		3.3			4.4			39.2				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			0.1			1.3				
Delay (s)		3.3			4.5			40.4				
Level of Service		A			A			D				
Approach Delay (s)		3.3			4.5			40.4			0.0	
Approach LOS		A			A			D			A	

Intersection Summary				
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	98.9	Sum of lost time (s)	19.6	
Intersection Capacity Utilization	58.1%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	415	5	0	1025	0	0	0	0	10	0	5
Future Volume (Veh/h)	0	415	5	0	1025	0	0	0	0	10	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	437	5	0	1079	0	0	0	0	11	0	5
Pedestrians											75	
Lane Width (m)											3.0	
Walking Speed (m/s)											1.1	
Percent Blockage											6	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		100			91							
pX, platoon unblocked	0.80			0.99			0.80	0.80	0.99	0.80	0.80	0.80
vC, conflicting volume	1154			442			984	1594	221	1372	1596	614
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	691			414			435	1192	190	917	1195	16
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	93	100	99
cM capacity (veh/h)	689			1143			390	143	816	167	143	803

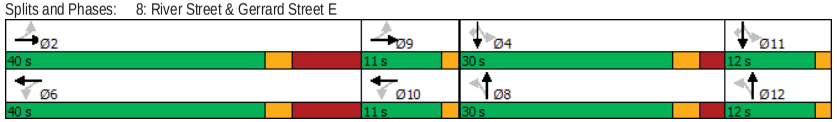
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	291	151	540	540	16
Volume Left	0	0	0	0	11
Volume Right	0	5	0	0	5
cSH	1700	1700	1700	1700	222
Volume to Capacity	0.17	0.09	0.32	0.32	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.8
Control Delay (s)	0.0	0.0	0.0	0.0	22.5
Lane LOS					C
Approach Delay (s)	0.0		0.0		22.5
Approach LOS					C

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	38.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø2	Ø4	Ø6
Lane Configurations												
Traffic Volume (vph)	110	275	160	815	45	365	125	365	165			
Future Volume (vph)	110	275	160	815	45	365	125	365	165			
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm			
Protected Phases		2 9		6 10		8 12		4 11		2	4	6
Permitted Phases	2 9		6 10		8 12		4 11		4 11			
Detector Phase	2	2	6	6	8	8	4	4	4			
Switch Phase												
Minimum Initial (s)										23.0	19.0	23.0
Minimum Split (s)										33.8	30.0	33.8
Total Split (s)										40.0	30.0	40.0
Total Split (%)										43%	32%	43%
Yellow Time (s)										3.0	3.0	3.0
All-Red Time (s)										7.8	3.0	7.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode										Min	Min	Min
Act Effct Green (s)		36.8		36.8	29.9	29.9	29.9	29.9	29.9			
Actuated g/C Ratio		0.45		0.45	0.37	0.37	0.37	0.37	0.37			
v/c Ratio		0.58		1.02	0.19	0.71	0.64	0.56	0.29			
Control Delay		20.8		55.3	20.8	28.7	38.2	24.6	8.6			
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		20.8		55.3	20.8	28.7	38.2	24.6	8.6			
LOS		C		E	C	C	D	C	A			
Approach Delay		20.8		55.3		28.0		23.2				
Approach LOS		C		E		C		C				

Intersection Summary			
Cycle Length: 93			
Actuated Cycle Length: 81.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 37.3		Intersection LOS: D	
Intersection Capacity Utilization 117.6%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 8: River Street & Gerrard Street E



Lane Group	Ø8	Ø9	Ø10	Ø11	Ø12
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Turn Type					
Protected Phases	8	9	10	11	12
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	19.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	11.0	11.0	12.0	12.0
Total Split (s)	30.0	11.0	11.0	12.0	12.0
Total Split (%)	32%	12%	12%	13%	13%
Yellow Time (s)	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	3.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	None	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	443	1204	47	453	130	380	172
v/c Ratio	0.58	1.02	0.19	0.71	0.64	0.56	0.29
Control Delay	20.8	55.3	20.8	28.7	38.2	24.6	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	55.3	20.8	28.7	38.2	24.6	8.6
Queue Length 50th (m)	26.5	100.3	5.4	62.8	17.9	50.4	6.3
Queue Length 95th (m)	45.2	#161.7	13.2	95.6	38.9	76.7	19.2
Internal Link Dist (m)	67.0	81.6		126.5		61.7	
Turn Bay Length (m)			30.0		30.0		
Base Capacity (vph)	740	1181	252	668	213	708	609
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	0.60	1.02	0.19	0.68	0.61	0.54	0.28

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	275	40	160	815	180	45	365	70	125	365	165
Future Volume (vph)	110	275	40	160	815	180	45	365	70	125	365	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.8			9.8		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.98			0.98		1.00	0.98		1.00	1.00	0.94
Flpb, ped/bikes		1.00			0.99		0.98	1.00		0.96	1.00	1.00
Frt		0.99			0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3189			3261		1528	1738		1577	1860	1420
Flt Permitted		0.52			0.79		0.41	1.00		0.34	1.00	1.00
Satd. Flow (perm)		1684			2601		665	1738		562	1860	1420
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	115	286	42	167	849	188	47	380	73	130	380	172
RTOR Reduction (vph)	0	7	0	0	13	0	0	7	0	0	0	67
Lane Group Flow (vph)	0	436	0	0	1191	0	47	446	0	130	380	105
Confl. Peds. (#/hr)	50		95	95		50	40		85	85		40
Confl. Bikes (#/hr)			10			75			15			10
Heavy Vehicles (%)	4%	8%	4%	0%	3%	1%	8%	4%	2%	3%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2 9			6 10			8 12			4 11	
Permitted Phases	2 9			6 10			8 12			4 11		4 11
Actuated Green, G (s)		45.5			45.5		33.8	33.8		33.8	33.8	33.8
Effective Green, g (s)		46.5			46.5		34.8	34.8		34.8	34.8	34.8
Actuated g/C Ratio		0.56			0.56		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		940			1451		277	726		234	777	593
v/s Ratio Prot								c0.26			0.20	
v/s Ratio Perm		0.26			c0.46		0.07			0.23		0.07
v/c Ratio		0.46			0.82		0.17	0.61		0.56	0.49	0.18
Uniform Delay, d1		11.0			15.0		15.2	19.0		18.4	17.7	15.2
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4			3.9		0.3	1.6		2.8	0.5	0.1
Delay (s)		11.3			18.9		15.5	20.5		21.2	18.2	15.4
Level of Service		B			B		B	C		C	B	B
Approach Delay (s)		11.3			18.9			20.1			18.1	
Approach LOS		B			B			C			B	

Intersection Summary				
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	16.8	
Intersection Capacity Utilization	117.6%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	10	10	5	0	0	0	0	15	140	5
Future Volume (Veh/h)	0	5	10	10	5	0	0	0	0	15	140	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	0	6	13	13	6	0	0	0	0	19	182	6
Pedestrians		70			40			15			10	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		6			4			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											58	
pX, platoon unblocked												
vC, conflicting volume	306	333	270	294	336	50	258			40		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	306	333	270	294	336	50	258			40		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	98	98	99	100	100			99		
cM capacity (veh/h)	551	527	726	571	525	979	1237			1527		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	19	19	207
Volume Left	0	13	19
Volume Right	13	0	6
cSH	649	556	1527
Volume to Capacity	0.03	0.03	0.01
Queue Length 95th (m)	0.7	0.8	0.3
Control Delay (s)	10.7	11.7	0.8
Lane LOS	B	B	A
Approach Delay (s)	10.7	11.7	0.8
Approach LOS	B	B	

Intersection Summary					
Average Delay	2.4				
Intersection Capacity Utilization	31.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	65	395	10	15	475
Future Volume (Veh/h)	45	65	395	10	15	475
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	47	68	416	11	16	500
Pedestrians	260		5			175
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	20		0			15
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			151			143
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	968	648			687	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	898	628			666	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	76			98	
cM capacity (veh/h)	218	282			742	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	115	277	150	183	333
Volume Left	47	0	0	16	0
Volume Right	68	0	11	0	0
cSH	252	1700	1700	742	1700
Volume to Capacity	0.46	0.16	0.09	0.02	0.20
Queue Length 95th (m)	17.0	0.0	0.0	0.5	0.0
Control Delay (s)	30.8	0.0	0.0	1.1	0.0
Lane LOS	D			A	
Approach Delay (s)	30.8	0.0		0.4	
Approach LOS	D				

Intersection Summary					
Average Delay	3.5				
Intersection Capacity Utilization	44.0%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Traffic Volume (veh/h)	0	25	65	0	5	50
Future Volume (Veh/h)	0	25	65	0	5	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	30	79	0	6	61
Pedestrians		15			40	
Lane Width (m)		3.5			3.0	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		1			3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	119				149	134
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119				149	134
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	100				99	93
cM capacity (veh/h)	1437				822	851

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	30	79	67
Volume Left	0	0	6
Volume Right	0	0	61
cSH	1700	1700	848
Volume to Capacity	0.02	0.05	0.08
Queue Length 95th (m)	0.0	0.0	2.0
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary				
Average Delay		3.7		
Intersection Capacity Utilization		26.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	Y	
Traffic Volume (veh/h)	30	0	0	35	30	25
Future Volume (Veh/h)	30	0	0	35	30	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	38	0	0	45	38	32
Pedestrians	15			10	30	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	1			1	2	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			68		128	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			68		128	78
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	97
cM capacity (veh/h)			1511		831	947

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	38	45	70
Volume Left	0	0	38
Volume Right	0	0	32
cSH	1700	1700	880
Volume to Capacity	0.02	0.03	0.08
Queue Length 95th (m)	0.0	0.0	2.0
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary				
Average Delay		4.3		
Intersection Capacity Utilization		26.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	40	10	0	20	0	0	0	0	20	130	5
Future Volume (vph)	0	40	10	0	20	0	0	0	0	20	130	5
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	0	49	12	0	25	0	0	0	0	25	160	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	61	25	191
Volume Left (vph)	0	0	25
Volume Right (vph)	12	0	6
Hadj (s)	-0.02	0.00	0.10
Departure Headway (s)	4.3	4.4	4.2
Degree Utilization, x	0.07	0.03	0.22
Capacity (veh/h)	791	767	836
Control Delay (s)	7.7	7.5	8.4
Approach Delay (s)	7.7	7.5	8.4
Approach LOS	A	A	A

Intersection Summary					
Delay	8.2				
Level of Service	A				
Intersection Capacity Utilization	32.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	20	10	0	0	0	20	55	35	0	0	0
Future Volume (vph)	30	20	10	0	0	0	20	55	35	0	0	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	40	27	13	0	0	0	27	73	47	0	0	0

Direction, Lane #	EB 1	NB 1
Volume Total (vph)	80	147
Volume Left (vph)	40	27
Volume Right (vph)	13	47
Hadj (s)	0.08	-0.05
Departure Headway (s)	4.3	4.0
Degree Utilization, x	0.10	0.16
Capacity (veh/h)	807	868
Control Delay (s)	7.8	7.8
Approach Delay (s)	7.8	7.8
Approach LOS	A	A

Intersection Summary					
Delay	7.8				
Level of Service	A				
Intersection Capacity Utilization	32.1%	ICU Level of Service		A	
Analysis Period (min)	15				

16: Tubman Avenue/Site Laneway & Oak Street

10-25-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	55	0	0	0	0	0	0	0	0	5	0
Future Volume (Veh/h)	0	55	0	0	0	0	0	0	0	0	5	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	73	0	0	0	0	0	0	0	0	7	0
Pedestrians		40			10			45				
Lane Width (m)		3.5			0.0			0.0				
Walking Speed (m/s)		1.1			1.1			1.1				
Percent Blockage		4			0			0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	0			118			162	118	128	83	118	40
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			118			162	118	128	83	118	40
tC, single (s)	4.1			4.1			7.1	6.5	6.7	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.8	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	99	100
cM capacity (veh/h)	1636			1483			774	776	808	909	776	1000

Direction, Lane #	EB 1	SB 1
Volume Total	73	7
Volume Left	0	0
Volume Right	0	0
cSH	1700	776
Volume to Capacity	0.04	0.01
Queue Length 95th (m)	0.0	0.2
Control Delay (s)	0.0	9.7
Lane LOS		A
Approach Delay (s)	0.0	9.7
Approach LOS		A

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	28.5%	ICU Level of Service	A	
Analysis Period (min)	15			

17: Oak Street & Site Driveway

10-25-2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	50	0	0	5	0
Future Volume (Veh/h)	5	50	0	0	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	56	0	0	6	0
Pedestrians			10		10	
Lane Width (m)			0.0		3.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	10				88	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	10				88	10
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1610				907	1069

Direction, Lane #	EB 1	SB 1
Volume Total	62	6
Volume Left	6	6
Volume Right	0	0
cSH	1610	907
Volume to Capacity	0.00	0.01
Queue Length 95th (m)	0.1	0.2
Control Delay (s)	0.7	9.0
Lane LOS	A	A
Approach Delay (s)	0.7	9.0
Approach LOS		A

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	16.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	0	15	35	0	65	0	375	25	40	525	0
Future Volume (Veh/h)	40	0	15	35	0	65	0	375	25	40	525	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	44	0	16	38	0	71	0	412	27	44	577	0
Pedestrians		75			65			35			5	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		7			6			3			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								143			151	
pX, platoon unblocked	0.87	0.87	0.85	0.87	0.87	0.79	0.85			0.79		
vC, conflicting volume	1242	1244	687	1206	1230	496	652			504		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	810	812	543	769	797	229	501			240		
tC, single (s)	7.2	6.5	6.2	7.1	7.0	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.5	3.3	2.2			2.2		
p0 queue free %	76	100	96	82	100	88	100			96		
cM capacity (veh/h)	180	230	418	210	197	601	851			997		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	60	109	439	621
Volume Left	44	38	0	44
Volume Right	16	71	27	0
cSH	213	364	1700	997
Volume to Capacity	0.28	0.30	0.26	0.04
Queue Length 95th (m)	8.5	9.4	0.0	1.1
Control Delay (s)	28.5	19.0	0.0	1.2
Lane LOS	D	C		A
Approach Delay (s)	28.5	19.0	0.0	1.2
Approach LOS	D	C		

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	72.7%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	405	20	25	495
Future Volume (Veh/h)	0	0	405	20	25	495
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	440	22	27	538
Pedestrians	250		10			15
Lane Width (m)	0.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			214
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	1034	496			712	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	905	332			562	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	253	620			931	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	293	169	206	359
Volume Left	0	0	27	0
Volume Right	0	22	0	0
cSH	1700	1700	931	1700
Volume to Capacity	0.17	0.10	0.03	0.21
Queue Length 95th (m)	0.0	0.0	0.7	0.0
Control Delay (s)	0.0	0.0	1.4	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.5	
Approach LOS				

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	305	35	335	40	310	65	390
Future Volume (vph)	30	305	35	335	40	310	65	390
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	45.0	45.0	45.0	45.0	31.0	31.0	31.0	31.0
Total Split (%)	59.2%	59.2%	59.2%	59.2%	40.8%	40.8%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	Min	Min	Min	Min
Act Effct Green (s)		41.3		41.3		24.7		24.7
Actuated g/C Ratio		0.54		0.54		0.32		0.32
v/c Ratio		0.25		0.31		0.45		0.58
Control Delay		9.5		12.4		21.7		23.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		9.5		12.4		21.7		23.7
LOS		A		B		C		C
Approach Delay		9.5		12.4		21.7		23.7
Approach LOS		A		B		C		C

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 54 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.58		
Intersection Signal Delay: 17.1	Intersection LOS: B	
Intersection Capacity Utilization 91.7%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 20: Parliament Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	383	483	389	527
v/c Ratio	0.25	0.31	0.45	0.58
Control Delay	9.5	12.4	21.7	23.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.5	12.4	21.7	23.7
Queue Length 50th (m)	13.1	26.0	22.8	32.3
Queue Length 95th (m)	22.8	35.5	32.4	44.1
Internal Link Dist (m)	85.0	103.5	45.0	56.1
Turn Bay Length (m)				
Base Capacity (vph)	1561	1556	922	963
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.31	0.42	0.55

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	305	25	35	335	85	40	310	15	65	390	40
Future Volume (vph)	30	305	25	35	335	85	40	310	15	65	390	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.99			0.97			0.99			0.99	
Flpb, ped/bikes		0.99			1.00			0.99			0.99	
Frt		0.99			0.97			0.99			0.99	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		3171			3090			3112			3269	
Flt Permitted		0.89			0.90			0.85			0.84	
Satd. Flow (perm)		2840			2798			2652			2758	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	324	27	37	356	90	43	330	16	69	415	43
RTOR Reduction (vph)	0	7	0	0	25	0	0	4	0	0	9	0
Lane Group Flow (vph)	0	376	0	0	458	0	0	385	0	0	518	0
Confl. Peds. (#/hr)	155		110	110		155	140		160	160		140
Confl. Bikes (#/hr)			10			25						5
Heavy Vehicles (%)	6%	10%	4%	22%	5%	13%	18%	11%	13%	2%	5%	5%
Parking (#/hr)			0						0			0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		40.3			40.3			23.7			23.7	
Effective Green, g (s)		41.3			41.3			24.7			24.7	
Actuated g/C Ratio		0.54			0.54			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1543			1520			861			896	
v/s Ratio Prot												
v/s Ratio Perm		0.13			c0.16			0.15			c0.19	
v/c Ratio		0.24			0.30			0.45			0.58	
Uniform Delay, d1		9.1			9.5			20.3			21.3	
Progression Factor		1.00			1.37			1.00			1.00	
Incremental Delay, d2		0.4			0.5			0.4			0.9	
Delay (s)		9.5			13.5			20.6			22.2	
Level of Service		A			B			C			C	
Approach Delay (s)		9.5			13.5			20.6			22.2	
Approach LOS		A			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	91.7%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	380	10	10	430	35	15	10	5	20	10	20
Future Volume (Veh/h)	10	380	10	10	430	35	15	10	5	20	10	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	413	11	11	467	38	16	11	5	22	11	22
Pedestrians		20			5			70			80	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			0			6			7	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		127			124							
pX, platoon unblocked				1.00			1.00	1.00	1.00	1.00	1.00	
vC, conflicting volume	585			494			814	1118	287	832	1104	352
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	585			491			811	1115	284	829	1102	352
tC, single (s)	4.1			4.1			7.6	6.7	6.9	7.6	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.3	3.5	4.0	3.4
p0 queue free %	99			99			92	93	99	89	94	96
cM capacity (veh/h)	929			1015			197	164	671	199	182	567

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	218	218	244	272	32	55
Volume Left	11	0	11	0	16	22
Volume Right	0	11	0	38	5	22
cSH	929	1700	1015	1700	205	262
Volume to Capacity	0.01	0.13	0.01	0.16	0.16	0.21
Queue Length 95th (m)	0.3	0.0	0.2	0.0	4.1	5.9
Control Delay (s)	0.6	0.0	0.5	0.0	25.7	22.3
Lane LOS	A		A		D	C
Approach Delay (s)	0.3		0.2		25.7	22.3
Approach LOS					D	C

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	35.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	415	10	395	45	0	75	50
Future Volume (vph)	415	10	395	45	0	75	50
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2		6		8		4
Permitted Phases		6		8		4	
Detector Phase	2	6	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	17.0	17.0	17.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	26.0
Total Split (s)	50.0	50.0	50.0	26.0	26.0	26.0	26.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)	5.0		5.0		5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.5		47.5		18.5		18.5
Actuated g/C Ratio	0.62		0.62		0.24		0.24
v/c Ratio	0.23		0.40		0.22		0.51
Control Delay	6.8		6.2		12.8		26.3
Queue Delay	0.0		0.3		0.0		0.0
Total Delay	6.8		6.5		12.8		26.3
LOS	A		A		B		C
Approach Delay	6.8		6.5		12.8		26.3
Approach LOS	A		A		B		C

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 11 (14%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Sackville Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	463	427	73	174
v/c Ratio	0.23	0.40	0.22	0.51
Control Delay	6.8	6.2	12.8	26.3
Queue Delay	0.0	0.3	0.0	0.0
Total Delay	6.8	6.5	12.8	26.3
Queue Length 50th (m)	9.3	30.1	3.2	17.9
Queue Length 95th (m)	31.0	12.6	12.5	35.3
Internal Link Dist (m)	99.8	79.6	36.2	126.8
Turn Bay Length (m)				
Base Capacity (vph)	2019	1072	373	385
Starvation Cap Reductn	0	220	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.50	0.20	0.45

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	415	25	10	395	0	45	0	25	75	50	40
Future Volume (vph)	0	415	25	10	395	0	45	0	25	75	50	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			1.00			0.95			0.98	
Flpb, ped/bikes		1.00			1.00			0.97			0.95	
Frt		0.99			1.00			0.95			0.97	
Flt Protected		1.00			1.00			0.97			0.98	
Satd. Flow (prot)		3230			1736			1553			1591	
Flt Permitted		1.00			0.99			0.77			0.82	
Satd. Flow (perm)		3230			1716			1234			1338	
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)	0	437	26	11	416	0	47	0	26	79	53	42
RTOR Reduction (vph)	0	0	0	0	0	0	0	33	0	0	16	0
Lane Group Flow (vph)	0	463	0	0	427	0	0	40	0	0	158	0
Confl. Peds. (#/hr)	65		85	85		65	65		60	60		65
Confl. Bikes (#/hr)			10			25						
Heavy Vehicles (%)	0%	8%	13%	0%	8%	0%	0%	0%	8%	6%	2%	4%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases				6			8			4		
Actuated Green, G (s)		46.5			46.5			17.5			17.5	
Effective Green, g (s)		47.5			47.5			18.5			18.5	
Actuated g/C Ratio		0.62			0.62			0.24			0.24	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2018			1072			300			325	
v/s Ratio Prot		0.14										
v/s Ratio Perm					c0.25			0.03			c0.12	
v/c Ratio		0.23			0.40			0.13			0.49	
Uniform Delay, d1		6.2			7.1			22.5			24.7	
Progression Factor		0.94			0.62			1.00			1.00	
Incremental Delay, d2		0.3			1.1			0.2			1.1	
Delay (s)		6.1			5.5			22.7			25.8	
Level of Service		A			A			C			C	
Approach Delay (s)		6.1			5.5			22.7			25.8	
Approach LOS		A			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.42			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	53.2%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	Ø4
Lane Configurations				
Traffic Volume (vph)	495	15	405	
Future Volume (vph)	495	15	405	
Turn Type	NA	Perm	NA	
Protected Phases	2		6	4
Permitted Phases		6		
Detector Phase	2	6	6	
Switch Phase				
Minimum Initial (s)	18.0	18.0	18.0	20.0
Minimum Split (s)	23.9	23.9	23.9	23.0
Total Split (s)	53.0	53.0	53.0	23.0
Total Split (%)	69.7%	69.7%	69.7%	30%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	-1.0		-1.0	
Total Lost Time (s)	4.9		4.9	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Min	C-Min	C-Min	None
Act Effct Green (s)	64.8		64.8	
Actuated g/C Ratio	0.85		0.85	
v/c Ratio	0.37		0.30	
Control Delay	4.2		4.6	
Queue Delay	0.0		0.0	
Total Delay	4.2		4.6	
LOS	A		A	
Approach Delay	4.2		4.6	
Approach LOS	A		A	

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 8 (11%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 4.4		Intersection LOS: A	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Regent Park Boulevard & Dundas Street E

Lane Group	EBT	WBT
Lane Group Flow (vph)	537	438
v/c Ratio	0.37	0.30
Control Delay	4.2	4.6
Queue Delay	0.0	0.0
Total Delay	4.2	4.6
Queue Length 50th (m)	9.2	0.0
Queue Length 95th (m)	28.5	43.8
Internal Link Dist (m)	79.6	86.0
Turn Bay Length (m)		
Base Capacity (vph)	1465	1447
Starvation Cap Reductn	32	116
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.37	0.33

Intersection Summary

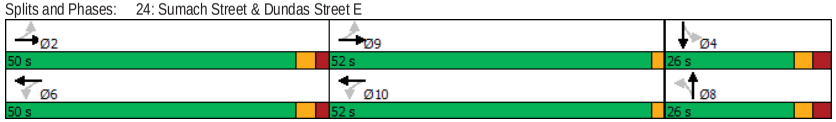
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	495	20	15	405	0	0
Future Volume (vph)	495	20	15	405	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.0	3.0	3.5	3.0	3.0
Total Lost time (s)	4.9			4.9		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	0.99			1.00		
Flpb, ped/bikes	1.00			1.00		
Frt	0.99			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1717			1728		
Flt Permitted	1.00			0.98		
Satd. Flow (perm)	1717			1694		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	516	21	16	422	0	0
RTOR Reduction (vph)	1	0	0	0	0	0
Lane Group Flow (vph)	536	0	0	438	0	0
Confl. Peds. (#/hr)		125	125		40	60
Heavy Vehicles (%)	8%	0%	9%	8%	0%	0%
Turn Type	NA		Perm	NA		
Protected Phases	2			6		
Permitted Phases			6			
Actuated Green, G (s)	59.1			59.1		
Effective Green, g (s)	60.1			60.1		
Actuated g/C Ratio	0.79			0.79		
Clearance Time (s)	5.9			5.9		
Vehicle Extension (s)	3.0			3.0		
Lane Grp Cap (vph)	1357			1339		
v/s Ratio Prot	c0.31					
v/s Ratio Perm				0.26		
v/c Ratio	0.39			0.33		
Uniform Delay, d1	2.4			2.2		
Progression Factor	0.82			1.00		
Incremental Delay, d2	0.8			0.7		
Delay (s)	2.8			2.9		
Level of Service	A			A		
Approach Delay (s)	2.8			2.9	0.0	
Approach LOS	A			A	A	

Intersection Summary				
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.35			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	7.9	
Intersection Capacity Utilization	52.9%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	15	435	30	395	15	30	40	0				
Future Volume (vph)	15	435	30	395	15	30	40	0				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)					26.0	26.0	26.0	26.0	21.0	21.0	52.0	52.0
Total Split (s)					26.0	26.0	26.0	26.0	50.0	50.0	52.0	52.0
Total Split (%)					20.3%	20.3%	20.3%	20.3%	39%	39%	41%	41%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)						-1.0		-1.0				
Total Lost Time (s)						5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	None	None	Min	Min	None	None
Act Effct Green (s)		71.8		71.8		25.4		25.4				
Actuated g/C Ratio		0.78		0.78		0.27		0.27				
v/c Ratio		0.43		0.42		0.28		0.17				
Control Delay		6.9		6.8		28.1		20.5				
Queue Delay		1.4		0.3		0.0		0.0				
Total Delay		8.4		7.1		28.1		20.5				
LOS		A		A		C		C				
Approach Delay		8.4		7.1		28.1		20.5				
Approach LOS		A		A		C		C				

Intersection Summary	
Cycle Length: 128	
Actuated Cycle Length: 92.6	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 61.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 24: Sumach Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	538	511	109	54
v/c Ratio	0.43	0.42	0.28	0.17
Control Delay	6.9	6.8	28.1	20.5
Queue Delay	1.4	0.3	0.0	0.0
Total Delay	8.4	7.1	28.1	20.5
Queue Length 50th (m)	39.9	37.2	11.7	3.3
Queue Length 95th (m)	58.2	54.7	29.8	15.0
Internal Link Dist (m)	86.0	75.5	76.2	121.5
Turn Bay Length (m)				
Base Capacity (vph)	1248	1218	390	309
Starvation Cap Reductn	495	246	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.53	0.28	0.17

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	15	435	45	30	395	45	15	30	55	40	0	10
Future Volume (vph)	15	435	45	30	395	45	15	30	55	40	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.96			0.98			0.93			0.94	
Flpb, ped/bikes		1.00			0.99			0.96			0.93	
Frt		0.99			0.99			0.93			0.97	
Flt Protected		1.00			1.00			0.99			0.96	
Satd. Flow (prot)		1650			1662			1423			1501	
Flt Permitted		0.98			0.95			0.95			0.69	
Satd. Flow (perm)		1624			1584			1364			1083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	473	49	33	429	49	16	33	60	43	0	11
RTOR Reduction (vph)	0	3	0	0	3	0	0	35	0	0	29	0
Lane Group Flow (vph)	0	535	0	0	508	0	0	74	0	0	25	0
Confl. Peds. (#/hr)	70		135	135		70	120		50	50		120
Confl. Bikes (#/hr)			5			30						
Heavy Vehicles (%)	13%	7%	14%	9%	8%	3%	11%	3%	10%	0%	3%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		72.2			72.2			13.9			13.9	
Effective Green, g (s)		73.2			73.2			14.9			14.9	
Actuated g/C Ratio		0.78			0.78			0.16			0.16	
Clearance Time (s)								6.0			6.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		1263			1232			215			171	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.32			c0.05			0.02	
v/c Ratio		0.42			0.41			0.35			0.15	
Uniform Delay, d1		3.5			3.4			35.3			34.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.2			1.0			0.4	
Delay (s)		3.7			3.6			36.2			34.5	
Level of Service		A			A			D			C	
Approach Delay (s)		3.7			3.6			36.2			34.5	
Approach LOS		A			A			D			C	

Intersection Summary				
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.42			
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	61.6%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣						✣	
Traffic Volume (veh/h)	0	515	15	5	470	0	0	0	0	5	0	0
Future Volume (Veh/h)	0	515	15	5	470	0	0	0	0	5	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	572	17	6	522	0	0	0	0	6	0	0
Pedestrians		5			5			115			45	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			0			4	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		99			98							
pX, platoon unblocked	0.84			0.91			0.89	0.89	0.91	0.89	0.89	0.84
vC, conflicting volume	567			704			1234	1274	700	1164	1283	572
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	391			627			976	1021	623	897	1031	397
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	97	100	100
cM capacity (veh/h)	952			879			198	201	444	215	198	528

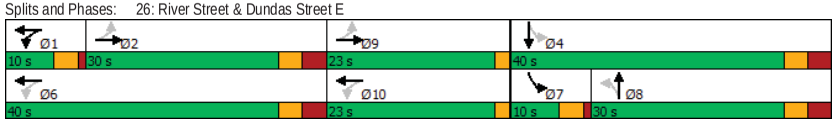
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	589	528	6
Volume Left	0	6	6
Volume Right	17	0	0
cSH	952	879	215
Volume to Capacity	0.00	0.01	0.03
Queue Length 95th (m)	0.0	0.2	0.7
Control Delay (s)	0.0	0.2	22.3
Lane LOS		A	C
Approach Delay (s)	0.0	0.2	22.3
Approach LOS			C

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	41.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	15	455	110	315	70	325	110	410				
Future Volume (vph)	15	455	110	315	70	325	110	410				
Turn Type	Perm	NA	custom	NA	Perm	NA	pm+pt	NA				
Protected Phases		2 9	1	1 6 10		8	7	4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	1	1 6	8	8	7	4				
Switch Phase												
Minimum Initial (s)			6.0		21.0	21.0	5.0	21.0	21.0	21.0	5.0	5.0
Minimum Split (s)			10.0		27.0	27.0	9.0	27.0	27.0	27.0	23.0	23.0
Total Split (s)			10.0		30.0	30.0	10.0	40.0	30.0	40.0	23.0	23.0
Total Split (%)			9.7%		29.1%	29.1%	9.7%	38.8%	29%	39%	22%	22%
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)			1.0		3.0	3.0	1.0	3.0	3.0	3.0	0.0	0.0
Lost Time Adjust (s)					-1.0	-1.0	-1.0	-1.0				
Total Lost Time (s)					5.0	5.0	3.0	5.0				
Lead/Lag			Lead		Lag	Lag	Lead		Lag			
Lead-Lag Optimize?			Yes		Yes	Yes	Yes		Yes			
Recall Mode			None		Min	Min	None	Min	Min	Min	None	None
Act Effct Green (s)		28.6		40.7	25.3	25.3	37.4	35.4				
Actuated g/C Ratio		0.34		0.48	0.30	0.30	0.44	0.42				
v/c Ratio		0.97		0.82	0.45	0.98	0.53	0.79				
Control Delay		59.0		29.2	37.7	67.1	27.0	32.8				
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay		59.0		29.2	37.7	67.1	27.0	32.8				
LOS		E		C	D	E	C	C				
Approach Delay		59.0		29.2		63.3		31.8				
Approach LOS		E		C		E		C				

Intersection Summary			
Cycle Length: 103			
Actuated Cycle Length: 84.2			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 45.7		Intersection LOS: D	
Intersection Capacity Utilization 115.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 26: River Street & Dundas Street E



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	553	505	74	490	117	532
v/c Ratio	0.97	0.82	0.45	0.98	0.53	0.79
Control Delay	59.0	29.2	37.7	67.1	27.0	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	29.2	37.7	67.1	27.0	32.8
Queue Length 50th (m)	~92.7	54.5	8.9	69.6	9.9	64.2
Queue Length 95th (m)	124.9	80.7	#31.6	#179.1	#31.4	#169.2
Internal Link Dist (m)	73.4	80.5		131.0		118.9
Turn Bay Length (m)			20.0		25.0	
Base Capacity (vph)	578	619	164	499	220	674
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	0.96	0.82	0.45	0.98	0.53	0.79

Intersection Summary
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	455	50	110	315	50	70	325	135	110	410	90
Future Volume (vph)	15	455	50	110	315	50	70	325	135	110	410	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			3.0		5.0	5.0		3.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.99		1.00	0.97		1.00	0.97	
Flpb, ped/bikes		1.00			0.99		0.95	1.00		1.00	1.00	
Frt		0.99			0.99		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1702			1705		1462	1630		1601	1597	
Flt Permitted		0.98			0.68		0.35	1.00		0.14	1.00	
Satd. Flow (perm)		1671			1166		546	1630		238	1597	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	16	484	53	117	335	53	74	346	144	117	436	96
RTOR Reduction (vph)	0	4	0	0	5	0	0	13	0	0	7	0
Lane Group Flow (vph)	0	549	0	0	500	0	74	477	0	117	525	0
Confl. Peds. (#/hr)	65		90	90		65	65		45	45		65
Confl. Bikes (#/hr)			5			30						15
Heavy Vehicles (%)	0%	7%	4%	3%	7%	0%	9%	9%	1%	5%	12%	7%
Turn Type	Perm	NA		custom	NA		Perm	NA		pm+pt	NA	
Protected Phases		2 9		1	1 6 10			8		7	4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		33.3			43.4		24.3	24.3		34.4	34.4	
Effective Green, g (s)		34.3			39.4		25.3	25.3		35.4	35.4	
Actuated g/C Ratio		0.40			0.46		0.29	0.29		0.41	0.41	
Clearance Time (s)							6.0	6.0		4.0	6.0	
Vehicle Extension (s)							3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		668			580		161	480		210	658	
v/s Ratio Prot					c0.07			c0.29		0.05	c0.33	
v/s Ratio Perm		c0.33			c0.32		0.14			0.18		
v/c Ratio		0.82			0.86		0.46	0.99		0.56	0.80	
Uniform Delay, d1		23.0			20.8		24.7	30.2		18.8	22.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.0			12.5		2.1	39.0		3.2	6.7	
Delay (s)		31.0			33.2		26.7	69.2		22.0	28.8	
Level of Service		C			C		C	E		C	C	
Approach Delay (s)		31.0			33.2			63.6			27.5	
Approach LOS		C			C			E			C	

Intersection Summary				
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	85.8	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	115.8%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	340	25	5	780	0	0
Future Volume (Veh/h)	340	25	5	780	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	378	28	6	867	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	88			164		
pX, platoon unblocked			0.98		0.90	0.98
vC, conflicting volume			406		838	203
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			344		487	136
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1198		462	873

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	252	154	295	578
Volume Left	0	0	6	0
Volume Right	0	28	0	0
cSH	1700	1700	1198	1700
Volume to Capacity	0.15	0.09	0.01	0.34
Queue Length 95th (m)	0.0	0.0	0.1	0.0
Control Delay (s)	0.0	0.0	0.2	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.1	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

29: Sumach Street & Site Driveway

10-25-2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	80	5	0	0
Future Volume (Veh/h)	0	0	80	5	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	89	6	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						57
pX, platoon unblocked						
vC, conflicting volume	92	92			95	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	92	92			95	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	913	971			1512	

Direction, Lane #	WB 1	NB 1
Volume Total	0	95
Volume Left	0	0
Volume Right	0	6
cSH	1700	1700
Volume to Capacity	0.00	0.06
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS	A	

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		7.8%	ICU Level of Service	A
Analysis Period (min)		15		

31: Site Laneway & Gerrard Street E

10-25-2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	345	5	0	845	0	5
Future Volume (Veh/h)	345	5	0	845	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	383	6	0	939	0	6
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	171			80		
pX, platoon unblocked					0.86	
vC, conflicting volume			389		856	194
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			389		509	194
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1181		429	820

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	255	134	470	470	6
Volume Left	0	0	0	0	0
Volume Right	0	6	0	0	6
cSH	1700	1700	1700	1700	820
Volume to Capacity	0.15	0.08	0.28	0.28	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	0.0	0.0	9.4
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.4
Approach LOS					A

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		26.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	50	35	0	5	0
Future Volume (Veh/h)	5	50	35	0	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	56	39	0	6	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	39				107	39
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	39				107	39
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1584				892	1038

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	62	39	6
Volume Left	6	0	6
Volume Right	0	0	0
cSH	1584	1700	892
Volume to Capacity	0.00	0.02	0.01
Queue Length 95th (m)	0.1	0.0	0.2
Control Delay (s)	0.7	0.0	9.1
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		16.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	10	515	585	75
Future Volume (Veh/h)	0	0	10	515	585	75
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	11	579	657	84
Pedestrians	150			5	10	
Lane Width (m)	0.0			3.5	3.5	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				39		
pX, platoon unblocked	0.95					
vC, conflicting volume	1170	526	891			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1078	526	891			
tC, single (s)	6.8	6.9	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	98			
cM capacity (veh/h)	201	500	702			

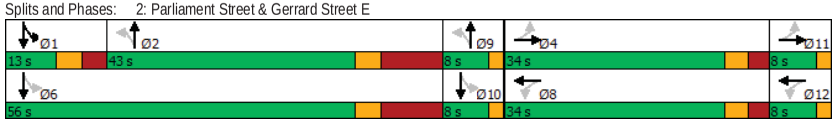
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	204	386	438	303
Volume Left	11	0	0	0
Volume Right	0	0	0	84
cSH	702	1700	1700	1700
Volume to Capacity	0.02	0.23	0.26	0.18
Queue Length 95th (m)	0.4	0.0	0.0	0.0
Control Delay (s)	0.7	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.2		0.0	
Approach LOS				

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		32.9%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø4	Ø6	Ø8
Lane Configurations												
Traffic Volume (vph)	30	545	40	250	75	355	230	285				
Future Volume (vph)	30	545	40	250	75	355	230	285				
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA				
Protected Phases		4 11		8 12		2 9	1	1 6 10	2	4	6	8
Permitted Phases	4 11		8 12		2 9		6 10					
Detector Phase	4	4	8	8	2	2	1	1 6				
Switch Phase												
Minimum Initial (s)							6.0		22.0	21.0	22.0	21.0
Minimum Split (s)							12.5		33.2	31.8	33.2	31.8
Total Split (s)							13.0		43.0	34.0	56.0	34.0
Total Split (%)							12.3%		41%	32%	53%	32%
Yellow Time (s)							3.3		3.3	3.0	3.3	3.0
All-Red Time (s)							3.2		7.9	2.8	7.9	2.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead		Lag			
Lead-Lag Optimize?							Yes		Yes			
Recall Mode							None		Min	Min	Min	Min
Act Effct Green (s)		31.4		31.4		28.9		53.0				
Actuated g/C Ratio		0.33		0.33		0.30		0.56				
v/c Ratio		0.64		0.49		0.76		0.51				
Control Delay		30.0		22.5		37.1		13.4				
Queue Delay		0.0		0.0		0.0		0.0				
Total Delay		30.0		22.5		37.1		13.4				
LOS		C		C		D		B				
Approach Delay		30.0		22.5		37.1		13.4				
Approach LOS		C		C		D		B				

Intersection Summary			
Cycle Length: 106			
Actuated Cycle Length: 94.9			
Natural Cycle: 95			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 25.9		Intersection LOS: C	
Intersection Capacity Utilization 99.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Parliament Street & Gerrard Street E



Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	8.0	8.0	8.0	8.0
Total Split (%)	8%	8%	8%	8%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	665	443	562	603
v/c Ratio	0.64	0.49	0.76	0.51
Control Delay	30.0	22.5	37.1	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.0	22.5	37.1	13.4
Queue Length 50th (m)	54.7	28.0	50.0	30.9
Queue Length 95th (m)	76.4	43.9	72.2	43.6
Internal Link Dist (m)	33.0	65.6	119.2	15.0
Turn Bay Length (m)				
Base Capacity (vph)	1099	934	847	1235
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.47	0.66	0.49

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	545	70	40	250	140	75	355	115	230	285	70
Future Volume (vph)	30	545	70	40	250	140	75	355	115	230	285	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.8			4.8			10.2			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.95			0.93			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.97	
Frt		0.98			0.95			0.97			0.98	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3400			3094			3105			3172	
Flt Permitted		0.91			0.83			0.75			0.60	
Satd. Flow (perm)		3117			2592			2347			1949	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	562	72	41	258	144	77	366	119	237	294	72
RTOR Reduction (vph)	0	9	0	0	53	0	0	18	0	0	11	0
Lane Group Flow (vph)	0	656	0	0	390	0	0	544	0	0	592	0
Confl. Peds. (#/hr)	130		120	120		130	125		235	235		125
Confl. Bikes (#/hr)			25			10			15			5
Heavy Vehicles (%)	10%	0%	5%	0%	0%	10%	4%	2%	2%	6%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4 11			8 12			2 9		1	1 6 10	
Permitted Phases	4 11			8 12			2 9			6 10		
Actuated Green, G (s)		35.1			35.1			43.8			56.9	
Effective Green, g (s)		36.1			36.1			44.8			47.7	
Actuated g/C Ratio		0.38			0.38			0.47			0.50	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1172			974			1095			1065	
v/s Ratio Prot											c0.04	
v/s Ratio Perm		c0.21			0.15			c0.23			c0.23	
v/c Ratio		0.56			0.40			0.50			0.56	
Uniform Delay, d1		23.7			22.0			17.8			16.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			0.3			0.4			0.6	
Delay (s)		24.3			22.3			18.1			17.4	
Level of Service		C			C			B			B	
Approach Delay (s)		24.3			22.3			18.1			17.4	
Approach LOS		C			C			B			B	

Intersection Summary					
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.63				
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	22.5		
Intersection Capacity Utilization	99.2%	ICU Level of Service	F		
Analysis Period (min)	15				

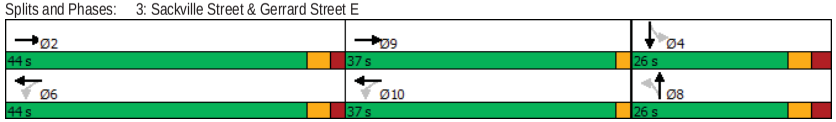
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations											
Traffic Volume (vph)	940	35	535	5	0	135	40				
Future Volume (vph)	940	35	535	5	0	135	40				
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases	2 9		6 10		8		4	2	6	9	10
Permitted Phases		6 10		8		4					
Detector Phase	2	6	6	8	8	4	4				
Switch Phase											
Minimum Initial (s)				20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)				25.7	25.7	25.7	25.7	21.0	21.0	37.0	37.0
Total Split (s)				26.0	26.0	26.0	26.0	44.0	44.0	37.0	37.0
Total Split (%)				24.3%	24.3%	24.3%	24.3%	41%	41%	35%	35%
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				2.7	2.7	2.7	2.7	2.0	2.0	0.0	0.0
Lost Time Adjust (s)					-1.0		-1.0				
Total Lost Time (s)					4.7		4.7				
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode				Min	Min	Min	Min	Min	Min	None	None
Act Effct Green (s)	37.3		37.3		21.7		21.7				
Actuated g/C Ratio	0.55		0.55		0.32		0.32				
v/c Ratio	0.53		0.37		0.08		0.50				
Control Delay	10.2		8.8		7.3		26.4				
Queue Delay	0.0		0.0		0.0		0.0				
Total Delay	10.2		8.8		7.3		26.4				
LOS	B		A		A		C				
Approach Delay	10.2		8.8		7.3		26.4				
Approach LOS	B		A		A		C				

Intersection Summary

Cycle Length: 107
Actuated Cycle Length: 67.9
Natural Cycle: 85
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 11.5 — Intersection LOS: B
Intersection Capacity Utilization 66.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Sackville Street & Gerrard Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	995	593	36	209
v/c Ratio	0.53	0.37	0.08	0.50
Control Delay	10.2	8.8	7.3	26.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.2	8.8	7.3	26.4
Queue Length 50th (m)	36.7	19.6	0.0	22.0
Queue Length 95th (m)	49.7	28.2	5.9	47.8
Internal Link Dist (m)	138.2	47.8	34.3	15.3
Turn Bay Length (m)				
Base Capacity (vph)	2215	1868	469	426
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.45	0.32	0.08	0.49

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	940	15	35	535	0	5	0	30	135	40	25
Future Volume (vph)	0	940	15	35	535	0	5	0	30	135	40	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			4.7			4.7	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.94			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.96	
Frt		1.00			1.00			0.88			0.98	
Flt Protected		1.00			1.00			0.99			0.97	
Satd. Flow (prot)		3448			3363			1466			1682	
Flt Permitted		1.00			0.86			0.96			0.78	
Satd. Flow (perm)		3448			2911			1419			1349	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	979	16	36	557	0	5	0	31	141	42	26
RTOR Reduction (vph)	0	2	0	0	0	0	0	25	0	0	4	0
Lane Group Flow (vph)	0	993	0	0	593	0	0	11	0	0	205	0
Confl. Peds. (#/hr)	85		70	70		85	90		60	60		90
Confl. Bikes (#/hr)			60			15			5			10
Heavy Vehicles (%)	0%	3%	0%	0%	6%	0%	0%	0%	5%	1%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases				6 10			8			4		
Actuated Green, G (s)		39.8			39.8			20.6			20.6	
Effective Green, g (s)		40.8			40.8			21.6			21.6	
Actuated g/C Ratio		0.60			0.60			0.32			0.32	
Clearance Time (s)								5.7			5.7	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		2065			1744			450			427	
v/s Ratio Prot		c0.29										
v/s Ratio Perm					0.20			0.01			c0.15	
v/c Ratio		0.48			0.34			0.03			0.48	
Uniform Delay, d1		7.7			6.9			16.0			18.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.1			0.0			0.9	
Delay (s)		7.9			7.0			16.0			19.6	
Level of Service		A			A			B			B	
Approach Delay (s)		7.9			7.0			16.0			19.6	
Approach LOS		A			A			B			B	

Intersection Summary				
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	9.7	
Intersection Capacity Utilization	66.9%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	1095	565	5	15	5
Future Volume (Veh/h)	10	1095	565	5	15	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	1288	665	6	18	6
Pedestrians		5			65	
Lane Width (m)		3.5			3.0	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		72	141			
pX, platoon unblocked	0.98				0.85	0.98
vC, conflicting volume	736				1401	406
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	678				989	339
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	99
cM capacity (veh/h)	856				197	612

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	441	859	443	228	24
Volume Left	12	0	0	0	18
Volume Right	0	0	0	6	6
cSH	856	1700	1700	1700	238
Volume to Capacity	0.01	0.51	0.26	0.13	0.10
Queue Length 95th (m)	0.3	0.0	0.0	0.0	2.5
Control Delay (s)	0.4	0.0	0.0	0.0	21.9
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		21.9
Approach LOS					C

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1105	565	5	5	5
Future Volume (Veh/h)	5	1105	565	5	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	6	1270	649	6	6	6
Pedestrians					60	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		145	68			
pX, platoon unblocked	0.95				0.88	0.95
vC, conflicting volume	715				1359	388
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	589				860	244
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	99
cM capacity (veh/h)	901				249	690

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	429	847	433	222	12
Volume Left	6	0	0	0	6
Volume Right	0	0	0	6	6
cSH	901	1700	1700	1700	366
Volume to Capacity	0.01	0.50	0.25	0.13	0.03
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.8
Control Delay (s)	0.2	0.0	0.0	0.0	15.2
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		15.2
Approach LOS					C

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		44.0%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBL	WBT	NBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations									
Traffic Volume (vph)	10	1080	20	550	25				
Future Volume (vph)	10	1080	20	550	25				
Turn Type	Perm	NA	Perm	NA	NA				
Protected Phases		2 9		6 10	8	2	6	9	10
Permitted Phases	2 9		6 10						
Detector Phase	2 9	2 9	6 10	6 10	8				
Switch Phase									
Minimum Initial (s)					15.0	11.0	11.0	5.0	5.0
Minimum Split (s)					25.4	26.2	26.2	72.0	72.0
Total Split (s)					27.0	43.0	43.0	72.0	72.0
Total Split (%)					19.0%	30%	30%	51%	51%
Yellow Time (s)					3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					7.4	7.2	7.2	0.0	0.0
Lost Time Adjust (s)					-1.0				
Total Lost Time (s)					9.4				
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode					None	Min	Min	None	None
Act Effct Green (s)		61.2		61.2	16.0				
Actuated g/C Ratio		0.64		0.64	0.17				
v/c Ratio		0.55		0.37	0.36				
Control Delay		10.7		8.3	29.2				
Queue Delay		0.0		0.0	0.0				
Total Delay		10.7		8.3	29.2				
LOS		B		A	C				
Approach Delay		10.7		8.3	29.2				
Approach LOS		B		A	C				

Intersection Summary			
Cycle Length: 142			
Actuated Cycle Length: 95.9			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Sumach Street & Gerrard Street E

Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	1144	676	104
v/c Ratio	0.55	0.37	0.36
Control Delay	10.7	8.3	29.2
Queue Delay	0.0	0.0	0.0
Total Delay	10.7	8.3	29.2
Queue Length 50th (m)	55.7	26.5	11.7
Queue Length 95th (m)	70.9	36.0	27.5
Internal Link Dist (m)	44.0	75.7	30.7
Turn Bay Length (m)			
Base Capacity (vph)	3225	2698	311
Starvation Cap Reductn	242	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.38	0.25	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1080	20	20	550	85	20	25	55	0	0	0
Future Volume (vph)	10	1080	20	20	550	85	20	25	55	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.2			9.2			9.4				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		0.99			0.96			0.95				
Flpb, ped/bikes		1.00			1.00			0.97				
Frt		1.00			0.98			0.93				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3466			3239			1593				
Flt Permitted		0.95			0.89			0.99				
Satd. Flow (perm)		3285			2886			1593				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1113	21	21	567	88	21	26	57	0	0	0
RTOR Reduction (vph)	0	1	0	0	9	0	0	29	0	0	0	0
Lane Group Flow (vph)	0	1143	0	0	667	0	0	75	0	0	0	0
Confl. Peds. (#/hr)	95		95	95		95	80		35	35		80
Confl. Bikes (#/hr)			75			35			5			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		2 9			6 10			8				
Permitted Phases	2 9			6 10			8					
Actuated Green, G (s)		68.5			68.5			15.0				
Effective Green, g (s)		69.5			69.5			16.0				
Actuated g/C Ratio		0.72			0.72			0.17				
Clearance Time (s)								10.4				
Vehicle Extension (s)								3.0				
Lane Grp Cap (vph)		2380			2091			265				
v/s Ratio Prot												
v/s Ratio Perm		c0.35			0.23			0.05				
v/c Ratio		0.48			0.32			0.28				
Uniform Delay, d1		5.6			4.7			34.9				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.2			0.1			0.6				
Delay (s)		5.7			4.8			35.5				
Level of Service		A			A			D				
Approach Delay (s)		5.7			4.8			35.5			0.0	
Approach LOS		A			A			D			A	

Intersection Summary					
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.49				
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	19.6		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C		
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1135	645	0	15	10
Future Volume (Veh/h)	0	1135	645	0	15	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1261	717	0	17	11
Pedestrians					65	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		100	91			
pX, platoon unblocked	0.93				0.90	0.93
vC, conflicting volume	782				1412	424
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	618				887	233
tC, single (s)	4.1				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	100				93	98
cM capacity (veh/h)	860				245	665

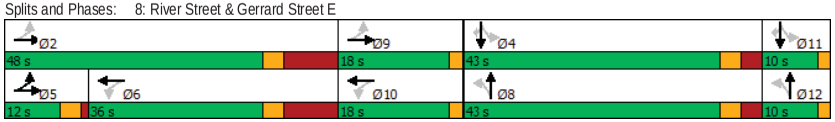
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	630	630	358	358	28
Volume Left	0	0	0	0	17
Volume Right	0	0	0	0	11
cSH	1700	1700	1700	1700	326
Volume to Capacity	0.37	0.37	0.21	0.21	0.09
Queue Length 95th (m)	0.0	0.0	0.0	0.0	2.1
Control Delay (s)	0.0	0.0	0.0	0.0	17.1
Lane LOS					C
Approach Delay (s)	0.0		0.0		17.1
Approach LOS					C

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		41.4%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø2	Ø4	Ø6
Lane Configurations												
Traffic Volume (vph)	225	855	80	385	70	340	165	450	190			
Future Volume (vph)	225	855	80	385	70	340	165	450	190			
Turn Type	custom	NA	Perm	NA	Perm	NA	Perm	NA	Perm			
Protected Phases	5	5 2 9		6 10		8 12		4 11		2	4	6
Permitted Phases	2 9		6 10		8 12		4 11		4 11			
Detector Phase	5	5 2	6	6	8	8	4	4	4			
Switch Phase												
Minimum Initial (s)	6.0									23.0	19.0	23.0
Minimum Split (s)	10.0									33.8	30.0	33.8
Total Split (s)	12.0									48.0	43.0	36.0
Total Split (%)	10.1%									40%	36%	30%
Yellow Time (s)	3.0									3.0	3.0	3.0
All-Red Time (s)	1.0									7.8	3.0	7.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag	Lead											Lag
Lead-Lag Optimize?	Yes											Yes
Recall Mode	None									Min	Min	Min
Act Effct Green (s)		55.6		36.5	39.0	39.0	39.0	39.0	39.0			
Actuated g/C Ratio		0.54		0.36	0.38	0.38	0.38	0.38	0.38			
v/c Ratio		0.90		0.91	0.36	0.77	1.00	0.67	0.30			
Control Delay		29.9		50.0	31.3	36.8	104.7	33.0	4.6			
Queue Delay		17.6		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		47.5		50.0	31.3	36.8	104.7	33.0	4.6			
LOS		D		D	C	D	F	C	A			
Approach Delay		47.5		50.0		36.1		41.0				
Approach LOS		D		D		D		D				

Intersection Summary			
Cycle Length: 119			
Actuated Cycle Length: 102.7			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 44.2		Intersection LOS: D	
Intersection Capacity Utilization 116.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 8: River Street & Gerrard Street E



Lane Group	Ø8	Ø9	Ø10	Ø11	Ø12
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Turn Type					
Protected Phases	8	9	10	11	12
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	19.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	18.0	18.0	10.0	10.0
Total Split (s)	43.0	18.0	18.0	10.0	10.0
Total Split (%)	36%	15%	15%	8%	8%
Yellow Time (s)	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	3.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	None	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1198	593	73	521	172	469	198
v/c Ratio	0.90	0.91	0.36	0.77	1.00	0.67	0.30
Control Delay	29.9	50.0	31.3	36.8	104.7	33.0	4.6
Queue Delay	17.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	50.0	31.3	36.8	104.7	33.0	4.6
Queue Length 50th (m)	81.6	55.3	11.6	96.9	~41.0	86.1	0.0
Queue Length 95th (m)	#140.0	#98.4	24.8	138.5	#82.6	121.3	14.0
Internal Link Dist (m)	67.0	81.6		126.5		61.7	
Turn Bay Length (m)			30.0		30.0		
Base Capacity (vph)	1335	650	211	697	178	730	678
Starvation Cap Reductn	165	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	1.02	0.91	0.35	0.75	0.97	0.64	0.29

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	855	70	80	385	105	70	340	160	165	450	190
Future Volume (vph)	225	855	70	80	385	105	70	340	160	165	450	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		3.0			9.8		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			0.98		1.00	0.98		1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.98	1.00	1.00
Frt		0.99			0.97		1.00	0.95		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3383			3271		1625	1742		1643	1860	1424
Flt Permitted		0.67			0.54		0.31	1.00		0.26	1.00	1.00
Satd. Flow (perm)		2281			1788		536	1742		456	1860	1424
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	234	891	73	83	401	109	73	354	167	172	469	198
RTOR Reduction (vph)	0	4	0	0	15	0	0	14	0	0	0	114
Lane Group Flow (vph)	0	1194	0	0	578	0	73	507	0	172	469	84
Confl. Peds. (#/hr)	40		80	80		40	15		40	40		15
Confl. Bikes (#/hr)			35			15			15			10
Heavy Vehicles (%)	3%	2%	3%	0%	4%	0%	3%	0%	1%	1%	1%	2%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	5 2 9			6 10			8 12			4 11	
Permitted Phases	2 9			6 10			8 12			4 11		4 11
Actuated Green, G (s)		57.4			45.3		43.6	43.6		43.6	43.6	43.6
Effective Green, g (s)		48.6			46.3		44.6	44.6		44.6	44.6	44.6
Actuated g/C Ratio		0.46			0.44		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1151			788		227	739		193	790	604
v/s Ratio Prot		c0.09						0.29			0.25	
v/s Ratio Perm		c0.39			c0.32		0.14			c0.38		0.06
v/c Ratio		1.04			0.73		0.32	0.69		0.89	0.59	0.14
Uniform Delay, d1		28.2			24.3		20.1	24.5		28.0	23.2	18.5
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		36.6			3.6		0.8	2.7		36.2	1.2	0.1
Delay (s)		64.8			27.8		20.9	27.2		64.1	24.4	18.6
Level of Service		E			C		C	C		E	C	B
Approach Delay (s)		64.8			27.8			26.4			31.2	
Approach LOS		E			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.8	
Intersection Capacity Utilization	116.3%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	0	5	0	5	0	20	0	5	85	0
Future Volume (Veh/h)	10	0	0	5	0	5	0	20	0	5	85	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	0	0	6	0	6	0	24	0	6	100	0
Pedestrians		60			35			5			15	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		5			3			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											58	
pX, platoon unblocked												
vC, conflicting volume	217	231	165	176	231	74	160			59		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	217	231	165	176	231	74	160			59		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	99	100	99	100			100		
cM capacity (veh/h)	645	615	834	713	615	950	1356			1510		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	12	24	106
Volume Left	12	6	0	6
Volume Right	0	6	0	0
cSH	645	814	1356	1510
Volume to Capacity	0.02	0.01	0.00	0.00
Queue Length 95th (m)	0.4	0.3	0.0	0.1
Control Delay (s)	10.7	9.5	0.0	0.4
Lane LOS	B	A		A
Approach Delay (s)	10.7	9.5	0.0	0.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	26.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	50	495	25	25	370
Future Volume (Veh/h)	35	50	495	25	25	370
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	41	59	582	29	29	435
Pedestrians	220		5			55
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	17		0			5
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			151			143
pX, platoon unblocked	0.93	0.93			0.93	
vC, conflicting volume	1097	580			831	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	956	401			670	
tC, single (s)	6.8	6.9			4.3	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	79	87			96	
cM capacity (veh/h)	192	446			661	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	100	388	223	174	290
Volume Left	41	0	0	29	0
Volume Right	59	0	29	0	0
cSH	289	1700	1700	661	1700
Volume to Capacity	0.35	0.23	0.13	0.04	0.17
Queue Length 95th (m)	11.4	0.0	0.0	1.0	0.0
Control Delay (s)	23.9	0.0	0.0	2.2	0.0
Lane LOS	C			A	
Approach Delay (s)	23.9	0.0		0.8	
Approach LOS	C				

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	48.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	55	35	0	15	45
Future Volume (Veh/h)	0	55	35	0	15	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	59	38	0	16	48
Pedestrians		25	10		40	
Lane Width (m)		3.5	3.5		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		2	1		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	78				147	103
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78				147	103
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	95
cM capacity (veh/h)	1487				817	908

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	59	38	64
Volume Left	0	0	16
Volume Right	0	0	48
cSH	1700	1700	883
Volume to Capacity	0.03	0.02	0.07
Queue Length 95th (m)	0.0	0.0	1.8
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	27.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	0	20	15	45
Future Volume (Veh/h)	70	0	0	20	15	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	84	0	0	24	18	54
Pedestrians	15			15	40	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	1			1	3	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			124		163	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			124		163	139
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	94
cM capacity (veh/h)			1431		796	875

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	84	24	72
Volume Left	0	0	18
Volume Right	0	0	54
cSH	1700	1700	854
Volume to Capacity	0.05	0.01	0.08
Queue Length 95th (m)	0.0	0.0	2.1
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary				
Average Delay		3.8		
Intersection Capacity Utilization		27.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	105	20	0	5	0
Future Volume (Veh/h)	10	105	20	0	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	12	127	24	0	6	0
Pedestrians			65		35	
Lane Width (m)			3.5		3.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			6		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	59				275	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	59				275	59
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1516				654	986

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	139	24	6
Volume Left	12	0	6
Volume Right	0	0	0
cSH	1516	1700	654
Volume to Capacity	0.01	0.01	0.01
Queue Length 95th (m)	0.2	0.0	0.2
Control Delay (s)	0.7	0.0	10.6
Lane LOS	A		B
Approach Delay (s)	0.7	0.0	10.6
Approach LOS			B

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		22.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	75	20	5	5	0	0	0	0	10	70	5
Future Volume (vph)	20	75	20	5	5	0	0	0	0	10	70	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	83	22	6	6	0	0	0	0	11	78	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	127	12	95
Volume Left (vph)	22	6	11
Volume Right (vph)	22	0	6
Hadj (s)	-0.05	0.27	0.03
Departure Headway (s)	4.1	4.5	4.2
Degree Utilization, x	0.14	0.02	0.11
Capacity (veh/h)	859	773	818
Control Delay (s)	7.8	7.6	7.8
Approach Delay (s)	7.8	7.6	7.8
Approach LOS	A	A	A

Intersection Summary					
Delay	7.8				
Level of Service	A				
Intersection Capacity Utilization	32.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	55	10	0	0	0	5	80	75	15	35	5
Future Volume (vph)	20	55	10	0	0	0	5	80	75	15	35	5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	22	60	11	0	0	0	5	88	82	16	38	5

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	93	175	59
Volume Left (vph)	22	5	16
Volume Right (vph)	11	82	5
Hadj (s)	0.05	-0.20	0.13
Departure Headway (s)	4.4	4.0	4.4
Degree Utilization, x	0.11	0.19	0.07
Capacity (veh/h)	768	875	789
Control Delay (s)	8.0	7.9	7.8
Approach Delay (s)	8.0	7.9	7.8
Approach LOS	A	A	A

Intersection Summary					
Delay	7.9				
Level of Service	A				
Intersection Capacity Utilization	32.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	135	10	0	0	0	0
Future Volume (Veh/h)	135	10	0	0	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	145	11	0	0	0	0
Pedestrians	20			5	30	
Lane Width (m)	3.5			0.0	0.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	2			0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			186		200	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			186		200	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1401		779	862

Direction, Lane #	EB 1
Volume Total	156
Volume Left	0
Volume Right	11
cSH	1700
Volume to Capacity	0.09
Queue Length 95th (m)	0.0
Control Delay (s)	0.0
Lane LOS	
Approach Delay (s)	0.0
Approach LOS	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	130	0	0	10	0
Future Volume (Veh/h)	5	130	0	0	10	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	148	0	0	11	0
Pedestrians		5	5		25	
Lane Width (m)		3.5	0.0		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	25				190	30
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				190	30
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1572				785	1026

Direction, Lane #	EB 1	SB 1
Volume Total	154	11
Volume Left	6	11
Volume Right	0	0
cSH	1572	785
Volume to Capacity	0.00	0.01
Queue Length 95th (m)	0.1	0.3
Control Delay (s)	0.3	9.6
Lane LOS	A	A
Approach Delay (s)	0.3	9.6
Approach LOS		A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	5	50	20	0	50	0	435	40	50	550	0
Future Volume (Veh/h)	85	5	50	20	0	50	0	435	40	50	550	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	5	54	22	0	54	0	473	43	54	598	0
Pedestrians		75			45			50			5	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		7			4			4			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								143			151	
pX, platoon unblocked	0.85	0.85	0.80	0.85	0.85	0.90	0.80			0.90		
vC, conflicting volume	1334	1342	723	1352	1320	544	673			561		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1047	1056	527	1068	1031	442	464			460		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	29	97	86	81	100	90	100			94		
cM capacity (veh/h)	130	163	389	116	169	535	826			964		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	151	76	516	652
Volume Left	92	22	0	54
Volume Right	54	54	43	0
cSH	172	262	1700	964
Volume to Capacity	0.88	0.29	0.30	0.06
Queue Length 95th (m)	48.1	8.9	0.0	1.4
Control Delay (s)	93.5	24.3	0.0	1.5
Lane LOS	F	C		A
Approach Delay (s)	93.5	24.3	0.0	1.5
Approach LOS	F	C		

Intersection Summary				
Average Delay	12.1			
Intersection Capacity Utilization	83.5%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	520	20	25	380
Future Volume (Veh/h)	0	0	520	20	25	380
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	619	24	30	452
Pedestrians	255		25			15
Lane Width (m)	0.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		2			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			214
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	1197	592			898	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	983	306			649	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			96	
cM capacity (veh/h)	210	614			846	

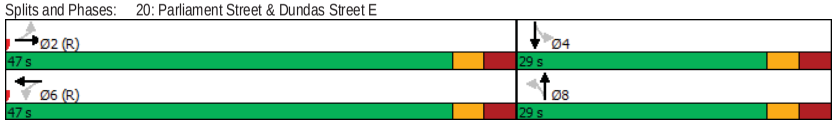
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	413	230	181	301
Volume Left	0	0	30	0
Volume Right	0	24	0	0
cSH	1700	1700	846	1700
Volume to Capacity	0.24	0.14	0.04	0.18
Queue Length 95th (m)	0.0	0.0	0.8	0.0
Control Delay (s)	0.0	0.0	1.9	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.7	
Approach LOS				

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	65	490	45	195	45	405	40	320
Future Volume (vph)	65	490	45	195	45	405	40	320
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	47.0	47.0	47.0	47.0	29.0	29.0	29.0	29.0
Total Split (%)	61.8%	61.8%	61.8%	61.8%	38.2%	38.2%	38.2%	38.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	Min	Min	Min	Min
Act Effct Green (s)		41.3		41.3		24.7		24.7
Actuated g/C Ratio		0.54		0.54		0.32		0.32
v/c Ratio		0.45		0.26		0.59		0.48
Control Delay		11.4		12.6		23.7		22.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		11.4		12.6		23.7		22.1
LOS		B		B		C		C
Approach Delay		11.4		12.6		23.7		22.1
Approach LOS		B		B		C		C

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 9 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 17.2		Intersection LOS: B	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 20: Parliament Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	691	349	551	427
v/c Ratio	0.45	0.26	0.59	0.48
Control Delay	11.4	12.6	23.7	22.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.4	12.6	23.7	22.1
Queue Length 50th (m)	27.3	10.3	34.0	25.3
Queue Length 95th (m)	43.2	28.5	45.3	35.0
Internal Link Dist (m)	85.0	103.5	45.0	56.1
Turn Bay Length (m)				
Base Capacity (vph)	1557	1354	937	892
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.44	0.26	0.59	0.48

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	490	60	45	195	70	45	405	40	40	320	20
Future Volume (vph)	65	490	60	45	195	70	45	405	40	40	320	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.94			0.98			0.99	
Flpb, ped/bikes		0.98			0.99			0.99			0.99	
Frt		0.99			0.97			0.99			0.99	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		3205			3013			3272			3214	
Flt Permitted		0.87			0.80			0.87			0.85	
Satd. Flow (perm)		2799			2434			2858			2732	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	73	551	67	51	219	79	51	455	45	45	360	22
RTOR Reduction (vph)	0	11	0	0	9	0	0	9	0	0	5	0
Lane Group Flow (vph)	0	680	0	0	340	0	0	542	0	0	422	0
Confl. Peds. (#/hr)	260		155	155		260	165		225	225		165
Confl. Bikes (#/hr)			25			20			5			10
Heavy Vehicles (%)	3%	6%	5%	5%	6%	6%	3%	5%	0%	3%	8%	10%
Parking (#/hr)			0						0			0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		40.3			40.3			23.7			23.7	
Effective Green, g (s)		41.3			41.3			24.7			24.7	
Actuated g/C Ratio		0.54			0.54			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1521			1322			928			887	
v/s Ratio Prot												
v/s Ratio Perm		c0.24			0.14			c0.19			0.15	
v/c Ratio		0.45			0.26			0.58			0.48	
Uniform Delay, d1		10.5			9.2			21.4			20.5	
Progression Factor		1.00			1.34			1.00			1.00	
Incremental Delay, d2		1.0			0.5			0.9			0.4	
Delay (s)		11.4			12.8			22.3			20.9	
Level of Service		B			B			C			C	
Approach Delay (s)		11.4			12.8			22.3			20.9	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	93.3%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	500	15	5	300	25	5	10	5	5	5	25
Future Volume (Veh/h)	40	500	15	5	300	25	5	10	5	5	5	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	43	538	16	5	323	27	5	11	5	5	5	27
Pedestrians		30			10			125			135	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		3			1			11			12	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		127			124							
pX, platoon unblocked				0.95			0.95	0.95	0.95	0.95	0.95	
vC, conflicting volume	485			679			988	1252	412	857	1246	340
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	485			556			881	1159	274	743	1153	340
tC, single (s)	4.1			4.4			7.5	6.5	7.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.5	4.0	3.8	3.5	4.0	3.3
p0 queue free %	96			99			97	92	99	97	96	95
cM capacity (veh/h)	958			777			149	139	500	190	140	567

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	312	285	166	188	21	37
Volume Left	43	0	5	0	5	5
Volume Right	0	16	0	27	5	27
cSH	958	1700	777	1700	172	338
Volume to Capacity	0.04	0.17	0.01	0.11	0.12	0.11
Queue Length 95th (m)	1.1	0.0	0.1	0.0	3.1	2.8
Control Delay (s)	1.6	0.0	0.4	0.0	28.9	17.0
Lane LOS	A		A		D	C
Approach Delay (s)	0.9		0.2		28.9	17.0
Approach LOS					D	C

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	49.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	490	15	255	40	0	30	35
Future Volume (vph)	490	15	255	40	0	30	35
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2		6		8		4
Permitted Phases		6		8		4	
Detector Phase	2	6	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	17.0	17.0	17.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	26.0
Total Split (s)	50.0	50.0	50.0	26.0	26.0	26.0	26.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)	5.0		5.0		5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.6		47.6		18.4		18.4
Actuated g/C Ratio	0.63		0.63		0.24		0.24
v/c Ratio	0.27		0.27		0.23		0.28
Control Delay	5.1		7.0		13.2		17.1
Queue Delay	0.0		0.3		0.0		0.0
Total Delay	5.1		7.2		13.2		17.1
LOS	A		A		B		B
Approach Delay	5.1		7.2		13.2		17.1
Approach LOS	A		A		B		B

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 25 (33%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 7.6		Intersection LOS: A	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Sackville Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	559	290	75	108
v/c Ratio	0.27	0.27	0.23	0.28
Control Delay	5.1	7.0	13.2	17.1
Queue Delay	0.0	0.3	0.0	0.0
Total Delay	5.1	7.2	13.2	17.1
Queue Length 50th (m)	12.4	18.5	3.4	7.8
Queue Length 95th (m)	16.4	21.7	12.9	19.6
Internal Link Dist (m)	99.8	79.6	36.2	126.8
Turn Bay Length (m)				
Base Capacity (vph)	2058	1063	369	434
Starvation Cap Reductn	0	313	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.39	0.20	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	490	30	15	255	0	40	0	30	30	35	35
Future Volume (vph)	0	490	30	15	255	0	40	0	30	30	35	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			1.00			0.95			0.97	
Flpb, ped/bikes		1.00			0.99			0.96			0.97	
Frt		0.99			1.00			0.94			0.95	
Flt Protected		1.00			1.00			0.97			0.99	
Satd. Flow (prot)		3289			1756			1494			1618	
Flt Permitted		1.00			0.96			0.80			0.90	
Satd. Flow (perm)		3289			1697			1226			1478	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	527	32	16	274	0	43	0	32	32	38	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	33	0	0	27	0
Lane Group Flow (vph)	0	559	0	0	290	0	0	42	0	0	81	0
Confl. Peds. (#/hr)	105		175	175		105	70		55	55		70
Confl. Bikes (#/hr)			35			20						5
Heavy Vehicles (%)	0%	5%	6%	0%	6%	0%	0%	0%	12%	0%	2%	5%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases				6			8			4		
Actuated Green, G (s)		46.6			46.6			17.4			17.4	
Effective Green, g (s)		47.6			47.6			18.4			18.4	
Actuated g/C Ratio		0.63			0.63			0.24			0.24	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2059			1062			296			357	
v/s Ratio Prot		0.17										
v/s Ratio Perm					c0.17			0.03			c0.05	
v/c Ratio		0.27			0.27			0.14			0.23	
Uniform Delay, d1		6.4			6.4			22.6			23.1	
Progression Factor		0.67			0.86			1.00			1.00	
Incremental Delay, d2		0.3			0.6			0.2			0.3	
Delay (s)		4.6			6.1			22.8			23.4	
Level of Service		A			A			C			C	
Approach Delay (s)		4.6			6.1			22.8			23.4	
Approach LOS		A			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.26			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	49.8%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	Ø4
Lane Configurations				
Traffic Volume (vph)	520	15	270	
Future Volume (vph)	520	15	270	
Turn Type	NA	Perm	NA	
Protected Phases	2		6	4
Permitted Phases		6		
Detector Phase	2	6	6	
Switch Phase				
Minimum Initial (s)	18.0	18.0	18.0	20.0
Minimum Split (s)	23.9	23.9	23.9	23.0
Total Split (s)	53.0	53.0	53.0	23.0
Total Split (%)	69.7%	69.7%	69.7%	30%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	-1.0		-1.0	
Total Lost Time (s)	4.9		4.9	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Min	C-Min	C-Min	None
Act Effct Green (s)	64.8		64.8	
Actuated g/C Ratio	0.85		0.85	
v/c Ratio	0.42		0.22	
Control Delay	3.1		4.1	
Queue Delay	0.0		0.0	
Total Delay	3.2		4.1	
LOS	A		A	
Approach Delay	3.2		4.1	
Approach LOS	A		A	

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.42		
Intersection Signal Delay: 3.5	Intersection LOS: A	
Intersection Capacity Utilization 49.2%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 23: Regent Park Boulevard & Dundas Street E

Lane Group	EBT	WBT
Lane Group Flow (vph)	618	320
v/c Ratio	0.42	0.22
Control Delay	3.1	4.1
Queue Delay	0.0	0.0
Total Delay	3.2	4.1
Queue Length 50th (m)	1.6	0.0
Queue Length 95th (m)	50.5	29.6
Internal Link Dist (m)	79.6	86.0
Turn Bay Length (m)		
Base Capacity (vph)	1461	1452
Starvation Cap Reductn	36	133
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.43	0.24

Intersection Summary

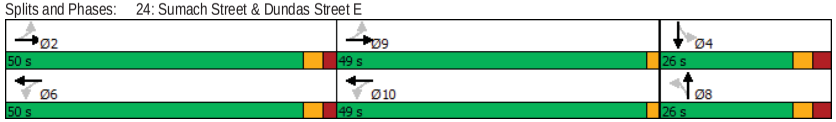
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	520	30	15	270	0	0
Future Volume (vph)	520	30	15	270	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.0	3.0	3.5	3.0	3.0
Total Lost time (s)	4.9			4.9		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	0.97			1.00		
Flpb, ped/bikes	1.00			0.99		
Frt	0.99			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1710			1755		
Flt Permitted	1.00			0.96		
Satd. Flow (perm)	1710			1698		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	584	34	17	303	0	0
RTOR Reduction (vph)	2	0	0	0	0	0
Lane Group Flow (vph)	616	0	0	320	0	0
Confl. Peds. (#/hr)		235	235		60	65
Heavy Vehicles (%)	6%	6%	0%	6%	0%	0%
Turn Type	NA		Perm	NA		
Protected Phases	2			6		
Permitted Phases			6			
Actuated Green, G (s)	59.1			59.1		
Effective Green, g (s)	60.1			60.1		
Actuated g/C Ratio	0.79			0.79		
Clearance Time (s)	5.9			5.9		
Vehicle Extension (s)	3.0			3.0		
Lane Grp Cap (vph)	1352			1342		
v/s Ratio Prot	c0.36					
v/s Ratio Perm				0.19		
v/c Ratio	0.46			0.24		
Uniform Delay, d1	2.6			2.0		
Progression Factor	0.48			1.00		
Incremental Delay, d2	1.1			0.4		
Delay (s)	2.3			2.5		
Level of Service	A			A		
Approach Delay (s)	2.3			2.5	0.0	
Approach LOS	A			A	A	

Intersection Summary				
HCM 2000 Control Delay	2.4	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	7.9	
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	45	460	25	245	25	90	25	20				
Future Volume (vph)	45	460	25	245	25	90	25	20				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)					26.0	26.0	26.0	26.0	21.0	21.0	49.0	49.0
Total Split (s)					26.0	26.0	26.0	26.0	50.0	50.0	49.0	49.0
Total Split (%)					20.8%	20.8%	20.8%	20.8%	40%	40%	39%	39%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)						-1.0		-1.0				
Total Lost Time (s)						5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	None	None	Min	Min	None	None
Act Effct Green (s)		61.0		61.0		23.1		23.1				
Actuated g/C Ratio		0.65		0.65		0.25		0.25				
v/c Ratio		0.54		0.36		0.46		0.19				
Control Delay		9.3		6.7		40.2		33.4				
Queue Delay		1.8		0.0		0.0		0.0				
Total Delay		11.1		6.7		40.2		33.4				
LOS		B		A		D		C				
Approach Delay		11.1		6.7		40.2		33.4				
Approach LOS		B		A		D		C				

Intersection Summary			
Cycle Length: 125			
Actuated Cycle Length: 94.1			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 61.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 24: Sumach Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	559	349	172	65
v/c Ratio	0.54	0.36	0.46	0.19
Control Delay	9.3	6.7	40.2	33.4
Queue Delay	1.8	0.0	0.0	0.0
Total Delay	11.1	6.7	40.2	33.4
Queue Length 50th (m)	43.1	21.2	28.5	9.0
Queue Length 95th (m)	62.7	32.8	55.5	22.9
Internal Link Dist (m)	86.0	75.5	76.2	121.5
Turn Bay Length (m)				
Base Capacity (vph)	1220	1126	374	335
Starvation Cap Reductn	475	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.75	0.31	0.46	0.19

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	45	460	15	25	245	55	25	90	45	25	20	15
Future Volume (vph)	45	460	15	25	245	55	25	90	45	25	20	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.95			0.96			0.94	
Flpb, ped/bikes		0.99			0.99			0.97			0.97	
Frt		1.00			0.98			0.96			0.97	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1699			1586			1585			1564	
Flt Permitted		0.95			0.94			0.95			0.86	
Satd. Flow (perm)		1614			1502			1516			1366	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	48	495	16	27	263	59	27	97	48	27	22	16
RTOR Reduction (vph)	0	1	0	0	7	0	0	10	0	0	8	0
Lane Group Flow (vph)	0	558	0	0	342	0	0	162	0	0	57	0
Confl. Peds. (#/hr)	100		185	185		100	105		50	50		105
Confl. Bikes (#/hr)			25			20						
Heavy Vehicles (%)	12%	6%	8%	0%	9%	5%	4%	5%	6%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		63.5			63.5			22.0			22.0	
Effective Green, g (s)		64.5			64.5			23.0			23.0	
Actuated g/C Ratio		0.69			0.69			0.25			0.25	
Clearance Time (s)								6.0			6.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		1113			1036			372			336	
v/s Ratio Prot												
v/s Ratio Perm		c0.35			0.23			c0.11			0.04	
v/c Ratio		0.50			0.33			0.44			0.17	
Uniform Delay, d1		6.9			5.8			29.8			27.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.2			0.8			0.2	
Delay (s)		7.2			6.0			30.6			28.0	
Level of Service		A			A			C			C	
Approach Delay (s)		7.2			6.0			30.6			28.0	
Approach LOS		A			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	61.6%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣						✣	
Traffic Volume (veh/h)	0	520	10	10	320	0	0	0	0	5	0	5
Future Volume (Veh/h)	0	520	10	10	320	0	0	0	0	5	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	547	11	11	337	0	0	0	0	5	0	5
Pedestrians		10			10			130			50	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			1			0			4	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		99			98							
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	387			688			1056	1092	692	972	1097	397
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	387			562			988	1028	567	889	1034	397
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	98	100	99
cM capacity (veh/h)	1130			882			186	193	452	209	191	622

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	558	348	10
Volume Left	0	11	5
Volume Right	11	0	5
cSH	1130	882	313
Volume to Capacity	0.00	0.01	0.03
Queue Length 95th (m)	0.0	0.3	0.8
Control Delay (s)	0.0	0.4	16.9
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	16.9
Approach LOS			C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	25	440	95	210	45	365	105	445				
Future Volume (vph)	25	440	95	210	45	365	105	445				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					21.0	21.0	21.0	21.0	21.0	21.0	5.0	5.0
Minimum Split (s)					27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)					42.0	42.0	42.0	42.0	34.0	34.0	27.0	27.0
Total Split (%)					40.8%	40.8%	40.8%	40.8%	33%	33%	26%	26%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0
Lost Time Adjust (s)					-1.0	-1.0	-1.0	-1.0				
Total Lost Time (s)					5.0	5.0	5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					Min	Min	Min	Min	Min	Min	None	None
Act Effct Green (s)		31.8		31.8	37.7	37.7	37.7	37.7				
Actuated g/C Ratio		0.40		0.40	0.47	0.47	0.47	0.47				
v/c Ratio		0.82		0.85	0.20	0.79	0.58	0.71				
Control Delay		31.5		37.3	19.5	28.2	34.8	25.7				
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay		31.5		37.3	19.5	28.2	34.8	25.7				
LOS		C		D	B	C	C	C				
Approach Delay		31.5		37.3		27.6		27.2				
Approach LOS		C		D		C		C				

Intersection Summary			
Cycle Length: 103			
Actuated Cycle Length: 79.7			
Natural Cycle: 95			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 30.2		Intersection LOS: C	
Intersection Capacity Utilization 120.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 26: River Street & Dundas Street E

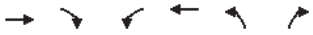
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	552	421	47	610	111	547
v/c Ratio	0.82	0.85	0.20	0.79	0.58	0.71
Control Delay	31.5	37.3	19.5	28.2	34.8	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	37.3	19.5	28.2	34.8	25.7
Queue Length 50th (m)	70.0	52.4	3.6	64.4	10.6	56.6
Queue Length 95th (m)	103.3	86.0	16.6	#192.0	#49.6	#168.5
Internal Link Dist (m)	73.4	80.5		131.0		118.9
Turn Bay Length (m)			20.0		25.0	
Base Capacity (vph)	711	523	230	777	193	769
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	0.80	0.20	0.79	0.58	0.71

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	440	60	95	210	95	45	365	215	105	445	75
Future Volume (vph)	25	440	60	95	210	95	45	365	215	105	445	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.97		1.00	0.94		1.00	0.98	
Flpb, ped/bikes		1.00			0.99		0.95	1.00		0.96	1.00	
Frt		0.98			0.97		1.00	0.94		1.00	0.98	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1637		1532	1633		1591	1627	
Flt Permitted		0.97			0.73		0.29	1.00		0.23	1.00	
Satd. Flow (perm)		1676			1214		466	1633		393	1627	
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)	26	463	63	100	221	100	47	384	226	111	468	79
RTOR Reduction (vph)	0	5	0	0	13	0	0	17	0	0	5	0
Lane Group Flow (vph)	0	547	0	0	408	0	47	593	0	111	542	0
Confl. Peds. (#/hr)	55		75	75		55	75		75	75		75
Confl. Bikes (#/hr)			25			20			10			5
Heavy Vehicles (%)	9%	5%	0%	1%	9%	0%	5%	3%	0%	2%	12%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		36.5			36.5		36.7	36.7		36.7	36.7	
Effective Green, g (s)		37.5			37.5		37.7	37.7		37.7	37.7	
Actuated g/C Ratio		0.46			0.46		0.46	0.46		0.46	0.46	
Clearance Time (s)							6.0	6.0		6.0	6.0	
Vehicle Extension (s)							3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		774			560		216	758		182	755	
v/s Ratio Prot								c0.36			0.33	
v/s Ratio Perm		0.33			c0.34		0.10			0.28		
v/c Ratio		0.71			0.73		0.22	0.78		0.61	0.72	
Uniform Delay, d1		17.5			17.7		13.0	18.3		16.3	17.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.0			4.7		0.5	5.3		5.7	3.3	
Delay (s)		20.4			22.4		13.5	23.6		21.9	20.8	
Level of Service		C			C		B	C		C	C	
Approach Delay (s)		20.4			22.4			22.8			21.0	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	120.3%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	835	55	10	430	0	0
Future Volume (Veh/h)	835	55	10	430	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	879	58	11	453	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	90			162		
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			937		1156	468
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			623		876	83
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			840		250	839

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	586	351	162	302
Volume Left	0	0	11	0
Volume Right	0	58	0	0
cSH	1700	1700	840	1700
Volume to Capacity	0.34	0.21	0.01	0.18
Queue Length 95th (m)	0.0	0.0	0.3	0.0
Control Delay (s)	0.0	0.0	0.8	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.3	
Approach LOS				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	5	95	0	0	40
Future Volume (Veh/h)	10	5	95	0	0	40
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	5	100	0	0	42
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						55
pX, platoon unblocked						
vC, conflicting volume	142	100			100	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	142	100			100	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	856	961			1505	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	100	42
Volume Left	11	0	0
Volume Right	5	0	0
cSH	886	1700	1505
Volume to Capacity	0.02	0.06	0.00
Queue Length 95th (m)	0.4	0.0	0.0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		15.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	10	515	585	75
Future Volume (Veh/h)	0	0	10	515	585	75
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	11	579	657	84
Pedestrians	150			5	10	
Lane Width (m)	0.0			3.5	3.5	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				39		
pX, platoon unblocked	0.95					
vC, conflicting volume	1170	526	891			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1066	526	891			
tC, single (s)	6.8	6.9	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	98			
cM capacity (veh/h)	204	500	702			

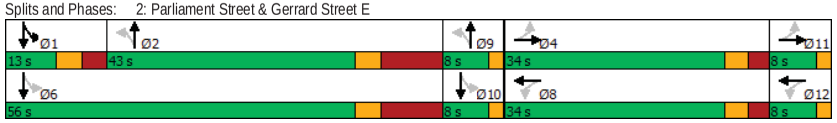
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	204	386	438	303
Volume Left	11	0	0	0
Volume Right	0	0	0	84
cSH	702	1700	1700	1700
Volume to Capacity	0.02	0.23	0.26	0.18
Queue Length 95th (m)	0.4	0.0	0.0	0.0
Control Delay (s)	0.7	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.2		0.0	
Approach LOS				

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		32.9%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø4	Ø6	Ø8
Lane Configurations												
Traffic Volume (vph)	30	540	45	250	75	360	230	285				
Future Volume (vph)	30	540	45	250	75	360	230	285				
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA				
Protected Phases		4 11		8 12		2 9	1	1 6 10	2	4	6	8
Permitted Phases	4 11		8 12		2 9		6 10					
Detector Phase	4	4	8	8	2	2	1	1 6				
Switch Phase												
Minimum Initial (s)							6.0		22.0	21.0	22.0	21.0
Minimum Split (s)							12.5		33.2	31.8	33.2	31.8
Total Split (s)							13.0		43.0	34.0	56.0	34.0
Total Split (%)							12.3%		41%	32%	53%	32%
Yellow Time (s)							3.3		3.3	3.0	3.3	3.0
All-Red Time (s)							3.2		7.9	2.8	7.9	2.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead		Lag			
Lead-Lag Optimize?							Yes		Yes			
Recall Mode							None		Min	Min	Min	Min
Act Effct Green (s)		31.4		31.4		28.9		53.1				
Actuated g/C Ratio		0.33		0.33		0.30		0.56				
v/c Ratio		0.64		0.50		0.77		0.51				
Control Delay		30.0		23.4		37.3		13.4				
Queue Delay		0.0		0.0		0.0		0.0				
Total Delay		30.0		23.4		37.3		13.4				
LOS		C		C		D		B				
Approach Delay		30.0		23.4		37.3		13.4				
Approach LOS		C		C		D		B				

Intersection Summary			
Cycle Length: 106			
Actuated Cycle Length: 95			
Natural Cycle: 95			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 100.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Parliament Street & Gerrard Street E



Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	8.0	8.0	8.0	8.0
Total Split (%)	8%	8%	8%	8%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	665	443	567	603
v/c Ratio	0.64	0.50	0.77	0.51
Control Delay	30.0	23.4	37.3	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.0	23.4	37.3	13.4
Queue Length 50th (m)	54.9	28.9	50.5	30.9
Queue Length 95th (m)	76.3	45.1	73.1	43.6
Internal Link Dist (m)	33.0	65.6	119.2	15.0
Turn Bay Length (m)				
Base Capacity (vph)	1097	902	848	1234
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.49	0.67	0.49

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	540	75	45	250	135	75	360	115	230	285	70
Future Volume (vph)	30	540	75	45	250	135	75	360	115	230	285	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.8			4.8			10.2			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.95			0.93			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.97	
Frt		0.98			0.95			0.97			0.98	
Flt Protected		1.00			0.99			0.99			0.98	
Satd. Flow (prot)		3390			3105			3109			3172	
Flt Permitted		0.91			0.81			0.75			0.60	
Satd. Flow (perm)		3108			2522			2353			1946	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	557	77	46	258	139	77	371	119	237	294	72
RTOR Reduction (vph)	0	9	0	0	48	0	0	18	0	0	11	0
Lane Group Flow (vph)	0	656	0	0	395	0	0	549	0	0	592	0
Confl. Peds. (#/hr)	130		120	120		130	125		235	235		125
Confl. Bikes (#/hr)			25			10			15			5
Heavy Vehicles (%)	10%	0%	5%	0%	0%	10%	4%	2%	2%	6%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4 11			8 12			2 9		1	1 6 10	
Permitted Phases	4 11			8 12			2 9			6 10		
Actuated Green, G (s)		35.1			35.1			43.8			56.9	
Effective Green, g (s)		36.1			36.1			44.8			47.7	
Actuated g/C Ratio		0.38			0.38			0.47			0.50	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1168			948			1098			1063	
v/s Ratio Prot											c0.04	
v/s Ratio Perm		c0.21			0.16			c0.23			c0.23	
v/c Ratio		0.56			0.42			0.50			0.56	
Uniform Delay, d1		23.7			22.2			17.8			16.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			0.3			0.4			0.6	
Delay (s)		24.3			22.5			18.2			17.4	
Level of Service		C			C			B			B	
Approach Delay (s)		24.3			22.5			18.2			17.4	
Approach LOS		C			C			B			B	

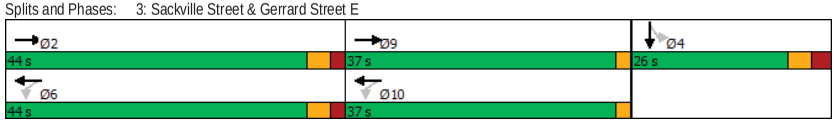
Intersection Summary					
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.64				
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	22.5		
Intersection Capacity Utilization	100.2%	ICU Level of Service	G		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBT	WBL	WBT	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	930	50	540	40				
Future Volume (vph)	930	50	540	40				
Turn Type	NA	Perm	NA	NA				
Protected Phases	2 9		6 10	4	2	6	9	10
Permitted Phases		6 10						
Detector Phase	2	6	6	4				
Switch Phase								
Minimum Initial (s)				20.0	16.0	16.0	5.0	5.0
Minimum Split (s)				25.7	21.0	21.0	37.0	37.0
Total Split (s)				26.0	44.0	44.0	37.0	37.0
Total Split (%)				24.3%	41%	41%	35%	35%
Yellow Time (s)				3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				2.7	2.0	2.0	0.0	0.0
Lost Time Adjust (s)				-1.0				
Total Lost Time (s)				4.7				
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode				Min	Min	Min	None	None
Act Effct Green (s)	37.3		37.3	21.6				
Actuated g/C Ratio	0.55		0.55	0.32				
v/c Ratio	0.53		0.41	0.40				
Control Delay	10.1		9.1	23.6				
Queue Delay	0.0		0.0	0.0				
Total Delay	10.1		9.1	23.6				
LOS	B		A	C				
Approach Delay	10.1		9.1	23.6				
Approach LOS	B		A	C				

Intersection Summary			
Cycle Length: 107			
Actuated Cycle Length: 67.8			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 11.3		Intersection LOS: B	
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Sackville Street & Gerrard Street E



Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	995	615	209
v/c Ratio	0.53	0.41	0.40
Control Delay	10.1	9.1	23.6
Queue Delay	0.0	0.0	0.0
Total Delay	10.1	9.1	23.6
Queue Length 50th (m)	36.6	20.8	21.2
Queue Length 95th (m)	49.0	29.7	44.9
Internal Link Dist (m)	56.5	47.8	15.3
Turn Bay Length (m)			
Base Capacity (vph)	2208	1772	529
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.45	0.35	0.40

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	930	25	50	540	0	0	0	0	135	40	25
Future Volume (vph)	0	930	25	50	540	0	0	0	0	135	40	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0						4.7	
Lane Util. Factor		0.95			0.95						1.00	
Frpb, ped/bikes		0.99			1.00						0.99	
Flpb, ped/bikes		1.00			1.00						0.96	
Frt		1.00			1.00						0.98	
Flt Protected		1.00			1.00						0.97	
Satd. Flow (prot)		3437			3362						1679	
Flt Permitted		1.00			0.82						0.97	
Satd. Flow (perm)		3437			2760						1679	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	969	26	52	562	0	0	0	0	141	42	26
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	993	0	0	615	0	0	0	0	0	205	0
Confl. Peds. (#/hr)	85		70	70		85	90		60	60		90
Confl. Bikes (#/hr)			60			15			5			10
Heavy Vehicles (%)	0%	3%	0%	0%	6%	0%	0%	0%	5%	1%	0%	0%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2 9			6 10						4	
Permitted Phases				6 10						4		
Actuated Green, G (s)		39.8			39.8						20.6	
Effective Green, g (s)		40.8			40.8						21.6	
Actuated g/C Ratio		0.60			0.60						0.32	
Clearance Time (s)											5.7	
Vehicle Extension (s)											3.0	
Lane Grp Cap (vph)		2059			1653						532	
v/s Ratio Prot		c0.29										
v/s Ratio Perm					0.22						0.12	
v/c Ratio		0.48			0.37						0.39	
Uniform Delay, d1		7.7			7.0						18.1	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.2			0.1						0.5	
Delay (s)		7.9			7.2						18.6	
Level of Service		A			A						B	
Approach Delay (s)		7.9			7.2			0.0			18.6	
Approach LOS		A			A			A			B	

Intersection Summary				
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	9.7	
Intersection Capacity Utilization	72.1%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	1055	585	5	15	5
Future Volume (Veh/h)	10	1055	585	5	15	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	1241	688	6	18	6
Pedestrians		5			65	
Lane Width (m)		3.5			3.0	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		72	141			
pX, platoon unblocked	0.97				0.86	0.97
vC, conflicting volume	759				1400	417
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	684				960	331
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	99
cM capacity (veh/h)	845				207	614

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	426	827	459	235	24
Volume Left	12	0	0	0	18
Volume Right	0	0	0	6	6
cSH	845	1700	1700	1700	248
Volume to Capacity	0.01	0.49	0.27	0.14	0.10
Queue Length 95th (m)	0.3	0.0	0.0	0.0	2.4
Control Delay (s)	0.4	0.0	0.0	0.0	21.1
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		21.1
Approach LOS					C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1065	585	5	5	5
Future Volume (Veh/h)	5	1065	585	5	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	6	1224	672	6	6	6
Pedestrians					60	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		145	68			
pX, platoon unblocked	0.94				0.88	0.94
vC, conflicting volume	738				1359	399
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	601				844	241
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	99
cM capacity (veh/h)	888				256	689

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	414	816	448	230	12
Volume Left	6	0	0	0	6
Volume Right	0	0	0	6	6
cSH	888	1700	1700	1700	373
Volume to Capacity	0.01	0.48	0.26	0.14	0.03
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.8
Control Delay (s)	0.2	0.0	0.0	0.0	15.0
Lane LOS	A				B
Approach Delay (s)	0.1		0.0		15.0
Approach LOS					B

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		42.9%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	NBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	10	1060	565	25				
Future Volume (vph)	10	1060	565	25				
Turn Type	Perm	NA	NA	NA				
Protected Phases		2 9	6 10	8	2	6	9	10
Permitted Phases	2 9							
Detector Phase	2 9	2 9	6 10	8				
Switch Phase								
Minimum Initial (s)				15.0	11.0	11.0	5.0	5.0
Minimum Split (s)				25.4	26.2	26.2	72.0	72.0
Total Split (s)				27.0	43.0	43.0	72.0	72.0
Total Split (%)				19.0%	30%	30%	51%	51%
Yellow Time (s)				3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				7.4	7.2	7.2	0.0	0.0
Lost Time Adjust (s)				-1.0				
Total Lost Time (s)				9.4				
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode				None	Min	Min	None	None
Act Effct Green (s)		58.1	58.1	16.4				
Actuated g/C Ratio		0.62	0.62	0.18				
v/c Ratio		0.54	0.34	0.47				
Control Delay		10.9	8.3	29.2				
Queue Delay		0.0	0.0	0.0				
Total Delay		10.9	8.3	29.2				
LOS		B	A	C				
Approach Delay		10.9	8.3	29.2				
Approach LOS		B	A	C				

Intersection Summary		
Cycle Length: 142		
Actuated Cycle Length: 93.3		
Natural Cycle: 125		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.54		
Intersection Signal Delay: 11.4	Intersection LOS: B	
Intersection Capacity Utilization 68.7%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 6: Sumach Street & Gerrard Street E

Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	1103	670	145
v/c Ratio	0.54	0.34	0.47
Control Delay	10.9	8.3	29.2
Queue Delay	0.0	0.0	0.0
Total Delay	10.9	8.3	29.2
Queue Length 50th (m)	52.5	25.3	15.8
Queue Length 95th (m)	70.4	35.9	35.5
Internal Link Dist (m)	44.0	75.7	30.7
Turn Bay Length (m)			
Base Capacity (vph)	3242	3028	329
Starvation Cap Reductn	245	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.37	0.22	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1060	0	0	565	85	25	25	90	0	0	0
Future Volume (vph)	10	1060	0	0	565	85	25	25	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.2			9.2			9.4				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			0.96			0.95				
Flpb, ped/bikes		1.00			1.00			0.97				
Frt		1.00			0.98			0.91				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3495			3247			1569				
Flt Permitted		0.95			1.00			0.99				
Satd. Flow (perm)		3312			3247			1569				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1093	0	0	582	88	26	26	93	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	43	0	0	0	0
Lane Group Flow (vph)	0	1103	0	0	661	0	0	102	0	0	0	0
Confl. Peds. (#/hr)	95		95	95		95	80		35	35		80
Confl. Bikes (#/hr)			75			35			5			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2 9			6 10			8				
Permitted Phases	2 9						8					
Actuated Green, G (s)		65.3			65.3			15.4				
Effective Green, g (s)		66.3			66.3			16.4				
Actuated g/C Ratio		0.71			0.71			0.18				
Clearance Time (s)								10.4				
Vehicle Extension (s)								3.0				
Lane Grp Cap (vph)		2358			2312			276				
v/s Ratio Prot					0.20							
v/s Ratio Perm		c0.33						0.07				
v/c Ratio		0.47			0.29			0.37				
Uniform Delay, d1		5.8			4.8			33.8				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.1			0.1			0.8				
Delay (s)		5.9			4.9			34.6				
Level of Service		A			A			C				
Approach Delay (s)		5.9			4.9			34.6			0.0	
Approach LOS		A			A			C			A	

Intersection Summary					
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio	0.49				
Actuated Cycle Length (s)	93.1	Sum of lost time (s)		19.6	
Intersection Capacity Utilization	68.7%	ICU Level of Service		C	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1140	10	0	640	0	0	0	0	15	0	10
Future Volume (Veh/h)	0	1140	10	0	640	0	0	0	0	15	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1267	11	0	711	0	0	0	0	17	0	11
Pedestrians											65	
Lane Width (m)											3.0	
Walking Speed (m/s)											1.1	
Percent Blockage											5	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		100			91							
pX, platoon unblocked	0.93			0.87			0.90	0.90	0.87	0.90	0.90	0.93
vC, conflicting volume	776			1278			1639	2048	639	1410	2054	420
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	621			1009			1157	1613	271	902	1620	241
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	100			100			100	100	100	91	100	98
cM capacity (veh/h)	862			601			131	90	634	194	89	660

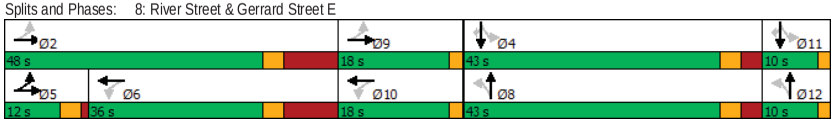
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	845	433	356	356	28
Volume Left	0	0	0	0	17
Volume Right	0	11	0	0	11
cSH	1700	1700	1700	1700	268
Volume to Capacity	0.50	0.25	0.21	0.21	0.10
Queue Length 95th (m)	0.0	0.0	0.0	0.0	2.6
Control Delay (s)	0.0	0.0	0.0	0.0	20.0
Lane LOS					C
Approach Delay (s)	0.0		0.0		20.0
Approach LOS					C

Intersection Summary					
Average Delay	0.3				
Intersection Capacity Utilization	41.8%	ICU Level of Service	A		
Analysis Period (min)	15				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø2	Ø4	Ø6
Lane Configurations												
Traffic Volume (vph)	225	855	85	380	70	340	165	450	190			
Future Volume (vph)	225	855	85	380	70	340	165	450	190			
Turn Type	custom	NA	Perm	NA	Perm	NA	Perm	NA	Perm			
Protected Phases	5	5 2 9		6 10		8 12		4 11		2	4	6
Permitted Phases	2 9		6 10		8 12		4 11		4 11			
Detector Phase	5	5 2	6	6	8	8	4	4	4			
Switch Phase												
Minimum Initial (s)	6.0									23.0	19.0	23.0
Minimum Split (s)	10.0									33.8	30.0	33.8
Total Split (s)	12.0									48.0	43.0	36.0
Total Split (%)	10.1%									40%	36%	30%
Yellow Time (s)	3.0									3.0	3.0	3.0
All-Red Time (s)	1.0									7.8	3.0	7.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag	Lead											Lag
Lead-Lag Optimize?	Yes											Yes
Recall Mode	None									Min	Min	Min
Act Effct Green (s)		55.6		36.5	39.0	39.0	39.0	39.0	39.0			
Actuated g/C Ratio		0.54		0.36	0.38	0.38	0.38	0.38	0.38			
v/c Ratio		0.90		0.92	0.36	0.77	1.00	0.67	0.30			
Control Delay		30.4		51.8	31.3	36.8	104.7	33.0	4.6			
Queue Delay		18.5		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		48.9		51.8	31.3	36.8	104.7	33.0	4.6			
LOS		D		D	C	D	F	C	A			
Approach Delay		48.9		51.8		36.1		41.0				
Approach LOS		D		D		D		D				

Intersection Summary
Cycle Length: 119
Actuated Cycle Length: 102.7
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 45.0 Intersection LOS: D
Intersection Capacity Utilization 116.5% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 8: River Street & Gerrard Street E



Lane Group	Ø8	Ø9	Ø10	Ø11	Ø12
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Turn Type					
Protected Phases	8	9	10	11	12
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	19.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	18.0	18.0	10.0	10.0
Total Split (s)	43.0	18.0	18.0	10.0	10.0
Total Split (%)	36%	15%	15%	8%	8%
Yellow Time (s)	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	3.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	None	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1203	594	73	521	172	469	198
v/c Ratio	0.90	0.92	0.36	0.77	1.00	0.67	0.30
Control Delay	30.4	51.8	31.3	36.8	104.7	33.0	4.6
Queue Delay	18.5	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	51.8	31.3	36.8	104.7	33.0	4.6
Queue Length 50th (m)	82.2	55.7	11.6	96.9	~41.0	86.1	0.0
Queue Length 95th (m)	#142.2	#99.8	24.8	138.5	#82.6	121.3	14.0
Internal Link Dist (m)	67.0	81.6		126.5		61.7	
Turn Bay Length (m)			30.0		30.0		
Base Capacity (vph)	1334	644	211	697	178	730	678
Starvation Cap Reductn	163	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	0.92	0.35	0.75	0.97	0.64	0.29

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	855	75	85	380	105	70	340	160	165	450	190
Future Volume (vph)	225	855	75	85	380	105	70	340	160	165	450	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		3.0			9.8		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			0.98		1.00	0.98		1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.98	1.00	1.00
Frt		0.99			0.97		1.00	0.95		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3380			3271		1625	1742		1643	1860	1424
Flt Permitted		0.67			0.54		0.31	1.00		0.26	1.00	1.00
Satd. Flow (perm)		2278			1770		536	1742		456	1860	1424
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	234	891	78	89	396	109	73	354	167	172	469	198
RTOR Reduction (vph)	0	5	0	0	15	0	0	14	0	0	0	114
Lane Group Flow (vph)	0	1198	0	0	579	0	73	507	0	172	469	84
Confl. Peds. (#/hr)	40		80	80		40	15		40	40		15
Confl. Bikes (#/hr)			35			15			15			10
Heavy Vehicles (%)	3%	2%	3%	0%	4%	0%	3%	0%	1%	1%	1%	2%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	5 2 9			6 10			8 12			4 11	
Permitted Phases	2 9			6 10			8 12			4 11		4 11
Actuated Green, G (s)		57.4			45.3		43.6	43.6		43.6	43.6	43.6
Effective Green, g (s)		48.6			46.3		44.6	44.6		44.6	44.6	44.6
Actuated g/C Ratio		0.46			0.44		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1149			780		227	739		193	790	604
v/s Ratio Prot		c0.09						0.29			0.25	
v/s Ratio Perm		c0.39			c0.33		0.14			c0.38		0.06
v/c Ratio		1.04			0.74		0.32	0.69		0.89	0.59	0.14
Uniform Delay, d1		28.2			24.4		20.1	24.5		28.0	23.2	18.5
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		38.4			3.8		0.8	2.7		36.2	1.2	0.1
Delay (s)		66.6			28.2		20.9	27.2		64.1	24.4	18.6
Level of Service		E			C		C	C		E	C	B
Approach Delay (s)		66.6			28.2			26.4			31.2	
Approach LOS		E			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.8	
Intersection Capacity Utilization	116.5%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	10	0	0	0	0	0	5	110	0
Future Volume (Veh/h)	0	0	10	10	0	0	0	0	0	5	110	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	12	12	0	0	0	0	0	6	129	0
Pedestrians		60			35			5			15	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		5			3			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											58	
pX, platoon unblocked												
vC, conflicting volume	216	236	194	193	236	50	189			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	216	236	194	193	236	50	189			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	98	100	100	100			100		
cM capacity (veh/h)	650	611	807	688	611	979	1323			1540		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	12	12	135
Volume Left	0	12	6
Volume Right	12	0	0
cSH	807	688	1540
Volume to Capacity	0.01	0.02	0.00
Queue Length 95th (m)	0.3	0.4	0.1
Control Delay (s)	9.5	10.3	0.4
Lane LOS	A	B	A
Approach Delay (s)	9.5	10.3	0.4
Approach LOS	A	B	

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	29.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	55	495	25	25	380
Future Volume (Veh/h)	35	55	495	25	25	380
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	41	65	582	29	29	447
Pedestrians	220		5			55
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	17		0			5
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			151			143
pX, platoon unblocked	0.93	0.93			0.93	
vC, conflicting volume	1103	580			831	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	962	401			670	
tC, single (s)	6.8	6.9			4.3	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	78	85			96	
cM capacity (veh/h)	190	446			661	

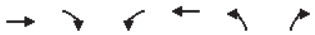
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	106	388	223	178	298
Volume Left	41	0	0	29	0
Volume Right	65	0	29	0	0
cSH	293	1700	1700	661	1700
Volume to Capacity	0.36	0.23	0.13	0.04	0.18
Queue Length 95th (m)	12.1	0.0	0.0	1.0	0.0
Control Delay (s)	24.1	0.0	0.0	2.2	0.0
Lane LOS	C			A	
Approach Delay (s)	24.1	0.0		0.8	
Approach LOS	C				

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	48.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	55	40	0	15	45
Future Volume (Veh/h)	0	55	40	0	15	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	59	43	0	16	48
Pedestrians		25	10		40	
Lane Width (m)		3.5	3.5		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		2	1		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	83				152	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	83				152	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	95
cM capacity (veh/h)	1481				812	902

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	59	43	64
Volume Left	0	0	16
Volume Right	0	0	48
cSH	1700	1700	878
Volume to Capacity	0.03	0.03	0.07
Queue Length 95th (m)	0.0	0.0	1.8
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	27.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	0	25	15	45
Future Volume (Veh/h)	70	0	0	25	15	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	84	0	0	30	18	54
Pedestrians	15			15	40	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	1			1	3	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			124		169	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			124		169	139
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	94
cM capacity (veh/h)			1431		790	875

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	84	30	72
Volume Left	0	0	18
Volume Right	0	0	54
cSH	1700	1700	852
Volume to Capacity	0.05	0.02	0.08
Queue Length 95th (m)	0.0	0.0	2.1
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary				
Average Delay		3.7		
Intersection Capacity Utilization		27.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	85	20	0	5	0	0	0	0	35	85	5
Future Volume (vph)	0	85	20	0	5	0	0	0	0	35	85	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	94	22	0	6	0	0	0	0	39	94	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	116	6	139
Volume Left (vph)	0	0	39
Volume Right (vph)	22	0	6
Hadj (s)	-0.09	0.00	0.10
Departure Headway (s)	4.1	4.3	4.3
Degree Utilization, x	0.13	0.01	0.16
Capacity (veh/h)	840	785	816
Control Delay (s)	7.8	7.4	8.1
Approach Delay (s)	7.8	7.4	8.1
Approach LOS	A	A	A

Intersection Summary				
Delay		7.9		
Level of Service		A		
Intersection Capacity Utilization		32.7%	ICU Level of Service	A
Analysis Period (min)		15		

15: Sumach Street & Oak Street

10-25-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	60	15	0	0	0	5	80	75	0	0	0
Future Volume (vph)	45	60	15	0	0	0	5	80	75	0	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	49	66	16	0	0	0	5	88	82	0	0	0

Direction, Lane #	EB 1	NB 1
Volume Total (vph)	131	175
Volume Left (vph)	49	5
Volume Right (vph)	16	82
Hadj (s)	0.07	-0.20
Departure Headway (s)	4.3	4.0
Degree Utilization, x	0.16	0.19
Capacity (veh/h)	797	868
Control Delay (s)	8.2	8.0
Approach Delay (s)	8.2	8.0
Approach LOS	A	A

Intersection Summary				
Delay	8.0			
Level of Service	A			
Intersection Capacity Utilization	34.6%	ICU Level of Service	A	
Analysis Period (min)	15			

16: Tubman Avenue/Site Laneway & Oak Street

10-25-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	125	10	0	0	0	0	0	0	5	5	0
Future Volume (Veh/h)	0	125	10	0	0	0	0	0	0	5	5	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	134	11	0	0	0	0	0	0	5	5	0
Pedestrians		20			5			30				
Lane Width (m)		3.5			0.0			0.0				
Walking Speed (m/s)		1.1			1.1			1.1				
Percent Blockage		2			0			0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	0			175			192	170	174	144	175	20
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			175			192	170	174	144	175	20
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	99	99	100
cM capacity (veh/h)	1636			1414			754	727	874	829	722	1045

Direction, Lane #	EB 1	SB 1
Volume Total	145	10
Volume Left	0	5
Volume Right	11	0
cSH	1700	772
Volume to Capacity	0.09	0.01
Queue Length 95th (m)	0.0	0.3
Control Delay (s)	0.0	9.7
Lane LOS		A
Approach Delay (s)	0.0	9.7
Approach LOS		A

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	26.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	125	0	0	10	0
Future Volume (Veh/h)	5	125	0	0	10	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	142	0	0	11	0
Pedestrians		5	5		25	
Lane Width (m)		3.5	0.0		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	25				184	30
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				184	30
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1572				792	1026

Direction, Lane #	EB 1	SB 1
Volume Total	148	11
Volume Left	6	11
Volume Right	0	0
cSH	1572	792
Volume to Capacity	0.00	0.01
Queue Length 95th (m)	0.1	0.3
Control Delay (s)	0.3	9.6
Lane LOS	A	A
Approach Delay (s)	0.3	9.6
Approach LOS		A

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	22.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	5	45	20	0	50	0	435	40	50	560	0
Future Volume (Veh/h)	85	5	45	20	0	50	0	435	40	50	560	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	5	49	22	0	54	0	473	43	54	609	0
Pedestrians		75			45			50			5	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		7			4			4			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								143			151	
pX, platoon unblocked	0.85	0.85	0.80	0.85	0.85	0.90	0.80			0.90		
vC, conflicting volume	1346	1353	734	1358	1332	544	684			561		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1060	1069	541	1075	1044	442	478			460		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	28	97	87	81	100	90	100			94		
cM capacity (veh/h)	127	160	382	116	166	535	816			964		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	146	76	516	663
Volume Left	92	22	0	54
Volume Right	49	54	43	0
cSH	165	262	1700	964
Volume to Capacity	0.88	0.29	0.30	0.06
Queue Length 95th (m)	47.8	8.9	0.0	1.4
Control Delay (s)	97.1	24.3	0.0	1.4
Lane LOS	F	C		A
Approach Delay (s)	97.1	24.3	0.0	1.4
Approach LOS	F	C		

Intersection Summary				
Average Delay	12.1			
Intersection Capacity Utilization	83.6%	ICU Level of Service		E
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	520	20	25	390
Future Volume (Veh/h)	0	0	520	20	25	390
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	619	24	30	464
Pedestrians	255		25			15
Lane Width (m)	0.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		2			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			214
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	1203	592			898	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	990	306			649	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			96	
cM capacity (veh/h)	208	614			846	

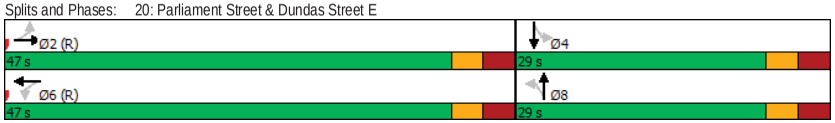
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	413	230	185	309
Volume Left	0	0	30	0
Volume Right	0	24	0	0
cSH	1700	1700	846	1700
Volume to Capacity	0.24	0.14	0.04	0.18
Queue Length 95th (m)	0.0	0.0	0.8	0.0
Control Delay (s)	0.0	0.0	1.8	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.7	
Approach LOS				

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			43.5%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	65	490	45	190	45	405	45	320
Future Volume (vph)	65	490	45	190	45	405	45	320
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	47.0	47.0	47.0	47.0	29.0	29.0	29.0	29.0
Total Split (%)	61.8%	61.8%	61.8%	61.8%	38.2%	38.2%	38.2%	38.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	Min	Min	Min	Min
Act Effct Green (s)		41.3		41.3		24.7		24.7
Actuated g/C Ratio		0.54		0.54		0.32		0.32
v/c Ratio		0.45		0.26		0.59		0.51
Control Delay		11.5		12.1		23.7		22.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		11.5		12.1		23.7		22.5
LOS		B		B		C		C
Approach Delay		11.5		12.1		23.7		22.5
Approach LOS		B		B		C		C

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 9 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.59		
Intersection Signal Delay: 17.3	Intersection LOS: B	
Intersection Capacity Utilization 93.3%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 20: Parliament Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	691	343	551	439
v/c Ratio	0.45	0.26	0.59	0.51
Control Delay	11.5	12.1	23.7	22.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.5	12.1	23.7	22.5
Queue Length 50th (m)	27.3	9.8	34.0	26.2
Queue Length 95th (m)	43.3	27.8	45.3	36.1
Internal Link Dist (m)	85.0	103.5	45.0	56.1
Turn Bay Length (m)				
Base Capacity (vph)	1558	1347	935	867
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.44	0.25	0.59	0.51

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	490	60	45	190	70	45	405	40	45	320	25
Future Volume (vph)	65	490	60	45	190	70	45	405	40	45	320	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.94			0.98			0.99	
Flpb, ped/bikes		0.98			0.99			0.99			0.99	
Frt		0.99			0.97			0.99			0.99	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		3205			3007			3272			3197	
Flt Permitted		0.87			0.80			0.87			0.82	
Satd. Flow (perm)		2802			2425			2853			2649	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	73	551	67	51	213	79	51	455	45	51	360	28
RTOR Reduction (vph)	0	11	0	0	9	0	0	9	0	0	7	0
Lane Group Flow (vph)	0	680	0	0	334	0	0	542	0	0	432	0
Confl. Peds. (#/hr)	260		155	155		260	165		225	225		165
Confl. Bikes (#/hr)			25			20			5			10
Heavy Vehicles (%)	3%	6%	5%	5%	6%	6%	3%	5%	0%	3%	8%	10%
Parking (#/hr)			0						0			0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		40.3			40.3			23.7			23.7	
Effective Green, g (s)		41.3			41.3			24.7			24.7	
Actuated g/C Ratio		0.54			0.54			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1522			1317			927			860	
v/s Ratio Prot												
v/s Ratio Perm		c0.24			0.14			c0.19			0.16	
v/c Ratio		0.45			0.25			0.58			0.50	
Uniform Delay, d1		10.5			9.2			21.4			20.7	
Progression Factor		1.00			1.29			1.00			1.00	
Incremental Delay, d2		1.0			0.5			0.9			0.5	
Delay (s)		11.4			12.3			22.3			21.2	
Level of Service		B			B			C			C	
Approach Delay (s)		11.4			12.3			22.3			21.2	
Approach LOS		B			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.50				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	93.3%	ICU Level of Service	F		
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	505	15	5	295	25	5	10	5	5	5	25
Future Volume (Veh/h)	40	505	15	5	295	25	5	10	5	5	5	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	43	543	16	5	317	27	5	11	5	5	5	27
Pedestrians		30			10			125			135	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		3			1			11			12	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		127			124							
pX, platoon unblocked				0.95			0.95	0.95	0.95	0.95	0.95	
vC, conflicting volume	479			684			990	1251	414	854	1246	337
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	479			562			884	1159	278	740	1153	337
tC, single (s)	4.1			4.4			7.5	6.5	7.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.5	4.0	3.8	3.5	4.0	3.3
p0 queue free %	96			99			97	92	99	97	96	95
cM capacity (veh/h)	963			773			149	140	498	192	141	570

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	314	288	164	186	21	37
Volume Left	43	0	5	0	5	5
Volume Right	0	16	0	27	5	27
cSH	963	1700	773	1700	171	339
Volume to Capacity	0.04	0.17	0.01	0.11	0.12	0.11
Queue Length 95th (m)	1.1	0.0	0.1	0.0	3.1	2.8
Control Delay (s)	1.6	0.0	0.4	0.0	28.9	16.9
Lane LOS	A		A		D	C
Approach Delay (s)	0.9		0.2		28.9	16.9
Approach LOS					D	C

Intersection Summary						
Average Delay	1.8					
Intersection Capacity Utilization	49.1%	ICU Level of Service	A			
Analysis Period (min)	15					

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	495	15	245	40	0	35	35
Future Volume (vph)	495	15	245	40	0	35	35
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2		6		8		4
Permitted Phases		6		8		4	
Detector Phase	2	6	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	17.0	17.0	17.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	26.0
Total Split (s)	50.0	50.0	50.0	26.0	26.0	26.0	26.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)	5.0		5.0		5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.6		47.6		18.4		18.4
Actuated g/C Ratio	0.63		0.63		0.24		0.24
v/c Ratio	0.27		0.26		0.23		0.31
Control Delay	5.1		7.0		13.2		17.8
Queue Delay	0.0		0.0		0.0		0.0
Total Delay	5.1		7.0		13.2		17.8
LOS	A		A		B		B
Approach Delay	5.1		7.0		13.2		17.8
Approach LOS	A		A		B		B

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 25 (33%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 49.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Sackville Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	564	279	75	119
v/c Ratio	0.27	0.26	0.23	0.31
Control Delay	5.1	7.0	13.2	17.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.1	7.0	13.2	17.8
Queue Length 50th (m)	12.7	17.6	3.4	9.0
Queue Length 95th (m)	16.5	21.8	12.9	21.6
Internal Link Dist (m)	99.8	79.6	36.2	126.8
Turn Bay Length (m)				
Base Capacity (vph)	2059	1061	367	427
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.26	0.20	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	495	30	15	245	0	40	0	30	35	35	40
Future Volume (vph)	0	495	30	15	245	0	40	0	30	35	35	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			1.00			0.95			0.97	
Flpb, ped/bikes		1.00			0.99			0.96			0.97	
Frt		0.99			1.00			0.94			0.95	
Flt Protected		1.00			1.00			0.97			0.98	
Satd. Flow (prot)		3290			1755			1495			1609	
Flt Permitted		1.00			0.96			0.79			0.89	
Satd. Flow (perm)		3290			1694			1220			1452	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	532	32	16	263	0	43	0	32	38	38	43
RTOR Reduction (vph)	0	0	0	0	0	0	0	33	0	0	28	0
Lane Group Flow (vph)	0	564	0	0	279	0	0	42	0	0	91	0
Confl. Peds. (#/hr)	105		175	175		105	70		55	55		70
Confl. Bikes (#/hr)			35			20						5
Heavy Vehicles (%)	0%	5%	6%	0%	6%	0%	0%	0%	12%	0%	2%	5%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases				6			8			4		
Actuated Green, G (s)		46.6			46.6			17.4			17.4	
Effective Green, g (s)		47.6			47.6			18.4			18.4	
Actuated g/C Ratio		0.63			0.63			0.24			0.24	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2060			1060			295			351	
v/s Ratio Prot		c0.17										
v/s Ratio Perm					0.16			0.03			c0.06	
v/c Ratio		0.27			0.26			0.14			0.26	
Uniform Delay, d1		6.4			6.4			22.6			23.3	
Progression Factor		0.67			0.87			1.00			1.00	
Incremental Delay, d2		0.3			0.6			0.2			0.4	
Delay (s)		4.6			6.1			22.8			23.7	
Level of Service		A			A			C			C	
Approach Delay (s)		4.6			6.1			22.8			23.7	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.27				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBT	WBL	WBT	Ø4
Lane Configurations				
Traffic Volume (vph)	530	15	260	
Future Volume (vph)	530	15	260	
Turn Type	NA	Perm	NA	
Protected Phases	2		6	4
Permitted Phases		6		
Detector Phase	2	6	6	
Switch Phase				
Minimum Initial (s)	18.0	18.0	18.0	20.0
Minimum Split (s)	23.9	23.9	23.9	23.0
Total Split (s)	53.0	53.0	53.0	23.0
Total Split (%)	69.7%	69.7%	69.7%	30%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	-1.0		-1.0	
Total Lost Time (s)	4.9		4.9	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Min	C-Min	C-Min	None
Act Effct Green (s)	64.8		64.8	
Actuated g/C Ratio	0.85		0.85	
v/c Ratio	0.43		0.21	
Control Delay	3.2		4.0	
Queue Delay	0.0		0.0	
Total Delay	3.3		4.0	
LOS	A		A	
Approach Delay	3.3		4.0	
Approach LOS	A		A	

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 3.5		Intersection LOS: A	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Regent Park Boulevard & Dundas Street E

Lane Group	EBT	WBT
Lane Group Flow (vph)	630	309
v/c Ratio	0.43	0.21
Control Delay	3.2	4.0
Queue Delay	0.0	0.0
Total Delay	3.3	4.0
Queue Length 50th (m)	1.7	0.0
Queue Length 95th (m)	51.7	28.6
Internal Link Dist (m)	79.6	86.0
Turn Bay Length (m)		
Base Capacity (vph)	1462	1448
Starvation Cap Reductn	41	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.44	0.21

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	530	30	15	260	0	0
Future Volume (vph)	530	30	15	260	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.0	3.0	3.5	3.0	3.0
Total Lost time (s)	4.9			4.9		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	0.97			1.00		
Flpb, ped/bikes	1.00			0.99		
Frt	0.99			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1712			1755		
Flt Permitted	1.00			0.96		
Satd. Flow (perm)	1712			1695		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	596	34	17	292	0	0
RTOR Reduction (vph)	1	0	0	0	0	0
Lane Group Flow (vph)	629	0	0	309	0	0
Confl. Peds. (#/hr)		235	235		60	65
Heavy Vehicles (%)	6%	6%	0%	6%	0%	0%
Turn Type	NA		Perm	NA		
Protected Phases	2			6		
Permitted Phases			6			
Actuated Green, G (s)	59.1			59.1		
Effective Green, g (s)	60.1			60.1		
Actuated g/C Ratio	0.79			0.79		
Clearance Time (s)	5.9			5.9		
Vehicle Extension (s)	3.0			3.0		
Lane Grp Cap (vph)	1353			1340		
v/s Ratio Prot	c0.37					
v/s Ratio Perm				0.18		
v/c Ratio	0.46			0.23		
Uniform Delay, d1	2.6			2.0		
Progression Factor	0.50			1.00		
Incremental Delay, d2	1.1			0.4		
Delay (s)	2.4			2.4		
Level of Service	A			A		
Approach Delay (s)	2.4			2.4	0.0	
Approach LOS	A			A	A	

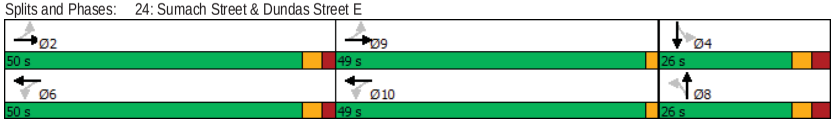
Intersection Summary				
HCM 2000 Control Delay	2.4	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.41			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	7.9	
Intersection Capacity Utilization	49.8%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	45	465	30	245	25	90	15	10				
Future Volume (vph)	45	465	30	245	25	90	15	10				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)					26.0	26.0	26.0	26.0	21.0	21.0	49.0	49.0
Total Split (s)					26.0	26.0	26.0	26.0	50.0	50.0	49.0	49.0
Total Split (%)					20.8%	20.8%	20.8%	20.8%	40%	40%	39%	39%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)						-1.0		-1.0				
Total Lost Time (s)						5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	None	None	Min	Min	None	None
Act Effct Green (s)		62.8		62.8		22.8		22.8				
Actuated g/C Ratio		0.66		0.66		0.24		0.24				
v/c Ratio		0.54		0.37		0.47		0.10				
Control Delay		9.3		6.7		40.8		33.2				
Queue Delay		2.2		0.0		0.0		0.0				
Total Delay		11.5		6.7		40.8		33.2				
LOS		B		A		D		C				
Approach Delay		11.5		6.7		40.8		33.2				
Approach LOS		B		A		D		C				

Intersection Summary			
Cycle Length: 125			
Actuated Cycle Length: 95.4			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 60.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 24: Sumach Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	570	354	172	32
v/c Ratio	0.54	0.37	0.47	0.10
Control Delay	9.3	6.7	40.8	33.2
Queue Delay	2.2	0.0	0.0	0.0
Total Delay	11.5	6.7	40.8	33.2
Queue Length 50th (m)	44.5	21.8	28.7	4.4
Queue Length 95th (m)	64.7	33.5	55.9	13.8
Internal Link Dist (m)	86.0	75.5	76.2	121.5
Turn Bay Length (m)				
Base Capacity (vph)	1194	1093	364	328
Starvation Cap Reductn	466	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.78	0.32	0.47	0.10

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	465	20	30	245	55	25	90	45	15	10	5
Future Volume (vph)	45	465	20	30	245	55	25	90	45	15	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.95			0.96			0.96	
Flpb, ped/bikes		0.99			0.98			0.96			0.96	
Frt		0.99			0.98			0.96			0.98	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1688			1584			1580			1604	
Flt Permitted		0.95			0.93			0.95			0.84	
Satd. Flow (perm)		1604			1478			1519			1386	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	48	500	22	32	263	59	27	97	48	16	11	5
RTOR Reduction (vph)	0	2	0	0	7	0	0	10	0	0	4	0
Lane Group Flow (vph)	0	568	0	0	347	0	0	162	0	0	28	0
Confl. Peds. (#/hr)	100		185	185		100	105		50	50		105
Confl. Bikes (#/hr)			25			20						
Heavy Vehicles (%)	12%	6%	8%	0%	9%	5%	4%	5%	6%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		65.4			65.4			21.7			21.7	
Effective Green, g (s)		66.4			66.4			22.7			22.7	
Actuated g/C Ratio		0.70			0.70			0.24			0.24	
Clearance Time (s)								6.0			6.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		1119			1031			362			330	
v/s Ratio Prot												
v/s Ratio Perm		c0.35			0.23			c0.11			0.02	
v/c Ratio		0.51			0.34			0.45			0.09	
Uniform Delay, d1		6.7			5.7			30.9			28.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.2			0.9			0.1	
Delay (s)		7.1			5.9			31.7			28.2	
Level of Service		A			A			C			C	
Approach Delay (s)		7.1			5.9			31.7			28.2	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.51				
Actuated Cycle Length (s)	95.1	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	60.9%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	515	10	10	325	0	0	0	0	10	0	5
Future Volume (Veh/h)	0	515	10	10	325	0	0	0	0	10	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	542	11	11	342	0	0	0	0	11	0	5
Pedestrians		10			10			130			50	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			1			0			4	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		99			98							
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	392			683			1056	1092	688	972	1097	402
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	392			555			987	1028	561	889	1034	402
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	95	100	99
cM capacity (veh/h)	1125			887			186	193	455	209	191	618

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	553	353	16
Volume Left	0	11	11
Volume Right	11	0	5
cSH	1125	887	263
Volume to Capacity	0.00	0.01	0.06
Queue Length 95th (m)	0.0	0.3	1.5
Control Delay (s)	0.0	0.4	19.6
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	19.6
Approach LOS			C

Intersection Summary					
Average Delay			0.5		
Intersection Capacity Utilization			43.9%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	25	440	95	210	45	365	105	445				
Future Volume (vph)	25	440	95	210	45	365	105	445				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					21.0	21.0	21.0	21.0	21.0	21.0	5.0	5.0
Minimum Split (s)					27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)					42.0	42.0	42.0	42.0	34.0	34.0	27.0	27.0
Total Split (%)					40.8%	40.8%	40.8%	40.8%	33%	33%	26%	26%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0
Lost Time Adjust (s)					-1.0	-1.0	-1.0	-1.0				
Total Lost Time (s)					5.0	5.0	5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					Min	Min	Min	Min	Min	Min	None	None
Act Effct Green (s)		31.8		31.8	37.7	37.7	37.7	37.7				
Actuated g/C Ratio		0.40		0.40	0.47	0.47	0.47	0.47				
v/c Ratio		0.82		0.85	0.21	0.79	0.58	0.72				
Control Delay		31.5		37.3	19.6	28.2	34.8	26.0				
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay		31.5		37.3	19.6	28.2	34.8	26.0				
LOS		C		D	B	C	C	C				
Approach Delay		31.5		37.3		27.6		27.4				
Approach LOS		C		D		C		C				

Intersection Summary		
Cycle Length: 103		
Actuated Cycle Length: 79.7		
Natural Cycle: 95		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.85		
Intersection Signal Delay: 30.3	Intersection LOS: C	
Intersection Capacity Utilization 120.3%	ICU Level of Service H	
Analysis Period (min) 15		

Splits and Phases: 26: River Street & Dundas Street E

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	552	421	47	610	111	552
v/c Ratio	0.82	0.85	0.21	0.79	0.58	0.72
Control Delay	31.5	37.3	19.6	28.2	34.8	26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	37.3	19.6	28.2	34.8	26.0
Queue Length 50th (m)	70.0	52.4	3.7	64.4	10.6	57.3
Queue Length 95th (m)	103.3	86.0	16.6	#192.0	#49.6	#170.6
Internal Link Dist (m)	73.4	80.5		131.0		118.9
Turn Bay Length (m)			20.0		25.0	
Base Capacity (vph)	711	523	227	777	193	769
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	0.80	0.21	0.79	0.58	0.72

Intersection Summary

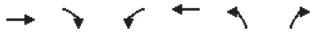
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	440	60	95	210	95	45	365	215	105	445	80
Future Volume (vph)	25	440	60	95	210	95	45	365	215	105	445	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.97		1.00	0.94		1.00	0.97	
Flpb, ped/bikes		1.00			0.99		0.96	1.00		0.96	1.00	
Frt		0.98			0.97		1.00	0.94		1.00	0.98	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1637		1533	1633		1591	1624	
Flt Permitted		0.97			0.73		0.28	1.00		0.23	1.00	
Satd. Flow (perm)		1676			1214		460	1633		393	1624	
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)	26	463	63	100	221	100	47	384	226	111	468	84
RTOR Reduction (vph)	0	5	0	0	13	0	0	17	0	0	5	0
Lane Group Flow (vph)	0	547	0	0	408	0	47	593	0	111	547	0
Confl. Peds. (#/hr)	55		75	75		55	75		75	75		75
Confl. Bikes (#/hr)			25			20			10			5
Heavy Vehicles (%)	9%	5%	0%	1%	9%	0%	5%	3%	0%	2%	12%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		36.5			36.5		36.7	36.7		36.7	36.7	
Effective Green, g (s)		37.5			37.5		37.7	37.7		37.7	37.7	
Actuated g/C Ratio		0.46			0.46		0.46	0.46		0.46	0.46	
Clearance Time (s)							6.0	6.0		6.0	6.0	
Vehicle Extension (s)							3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		774			560		213	758		182	754	
v/s Ratio Prot								c0.36			0.34	
v/s Ratio Perm		0.33			c0.34		0.10			0.28		
v/c Ratio		0.71			0.73		0.22	0.78		0.61	0.72	
Uniform Delay, d1		17.5			17.7		13.0	18.3		16.3	17.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.0			4.7		0.5	5.3		5.7	3.5	
Delay (s)		20.4			22.4		13.5	23.6		21.9	21.0	
Level of Service		C			C		B	C		C	C	
Approach Delay (s)		20.4			22.4			22.9			21.2	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	21.7	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.79				
Actuated Cycle Length (s)	81.2	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	120.3%	ICU Level of Service		H	
Analysis Period (min)	15				

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	830	55	10	430	0	0
Future Volume (Veh/h)	830	55	10	430	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	874	58	11	453	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	90			162		
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			932		1152	466
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			619		871	82
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			844		252	840

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	583	349	162	302
Volume Left	0	0	11	0
Volume Right	0	58	0	0
cSH	1700	1700	844	1700
Volume to Capacity	0.34	0.21	0.01	0.18
Queue Length 95th (m)	0.0	0.0	0.3	0.0
Control Delay (s)	0.0	0.0	0.8	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.3	
Approach LOS				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	28.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	15	125	0	0	0
Future Volume (Veh/h)	0	15	125	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	16	132	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						55
pX, platoon unblocked						
vC, conflicting volume	132	132			132	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	132	132			132	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	867	923			1466	

Direction, Lane #	WB 1	NB 1
Volume Total	16	132
Volume Left	0	0
Volume Right	16	0
cSH	923	1700
Volume to Capacity	0.02	0.08
Queue Length 95th (m)	0.4	0.0
Control Delay (s)	9.0	0.0
Lane LOS	A	
Approach Delay (s)	9.0	0.0
Approach LOS	A	

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	16.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	950	0	0	565	0	5
Future Volume (Veh/h)	950	0	0	565	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1000	0	0	595	0	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	171			80		
pX, platoon unblocked			0.90		0.93	0.90
vC, conflicting volume			1000		1298	500
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			773		838	216
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			765		288	714

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	667	333	298	298	5
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	5
cSH	1700	1700	1700	1700	714
Volume to Capacity	0.39	0.20	0.17	0.17	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	0.0	0.0	10.1
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.1
Approach LOS					B

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	36.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	110	25	0	0	0
Future Volume (Veh/h)	5	110	25	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	116	26	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	26				152	26
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	26				152	26
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1601				842	1056

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	121	26	0
Volume Left	5	0	0
Volume Right	0	0	0
cSH	1601	1700	1700
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (m)	0.1	0.0	0.0
Control Delay (s)	0.3	0.0	0.0
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	0.0
Approach LOS			A

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	13.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	5	575	495	60
Future Volume (Veh/h)	0	0	5	575	495	60
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	5	625	538	65
Pedestrians	80				5	
Lane Width (m)	0.0				3.5	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				39		
pX, platoon unblocked	0.93					
vC, conflicting volume	978	382	683			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	820	382	683			
tC, single (s)	6.8	6.9	4.5			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	100	100	99			
cM capacity (veh/h)	291	622	795			

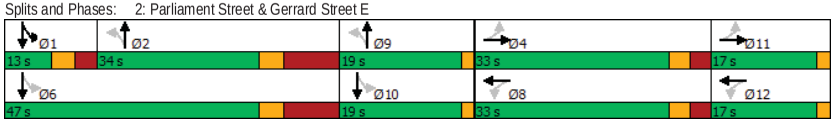
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	213	417	359	244
Volume Left	5	0	0	0
Volume Right	0	0	0	65
cSH	795	1700	1700	1700
Volume to Capacity	0.01	0.25	0.21	0.14
Queue Length 95th (m)	0.1	0.0	0.0	0.0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary				
Average Delay			0.1	
Intersection Capacity Utilization			22.7%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø4	Ø6	Ø8
Lane Configurations												
Traffic Volume (vph)	25	245	70	545	110	345	85	340				
Future Volume (vph)	25	245	70	545	110	345	85	340				
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA				
Protected Phases		4 11		8 12		2 9	1	1 6 10	2	4	6	8
Permitted Phases	4 11		8 12		2 9		6 10					
Detector Phase	4	4	8	8	2	2	1	1 6				
Switch Phase												
Minimum Initial (s)							6.0		22.0	21.0	22.0	21.0
Minimum Split (s)							12.5		33.2	31.8	33.2	31.8
Total Split (s)							13.0		34.0	33.0	47.0	33.0
Total Split (%)							11.2%		29%	28%	41%	28%
Yellow Time (s)							3.3		3.3	3.0	3.3	3.0
All-Red Time (s)							3.2		7.9	2.8	7.9	2.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead		Lag			
Lead-Lag Optimize?							Yes		Yes			
Recall Mode							None		Min	Min	Min	Min
Act Effct Green (s)		33.5		33.5		30.4		48.8				
Actuated g/C Ratio		0.36		0.36		0.33		0.52				
v/c Ratio		0.35		0.84		0.70		0.38				
Control Delay		20.9		34.6		32.7		13.5				
Queue Delay		0.0		0.0		0.0		0.0				
Total Delay		20.9		34.6		32.7		13.5				
LOS		C		C		C		B				
Approach Delay		20.9		34.6		32.7		13.5				
Approach LOS		C		C		C		B				

Intersection Summary		
Cycle Length: 116		
Actuated Cycle Length: 93		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.84		
Intersection Signal Delay: 27.2	Intersection LOS: C	
Intersection Capacity Utilization 100.9%	ICU Level of Service G	
Analysis Period (min) 15		

Splits and Phases: 2: Parliament Street & Gerrard Street E



Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	19.0	19.0	17.0	17.0
Total Split (s)	19.0	19.0	17.0	17.0
Total Split (%)	16%	16%	15%	15%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	363	869	526	521
v/c Ratio	0.35	0.84	0.70	0.38
Control Delay	20.9	34.6	32.7	13.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.9	34.6	32.7	13.5
Queue Length 50th (m)	18.7	60.2	37.2	21.2
Queue Length 95th (m)	38.5	110.8	68.4	43.5
Internal Link Dist (m)	33.0	63.9	119.2	15.0
Turn Bay Length (m)				
Base Capacity (vph)	1042	1065	763	1396
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.82	0.69	0.37

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	245	75	70	545	210	110	345	45	85	340	70
Future Volume (vph)	25	245	75	70	545	210	110	345	45	85	340	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.8			4.8			10.2			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.97			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.99	
Frt		0.97			0.96			0.99			0.98	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		3312			3197			3174			3199	
Flt Permitted		0.86			0.87			0.72			0.78	
Satd. Flow (perm)		2854			2803			2298			2518	
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)	26	258	79	74	574	221	116	363	47	89	358	74
RTOR Reduction (vph)	0	21	0	0	28	0	0	6	0	0	13	0
Lane Group Flow (vph)	0	342	0	0	841	0	0	520	0	0	508	0
Confl. Peds. (#/hr)	80		85	85		80	85		120	120		85
Confl. Bikes (#/hr)			5			20			5			10
Heavy Vehicles (%)	13%	0%	2%	1%	1%	11%	6%	8%	0%	11%	6%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4 11			8 12			2 9		1	1 6 10	
Permitted Phases	4 11			8 12			2 9			6 10		
Actuated Green, G (s)		38.0			38.0			40.6			53.8	
Effective Green, g (s)		39.0			39.0			41.6			44.6	
Actuated g/C Ratio		0.41			0.41			0.43			0.47	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1161			1141			997			1226	
v/s Ratio Prot											c0.03	
v/s Ratio Perm		0.12			c0.30			c0.23			0.16	
v/c Ratio		0.29			0.74			0.52			0.41	
Uniform Delay, d1		19.1			24.1			19.8			17.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			2.5			0.5			0.2	
Delay (s)		19.3			26.6			20.3			17.2	
Level of Service		B			C			C			B	
Approach Delay (s)		19.3			26.6			20.3			17.2	
Approach LOS		B			C			C			B	

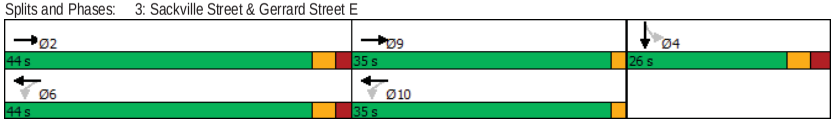
Intersection Summary				
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	95.8	Sum of lost time (s)	22.5	
Intersection Capacity Utilization	100.9%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	335	140	875	35				
Future Volume (vph)	335	140	875	35				
Turn Type	NA	Perm	NA	NA				
Protected Phases	2 9		6 10	4	2	6	9	10
Permitted Phases		6 10						
Detector Phase	2	6	6	4				
Switch Phase								
Minimum Initial (s)				20.0	16.0	16.0	5.0	5.0
Minimum Split (s)				25.7	21.0	21.0	35.0	35.0
Total Split (s)				26.0	44.0	44.0	35.0	35.0
Total Split (%)				24.8%	42%	42%	33%	33%
Yellow Time (s)				3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				2.7	2.0	2.0	0.0	0.0
Lost Time Adjust (s)				-1.0				
Total Lost Time (s)				4.7				
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode				Min	Min	Min	None	None
Act Effct Green (s)	53.2		53.2	22.6				
Actuated g/C Ratio	0.62		0.62	0.27				
v/c Ratio	0.20		0.66	0.28				
Control Delay	5.7		10.9	33.3				
Queue Delay	0.0		0.0	0.0				
Total Delay	5.7		10.9	33.3				
LOS	A		B	C				
Approach Delay	5.7		10.9	33.3				
Approach LOS	A		B	C				

Intersection Summary			
Cycle Length: 105			
Actuated Cycle Length: 85.2			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 68.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Sackville Street & Gerrard Street E



Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	395	1116	114
v/c Ratio	0.20	0.66	0.28
Control Delay	5.7	10.9	33.3
Queue Delay	0.0	0.0	0.0
Total Delay	5.7	10.9	33.3
Queue Length 50th (m)	11.3	49.8	17.5
Queue Length 95th (m)	16.0	65.0	35.3
Internal Link Dist (m)	58.8	47.8	15.3
Turn Bay Length (m)			
Base Capacity (vph)	2231	1882	414
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.18	0.59	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	335	25	140	875	0	0	0	0	55	35	15
Future Volume (vph)	0	335	25	140	875	0	0	0	0	55	35	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0						4.7	
Lane Util. Factor		0.95			0.95						1.00	
Frpb, ped/bikes		0.99			1.00						0.99	
Flpb, ped/bikes		1.00			0.99						0.91	
Frt		0.99			1.00						0.98	
Flt Protected		1.00			0.99						0.97	
Satd. Flow (prot)		3191			3343						1561	
Flt Permitted		1.00			0.81						0.97	
Satd. Flow (perm)		3191			2730						1561	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	368	27	154	962	0	0	0	0	60	38	16
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	389	0	0	1116	0	0	0	0	0	109	0
Confl. Peds. (#/hr)	40		60	60		40	60		140	140		60
Confl. Bikes (#/hr)			15			75						5
Heavy Vehicles (%)	0%	10%	0%	9%	4%	0%	0%	0%	0%	0%	6%	6%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2 9			6 10						4	
Permitted Phases				6 10						4		
Actuated Green, G (s)		56.4			56.4						21.6	
Effective Green, g (s)		57.4			57.4						22.6	
Actuated g/C Ratio		0.67			0.67						0.26	
Clearance Time (s)											5.7	
Vehicle Extension (s)											3.0	
Lane Grp Cap (vph)		2137			1828						411	
v/s Ratio Prot		0.12										
v/s Ratio Perm					c0.41						0.07	
v/c Ratio		0.18			0.61						0.26	
Uniform Delay, d1		5.3			7.9						25.0	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.0			0.6						0.3	
Delay (s)		5.4			8.5						25.3	
Level of Service		A			A						C	
Approach Delay (s)		5.4			8.5			0.0			25.3	
Approach LOS		A			A			A			C	

Intersection Summary					
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio	0.53				
Actuated Cycle Length (s)	85.7	Sum of lost time (s)		9.7	
Intersection Capacity Utilization	68.8%	ICU Level of Service		C	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	385	1010	20	5	5
Future Volume (Veh/h)	5	385	1010	20	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	401	1052	21	5	5
Pedestrians		5	5		50	
Lane Width (m)		3.5	3.5		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		4	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		72	141			
pX, platoon unblocked	0.86				0.87	0.86
vC, conflicting volume	1123				1328	592
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	817				970	198
tC, single (s)	4.1				7.5	7.3
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.5
p0 queue free %	99				97	99
cM capacity (veh/h)	678				167	623

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	139	267	701	372	10
Volume Left	5	0	0	0	5
Volume Right	0	0	0	21	5
cSH	678	1700	1700	1700	263
Volume to Capacity	0.01	0.16	0.41	0.22	0.04
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.9
Control Delay (s)	0.5	0.0	0.0	0.0	19.2
Lane LOS	A				C
Approach Delay (s)	0.2		0.0		19.2
Approach LOS					C

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization	40.2%	ICU Level of Service		A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	385	1020	5	15	10
Future Volume (Veh/h)	5	385	1020	5	15	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	397	1052	5	15	10
Pedestrians					75	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		145	68			
pX, platoon unblocked	0.84				0.84	0.84
vC, conflicting volume	1132				1338	604
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	773				1018	143
tC, single (s)	4.1				6.9	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	99				92	99
cM capacity (veh/h)	674				177	676

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	137	265	701	356	25
Volume Left	5	0	0	0	15
Volume Right	0	0	0	5	10
cSH	674	1700	1700	1700	251
Volume to Capacity	0.01	0.16	0.41	0.21	0.10
Queue Length 95th (m)	0.2	0.0	0.0	0.0	2.5
Control Delay (s)	0.5	0.0	0.0	0.0	20.9
Lane LOS	A				C
Approach Delay (s)	0.2		0.0		20.9
Approach LOS					C

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization	38.4%	ICU Level of Service		A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	NBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	5	395	920	10				
Future Volume (vph)	5	395	920	10				
Turn Type	Perm	NA	NA	NA				
Protected Phases		2 9	6 10	8	2	6	9	10
Permitted Phases	2 9							
Detector Phase	2	2	6	8				
Switch Phase								
Minimum Initial (s)				15.0	11.0	11.0	5.0	5.0
Minimum Split (s)				25.4	26.2	26.2	72.0	72.0
Total Split (s)				27.0	43.0	43.0	72.0	72.0
Total Split (%)				19.0%	30%	30%	51%	51%
Yellow Time (s)				3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				7.4	7.2	7.2	0.0	0.0
Lost Time Adjust (s)				-1.0				
Total Lost Time (s)				9.4				
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode				None	Min	Min	None	None
Act Effct Green (s)		56.4	56.4	20.0				
Actuated g/C Ratio		0.58	0.58	0.20				
v/c Ratio		0.25	0.64	0.82				
Control Delay		8.5	12.6	61.4				
Queue Delay		0.0	0.3	0.0				
Total Delay		8.5	12.9	61.4				
LOS		A	B	E				
Approach Delay		8.5	12.9	61.4				
Approach LOS		A	B	E				

Intersection Summary			
Cycle Length: 142			
Actuated Cycle Length: 97.6			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 18.0		Intersection LOS: B	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Sumach Street & Gerrard Street E

Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	460	1201	241
v/c Ratio	0.25	0.64	0.82
Control Delay	8.5	12.6	61.4
Queue Delay	0.0	0.3	0.0
Total Delay	8.5	12.9	61.4
Queue Length 50th (m)	18.0	62.1	25.6
Queue Length 95th (m)	22.5	70.4	#127.9
Internal Link Dist (m)	44.0	75.7	33.2
Turn Bay Length (m)			
Base Capacity (vph)	1901	1950	294
Starvation Cap Reductn	0	253	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.24	0.71	0.82

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	395	0	0	920	125	105	10	95	0	0	0
Future Volume (vph)	5	395	0	0	920	125	105	10	95	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.2			9.2			9.4				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			0.97			0.94				
Flpb, ped/bikes		1.00			1.00			0.90				
Frt		1.00			0.98			0.94				
Flt Protected		1.00			1.00			0.98				
Satd. Flow (prot)		3399			3279			1456				
Flt Permitted		0.94			1.00			0.98				
Satd. Flow (perm)		3185			3279			1456				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	454	0	0	1057	144	121	11	109	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	19	0	0	0	0
Lane Group Flow (vph)	0	460	0	0	1192	0	0	222	0	0	0	0
Confl. Peds. (#/hr)	65		85	85		65	100		65	65		100
Confl. Bikes (#/hr)			15			120			5			
Heavy Vehicles (%)	0%	5%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2 9			6 10			8				
Permitted Phases	2 9						8					
Actuated Green, G (s)		65.2			65.2			18.9				
Effective Green, g (s)		66.2			66.2			19.9				
Actuated g/C Ratio		0.69			0.69			0.21				
Clearance Time (s)								10.4				
Vehicle Extension (s)								3.0				
Lane Grp Cap (vph)		2184			2249			300				
v/s Ratio Prot					c0.36							
v/s Ratio Perm		0.14						0.15				
v/c Ratio		0.21			0.53			0.74				
Uniform Delay, d1		5.6			7.5			35.9				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			0.2			9.2				
Delay (s)		5.6			7.7			45.1				
Level of Service		A			A			D				
Approach Delay (s)		5.6			7.7			45.1			0.0	
Approach LOS		A			A			D			A	

Intersection Summary				
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	96.5	Sum of lost time (s)	19.6	
Intersection Capacity Utilization	66.4%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	480	10	0	1040	0	0	0	0	10	0	5
Future Volume (Veh/h)	0	480	10	0	1040	0	0	0	0	10	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	505	11	0	1095	0	0	0	0	11	0	5
Pedestrians											75	
Lane Width (m)											3.0	
Walking Speed (m/s)											1.1	
Percent Blockage											6	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		100			91							
pX, platoon unblocked	0.79			0.97			0.81	0.81	0.97	0.81	0.81	0.79
vC, conflicting volume	1170			516			1063	1680	258	1422	1686	622
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	697			448			454	1218	183	899	1225	8
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	94	100	99
cM capacity (veh/h)	681			1093			379	139	812	173	137	808

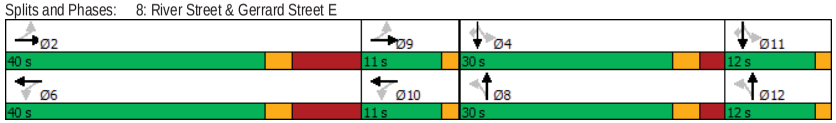
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	337	179	548	548	16
Volume Left	0	0	0	0	11
Volume Right	0	11	0	0	5
cSH	1700	1700	1700	1700	229
Volume to Capacity	0.20	0.11	0.32	0.32	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.7
Control Delay (s)	0.0	0.0	0.0	0.0	21.9
Lane LOS					C
Approach Delay (s)	0.0		0.0		21.9
Approach LOS					C

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	38.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø2	Ø4	Ø6
Lane Configurations												
Traffic Volume (vph)	130	275	165	825	45	360	125	365	170			
Future Volume (vph)	130	275	165	825	45	360	125	365	170			
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm			
Protected Phases		2 9		6 10		8 12		4 11		2	4	6
Permitted Phases	2 9		6 10		8 12		4 11		4 11			
Detector Phase	2	2	6	6	8	8	4	4	4			
Switch Phase												
Minimum Initial (s)										23.0	19.0	23.0
Minimum Split (s)										33.8	30.0	33.8
Total Split (s)										40.0	30.0	40.0
Total Split (%)										43%	32%	43%
Yellow Time (s)										3.0	3.0	3.0
All-Red Time (s)										7.8	3.0	7.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode										Min	Min	Min
Act Effct Green (s)		36.8		36.8	29.9	29.9	29.9	29.9	29.9			
Actuated g/C Ratio		0.45		0.45	0.37	0.37	0.37	0.37	0.37			
v/c Ratio		0.85dl		1.06	0.19	0.71	0.64	0.56	0.30			
Control Delay		23.1		66.9	20.8	28.8	38.2	24.6	8.9			
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		23.1		66.9	20.8	28.8	38.2	24.6	8.9			
LOS		C		E	C	C	D	C	A			
Approach Delay		23.1		66.9		28.0		23.1				
Approach LOS		C		E		C		C				

Intersection Summary			
Cycle Length: 93			
Actuated Cycle Length: 81.9			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 42.3		Intersection LOS: D	
Intersection Capacity Utilization 118.1%		ICU Level of Service H	
Analysis Period (min) 15			
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			

Splits and Phases: 8: River Street & Gerrard Street E



Lane Group	Ø8	Ø9	Ø10	Ø11	Ø12
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Turn Type					
Protected Phases	8	9	10	11	12
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	19.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	11.0	11.0	12.0	12.0
Total Split (s)	30.0	11.0	11.0	12.0	12.0
Total Split (%)	32%	12%	12%	13%	13%
Yellow Time (s)	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	3.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	None	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	510	1219	47	453	130	380	177
v/c Ratio	0.85dl	1.06	0.19	0.71	0.64	0.56	0.30
Control Delay	23.1	66.9	20.8	28.8	38.2	24.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	66.9	20.8	28.8	38.2	24.6	8.9
Queue Length 50th (m)	31.4	~109.9	5.4	62.7	17.9	50.4	6.9
Queue Length 95th (m)	54.2	#167.6	13.2	95.6	38.9	76.7	20.2
Internal Link Dist (m)	67.0	81.6		25.1		61.7	
Turn Bay Length (m)			30.0		30.0		
Base Capacity (vph)	750	1153	252	667	213	708	609
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	0.68	1.06	0.19	0.68	0.61	0.54	0.29

Intersection Summary

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	275	85	165	825	180	45	360	75	125	365	170
Future Volume (vph)	130	275	85	165	825	180	45	360	75	125	365	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.8			9.8		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.97			0.98		1.00	0.98		1.00	1.00	0.94
Flpb, ped/bikes		1.00			0.99		0.98	1.00		0.96	1.00	1.00
Frt		0.97			0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3109			3266		1528	1734		1577	1860	1420
Flt Permitted		0.52			0.77		0.41	1.00		0.34	1.00	1.00
Satd. Flow (perm)		1631			2539		665	1734		562	1860	1420
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	135	286	89	172	859	188	47	375	78	130	380	177
RTOR Reduction (vph)	0	15	0	0	13	0	0	8	0	0	0	67
Lane Group Flow (vph)	0	495	0	0	1206	0	47	445	0	130	380	110
Confl. Peds. (#/hr)	50		95	95		50	40		85	85		40
Confl. Bikes (#/hr)			10			75			15			10
Heavy Vehicles (%)	4%	8%	4%	0%	3%	1%	8%	4%	2%	3%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2 9			6 10			8 12			4 11	
Permitted Phases	2 9			6 10			8 12			4 11		4 11
Actuated Green, G (s)		45.5			45.5		33.8	33.8		33.8	33.8	33.8
Effective Green, g (s)		46.5			46.5		34.8	34.8		34.8	34.8	34.8
Actuated g/C Ratio		0.56			0.56		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		910			1417		277	724		234	777	593
v/s Ratio Prot								c0.26			0.20	
v/s Ratio Perm		0.30			c0.48		0.07			0.23		0.08
v/c Ratio		0.85dl			0.85		0.17	0.62		0.56	0.49	0.19
Uniform Delay, d1		11.7			15.5		15.2	19.0		18.4	17.7	15.3
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7			5.1		0.3	1.6		2.8	0.5	0.2
Delay (s)		12.3			20.6		15.5	20.6		21.2	18.2	15.5
Level of Service		B			C		B	C		C	B	B
Approach Delay (s)		12.3			20.6			20.1			18.1	
Approach LOS		B			C			C			B	

Intersection Summary

HCM 2000 Control Delay		18.5	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio		0.88				
Actuated Cycle Length (s)		83.3	Sum of lost time (s)		16.8	
Intersection Capacity Utilization		118.1%	ICU Level of Service		H	
Analysis Period (min)		15				

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	80	55	0	0	0	0	0	20	155	25
Future Volume (Veh/h)	0	0	80	55	0	0	0	0	0	20	155	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	0	0	104	71	0	0	0	0	0	26	201	32
Pedestrians		70			40			15			10	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		6			4			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											58	
pX, platoon unblocked												
vC, conflicting volume	349	379	302	428	395	50	303			40		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	349	379	302	428	395	50	303			40		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	85	83	100	100	100			98		
cM capacity (veh/h)	519	495	696	406	485	979	1191			1527		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	71	259
Volume Left	0	71	26
Volume Right	104	0	32
cSH	696	406	1527
Volume to Capacity	0.15	0.17	0.02
Queue Length 95th (m)	4.0	4.8	0.4
Control Delay (s)	11.1	15.7	0.9
Lane LOS	B	C	A
Approach Delay (s)	11.1	15.7	0.9
Approach LOS	B	C	

Intersection Summary					
Average Delay	5.7				
Intersection Capacity Utilization	35.5%	ICU Level of Service	A		
Analysis Period (min)	15				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	105	395	10	5	480
Future Volume (Veh/h)	70	105	395	10	5	480
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	74	111	416	11	5	505
Pedestrians	260		5			175
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	20		0			15
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			151			143
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	949	648			687	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	898	629			668	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	61			99	
cM capacity (veh/h)	223	281			742	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	185	277	150	173	337
Volume Left	74	0	0	5	0
Volume Right	111	0	11	0	0
cSH	255	1700	1700	742	1700
Volume to Capacity	0.73	0.16	0.09	0.01	0.20
Queue Length 95th (m)	38.3	0.0	0.0	0.2	0.0
Control Delay (s)	49.3	0.0	0.0	0.4	0.0
Lane LOS	E			A	
Approach Delay (s)	49.3	0.0		0.1	
Approach LOS	E				

Intersection Summary					
Average Delay	8.2				
Intersection Capacity Utilization	38.3%	ICU Level of Service	A		
Analysis Period (min)	15				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Traffic Volume (veh/h)	0	15	125	0	10	55
Future Volume (Veh/h)	0	15	125	0	10	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	18	152	0	12	67
Pedestrians		15			40	
Lane Width (m)		3.5			3.0	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		1			3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	192				210	207
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192				210	207
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	100				98	91
cM capacity (veh/h)	1351				759	774

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	18	152	79
Volume Left	0	0	12
Volume Right	0	0	67
cSH	1700	1700	772
Volume to Capacity	0.01	0.09	0.10
Queue Length 95th (m)	0.0	0.0	2.6
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary				
Average Delay		3.2		
Intersection Capacity Utilization		29.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	Y	
Traffic Volume (veh/h)	25	0	0	95	30	30
Future Volume (Veh/h)	25	0	0	95	30	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	32	0	0	122	38	38
Pedestrians	15			10	30	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	1			1	2	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			62		199	72
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			62		199	72
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	96
cM capacity (veh/h)			1519		757	954

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	122	76
Volume Left	0	0	38
Volume Right	0	0	38
cSH	1700	1700	844
Volume to Capacity	0.02	0.07	0.09
Queue Length 95th (m)	0.0	0.0	2.2
Control Delay (s)	0.0	0.0	9.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.7
Approach LOS			A

Intersection Summary				
Average Delay		3.2		
Intersection Capacity Utilization		29.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	40	15	0	20	0	0	0	0	55	165	70
Future Volume (vph)	0	40	15	0	20	0	0	0	0	55	165	70
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	0	49	19	0	25	0	0	0	0	68	204	86

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	68	25	358
Volume Left (vph)	0	0	68
Volume Right (vph)	19	0	86
Hadj (s)	-0.06	0.00	-0.01
Departure Headway (s)	4.7	4.8	4.1
Degree Utilization, x	0.09	0.03	0.41
Capacity (veh/h)	709	687	855
Control Delay (s)	8.1	8.0	10.0
Approach Delay (s)	8.1	8.0	10.0
Approach LOS	A	A	A

Intersection Summary					
Delay	9.6				
Level of Service	A				
Intersection Capacity Utilization	41.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	35	25	0	0	0	20	105	35	0	0	0
Future Volume (vph)	35	35	25	0	0	0	20	105	35	0	0	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	47	47	33	0	0	0	27	140	47	0	0	0

Direction, Lane #	EB 1	NB 1
Volume Total (vph)	127	214
Volume Left (vph)	47	27
Volume Right (vph)	33	47
Hadj (s)	0.00	-0.03
Departure Headway (s)	4.4	4.2
Degree Utilization, x	0.15	0.25
Capacity (veh/h)	786	836
Control Delay (s)	8.2	8.5
Approach Delay (s)	8.2	8.5
Approach LOS	A	A

Intersection Summary					
Delay	8.4				
Level of Service	A				
Intersection Capacity Utilization	35.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	70	0	0	0	0	0	0	0	0	10	0
Future Volume (Veh/h)	0	70	0	0	0	0	0	0	0	0	10	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	93	0	0	0	0	0	0	0	0	13	0
Pedestrians		40			10			45				
Lane Width (m)		3.5			0.0			0.0				
Walking Speed (m/s)		1.1			1.1			1.1				
Percent Blockage		4			0			0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	0			138			184	138	148	103	138	40
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			138			184	138	148	103	138	40
tC, single (s)	4.1			4.1			7.1	6.5	6.7	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.8	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	98	100
cM capacity (veh/h)	1636			1458			743	757	786	882	757	1000

Direction, Lane #	EB 1	SB 1
Volume Total	93	13
Volume Left	0	0
Volume Right	0	0
cSH	1700	757
Volume to Capacity	0.05	0.02
Queue Length 95th (m)	0.0	0.4
Control Delay (s)	0.0	9.8
Lane LOS		A
Approach Delay (s)	0.0	9.8
Approach LOS		A

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	28.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	0	30	35	0	65	0	375	25	40	630	0
Future Volume (Veh/h)	40	0	30	35	0	65	0	375	25	40	630	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	44	0	33	38	0	71	0	412	27	44	692	0
Pedestrians		75			65			35			5	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		7			6			3			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								143			151	
pX, platoon unblocked	0.86	0.86	0.85	0.86	0.86	0.79	0.85			0.79		
vC, conflicting volume	1356	1359	802	1338	1346	496	767			504		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	951	954	682	930	938	228	641			239		
tC, single (s)	7.2	6.5	6.2	7.1	7.0	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.5	3.3	2.2			2.2		
p0 queue free %	69	100	91	75	100	88	100			96		
cM capacity (veh/h)	144	189	350	153	160	601	759			997		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	77	109	439	736
Volume Left	44	38	0	44
Volume Right	33	71	27	0
cSH	193	298	1700	997
Volume to Capacity	0.40	0.37	0.26	0.04
Queue Length 95th (m)	13.5	12.3	0.0	1.1
Control Delay (s)	35.6	23.9	0.0	1.1
Lane LOS	E	C		A
Approach Delay (s)	35.6	23.9	0.0	1.1
Approach LOS	E	C		

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	78.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	405	20	25	525
Future Volume (Veh/h)	0	0	405	20	25	525
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	440	22	27	571
Pedestrians	250		10			15
Lane Width (m)	0.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			214
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	1050	496			712	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	924	334			564	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	246	619			930	

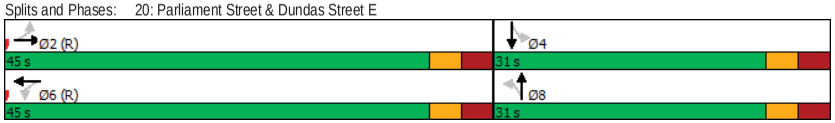
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	293	169	217	381
Volume Left	0	0	27	0
Volume Right	0	22	0	0
cSH	1700	1700	930	1700
Volume to Capacity	0.17	0.10	0.03	0.22
Queue Length 95th (m)	0.0	0.0	0.7	0.0
Control Delay (s)	0.0	0.0	1.4	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.5	
Approach LOS				

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			45.8%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	310	60	330	40	310	65	400
Future Volume (vph)	30	310	60	330	40	310	65	400
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	45.0	45.0	45.0	45.0	31.0	31.0	31.0	31.0
Total Split (%)	59.2%	59.2%	59.2%	59.2%	40.8%	40.8%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	Min	Min	Min	Min
Act Effct Green (s)		41.0		41.0		25.0		25.0
Actuated g/C Ratio		0.54		0.54		0.33		0.33
v/c Ratio		0.25		0.35		0.45		0.61
Control Delay		9.8		12.7		21.3		23.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		9.8		12.7		21.3		23.6
LOS		A		B		C		C
Approach Delay		9.8		12.7		21.3		23.6
Approach LOS		A		B		C		C

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 54 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.61		
Intersection Signal Delay: 17.2	Intersection LOS: B	
Intersection Capacity Utilization 93.3%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 20: Parliament Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	389	505	389	559
v/c Ratio	0.25	0.35	0.45	0.61
Control Delay	9.8	12.7	21.3	23.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.8	12.7	21.3	23.6
Queue Length 50th (m)	13.4	27.2	22.9	34.4
Queue Length 95th (m)	23.7	38.2	31.8	45.8
Internal Link Dist (m)	85.0	103.5	45.0	56.1
Turn Bay Length (m)				
Base Capacity (vph)	1553	1454	922	970
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.35	0.42	0.58

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	310	25	60	330	85	40	310	15	65	400	60
Future Volume (vph)	30	310	25	60	330	85	40	310	15	65	400	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.99			0.97			0.99			0.98	
Flpb, ped/bikes		0.99			0.99			0.99			0.99	
Frt		0.99			0.97			0.99			0.98	
Flt Protected		1.00			0.99			0.99			0.99	
Satd. Flow (prot)		3173			3058			3113			3239	
Flt Permitted		0.89			0.85			0.84			0.84	
Satd. Flow (perm)		2836			2627			2638			2749	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	330	27	64	351	90	43	330	16	69	426	64
RTOR Reduction (vph)	0	7	0	0	23	0	0	4	0	0	13	0
Lane Group Flow (vph)	0	382	0	0	482	0	0	385	0	0	546	0
Confl. Peds. (#/hr)	155		110	110		155	140		160	160		140
Confl. Bikes (#/hr)			10			25						5
Heavy Vehicles (%)	6%	10%	4%	22%	5%	13%	18%	11%	13%	2%	5%	5%
Parking (#/hr)			0						0			0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		40.0			40.0			24.0			24.0	
Effective Green, g (s)		41.0			41.0			25.0			25.0	
Actuated g/C Ratio		0.54			0.54			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1529			1417			867			904	
v/s Ratio Prot												
v/s Ratio Perm		0.13			c0.18			0.15			c0.20	
v/c Ratio		0.25			0.34			0.44			0.60	
Uniform Delay, d1		9.3			9.9			20.0			21.4	
Progression Factor		1.00			1.29			1.00			1.00	
Incremental Delay, d2		0.4			0.6			0.4			1.1	
Delay (s)		9.7			13.4			20.4			22.5	
Level of Service		A			B			C			C	
Approach Delay (s)		9.7			13.4			20.4			22.5	
Approach LOS		A			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.44				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	93.3%	ICU Level of Service	F		
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	380	10	10	450	35	15	10	5	20	10	20
Future Volume (Veh/h)	15	380	10	10	450	35	15	10	5	20	10	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	413	11	11	489	38	16	11	5	22	11	22
Pedestrians		20			5			70			80	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		2			0			6			7	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		127			124							
pX, platoon unblocked				1.00			1.00	1.00	1.00	1.00	1.00	
vC, conflicting volume	607			494			834	1150	287	864	1136	364
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	607			484			826	1142	276	855	1128	364
tC, single (s)	4.1			4.1			7.6	6.7	6.9	7.6	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.3	3.5	4.0	3.4
p0 queue free %	98			99			92	93	99	88	94	96
cM capacity (veh/h)	912			1018			190	157	677	189	174	558

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	222	218	256	282	32	55
Volume Left	16	0	11	0	16	22
Volume Right	0	11	0	38	5	22
cSH	912	1700	1018	1700	198	251
Volume to Capacity	0.02	0.13	0.01	0.17	0.16	0.22
Queue Length 95th (m)	0.4	0.0	0.2	0.0	4.3	6.2
Control Delay (s)	0.8	0.0	0.5	0.0	26.7	23.3
Lane LOS	A		A		D	C
Approach Delay (s)	0.4		0.2		26.7	23.3
Approach LOS					D	C

Intersection Summary						
Average Delay	2.3					
Intersection Capacity Utilization	37.2%	ICU Level of Service	A			
Analysis Period (min)	15					

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	415	10	400	45	0	100	50
Future Volume (vph)	415	10	400	45	0	100	50
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2		6		8		4
Permitted Phases		6		8		4	
Detector Phase	2	6	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	17.0	17.0	17.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	26.0
Total Split (s)	50.0	50.0	50.0	26.0	26.0	26.0	26.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)	5.0		5.0		5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	46.5		46.5		19.5		19.5
Actuated g/C Ratio	0.61		0.61		0.26		0.26
v/c Ratio	0.23		0.41		0.22		0.62
Control Delay	7.4		6.6		12.1		29.1
Queue Delay	0.0		0.3		0.0		0.0
Total Delay	7.4		6.9		12.1		29.1
LOS	A		A		B		C
Approach Delay	7.4		6.9		12.1		29.1
Approach LOS	A		A		B		C

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 11 (14%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 53.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Sackville Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	463	432	73	216
v/c Ratio	0.23	0.41	0.22	0.62
Control Delay	7.4	6.6	12.1	29.1
Queue Delay	0.0	0.3	0.0	0.0
Total Delay	7.4	6.9	12.1	29.1
Queue Length 50th (m)	9.2	30.5	3.2	23.5
Queue Length 95th (m)	33.4	11.3	11.7	41.5
Internal Link Dist (m)	99.8	79.6	36.2	126.8
Turn Bay Length (m)				
Base Capacity (vph)	2007	1066	372	388
Starvation Cap Reductn	0	212	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.51	0.20	0.56

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	415	25	10	400	0	45	0	25	100	50	55
Future Volume (vph)	0	415	25	10	400	0	45	0	25	100	50	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			1.00			0.95			0.98	
Flpb, ped/bikes		1.00			1.00			0.97			0.95	
Frt		0.99			1.00			0.95			0.96	
Flt Protected		1.00			1.00			0.97			0.98	
Satd. Flow (prot)		3230			1736			1558			1571	
Flt Permitted		1.00			0.99			0.75			0.81	
Satd. Flow (perm)		3230			1716			1200			1303	
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)	0	437	26	11	421	0	47	0	26	105	53	58
RTOR Reduction (vph)	0	0	0	0	0	0	0	32	0	0	18	0
Lane Group Flow (vph)	0	463	0	0	432	0	0	41	0	0	198	0
Confl. Peds. (#/hr)	65		85	85		65	65		60	60		65
Confl. Bikes (#/hr)			10			25						
Heavy Vehicles (%)	0%	8%	13%	0%	8%	0%	0%	0%	8%	6%	2%	4%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases				6			8			4		
Actuated Green, G (s)		45.5			45.5			18.5			18.5	
Effective Green, g (s)		46.5			46.5			19.5			19.5	
Actuated g/C Ratio		0.61			0.61			0.26			0.26	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1976			1049			307			334	
v/s Ratio Prot		0.14										
v/s Ratio Perm					c0.25			0.03			c0.15	
v/c Ratio		0.23			0.41			0.13			0.59	
Uniform Delay, d1		6.7			7.7			21.7			24.8	
Progression Factor		0.95			0.61			1.00			1.00	
Incremental Delay, d2		0.3			1.2			0.2			2.8	
Delay (s)		6.6			5.8			21.9			27.6	
Level of Service		A			A			C			C	
Approach Delay (s)		6.6			5.8			21.9			27.6	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.47				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBT	WBL	WBT	Ø4
Lane Configurations				
Traffic Volume (vph)	520	15	410	
Future Volume (vph)	520	15	410	
Turn Type	NA	Perm	NA	
Protected Phases	2		6	4
Permitted Phases		6		
Detector Phase	2	6	6	
Switch Phase				
Minimum Initial (s)	18.0	18.0	18.0	20.0
Minimum Split (s)	23.9	23.9	23.9	23.0
Total Split (s)	53.0	53.0	53.0	23.0
Total Split (%)	69.7%	69.7%	69.7%	30%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	-1.0		-1.0	
Total Lost Time (s)	4.9		4.9	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Min	C-Min	C-Min	None
Act Effct Green (s)	64.8		64.8	
Actuated g/C Ratio	0.85		0.85	
v/c Ratio	0.38		0.31	
Control Delay	4.3		4.6	
Queue Delay	0.0		0.0	
Total Delay	4.3		4.6	
LOS	A		A	
Approach Delay	4.3		4.6	
Approach LOS	A		A	

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 8 (11%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green		
Natural Cycle: 55		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.38		
Intersection Signal Delay: 4.5	Intersection LOS: A	
Intersection Capacity Utilization 53.1%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 23: Regent Park Boulevard & Dundas Street E

Lane Group	EBT	WBT
Lane Group Flow (vph)	563	443
v/c Ratio	0.38	0.31
Control Delay	4.3	4.6
Queue Delay	0.0	0.0
Total Delay	4.3	4.6
Queue Length 50th (m)	9.8	0.0
Queue Length 95th (m)	31.4	44.5
Internal Link Dist (m)	79.6	86.0
Turn Bay Length (m)		
Base Capacity (vph)	1466	1446
Starvation Cap Reductn	19	115
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.39	0.33

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	520	20	15	410	0	0
Future Volume (vph)	520	20	15	410	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.0	3.0	3.5	3.0	3.0
Total Lost time (s)	4.9			4.9		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	0.99			1.00		
Flpb, ped/bikes	1.00			1.00		
Frt	0.99			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1718			1729		
Flt Permitted	1.00			0.98		
Satd. Flow (perm)	1718			1694		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	542	21	16	427	0	0
RTOR Reduction (vph)	1	0	0	0	0	0
Lane Group Flow (vph)	562	0	0	443	0	0
Confl. Peds. (#/hr)		125	125		40	60
Heavy Vehicles (%)	8%	0%	9%	8%	0%	0%
Turn Type	NA		Perm	NA		
Protected Phases	2			6		
Permitted Phases			6			
Actuated Green, G (s)	59.1			59.1		
Effective Green, g (s)	60.1			60.1		
Actuated g/C Ratio	0.79			0.79		
Clearance Time (s)	5.9			5.9		
Vehicle Extension (s)	3.0			3.0		
Lane Grp Cap (vph)	1358			1339		
v/s Ratio Prot	c0.33					
v/s Ratio Perm				0.26		
v/c Ratio	0.41			0.33		
Uniform Delay, d1	2.5			2.3		
Progression Factor	0.81			1.00		
Incremental Delay, d2	0.9			0.7		
Delay (s)	2.9			2.9		
Level of Service	A			A		
Approach Delay (s)	2.9			2.9	0.0	
Approach LOS	A			A	A	

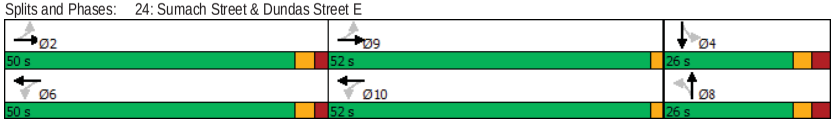
Intersection Summary				
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	7.9
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	15	460	30	400	15	30	55	0				
Future Volume (vph)	15	460	30	400	15	30	55	0				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)					26.0	26.0	26.0	26.0	21.0	21.0	52.0	52.0
Total Split (s)					26.0	26.0	26.0	26.0	50.0	50.0	52.0	52.0
Total Split (%)					20.3%	20.3%	20.3%	20.3%	39%	39%	41%	41%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)						-1.0		-1.0				
Total Lost Time (s)						5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	None	None	Min	Min	None	None
Act Effct Green (s)		74.4		74.4		25.7		25.7				
Actuated g/C Ratio		0.78		0.78		0.27		0.27				
v/c Ratio		0.45		0.48		0.28		0.24				
Control Delay		7.0		7.2		29.4		26.6				
Queue Delay		1.6		0.4		0.0		0.0				
Total Delay		8.6		7.6		29.4		26.6				
LOS		A		A		C		C				
Approach Delay		8.6		7.6		29.4		26.6				
Approach LOS		A		A		C		C				

Intersection Summary			
Cycle Length: 128			
Actuated Cycle Length: 95.2			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 24: Sumach Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	565	571	109	71
v/c Ratio	0.45	0.48	0.28	0.24
Control Delay	7.0	7.2	29.4	26.6
Queue Delay	1.6	0.4	0.0	0.0
Total Delay	8.6	7.6	29.4	26.6
Queue Length 50th (m)	43.2	43.8	12.1	6.5
Queue Length 95th (m)	62.0	64.3	31.5	21.4
Internal Link Dist (m)	86.0	75.5	76.2	121.5
Turn Bay Length (m)				
Base Capacity (vph)	1260	1196	384	290
Starvation Cap Reductn	498	228	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.59	0.28	0.24

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	460	45	30	400	95	15	30	55	55	0	10
Future Volume (vph)	15	460	45	30	400	95	15	30	55	55	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.96			0.96			0.92			0.95	
Flpb, ped/bikes		1.00			0.99			0.96			0.92	
Frt		0.99			0.98			0.93			0.98	
Flt Protected		1.00			1.00			0.99			0.96	
Satd. Flow (prot)		1654			1617			1422			1527	
Flt Permitted		0.98			0.95			0.95			0.64	
Satd. Flow (perm)		1626			1545			1359			1023	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	500	49	33	435	103	16	33	60	60	0	11
RTOR Reduction (vph)	0	2	0	0	6	0	0	35	0	0	29	0
Lane Group Flow (vph)	0	563	0	0	565	0	0	74	0	0	42	0
Confl. Peds. (#/hr)	70		135	135		70	120		50	50		120
Confl. Bikes (#/hr)			5			30						
Heavy Vehicles (%)	13%	7%	14%	9%	8%	3%	11%	3%	10%	0%	3%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		74.7			74.7			13.9			13.9	
Effective Green, g (s)		75.7			75.7			14.9			14.9	
Actuated g/C Ratio		0.78			0.78			0.15			0.15	
Clearance Time (s)								6.0			6.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		1274			1210			209			157	
v/s Ratio Prot												
v/s Ratio Perm		0.35			c0.37			c0.05			0.04	
v/c Ratio		0.44			0.47			0.36			0.27	
Uniform Delay, d1		3.5			3.6			36.6			36.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.3			1.0			0.9	
Delay (s)		3.7			3.9			37.6			37.0	
Level of Service		A			A			D			D	
Approach Delay (s)		3.7			3.9			37.6			37.0	
Approach LOS		A			A			D			D	

Intersection Summary					
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio	0.46				
Actuated Cycle Length (s)	96.6	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	65.8%	ICU Level of Service		C	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	555	15	5	525	0	0	0	0	10	0	0
Future Volume (Veh/h)	0	555	15	5	525	0	0	0	0	10	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	617	17	6	583	0	0	0	0	11	0	0
Pedestrians		5			5			115			45	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			0			4	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		99			98							
pX, platoon unblocked	0.83			0.90			0.88	0.88	0.90	0.88	0.88	0.83
vC, conflicting volume	628			749			1340	1380	746	1270	1389	633
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	447			670			1072	1118	666	992	1128	453
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	94	100	100
cM capacity (veh/h)	894			841			168	174	417	183	172	484

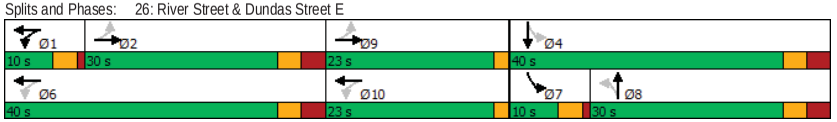
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	634	589	11
Volume Left	0	6	11
Volume Right	17	0	0
cSH	894	841	183
Volume to Capacity	0.00	0.01	0.06
Queue Length 95th (m)	0.0	0.2	1.4
Control Delay (s)	0.0	0.2	25.9
Lane LOS		A	D
Approach Delay (s)	0.0	0.2	25.9
Approach LOS			D

Intersection Summary			
Average Delay			0.3
Intersection Capacity Utilization			46.4%
Analysis Period (min)			15
		ICU Level of Service	
			A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	15	490	110	325	75	325	155	445				
Future Volume (vph)	15	490	110	325	75	325	155	445				
Turn Type	Perm	NA	custom	NA	Perm	NA	pm+pt	NA				
Protected Phases		2 9	1	1 6 10		8	7	4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	1	1 6	8	8	7	4				
Switch Phase												
Minimum Initial (s)			6.0		21.0	21.0	5.0	21.0	21.0	21.0	5.0	5.0
Minimum Split (s)			10.0		27.0	27.0	9.0	27.0	27.0	27.0	23.0	23.0
Total Split (s)			10.0		30.0	30.0	10.0	40.0	30.0	40.0	23.0	23.0
Total Split (%)			9.7%		29.1%	29.1%	9.7%	38.8%	29%	39%	22%	22%
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)			1.0		3.0	3.0	1.0	3.0	3.0	3.0	0.0	0.0
Lost Time Adjust (s)					-1.0	-1.0	-1.0	-1.0				
Total Lost Time (s)					5.0	5.0	3.0	5.0				
Lead/Lag			Lead		Lag	Lag	Lead		Lag			
Lead-Lag Optimize?			Yes		Yes	Yes	Yes		Yes			
Recall Mode			None		Min	Min	None	Min	Min	Min	None	None
Act Effct Green (s)		29.0		41.2	25.3	25.3	37.4	35.4				
Actuated g/C Ratio		0.34		0.49	0.30	0.30	0.44	0.42				
v/c Ratio		1.05		0.86	0.70	0.99	0.75	0.92				
Control Delay		78.1		33.0	62.8	68.4	41.3	45.6				
Queue Delay		0.6		0.0	0.0	0.0	0.0	0.0				
Total Delay		78.7		33.0	62.8	68.4	41.3	45.6				
LOS		E		C	E	E	D	D				
Approach Delay		78.7		33.0		67.6		44.7				
Approach LOS		E		C		E		D				

Intersection Summary			
Cycle Length: 103			
Actuated Cycle Length: 84.6			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 55.8		Intersection LOS: E	
Intersection Capacity Utilization 123.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 26: River Street & Dundas Street E



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	601	516	80	490	165	611
v/c Ratio	1.05	0.86	0.70	0.99	0.75	0.92
Control Delay	78.1	33.0	62.8	68.4	41.3	45.6
Queue Delay	0.6	0.0	0.0	0.0	0.0	0.0
Total Delay	78.7	33.0	62.8	68.4	41.3	45.6
Queue Length 50th (m)	~108.4	56.3	10.5	69.6	14.4	80.2
Queue Length 95th (m)	141.5	82.9	#43.3	#179.1	#57.2	#206.7
Internal Link Dist (m)	73.4	80.5		131.0		118.9
Turn Bay Length (m)			20.0		25.0	
Base Capacity (vph)	575	600	115	497	220	664
Starvation Cap Reductn	1	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	1.05	0.86	0.70	0.99	0.75	0.92

Intersection Summary

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

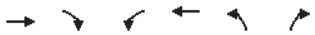
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	490	60	110	325	50	75	325	135	155	445	130
Future Volume (vph)	15	490	60	110	325	50	75	325	135	155	445	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			3.0		5.0	5.0		3.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.99		1.00	0.97		1.00	0.96	
Flpb, ped/bikes		1.00			0.99		0.96	1.00		1.00	1.00	
Frt		0.99			0.99		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1708		1480	1630		1601	1577	
Flt Permitted		0.98			0.65		0.24	1.00		0.14	1.00	
Satd. Flow (perm)		1667			1127		382	1630		239	1577	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	16	521	64	117	346	53	80	346	144	165	473	138
RTOR Reduction (vph)	0	5	0	0	5	0	0	13	0	0	9	0
Lane Group Flow (vph)	0	596	0	0	511	0	80	477	0	165	602	0
Confl. Peds. (#/hr)	65		90	90		65	65		45	45		65
Confl. Bikes (#/hr)			5			30						15
Heavy Vehicles (%)	0%	7%	4%	3%	7%	0%	9%	9%	1%	5%	12%	7%
Turn Type	Perm	NA		custom	NA		Perm	NA		pm+pt	NA	
Protected Phases		2 9		1	1 6 10			8		7	4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		33.6			43.7		24.2	24.2		34.3	34.3	
Effective Green, g (s)		34.6			39.7		25.2	25.2		35.3	35.3	
Actuated g/C Ratio		0.40			0.46		0.29	0.29		0.41	0.41	
Clearance Time (s)							6.0	6.0		4.0	6.0	
Vehicle Extension (s)							3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		670			568		111	477		210	647	
v/s Ratio Prot					c0.07			0.29		0.06	c0.38	
v/s Ratio Perm		c0.36			c0.34		0.21			0.26		
v/c Ratio		0.89			0.90		0.72	1.00		0.79	0.93	
Uniform Delay, d1		23.9			21.3		27.2	30.4		19.7	24.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		13.7			16.9		20.4	40.7		17.4	20.2	
Delay (s)		37.7			38.2		47.7	71.0		37.1	44.3	
Level of Service		D			D		D	E		D	D	
Approach Delay (s)		37.7			38.2			67.8			42.8	
Approach LOS		D			D			E			D	

Intersection Summary

HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	123.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	350	25	5	825	0	0
Future Volume (Veh/h)	350	25	5	825	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	389	28	6	917	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	88			164		
pX, platoon unblocked			0.97		0.89	0.97
vC, conflicting volume			417		874	208
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			348		494	134
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1190		454	873

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	259	158	312	611
Volume Left	0	0	6	0
Volume Right	0	28	0	0
cSH	1700	1700	1190	1700
Volume to Capacity	0.15	0.09	0.01	0.36
Queue Length 95th (m)	0.0	0.0	0.1	0.0
Control Delay (s)	0.0	0.0	0.2	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.1	
Approach LOS				

Intersection Summary				
Average Delay			0.0	
Intersection Capacity Utilization			29.6%	ICU Level of Service
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	0	0	0	0	30
Future Volume (Veh/h)	20	0	0	0	0	30
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	0	0	0	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	33	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	33	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	986	1091			1636	

Direction, Lane #	WB 1	SB 1
Volume Total	22	33
Volume Left	22	0
Volume Right	0	0
cSH	986	1636
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.5	0.0
Control Delay (s)	8.7	0.0
Lane LOS	A	
Approach Delay (s)	8.7	0.0
Approach LOS	A	

Intersection Summary				
Average Delay			3.5	
Intersection Capacity Utilization			13.3%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	0	0	0	0	60	0	115	25	0	0	0
Future Volume (Veh/h)	35	0	0	0	0	60	0	115	25	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	0	0	0	0	67	0	128	28	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											57	
pX, platoon unblocked												
vC, conflicting volume	209	156	0	142	142	142	0			156		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	209	156	0	142	142	142	0			156		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	100	100	100	93	100			100		
cM capacity (veh/h)	697	740	1091	832	753	911	1636			1436		

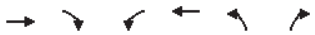
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	39	67	156
Volume Left	39	0	0
Volume Right	0	67	28
cSH	697	911	1636
Volume to Capacity	0.06	0.07	0.00
Queue Length 95th (m)	1.3	1.8	0.0
Control Delay (s)	10.5	9.3	0.0
Lane LOS	B	A	
Approach Delay (s)	10.5	9.3	0.0
Approach LOS	B	A	

Intersection Summary					
Average Delay		3.9			
Intersection Capacity Utilization	22.8%	ICU Level of Service		A	
Analysis Period (min)		15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	65	0	480	605	10
Future Volume (Veh/h)	0	65	0	480	605	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	72	0	533	672	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				244	49	
pX, platoon unblocked	0.91	0.85	0.85			
vC, conflicting volume	1210	678	683			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	893	531	537			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	85	100			
cM capacity (veh/h)	285	469	883			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	72	533	683
Volume Left	0	0	0
Volume Right	72	0	11
cSH	469	1700	1700
Volume to Capacity	0.15	0.31	0.40
Queue Length 95th (m)	4.1	0.0	0.0
Control Delay (s)	14.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.1	0.0	0.0
Approach LOS	B		

Intersection Summary					
Average Delay		0.8			
Intersection Capacity Utilization	43.1%	ICU Level of Service		A	
Analysis Period (min)		15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	350	10	0	890	0	10
Future Volume (Veh/h)	350	10	0	890	0	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	389	11	0	989	0	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	169			83		
pX, platoon unblocked					0.85	
vC, conflicting volume			400		889	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			400		524	200
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1170		416	814

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	259	141	494	494	11
Volume Left	0	0	0	0	0
Volume Right	0	11	0	0	11
cSH	1700	1700	1700	1700	814
Volume to Capacity	0.15	0.08	0.29	0.29	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	0.0	0.0	9.5
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.5
Approach LOS					A

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	27.9%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	45	95	0	10	0
Future Volume (Veh/h)	10	45	95	0	10	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	50	106	0	11	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	106				178	106
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	106				178	106
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1498				810	954

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	61	106	11
Volume Left	11	0	11
Volume Right	0	0	0
cSH	1498	1700	810
Volume to Capacity	0.01	0.06	0.01
Queue Length 95th (m)	0.2	0.0	0.3
Control Delay (s)	1.4	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	1.4	0.0	9.5
Approach LOS			A

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	19.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	10	525	590	75
Future Volume (Veh/h)	0	0	10	525	590	75
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	11	590	663	84
Pedestrians	150			5	10	
Lane Width (m)	0.0			3.5	3.5	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				39		
pX, platoon unblocked						
vC, conflicting volume	1182	528	897			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1182	528	897			
tC, single (s)	6.8	6.9	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	98			
cM capacity (veh/h)	181	498	699			

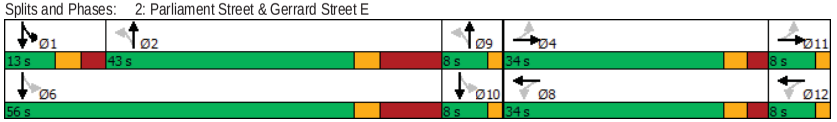
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	208	393	442	305
Volume Left	11	0	0	0
Volume Right	0	0	0	84
cSH	699	1700	1700	1700
Volume to Capacity	0.02	0.23	0.26	0.18
Queue Length 95th (m)	0.4	0.0	0.0	0.0
Control Delay (s)	0.7	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.2		0.0	
Approach LOS				

Intersection Summary				
Average Delay			0.1	
Intersection Capacity Utilization			33.2%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø4	Ø6	Ø8
Lane Configurations												
Traffic Volume (vph)	30	575	45	265	80	365	245	275				
Future Volume (vph)	30	575	45	265	80	365	245	275				
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA				
Protected Phases		4 11		8 12		2 9	1	1 6 10	2	4	6	8
Permitted Phases	4 11		8 12		2 9		6 10					
Detector Phase	4	4	8	8	2	2	1	1 6				
Switch Phase												
Minimum Initial (s)							6.0		22.0	21.0	22.0	21.0
Minimum Split (s)							12.5		33.2	31.8	33.2	31.8
Total Split (s)							13.0		43.0	34.0	56.0	34.0
Total Split (%)							12.3%		41%	32%	53%	32%
Yellow Time (s)							3.3		3.3	3.0	3.3	3.0
All-Red Time (s)							3.2		7.9	2.8	7.9	2.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead		Lag			
Lead-Lag Optimize?							Yes		Yes			
Recall Mode							None		Min	Min	Min	Min
Act Effct Green (s)		33.3		33.3		30.1		54.2				
Actuated g/C Ratio		0.34		0.34		0.31		0.55				
v/c Ratio		0.66		0.52		0.82		0.53				
Control Delay		30.7		24.2		41.0		14.3				
Queue Delay		0.0		0.0		0.0		0.0				
Total Delay		30.7		24.2		41.0		14.3				
LOS		C		C		D		B				
Approach Delay		30.7		24.2		41.0		14.3				
Approach LOS		C		C		D		B				

Intersection Summary			
Cycle Length: 106			
Actuated Cycle Length: 98			
Natural Cycle: 95			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 27.9		Intersection LOS: C	
Intersection Capacity Utilization 101.1%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Parliament Street & Gerrard Street E



Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	8.0	8.0	8.0	8.0
Total Split (%)	8%	8%	8%	8%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	701	463	607	609
v/c Ratio	0.66	0.52	0.82	0.53
Control Delay	30.7	24.2	41.0	14.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.7	24.2	41.0	14.3
Queue Length 50th (m)	61.7	32.6	55.9	32.2
Queue Length 95th (m)	81.4	47.9	#84.6	44.3
Internal Link Dist (m)	33.0	65.6	119.2	15.0
Turn Bay Length (m)				
Base Capacity (vph)	1089	881	814	1190
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.53	0.75	0.51

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	575	75	45	265	140	80	365	145	245	275	70
Future Volume (vph)	30	575	75	45	265	140	80	365	145	245	275	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.8			4.8			10.2			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.95			0.92			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			0.97	
Frt		0.98			0.95			0.96			0.98	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3398			3107			3053			3174	
Flt Permitted		0.91			0.80			0.75			0.58	
Satd. Flow (perm)		3116			2487			2307			1886	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	593	77	46	273	144	82	376	149	253	284	72
RTOR Reduction (vph)	0	9	0	0	46	0	0	23	0	0	11	0
Lane Group Flow (vph)	0	692	0	0	417	0	0	584	0	0	598	0
Confl. Peds. (#/hr)	130		120	120		130	125		235	235		125
Confl. Bikes (#/hr)			25			10			15			5
Heavy Vehicles (%)	10%	0%	5%	0%	0%	10%	4%	2%	2%	6%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4 11			8 12			2 9		1	1 6 10	
Permitted Phases	4 11			8 12			2 9			6 10		
Actuated Green, G (s)		36.6			36.6			44.9			58.0	
Effective Green, g (s)		37.6			37.6			45.9			48.8	
Actuated g/C Ratio		0.38			0.38			0.47			0.49	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1188			948			1073			1032	
v/s Ratio Prot											c0.04	
v/s Ratio Perm		c0.22			0.17			c0.25			c0.24	
v/c Ratio		0.58			0.44			0.54			0.58	
Uniform Delay, d1		24.3			22.7			18.9			17.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.3			0.6			0.8	
Delay (s)		25.0			23.0			19.4			18.4	
Level of Service		C			C			B			B	
Approach Delay (s)		25.0			23.0			19.4			18.4	
Approach LOS		C			C			B			B	

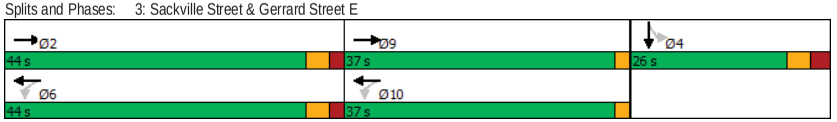
Intersection Summary				
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	22.5	
Intersection Capacity Utilization	101.1%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	950	105	565	40				
Future Volume (vph)	950	105	565	40				
Turn Type	NA	Perm	NA	NA				
Protected Phases	2 9		6 10	4	2	6	9	10
Permitted Phases		6 10						
Detector Phase	2	6	6	4				
Switch Phase								
Minimum Initial (s)				20.0	16.0	16.0	5.0	5.0
Minimum Split (s)				25.7	21.0	21.0	37.0	37.0
Total Split (s)				26.0	44.0	44.0	37.0	37.0
Total Split (%)				24.3%	41%	41%	35%	35%
Yellow Time (s)				3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				2.7	2.0	2.0	0.0	0.0
Lost Time Adjust (s)				-1.0				
Total Lost Time (s)				4.7				
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode				Min	Min	Min	None	None
Act Effct Green (s)	40.2		40.2	21.7				
Actuated g/C Ratio	0.57		0.57	0.31				
v/c Ratio	0.56		0.55	0.42				
Control Delay	10.1		10.8	25.4				
Queue Delay	0.0		0.0	0.0				
Total Delay	10.1		10.8	25.4				
LOS	B		B	C				
Approach Delay	10.1		10.8	25.4				
Approach LOS	B		B	C				

Intersection Summary			
Cycle Length: 107			
Actuated Cycle Length: 70.8			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 76.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Sackville Street & Gerrard Street E



Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	1073	698	209
v/c Ratio	0.56	0.55	0.42
Control Delay	10.1	10.8	25.4
Queue Delay	0.0	0.0	0.0
Total Delay	10.1	10.8	25.4
Queue Length 50th (m)	40.5	26.7	22.4
Queue Length 95th (m)	54.3	39.1	48.0
Internal Link Dist (m)	57.2	47.8	15.3
Turn Bay Length (m)			
Base Capacity (vph)	2161	1438	507
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.50	0.49	0.41

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	950	80	105	565	0	0	0	0	135	40	25
Future Volume (vph)	0	950	80	105	565	0	0	0	0	135	40	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0						4.7	
Lane Util. Factor		0.95			0.95						1.00	
Frpb, ped/bikes		0.98			1.00						0.99	
Flpb, ped/bikes		1.00			1.00						0.96	
Frt		0.99			1.00						0.98	
Flt Protected		1.00			0.99						0.97	
Satd. Flow (prot)		3380			3358						1675	
Flt Permitted		1.00			0.66						0.97	
Satd. Flow (perm)		3380			2243						1675	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	990	83	109	589	0	0	0	0	141	42	26
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	1065	0	0	698	0	0	0	0	0	205	0
Confl. Peds. (#/hr)	85		70	70		85	90		60	60		90
Confl. Bikes (#/hr)			60			15			5			10
Heavy Vehicles (%)	0%	3%	0%	0%	6%	0%	0%	0%	5%	1%	0%	0%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2 9			6 10						4	
Permitted Phases				6 10						4		
Actuated Green, G (s)		42.7			42.7						20.6	
Effective Green, g (s)		43.7			43.7						21.6	
Actuated g/C Ratio		0.62			0.62						0.30	
Clearance Time (s)											5.7	
Vehicle Extension (s)											3.0	
Lane Grp Cap (vph)		2080			1380						509	
v/s Ratio Prot		c0.32										
v/s Ratio Perm					0.31						0.12	
v/c Ratio		0.51			0.51						0.40	
Uniform Delay, d1		7.7			7.6						19.6	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.2			0.3						0.5	
Delay (s)		7.9			7.9						20.1	
Level of Service		A			A						C	
Approach Delay (s)		7.9			7.9			0.0			20.1	
Approach LOS		A			A			A			C	

Intersection Summary					
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio	0.49				
Actuated Cycle Length (s)	71.0	Sum of lost time (s)		9.7	
Intersection Capacity Utilization	76.9%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	1075	665	5	15	5
Future Volume (Veh/h)	10	1075	665	5	15	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	1265	782	6	18	6
Pedestrians		5			65	
Lane Width (m)		3.5			3.0	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		72	141			
pX, platoon unblocked	0.95				0.85	0.95
vC, conflicting volume	853				1506	464
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	750				1004	342
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				91	99
cM capacity (veh/h)	788				193	596

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	434	843	521	267	24
Volume Left	12	0	0	0	18
Volume Right	0	0	0	6	6
cSH	788	1700	1700	1700	232
Volume to Capacity	0.02	0.50	0.31	0.16	0.10
Queue Length 95th (m)	0.4	0.0	0.0	0.0	2.6
Control Delay (s)	0.5	0.0	0.0	0.0	22.3
Lane LOS	A				C
Approach Delay (s)	0.2		0.0		22.3
Approach LOS					C

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A	
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1085	665	5	5	5
Future Volume (Veh/h)	5	1085	665	5	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	6	1247	764	6	6	6
Pedestrians					60	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.1	
Percent Blockage					5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		145	68			
pX, platoon unblocked	0.93				0.88	0.93
vC, conflicting volume	830				1462	445
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	671				904	258
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	99
cM capacity (veh/h)	826				234	665

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	422	831	509	261	12
Volume Left	6	0	0	0	6
Volume Right	0	0	0	6	6
cSH	826	1700	1700	1700	346
Volume to Capacity	0.01	0.49	0.30	0.15	0.03
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.8
Control Delay (s)	0.2	0.0	0.0	0.0	15.8
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		15.8
Approach LOS					C

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization	43.5%	ICU Level of Service	A	
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	NBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	10	1080	600	25				
Future Volume (vph)	10	1080	600	25				
Turn Type	Perm	NA	NA	NA				
Protected Phases		2 9	6 10	8	2	6	9	10
Permitted Phases	2 9							
Detector Phase	2 9	2 9	6 10	8				
Switch Phase								
Minimum Initial (s)				15.0	11.0	11.0	5.0	5.0
Minimum Split (s)				25.4	26.2	26.2	72.0	72.0
Total Split (s)				27.0	43.0	43.0	72.0	72.0
Total Split (%)				19.0%	30%	30%	51%	51%
Yellow Time (s)				3.0	3.0	3.0	2.0	2.0
All-Red Time (s)				7.4	7.2	7.2	0.0	0.0
Lost Time Adjust (s)				-1.0				
Total Lost Time (s)				9.4				
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode				None	Min	Min	None	None
Act Effct Green (s)		56.2	56.2	17.8				
Actuated g/C Ratio		0.60	0.60	0.19				
v/c Ratio		0.56	0.36	0.68				
Control Delay		11.8	9.1	44.0				
Queue Delay		0.0	0.0	0.0				
Total Delay		11.9	9.1	44.0				
LOS		B	A	D				
Approach Delay		11.9	9.1	44.0				
Approach LOS		B	A	D				

Intersection Summary			
Cycle Length: 142			
Actuated Cycle Length: 92.9			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 72.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Sumach Street & Gerrard Street E

Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	1123	707	211
v/c Ratio	0.56	0.36	0.68
Control Delay	11.8	9.1	44.0
Queue Delay	0.0	0.0	0.0
Total Delay	11.9	9.1	44.0
Queue Length 50th (m)	57.1	28.8	33.1
Queue Length 95th (m)	72.2	38.4	#67.5
Internal Link Dist (m)	44.0	75.7	30.7
Turn Bay Length (m)			
Base Capacity (vph)	3209	3036	311
Starvation Cap Reductn	258	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.38	0.23	0.68

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1080	0	0	600	85	70	25	110	0	0	0
Future Volume (vph)	10	1080	0	0	600	85	70	25	110	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		9.2			9.2			9.4				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			0.96			0.96				
Flpb, ped/bikes		1.00			1.00			0.95				
Frt		1.00			0.98			0.93				
Flt Protected		1.00			1.00			0.98				
Satd. Flow (prot)		3496			3257			1557				
Flt Permitted		0.95			1.00			0.98				
Satd. Flow (perm)		3311			3257			1557				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1113	0	0	619	88	72	26	113	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	27	0	0	0	0
Lane Group Flow (vph)	0	1123	0	0	698	0	0	184	0	0	0	0
Confl. Peds. (#/hr)	95		95	95		95	80		35	35		80
Confl. Bikes (#/hr)			75			35			5			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2 9			6 10			8				
Permitted Phases	2 9						8					
Actuated Green, G (s)		63.4			63.4			16.8				
Effective Green, g (s)		64.4			64.4			17.8				
Actuated g/C Ratio		0.70			0.70			0.19				
Clearance Time (s)								10.4				
Vehicle Extension (s)								3.0				
Lane Grp Cap (vph)		2302			2265			299				
v/s Ratio Prot					0.21							
v/s Ratio Perm		c0.34						0.12				
v/c Ratio		0.49			0.31			0.62				
Uniform Delay, d1		6.5			5.5			34.3				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.2			0.1			3.8				
Delay (s)		6.7			5.5			38.0				
Level of Service		A			A			D				
Approach Delay (s)		6.7			5.5			38.0			0.0	
Approach LOS		A			A			D			A	

Intersection Summary				
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	19.6	
Intersection Capacity Utilization	72.6%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1170	20	0	675	0	0	0	0	15	0	10
Future Volume (Veh/h)	0	1170	20	0	675	0	0	0	0	15	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1300	22	0	750	0	0	0	0	17	0	11
Pedestrians											65	
Lane Width (m)											3.0	
Walking Speed (m/s)											1.1	
Percent Blockage											5	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		100			91							
pX, platoon unblocked	0.93			0.85			0.89	0.89	0.85	0.89	0.89	0.93
vC, conflicting volume	815			1322			1697	2126	661	1465	2137	440
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	663			1033			1198	1682	258	936	1695	262
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	100			100			100	100	100	91	100	98
cM capacity (veh/h)	831			581			120	80	637	181	79	639

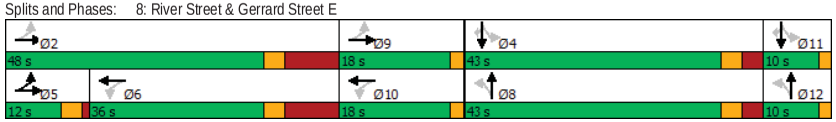
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	867	455	375	375	28
Volume Left	0	0	0	0	17
Volume Right	0	22	0	0	11
cSH	1700	1700	1700	1700	252
Volume to Capacity	0.51	0.27	0.22	0.22	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	2.8
Control Delay (s)	0.0	0.0	0.0	0.0	21.1
Lane LOS					C
Approach Delay (s)	0.0		0.0		21.1
Approach LOS					C

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	43.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø2	Ø4	Ø6
Lane Configurations												
Traffic Volume (vph)	220	855	85	380	85	340	165	465	210			
Future Volume (vph)	220	855	85	380	85	340	165	465	210			
Turn Type	custom	NA	Perm	NA	Perm	NA	Perm	NA	Perm			
Protected Phases	5	5 2 9		6 10		8 12		4 11		2	4	6
Permitted Phases	2 9		6 10		8 12		4 11		4 11			
Detector Phase	5	5 2	6	6	8	8	4	4	4			
Switch Phase												
Minimum Initial (s)	6.0									23.0	19.0	23.0
Minimum Split (s)	10.0									33.8	30.0	33.8
Total Split (s)	12.0									48.0	43.0	36.0
Total Split (%)	10.1%									40%	36%	30%
Yellow Time (s)	3.0									3.0	3.0	3.0
All-Red Time (s)	1.0									7.8	3.0	7.8
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag	Lead											Lag
Lead-Lag Optimize?	Yes											Yes
Recall Mode	None									Min	Min	Min
Act Effct Green (s)		55.6		36.5	39.0	39.0	39.0	39.0	39.0			
Actuated g/C Ratio		0.54		0.36	0.38	0.38	0.38	0.38	0.38			
v/c Ratio		0.93		0.94	0.46	0.77	1.00	0.69	0.32			
Control Delay		33.1		54.2	35.4	36.8	104.7	33.8	4.5			
Queue Delay		24.4		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		57.5		54.2	35.4	36.8	104.7	33.8	4.5			
LOS		E		D	D	D	F	C	A			
Approach Delay		57.5		54.2		36.6		40.4				
Approach LOS		E		D		D		D				

Intersection Summary	
Cycle Length: 119	
Actuated Cycle Length: 102.7	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 117.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 8: River Street & Gerrard Street E



Lane Group	Ø8	Ø9	Ø10	Ø11	Ø12
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Turn Type					
Protected Phases	8	9	10	11	12
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	19.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	18.0	18.0	10.0	10.0
Total Split (s)	43.0	18.0	18.0	10.0	10.0
Total Split (%)	36%	15%	15%	8%	8%
Yellow Time (s)	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	3.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	None	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1235	594	89	521	172	484	219
v/c Ratio	0.93	0.94	0.46	0.77	1.00	0.69	0.32
Control Delay	33.1	54.2	35.4	36.8	104.7	33.8	4.5
Queue Delay	24.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	54.2	35.4	36.8	104.7	33.8	4.5
Queue Length 50th (m)	85.6	56.1	14.8	96.9	~41.0	89.8	0.0
Queue Length 95th (m)	#155.1	#101.1	31.1	138.5	#82.6	126.1	14.6
Internal Link Dist (m)	67.0	81.6		27.9		61.7	
Turn Bay Length (m)			30.0		30.0		
Base Capacity (vph)	1334	635	200	697	178	730	690
Starvation Cap Reductn	155	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	1.05	0.94	0.45	0.75	0.97	0.66	0.32

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	855	110	85	380	105	85	340	160	165	465	210
Future Volume (vph)	220	855	110	85	380	105	85	340	160	165	465	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		3.0			9.8		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			0.98		1.00	0.98		1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.98	1.00	1.00
Frt		0.99			0.97		1.00	0.95		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3354			3272		1625	1742		1643	1860	1424
Flt Permitted		0.67			0.53		0.30	1.00		0.26	1.00	1.00
Satd. Flow (perm)		2277			1745		512	1742		456	1860	1424
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	229	891	115	89	396	109	89	354	167	172	484	219
RTOR Reduction (vph)	0	8	0	0	15	0	0	14	0	0	0	126
Lane Group Flow (vph)	0	1227	0	0	579	0	89	507	0	172	484	93
Confl. Peds. (#/hr)	40		80	80		40	15		40	40		15
Confl. Bikes (#/hr)			35			15			15			10
Heavy Vehicles (%)	3%	2%	3%	0%	4%	0%	3%	0%	1%	1%	1%	2%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	5 2 9			6 10			8 12			4 11	
Permitted Phases	2 9			6 10			8 12			4 11		4 11
Actuated Green, G (s)		57.4			45.3		43.6	43.6		43.6	43.6	43.6
Effective Green, g (s)		48.6			46.3		44.6	44.6		44.6	44.6	44.6
Actuated g/C Ratio		0.46			0.44		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		1147			769		217	739		193	790	604
v/s Ratio Prot		c0.09						0.29			0.26	
v/s Ratio Perm		c0.40			c0.33		0.17			c0.38		0.07
v/c Ratio		1.07			0.75		0.41	0.69		0.89	0.61	0.15
Uniform Delay, d1		28.2			24.6		21.0	24.5		28.0	23.5	18.6
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		47.5			4.2		1.3	2.7		36.2	1.4	0.1
Delay (s)		75.7			28.8		22.3	27.2		64.1	24.9	18.7
Level of Service		E			C		C	C		E	C	B
Approach Delay (s)		75.7			28.8			26.5			31.1	
Approach LOS		E			C			C			C	

Intersection Summary

HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	117.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	40	25	0	0	0	0	0	45	125	55
Future Volume (Veh/h)	0	0	40	25	0	0	0	0	0	45	125	55
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	47	29	0	0	0	0	0	53	147	65
Pedestrians		60			35			5			15	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		5			3			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											58	
pX, platoon unblocked												
vC, conflicting volume	360	380	244	372	413	50	272			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	360	380	244	372	413	50	272			35		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	94	100	100	100			97		
cM capacity (veh/h)	511	492	757	488	472	979	1234			1540		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	47	29	265
Volume Left	0	29	53
Volume Right	47	0	65
cSH	757	488	1540
Volume to Capacity	0.06	0.06	0.03
Queue Length 95th (m)	1.5	1.4	0.8
Control Delay (s)	10.1	12.8	1.7
Lane LOS	B	B	A
Approach Delay (s)	10.1	12.8	1.7
Approach LOS	B	B	

Intersection Summary					
Average Delay		3.8			
Intersection Capacity Utilization	37.0%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	70	520	30	15	380
Future Volume (Veh/h)	45	70	520	30	15	380
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	53	82	612	35	18	447
Pedestrians	220		5			55
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	17		0			5
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			151			143
pX, platoon unblocked	0.92	0.92			0.92	
vC, conflicting volume	1114	598			867	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	943	381			674	
tC, single (s)	6.8	6.9			4.3	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	73	82			97	
cM capacity (veh/h)	196	453			649	

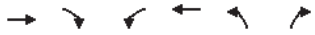
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	135	408	239	167	298
Volume Left	53	0	0	18	0
Volume Right	82	0	35	0	0
cSH	299	1700	1700	649	1700
Volume to Capacity	0.45	0.24	0.14	0.03	0.18
Queue Length 95th (m)	17.0	0.0	0.0	0.6	0.0
Control Delay (s)	26.6	0.0	0.0	1.4	0.0
Lane LOS	D			A	
Approach Delay (s)	26.6	0.0		0.5	
Approach LOS	D				

Intersection Summary					
Average Delay		3.1			
Intersection Capacity Utilization	40.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Traffic Volume (veh/h)	0	50	65	0	10	45
Future Volume (Veh/h)	0	50	65	0	10	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	54	70	0	11	48
Pedestrians		25	10		40	
Lane Width (m)		3.5	3.5		3.0	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		2	1		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	110				174	135
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	110				174	135
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	94
cM capacity (veh/h)	1448				789	872

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	54	70	59
Volume Left	0	0	11
Volume Right	0	0	48
cSH	1700	1700	855
Volume to Capacity	0.03	0.04	0.07
Queue Length 95th (m)	0.0	0.0	1.7
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

Intersection Summary				
Average Delay		3.1		
Intersection Capacity Utilization		27.2%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	Y	
Traffic Volume (veh/h)	60	0	0	50	15	45
Future Volume (Veh/h)	60	0	0	50	15	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	72	0	0	60	18	54
Pedestrians	15			15	40	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.1			1.1	1.1	
Percent Blockage	1			1	3	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			112		187	127
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			112		187	127
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	94
cM capacity (veh/h)			1445		772	889

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	72	60	72
Volume Left	0	0	18
Volume Right	0	0	54
cSH	1700	1700	856
Volume to Capacity	0.04	0.04	0.08
Queue Length 95th (m)	0.0	0.0	2.1
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary				
Average Delay		3.4		
Intersection Capacity Utilization		27.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	80	15	0	5	0	0	0	0	65	95	30
Future Volume (vph)	0	80	15	0	5	0	0	0	0	65	95	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	89	17	0	6	0	0	0	0	72	106	33

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	106	6	211
Volume Left (vph)	0	0	72
Volume Right (vph)	17	0	33
Hadj (s)	-0.07	0.00	0.04
Departure Headway (s)	4.3	4.5	4.2
Degree Utilization, x	0.13	0.01	0.25
Capacity (veh/h)	795	746	832
Control Delay (s)	8.0	7.5	8.6
Approach Delay (s)	8.0	7.5	8.6
Approach LOS	A	A	A

Intersection Summary					
Delay	8.3				
Level of Service	A				
Intersection Capacity Utilization	36.9%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	55	65	25	0	0	0	5	175	75	0	0	0
Future Volume (vph)	55	65	25	0	0	0	5	175	75	0	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	60	71	27	0	0	0	5	192	82	0	0	0

Direction, Lane #	EB 1	NB 1
Volume Total (vph)	158	279
Volume Left (vph)	60	5
Volume Right (vph)	27	82
Hadj (s)	0.04	-0.10
Departure Headway (s)	4.6	4.2
Degree Utilization, x	0.20	0.32
Capacity (veh/h)	740	832
Control Delay (s)	8.7	9.2
Approach Delay (s)	8.7	9.2
Approach LOS	A	A

Intersection Summary					
Delay	9.0				
Level of Service	A				
Intersection Capacity Utilization	40.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	130	10	0	0	0	0	0	0	10	10	0
Future Volume (Veh/h)	0	130	10	0	0	0	0	0	0	10	10	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	140	11	0	0	0	0	0	0	11	11	0
Pedestrians		20			5			30				
Lane Width (m)		3.5			0.0			0.0				
Walking Speed (m/s)		1.1			1.1			1.1				
Percent Blockage		2			0			0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	0			181			201	176	180	150	181	20
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			181			201	176	180	150	181	20
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	99	98	100
cM capacity (veh/h)	1636			1407			740	722	867	822	717	1045

Direction, Lane #	EB 1	SB 1
Volume Total	151	22
Volume Left	0	11
Volume Right	11	0
cSH	1700	766
Volume to Capacity	0.09	0.03
Queue Length 95th (m)	0.0	0.7
Control Delay (s)	0.0	9.8
Lane LOS		A
Approach Delay (s)	0.0	9.8
Approach LOS		A

Intersection Summary					
Average Delay	1.3				
Intersection Capacity Utilization	28.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	5	50	20	0	50	0	450	40	50	595	0
Future Volume (Veh/h)	85	5	50	20	0	50	0	450	40	50	595	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	5	54	22	0	54	0	489	43	54	647	0
Pedestrians		75			45			50			5	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		7			4			4			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								143			151	
pX, platoon unblocked	0.86	0.86	0.80	0.86	0.86	0.87	0.80			0.87		
vC, conflicting volume	1400	1407	772	1417	1386	560	722			577		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1053	1062	587	1074	1037	425	524			444		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	29	97	85	81	100	90	100			94		
cM capacity (veh/h)	130	164	359	115	170	529	784			946		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	151	76	532	701
Volume Left	92	22	0	54
Volume Right	54	54	43	0
cSH	170	259	1700	946
Volume to Capacity	0.89	0.29	0.31	0.06
Queue Length 95th (m)	48.8	9.0	0.0	1.4
Control Delay (s)	96.0	24.5	0.0	1.5
Lane LOS	F	C		A
Approach Delay (s)	96.0	24.5	0.0	1.5
Approach LOS	F	C		

Intersection Summary					
Average Delay	11.9				
Intersection Capacity Utilization	86.6%	ICU Level of Service		E	
Analysis Period (min)	15				

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	550	20	25	400
Future Volume (Veh/h)	0	0	550	20	25	400
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	655	24	30	476
Pedestrians	255		25			15
Lane Width (m)	0.0		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		2			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			214
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	1245	610			934	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1012	293			660	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			96	
cM capacity (veh/h)	199	618			828	

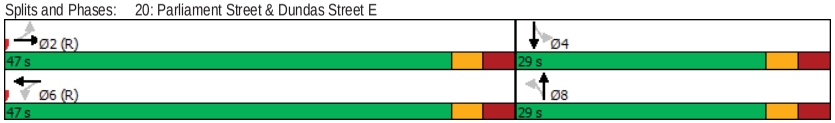
Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	437	242	189	317
Volume Left	0	0	30	0
Volume Right	0	24	0	0
cSH	1700	1700	828	1700
Volume to Capacity	0.26	0.14	0.04	0.19
Queue Length 95th (m)	0.0	0.0	0.9	0.0
Control Delay (s)	0.0	0.0	1.8	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.7	
Approach LOS				

Intersection Summary					
Average Delay			0.3		
Intersection Capacity Utilization			43.8%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	65	490	50	190	45	435	45	335
Future Volume (vph)	65	490	50	190	45	435	45	335
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	47.0	47.0	47.0	47.0	29.0	29.0	29.0	29.0
Total Split (%)	61.8%	61.8%	61.8%	61.8%	38.2%	38.2%	38.2%	38.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	Min	Min	Min	Min
Act Effct Green (s)		41.0		41.0		25.0		25.0
Actuated g/C Ratio		0.54		0.54		0.33		0.33
v/c Ratio		0.45		0.27		0.62		0.52
Control Delay		11.7		12.6		24.1		22.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		11.7		12.6		24.1		22.6
LOS		B		B		C		C
Approach Delay		11.7		12.6		24.1		22.6
Approach LOS		B		B		C		C

Intersection Summary		
Cycle Length: 76		
Actuated Cycle Length: 76		
Offset: 9 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.62		
Intersection Signal Delay: 17.7	Intersection LOS: B	
Intersection Capacity Utilization 93.3%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 20: Parliament Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	691	348	585	449
v/c Ratio	0.45	0.27	0.62	0.52
Control Delay	11.7	12.6	24.1	22.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.7	12.6	24.1	22.6
Queue Length 50th (m)	27.3	10.1	36.7	27.2
Queue Length 95th (m)	44.2	28.5	47.7	36.8
Internal Link Dist (m)	85.0	103.5	45.0	56.1
Turn Bay Length (m)				
Base Capacity (vph)	1557	1325	949	867
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.44	0.26	0.62	0.52

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	490	60	50	190	70	45	435	40	45	335	20
Future Volume (vph)	65	490	60	50	190	70	45	435	40	45	335	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frpb, ped/bikes		0.98			0.94			0.98			0.99	
Flpb, ped/bikes		0.98			0.99			0.99			0.99	
Frt		0.99			0.97			0.99			0.99	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		3205			3008			3280			3216	
Flt Permitted		0.87			0.79			0.87			0.81	
Satd. Flow (perm)		2799			2384			2868			2627	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	73	551	67	56	213	79	51	489	45	51	376	22
RTOR Reduction (vph)	0	11	0	0	8	0	0	8	0	0	5	0
Lane Group Flow (vph)	0	680	0	0	340	0	0	577	0	0	444	0
Confl. Peds. (#/hr)	260		155	155		260	165		225	225		165
Confl. Bikes (#/hr)			25			20			5			10
Heavy Vehicles (%)	3%	6%	5%	5%	6%	6%	3%	5%	0%	3%	8%	10%
Parking (#/hr)			0						0			0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		40.0			40.0			24.0			24.0	
Effective Green, g (s)		41.0			41.0			25.0			25.0	
Actuated g/C Ratio		0.54			0.54			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1509			1286			943			864	
v/s Ratio Prot												
v/s Ratio Perm		c0.24			0.14			c0.20			0.17	
v/c Ratio		0.45			0.26			0.61			0.51	
Uniform Delay, d1		10.6			9.4			21.4			20.6	
Progression Factor		1.00			1.29			1.00			1.00	
Incremental Delay, d2		1.0			0.5			1.2			0.5	
Delay (s)		11.6			12.6			22.6			21.1	
Level of Service		B			B			C			C	
Approach Delay (s)		11.6			12.6			22.6			21.1	
Approach LOS		B			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.51				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	93.3%	ICU Level of Service	F		
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	505	15	5	300	25	5	10	5	5	5	25
Future Volume (Veh/h)	40	505	15	5	300	25	5	10	5	5	5	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	43	543	16	5	323	27	5	11	5	5	5	27
Pedestrians		30			10			125			135	
Lane Width (m)		3.5			3.5			3.5			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		3			1			11			12	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		127			124							
pX, platoon unblocked				0.95			0.95	0.95	0.95	0.95	0.95	
vC, conflicting volume	485			684			993	1257	414	860	1252	340
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	485			559			884	1163	274	744	1157	340
tC, single (s)	4.1			4.4			7.5	6.5	7.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.5	4.0	3.8	3.5	4.0	3.3
p0 queue free %	96			99			97	92	99	97	96	95
cM capacity (veh/h)	958			774			148	139	500	190	140	567

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	314	288	166	188	21	37
Volume Left	43	0	5	0	5	5
Volume Right	0	16	0	27	5	27
cSH	958	1700	774	1700	171	337
Volume to Capacity	0.04	0.17	0.01	0.11	0.12	0.11
Queue Length 95th (m)	1.1	0.0	0.1	0.0	3.1	2.8
Control Delay (s)	1.6	0.0	0.4	0.0	29.0	17.0
Lane LOS	A		A		D	C
Approach Delay (s)	0.9		0.2		29.0	17.0
Approach LOS					D	C

Intersection Summary					
Average Delay	1.8				
Intersection Capacity Utilization	49.1%	ICU Level of Service	A		
Analysis Period (min)	15				

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	495	15	245	40	0	35	35
Future Volume (vph)	495	15	245	40	0	35	35
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2		6		8		4
Permitted Phases		6		8		4	
Detector Phase	2	6	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	17.0	17.0	17.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	26.0
Total Split (s)	50.0	50.0	50.0	26.0	26.0	26.0	26.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0		-1.0		-1.0		-1.0
Total Lost Time (s)	5.0		5.0		5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.6		47.6		18.4		18.4
Actuated g/C Ratio	0.63		0.63		0.24		0.24
v/c Ratio	0.27		0.26		0.23		0.32
Control Delay	5.1		7.0		13.2		17.5
Queue Delay	0.0		0.0		0.0		0.0
Total Delay	5.1		7.0		13.2		17.5
LOS	A		A		B		B
Approach Delay	5.1		7.0		13.2		17.5
Approach LOS	A		A		B		B

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 25 (33%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 49.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Sackville Street & Dundas Street E

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	564	279	75	124
v/c Ratio	0.27	0.26	0.23	0.32
Control Delay	5.1	7.0	13.2	17.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.1	7.0	13.2	17.5
Queue Length 50th (m)	12.6	17.6	3.4	9.1
Queue Length 95th (m)	16.5	21.8	12.9	21.9
Internal Link Dist (m)	99.8	79.6	36.2	126.8
Turn Bay Length (m)				
Base Capacity (vph)	2059	1061	367	430
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.26	0.20	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	495	30	15	245	0	40	0	30	35	35	45
Future Volume (vph)	0	495	30	15	245	0	40	0	30	35	35	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			1.00			0.95			0.96	
Flpb, ped/bikes		1.00			0.99			0.96			0.97	
Frt		0.99			1.00			0.94			0.95	
Flt Protected		1.00			1.00			0.97			0.98	
Satd. Flow (prot)		3290			1755			1496			1601	
Flt Permitted		1.00			0.96			0.79			0.89	
Satd. Flow (perm)		3290			1694			1217			1450	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	532	32	16	263	0	43	0	32	38	38	48
RTOR Reduction (vph)	0	0	0	0	0	0	0	33	0	0	31	0
Lane Group Flow (vph)	0	564	0	0	279	0	0	42	0	0	93	0
Confl. Peds. (#/hr)	105		175	175		105	70		55	55		70
Confl. Bikes (#/hr)			35			20						5
Heavy Vehicles (%)	0%	5%	6%	0%	6%	0%	0%	0%	12%	0%	2%	5%
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases				6			8			4		
Actuated Green, G (s)		46.6			46.6			17.4			17.4	
Effective Green, g (s)		47.6			47.6			18.4			18.4	
Actuated g/C Ratio		0.63			0.63			0.24			0.24	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2060			1060			294			351	
v/s Ratio Prot		c0.17										
v/s Ratio Perm					0.16			0.03			c0.06	
v/c Ratio		0.27			0.26			0.14			0.26	
Uniform Delay, d1		6.4			6.4			22.6			23.3	
Progression Factor		0.67			0.87			1.00			1.00	
Incremental Delay, d2		0.3			0.6			0.2			0.4	
Delay (s)		4.6			6.1			22.8			23.7	
Level of Service		A			A			C			C	
Approach Delay (s)		4.6			6.1			22.8			23.7	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.27				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBT	WBL	WBT	Ø4
Lane Configurations				
Traffic Volume (vph)	530	15	260	
Future Volume (vph)	530	15	260	
Turn Type	NA	Perm	NA	
Protected Phases	2		6	4
Permitted Phases		6		
Detector Phase	2	6	6	
Switch Phase				
Minimum Initial (s)	18.0	18.0	18.0	20.0
Minimum Split (s)	23.9	23.9	23.9	23.0
Total Split (s)	53.0	53.0	53.0	23.0
Total Split (%)	69.7%	69.7%	69.7%	30%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	-1.0		-1.0	
Total Lost Time (s)	4.9		4.9	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Min	C-Min	C-Min	None
Act Effct Green (s)	64.8		64.8	
Actuated g/C Ratio	0.85		0.85	
v/c Ratio	0.43		0.21	
Control Delay	3.3		4.0	
Queue Delay	0.0		0.0	
Total Delay	3.3		4.0	
LOS	A		A	
Approach Delay	3.3		4.0	
Approach LOS	A		A	

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 3.5		Intersection LOS: A	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Regent Park Boulevard & Dundas Street E

Lane Group	EBT	WBT
Lane Group Flow (vph)	630	309
v/c Ratio	0.43	0.21
Control Delay	3.3	4.0
Queue Delay	0.0	0.0
Total Delay	3.3	4.0
Queue Length 50th (m)	1.7	0.0
Queue Length 95th (m)	52.4	28.6
Internal Link Dist (m)	79.6	86.0
Turn Bay Length (m)		
Base Capacity (vph)	1462	1448
Starvation Cap Reductn	41	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.44	0.21

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	530	30	15	260	0	0
Future Volume (vph)	530	30	15	260	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.0	3.0	3.5	3.0	3.0
Total Lost time (s)	4.9			4.9		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	0.97			1.00		
Flpb, ped/bikes	1.00			0.99		
Frt	0.99			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1712			1755		
Flt Permitted	1.00			0.96		
Satd. Flow (perm)	1712			1695		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	596	34	17	292	0	0
RTOR Reduction (vph)	1	0	0	0	0	0
Lane Group Flow (vph)	629	0	0	309	0	0
Confl. Peds. (#/hr)		235	235		60	65
Heavy Vehicles (%)	6%	6%	0%	6%	0%	0%
Turn Type	NA		Perm	NA		
Protected Phases	2			6		
Permitted Phases			6			
Actuated Green, G (s)	59.1			59.1		
Effective Green, g (s)	60.1			60.1		
Actuated g/C Ratio	0.79			0.79		
Clearance Time (s)	5.9			5.9		
Vehicle Extension (s)	3.0			3.0		
Lane Grp Cap (vph)	1353			1340		
v/s Ratio Prot	c0.37					
v/s Ratio Perm				0.18		
v/c Ratio	0.46			0.23		
Uniform Delay, d1	2.6			2.0		
Progression Factor	0.50			1.00		
Incremental Delay, d2	1.1			0.4		
Delay (s)	2.4			2.4		
Level of Service	A			A		
Approach Delay (s)	2.4			2.4	0.0	
Approach LOS	A			A	A	

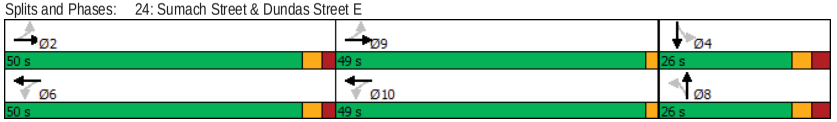
Intersection Summary				
HCM 2000 Control Delay	2.4	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.41			
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	7.9	
Intersection Capacity Utilization	49.8%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	45	465	30	245	25	90	25	10				
Future Volume (vph)	45	465	30	245	25	90	25	10				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					20.0	20.0	20.0	20.0	16.0	16.0	5.0	5.0
Minimum Split (s)					26.0	26.0	26.0	26.0	21.0	21.0	49.0	49.0
Total Split (s)					26.0	26.0	26.0	26.0	50.0	50.0	49.0	49.0
Total Split (%)					20.8%	20.8%	20.8%	20.8%	40%	40%	39%	39%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)						-1.0		-1.0				
Total Lost Time (s)						5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	None	None	Min	Min	None	None
Act Effct Green (s)		63.1		63.1		22.8		22.8				
Actuated g/C Ratio		0.66		0.66		0.24		0.24				
v/c Ratio		0.55		0.51		0.47		0.13				
Control Delay		9.4		7.8		40.9		34.8				
Queue Delay		2.2		0.0		0.0		0.0				
Total Delay		11.6		7.8		40.9		34.8				
LOS		B		A		D		C				
Approach Delay		11.6		7.8		40.9		34.8				
Approach LOS		B		A		D		C				

Intersection Summary			
Cycle Length: 125			
Actuated Cycle Length: 95.7			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 24: Sumach Street & Dundas Street E



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	570	456	172	43
v/c Ratio	0.55	0.51	0.47	0.13
Control Delay	9.4	7.8	40.9	34.8
Queue Delay	2.2	0.0	0.0	0.0
Total Delay	11.6	7.8	40.9	34.8
Queue Length 50th (m)	44.8	28.9	28.8	6.3
Queue Length 95th (m)	65.1	46.0	56.2	17.4
Internal Link Dist (m)	86.0	75.5	76.2	121.5
Turn Bay Length (m)				
Base Capacity (vph)	1187	1015	363	322
Starvation Cap Reductn	461	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.45	0.47	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	465	20	30	245	150	25	90	45	25	10	5
Future Volume (vph)	45	465	20	30	245	150	25	90	45	25	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		4.0			4.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.89			0.96			0.97	
Flpb, ped/bikes		0.99			0.99			0.96			0.95	
Frt		0.99			0.95			0.96			0.98	
Flt Protected		1.00			1.00			0.99			0.97	
Satd. Flow (prot)		1692			1460			1581			1616	
Flt Permitted		0.94			0.94			0.95			0.82	
Satd. Flow (perm)		1590			1383			1517			1360	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	48	500	22	32	263	161	27	97	48	27	11	5
RTOR Reduction (vph)	0	2	0	0	20	0	0	10	0	0	4	0
Lane Group Flow (vph)	0	568	0	0	436	0	0	162	0	0	39	0
Confl. Peds. (#/hr)	100		185	185		100	105		50	50		105
Confl. Bikes (#/hr)			25			20						
Heavy Vehicles (%)	12%	6%	8%	0%	9%	5%	4%	5%	6%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		65.6			65.6			21.7			21.7	
Effective Green, g (s)		66.6			66.6			22.7			22.7	
Actuated g/C Ratio		0.70			0.70			0.24			0.24	
Clearance Time (s)								6.0			6.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)		1111			966			361			323	
v/s Ratio Prot												
v/s Ratio Perm		c0.36			0.32			c0.11			0.03	
v/c Ratio		0.51			0.45			0.45			0.12	
Uniform Delay, d1		6.7			6.3			31.0			28.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.3			0.9			0.2	
Delay (s)		7.1			6.7			31.9			28.6	
Level of Service		A			A			C			C	
Approach Delay (s)		7.1			6.7			31.9			28.6	
Approach LOS		A			A			C			C	

Intersection Summary					
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.51				
Actuated Cycle Length (s)	95.3	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	62.9%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	525	10	10	420	0	0	0	0	15	0	5
Future Volume (Veh/h)	0	525	10	10	420	0	0	0	0	15	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	553	11	11	442	0	0	0	0	16	0	5
Pedestrians		10			10			130			50	
Lane Width (m)		3.5			3.5			0.0			3.5	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			1			0			4	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		99			98							
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	492			694			1168	1202	698	1082	1208	502
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	492			568			1116	1156	574	1017	1163	502
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	91	100	99
cM capacity (veh/h)	1034			877			152	162	448	171	160	543

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	564	453	21
Volume Left	0	11	16
Volume Right	11	0	5
cSH	1034	877	204
Volume to Capacity	0.00	0.01	0.10
Queue Length 95th (m)	0.0	0.3	2.6
Control Delay (s)	0.0	0.4	24.6
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	24.6
Approach LOS			C

Intersection Summary					
Average Delay			0.7		
Intersection Capacity Utilization			46.4%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø2	Ø6	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	25	450	95	255	75	370	120	450				
Future Volume (vph)	25	450	95	255	75	370	120	450				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2 9		6 10		8		4	2	6	9	10
Permitted Phases	2 9		6 10		8		4					
Detector Phase	2	2	6	6	8	8	4	4				
Switch Phase												
Minimum Initial (s)					21.0	21.0	21.0	21.0	21.0	21.0	5.0	5.0
Minimum Split (s)					27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)					42.0	42.0	42.0	42.0	34.0	34.0	27.0	27.0
Total Split (%)					40.8%	40.8%	40.8%	40.8%	33%	33%	26%	26%
Yellow Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)					3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0
Lost Time Adjust (s)					-1.0	-1.0	-1.0	-1.0				
Total Lost Time (s)					5.0	5.0	5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					Min	Min	Min	Min	Min	Min	None	None
Act Effct Green (s)		32.0		32.0	37.7	37.7	37.7	37.7				
Actuated g/C Ratio		0.40		0.40	0.47	0.47	0.47	0.47				
v/c Ratio		0.85		0.95	0.38	0.79	0.67	0.76				
Control Delay		33.4		51.0	25.1	28.7	41.8	27.8				
Queue Delay		0.7		0.0	0.0	0.0	0.0	0.0				
Total Delay		34.1		51.0	25.1	28.7	41.8	27.8				
LOS		C		D	C	C	D	C				
Approach Delay		34.1		51.0		28.3		30.3				
Approach LOS		C		D		C		C				

Intersection Summary			
Cycle Length: 103			
Actuated Cycle Length: 79.9			
Natural Cycle: 95			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 34.7		Intersection LOS: C	
Intersection Capacity Utilization 124.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 26: River Street & Dundas Street E

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	568	479	79	615	126	579
v/c Ratio	0.85	0.95	0.38	0.79	0.67	0.76
Control Delay	33.4	51.0	25.1	28.7	41.8	27.8
Queue Delay	0.7	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	51.0	25.1	28.7	41.8	27.8
Queue Length 50th (m)	73.2	64.2	6.7	65.1	12.8	61.5
Queue Length 95th (m)	108.4	104.7	28.6	#193.8	#58.8	#183.7
Internal Link Dist (m)	73.4	80.5		131.0		118.9
Turn Bay Length (m)			20.0		25.0	
Base Capacity (vph)	707	532	207	775	187	762
Starvation Cap Reductn	24	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	0.83	0.90	0.38	0.79	0.67	0.76

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	450	65	95	255	105	75	370	215	120	450	100
Future Volume (vph)	25	450	65	95	255	105	75	370	215	120	450	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.97		1.00	0.94		1.00	0.97	
Flpb, ped/bikes		1.00			0.99		0.96	1.00		0.96	1.00	
Frt		0.98			0.97		1.00	0.94		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1722			1641		1539	1634		1592	1614	
Flt Permitted		0.97			0.75		0.26	1.00		0.23	1.00	
Satd. Flow (perm)		1669			1241		422	1634		384	1614	
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)	26	474	68	100	268	111	79	389	226	126	474	105
RTOR Reduction (vph)	0	5	0	0	12	0	0	17	0	0	6	0
Lane Group Flow (vph)	0	563	0	0	467	0	79	598	0	126	573	0
Confl. Peds. (#/hr)	55		75	75		55	75		75	75		75
Confl. Bikes (#/hr)			25			20			10			5
Heavy Vehicles (%)	9%	5%	0%	1%	9%	0%	5%	3%	0%	2%	12%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2 9			6 10			8			4	
Permitted Phases	2 9			6 10			8			4		
Actuated Green, G (s)		36.7			36.7		36.7	36.7		36.7	36.7	
Effective Green, g (s)		37.7			37.7		37.7	37.7		37.7	37.7	
Actuated g/C Ratio		0.46			0.46		0.46	0.46		0.46	0.46	
Clearance Time (s)							6.0	6.0		6.0	6.0	
Vehicle Extension (s)							3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		772			574		195	756		177	747	
v/s Ratio Prot								c0.37			0.35	
v/s Ratio Perm		0.34			c0.38		0.19			0.33		
v/c Ratio		0.73			0.81		0.41	0.79		0.71	0.77	
Uniform Delay, d1		17.7			18.8		14.4	18.5		17.5	18.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.5			8.6		1.4	5.7		12.7	4.7	
Delay (s)		21.2			27.4		15.8	24.2		30.2	22.9	
Level of Service		C			C		B	C		C	C	
Approach Delay (s)		21.2			27.4			23.2			24.2	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	11.0
Intersection Capacity Utilization	124.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	900	65	15	450	0	0
Future Volume (Veh/h)	900	65	15	450	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	947	68	16	474	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	90			162		
pX, platoon unblocked			0.86		0.86	0.86
vC, conflicting volume			1015		1250	508
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			686		960	95
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			787		217	815

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	631	384	174	316
Volume Left	0	0	16	0
Volume Right	0	68	0	0
cSH	1700	1700	787	1700
Volume to Capacity	0.37	0.23	0.02	0.19
Queue Length 95th (m)	0.0	0.0	0.5	0.0
Control Delay (s)	0.0	0.0	1.1	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.4	
Approach LOS				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	30.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	0	0	0	15	65
Future Volume (Veh/h)	5	0	0	0	15	65
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	0	0	0	16	68
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	100	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			99	
cM capacity (veh/h)	895	1091			1636	

Direction, Lane #	WB 1	SB 1
Volume Total	5	84
Volume Left	5	16
Volume Right	0	0
cSH	895	1636
Volume to Capacity	0.01	0.01
Queue Length 95th (m)	0.1	0.2
Control Delay (s)	9.0	1.4
Lane LOS	A	A
Approach Delay (s)	9.0	1.4
Approach LOS	A	

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	14.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	0	0	0	35	20	160	50	0	0	0
Future Volume (Veh/h)	10	0	0	0	0	35	20	160	50	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	0	0	0	0	37	21	168	53	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											55	
pX, platoon unblocked												
vC, conflicting volume	274	263	0	236	236	194	0			221		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	274	263	0	236	236	194	0			221		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	96	99			100		
cM capacity (veh/h)	647	637	1091	715	659	852	1636			1360		

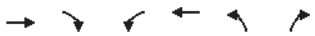
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	37	242
Volume Left	11	0	21
Volume Right	0	37	53
cSH	647	852	1636
Volume to Capacity	0.02	0.04	0.01
Queue Length 95th (m)	0.4	1.0	0.3
Control Delay (s)	10.7	9.4	0.7
Lane LOS	B	A	A
Approach Delay (s)	10.7	9.4	0.7
Approach LOS	B	A	

Intersection Summary					
Average Delay			2.2		
Intersection Capacity Utilization			26.5%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	25	0	585	620	40
Future Volume (Veh/h)	0	25	0	585	620	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	26	0	616	653	42
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				241	52	
pX, platoon unblocked	0.79	0.79	0.79			
vC, conflicting volume	1290	674	695			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1236	460	486			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	100			
cM capacity (veh/h)	156	481	863			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	26	616	695
Volume Left	0	0	0
Volume Right	26	0	42
cSH	481	1700	1700
Volume to Capacity	0.05	0.36	0.41
Queue Length 95th (m)	1.3	0.0	0.0
Control Delay (s)	12.9	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.9	0.0	0.0
Approach LOS	B		

Intersection Summary					
Average Delay			0.3		
Intersection Capacity Utilization			45.1%	ICU Level of Service	A
Analysis Period (min)			15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1020	0	0	590	0	10
Future Volume (Veh/h)	1020	0	0	590	0	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1074	0	0	621	0	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	171			81		
pX, platoon unblocked			0.89		0.92	0.89
vC, conflicting volume			1074		1384	537
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			825		890	219
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			721		264	701

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	716	358	310	310	11
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	11
cSH	1700	1700	1700	1700	701
Volume to Capacity	0.42	0.21	0.18	0.18	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	10.2
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.2
Approach LOS					B

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	38.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	95	50	0	0	0
Future Volume (Veh/h)	10	95	50	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	100	53	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	53				175	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	53				175	53
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1566				814	1020

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	111	53	0
Volume Left	11	0	0
Volume Right	0	0	0
cSH	1566	1700	1700
Volume to Capacity	0.01	0.03	0.00
Queue Length 95th (m)	0.2	0.0	0.0
Control Delay (s)	0.8	0.0	0.0
Lane LOS	A		A
Approach Delay (s)	0.8	0.0	0.0
Approach LOS			A

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	15.6%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	70	395	5	480
Future Volume (vph)	70	395	5	480
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	7.0	21.0	21.0	21.0
Minimum Split (s)	28.0	28.0	27.0	27.0
Total Split (s)	28.0	48.0	48.0	48.0
Total Split (%)	36.8%	63.2%	63.2%	63.2%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0
Total Lost Time (s)	5.0	5.0		5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	14.7	51.3		51.3
Actuated g/C Ratio	0.19	0.68		0.68
v/c Ratio	0.53	0.20		0.23
Control Delay	17.3	15.5		6.2
Queue Delay	0.0	0.0		0.0
Total Delay	17.3	15.5		6.2
LOS	B	B		A
Approach Delay	17.3	15.5		6.2
Approach LOS	B	B		A

Intersection Summary	
Cycle Length: 76	
Actuated Cycle Length: 76	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of 1st Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 44.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 10: Parliament Street & Oak Street

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	185	427	510
v/c Ratio	0.53	0.20	0.23
Control Delay	17.3	15.5	6.2
Queue Delay	0.0	0.0	0.0
Total Delay	17.3	15.5	6.2
Queue Length 50th (m)	11.0	22.2	10.3
Queue Length 95th (m)	24.2	37.4	26.2
Internal Link Dist (m)	65.1	47.1	119.2
Turn Bay Length (m)			
Base Capacity (vph)	486	2116	2198
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.38	0.20	0.23

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	70	105	395	10	5	480
Future Volume (vph)	70	105	395	10	5	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.5	3.0	3.0	3.5
Total Lost time (s)	5.0		5.0			5.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.89		0.99			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1375		3135			3423
Flt Permitted	0.98		1.00			0.95
Satd. Flow (perm)	1375		3135			3259
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	111	416	11	5	505
RTOR Reduction (vph)	82	0	2	0	0	0
Lane Group Flow (vph)	103	0	425	0	0	510
Confl. Peds. (#/hr)	5	175		260	260	
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	0%	5%	12%	9%	0%	4%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	13.7		50.3			50.3
Effective Green, g (s)	14.7		51.3			51.3
Actuated g/C Ratio	0.19		0.67			0.67
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	265		2116			2199
v/s Ratio Prot	c0.07		0.14			
v/s Ratio Perm						c0.16
v/c Ratio	0.39		0.20			0.23
Uniform Delay, d1	26.7		4.6			4.8
Progression Factor	1.00		2.63			1.00
Incremental Delay, d2	0.9		0.2			0.2
Delay (s)	27.7		12.4			5.0
Level of Service	C		B			A
Approach Delay (s)	27.7		12.4			5.0
Approach LOS	C		B			A

Intersection Summary				
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	40	0	35	0	375	40	630
Future Volume (vph)	40	0	35	0	375	40	630
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0	21.0	21.0	21.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Total Split (s)	28.0	28.0	28.0	28.0	48.0	48.0	48.0
Total Split (%)	36.8%	36.8%	36.8%	36.8%	63.2%	63.2%	63.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0
Total Lost Time (s)		5.0		5.0	5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)		14.1		14.1	55.5		55.5
Actuated g/C Ratio		0.19		0.19	0.73		0.73
v/c Ratio		0.28		0.34	0.34		0.61
Control Delay		14.7		12.7	7.2		11.8
Queue Delay		0.0		0.0	0.0		0.8
Total Delay		14.7		12.7	7.2		12.6
LOS		B		B	A		B
Approach Delay		14.7		12.7	7.2		12.6
Approach LOS		B		B	A		B

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of 1st Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 11.0		Intersection LOS: B	
Intersection Capacity Utilization 84.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 18: River Street & Oak Street

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	77	109	439	736
v/c Ratio	0.28	0.34	0.34	0.61
Control Delay	14.7	12.7	7.2	11.8
Queue Delay	0.0	0.0	0.0	0.8
Total Delay	14.7	12.7	7.2	12.6
Queue Length 50th (m)	4.5	5.1	15.2	35.2
Queue Length 95th (m)	12.6	14.6	52.3	#125.3
Internal Link Dist (m)	70.5	11.7	118.9	77.4
Turn Bay Length (m)				
Base Capacity (vph)	416	472	1282	1207
Starvation Cap Reductn	0	0	0	207
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.19	0.23	0.34	0.74

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	30	35	0	65	0	375	25	40	630	0
Future Volume (vph)	40	0	30	35	0	65	0	375	25	40	630	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.97			0.98			0.99			1.00	
Flpb, ped/bikes		1.00			0.98			1.00			1.00	
Frt		0.94			0.91			0.99			1.00	
Flt Protected		0.97			0.98			1.00			1.00	
Satd. Flow (prot)		1566			1574			1754			1721	
Flt Permitted		0.79			0.87			1.00			0.96	
Satd. Flow (perm)		1276			1400			1754			1652	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	44	0	33	38	0	71	0	412	27	44	692	0
RTOR Reduction (vph)	0	36	0	0	59	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	41	0	0	50	0	0	437	0	0	736	0
Confl. Peds. (#/hr)	5		35	35		5	75		65	65		75
Confl. Bikes (#/hr)									5			10
Heavy Vehicles (%)	10%	0%	0%	5%	50%	2%	0%	5%	11%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		11.7			11.7			52.3			52.3	
Effective Green, g (s)		12.7			12.7			53.3			53.3	
Actuated g/C Ratio		0.17			0.17			0.70			0.70	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		213			233			1230			1158	
v/s Ratio Prot								0.25				
v/s Ratio Perm		0.03			c0.04						c0.45	
v/c Ratio		0.19			0.21			0.36			0.64	
Uniform Delay, d1		27.2			27.3			4.5			6.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.5			0.8			2.7	
Delay (s)		27.7			27.8			5.3			8.8	
Level of Service		C			C			A			A	
Approach Delay (s)		27.7			27.8			5.3			8.8	
Approach LOS		C			C			A			A	

Intersection Summary

HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	45	520	15	380
Future Volume (vph)	45	520	15	380
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	7.0	21.0	21.0	21.0
Minimum Split (s)	28.0	27.0	27.0	27.0
Total Split (s)	28.0	48.0	48.0	48.0
Total Split (%)	36.8%	63.2%	63.2%	63.2%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0
Total Lost Time (s)	5.0	5.0		5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	14.2	55.4		55.4
Actuated g/C Ratio	0.19	0.73		0.73
v/c Ratio	0.38	0.27		0.21
Control Delay	13.6	2.3		5.8
Queue Delay	0.0	0.0		0.0
Total Delay	13.6	2.3		5.8
LOS	B	A		A
Approach Delay	13.6	2.3		5.8
Approach LOS	B	A		A

Intersection Summary	
Cycle Length: 76	
Actuated Cycle Length: 76	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of 1st Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.38	
Intersection Signal Delay: 4.8	Intersection LOS: A
Intersection Capacity Utilization 46.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 10: Parliament Street & Oak Street

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	135	647	465
v/c Ratio	0.38	0.27	0.21
Control Delay	13.6	2.3	5.8
Queue Delay	0.0	0.0	0.0
Total Delay	13.6	2.3	5.8
Queue Length 50th (m)	7.1	2.4	8.0
Queue Length 95th (m)	15.9	10.4	22.5
Internal Link Dist (m)	65.1	47.1	119.2
Turn Bay Length (m)			
Base Capacity (vph)	520	2380	2208
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.26	0.27	0.21

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	70	520	30	15	380
Future Volume (vph)	45	70	520	30	15	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.5	3.0	3.0	3.5
Total Lost time (s)	5.0		5.0			5.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.96		0.98			1.00
Flpb, ped/bikes	1.00		1.00			0.99
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1531		3262			3272
Flt Permitted	0.98		1.00			0.92
Satd. Flow (perm)	1531		3262			3030
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	53	82	612	35	18	447
RTOR Reduction (vph)	68	0	4	0	0	0
Lane Group Flow (vph)	67	0	643	0	0	465
Confl. Peds. (#/hr)	5	55		220	220	
Confl. Bikes (#/hr)				10		
Heavy Vehicles (%)	0%	0%	6%	4%	12%	8%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	11.8		52.2			52.2
Effective Green, g (s)	12.8		53.2			53.2
Actuated g/C Ratio	0.17		0.70			0.70
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	257		2283			2121
v/s Ratio Prot	c0.04		c0.20			
v/s Ratio Perm						0.15
v/c Ratio	0.26		0.28			0.22
Uniform Delay, d1	27.5		4.3			4.0
Progression Factor	1.00		0.35			1.00
Incremental Delay, d2	0.5		0.3			0.2
Delay (s)	28.0		1.8			4.3
Level of Service	C		A			A
Approach Delay (s)	28.0		1.8			4.3
Approach LOS	C		A			A

Intersection Summary				
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	85	5	20	0	450	50	595
Future Volume (vph)	85	5	20	0	450	50	595
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0	21.0	21.0	21.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Total Split (s)	28.0	28.0	28.0	28.0	48.0	48.0	48.0
Total Split (%)	36.8%	36.8%	36.8%	36.8%	63.2%	63.2%	63.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0
Total Lost Time (s)		5.0		5.0	5.0		5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)		15.5		15.5	50.5		50.5
Actuated g/C Ratio		0.20		0.20	0.66		0.66
v/c Ratio		0.49		0.22	0.44		0.64
Control Delay		23.6		10.8	8.7		12.7
Queue Delay		0.0		0.0	0.6		1.0
Total Delay		23.6		10.8	9.3		13.7
LOS		C		B	A		B
Approach Delay		23.6		10.8	9.3		13.7
Approach LOS		C		B	A		B

Intersection Summary			
Cycle Length: 76			
Actuated Cycle Length: 76			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of 1st Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 90.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 18: River Street & Oak Street

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	151	76	532	701
v/c Ratio	0.49	0.22	0.44	0.64
Control Delay	23.6	10.8	8.7	12.7
Queue Delay	0.0	0.0	0.6	1.0
Total Delay	23.6	10.8	9.3	13.7
Queue Length 50th (m)	14.9	2.7	26.3	43.7
Queue Length 95th (m)	26.9	11.1	65.7	112.9
Internal Link Dist (m)	70.5	11.7	118.9	74.6
Turn Bay Length (m)				
Base Capacity (vph)	436	482	1217	1099
Starvation Cap Reductn	0	0	330	178
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.16	0.60	0.76

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	5	50	20	0	50	0	450	40	50	595	0
Future Volume (vph)	85	5	50	20	0	50	0	450	40	50	595	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.96			0.98			0.99			1.00	
Flpb, ped/bikes		1.00			0.98			1.00			1.00	
Frt		0.95			0.90			0.99			1.00	
Flt Protected		0.97			0.99			1.00			1.00	
Satd. Flow (prot)		1633			1611			1827			1769	
Flt Permitted		0.80			0.90			1.00			0.93	
Satd. Flow (perm)		1353			1471			1827			1655	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	5	54	22	0	54	0	489	43	54	647	0
RTOR Reduction (vph)	0	30	0	0	43	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	121	0	0	33	0	0	529	0	0	701	0
Confl. Peds. (#/hr)	5		50	50		5	75		45	45		75
Confl. Bikes (#/hr)									5			5
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	0%	1%	0%	0%	6%	0%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		14.5			14.5			49.5			49.5	
Effective Green, g (s)		15.5			15.5			50.5			50.5	
Actuated g/C Ratio		0.20			0.20			0.66			0.66	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		275			300			1213			1099	
v/s Ratio Prot								0.29				
v/s Ratio Perm		c0.09			0.02						c0.42	
v/c Ratio		0.44			0.11			0.44			0.64	
Uniform Delay, d1		26.4			24.6			6.0			7.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.1			0.2			1.1			2.8	
Delay (s)		27.6			24.8			7.2			10.3	
Level of Service		C			C			A			B	
Approach Delay (s)		27.6			24.8			7.2			10.3	
Approach LOS		C			C			A			B	

Intersection Summary					
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.59				
Actuated Cycle Length (s)	76.0	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	90.9%	ICU Level of Service		E	
Analysis Period (min)	15				

c Critical Lane Group

Appendix H:
Updated Signal Warrant Review

START TIME	VOL	START HOUR	HOURLY	PEDS	HOURLY_P
07:00:00	102			2	
07:15:00	96			7	
07:30:00	117			10	
07:45:00	127	07:00:00	442	8	27
08:00:00	134	07:15:00	474	6	31
08:15:00	138	07:30:00	516	13	37
08:30:00	158	07:45:00	557	97	124
08:45:00	183	08:00:00	613	64	180
09:00:00	175	08:15:00	654	21	195
09:15:00	121	08:30:00	637	12	194
09:30:00	157	08:45:00	636	7	104
09:45:00	140	09:00:00	593	11	51
10:00:00	157	09:15:00	575	6	36
10:15:00	145	09:30:00	599	7	31
10:30:00	133	09:45:00	575	11	35
10:45:00	152	10:00:00	587	8	32
11:00:00	145	10:15:00	575	10	36
11:15:00	139	10:30:00	569	36	65
11:30:00	143	10:45:00	579	17	71
11:45:00	155	11:00:00	582	17	80
12:00:00	176	11:15:00	613	15	85
12:15:00	168	11:30:00	642	27	76
12:30:00	162	11:45:00	661	21	80
12:45:00	169	12:00:00	675	12	75
13:00:00	184	12:15:00	683	6	66
13:15:00	176	12:30:00	691	5	44
13:30:00	173	12:45:00	702	13	36
13:45:00	196	13:00:00	729	12	36
14:00:00	159	13:15:00	704	13	43
14:15:00	183	13:30:00	711	12	50
14:30:00	163	13:45:00	701	5	42
14:45:00	174	14:00:00	679	26	56
15:00:00	177	14:15:00	697	58	101
15:15:00	181	14:30:00	695	95	184
15:30:00	178	14:45:00	710	52	231
15:45:00	171	15:00:00	707	18	223
16:00:00	168	15:15:00	698	22	187
16:15:00	155	15:30:00	672	15	107
16:30:00	157	15:45:00	651	10	65
16:45:00	176	16:00:00	656	18	65
17:00:00	179	16:15:00	667	34	77
17:15:00	188	16:30:00	700	37	99
17:30:00	181	16:45:00	724	11	100
17:45:00	169	17:00:00	717	15	97

F_TOTAL PED FACTOR 2.5

07:00:00	442	27	70
08:00:00	613	180	450
09:00:00	593	51	130
10:00:00	587	32	80
11:00:00	582	80	200
12:00:00	675	75	190
13:00:00	729	36	90
14:00:00	679	56	140
15:00:00	707	223	560
16:00:00	656	65	165
17:00:00	717	97	245

FUTURE BACKGROUND TRAFFIC FORECASTS

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR	
84%	0	395	10				15	475		45		65	
81%		382	10	0	0	0	15	460	0	44	0	63	
93%		435	11	0	0	0	17	523	0	50	0	72	
100%		470	12	0	0	0	18	565	0	54	0	77	
95%		469	24	0	0	0	24	360		33		52	
99%		488	25	0	0	0	25	375		35		54	
91%		453	23	0	0	0	23	348		32		50	
100%	0	495	25				25	380		35		55	
8:00:00	0	395	10	0	0	0	15	475	0	45	0	65	180
9:00:00	0	382	10	0	0	0	15	460	0	44	0	63	51
12:00:00	0	435	11	0	0	0	17	523	0	50	0	72	75
13:00:00	0	470	12	0	0	0	18	565	0	54	0	77	36
14:00:00	0	469	24	0	0	0	24	360	0	33	0	52	56
15:00:00	0	488	25	0	0	0	25	375	0	35	0	54	223
16:00:00	0	453	23	0	0	0	23	348	0	32	0	50	65
17:00:00	0	495	25	0	0	0	25	380	0	35	0	55	97

FUTURE TOTAL TRAFFIC FORECASTS

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR	
84%	0	395	10				5	480		70		105	
81%		382	10	0	0	0	5	464	0	68	0	102	
93%		435	11	0	0	0	6	529	0	77	0	116	
100%		470	12	0	0	0	6	571	0	83	0	125	
95%		492	28	0	0	0	14	360		43		66	
99%		513	30	0	0	0	15	375		44		69	
91%		476	27	0	0	0	14	348		41		64	
100%	0	520	30				15	380		45		70	
8:00:00	0	395	10	0	0	0	5	480	0	70	0	105	450
9:00:00	0	382	10	0	0	0	5	464	0	68	0	102	130
12:00:00	0	435	11	0	0	0	6	529	0	77	0	116	190
13:00:00	0	470	12	0	0	0	6	571	0	83	0	125	90
14:00:00	0	492	28	0	0	0	14	360	0	43	0	66	140
15:00:00	0	513	30	0	0	0	15	375	0	44	0	69	560
16:00:00	0	476	27	0	0	0	14	348	0	41	0	64	165
17:00:00	0	520	30	0	0	0	15	380	0	45	0	70	245

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? Parliament Street / Oak Street (Future Background 2032)

What is the direction of the Main Road street? North-South

When was the data collected?

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	0	395	10	0	0	0	15	475	0	45	0	65	180
9:00	0	382	10	0	0	0	15	460	0	44	0	63	51
12:00	0	435	11	0	0	0	17	523	0	50	0	72	75
13:00	0	470	12	0	0	0	18	565	0	54	0	77	36
14:00	0	469	24	0	0	0	24	360	0	33	0	52	56
15:00	0	488	25	0	0	0	25	375	0	35	0	54	223
16:00	0	453	23	0	0	0	23	348	0	32	0	50	65
17:00	0	495	25	0	0	0	25	380	0	35	0	55	97
Total	**0**	**3,587**	**140**	**0**	**0**	**0**	**162**	**3,486**	**0**	**328**	**0**	**488**	**783**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume		392		392					
Factored 8 hour pedestrian volume	392		392		0		0		
% Assigned to crossing rate	100%		100%						
Net 8 Hour Pedestrian Volume at Crossing									784
Net 8 Hour Vehicular Volume on Street Being Crossed									7,375

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	392	0	392	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0		0				0	0	
Factored volume of total pedestrians	392		392		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	100%		100%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									784
Net 8 Hour Volume of Delayed Pedestrians									0

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: Parliament Street / Oak Street (Future Background 2032) Count Date:

Justification 1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☑	8:00	9:00	12:00	13:00	14:00	15:00	16:00	17:00		
1A	480	720	600	900	1,005	974	1,108	1,196	962	1,002	929	1,015		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	110	107	122	131	85	89	82	90		
	COMPLIANCE %				65	63	72	77	50	52	48	53	480	60
Restricted Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☑	8:00	9:00	12:00	13:00	14:00	15:00	16:00	17:00		
2A	480	720	600	900	895	867	986	1,065	877	913	847	925		
	COMPLIANCE %				99	96	100	100	97	100	94	100	787	98
2B	50	75	50	75	225	95	125	90	89	258	97	132		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
Restricted Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐									

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☑	NO ☐		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	12:00	986	122	199	61 %	54 %
	13:00	1,065	131	173	76 %	
	15:00	913	89	227	39 %	
	17:00	925	90	222	40 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

Intersection: Parliament Street / Oak Street (Future Background 2(Count Date:

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	60	%		
2. Delay to Cross Traffic	A	Main Road	98	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	60	%	☐	☑
	B	Justification 2	98	%		
4. 4-Hr Volume			54	%	☐	☑
5. Collision Experience			0	%	☐	☑
6. Pedestrians	A	Volume	Justification met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? Parliament Street / Oak Street (Future Total 2032)

What is the direction of the Main Road street? North-South

When was the data collected?

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	0	395	10	0	0	0	5	480	0	70	0	105	450
9:00	0	382	10	0	0	0	5	464	0	68	0	102	130
12:00	0	435	11	0	0	0	6	529	0	77	0	116	190
13:00	0	470	12	0	0	0	6	571	0	83	0	125	90
14:00	0	492	28	0	0	0	14	360	0	43	0	66	140
15:00	0	513	30	0	0	0	15	375	0	44	0	69	560
16:00	0	476	27	0	0	0	14	348	0	41	0	64	165
17:00	0	520	30	0	0	0	15	380	0	45	0	70	245
Total	**0**	**3,683**	**158**	**0**	**0**	**0**	**80**	**3,507**	**0**	**471**	**0**	**717**	**1,970**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume		985		985					
Factored 8 hour pedestrian volume	985		985		0		0		
% Assigned to crossing rate	100%		100%						
Net 8 Hour Pedestrian Volume at Crossing									1,970
Net 8 Hour Vehicular Volume on Street Being Crossed									7,428

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	985	0	985	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0		0				0	0	
Factored volume of total pedestrians	985		985		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	100%		100%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									1,970
Net 8 Hour Volume of Delayed Pedestrians									0

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: Parliament Street / Oak Street (Future Total 2032) Count Date:

Justification 1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☑	8:00	9:00	12:00	13:00	14:00	15:00	16:00	17:00		
1A	480	720	600	900	1,065	1,031	1,174	1,267	1,003	1,046	970	1,060		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	175	170	193	208	109	113	105	115		
	COMPLIANCE %				100	100	100	100	64	66	62	68	660	83
Restricted Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours					Yes ☐		No ☑		
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours					Yes ☑		No ☐		

Justification 2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☑	8:00	9:00	12:00	13:00	14:00	15:00	16:00	17:00		
2A	480	720	600	900	890	861	981	1,059	894	933	865	945		
	COMPLIANCE %				99	96	100	100	99	100	96	100	790	99
2B	50	75	50	75	520	198	267	173	183	604	206	290		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
Restricted Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours					Yes ☐		No ☑		
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours					Yes ☑		No ☐		

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	12:00	981	193	201	96 %	75 %
	13:00	1,059	208	175	100 %	
	15:00	933	113	219	52 %	
	17:00	945	115	215	54 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

Intersection: Parliament Street / Oak Street (Future Total 2032) Count Date:

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	83	%		
2. Delay to Cross Traffic	A	Main Road	99	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	83	%	☑	☐
	B	Justification 2	99	%		
4. 4-Hr Volume			75	%	☐	☑
5. Collision Experience			0	%	☐	☑
6. Pedestrians	A	Volume	Justification met		☐	☑
	B	Delay	Justification not met			

START TIME	VOL	START HOUR	HOURLY	PEDS	HOURLY_P
07:00:00	98			16	
07:15:00	116			7	
07:30:00	128			5	
07:45:00	123	07:00:00	465	5	33
08:00:00	166	07:15:00	533	10	27
08:15:00	157	07:30:00	574	13	33
08:30:00	153	07:45:00	599	14	42
08:45:00	166	08:00:00	642	12	49
09:00:00	134	08:15:00	610	10	49
09:15:00	168	08:30:00	621	18	54
09:30:00	135	08:45:00	603	13	53
09:45:00	156	09:00:00	593	6	47
10:00:00	150	09:15:00	609	8	45
10:15:00	151	09:30:00	592	9	36
10:30:00	151	09:45:00	608	13	36
10:45:00	146	10:00:00	598	9	39
11:00:00	134	10:15:00	582	6	37
11:15:00	152	10:30:00	583	10	38
11:30:00	160	10:45:00	592	12	37
11:45:00	164	11:00:00	610	15	43
12:00:00	164	11:15:00	640	14	51
12:15:00	160	11:30:00	648	21	62
12:30:00	176	11:45:00	664	18	68
12:45:00	140	12:00:00	640	10	63
13:00:00	176	12:15:00	652	10	59
13:15:00	157	12:30:00	649	8	46
13:30:00	160	12:45:00	633	13	41
13:45:00	175	13:00:00	668	11	42
14:00:00	167	13:15:00	659	4	36
14:15:00	157	13:30:00	659	8	36
14:30:00	177	13:45:00	676	13	36
14:45:00	157	14:00:00	658	15	40
15:00:00	201	14:15:00	692	7	43
15:15:00	201	14:30:00	736	16	51
15:30:00	189	14:45:00	748	30	68
15:45:00	179	15:00:00	770	13	66
16:00:00	192	15:15:00	761	19	78
16:15:00	170	15:30:00	730	16	78
16:30:00	186	15:45:00	727	13	61
16:45:00	198	16:00:00	746	6	54
17:00:00	181	16:15:00	735	18	53
17:15:00	204	16:30:00	769	4	41
17:30:00	187	16:45:00	770	23	51
17:45:00	204	17:00:00	776	14	59

F_TOTAL PED FACTOR: 2.5

07:00:00	465	33	85
08:00:00	642	49	125
09:00:00	593	47	120
10:00:00	598	39	100
11:00:00	610	43	110
12:00:00	640	63	160
13:00:00	668	42	105
14:00:00	658	40	100
15:00:00	770	66	165
16:00:00	746	54	135
17:00:00	776	59	150

FUTURE BACKGROUND TRAFFIC FORECASTS

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR	
96%		375	25	40		15	40	525		35		65	
91%		356	24	38		14	38	499		33		62	
96%		374	25	40		15	40	523		35		65	
100%		390	26	42		16	42	546		36		68	
85%		369	34	72	4	38	42	475		17		42	
99%		432	40	84	5	45	50	556		20		50	
96%		418	38	82	5	43	48	538		19		48	
100%		435	40	85	5	45	50	560		20		50	
8:00:00	0	375	25	40	0	15	40	525	0	35	0	65	49
11:00:00	0	356	24	38	0	14	38	499	0	33	0	62	43
12:00:00	0	374	25	40	0	15	40	523	0	35	0	65	63
13:00:00	0	390	26	42	0	16	42	546	0	36	0	68	42
14:00:00	0	369	34	72	4	38	42	475	0	17	0	42	40
15:00:00	0	432	40	84	5	45	50	556	0	20	0	50	66
16:00:00	0	418	38	82	5	43	48	538	0	19	0	48	54
17:00:00	0	435	40	85	5	45	50	560	0	20	0	50	59

FUTURE TOTAL TRAFFIC FORECASTS

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR	
96%		375	25	40		30	40	630		35		65	
91%		356	24	38		29	38	599		33		62	
96%		374	25	40		30	40	628		35		65	
100%		390	26	42		31	42	656		36		68	
85%		382	34	72	4	42	42	505		17		42	
99%		447	40	84	5	50	50	590		20		50	
96%		433	38	82	5	48	48	572		19		48	
100%		450	40	85	5	50	50	595		20		50	
8:00:00	0	375	25	40	0	30	40	630	0	35	0	65	125
11:00:00	0	356	24	38	0	29	38	599	0	33	0	62	110
12:00:00	0	374	25	40	0	30	40	628	0	35	0	65	160
13:00:00	0	390	26	42	0	31	42	656	0	36	0	68	105
14:00:00	0	382	34	72	4	42	42	505	0	17	0	42	100
15:00:00	0	447	40	84	5	50	50	590	0	20	0	50	165
16:00:00	0	433	38	82	5	48	48	572	0	19	0	48	135
17:00:00	0	450	40	85	5	50	50	595	0	20	0	50	150

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision | GO TO Justification:

What are the intersecting roadways? River Street / Oak Street (Future Background 2032)

What is the direction of the Main Road street? North-South

When was the data collected?

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 1

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	0	375	25	40	0	15	40	525	0	35	0	65	49
11:00	0	356	24	38	0	14	38	499	0	33	0	62	43
12:00	0	374	25	40	0	15	40	523	0	35	0	65	63
13:00	0	390	26	42	0	16	42	546	0	36	0	68	42
14:00	0	369	34	72	4	38	42	475	0	17	0	42	40
15:00	0	432	40	84	5	45	50	556	0	20	0	50	66
16:00	0	418	38	82	5	43	48	538	0	19	0	48	54
17:00	0	435	40	85	5	45	50	560	0	20	0	50	59
Total	**0**	**3,149**	**252**	**483**	**19**	**231**	**350**	**4,222**	**0**	**215**	**0**	**450**	**416**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume		208		208					
Factored 8 hour pedestrian volume	208		208		0		0		
% Assigned to crossing rate	100%		100%						
Net 8 Hour Pedestrian Volume at Crossing									416
Net 8 Hour Vehicular Volume on Street Being Crossed									7,973

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	208	0	208	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0		0				0	0	
Factored volume of total pedestrians	208		208		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	100%		100%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									416
Net 8 Hour Volume of Delayed Pedestrians									0

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: River Street / Oak Street (Future Background 2032) Count Date:

Justification 1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☑	FREE FLOW ☐	RESTR. FLOW ☐	8:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00		
1A	480	720	600	900	1,120	1,064	1,117	1,166	1,093	1,282	1,239	1,290		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	155	147	155	162	173	204	197	205		
	COMPLIANCE %				91	86	91	95	100	100	100	100	764	96

Restricted Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☑	FREE FLOW ☐	RESTR. FLOW ☐	8:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00		
2A	480	720	600	900	965	917	962	1,004	920	1,078	1,042	1,085		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	124	114	138	120	133	175	160	169		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Restricted Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☑	No ☐
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	13:00	1,004	104	101	100 %	100 %
	15:00	1,078	134	88	100 %	
	16:00	1,042	130	94	100 %	
	17:00	1,085	135	87	100 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

Intersection: River Street / Oak Street (Future Background 2032) Count Date:

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	96	%		
2. Delay to Cross Traffic	A	Main Road	100	%	☑	☐
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	96	%	☑	☐
	B	Justification 2	100	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			0	%	☐	☑
6. Pedestrians	A	Volume	Justification met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision | GO TO Justification:

What are the intersecting roadways? River Street / Oak Street (Future Total 2032)

What is the direction of the Main Road street? North-South

When was the data collected?

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 1

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	0	375	25	40	0	30	40	630	0	35	0	65	125
11:00	0	356	24	38	0	29	38	599	0	33	0	62	110
12:00	0	374	25	40	0	30	40	628	0	35	0	65	160
13:00	0	390	26	42	0	31	42	656	0	36	0	68	105
14:00	0	382	34	72	4	42	42	505	0	17	0	42	100
15:00	0	447	40	84	5	50	50	590	0	20	0	50	165
16:00	0	433	38	82	5	48	48	572	0	19	0	48	135
17:00	0	450	40	85	5	50	50	595	0	20	0	50	150
Total	**0**	**3,207**	**252**	**483**	**19**	**310**	**350**	**4,775**	**0**	**215**	**0**	**450**	**1,050**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume		525		525					
Factored 8 hour pedestrian volume	525		525		0		0		
% Assigned to crossing rate	100%		100%						
Net 8 Hour Pedestrian Volume at Crossing									1,050
Net 8 Hour Vehicular Volume on Street Being Crossed									8,584

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	525	0	525	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0		0				0	0	
Factored volume of total pedestrians	525		525		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	100%		100%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									1,050
Net 8 Hour Volume of Delayed Pedestrians									0

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: River Street / Oak Street (Future Total 2032) Count Date:

Justification 1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☑	FREE FLOW ☐	RESTR. FLOW ☐	8:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00		
1A	480	720	600	900	1,240	1,179	1,237	1,291	1,140	1,336	1,293	1,345		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	170	162	170	177	177	209	202	210		
	COMPLIANCE %				100	95	100	100	100	100	100	100	795	99

Restricted Flow Signal Justification 1:

Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑

Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐

Justification 2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☑	FREE FLOW ☐	RESTR. FLOW ☐	8:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00		
2A	480	720	600	900	1,070	1,017	1,067	1,114	963	1,127	1,091	1,135		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	200	181	235	183	193	274	241	260		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Restricted Flow Signal Justification 2:

Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☑ No ☐

Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	13:00	1,114	104	82	100 %	100 %
	15:00	1,127	139	80	100 %	
	16:00	1,091	135	86	100 %	
	17:00	1,135	140	79	100 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

Intersection: River Street / Oak Street (Future Total 2032) Count Date:

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	99	%		
2. Delay to Cross Traffic	A	Main Road	100	%	☑	☐
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	99	%	☑	☐
	B	Justification 2	100	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			0	%	☐	☑
6. Pedestrians	A	Volume	Justification met		☐	☑
	B	Delay	Justification not met			