4095 Tomken Road, City of Mississauga

Westminster United Church

Urban Transportation Considerations

Zoning By-law Amendment Application

Prepared For: KPMB Architects

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

TABLE OF APPENDICES

1.0 INTRODUCTION

1.1 OVERVIEW

BA Group is retained by KPMB Architects to provide urban transportation consulting services in relation to a Zoning By-law Amendment application being made to the City of Mississauga, for the construction of a residential infill development located at 4094 Tomken Road, herein referred to as the "Site".

The Site is located in the south-west quadrant of the Tomken Road / Rathburn Road East intersection. The Site is bounded by Rathburn Road East to the north, Tomken Road to the east, residential properties to the west and south. The site location and context are illustrated in **Figure 1** and **Figure 2**, respectively.

1.2 EXISTING SITE

The existing Site is occupied by a seven (7) storey purpose built residential rental building (consisting of 68 residential units) located on the western portion of the Site; while the Westminster United Church is located on the eastern portion of the Site. Surface parking surrounds the buildings, and one underground parking ramp is located to the south side of the existing residential building.

Residential Rental Building
The existing to remain purpose built residential building is comprised of a total of 68 purpures built residential units located at the 924 Rathburn Road East. As of 2018, 65% of the total units are provided as affordable housing units (based upon rent geared to income (RGI) standards) and 35% market rental units.

A total of 158 parking spaces are provided to accommodate the residential and residential visitor parking demands, including:

- 11 parking spaces (or an effective parking supply of 0.16 spaces / unit) on the surface to accommodate residential visitor demands (spaces are signed as visitor spaces on the surface today); and,
- 92 parking spaces (or an effective parking supply of 1.35 spaces / unit) provided within a both the surface parking lot (38 spaces) and the one-level underground parking garage (54 parking spaces) that is accessed from the south-western portion of the Site.

A loading area is provided on the west side of the residential building to accommodate garbage collection and moving / delivery activities.

Access to the parking and loading facilities is provided via two access points, one (1) along Tomken Road and one (1) along Rathburn Road East. Both of these driveways operate under side street STOP control.

Westminster United Church
The Westminster United Church is located at 4094 Tomken Road. A private daycare facility (The Western Heights Montessori school) is also located within the church building. The Westminster United Church has approximately 345 sq. metres of worship space. Currently the Westminster United Church as one gathering time Sundays at 10:00 a.m. there are daycare and youth programming during the worship times. The Western Heights Montessori school has offers services for toddlers (15 to 30 months old), casa age group (30 months to 6 years old) and march and summary break camp programs during workweek daytime hours.

Vehicular access to the parking facilities is provided from the same two (2) driveways (one off of Tomken Road and Rathburn Road East) that services the residential building.

A total of 110 parking spaces (or an effective parking supply of ratio of approximately 32 spaces per 100 square metres of worship area) is provided on the Site today within the surface parking lot. A pick-up / drop-off area is provided on the south side of the church building and no formal loading spaces are provided to service the loading needs of the church / school.

1.3 CURRENT APPLICATION

A Zoning By-law Amendment application being made to the City of Mississauga to construct two (2) new residential buildings located within both the southern portion of the Site (where the surface parking lot is today) and within the north-eastern portion of the site adjacent to the Tomken Road / Rathburn Road East intersection.

Following the redevelopment of the Site the existing residential building (located at 924 Rathburn Road East) and church building (located at 4094 Tomken Road) will remain in the current condition albeit the parking supply and church's pick-up / drop-off facilities will be adjusted following the redevelopment of the Site.

The proposed development includes the following:

- Northern Building – 85 residential units;
- Southern Building – 156 residential units;
- Existing to Remain Uses:
    - 68 existing to remain residential units at the 924 Rathburn Road East property;
    - 345 sq. metres of church uses at the 4094 Tomken Road property; and,
    - 385 sq. metres of daycare uses at the 4094 Tomken Road property.

The project statistics are summarized in **Table 1**. Reduce-scale copies of the architectural plans are included in **Appendix A**.

TABLE 1 DEVELOPMENT PROPOSAL SUMMARY

Use			Development Proposal	
Existing to Remain Uses		**Residential Units**	68 purpose built rental units (including 65% RCI and 35% market rate units)	
		Church GFA	340 sq. meters	
		Daycare GFA	385 sq. meters	
Newly Constructed Buildings		**Residential Units[1]**	Studio	10 units
			1 Bedroom	116 units
			2 Bedroom	105 units
			3 Bedroom	10 units
			Total	**241 units[1]**
Overall Proposed		**Residential Units**	309 units	
		Church GFA	345 sq. meters	
		Daycare GFA	385 sq. meters	
		Parking Spaces[1]	Resident	Proposed Buildings: 193 Existing Buildings : 54
			Resident Visitor	Proposed Buildings : 48 Existing Buildings :14
			Church	77
			School	
			Total	**386**
		Bicycle Parking Spaces	Total	**196**

Notes:
1. Includes 30 percent affordable units and 70 percent of market rate units.

1.4 STUDY SCOPE

This report provides a summary of BA Group's review of the transportation aspects of the proposed development and documents the study approach, travel demand forecasting methodology, traffic operations assessment and technical findings, as well as the transportation design elements considered in the development of the development proposal. The following form part of the assessment:

Transportation Context

- A review of existing and future transportation context of the Site including road, transit, pedestrian, and cycling elements.

Development Plan and Mobility Strategies

- An overview of the integrated on-site and area physical and operational transportation elements and strategies that enable the minimization of automobile-dependent travel for prospective residents, and visitors while meeting the practical and operational needs of mixed-use development;
- A review of pedestrian and cycling elements of the development plan and related strategies, as well as review of the area street network around the Site;
- A review of vehicular elements of the development plan including vehicular access, loading, and parking provisions, as well as related operational strategies; and
- A summary of Transportation Demand Management measures and initiatives that are central to the development plan.

Sit Planning

- A review of parking requirements and provisions, including a review of the appropriateness of the proposed parking supply;
- A review pf bicycle parking requirements and provisions, including a review of the location and configuration; and
- A review of loading requirements and provisions, including a functional review of the design of the proposed loading facilities.

Travel Demand Forecasting

- A review of site-related traffic forecasts considering each of the proposed land uses, travel demand variations, automobile usage characteristics, and routing options available across the area road network; and
- An outline of travel characteristics and travel demand projections for the component uses recognizing the urban context of the Site, its proximity to employment, recreational, retail, amenity, entertainment, and institutional facilities, the surrounding area population and its location relative to higher order transit services.

Traffic Operations Review

- A review of area traffic activity levels today and in the future considering other area development activity that may influence traffic demands in the Site vicinity; and
- A review of traffic operations on the area road network under existing and future traffic conditions to provide a measure of prevailing traffic activity and operational characteristics and an assessment of site-related impacts.

The findings of our transportation review are summarized in the following sections.

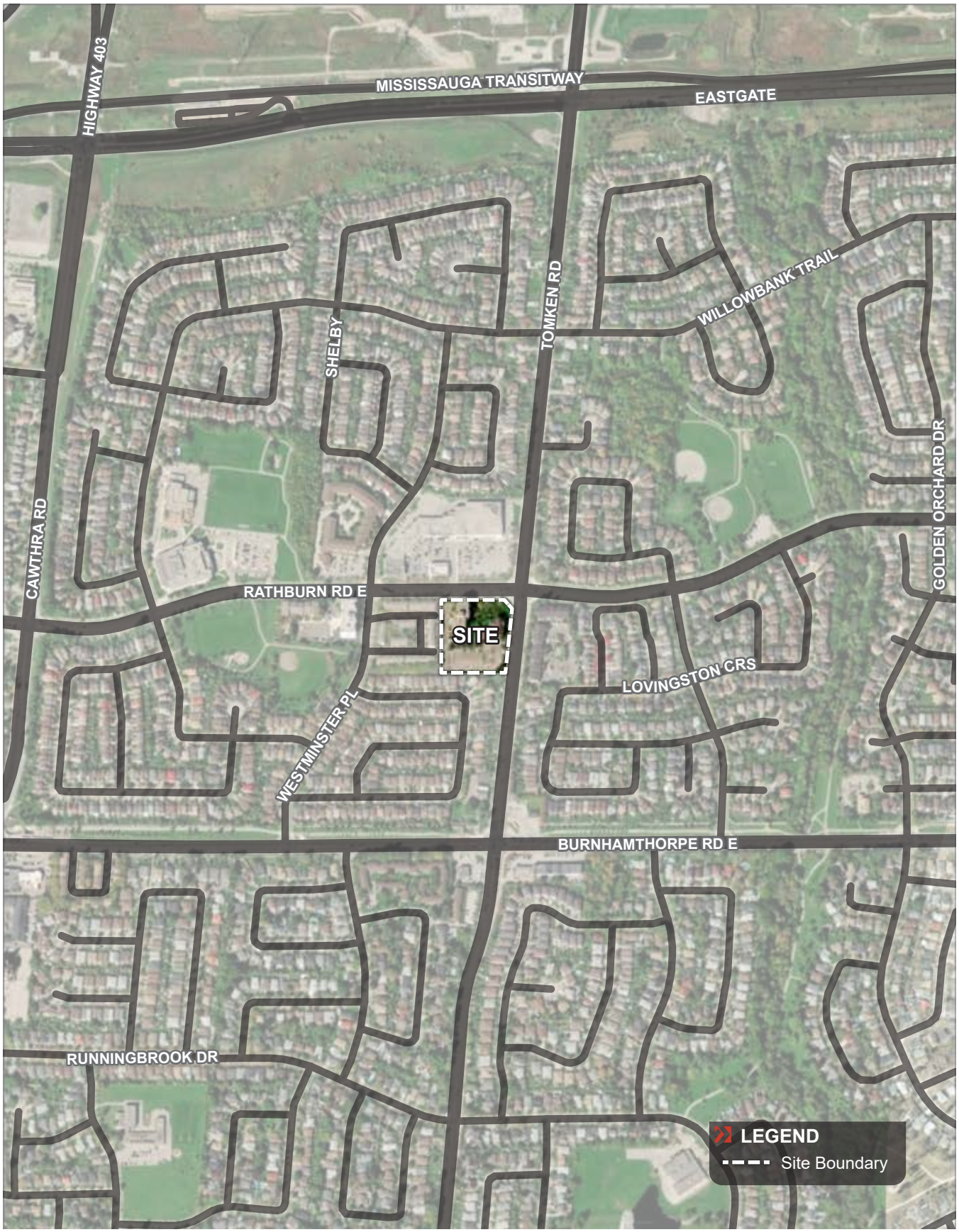

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FIGURE 1 SITE LOCATION

BA GROUP 6126-23

4094 TOMKEN RD, MISSISSAUGA

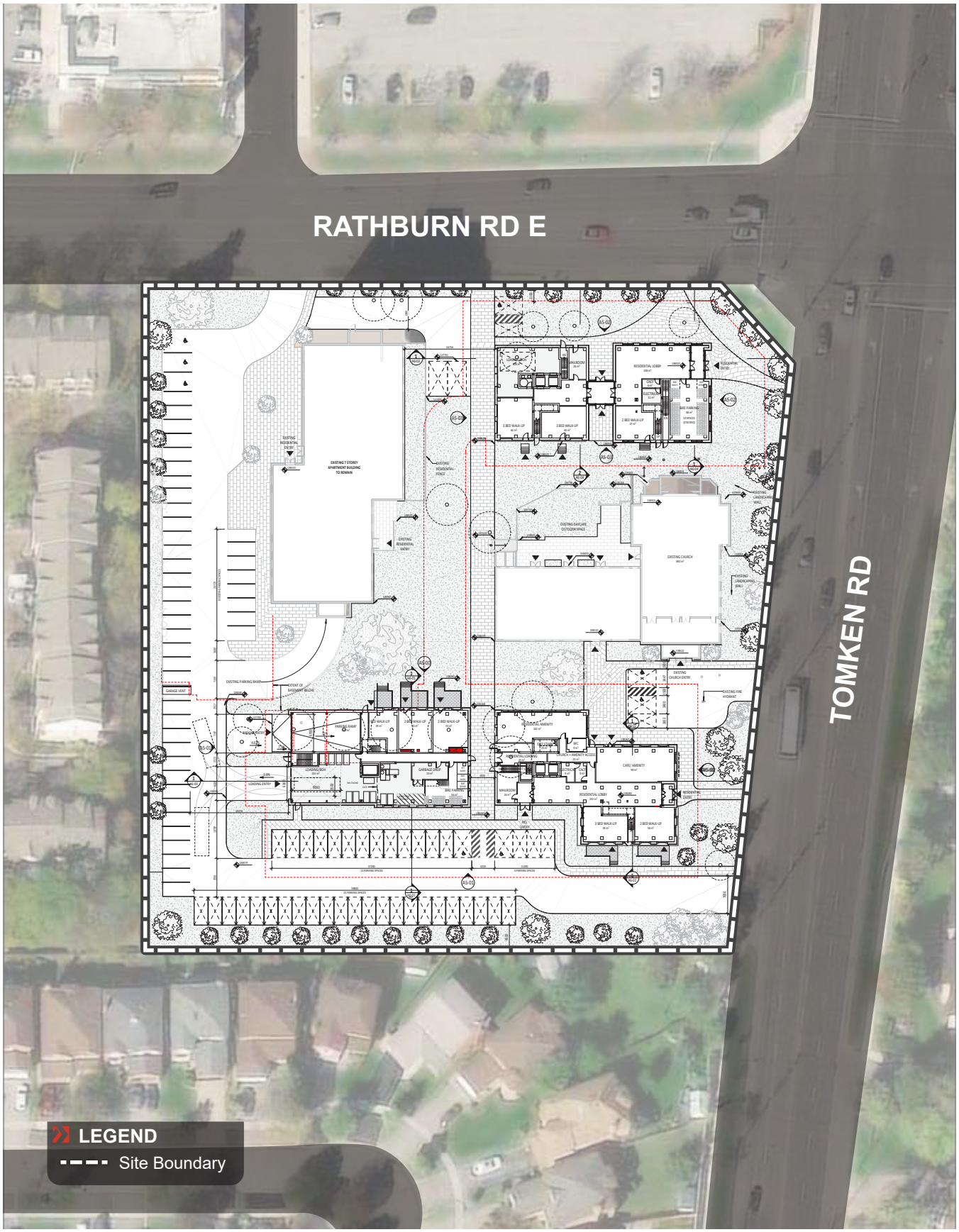

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FIGURE 2 SITE CONTEXT

BA GROUP 6126-23

4094 TOMKEN RD, MISSISSAUGA

2.0 EXISTING AREA TRANSPORTATION CONTEXT

2.1 AREA ROAD NETWORK

The characteristics of the roads and intersections in the vicinity of the subject site are described below. The existing lane configurations and traffic control are illustrated in **Figure 3**.

Tomken Road is a north-south major collector road under the jurisdiction of the City of Mississauga. Tomken Road has a basic four-lane urban cross-section. Within the site environ, it operates with no posted speed limit, so it is assumed that the statutory 50 km/h speed limit applies. Tomken Road intersects with Rathburn Road E at a signalized intersection.

Rathburn Road E is an east-west major collector road under the jurisdiction of the City of Mississauga. Rathburn Road has a basic four-lane urban cross-section. Within the site environ, it operates with no posted speed limit, so it is assumed that the statutory 50 km/h speed limit applies.

Westminster Road is a minor collector road under the jurisdiction of the City of Mississauga. A crescent shaped road intersects with Burnhamthorpe Road East and Rathburn Road East and has a basic two-lane urban cross-section with on-street parking permitted on either side of the road through the study area. It provides access to the various land uses along its length and is adjacent to the site but does not provide direct access.

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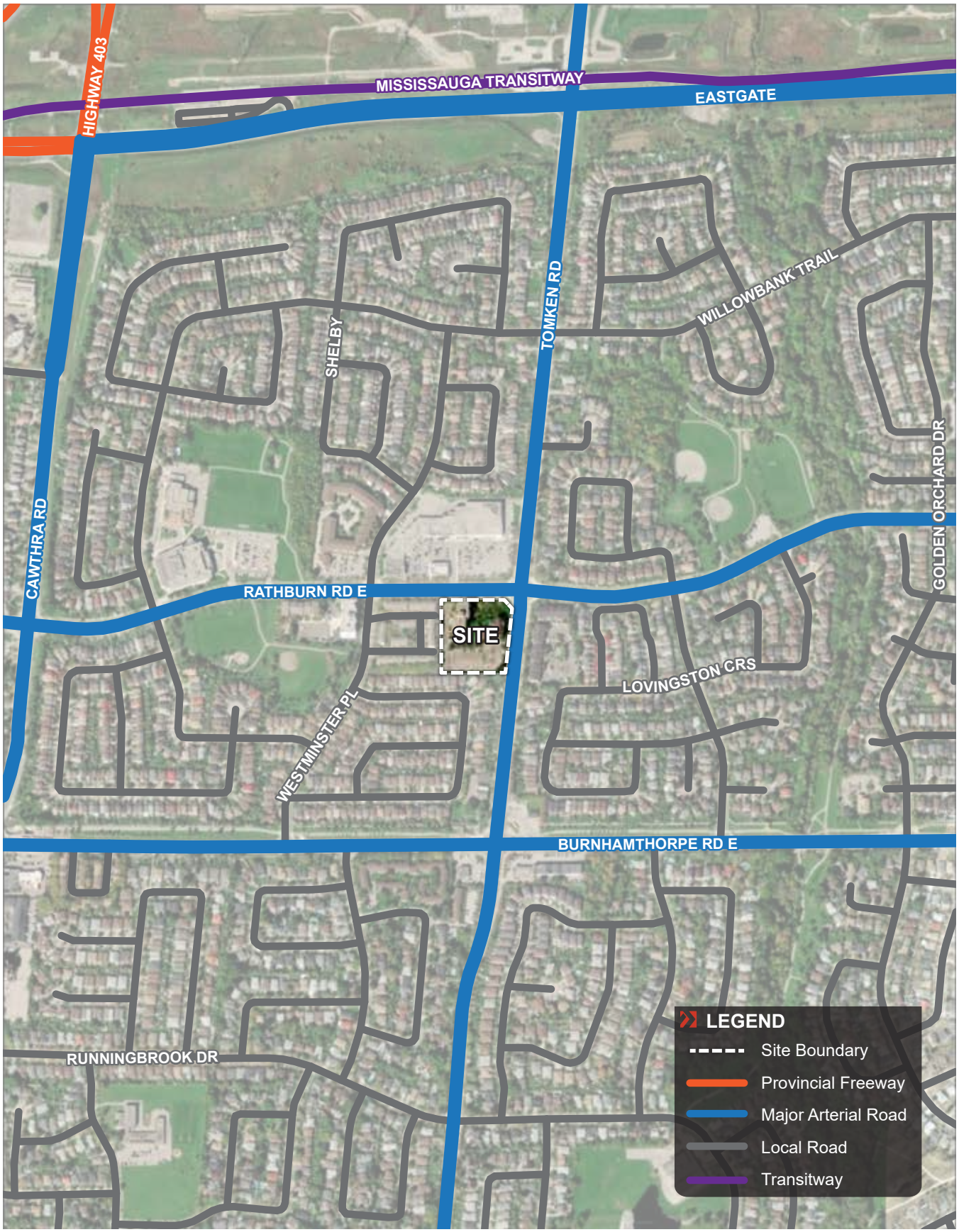

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FIGURE 3 AREA ROAD NETWORK

BA GROUP 6126-23

4094 TOMKEN RD, MISSISSAUGA

2.2 TRANSIT NETWORK

2.2.1 Existing Transit Network

The site is well served by bus services operated by the Mississauga municipal transit service provider MiWay. Nearby bus connections as illustrated in **Figure 4**. The nearest existing transit stops to the site are located within a 300 meters radius or 5-minute walking distance on Rathburn Road E and Tomken Road.

20 Rathburn Road East

The **20 Rathburn Road East** bus route is a regular service that generally operates in an east-west direction along Rathburn Road which extends north to Derry Road E and Dundas Street E to the south. It operates all day for seven days a week and headways are in the order of 15 minutes or less during the peak hour periods.

51 Tomken Road

The **51 Tomken Road** bus route is a regular service that generally operates in a north-south direction along Tomken Road which extends to the Erindale GO Station to the west and Highway 427 to the east. It operates all day for seven days a week and headways are in the order of 15 minutes or less during the peak hour periods.

26 Burnhamthorpe

The **26 Burnhamthorpe** bus route is a regular service that generally operates in an east-west direction along Burnhamthorpe Road between the Islington Subway Station in the east and the South Common Centre Bus Terminal in the west. It operates all day for seven days a week and headways are in the order of 15 minutes or less during the peak hour periods. The closest bus stop is located at the Tomken Road / Burnhamthorpe Road intersection, within the site environs.

2.2.2 Planned Transit Improvements

There are no proposed transit improvements in the vicinity of the site. Improvements elsewhere in the city will improve access to the city and region via connections to transit services currently servicing the sites.

2.3 AREA CYCLING NETWORK

In the City of Mississauga Official Plan (January 10, 2018), Burnhamthorpe Road is identified as a primary existing on-street bike lane route. This bike route operates at a main corridor connection to alternative primary routes that extend in the east-west direction. Rathburn Road East is identified as a proposed bike lane route within the five-year cycling implementation plan.

The existing and future planned cycling facilities are illustrated in **Figure 5.**

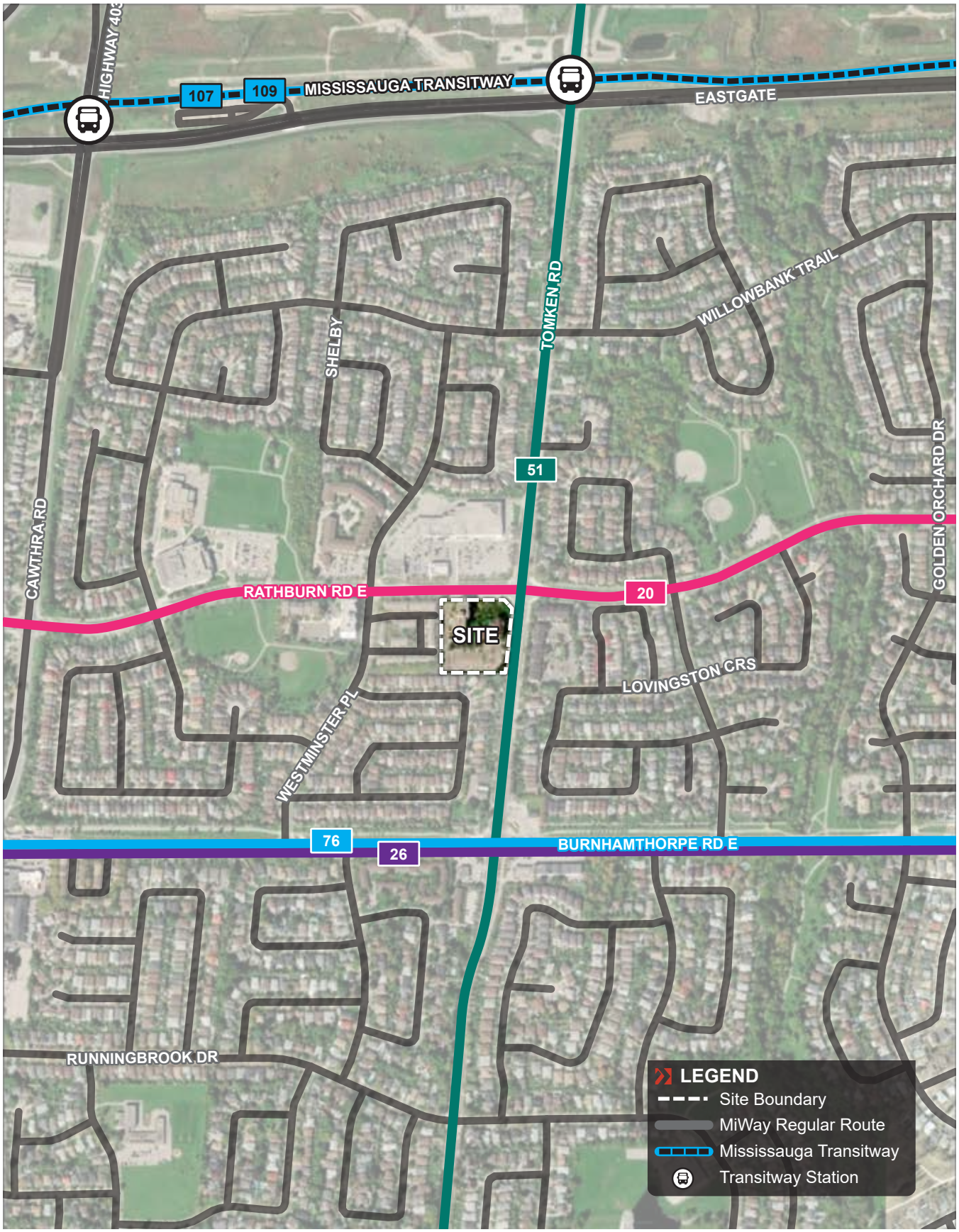

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FIGURE 4 AREA TRANSIT CONTEXT

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4094 TOMKEN RD, MISSISSAUGA

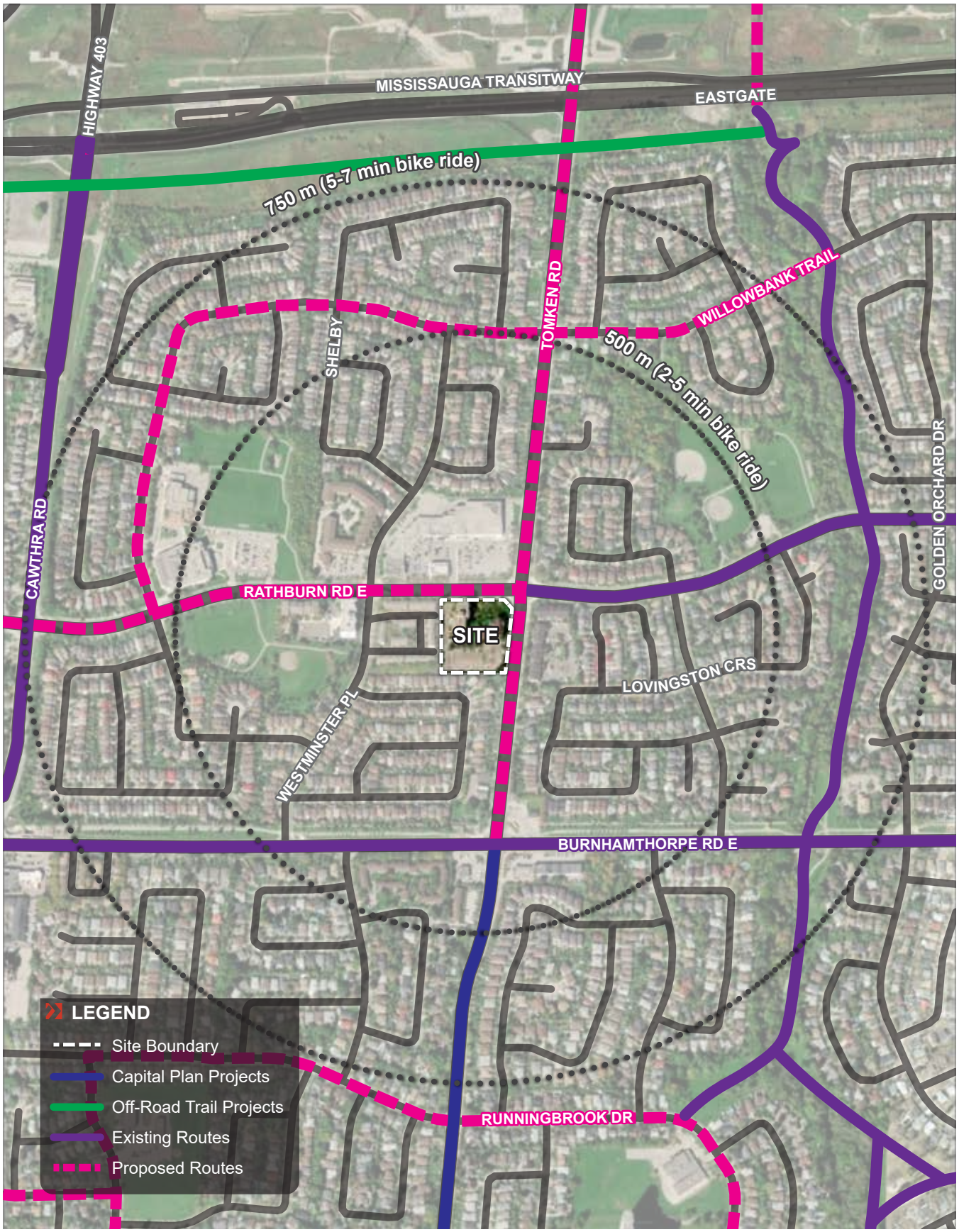

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FIGURE 5 EXISTING AND PROPOSED CYCLING NETWORK

BA GROUP 6126-23 4094 TOMKEN RD, MISSISSAUGA

3.0 SITE ACCESS

3.1 VEHICULAR ACCESS

With the redevelopment of the Site, three (3) driveways are proposed to provide vehicular access to both the existing to remain uses and the newly constructed uses.

It is proposed to maintain the existing driveway off Rathburn Road East which is located approximately 110 metres measured (centreline to centreline) west of the Tomken Road / Rathburn Road East intersection. This driveway will continue to operate under side street STOP control and is opposite of the Tomken Plaza driveway. This access will continue to provide vehicular access to the parking and loading facilities related to the existing to remain uses (i.e. church, daycare and residential uses) and the newly constructed uses (i.e. the proposed two new residential buildings).

Two (2) driveways are proposed on Tomken Road, including a one-way driveway located approximately 95 metres (measured centreline to centreline) south of the Tomken Road / Rathburn Road East intersection. This driveway provide access to the proposed pick-up / drop-off facility for the existing to remain church and daycare facility. The second Rathburn Road East two-way driveway is proposed adjacent to the southern property limit (approximately 130 metres measured centreline to centreline) and will provide access to the parking and loading facilities for both the existing to remain uses (i.e. church, daycare and residential uses) and the newly constructed uses (i.e. the proposed two new residential buildings). This driveway will also be connected to the Tomken Road driveway via the internal 'L' shaped driveway connection.

The driveway configuration is illustrated in the reduced scale architectural plans attached in **Appendix A.**

3.2 PICK-UP / DROP-OFF AREA

The pick-up / drop-off (PUDO) area for the Westminster Church is proposed to be provided in a PUDO area off of Tomken Road. The pick-up / drop-off area is one-way access with inbound vehicles entering from the north Tomken Road access and exiting from the proposed southern Tomken Road access. The proposed developments will have pick-up / drop-off provided on the southern side of the south development building. The proposed pick-up / drop-off areas are illustrated on the architect plans attached for reference in **Appendix A**.

3.3 PEDESTRIAN ACCESS

There is a north-south pedestrian connection proposed within the centre of the site. This will connect pedestrians from Rathburn Road East down to the southern end of the site. The south development building is split on the ground level to provide this continuous connection. The proposed connection is illustrated on the architect plans in **Appendix A.**

3.4 CYCLING ACCESS

Cycling access is provided via the site driveways. Cyclists can ride through the site driveway network or walk bicycles via the pedestrian walkway network through the site. Bicycle parking is located at grade and on the second level of each building.

4.0 VEHICULAR PARKING CONSIDERATIONS

4.1 MINIMUM PARKING REQUIREMENTS

The Site is subject to the City of Mississauga Zoning By-law 0225-2007, located within the City Centre district (Zone RA2-11) Precinct 4. The parking requirements for the Project are provided in **Table 2**.

TABLE 2 ZONING BY-LAW 0225-2007 MINIMUM PARKING REQUIREMENTS (PRECINCT 4)

Use		Units / GFA	Minimum Parking Rate	Minimum Parking Requirement[1]
Resident (Rental Apartment)	**Existing to Remain** Residential Building (924 Rathburn Rd E)	68 units	1.00 spaces / unit	68 spaces
	Newly Constructed	241 units		241 spaces
	Resident Subtotal	***309 units***		***309 spaces***
Resident Visitor	**Existing to Remain** Residential Building (924 Rathburn Rd E)	68 units	0.20 spaces / unit	14 spaces
	Newly Constructed	241 units		48 spaces
	Resident Visitor Subtotal	***309 units***		***62 spaces***
Non-Residential Uses	**Existing to Remain** Place of Worship Uses (4094 Tomken Rd)	345 m^2	27.1 spaces / 100 m^2	93 spaces
	Existing to Remain Daycare Uses (4094 Tomken Rd)	385 m^2	2.5 spaces / 100 m^2	10 spaces
	Non-Residential Subtotal			***103 spaces***
Total Required Spaces On-site				**474 spaces**

Notes:
1. All vehicle parking calculations resulting in a fraction of less than 0.50 shall be rounded down to the nearest whole number and vehicle parking calculations resulting in a fraction of more than 0.50 shall be rounded up to the nearest whole number, as per City of Mississauga By-law 0225-2007 Section 3.1.1.1.4.

As summarized above, application of the minimum Zoning By-law parking standards results in a requirement of 474 total spaces, comprising 309 resident spaces (1.00 space per unit) 62 resident visitor spaces and 103 non-resident spaces.

4.2 PROPOSED PARKING SUPPLY

A total of 386 parking spaces are proposed to accommodate both the existing to remain uses (i.e. existing residential, church and daycare uses) and the two newly constructed residential buildings. The proposed parking supply includes:

- 91 surface parking spaces to serve the visitor and non-resident for existing uses on the site that will remain.
- 54 existing to remain parking spaces provided within the 924 Rathburn Road East underground parking garage; and,
- 241 parking spaces provided within 3-levels of underground parking garage below the newly constructed north and south buildings; and,
- Within the overall parking supply, a total of 43 EVSE spaces are provided. Which exceeds the Mississauga By-law
- Within the overall parking supply, a total of 15 accessible spaces are proposed

It is our opinion that in the prevailing residential parking requirements, as per By-law 0225-2007, overstates the parking needs of the site based on a surplus of the existing on-site parking supply to remain. The justification for the reduced minimum residential parking rate is discussed further in **Section 4.3**.

Application of the proposed parking rates results in the minimum requirement of 386 parking spaces, including 246 residential (0.80 spaces per unit), 68 visitor (0.20 spaces per unit) and 78 shared non-residential spaces.
The proposed parking supply is summarized in **Table 3**.

TABLE 3 PROPOSED PARKING NEED AND SUPPLY

Use	Units / GFA	Minimum Rate	Total
Proposed Development			
Resident	241 units	0.8 space / unit	193 spaces
Visitor	241 units	0.20 space / unit	48 spaces
Total	-		241 spaces
Existing Apartment Building to Remain			
Existing Apartment Resident	68 units	0.8 space / unit	54 spaces
Existing Apartment Visitor	68 units	0.20 space / unit	14 spaces
Total	-		68 spaces
Existing Westminster Church & Daycare Facility to Remain			
Existing Westminster Church & Daycare Facility	-		77 spaces
Total	-		spaces
Proposed Parking Supply	**-**		**386 spaces**
By-law Parking Requirement	**-**		**474 spaces**
Difference vs. By-Law Requirement	**-**		**-88 spaces**

4.3 APPROPRIATENESS OF PARKING STANDARDS

The parking requirement of as per By-law 0225-2007, overstate the parking needs of the overall site for both the proposed uses and the existing uses to remain on the site. BA conducted a parking study and observed parking demands significantly lower than the By-law parking requirements. The following section discusses the appropriateness of the proposed (reduced) parking requirements, based on the following considerations:

- Emergence of non-auto supportive regional and local policy directives;
- Increasing levels of transit reach and accessibility;
- Observed on-site parking demand;
- Close proximity to the site to Precinct 3 boundary;
- Additional support from the site's TDM strategy.

4.3.1 Regional and Local Policy Directives

Mississauga's transportation policy and planning regime is evolving such that it actively responds to the changing transportation needs of the City. Specifically, current policies and initiatives better reflect and prioritize the mobility and experience of people with less emphasis on the efficiency of car movement.

Common themes across relevant transportation-related policies to the site area include:

Planning transit from a network perspective.
Public transit is being transformed to achieve an interconnected network of transit service. Planning and funding efforts are being undertaken on different scales (locally and regionally) to achieve this vision.

Designing streets and public realm for people.
While the efficient movement of automobiles has previously been the focus in transportation planning, this is no longer true. The enjoyment, safety, and efficiency of the pedestrian realm has become the new focus of mobility planning in the City of Mississauga.

Connecting and expanding active transportation infrastructure.
The City has been undertaking a greater expansion of cycling infrastructure through the Cycling Master Plan. The Plan aims to connect the gaps in the existing network of off-street multi-use paths and bicycle lanes, spanning across different neighbourhoods of the City. The Plan seeks to establish major corridors and expand the amount of protected cycling infrastructure.

Reducing parking in transit-accessible areas.
Support for public transit and active transportation facilities and usage have increased with the decreasing need / demand for excessive parking. Existing and new provincial and local plans have recognized the need to establish appropriate parking standards in response to the transportation advancements occurring in transit-focused areas, as well as the increasing number of rezoning and minor variance applications requested for new development

4.3.2 Observed On-site Parking Demand

BA group has recently performed a parking study of the existing site in order to determine what the current parking demands are for the existing rental apartment building and the Westminster United Church. The surveys were taken across 4 month period and on-site parking was counted for the following eight days:

- Tuesday March 22, 2022
- Wednesday March 23, 2022
- Thursday March 24, 2022
- Sunday March 27, 2022
- Monday June 27, 2022
- Tuesday June 28, 2022
- Wednesday July 6, 2022
- Thursday July 7, 2022

The parking total on-site parking was counted every hour for peak hours of each day. The parking demand also provides a breakdown of each on-site parking use (residential underground parking, residential visitor surface parking, and church surface parking). A summary of the parking survey findings is provided in **Table 4**. The table shows the date and time of day where peak parking demand was observed for each parking area. A conservative peak demand estimate is shown if the peak parking for each area were to occur on the same day at the same time. All parking demand data is provided in **Appendix B.**

TABLE 4 PEAK ON-SITE PARKING DEMAND SUMMARY

Date	Time	Apartment				Church / Daycare		Combined
		Residential UG	Residential Surface	Visitor Surface	Total	Surface	Total	
		54	35	14	103	110	110	213
Tuesday, March 22	7:00 AM	38	3	2	43	3	3	46
Tuesday, June 28	1:30 PM	37	5	4	46	0	0	46
Tuesday, March 22	10:00 AM	25	2	7	34	7	7	40
Sunday, March 27	11:00 AM	33	3	2	38	20	20	58
Peak Demand		**38**	**5**	**7**	**50**	**20**	**20**	**70**

4.3.2.1 Peak Existing Residential Parking Rate

Based on the parking survey data that we have collected, the sum of conservative total peak observed parking across both residential parking areas for the existing 68-unit building is 43 parking spaces, or approximately 0.63 spaces per unit. This is significantly lower than the proposed resident parking rate of 0.80 residential parking spaces per unit as well as the residential parking rate required in By-law 0225-2007 which is 1.0 parking space per unit. The peak observed residential parking demand is summarized in **Table 5**.

TABLE 5 PEAK ON-SITE RESIDENTIAL PARKING DEMAND SUMMARY

Date	Time	Apartment		
		Residential UG	Residential Surface	Total
		54 spaces	35 spaces	89 spaces
Tuesday, March 22	7:00 AM	38	3	41
Tuesday, June 28	1:30 PM	37	5	42
Peak Demand		**38 spaces**	**5 spaces**	**43 spaces**

4.3.2.2 Peak Existing Visitor Parking Rate

We have conservatively kept the observed residential surface parking in the review of the observed non-residential parking demand as it is largely empty, and therefore possible they are being used for non-resident parking. We have conservatively counted this demand twice, for both resident and non-resident parking.

Based on the parking survey data that we have collected, the sum of conservative total peak observed parking across the existing surface parking lot is 32 parking spaces. This is significantly lower than the proposed parking supply of 91 parking spaces which are intended to serve the existing-to-remain church and child care uses and well as the existing residential visitor parking.

TABLE 6 PEAK ON-SITE PARKING DEMAND SUMMARY

Date	Time	Apartment			Church		Combined
		Residential Surface	Visitor Surface	Total	Surface	Total	
		35	14	103	110	110	213
Tuesday, March 22	7:00 AM	3	2	5	3	3	8
Tuesday, June 28	1:30 PM	5	4	9	0	0	9
Tuesday, March 22	10:00 AM	2	7	9	7	7	16
Sunday, March 27	11:00 AM	3	2	5	20	20	25
Peak Demand		**5**	**7**	**12**	**20**	**20**	**32**

4.3.3 Proposed TDM Strategies

As discussed in detail in **Section 7.0** a TDM Plan for the site is proposed to guide the provision of viable alterative personal transportation options beyond the single-occupant, private automobile. The objective is to encourage the use of active and sustainable transportation modes, respond to the mobility needs of site residents, employees and patrons, and reduce dependence on automobiles.

The future site context provides frequent, public transit services and improved pedestrian and cycling connectivity. The TDM Plan supplements and further leverages the physical infrastructure and attributes of the site area with a goal to reduce or minimize auto-mode share. The proposed TDM strategies include (but are not limited to): provision of a reduced parking supply, abundant bicycle parking supply in excess of the Zoning By-law, abundant EVSE parking spaces, and promotional materials for transit services and bicycle events near the site.

4.3.4 Evolving Policy

Higher parking rates are not consistent with the contemporary planning and policy regime that are guiding new development today and into the future.

The *Mississauga's Parking Matters Master Plan and Implementing Strategy* was approved in June 2019 to improve the efficiency and effectiveness of local parking as the City continues to evolve. The Strategy indicated that managing parking supply as a key tool to achieving specific utilization, financial, and planning / development objectives. It recognized the need to manage issues by reducing minimum parking standards and encouraging the integration of TDM with parking and other non-auto strategies. General findings further indicate that the City should strive to achieve a stronger balance between the parking and Mississauga's desire to be foster a true multi-modal City.

While the subject site falls under Parking Precinct 4 on the current zoning maps, it is important to note that to the west of Tomken Road, Rathburn Road East acts as a dividing line with Precinct 4 parking rates on the south side and Precinct 3 Parking Rates on the North Side. The subject site is located directly at the south west corner of Rathburn Road East and Tomken Road intersection, therefore in Precinct 4, while the north west corner of the intersection immediately across the street is in Precinct 3, representing a 10% reduction in residential parking requirement with no change in transportation context.

While Precinct 3 would require a residential parking rate of 0.9 spaces per unit for rental developments, higher than the proposed 0.8 spaces per unit, it is noteworthy that the proposed parking rate of 0.8 spaces per unit represents a more modest reduction relative to required parking rates that are applicable immediately across the street.

4.4 VEHICULAR PARKING SUMMARY

It is our opinion that the as-of-right minimum parking requirements exceed the needs of the proposed development. This opinion is justified by supportive policies, plans, and City discussions; area transit and active transportation context; observed parking demand on the site for existing residential and non-residential uses. **Table 7** summarizes the ranges of parking ratios acknowledged throughout the rationale discussed above.

TABLE 7 SUMMARY OF RESIDENTIAL PARKING RATIONALE RATIOS

Type	Residential Parking Rate
Mississauga Zoning By-law 0225-2007	1.00
Observed On-site Residential Parking [1]	0.63
Proposed Site	0.80

Notes:
1. Parking rates as spaces per unit.

The evidence presented above provide a suitable basis for the proposed minimum residential parking requirement of 0.80 spaces per unit, which is supported by the observed parking demands on the site today and is in line with the prevailing policies toward reductions in parking.

It is also proposed to provide a total of 77 surface parking spaces on a shared non-exclusive basis to serve the needs of both the existing church and day care uses which are proposed to remain on the site. The proposed supply significantly exceeds the observed parking demand for existing non-residential uses.

TABLE 8 SUMMARY OF NON-RESIDENTIAL PARKING SUPPLY

Type	Parking Supply
Mississauga Zoning By-law 0225-2007 Existing To Remain – Place of Worship	93 spaces
Mississauga Zoning By-law 0225-2007 Existing To Remain – Child Care	10 spaces
Total Non-Residential Requirements	103 spaces
Proposed Site	**77 spaces**

As such, the overall supply of 386 parking spaces, including 247 residential, 62 residential visitor and 91 non-residential spaces will adequately meet the parking demands of the proposed site.

5.0 BICYCLE PARKING CONSIDERATIONS

5.1 MISSISSAUGA BICYLE PARKING RATES

Application of the recommended Mississauga Bicycle Parking Requirement By-law 0118-2022 requires a minimum of 156 bicycle parking spaces provided on the site (i.e. 144 long-term and 12 short-term residential spaces). A summary of the suggested minimum bicycle parking requirements summarized in **Table 9**.

TABLE 9 MISSISSAUGA BICYCLE PARKING REQUIREMENT BY-LAW 0118-2022 (RA2-11)

Use		Units / GFA (sq.m.)	Minimum Parking Rate	Minimum Parking Required
Residential	Long-Term	241 units	0.60 spaces / unit	145 spaces
	Short-Term		0.05 spaces / unit	13 spaces
	Total	-	-	156 spaces

Notes:

1. The City of Mississauga cycling standards does not specify any standards for rounding when calculating the required bicycle spaces. For the purposes of this assessment, if the calculation of the required number of parking spaces results in a fraction less than or equal to 0.5, the number is rounded down to the nearest whole

5.2 BICYCLE PARKING SUPPLY

It is proposed to provide 196 bicycle parking spaces (i.e. 160 long-term spaces, 36 short-term spaces) to support the bicycle parking demands of the proposed development.

A total of 160 residential spaces will be provided within secured facilities located on the ground floor and second level of the building.

Based on the above, the proposed development meets and exceeds Mississauga Bicycle parking standards.

6.0 LOADING CONSIDERATIONS

6.1 ZONING BY-LAW 0225-2007 LOADING REQUIREMENTS

BA Group has assessed the service vehicle loading requirements for the proposed development. Application of the prevailing City of Mississauga Zoning By-law 0225-2007 to the new development results in a requirement of two (2) loading space with dimensions of 3.5 metres by 9.0 metres. Loading space requirements for the proposed development summarized in **Table 10**.

It is noted that the existing church building containing the place of worship and child care uses pre-dates does not currently have a dedicated loading space. The existing site is served by 1 formal loading space located on the west side of the existing residential building, which will be maintained.

TABLE 10 CITY OF MISSISSAUGA ZONING BY-LAW 0225-2007 LOADING SPACE REQUIREMENTS

Use	Units / GFA (sq.m.)	Minimum Zoning By-law Requirements	Number of Loading Spaces Required
Residential	241 units	One loading space per apartment building containing a minimum of 30 dwelling units.	2 spaces
Total Required Loading Spaces			**2 spaces**

Notes:
1. Existing to remain place of worship and child care uses are located within the same building. Loading requirements within Mississauga By-law 0225-2007 provides a requirement

6.2 LOADING FACILITIES

6.2.1 Loading Supply

A total of 3 loading spaces are provided on the site.

Two (2) new formal loading spaces are proposed at-grade level for the proposed development, one for each building. These spaces meet the Zoning By-law requirements.

The existing loading space for the existing residential apartment building is proposed to be maintained. Since the existing church and child care facility do not have a dedicated loading space, it is proposed to continue to share the loading for the church and child care with the residential buildings on the site.

6.2.2 Residential Waste Collection

Residential garbage collection for the existing building will continue to be provided from the existing loading space along the west side of the existing building.

Residential garbage collection for both of the proposed buildings is proposed to be within the southern buildings loading area, and will meet the requirements of the "*Region of Peel Waste Collection Design Standards Manual*" (2020).

6.2.2.1 Approach

The collection point accommodates an 18m approach in line with Appendix 4 of the "*Region of Peel Waste Collection Design Standards Manual*" (2020).

6.2.2.2 Height Clearance

A total clear height of 7.5m is provided over the loading area in the southern building to accommodate front-end collection pick-up within the consolidated refuse collection point. Bins from the proposed north building will be brought to the south collection point from the underground refuse storage room via the underground connection and up the parking ramp. A minimum of 4.4m height clearance is provided throughout the route outside of the collection point.

6.2.2.3 Bin Staging

No specific bin staging requirements are outlined in the "*Region of Peel Waste Collection Design Standards Manual*" (2020); a requirement of one 3-cubic yards bin is required for every 54 units (i.e. five (5) bins for 241 units). In front of the loading space, approximately 60 sq.m. space has been provided for bin staging. The space provision can sufficiently accommodate the five (5) 3-cubic yards bins, with additional room for maintenance staff to shuffle waste bins on the day of collection. The bin staging area is a minimum of 6.0m wide at the collection point to accommodate bin manoeuvring to/from the collection point. Trained on-site staff will be present to assist with manoeuvring bins into and out of the collection point for the truck.

6.2.3 Operations and Maneuvering

Turning movement diagrams have been developed demonstrating the ability for Peel Region front loading refuse collection vehicles to manoeuvre appropriately within the site when accessing / departing the loading space proposed within the loading area. These are illustrated as Vehicle Manoeuvring Diagrams (**VMD-01** to **VMD-03**) in **Appendix C**.

These diagrams confirm that the proposed loading arrangements are appropriate and will facilitate the manoeuvring needs of the vehicles that use the proposed development.

6.3 LOADING SUMMARY

The proposed lay-by and interior garbage collection space, based on the above, can accommodate the servicing needs of the proposed development plan.

7.0 TRANSPORTATION DEMAND MANAGEMENT

A suite of transportation demand management measures are proposed as part of a Transportation Demand Management (TDM) Plan for the project that will attempt to influence the way people travel to and from the site. Specifically, the primary goal is to reduce the overall reliance on single-occupant vehicles (SOV) while promoting the use of more active and sustainable modes of transportation.

Generally, this TDM Plan has three primary objectives:

1. Reduce car dependence and the need for everyday SOV travel;
2. Make it easy and attractive for people to walk and cycle; and
3. Promote transit and low-carbon alternatives in comparison to car ownership and SOV travel.

The suite of TDM strategies under consideration will promote the use of more active and sustainable transportation modes, respond to the mobility needs of residents, and visitors to the site, and reduce dependence on the private automobile.

A number of transportation network improvements are planned or underway in the site environment that will alter the way area residents, and visitors are able to travel. Most significantly, these improvements will facilitate an improvement in the cycling network, allowing safer and easier access to and from the site via bicycle. Specific TDM initiatives proposed by the developer as part of the mobility strategy to support the proposed development and facilitate use of alternatives to car ownership are outlined below in **Table 11.**

The combination of the above proposed measures will serve to make travel by transit, walking and cycling easier, and will provide alternatives to parking a car on site for the portion of trips that require the use of a private automobile.

TABLE 11 POTENTIAL AND RECOMMENDED SITE TDM MEASURES

TDM Measure	Overview	Impact
Cycling Related		
Provision of bicycle parking	As is outlined in Section 4.2 Bicycle Parking Supply, 10 (ten) bicycle parking spaces will be provided for church goers, residents, and visitors.	Improved cycling convenience.
Transit Related		
Travel Information Brochure	Provide a travel information brochure to residents providing an overview of transportation (walk, cycle, car-share, transit) in the area.	Identifies mobility choices in the area.
Transit Availability	Site is located next to transit stops with further connections to the region	Improved transit convenience
Pedestrian Infrastructure		
Pedestrian Connectivity	Sidewalks through the site improve walkability and reduces walking distance	Improved pedestrian convenience.

8.0 TRAFFIC VOLUMES

8.1 OVERVIEW

The following analysis has been undertaken considering a residential infill development located at Westminster United Church over an assumed 5-year development horizon (2027). The following scenarios have been analyzed for the weekday morning peak, weekday afternoon peak and Sunday existing site-generated (midday) peak hours:

- Existing conditions;
- Future background conditions for the analysis horizon year 2027; and
- Future total conditions for the analysis horizon year 2027.

Existing lane configurations and area intersection traffic control are illustrated on **Figure 6**.

8.2 EXISTING TRAFFIC VOLUMES

Existing traffic volumes for intersections within the study area were adopted from traffic counts undertaken by Spectrum Traffic Data Inc., as commissioned by BA Group. The traffic count information adopted as the basis for the traffic operations analysis undertaken to assess the operational impacts of the proposed development is summarized in **Table 12**.

TABLE 12 EXISTING TRAFFIC COUNTS

Intersection	Date of Count	Source
Tomken Road / Burnhamthorpe Road E	Thursday March 24, 2022 Sunday May 3, 2022	Spectrum Traffic Data Inc.
Tomken Road / Westminster Church Access		
Tomken Road / Rathburn Road E		
Rathburn Road E / Tomken Plaza / Tomken Grove		
Rathburn Road E / Westminster Place		

The existing turning movement counts were reviewed in detail to ensure a general consistency in traffic volumes on links between intersections. Sunday counts adopted a forced peak hour of 11:15 AM – 12:15 PM to align with the existing site generated peak hour.

Existing traffic volumes adopted for this analysis are illustrated in **Figure 7** and raw traffic count data is provided in **Appendix D**.

8.3 BACKGROUND TRAFFIC VOLUMES

8.3.1 Background Development Growth

Allowances were made to account for new traffic volumes related to construction of other development proposals in Mississauga's Ward 3 within the vicinity of the site and summarized in **Table 13**. Together, these proposals represent development in the order of 159 residential units and 291,000 square feet (27,000 square metres) of non-residential floor area.

TABLE 13 BACKGROUND DEVELOPMENTS

Development	Development Statistics
900 Eglinton Avenue E	13,144 ft^2 mosque
1315 Silver Spear Road	159 residential units
4496 Tomken Road	277,461 ft^2 industrial

8.3.2 Corridor Growth

Traffic allowance has been made for general corridor growth on major corridors (i.e., Tomken Road and Burnhamthorpe Road E). In the absence of available historical data within the vicinity of the site, a growth rate of 2% per annum was conservatively adopted for all major movements along the major corridors based on the 5-year development horizon.

8.3.3 Future Background Traffic

Future background traffic volumes representing the sum of existing traffic volumes and background traffic volumes are illustrated on **Figure 8**.

8.4 SITE TRAFFIC VOLUMES

8.4.1 New Site Traffic Trip Generation Assumptions

Trip generation rates for the proposed residential development are based upon rates established by proxy sites (analyzed by BA Group) in the City of Mississauga and ITE trip generation rates. Trip generation rates were obtained from the ITE Trip Generation Manual (11th Edition) with the Land Use Code 222 (High-Rise Multifamily Housing). A summary of relevant proxy data and ITE rates are set out in **Table 14**.

TABLE 14 RESIDENTIAL VEHICLE TRIP GENERATION RATES

Proxy Site	AM Peak Hour			PM Peak Hour			Sunday Peak Hour		
	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
Amber Condominiums Proxy Data (438 Occupied Units)									
Trips	15	90	105	85	35	120	Sunday Data Not Available		
Trips per Unit	0.04	0.20	0.24	0.19	0.08	0.27			
Crystal Condominiums Proxy Data (461 Occupied Units)									
Trips	25	120	145	90	45	135	Sunday Data Not Available		
Trips per Unit	0.05	0.26	0.31	0.20	0.10	0.30			
Average Proxy Data Rate	0.05	0.23	0.28	0.20	0.09	0.29	Sunday Data Not Available		
ITE 11th Edition Land Use Code 222 – Multifamily Housing (High-Rise)									
Trips per Unit	0.09	0.18	0.27	0.18	0.14	0.32	0.16	0.14	0.30

Notes:
1. Trip counts rounded to the nearest 5 trips.

The two-way ITE trip generation rates are generally in line with the proxy trip survey results in the morning and afternoon peaks. The ITE Trip Generation Manual (11th Edition) also provides a Sunday peak hour rate which is not present within the proxy trip survey results. As such, the ITE trip generation rates have been adopted for the proposed development.

8.4.2 Vehicle Trip Generation

Peak hour site traffic volumes for the proposed development adopted for this analysis are summarized in **Table 15.**

TABLE 15 SITE TRAFFIC GENERATION

Use	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
Residential (*per unit*)[1]	*0.09*	*0.18*	***0.27***	*0.18*	*0.14*	***0.32***	*0.16*	*0.14*	***0.30***
Trips (241 units)	20	45	**65**	45	35	**80**	40	35	**75**

Notes:
1. Trip rate based on ITE LUC 222 – Multifamily Housing (High-Rise).

Based upon the foregoing, the proposed development is expected to generate in the order of **65, 80 and 75 gross two-way vehicle trips** during the weekday morning, weekday afternoon and Sunday midday peak hours, respectively.

8.4.3 Site Traffic Distribution

Site traffic distribution patterns are based upon a review of trip distribution information from the 2016 Transportation Tomorrow Survey (TTS). The distribution was determined through a TTS query for existing home-based vehicle trips in the area (TTS zone 3610) for the weekday peak periods. Inbound distributions are based on the weekday afternoon inbound query and outbound distributions are based on the weekday morning outbound query. In the absence of TTS information during weekends, weekday distributions were applied to the Sunday midday peak. The adopted trip distribution is summarized in **Table 16**.

TABLE 16 SITE TRAFFIC DISTRIBUTION

To / From	Route	In	Out
North	Tomken Road	35%	40%
	Westminster Place	5%	0%
South	Tomken Road	15%	10%
	Westminster Place	5%	5%
East	Rathburn Road E	5%	5%
	Burnhamthorpe Road E	15%	15%
West	Rathburn Road E	10%	15%
	Burnhamthorpe Road E	10%	10%
TOTAL		**100%**	**100%**

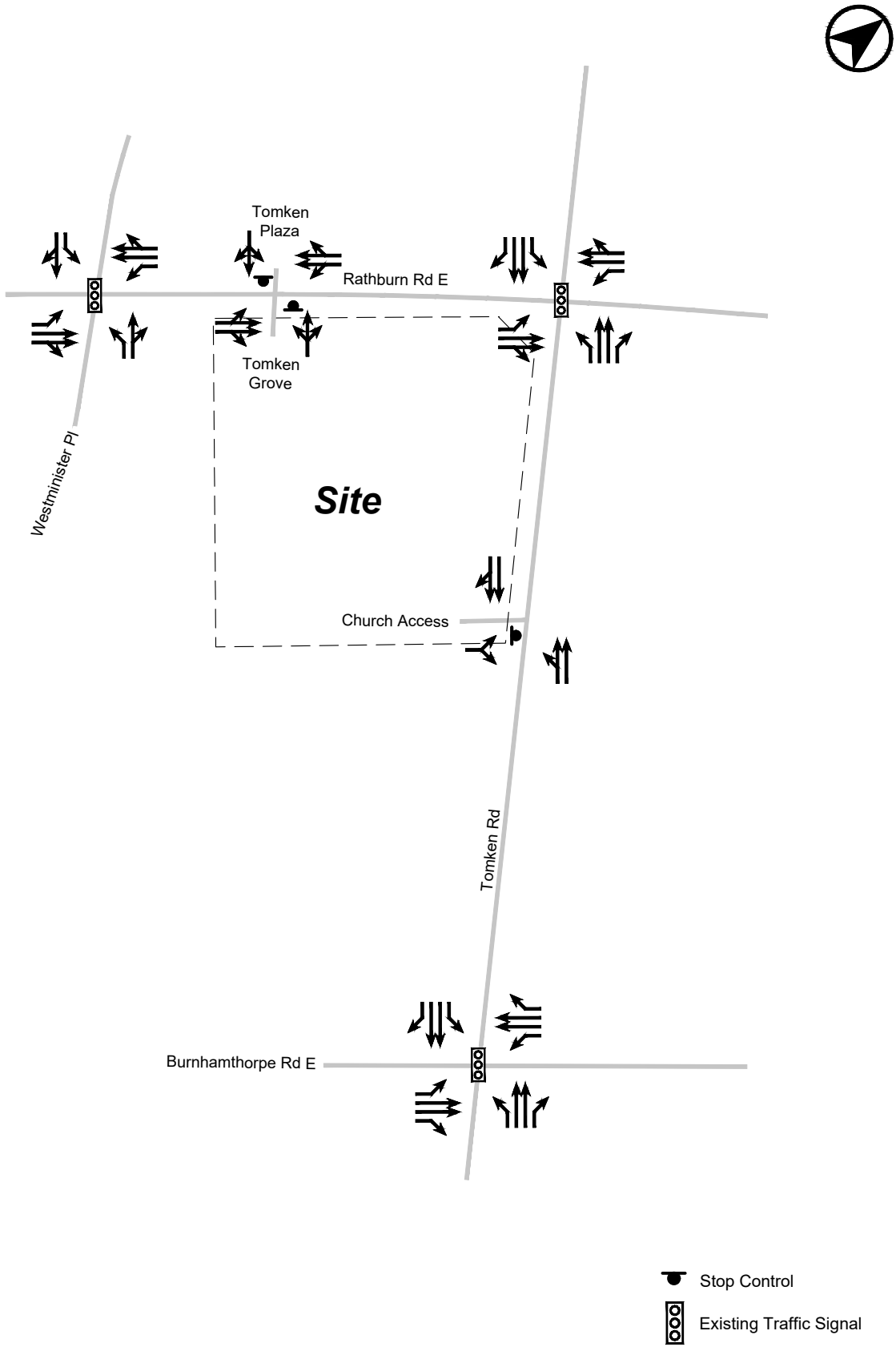
The adopted directional distribution was used to assign site trips to the area road network.

8.4.4 Site Traffic Volumes

Based on the foregoing vehicle trip generation and distribution, site traffic volumes are illustrated on **Figure 9**.

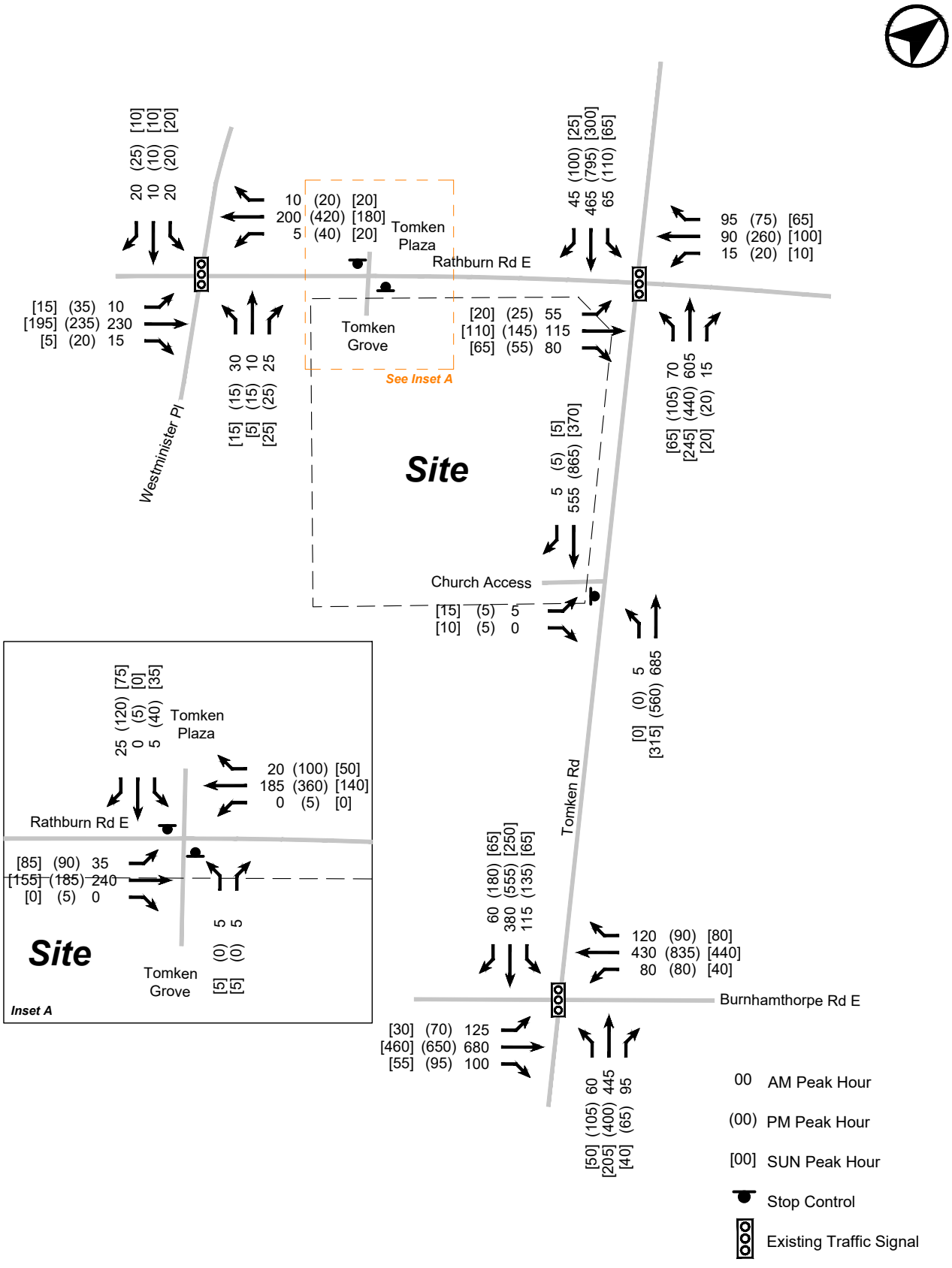
8.5 FUTURE TOTAL TRAFFIC VOLUMES

Future total traffic volumes which reflect the addition of existing area traffic volumes, area development traffic volumes and net new site traffic volumes are illustrated on **Figure 10.**



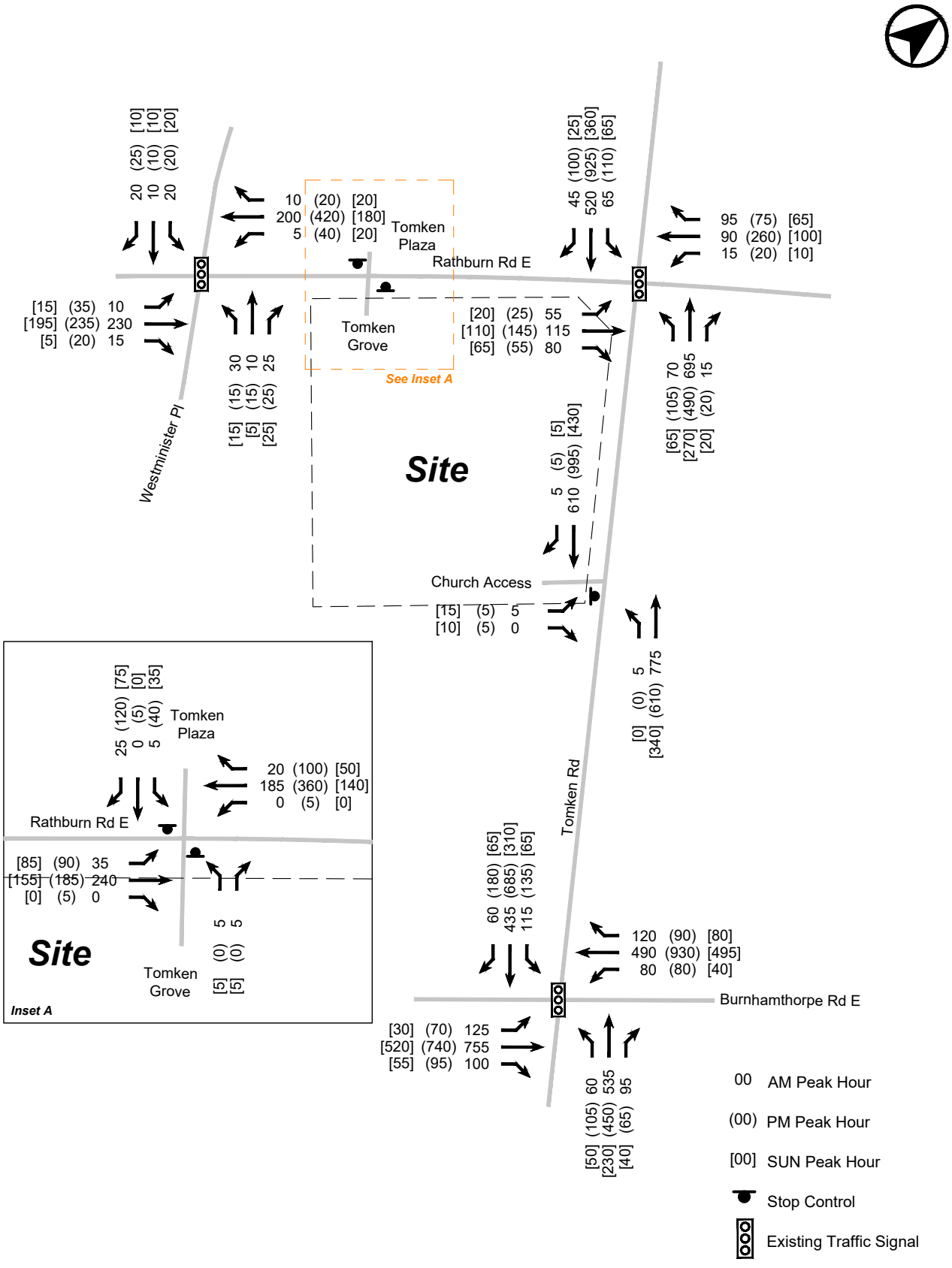
Date Plotted: October 13, 2022 Filename: P:\6126\23\Graphics\CAD\Fig06-00-ExLC.dwg

FIGURE 6 EXISTING LANE CONFIGURATION



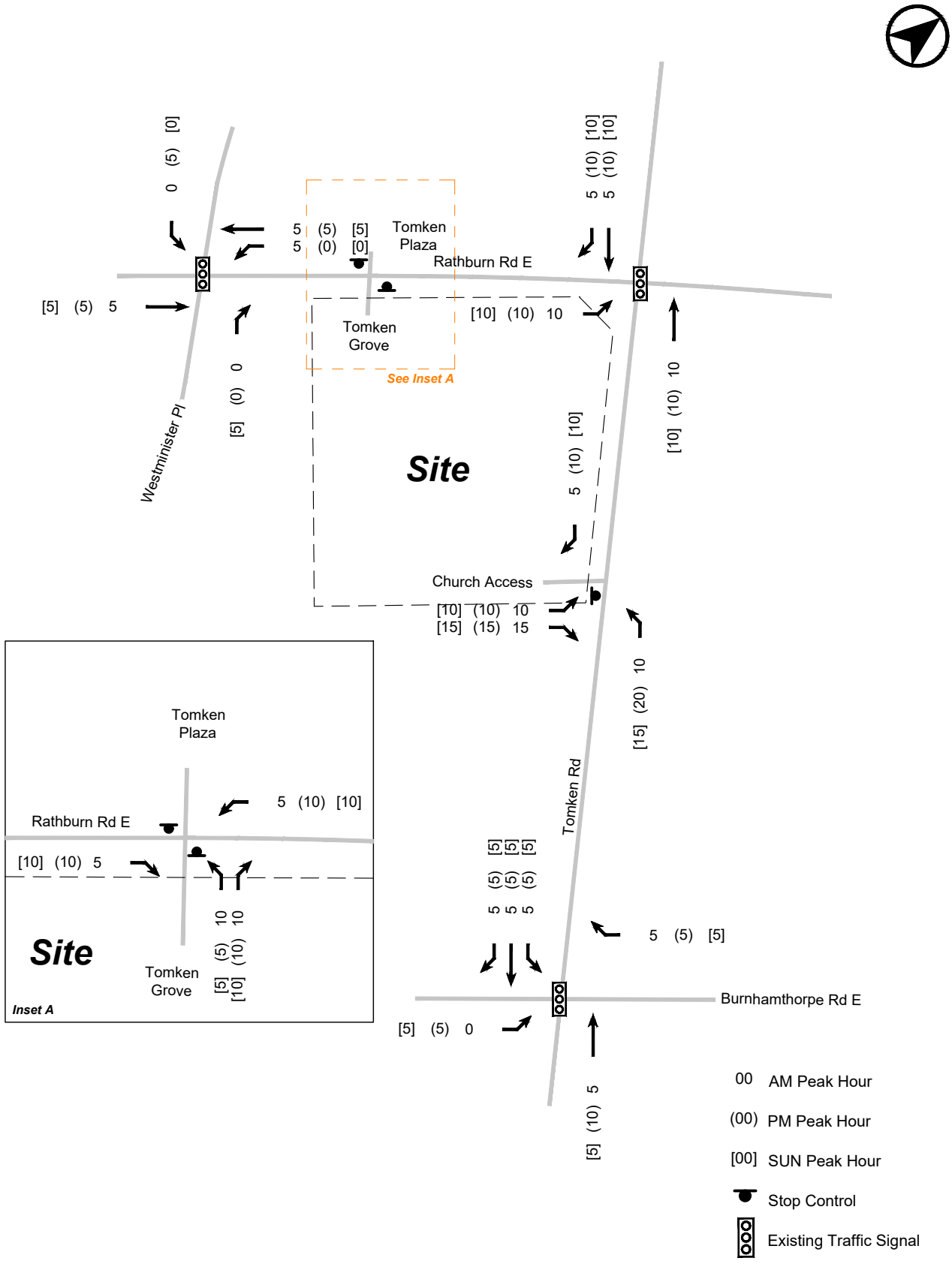
Date Plotted: October 14, 2022 Filename: P:\6\126\23\Graphics\CAD\Fig07-00-Ex.dwg

FIGURE 7 EXISTING TRAFFIC VOLUMES



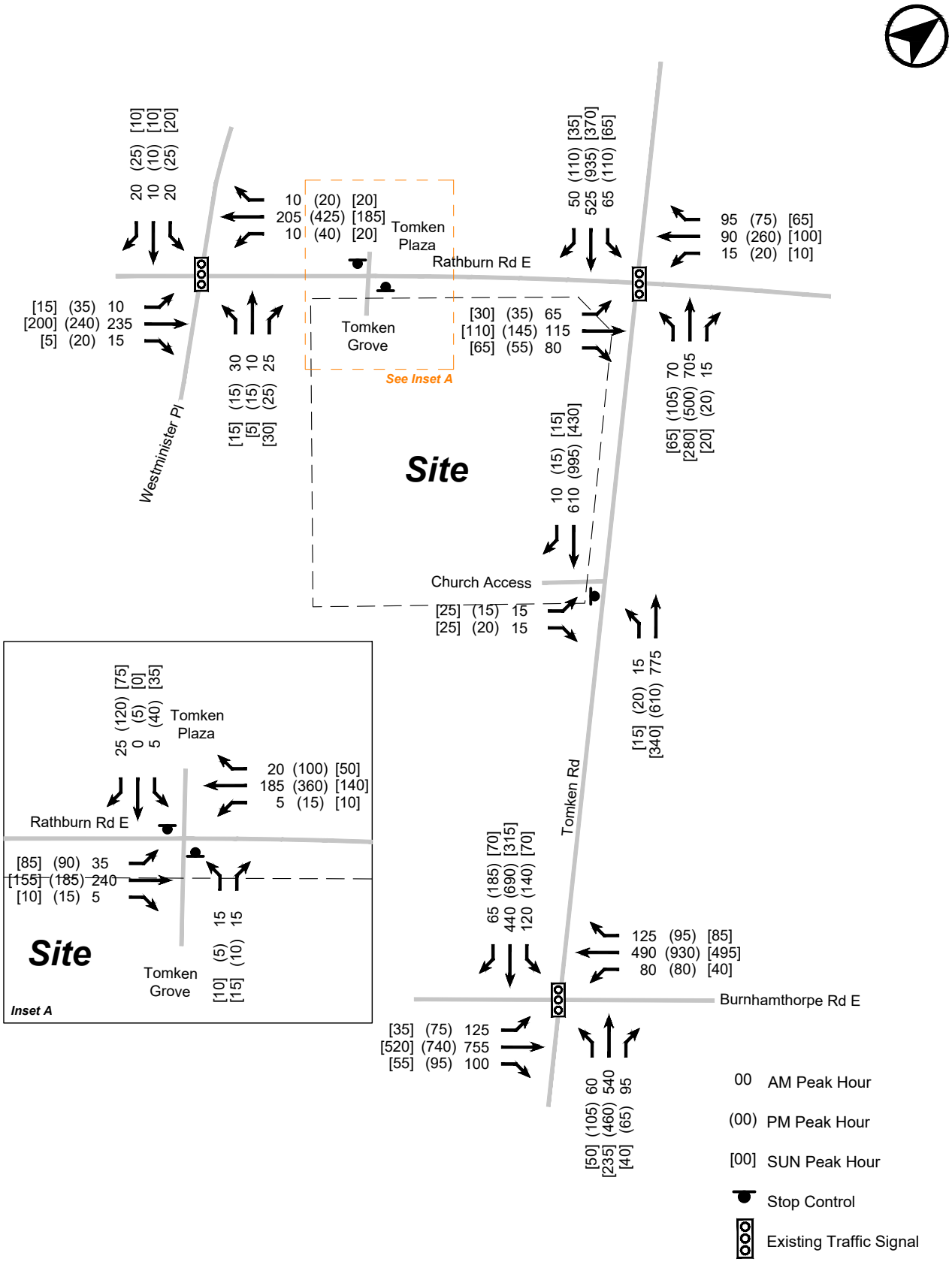
Date Plotted: October 13, 2022 Filename: P:\6126\23\Graphics\CAD\Fig08-00-FB.dwg

FIGURE 8 FUTURE BACKGROUND TRAFFIC VOLUMES



Date Plotted: October 13, 2022 Filename: P:\6126\23\Graphics\CAD\Fig09-00-ST.dwg

FIGURE 9 FUTURE SITE TRAFFIC VOLUMES



Date Plotted: October 13, 2022 Filename: P:\6126\23\Graphics\CAD\Fig10-00-FT.dwg

FIGURE 10 FUTURE TOTAL TRAFFIC VOLUMES

9.0 TRAFFIC OPERATIONS ANALYSIS

9.1 BASIS OF EVALUATION

Signalized and unsignalized intersection traffic operations analyses have been undertaken based upon the methodologies outlined in the *Highway Capacity Manual 2000* using the Synchro 11 software and in accordance with requirements contained in the *City of Mississauga's Traffic Impact Study Guidelines* and the *Region of Peel's Guidelines for Using Synchro*.

Existing signal cycle lengths and timings provided by the City of Mississauga were used for existing conditions. The existing signal timing plans are attached in **Appendix E**. Future background and future total traffic scenarios used optimized signal phasing to respond to changing traffic conditions as appropriate, whilst maintaining cycle lengths and flash don't walk times.

Synchro 11 worksheets including detailed input parameters and output results are attached in **Appendix F.**

9.1.1 Study Area Intersections

Traffic operations analyses have been undertaken for the following intersections as part of this traffic operations assessment.

Signalized

- Tomken Road / Burnhamthorpe Road E
- Tomken Road / Rathburn Road E
- Rathburn Road E / Westminster Place

Unsignalized

- Tomken Road / Westminster Church Access
- Rathburn Road E / Tomken Plaza / Tomken Grove

9.1.2 Analysis Parameters

Key parameters used in the analysis include:

- Existing lane configurations;
- Heavy vehicle percentages as derived from existing turning movement counts;
- Pedestrian and bicycle approach crossings as derived from existing traffic counts;
- Peak hour factor of 1.00 for all movements on all approaches as per *Region of Peel's Guidelines for Using Synchro*;
- Bus blockages as derived from the MiWay website;
- Signal timing plan data (i.e., minimum green time, pedestrian clearance time) under existing and future conditions are based on the parameters obtained from the City of Mississauga;
- Lost time of 1.0 seconds for advanced green phases and 5.0 seconds for main phases as per *City of Mississauga's Traffic Impact Study Guidelines*;
- Vehicle extension of 5 seconds for each phase as per *Region of Peel's Guidelines for Using Synchro*; and,
- Synchro defaults for all other parameters.

9.2 SIGNALIZED INTERSECTION ANALYSIS

A summary of signalized intersection performance criteria for the weekday morning, weekday afternoon and Sunday midday peak hours is provided in **Table 17**.

Under existing conditions, all intersections operate acceptably at overall volume-to-capacity (V/C) ratios of 0.38 or less in the weekday morning peak hour, 0.51 or less in the weekday afternoon peak hour and 0.22 or less during the Sunday midday peak hour.

Under future background conditions, with the addition of background development traffic volumes, all intersections will operate acceptably at overall volume-to-capacity (V/C) ratios of 0.44 or less in the weekday morning peak hour, 0.59 or less in the weekday afternoon peak hour and 0.25 or less during the Sunday midday peak hour. It is noted that at the Tomken Road / Burnhamthorpe Road E intersection, the weekday morning peak hour used the signals protected northbound left turning phase to accommodate northbound left turning volumes. This signal timing change was also carried through to the future total analysis

Under future total conditions, subject to the abovementioned timing change, all area signalized intersections will continue to operate acceptably at overall volume-to-capacity (V/C) ratios of 0.45 or less during the weekday morning peak hour, 0.59 or less during the weekday afternoon peak hour and 0.25 or less during the Sunday midday peak hour.

Based on the foregoing, site related traffic volumes can be reasonably accommodated at the area signalized intersections.

TABLE 17 SIGNALIZED INTERSECTION ANALYSIS

Movement	Existing Traffic		Future Background Traffic		Future Total Traffic	
	V/C	LOS	V/C	LOS	V/C	LOS
Tomken Road / Burnhamthorpe Road E[2]						
EBL	0.18 (0.15) [0.05]	B (B) [A]	0.18 (0.17) [0.05]	B (B) [A]	0.19 (0.18) [0.06]	B (B) [A]
EBT	0.31 (0.30) [0.18]	B (B) [A]	0.35 (0.35) [0.21]	B (B) [A]	0.35 (0.35) [0.21]	B (B) [A]
EBR	0.07 (0.06) [0.04]	B (B) [A]	0.07 (0.06) [0.04]	B (B) [A]	0.07 (0.06) [0.04]	B (B) [A]
WBL	0.28 (0.25) [0.06]	C (C) [A]	0.33 (0.28) [0.07]	D (C) [A]	0.33 (0.28) [0.07]	D (C) [A]
WBT	0.31 (0.54) [0.17]	C (D) [A]	0.39 (0.63) [0.20]	D (D) [A]	0.39 (0.63) [0.20]	D (D) [A]
WBR	0.08 (0.06) [0.05]	C (C) [A]	0.08 (0.07) [0.05]	C (C) [A]	0.08 (0.08) [0.05]	C (C) [A]
NBL[2]	0.30 (0.44) [0.31]	D (D) [E]	0.24 (0.51) [0.31]	D (D) [E]	0.24 (0.51) [0.31]	D (D) [E]
NBT	0.57 (0.47) [0.38]	E (D) [E]	0.66 (0.48) [0.41]	E (D) [E]	0.66 (0.49) [0.43]	E (D) [E]
NBR	0.07 (0.05) [0.03]	D (D) [E]	0.07 (0.05) [0.03]	D (D) [E]	0.07 (0.05) [0.03]	D (D) [E]
SBL	0.41 (0.45) [0.24]	D (D) [D]	0.47 (0.44) [0.24]	D (D) [D]	0.49 (0.46) [0.24]	D (D) [D]
SBT	0.35 (0.65) [0.30]	D (E) [D]	0.48 (0.70) [0.36]	D (E) [D]	0.48 (0.70) [0.35]	D (E) [D]
SBR	0.04 (0.12) [0.04]	D (D) [D]	0.04 (0.15) [0.04]	D (D) [D]	0.04 (0.15) [0.05]	D (D) [D]
Overall	**0.38 (0.51) [0.22]**	**C (D) [C]**	**0.44 (0.59) [0.25]**	**D (D) [C]**	**0.45 (0.59) [0.25]**	**D (D) [C]**

Note:
1. 00 (00) [00]: Weekday morning peak hour (Weekday afternoon peak hour) [Sunday midday peak hour]
2. Protected northbound left turn phase added in future background and future total (AM peak)

Movement	Existing Traffic		Future Background Traffic		Future Total Traffic	
	V/C	LOS	V/C	LOS	V/C	LOS
Tomken Road / Rathburn Road E						
EBL	0.34 (0.18) [0.12]	D (D) [D]	0.34 (0.18) [0.12]	D (D) [D]	0.38 (0.25) [0.18]	D (D) [D]
EBTR	0.27 (0.26) [0.24]	D (D) [D]	0.27 (0.26) [0.24]	D (D) [D]	0.26 (0.26) [0.24]	D (D) [D]
WBL	0.09 (0.10) [0.06]	D (D) [D]	0.09 (0.10) [0.06]	D (D) [D]	0.09 (0.10) [0.06]	D (D) [D]
WBTR	0.21 (0.48) [0.22]	D (D) [D]	0.21 (0.48) [0.22]	D (D) [D]	0.21 (0.48) [0.22]	D (D) [D]
NBL	0.10 (0.24) [0.08]	A (B) [A]	0.11 (0.28) [0.08]	A (B) [A]	0.11 (0.28) [0.08]	A (B) [A]
NBT	0.22 (0.27) [0.09]	A (C) [A]	0.25 (0.31) [0.10]	A (C) [A]	0.26 (0.32) [0.10]	A (C) [A]
NBR	0.01 (0.01) [0.01]	A (C) [A]	0.01 (0.01) [0.01]	A (C) [A]	0.01 (0.01) [0.01]	A (C) [A]
SBL	0.11 (0.13) [0.07]	A (A) [A]	0.13 (0.13) [0.08]	A (A) [A]	0.13 (0.13) [0.08]	A (A) [A]
SBT	0.17 (0.33) [0.11]	A (B) [A]	0.19 (0.39) [0.13]	A (B) [A]	0.19 (0.39) [0.13]	A (B) [A]
SBR	0.03 (0.08) [0.02]	A (A) [A]	0.03 (0.08) [0.02]	A (A) [A]	0.03 (0.09) [0.02]	A (A) [A]
Overall	**0.24 (0.35) [0.13]**	**B (C) [C]**	**0.27 (0.39) [0.15]**	**B (C) [B]**	**0.28 (0.40) [0.15]**	**B (C) [B]**
Rathburn Road E / Westminster Place						
EBL	0.01 (0.05) [0.02]	A (A) [A]	0.01 (0.05) [0.02]	A (A) [A]	0.01 (0.05) [0.02]	A (A) [A]
EBTR	0.10 (0.10) [0.08]	A (A) [A]	0.10 (0.10) [0.08]	A (A) [A]	0.10 (0.10) [0.08]	A (A) [A]
WBL	0.01 (0.05) [0.02]	A (A) [A]	0.01 (0.05) [0.02]	A (A) [A]	0.01 (0.05) [0.02]	A (A) [A]
WBTR	0.08 (0.17) [0.08]	A (A) [A]	0.08 (0.17) [0.08]	A (A) [A]	0.09 (0.17) [0.08]	A (A) [A]
NBL	0.15 (0.09) [0.08]	C (C) [C]	0.15 (0.09) [0.08]	C (C) [C]	0.15 (0.09) [0.08]	C (C) [C]
NBTR	0.06 (0.08) [0.04]	C (C) [C]	0.06 (0.08) [0.04]	C (C) [C]	0.06 (0.08) [0.04]	C (C) [C]
SBL	0.11 (0.10) [0.10]	C (C) [C]	0.11 (0.10) [0.10]	C (C) [C]	0.11 (0.13) [0.10]	C (C) [C]
SBTR	0.06 (0.06) [0.05]	C (C) [C]	0.06 (0.06) [0.05]	C (C) [C]	0.06 (0.06) [0.05]	C (C) [C]
Overall	**0.11 (0.16) [0.08]**	**A (A) [A]**	**0.11 (0.16) [0.08]**	**A (A) [A]**	**0.11 (0.17) [0.08]**	**A (A) [A]**

Note:
1. 00 (00) [00]: Weekday morning peak hour (Weekday afternoon peak hour) [Sunday midday peak hour]

9.3 UNSIGNALIZED INTERSECTION ANALYSIS

A summary of operations at unsignalized intersections for the weekday morning, weekday afternoon and Sunday midday peak hours is provided in **Table 18**.

Under future total conditions, turning movements at area unsignalized intersections will operate at LOS B or better.

TABLE 18 UNSIGNALIZED INTERSECTION ANALYSIS

Movement	Existing Traffic		Future Background Traffic		Future Total Traffic	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
Tomken Road / Westminster Church Access						
EBLR	14.0 (12.2) [10.9]	B (B) [B]	14.4 (12.9) [11.1]	B (B) [B]	12.6 (13.3) [11.4]	B (B) [B]
NBLT	0.2 (-)[2] [-][2]	A (-)[2] [-][2]	0.2 (-)[2] [-][2]	A (-)[2] [-][2]	0.6 (1.2) [1.1]	A (A) [A]
Rathburn Road E / Tomken Plaza / Tomken Grove						
EBLT	1.9 (4.4) [4.3]	A (A) [A]	1.9 (4.4) [4.3]	A (A) [A]	1.9 (4.4) [4.3]	A (A) [A]
WBLT	-[2] (0.2) [-][2]	-[2] (A) [-][2]	-[2] (0.2) [-][2]	-[2] (A) [-][2]	0.4 (0.7) [1.0]	A (A) [A]
NBLTR	10.9 (-)[2] [11.3]	B (-)[2] [B]	10.9 (-)[2] [11.3]	B (-)[2] [B]	11.2 (11.7) [11.1]	B (B) [B]
SBLTR	9.7 (12.4) [10.9]	A (B) [B]	9.7 (12.4) [10.9]	A (B) [B]	9.7 (12.7) [11.1]	A (B) [B]

Note:
1. 00 (00) [00]: Weekday morning peak hour (Weekday afternoon peak hour) [Sunday midday peak hour]
2. Zero volumes counted for movement

9.4 QUEUE LENGTHS

The key queue lengths at critical study area intersections and the available storage are summarized in **Table 19.**

TABLE 19 QUEUE LENGTHS

Intersection	Movement	95th %ile Queue (m)			Available Storage (m)
		Existing Traffic	Future Background Traffic	Future Total Traffic	
Tomken Road / Burnhamthorpe Road E[3]	EBL	26 (15) [9]	25 (16) [9]	25 (17) [10]	135 m
	EBR	8 (8) [6]	8 (8) [6]	8 (8) [6]	100 m
	WBL	29 (27) [11]	31 (29) [11]	31 (29) [12]	70 m
	WBR	12 (10) [7]	13 (13) [7]	13 (13) [8]	40 m
	NBL[3]	26 (33) [22]	20 (31) [22]	20 (31) [22]	90 m
	NBR	13 (10) [7]	13 (10) [7]	13 (10) [7]	90 m
	SBL	34 (40) [21]	35 (38) [21]	36 (39) [22]	60 m
	SBR	9 (17) [9]	8 (20) [9]	10 (21) [10]	60 m
Tomken Road / Rathburn Road E	EBL	18 (13) [10]	17 (13) [7]	20 (16) [11]	45 m
	WBL	7 (9) [6]	7 (9) [6]	7 (9) [6]	45 m
	NBL	15 (18) [13]	15 (18) [14]	15 (18) [14]	60 m
	NBR	1 (<1) [2]	1 (<1) [2]	1 (<1) [2]	35 m
	SBL	14 (18) [13]	15 (18) [13]	15 (18) [13]	40 m
	SBR	5 (14) [3]	5 (15) [3]	5 (17) [4]	30 m
Rathburn Road E / Westminster Place	EBL	3 (7) [4]	3 (7) [4]	3 (7) [4]	50 m
	WBL	2 (10) [5]	1 (10) [5]	2 (10) [5]	40 m
	NBL	6 (4) [4]	6 (4) [4]	6 (4) [4]	25 m
	SBL	5 (5) [5]	5 (5) [5]	5 (6) [5]	20 m

Notes:
1. 00 (00) [00]: Weekday morning peak hour (Weekday afternoon peak hour) [Sunday midday peak hour]
2. Signalized intersection queues based on Synchro queue reports.
3. Protected northbound left turn phase added in future background and future total (AM peak)

Queues at all signalized and unsignalized intersections fit well within the available storage between the intersections.

9.5 TRAFFIC OPERATIONS SUMMARY

Based on the foregoing, site related traffic volumes can be reasonably accommodated by the area road network, all signalized and unsignalized intersections can operate at appropriate levels of service.

10.0 SUMMARY AND CONCLUSIONS

Transportation Context

1. The Site is located in the south-west quadrant of the Tomken Road / Rathburn Road East intersection. The Site is bounded by Rathburn Road East to the north, Tomken Road to the east, residential properties to the west and south.

2. Tomken Road is a north-south major collector road under the jurisdiction of the City of Mississauga. Tomken Road. Tomken road intersects with Rathburn Road E at a signalized intersection.;

3. Rathburn Road E is an east-west major collector road under the jurisdiction of the City of Mississauga.

4. Westminster Road is a minor collector road under the jurisdiction of the City of Mississauga. A crescent shaped road intersects with Burnhamthorpe Road East and Rathburn Road East

5. In the City of Mississauga Official Plan (January 10, 2018), Burnhamthorpe Road is identified as a primary existing on-street bike lane route. This bike route operates at a main corridor connection to alternative primary routes that extend in the east-west direction. Rathburn Road East is identified as a proposed bike lane route within the five-year cycling implementation plan.

6. The site is well served by bus services operated by the Mississauga municipal transit service provider MiWay including bus lines 20 Rathburn Road East, 51 Tomken Road and 26 Burnhamthorpe.

Parking Arrangements

7. Application of the minimum Zoning By-law parking standards result in a requirement of 474 total spaces, comprising 309 resident spaces, 62 resident visitor spaces and 103 non-resident spaces.

8. A total of 386 parking spaces are proposed on the site, including 247 residential, 62 residential visitor and 77 non-residential spaces will adequately meet the parking demands of the proposed site.

9. The overall supply will adequately meet the parking demands of the proposed site based on supportive policies, plans, and City discussions; area transit and active transportation context; observed parking demand on the site for existing residential and non-residential uses

Bicycle Parking Arrangements

10. A total of 156 bicycle parking, including 145 long-term and 13 short term spaces are required for the proposed development.

11. A total of 196 bicycle parking spaces, including 160 long-term and 36 short term spaces are proposed.

12. The proposed bicycle parking supply meets and exceeds the requirements for the proposed development.

Loading Operations

13. Application of the prevailing City of Mississauga Zoning By-law 0225-2007 to the new development results in a requirement of two (2) loading

14. It is noted that the existing church building containing the place of worship and child care uses pre-dates does not currently have a dedicated loading space. The existing site is served by 1 formal loading space located on the west side of the existing residential building.

15. The existing loading space for the existing residential apartment building is proposed to be maintained. Since the existing church and child care facility do not have a dedicated loading space, it is proposed to continue to share the loading for the church and child care with the residential buildings on the site.

16. Two (2) new formal loading spaces are proposed at-grade level for the proposed development, one for each building. These spaces meet the Zoning By-law requirements.

17. The proposed lay-by and interior garbage collection space, based on the above, can accommodate the servicing needs of the proposed development plan.

Transportation Demand Management

18. A series of Transportation Demand Management (TDM) measures have been discussed and outlined in **Section 7.0**.

Traffic Volumes

19. Existing traffic volumes were established for the weekday morning, weekday afternoon and Sunday midday peak hours for intersections within the study area, based upon traffic counts undertaken by Spectrum Traffic Data Inc., as commissioned by BA Group.

20. Allowances were made to account for new traffic volumes related to construction of other development proposals in the site area. Together, allowances have been made accounting for construction of in the order of 159 residential units and 291,000 square feet of non-residential floor area in the surrounding area.

21. An additional 2% annual corridor growth is considered within the study area from 2022 to 2027.

22. The proposed development is expected to generate in the order of 65, 80 and 75 gross two-way vehicle trips during the weekday morning, weekday afternoon and Sunday midday peak hours, respectively.

Traffic Operations Analysis

23. Traffic operations analyses undertaken for existing, future background and future total traffic conditions indicate that the area signalized and unsignalized intersections operate acceptably today and will continue to do so in the future with the residential infill development as well as other area developments. It is noted that the future weekday morning peak hour scenarios assume the implementation of a protected northbound left turn phase at the Tomken Road / Burnhamthorpe Road E intersection.

24. Based on the analyses undertaken as part of this assessment, site related traffic volumes and queues can be reasonably accommodated within the surround area road network at all signalized and unsignalized intersections.

APPENDIX A:
Reduced Scale Arch Plans

4094 Tomken Rd & 924 Rathburn Rd, Mississauga, ON L4W 1J5	
1 Legal Address	4094 Tomken Rd & 924 Rathburn Rd, Mississauga, ON L4W 1J5
2 Municipal Address	4094 Tomken Rd & 924 Rathburn Rd, Mississauga, ON L4W 1J5
3 Applicable Zoning By-Laws	Zoning By-law (NO. 0225-2007)
4 Zoning Designation	Residential Zone – Apartments (RA2-11)
5 Lot Area (m2)	14,141m²
6 New Build Lot Coverage (Area at Grade, m2)	1,805m²
7 Total Lot Coverage (Area at Grade, m2)	2,804m²
8 New Build GFA (m2)	18,333m²
9 Total GFA (m2)	26,377m²
10 Sustainability Target	TBD
11 Established Grade (Building 1)	Geodetic el. 138.010m
12 Established Grade (Building 2)	Geodetic el. 138.260m
13 Total Area of Renovated Space	0
14 Landscape Area (40% min. required)	53%
Proposed Building Height (Building 1 & 2)	**43.800m**

1 City of Mississauga ZBL 0225-2017 "Established grade" means, with reference to a building, structure or part thereof, the average elevation of the finished grade of the ground immediately surrounding such building or structure
1 Building Height is measured from Established Grade as defined above
2 Floor heights are measured from Established Grade at Geodedic el. Described above
3 Landscape Area as defined by By-Law 0225-2007

ZBA_Project Area Breakdown (m2)

Level	Gross Constructed Area (GCA) New	Gross Floor Area (GFA) Site Total: Existing Church	New Community	Existing Residential	New Residential	Total	
LowerLevel 3	2805 m²	0 m²	0 m²	0 m²	22 m²	22 m²	
LowerLevel 2	4425 m²	0 m²	0 m²	0 m²	22 m²	22 m²	
LowerLevel 1	4792 m²	0 m²	0 m²	0 m²	21 m²	21 m²	
GroundLevel	1805 m²	890 m²	0 m²	999 m²	1150 m²	3040 m²	
Level 2	1753 m²	157 m²	0 m²	999 m²	1620 m²	2776 m²	
Level 3	1857 m²	0 m²	0 m²	999 m²	1723 m²	2722 m²	
Level 4	1898 m²	0 m²	0 m²	999 m²	1764 m²	2763 m²	
Level 5	1909 m²	0 m²	0 m²	999 m²	1774 m²	2774 m²	
Level 6	1910 m²	0 m²	0 m²	999 m²	1776 m²	2775 m²	
Level 7	1467 m²	0 m²	0 m²	999 m²	1349 m²	2348 m²	
Level 8	1541 m²	0 m²	0 m²	0 m²	1422 m²	1422 m²	
Level 9	1541 m²	0 m²	0 m²	0 m²	1422 m²	1422 m²	
Level 10	1541 m²	0 m²	0 m²	0 m²	1422 m²	1422 m²	
Level 11	1541 m²	0 m²	0 m²	0 m²	1422 m²	1422 m²	
Level 12	1541 m²	0 m²	0 m²	0 m²	1422 m²	1422 m²	
Roof	280 m²	0 m²	0 m²	0 m²	0 m²	0 m²	
Total	32605 m²	1047 m²	0 m²	6995 m²	18333 m²	26375 m²	FSI
	32605 m²	1047 m²		25328 m²		26375 m²	1.87

ZBA_Residential Suite Mix_Overall

Level	Studio	1 Bed	1 Bed + D	2 Bed	2 Bed + D	3 Bed	Total Count
GroundLevel	0	0	0	6	0	3	9
Level 2	0	3	0	6	0	2	11
Level 3	1	10	0	11	0	0	22
Level 4	1	12	0	12	0	0	25
Level 5	1	12	0	12	0	0	25
Level 6	1	12	0	12	0	0	25
Level 7	1	12	0	6	0	0	19
Level 8	1	11	0	8	0	1	21
Level 9	1	11	0	8	0	1	21
Level 10	1	11	0	8	0	1	21
Level 11	1	11	0	8	0	1	21
Level 12	1	11	0	8	0	1	21
Grand total	10	116	0	105	0	10	241
% of Total	4%	48%		44%		4%	

Barrier Free Units - Required (20%) OBC 3.8.2.1.(5)

	% of total units required	# of Units Required	% of total units provided	# of units provided	Comments
Building 1	30%	26	33%	28	
Building 2	30%	47	30.8%	48	

Residential Amenity Area

	Req. Total Amenity Area	Req. Outdoor Amenity	Provided Indoor Amenity	Provided Outdoor Amenity	Overall Rate Required	Overall Rate Provided
Building 1						
Total Area	476m²	55m²	90m²	786m²		
Area per Residential Suite	5.6m²	N/A	1.1m²	9.2m²	**5.6m²**	**10.3m²**
Building 2						
Total Area	874m²	55m²	260m²	1,634m²		
Area per Residential Suite	5.6m²	N/A	1.7m²	10.5m²	**5.6m²**	**12.1m²**

Residential Indoor Amenity Space Provided	Area	Description	Residential Outdoor Amenity Space Provided: Level	Area	Description
Building 1					
Ground Level			Ground Level	667m²	
Level 3			Level 3	33m²	
Level 4			Level 4	33m²	
Level 7	90m²		Level 7	53m²	
Total	**90m²**		**Total**	**786m²**	
Building 2					
Ground Level	190m²		Ground Level	1,356m²	
Level 3			Level 3	33m²	
Level 4			Level 4	33m²	
Level 7	70m²		Level 7	212m²	
Total	**260m²**		**Total**	**1,634m²**	

Calculation of Required Green Roof Area (m2)

	Required	Provided	Notes
Gross Floor Area1		32,605m²	
Total Roof Area(s)		1,601m²	
Areas Designated for renewable energy devices		m²	
Residential Private Terraces		m²	
Rooftop Outdoor Amenity Space2		265m²	
Tower floor plate above podium <750m2			
Available roof area (Total - Deductions)		1,336m²	
Area of green roof	40%	86%	
	534m²	1,153m²	
Coverage provided:			

1 As defined in Green Roof By-Law.
2 Rooftop Outdoor Amenity Space is the req'd amenity space, not exceeding the minimum area req'd under applicable zoning By-Law.

Car Parking as per City of Mississauga Zoning By-Law 0225-2017

	Visitor (Spaces per unit)	Standard (spaces per unit)	Parking Required Visitor & Standard	Parking Provided Visitor & Standard	EVSE Spaces Req'd	EVSE Spaces Provided	Spaces Provided/Notes
Residential							
Building 1	0.2	0.8	85	85	15		EVSE spaces 20% of total requirement and 10% of visitor parking
Building 2	0.2	0.8	156	156	28		
Sub-Total			**241**	**241**	**43**	**43**	
Effective Resident Ratio (Spaces per unit)			**1.00**	**1.00**			
Non-Residential	Worship Area (m2)	Standard (spaces per 100m2)	Parking Required	Parking Provided	EVSE Spaces Req'd	EVSE Spaces Provided	Spaces Provided/Notes
Place of Worship	345	27.1	93	77			EVSE's provided for new program only.
Sub-Total			**93**	**77**			
Existing				Existing			Spaces Provided/Notes
Existing Building Below Garde				54			Existing Spaces to Remain
Existing Building Visitor Parking				14			
Sub-Total				**68**			
Total				**386**			

Bicycle Parking as per City of Mississauga Zoning By-Law 0225-2017

	Units/GFA	Spaces (per unit)	Spaces Required	Spaces Provided			Spaces Provided/Notes
Building 1							
Residential Long-term	85	0.6	51	66			Bicycle parking calculations resulting in a fraction are rounded up to the nearest whole number in accordance with Zoning By-law 0225-2017
Residential Short-term	85	0.05	5	12			
Total			**56**	**78**			
Building 1							
Total Long-term	156	0.6	94	94			
Total Short-term	156	0.05	8	24			
Total			**101**	**118**			
Total Bicycle Parking			**157**	**196**			

Loading

	Number of Units/Size	Area
Building 1	85	LOADING SPACE 9.0m (L) x 3.5m (W) x 4.5m (H)
Building 2	156	LOADING SPACE 9.0m (L) x 3.5m (W) x 7.5m (H)
Total		

1 Rate requirements calculated as per the City of Mississauga Zoning By-Law 0225-2017
2 One loading space to accommodate both new buildings, and to be located within Building 2
3 New loading space also to accommodate Existing Church

Waste Management

Residential Garbage and Recycling	Req'd Garbage & Recycling Facilities1: Bins3	Room Size1 (m2)	Proposed Garbage and Recycling Facilities2: Bins3	Room Size (m2)
Recycling: 1 bin/50 suites	3	25m2 for first 50 units, 13m2 for each next 50 units		
Garbage: 1 bin/50 suites	3	25m2 for first 50 units, 13m2 for each next 50 units		
Organics: 1 bin/50 suites	3	25m2 for first 50 units, 13m2 for each next 50 units		
Total	3	25m2 for first 50 units, 13m2 for each next 50 units		

1 Requirements calculated as per the City of Toronto Requirements for Garbage, Recycling and Organics Collection Service (May, 2012).
2 Assumes pick-up --/week.
3 Maximum bin sizes: Recycling: , Garbage: , Organics:

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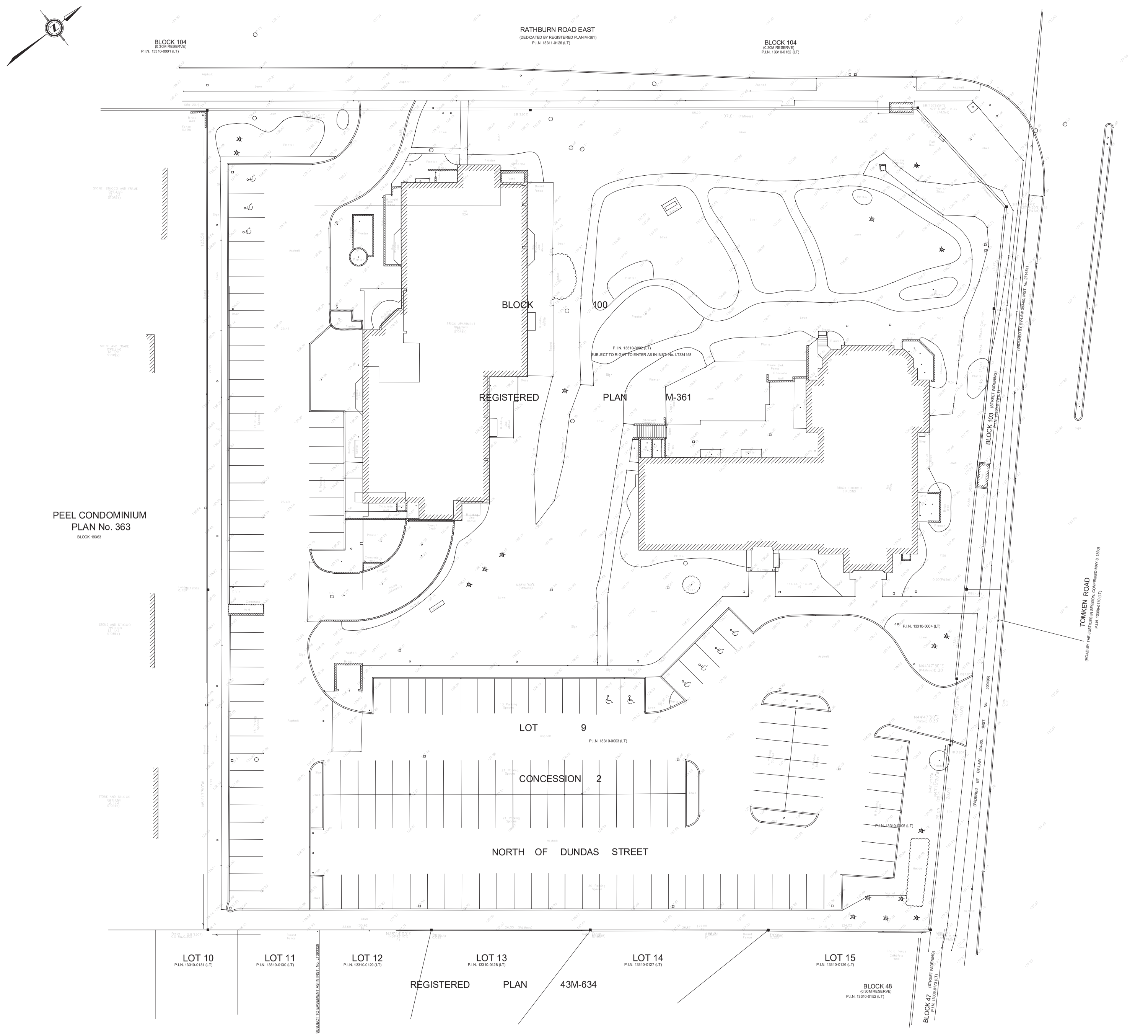
Project North True North

Project No. 2112
Scale 1 : 1
Plot Date 10/14/2022

STATISTICS

A1-00



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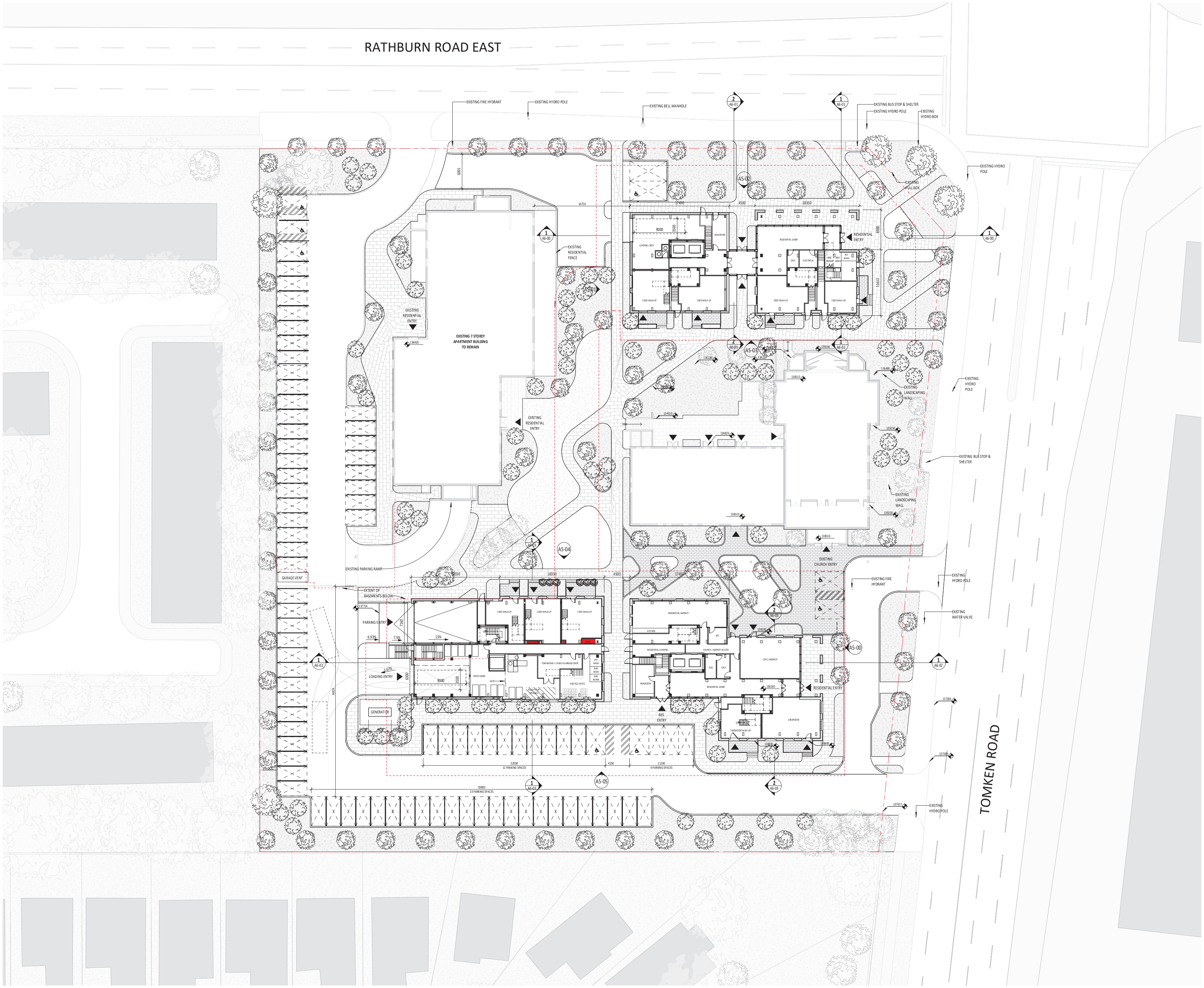
SITE SURVEY

A1-02



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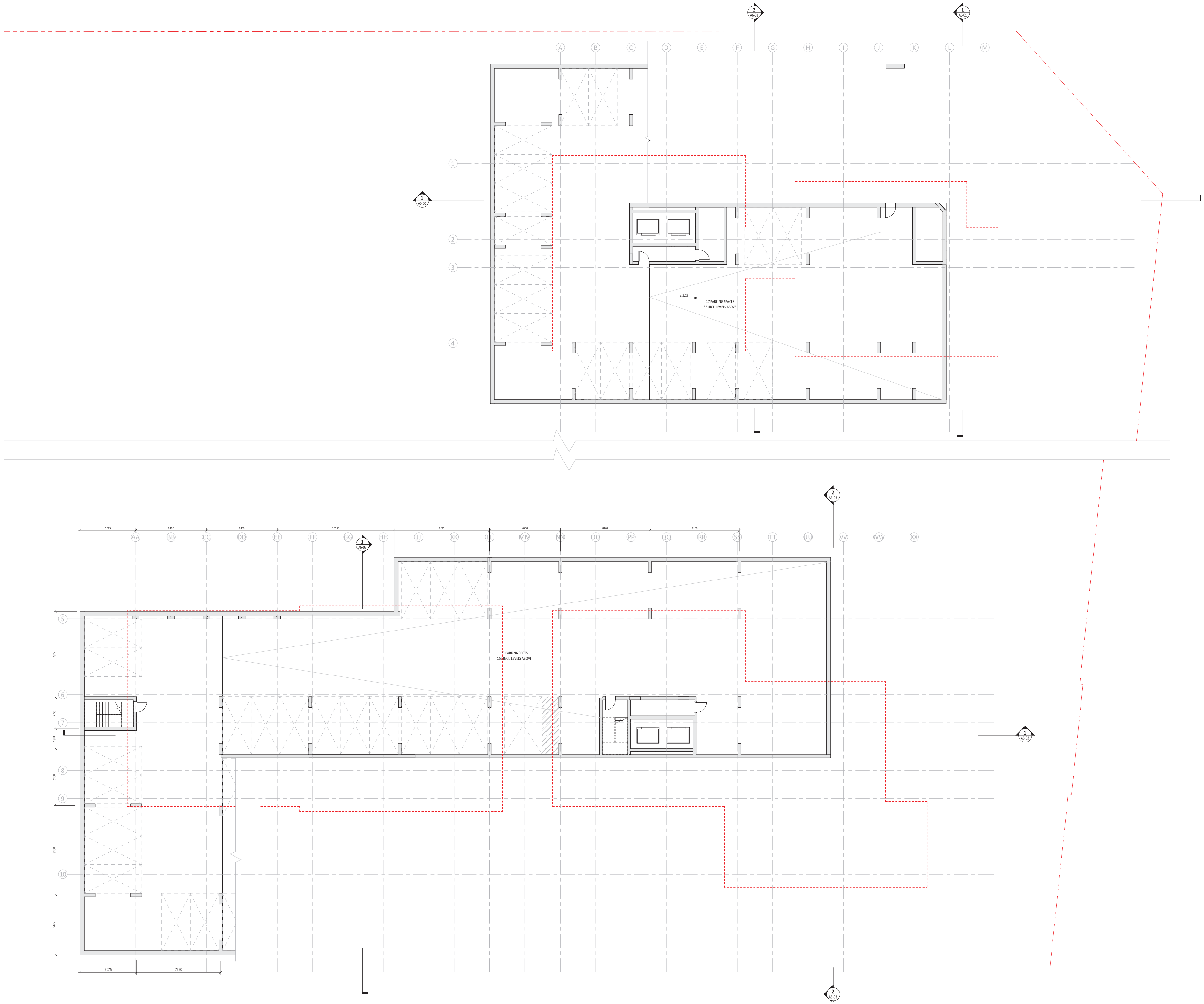
SITE PLAN

A1-03



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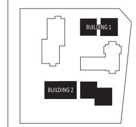

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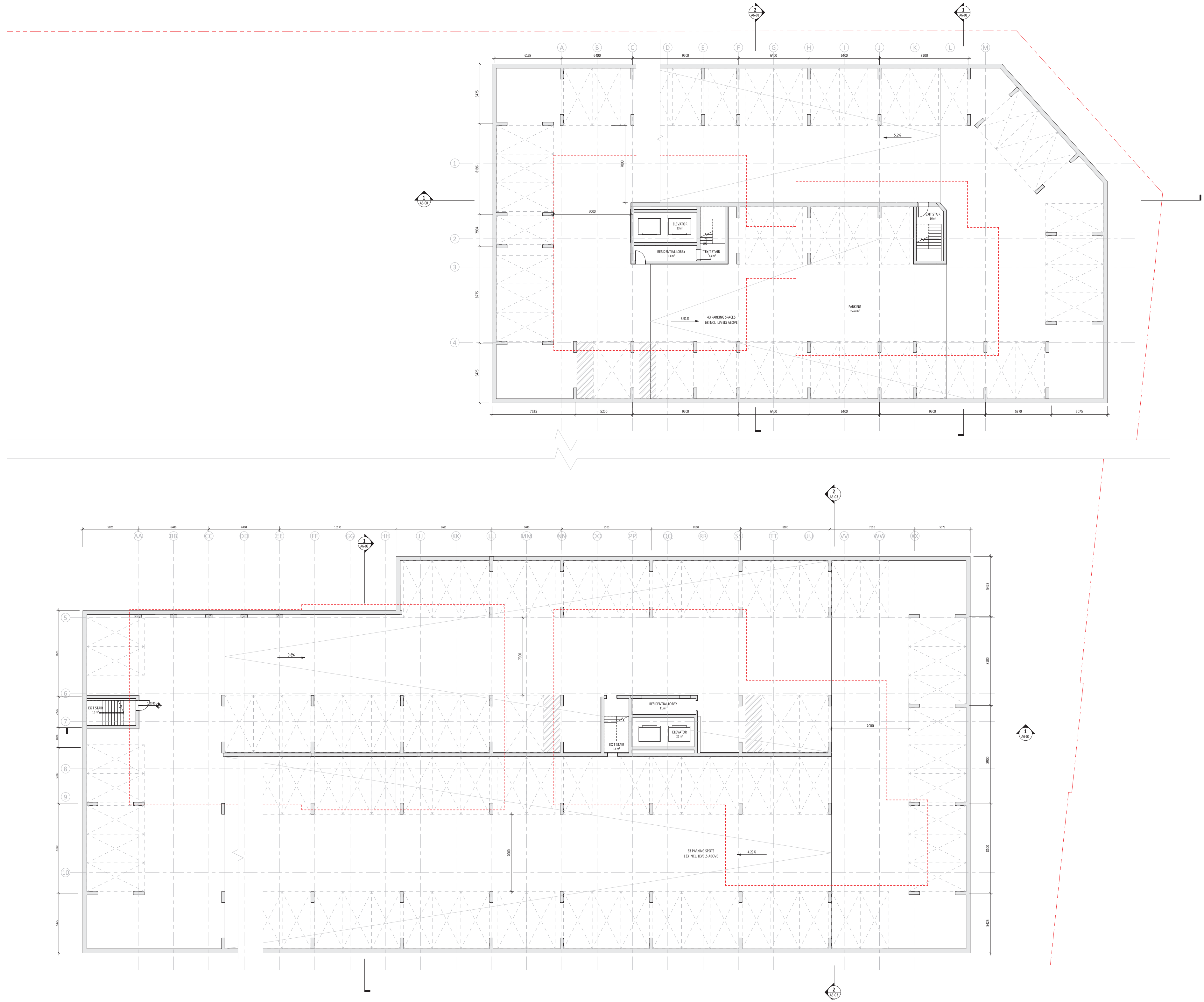
FLOOR PLAN - LOWERLEVEL 3

A2-00



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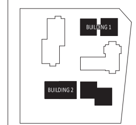

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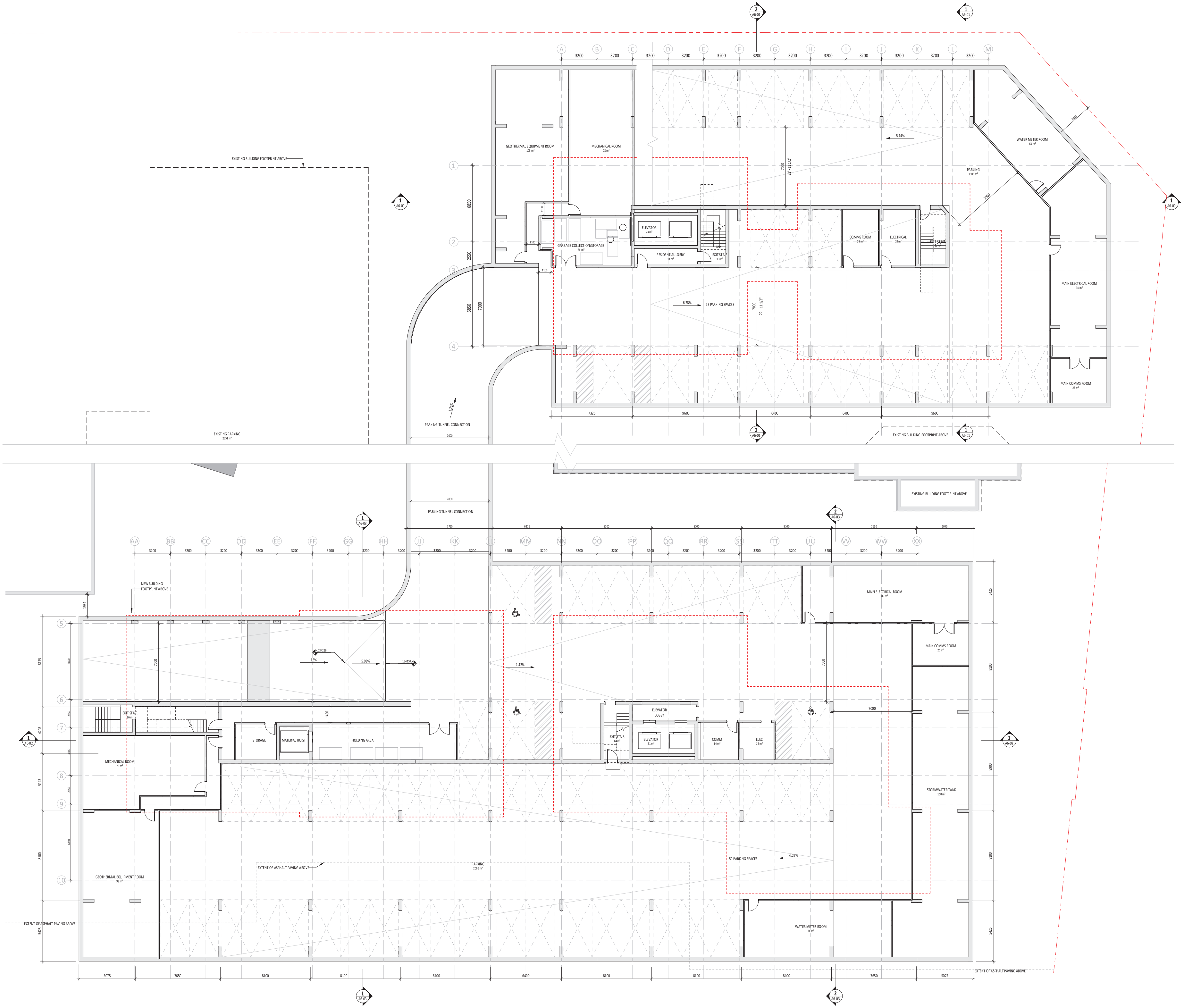
FLOOR PLAN - LOWERLEVEL 2

A2-01



KEY PLAN

BUILDING 1
BUILDING 2

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FLOOR PLAN - LOWERLEVEL 1

A2-02

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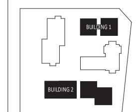
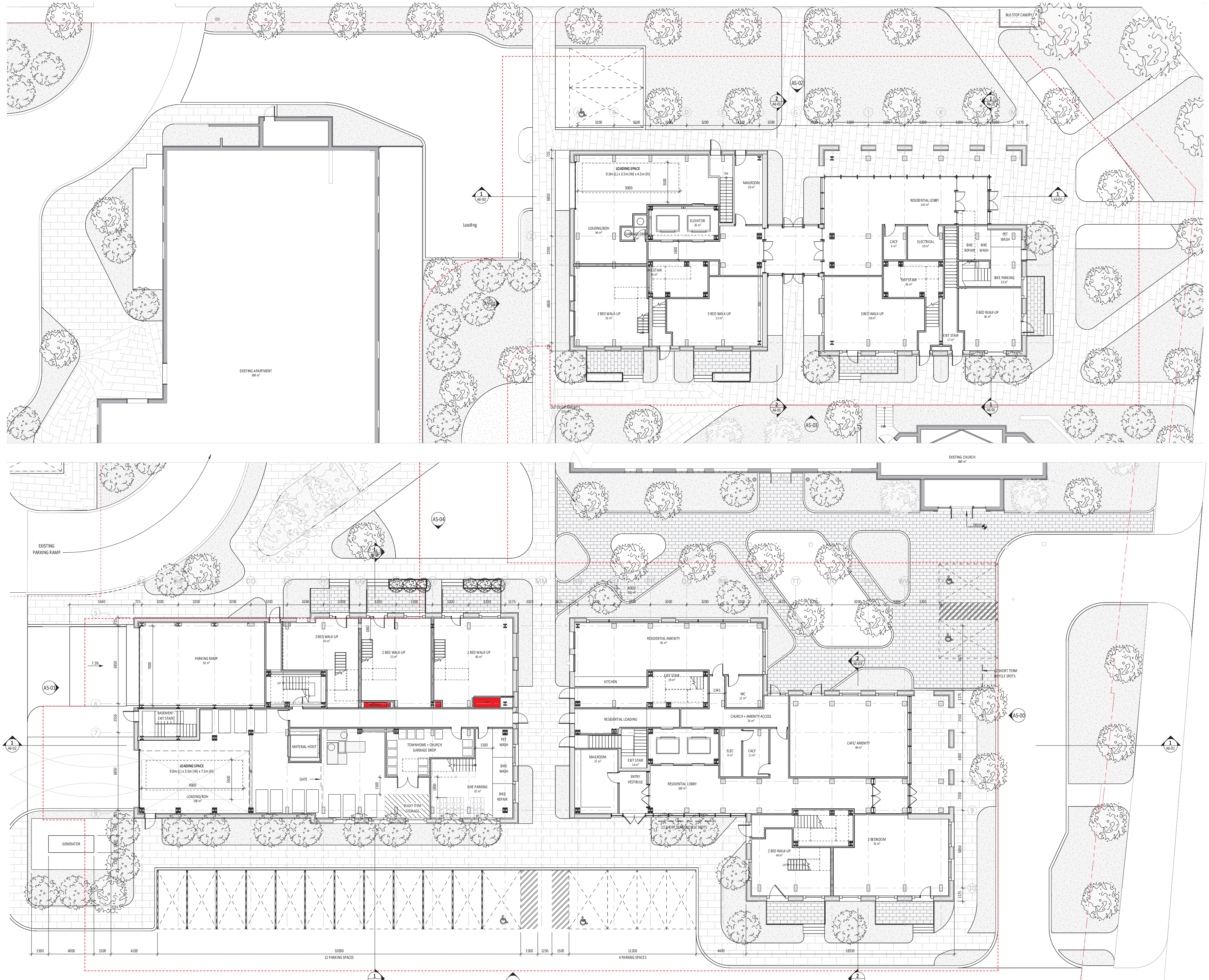
5. The architect has not been retained for supervision of construction and assumes no responsibility for means, methods and techniques of construction.
6. These documents are not to be used for construction unless specifically noted for such purpose.



KEY PLAN



1	2022-10-14	ZBA SUBMISSION
Rev.	Date	Issued

KPMB Architects
351 King St E, Suite 1200
Toronto, ON, Canada M5A 0L6
416.977.5104

UPRC
Westminster Mississauga

4094 Tomken Rd, Mississauga, ON
L4W 1J5

Project North True North

Project No. 2112
Scale 1 : 100
Plot Date 10/14/2022

FLOOR PLAN - GROUND LEVEL

A2-03

APPENDIX B:
Parking Demand Study

Project: 6126-23
Project No: Westminster - Mississauga
Location: 4094 Tomken Rd
Date: Tuesday March 22, 2022

AM Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
7:00	38	3	2	0	43	3	0	3	46
8:00	32	2	2	0	36	2	0	2	38
9:00	27	1	3	0	31	7	0	7	38
10:00	25	2	7	0	34	5	1	6	40

PM Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
16:00	23	0	4	0	27	8	0	8	35
17:00	24	0	1	0	25	3	0	3	28
18:00	32	0	1	0	33	2	0	2	35
19:00	30	0	1	0	31	18	0	18	49
20:00	33	0	3	0	36	21	1	22	58

Project: 6126-23
Project No: Westminster - Mississauga
Location: 4094 Tomken Rd
Date: Wednesday March 23, 2022

AM Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
7:00	38	2	4	0	44	1	0	1	45
8:00	37	1	4	0	42	1	0	1	43
9:00	26	1	4	0	31	5	0	5	36
10:00	27	1	6	1	35	6	0	6	41

PM Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
16:00	23	0	5	0	28	9	0	9	37
17:00	24	0	2	0	26	8	0	8	34
18:00	29	0	1	0	30	17	0	17	47
19:00	30	0	2	0	32	14	0	14	46
20:00	31	2	2	0	35	8	0	8	43

Project: 6126-23
Project No: Westminster - Mississauga
Location: 4094 Tomken Rd
Date: Thursday March 24, 2022

AM Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
7:00	41	1	2	0	44	0	0	0	44
8:00	35	1	2	0	38	1	0	1	39
9:00	30	1	4	0	35	4	1	5	40
10:00	28	0	5	0	33	4	1	5	38

PM Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
16:00	21	1	3	0	25	7	1	8	33
17:00	24	2	3	0	29	3	1	4	33
18:00	31	0	3	0	34	0	0	0	34
19:00	32	1	3	0	36	0	0	0	36
20:00	30	1	4	0	35	0	0	0	35

Project: 6126-23
Project No: Westminster - Mississauga
Location: 4094 Tomken Rd
Date: Sunday March 27, 2022

AM Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
8:00	38	3	4	0	45	0	0	0	45
9:00	36	4	5	0	45	0	1	1	46
10:00	35	4	3	0	42	17	2	19	61
11:00	33	3	2	0	38	18	2	20	58
12:00	30	3	2	0	35	1	0	1	36
13:00	27	2	4	0	33	5	0	5	38
14:00	25	3	3	0	31	7	0	7	38
15:00	24	4	3	0	31	5	1	6	37
16:00	29	4	2	0	35	0	0	0	35

Project: **6126-23**
Project No: **Westminster - Mississauga**
Location: **4094 Tomken Rd**
Date: **Monday June 27th - Tuesday June 28th**

Overnight Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
22:00	31	3	1	0	35	0	0	0	35
22:30	33	3	1	0	37	0	0	0	37
23:00	33	3	1	0	37	0	0	0	37
23:30	36	3	1	0	40	0	0	0	40
0:00	36	3	1	0	40	0	0	0	40
0:30	7	3	2	0	12	0	0	0	12
1:00	37	3	2	0	42	0	0	0	42
1:30	37	2	2	0	41	0	0	0	41
2:00	37	2	2	0	41	0	0	0	41
2:30	36	2	3	0	41	0	0	0	41
3:00	36	2	3	0	41	0	0	0	41

Project: 6126-23
Project No: Westminster - Mississauga
Location: 4094 Tomken Rd
Date: Tuesday June 28th - Wednesday June 29th

Overnight Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
22:00	32	2	6	0	40	0	0	0	40
22:30	32	3	6	0	41	0	0	0	41
23:00	33	3	5	0	41	0	0	0	41
23:30	34	3	5	0	42	0	0	0	42
0:00	35	3	5	0	43	0	0	0	43
0:30	37	3	5	0	45	0	0	0	45
1:00	37	4	5	0	46	0	0	0	46
1:30	37	5	4	0	46	0	0	0	46
2:00	37	4	3	0	44	0	0	0	44
2:30	38	4	3	0	45	0	0	0	45
3:00	38	4	3	0	45	0	0	0	45

Project: **6126-23**
Project No: **Westminster - Mississauga**
Location: **4094 Tomken Rd**
Date: **Wednesday July 6th - Thursday July 7th**

Overnight Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
22:00	28	4	4	0	36	0	0	0	36
22:30	30	4	2	0	36	0	0	0	36
23:00	30	5	2	0	37	0	0	0	37
23:30	32	4	3	0	39	0	0	0	39
0:00	33	4	2	0	39	0	0	0	39
0:30	35	4	1	0	40	0	0	0	40
1:00	35	4	1	0	40	0	0	0	40
1:30	35	4	1	0	40	0	0	0	40
2:00	35	4	0	0	39	0	0	0	39
2:30	35	3	0	0	38	0	0	0	38
3:00	35	3	0	0	38	0	0	0	38

Project: 6126-23
Project No: Westminster - Mississauga
Location: 4094 Tomken Rd
Date: Thursday July 7th - Friday July 9th

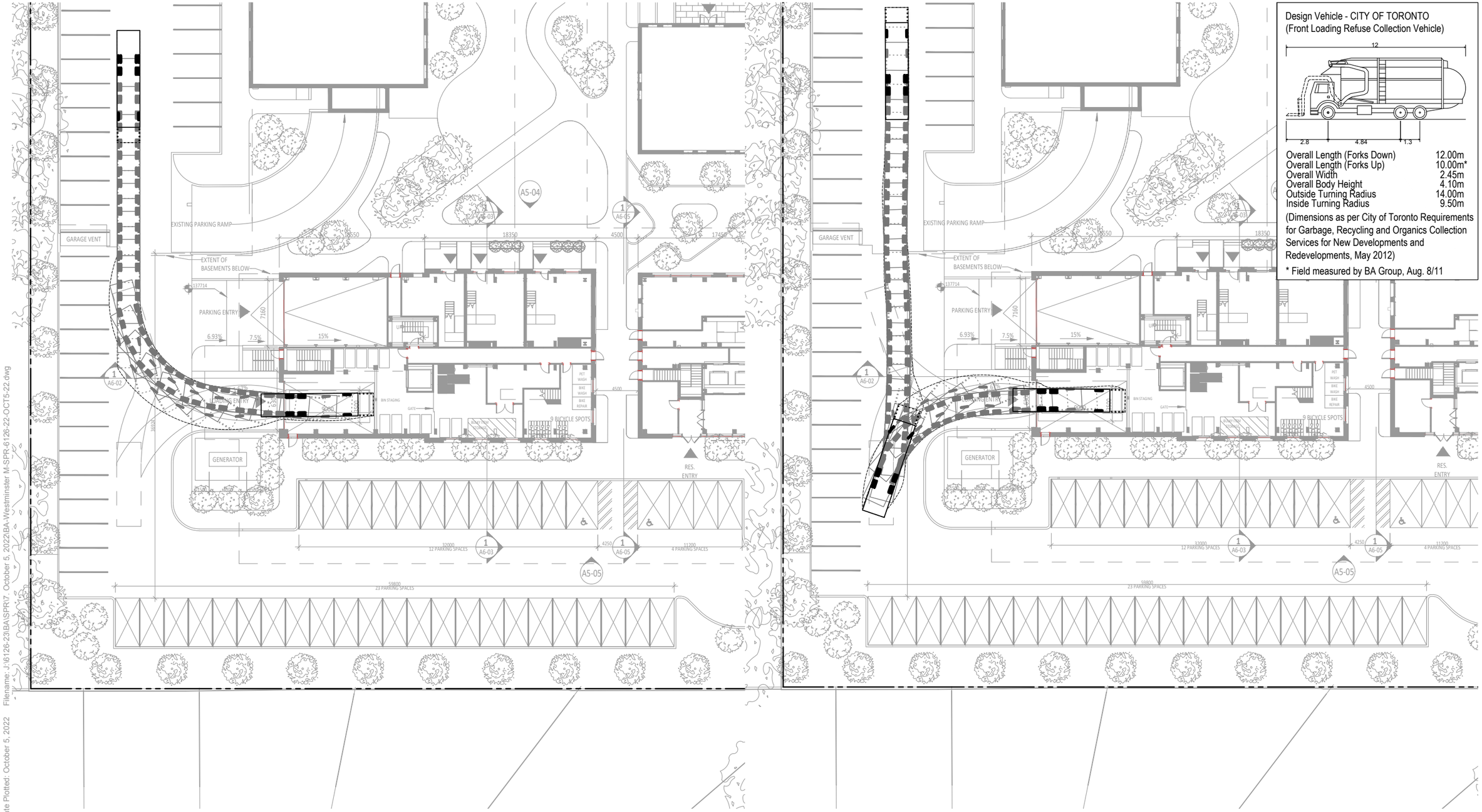
Overnight Parking Demand

Time	Apartment					Church			Combined
	UG	Surface	Visitor	Accessible	Total	Surface	Accessible	Total	
	54	35	11	3	103	104	6	110	213
22:00	29	3	4	0	36	0	0	0	36
22:30	30	3	4	0	37	0	0	0	37
23:00	31	3	4	0	38	0	0	0	38
23:30	35	3	4	0	42	0	0	0	42
0:00	35	3	4	0	42	0	0	0	42
0:30	36	3	4	0	43	0	0	0	43
1:00	36	3	3	0	42	0	0	0	42
1:30	37	3	3	0	43	0	0	0	43
2:00	37	3	3	0	43	0	0	0	43
2:30	37	3	3	0	43	0	0	0	43
3:00	37	3	3	0	43	0	0	0	43

APPENDIX C:
Vehicle Manoeuvring Diagrams

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

Filename: J:\6126-23\BA\SPR\7. October 5, 2022\BA-Westminster M-SPR-6126-22-OCT5-22.dwg

Date Plotted: October 5, 2022

BA Group

WESTMINSTER - MISSISSAUGA

VEHICLE MANOEUVRING DIAGRAM
SOUTH TOWER
FRONT LOADING GARBAGE TRUCK

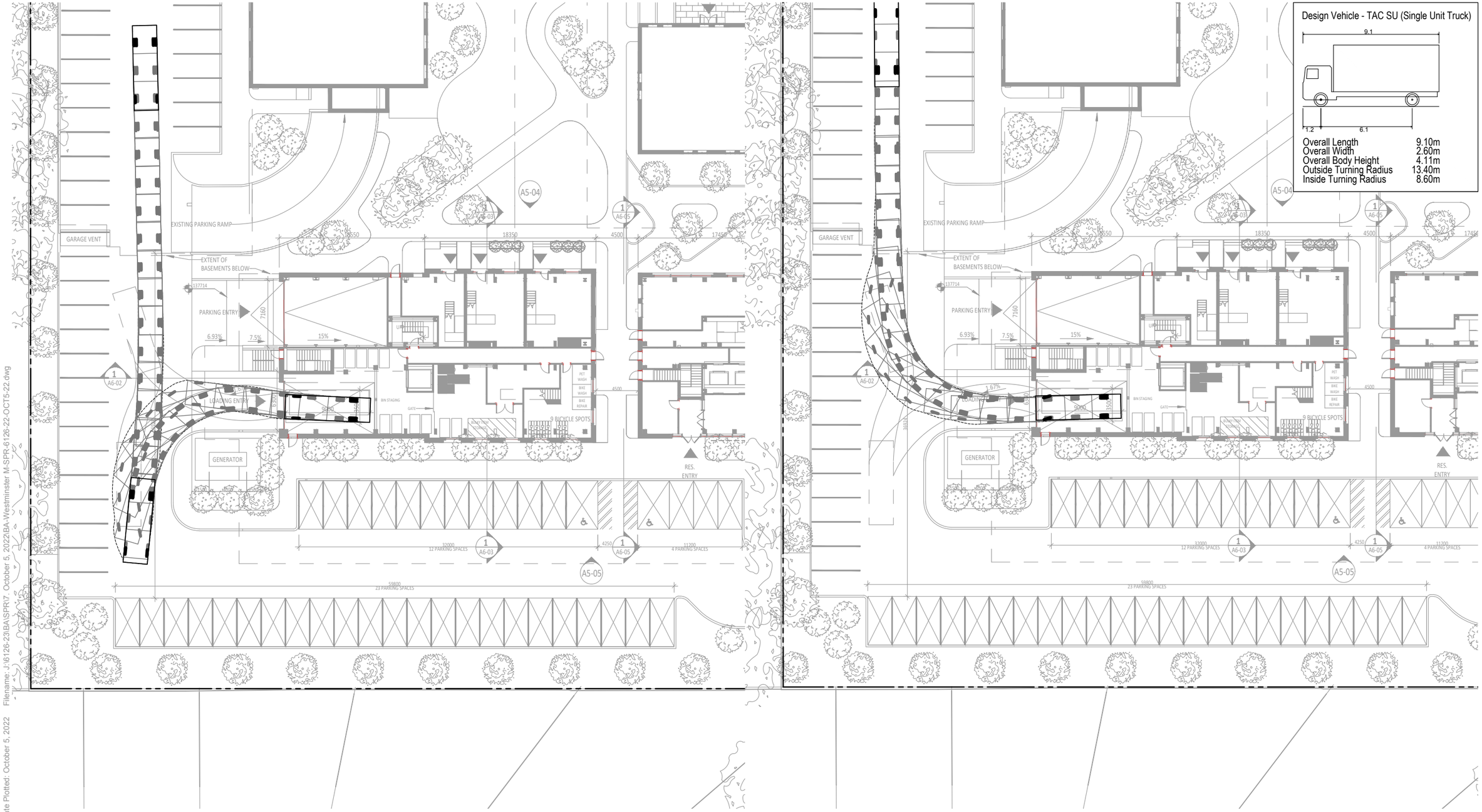
Project:	WESTMINSTER
Project No.	6126-23
Date:	OCTOBER 5, 2022
Revised:	--

Scale 1:400 — 0 2 4 6 8 10 20m

Drawing No. VMD-01

INBOUND

OUTBOUND



Filename: J:\6126-23\BA\SPR\7. October 5, 2022\BA-Westminster M-SPR-6126-22-OCT5-22.dwg
Date Plotted: October 5, 2022

BA Group

WESTMINSTER - MISSISSAUGA

VEHICLE MANOEUVRING DIAGRAM
SOUTH TOWER
TAC SU

Project:	WESTMINSTER
Project No.	6126-23
Date:	OCTOBER 5, 2022
Revised:	--

Scale 1:400 (0 2 4 6 8 10 20m)

Drawing No. VMD-02

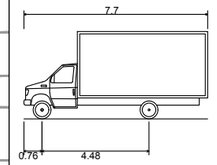
INBOUND

OUTBOUND

RATHBURN ROAD EAST

RATHBURN ROAD EAST

Design Vehicle - CUBEVAN (Ford E350)



Overall Length	7.70m
Overall Width	2.45m
Overall Body Height	3.66m
Outside Turning Radius	9.49m
Inside Turning Radius	5.68m

EXISTING FIRE HYDRANT
EXISTING HYDRO POLE
EXISTING BELL MANHOLE
EXISTING
EXISTING RESIDENTIAL ENTRY
EXISTING 7 STOREY APARTMENT BUILDING TO REMAIN
EXISTING RESIDENTIAL ENTRY
RES LOADING
EXISTING RESIDENTIAL FENCE
A5-01
A5-02
A5-03
A6-00
A6-01
16756
17700
17450
4500
138420
136220
134310
134820
DN
UP

Date Plotted: October 5, 2022 Filename: J:\6126-23\BA\SPR17_October 5, 2022\BA-Westminster M-SPR-6126-22-OCT5-22.dwg

BA Group

WESTMINSTER - MISSISSAUGA

VEHICLE MANOEUVRING DIAGRAM

N-E TOWER

CUBE VAN

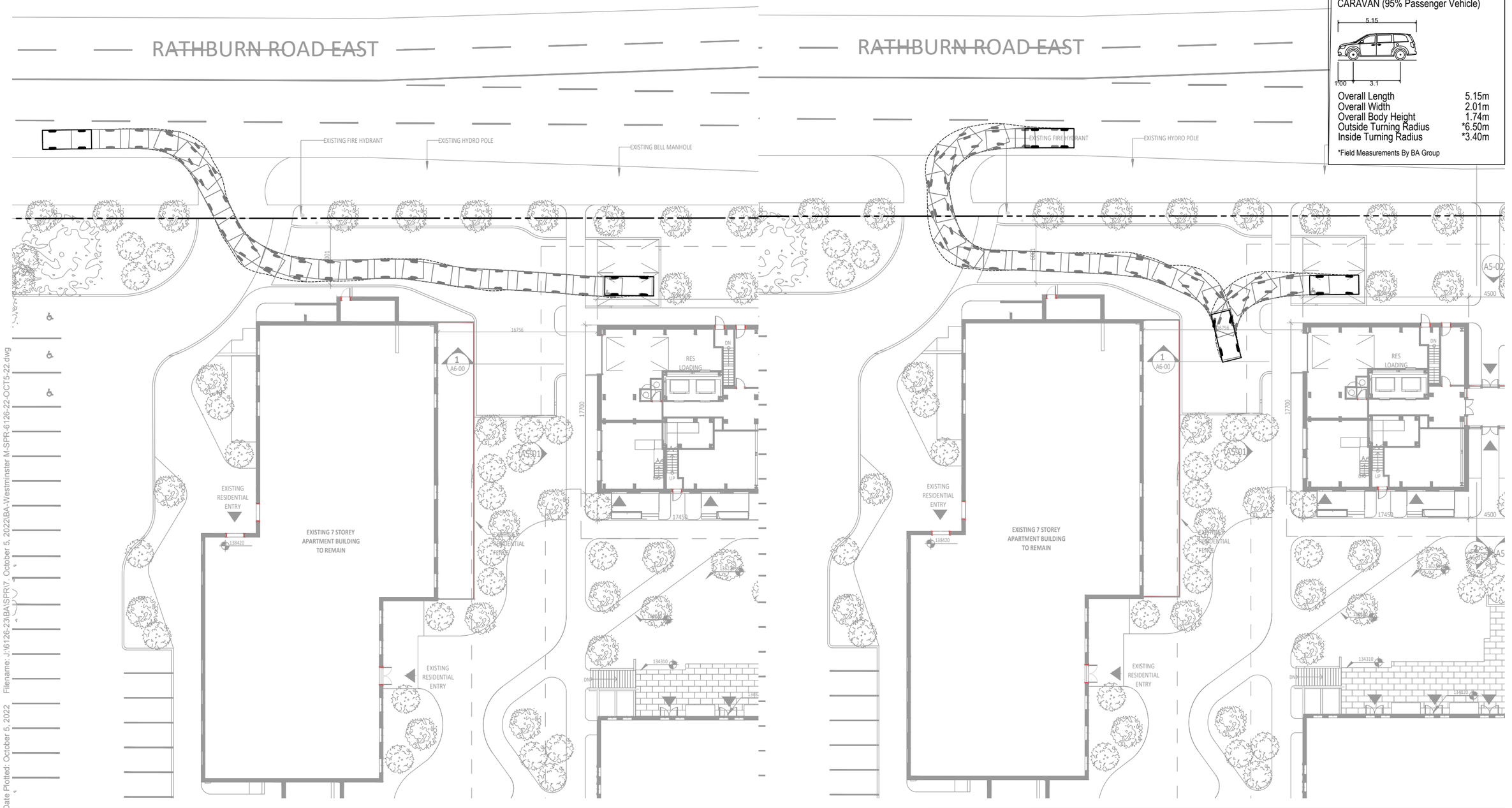
Project:	WESTMINSTER
Project No.	6126-23
Date:	OCTOBER 5, 2022
Revised:	--

Scale 1:400 0 2 4 6 8 10 20m

Drawing No. VMD-03

INBOUND

OUTBOUND



Design Vehicle - 2012 DODGE GRAND CARAVAN (95% Passenger Vehicle)

Overall Length	5.15m
Overall Width	2.01m
Overall Body Height	1.74m
Outside Turning Radius	*6.50m
Inside Turning Radius	*3.40m

*Field Measurements By BA Group

Date Plotted: October 5, 2022 Filename: J:\6126-23\BA\SPR7. October 5, 2022\BA-Westminster M-SPR-6126-22-OCT5-22.dwg

BA Group

WESTMINSTER - MISSISSAUGA

VEHICLE MANOEUVRING DIAGRAM
N-E TOWER
PASSENGER VEHICLE

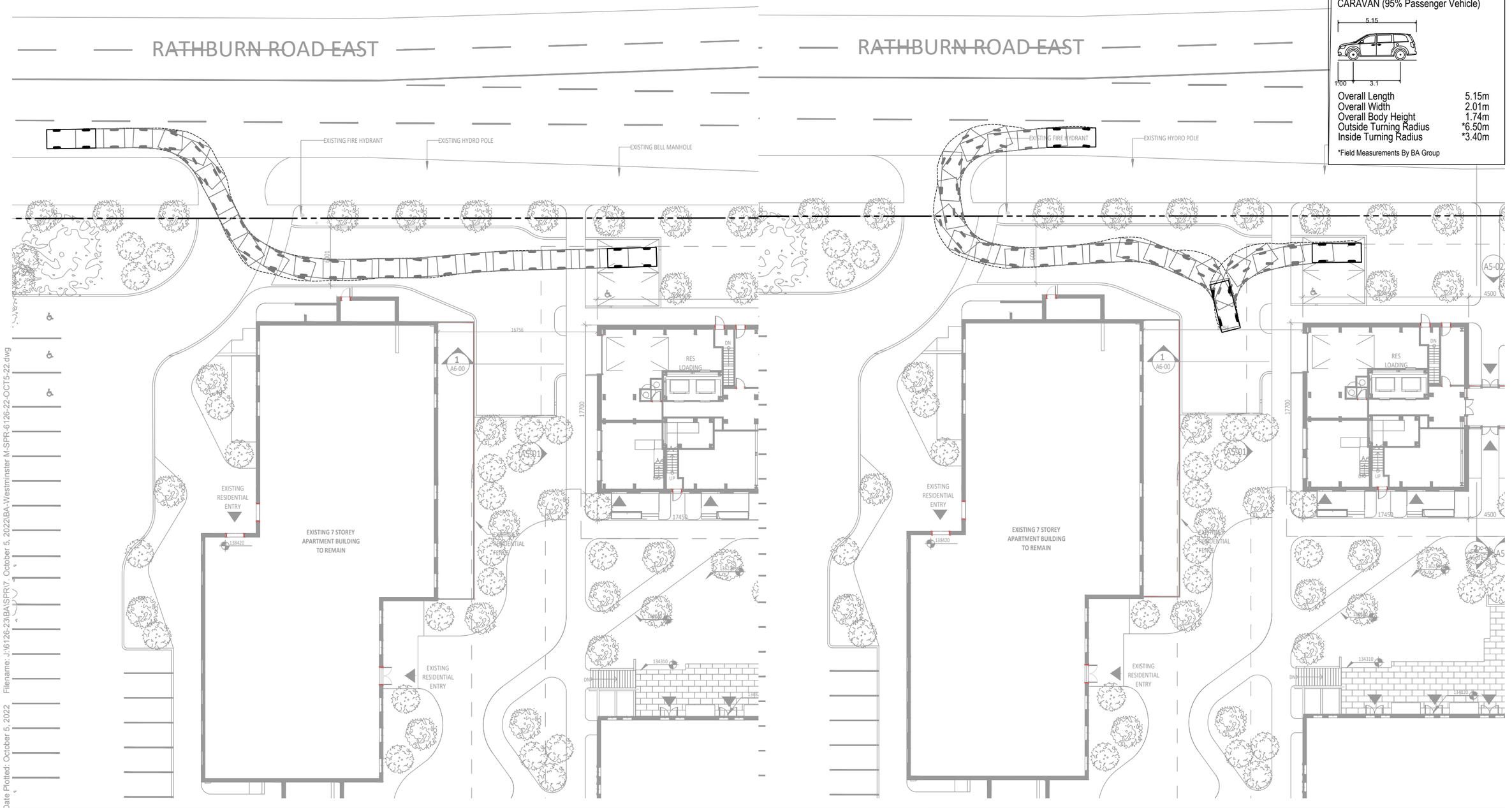
Project:	WESTMINSTER
Project No.	6126-23
Date:	OCTOBER 5, 2022
Revised:	--

Scale 1:400 (0 2 4 6 8 10 20m)

Drawing No. VMD-04

INBOUND

OUTBOUND



Design Vehicle - 2012 DODGE GRAND CARAVAN (95% Passenger Vehicle)

Overall Length	5.15m
Overall Width	2.01m
Overall Body Height	1.74m
Outside Turning Radius	*6.50m
Inside Turning Radius	*3.40m

*Field Measurements By BA Group

Date Plotted: October 5, 2022 Filename: J:\6126-23\BA\SPR7. October 5, 2022\BA-Westminster M-SPR-6126-22-OCT5-22.dwg

BA Group

WESTMINSTER - MISSISSAUGA

VEHICLE MANOEUVRING DIAGRAM
N-E TOWER
PASSENGER VEHICLE

Project:	WESTMINSTER
Project No.	6126-23
Date:	OCTOBER 5, 2022
Revised:	--

Scale 1:400 (0 2 4 6 8 10 20m)

Drawing No. VMD-05

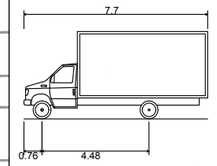
INBOUND

OUTBOUND

RATHBURN ROAD EAST

EXISTING FIRE HYDRANT
EXISTING HYDRO POLE
EXISTING BELL MANHOLE
EXISTING 7 STOREY APARTMENT BUILDING TO REMAIN
EXISTING RESIDENTIAL ENTRY
RESIDENTIAL FENCE
RES LOADING
A5-01
A5-02
A5-03
A6-00

Design Vehicle - CUBEVAN (Ford E350)



Overall Length	7.70m
Overall Width	2.45m
Overall Body Height	3.66m
Outside Turning Radius	9.49m
Inside Turning Radius	5.68m

Date Plotted: October 5, 2022 Filename: J:\6126-23\BA\SPR\7. October 5, 2022\BA-Westminster M-SPR-6126-22-OCT5-22.dwg

BA Group

WESTMINSTER - MISSISSAUGA

VEHICLE MANOEUVRING DIAGRAM
N-E TOWER
CUBE VAN

Project:	WESTMINSTER
Project No.	6126-23
Date:	OCTOBER 5, 2022
Revised:	--

Scale 1:400 (0 2 4 6 8 10 20m)

Drawing No. VMD-06

APPENDIX D:
Traffic Count Data

Spectrum

Turning Movement Count
Location Name: TOMKEN RD & BURNHAMTHORPE RD E
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (5 . TOMKEN RD & BURNHAMTHORPE RD E)

Start Time	N Approach TOMKEN RD						E Approach BURNHAMTHORPE RD E						S Approach TOMKEN RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	4	31	13	0	0	48	20	64	5	0	0	89	7	54	3	0	1	64	3	78	10	0	1	91	292	
07:15:00	4	27	11	0	7	42	10	65	5	0	7	80	9	65	3	0	2	77	8	112	23	0	1	143	342	
07:30:00	12	75	19	0	12	106	35	72	6	0	6	113	7	115	3	0	1	125	9	140	35	0	1	184	528	
07:45:00	22	110	38	0	7	170	31	79	18	0	7	128	16	131	8	0	2	155	27	150	50	0	4	227	680	1842
08:00:00	21	117	27	0	12	165	32	102	32	0	14	166	24	68	15	0	2	107	46	193	20	0	0	259	697	2247
08:15:00	13	88	24	0	3	125	20	117	15	0	4	152	34	141	23	0	2	198	16	185	17	0	2	218	693	2598
08:30:00	8	65	26	1	7	100	23	134	16	0	3	173	19	81	12	0	5	112	13	154	24	0	5	191	576	2646
08:45:00	13	82	21	0	3	116	24	128	15	0	5	167	16	88	18	0	1	122	18	166	33	0	2	217	622	2588
09:00:00	14	83	22	0	5	119	36	127	12	0	2	175	22	77	16	0	0	115	12	118	15	0	1	145	554	2445
09:15:00	12	53	19	0	2	84	23	113	7	0	1	143	10	48	4	0	0	62	9	121	21	0	1	151	440	2192
09:30:00	14	65	15	0	0	94	17	81	4	0	2	102	14	51	9	0	1	74	11	122	9	0	1	142	412	2028
09:45:00	14	37	16	0	3	67	17	95	7	0	2	119	7	37	13	0	8	57	11	111	17	0	1	139	382	1788
BREAK																										
16:00:00	36	130	27	0	5	193	24	188	18	0	0	230	11	104	25	0	2	140	19	149	7	0	1	175	738	
16:15:00	32	123	20	0	4	175	28	213	15	0	5	256	14	85	28	0	10	127	21	128	21	1	6	171	729	
16:30:00	40	127	35	0	6	202	24	196	10	0	7	230	13	105	27	0	2	145	16	162	13	0	2	191	768	
16:45:00	34	140	32	0	3	206	29	215	23	0	6	267	16	88	22	0	4	126	15	160	16	0	2	191	790	3025
17:00:00	48	105	25	0	14	178	24	226	26	0	9	276	18	99	27	0	3	144	32	161	19	0	2	212	810	3097
17:15:00	52	189	42	0	1	283	22	170	13	0	4	205	11	113	28	0	1	152	23	162	13	1	0	199	839	3207
17:30:00	38	116	31	0	18	185	13	225	20	0	10	258	18	92	26	0	1	136	26	165	21	0	0	212	791	3230
17:45:00	32	119	22	0	6	173	27	212	19	0	7	258	20	77	17	0	1	114	23	149	20	0	1	192	737	3177
18:00:00	30	94	24	0	3	148	21	187	9	0	2	217	14	111	18	0	1	143	20	146	14	0	0	180	688	3055
18:15:00	29	88	22	0	8	139	23	148	7	0	3	178	14	81	23	0	2	118	15	128	12	0	1	155	590	2806
18:30:00	22	89	27	0	4	138	22	163	13	0	5	198	9	66	15	0	0	90	11	112	9	0	0	132	558	2573
18:45:00	26	81	18	0	1	125	14	136	12	0	2	162	10	56	16	1	5	83	19	131	12	0	1	162	532	2368
19:00:00	19	58	16	0	4	93	16	133	7	0	1	156	11	60	16	0	1	87	5	114	13	0	1	132	468	2148
19:15:00	9	63	26	0	2	98	19	125	15	0	4	159	14	54	12	0	3	80	16	113	10	0	2	139	476	2034
19:30:00	13	50	18	0	2	81	13	124	14	0	0	151	10	57	14	0	0	81	8	97	9	0	1	114	427	1903
19:45:00	12	50	16	0	3	78	23	99	13	0	3	135	10	48	15	0	4	73	13	98	12	0	3	123	409	1780
Grand Total	623	2455	652	1	145	3731	630	3937	376	0	121	4943	398	2252	456	1	65	3107	465	3825	495	2	43	4787	**16568**	-
Approach%	16.7%	65.8%	17.5%	0%		-	12.7%	79.6%	7.6%	0%		-	12.8%	72.5%	14.7%	0%		-	9.7%	79.9%	10.3%	0%		-	**-**	-
Totals %	3.8%	14.8%	3.9%	0%		22.5%	3.8%	23.8%	2.3%	0%		29.8%	2.4%	13.6%	2.8%	0%		18.8%	2.8%	23.1%	3%	0%		28.9%	**-**	-
Heavy	6	80	6	0		-	11	131	3	0		-	12	80	7	0		-	9	118	10	0		-	**-**	-
Heavy %	1%	3.3%	0.9%	0%		-	1.7%	3.3%	0.8%	0%		-	3%	3.6%	1.5%	0%		-	1.9%	3.1%	2%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Spectrum

Turning Movement Count
Location Name: TOMKEN RD & BURNHAMTHORPE RD E
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

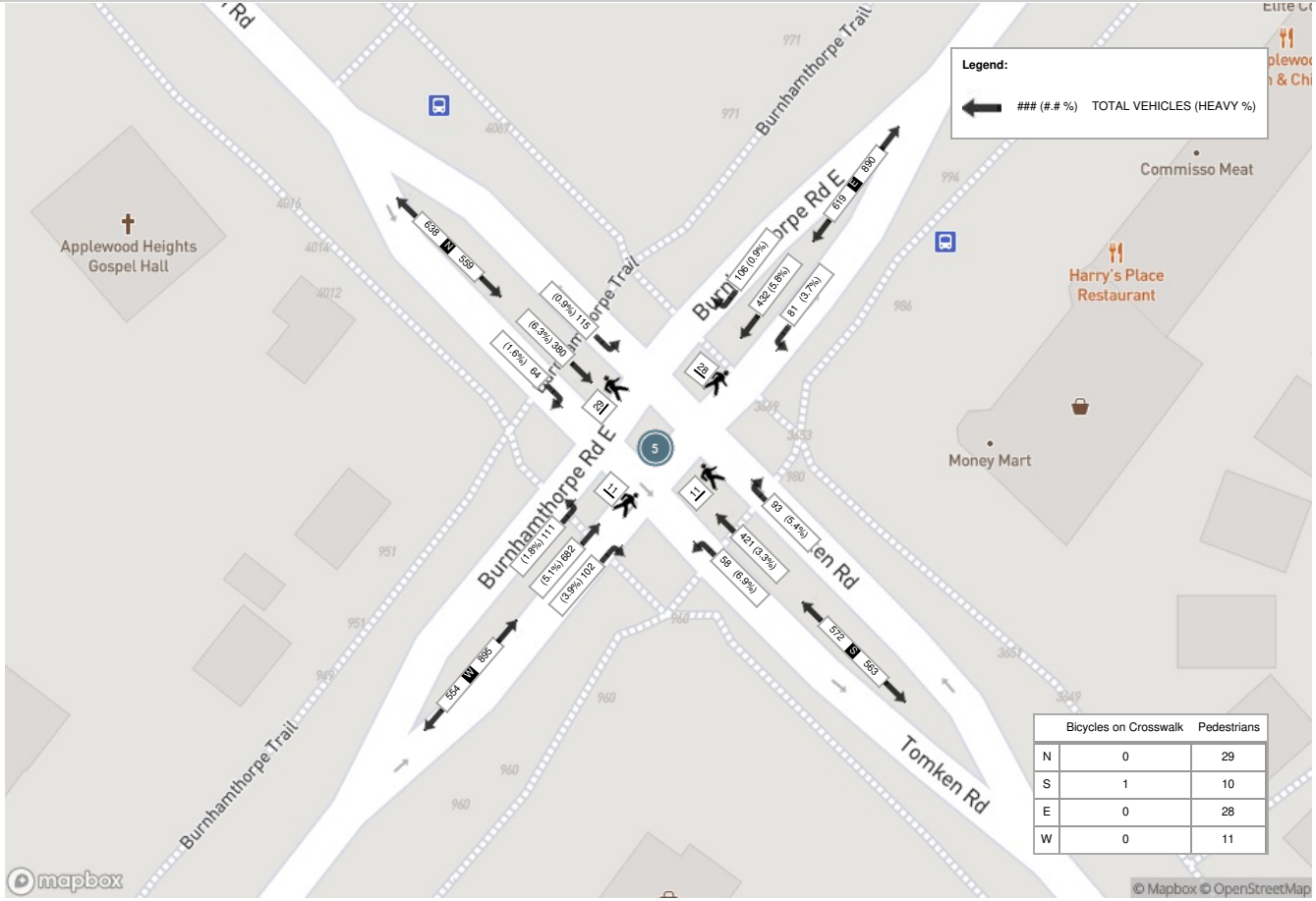
Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (4.68 °C)

Start Time	N Approach TOMKEN RD						E Approach BURNHAMTHORPE RD E						S Approach TOMKEN RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	22	110	38	0	7	170	31	79	18	0	7	128	16	131	8	0	2	155	27	150	50	0	4	227	680
08:00:00	21	117	27	0	12	165	32	102	32	0	14	166	24	68	15	0	2	107	46	193	20	0	0	259	697
08:15:00	13	88	24	0	3	125	20	117	15	0	4	152	34	141	23	0	2	198	16	185	17	0	2	218	693
08:30:00	8	65	26	1	7	100	23	134	16	0	3	173	19	81	12	0	5	112	13	154	24	0	5	191	576
Grand Total	64	380	115	1	29	560	106	432	81	0	28	619	93	421	58	0	11	572	102	682	111	0	11	895	**2646**
Approach%	11.4%	67.9%	20.5%	0.2%		-	17.1%	69.8%	13.1%	0%		-	16.3%	73.6%	10.1%	0%		-	11.4%	76.2%	12.4%	0%		-	**-**
Totals %	2.4%	14.4%	4.3%	0%		21.2%	4%	16.3%	3.1%	0%		23.4%	3.5%	15.9%	2.2%	0%		21.6%	3.9%	25.8%	4.2%	0%		33.8%	**-**
PHF	0.73	0.81	0.76	0.25		0.82	0.83	0.81	0.63	0		0.89	0.68	0.75	0.63	0		0.72	0.55	0.88	0.56	0		0.86	**-**
Heavy	1	24	1	0		26	1	25	3	0		29	5	14	4	0		23	4	35	2	0		41	**-**
Heavy %	1.6%	6.3%	0.9%	0%		4.6%	0.9%	5.8%	3.7%	0%		4.7%	5.4%	3.3%	6.9%	0%		4%	3.9%	5.1%	1.8%	0%		4.6%	**-**
Lights	63	356	114	1		534	105	407	78	0		590	88	407	54	0		549	98	647	109	0		854	**-**
Lights %	98.4%	93.7%	99.1%	100%		95.4%	99.1%	94.2%	96.3%	0%		95.3%	94.6%	96.7%	93.1%	0%		96%	96.1%	94.9%	98.2%	0%		95.4%	**-**
Single-Unit Trucks	0	4	0	0		4	0	8	2	0		10	0	2	0	0		2	1	16	0	0		17	**-**
Single-Unit Trucks %	0%	1.1%	0%	0%		0.7%	0%	1.9%	2.5%	0%		1.6%	0%	0.5%	0%	0%		0.3%	1%	2.3%	0%	0%		1.9%	**-**
Buses	1	20	1	0		22	1	15	1	0		17	5	12	4	0		21	3	17	2	0		22	**-**
Buses %	1.6%	5.3%	0.9%	0%		3.9%	0.9%	3.5%	1.2%	0%		2.7%	5.4%	2.9%	6.9%	0%		3.7%	2.9%	2.5%	1.8%	0%		2.5%	**-**
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	**-**
Pedestrians	-	-	-	-	29	-	-	-	-	-	28	-	-	-	-	-	10	-	-	-	-	-	11	-	**-**
Pedestrians%	-	-	-	-	36.7%		-	-	-	-	35.4%		-	-	-	-	12.7%		-	-	-	-	13.9%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	1.3%		-	-	-	-	0%		**-**

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (10.64 °C)

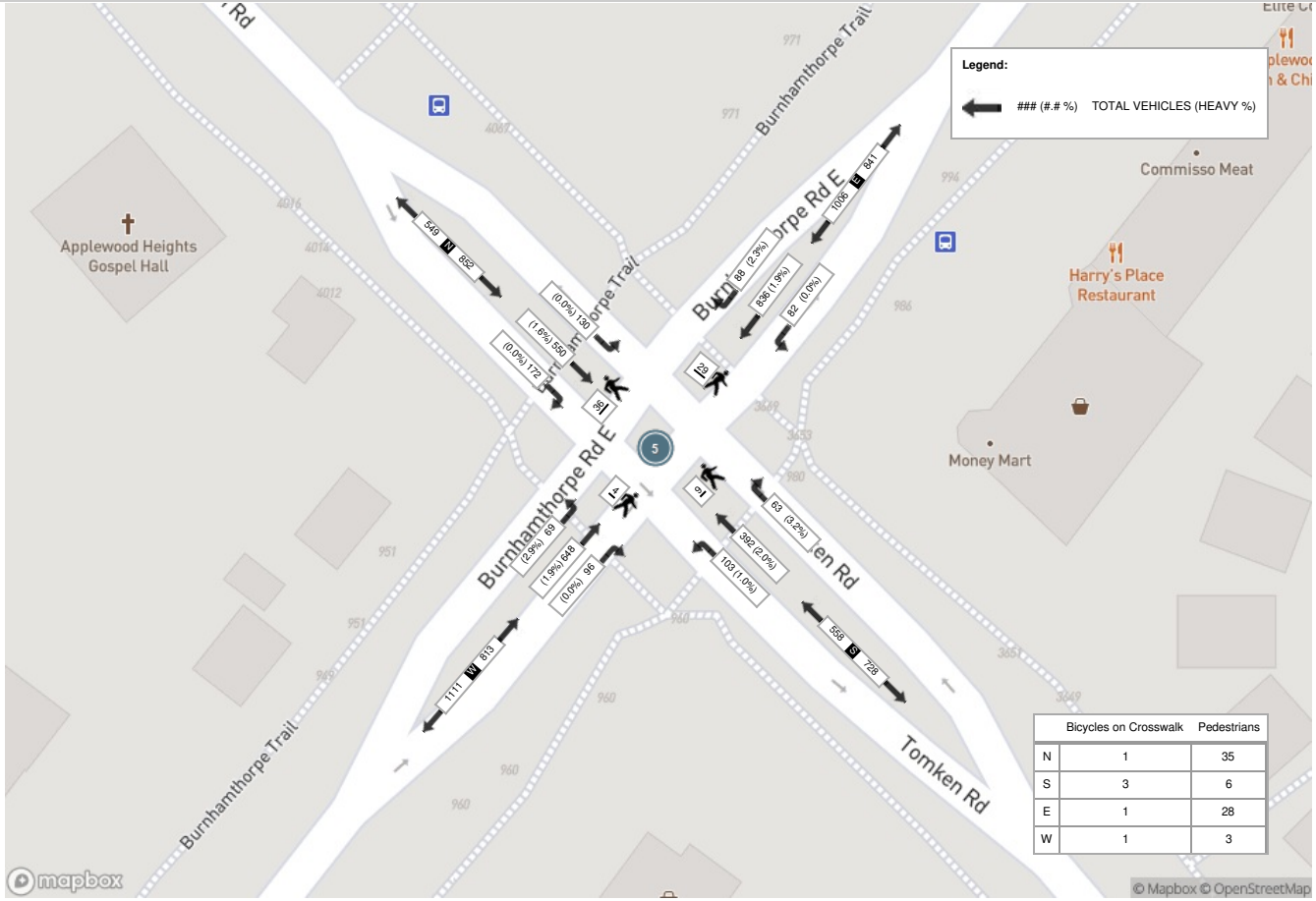
Start Time	N Approach TOMKEN RD						E Approach BURNHAMTHORPE RD E						S Approach TOMKEN RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	34	140	32	0	3	206	29	215	23	0	6	267	16	88	22	0	4	126	15	160	16	0	2	191	790
17:00:00	48	105	25	0	14	178	24	226	26	0	9	276	18	99	27	0	3	144	32	161	19	0	2	212	810
17:15:00	52	189	42	0	1	283	22	170	13	0	4	205	11	113	28	0	1	152	23	162	13	1	0	199	839
17:30:00	38	116	31	0	18	185	13	225	20	0	10	258	18	92	26	0	1	136	26	165	21	0	0	212	791
Grand Total	172	550	130	0	36	852	88	836	82	0	29	1006	63	392	103	0	9	558	96	648	69	1	4	814	**3230**
Approach%	20.2%	64.6%	15.3%	0%		-	8.7%	83.1%	8.2%	0%		-	11.3%	70.3%	18.5%	0%		-	11.8%	79.6%	8.5%	0.1%		-	**-**
Totals %	5.3%	17%	4%	0%		26.4%	2.7%	25.9%	2.5%	0%		31.1%	2%	12.1%	3.2%	0%		17.3%	3%	20.1%	2.1%	0%		25.2%	**-**
PHF	0.83	0.73	0.77	0		0.75	0.76	0.92	0.79	0		0.91	0.88	0.87	0.92	0		0.92	0.75	0.98	0.82	0.25		0.96	**-**
Heavy	0	9	0	0		9	2	16	0	0		18	2	8	1	0		11	0	12	2	0		14	**-**
Heavy %	0%	1.6%	0%	0%		1.1%	2.3%	1.9%	0%	0%		1.8%	3.2%	2%	1%	0%		2%	0%	1.9%	2.9%	0%		1.7%	**-**
Lights	172	541	130	0		843	86	820	82	0		988	61	384	102	0		547	96	636	67	1		800	**-**
Lights %	100%	98.4%	100%	0%		98.9%	97.7%	98.1%	100%	0%		98.2%	96.8%	98%	99%	0%		98%	100%	98.1%	97.1%	100%		98.3%	**-**
Single-Unit Trucks	0	2	0	0		2	2	6	0	0		8	2	2	1	0		5	0	4	2	0		6	**-**
Single-Unit Trucks %	0%	0.4%	0%	0%		0.2%	2.3%	0.7%	0%	0%		0.8%	3.2%	0.5%	1%	0%		0.9%	0%	0.6%	2.9%	0%		0.7%	**-**
Buses	0	7	0	0		7	0	9	0	0		9	0	6	0	0		6	0	7	0	0		7	**-**
Buses %	0%	1.3%	0%	0%		0.8%	0%	1.1%	0%	0%		0.9%	0%	1.5%	0%	0%		1.1%	0%	1.1%	0%	0%		0.9%	**-**
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	**-**
Pedestrians	-	-	-	-	35	-	-	-	-	-	28	-	-	-	-	-	6	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	44.9%		-	-	-	-	35.9%		-	-	-	-	7.7%		-	-	-	-	3.8%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	1.3%		-	-	-	-	1.3%		-	-	-	-	3.8%		-	-	-	-	1.3%		**-**

Peak Hour: 07:45 AM - 08:45 AM **Weather: Mist (4.68 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	29
S	1	10
E	0	28
W	0	11

Peak Hour: 04:45 PM - 05:45 PM **Weather: Overcast Clouds (10.64 °C)**



	Bicycles on Crosswalk	Pedestrians
N	1	35
S	3	6
E	1	28
W	1	3

Spectrum

Turning Movement Count
Location Name: TOMKEN RD & BURNHAMTHORPE RD E
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (5 . TOMKEN RD & BURNHAMTHORPE RD E)

Start Time	N Approach TOMKEN RD						E Approach BURNHAMTHORPE RD E						S Approach TOMKEN RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
08:00:00	2	14	6	0	1	22	8	40	6	0	0	54	4	12	3	0	0	19	4	39	2	0	0	45	140	
08:15:00	3	21	3	0	2	27	4	33	7	0	0	44	7	17	3	0	0	27	9	29	6	0	1	44	142	
08:30:00	7	14	6	0	1	27	12	46	2	0	0	60	1	24	1	0	0	26	7	26	4	0	2	37	150	
08:45:00	4	25	12	0	0	41	10	32	2	0	0	44	4	25	6	0	0	35	4	49	7	0	1	60	180	612
09:00:00	7	23	8	0	0	38	4	70	5	0	0	79	6	21	5	0	0	32	7	76	7	0	0	90	239	711
09:15:00	5	34	12	0	0	51	13	58	3	0	0	74	12	43	5	0	1	60	13	92	8	0	1	113	298	867
09:30:00	10	41	9	0	3	60	4	59	8	0	2	71	6	33	4	0	1	43	7	73	12	0	0	92	266	983
09:45:00	10	48	10	0	0	68	10	88	7	0	0	105	2	23	5	0	1	30	13	101	22	0	1	136	339	1142
10:00:00	6	44	13	0	1	63	11	78	5	0	0	94	6	28	7	0	0	41	16	84	5	0	1	105	303	1206
10:15:00	11	51	12	0	1	74	8	97	5	0	0	110	10	27	7	0	2	44	11	109	9	0	2	129	357	1265
10:30:00	7	30	15	0	1	52	16	90	4	0	1	110	7	39	5	0	2	51	19	102	11	0	0	132	345	1344
10:45:00	19	44	16	0	0	79	18	106	7	0	3	131	7	60	21	0	0	88	16	98	5	0	1	119	417	1422
11:00:00	12	35	8	0	1	55	16	107	8	0	0	131	12	47	3	0	1	62	19	113	7	0	0	139	387	1506
11:15:00	11	45	16	0	5	72	12	122	4	0	4	138	13	45	14	0	0	72	13	105	7	0	0	125	407	1556
11:30:00	15	71	18	0	1	104	19	94	18	0	0	131	7	51	9	0	3	67	5	113	10	0	3	128	430	1641
11:45:00	25	53	13	0	2	91	17	104	9	0	0	130	12	50	8	0	1	70	16	102	6	0	0	124	415	1639
12:00:00	15	80	22	0	0	117	32	121	8	0	0	161	9	58	18	0	4	85	22	138	6	0	0	166	529	1781
12:15:00	19	76	17	0	0	112	17	136	8	0	1	161	13	49	17	0	2	79	20	141	13	0	1	174	526	1900
12:30:00	9	83	19	0	3	111	18	147	7	0	1	172	10	54	15	0	0	79	8	155	14	0	0	177	539	2009
12:45:00	15	82	20	0	2	117	24	135	13	0	1	172	20	66	22	0	0	108	16	135	8	0	0	159	556	2150
13:00:00	11	52	14	0	1	77	24	119	13	0	0	156	15	66	10	0	1	91	22	170	11	0	2	203	527	2148
13:15:00	24	85	24	0	1	133	24	137	10	0	0	171	15	75	18	0	2	108	19	139	9	0	0	167	579	2201
13:30:00	12	74	16	0	4	102	25	122	11	0	0	158	10	58	12	0	1	80	20	149	12	0	0	181	521	2183
13:45:00	8	61	23	0	1	92	17	150	10	0	1	177	18	56	8	0	1	82	21	156	13	0	0	190	541	2168
14:00:00	15	73	29	0	0	117	16	131	4	0	1	151	14	69	19	0	0	102	17	139	11	0	2	167	537	2178
14:15:00	9	58	23	0	2	90	22	166	13	0	0	201	13	56	6	0	1	75	16	143	9	0	0	168	534	2133
14:30:00	14	64	20	0	3	98	19	156	12	0	1	187	4	66	20	0	1	90	18	155	12	0	2	185	560	2172
14:45:00	22	80	18	0	2	120	14	135	17	0	1	166	12	53	13	0	3	78	12	130	11	0	1	153	517	2148
Grand Total	327	1461	422	0	38	2210	434	2879	226	0	17	3539	269	1271	284	0	28	1824	390	3061	257	0	21	3708	**11281**	-
Approach%	14.8%	66.1%	19.1%	0%		-	12.3%	81.4%	6.4%	0%		-	14.7%	69.7%	15.6%	0%		-	10.5%	82.6%	6.9%	0%		-	-	-
Totals %	2.9%	13%	3.7%	0%		19.6%	3.8%	25.5%	2%	0%		31.4%	2.4%	11.3%	2.5%	0%		16.2%	3.5%	27.1%	2.3%	0%		32.9%	-	-
Heavy	3	6	1	0		-	1	22	0	0		-	1	2	2	0		-	0	24	0	0		-	-	-
Heavy %	0.9%	0.4%	0.2%	0%		-	0.2%	0.8%	0%	0%		-	0.4%	0.2%	0.7%	0%		-	0%	0.8%	0%	0%		-	-	-
Bicycles	0	1	0	0		-	0	0	0	0		-	0	0	0	0		-	0	1	0	0		-	-	-
Bicycle %	0%	0.1%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	-	-

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 12:30 PM - 01:30 PM Weather: Light Snow (1.59 °C)

Start Time	N Approach TOMKEN RD						E Approach BURNHAMTHORPE RD E						S Approach TOMKEN RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
12:30:00	9	83	19	0	3	111	18	147	7	0	1	172	10	54	15	0	0	79	8	155	14	0	0	177	539
12:45:00	15	82	20	0	2	117	24	135	13	0	1	172	20	66	22	0	0	108	16	135	8	0	0	159	556
13:00:00	11	52	14	0	1	77	24	119	13	0	0	156	15	66	10	0	1	91	22	170	11	0	2	203	527
13:15:00	24	85	24	0	1	133	24	137	10	0	0	171	15	75	18	0	2	108	19	139	9	0	0	167	579
Grand Total	59	302	77	0	7	438	90	538	43	0	2	671	60	261	65	0	3	386	65	599	42	0	2	706	**2201**
Approach%	13.5%	68.9%	17.6%	0%		-	13.4%	80.2%	6.4%	0%		-	15.5%	67.6%	16.8%	0%		-	9.2%	84.8%	5.9%	0%		-	**-**
Totals %	2.7%	13.7%	3.5%	0%		19.9%	4.1%	24.4%	2%	0%		30.5%	2.7%	11.9%	3%	0%		17.5%	3%	27.2%	1.9%	0%		32.1%	**-**
PHF	0.61	0.89	0.8	0		0.82	0.94	0.91	0.83	0		0.98	0.75	0.87	0.74	0		0.89	0.74	0.88	0.75	0		0.87	**-**
Heavy	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	**-**
Heavy %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	**-**
Lights	59	302	77	0		438	90	537	43	0		670	60	261	65	0		386	65	597	42	0		704	**-**
Lights %	100%	100%	100%	0%		100%	100%	99.8%	100%	0%		99.9%	100%	100%	100%	0%		100%	100%	99.7%	100%	0%		99.7%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	**-**
Pedestrians	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	50%		-	-	-	-	14.3%		-	-	-	-	21.4%		-	-	-	-	14.3%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: TOMKEN RD & BURNHAMTHORPE RD E
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

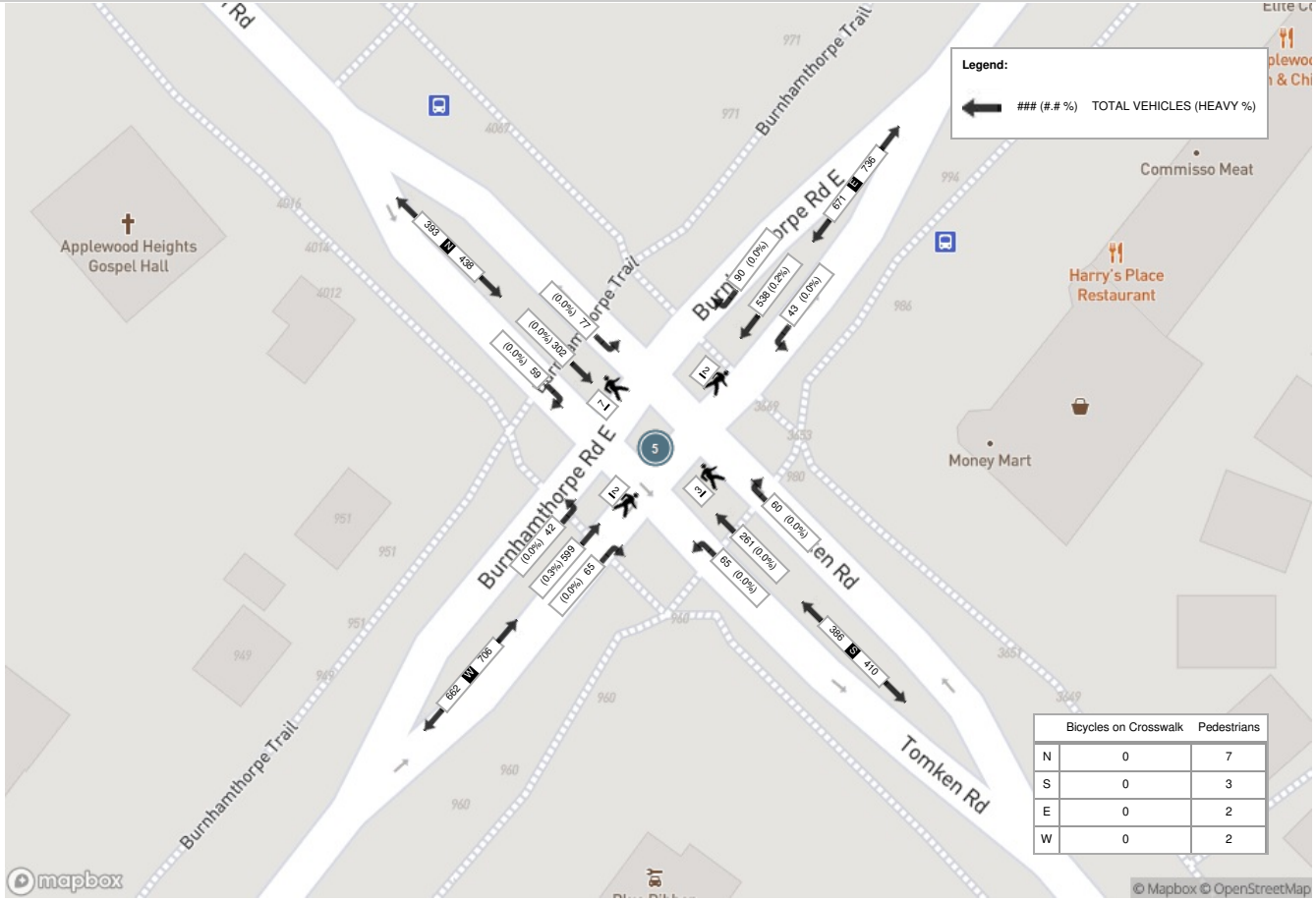
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 11:15 AM - 12:15 PM **Weather:**

Start Time	N Approach TOMKEN RD						E Approach BURNHAMTHORPE RD E						S Approach TOMKEN RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
11:15:00	11	45	16	0	5	72	12	122	4	0	4	138	13	45	14	0	0	72	13	105	7	0	0	125	407
11:30:00	15	71	18	0	1	104	19	94	18	0	0	131	7	51	9	0	3	67	5	113	10	0	3	128	430
11:45:00	25	53	13	0	2	91	17	104	9	0	0	130	12	50	8	0	1	70	16	102	6	0	0	124	415
12:00:00	15	80	22	0	0	117	32	121	8	0	0	161	9	58	18	0	4	85	22	138	6	0	0	166	529
Grand Total	66	249	69	0	8	384	80	441	39	0	4	560	41	204	49	0	8	294	56	458	29	0	3	543	**1781**
Approach%	17.2%	64.8%	18%	0%		-	14.3%	78.8%	7%	0%		-	13.9%	69.4%	16.7%	0%		-	10.3%	84.3%	5.3%	0%		-	**-**
Totals %	3.7%	14%	3.9%	0%		21.6%	4.5%	24.8%	2.2%	0%		31.4%	2.3%	11.5%	2.8%	0%		16.5%	3.1%	25.7%	1.6%	0%		30.5%	**-**
PHF	0.66	0.78	0.78	0		0.82	0.63	0.9	0.54	0		0.87	0.79	0.88	0.68	0		0.86	0.64	0.83	0.73	0		0.82	**-**
Heavy	1	2	0	0		3	0	2	0	0		2	0	2	0	0		2	0	5	0	0		5	**-**
Heavy %	1.5%	0.8%	0%	0%		0.8%	0%	0.5%	0%	0%		0.4%	0%	1%	0%	0%		0.7%	0%	1.1%	0%	0%		0.9%	**-**
Lights	65	247	69	0		381	80	439	39	0		558	41	202	49	0		292	56	453	29	0		538	**-**
Lights %	98.5%	99.2%	100%	0%		99.2%	100%	99.5%	100%	0%		99.6%	100%	99%	100%	0%		99.3%	100%	98.9%	100%	0%		99.1%	**-**
Single-Unit Trucks	1	2	0	0		3	0	0	0	0		0	0	1	0	0		1	0	3	0	0		3	**-**
Single-Unit Trucks %	1.5%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.3%	0%	0.7%	0%	0%		0.6%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	0	1	0	0		1	0	2	0	0		2	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.4%	0%	0.5%	0%	0%		0.3%	0%	0.4%	0%	0%		0.4%	**-**
Pedestrians	-	-	-	-	6	-	-	-	-	-	4	-	-	-	-	-	8	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	26.1%		-	-	-	-	17.4%		-	-	-	-	34.8%		-	-	-	-	13%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	8.7%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

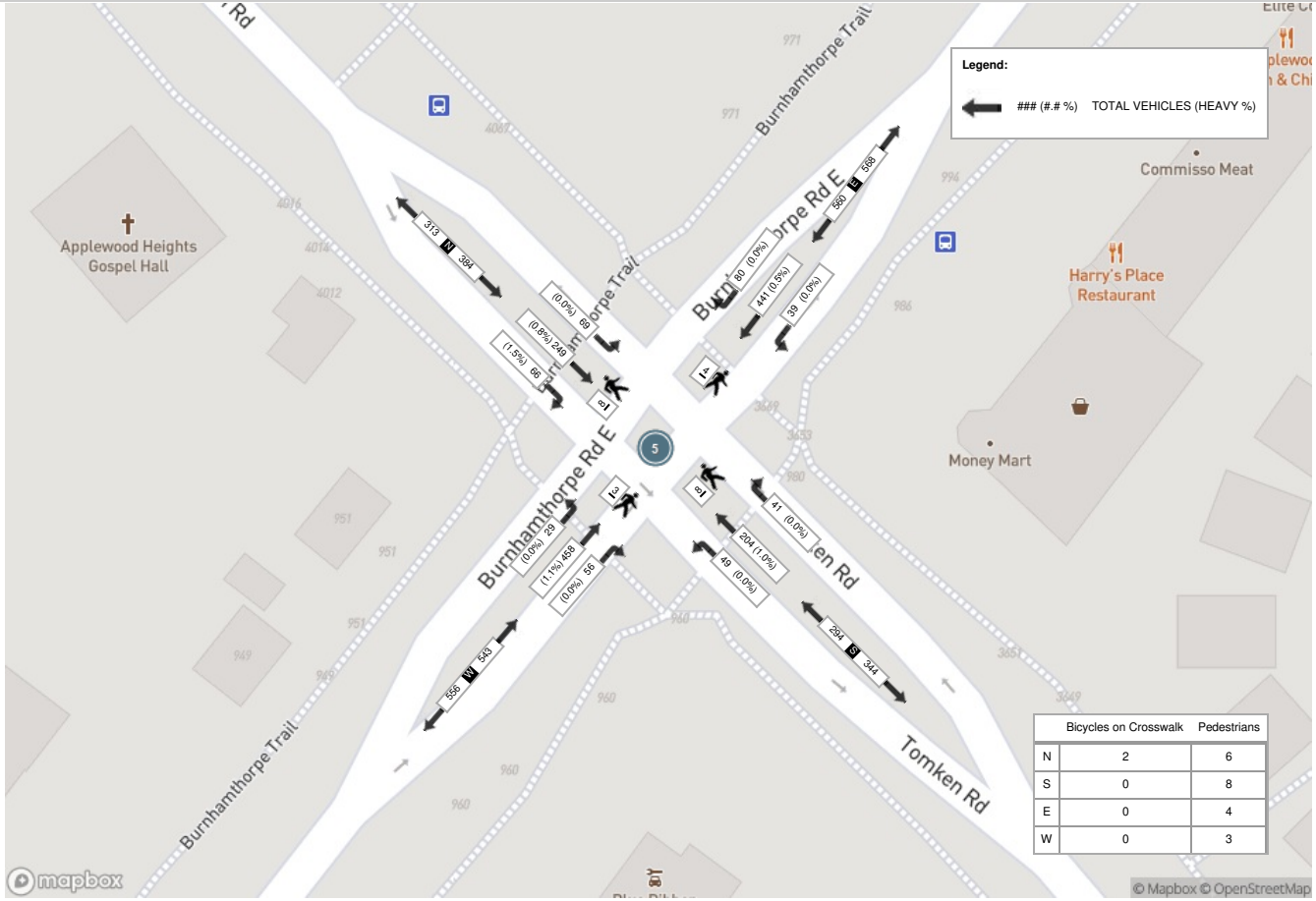
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 12:30 PM - 01:30 PM **Weather: Light Snow (1.59 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	7
S	0	3
E	0	2
W	0	2

Selected Hour: 11:15 AM - 12:15 PM **Weather:**



BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (4 . TOMKEN RD & WESTMINSTER CHURCH ACCESS)

Start Time	N Approach TOMKEN RD					S Approach TOMKEN RD					W Approach WESTMINSTER CHURCH ACCESS					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	43	0	0	43	82	1	0	0	83	1	0	0	0	1	127	
07:15:00	2	53	0	0	55	99	0	0	0	99	0	1	0	0	1	155	
07:30:00	2	102	0	1	104	186	0	0	0	186	1	2	0	3	3	293	
07:45:00	0	174	0	0	174	200	1	0	0	201	0	1	0	3	1	376	951
08:00:00	0	175	0	0	175	134	2	0	0	136	1	1	0	1	2	313	1137
08:15:00	2	102	0	0	104	174	1	0	0	175	0	2	0	0	2	281	1263
08:30:00	4	102	0	0	106	136	1	0	0	137	0	1	0	0	1	244	1214
08:45:00	7	114	0	0	121	140	1	0	0	141	3	4	0	1	7	269	1107
09:00:00	3	114	0	0	117	130	0	0	0	130	2	2	0	1	4	251	1045
09:15:00	1	85	0	0	86	93	1	0	0	94	1	1	0	1	2	182	946
09:30:00	1	89	0	0	90	71	0	0	0	71	0	1	0	0	1	162	864
09:45:00	1	72	0	0	73	78	0	0	0	78	1	1	0	3	2	153	748
BREAK																	
16:00:00	0	190	0	0	190	135	2	0	0	137	2	7	0	2	9	336	
16:15:00	0	183	0	0	183	133	0	0	0	133	0	2	0	1	2	318	
16:30:00	1	210	0	0	211	139	0	0	0	139	0	0	0	4	0	350	
16:45:00	1	187	0	0	188	127	0	0	0	127	1	0	0	6	1	316	1320
17:00:00	0	199	0	0	199	148	0	0	0	148	1	1	0	1	2	349	1333
17:15:00	1	270	0	0	271	147	0	0	0	147	1	4	0	0	5	423	1438
17:30:00	2	213	0	0	215	126	0	0	0	126	1	0	0	1	1	342	1430
17:45:00	1	167	0	0	168	128	0	0	0	128	0	0	0	0	0	296	1410
18:00:00	0	139	0	0	139	148	0	0	0	148	0	0	0	2	0	287	1348
18:15:00	0	153	0	0	153	113	0	1	0	114	0	0	0	0	0	267	1192
18:30:00	0	123	0	0	123	98	1	0	0	99	0	1	0	1	1	223	1073
18:45:00	0	130	0	0	130	75	0	0	0	75	0	0	0	1	0	205	982
19:00:00	0	94	0	0	94	101	0	0	0	101	0	0	0	2	0	195	890
19:15:00	0	93	0	0	93	79	0	0	0	79	0	0	0	2	0	172	795
19:30:00	0	83	0	0	83	73	0	0	0	73	0	0	0	3	0	156	728
19:45:00	1	89	0	0	90	83	0	0	0	83	1	0	0	4	1	174	697
Grand Total	30	3748	0	1	3778	3376	11	1	0	3388	17	32	0	43	49	**7215**	-
Approach%	0.8%	99.2%	0%		-	99.6%	0.3%	0%		-	34.7%	65.3%	0%		-	**-**	-
Totals %	0.4%	51.9%	0%		52.4%	46.8%	0.2%	0%		47%	0.2%	0.4%	0%		0.7%	**-**	-
Heavy	0	91	0		-	101	0	0		-	0	1	0		-	**-**	-

Heavy %	0%	2.4%	0%	-	3%	0%	0%	-	0%	3.1%	0%	-	**-**	-
Bicycles	0	0	0	-	0	0	0	-	1	0	0	-	**-**	-
Bicycle %	0%	0%	0%	-	0%	0%	0%	-	5.9%	0%	0%	-	**-**	-

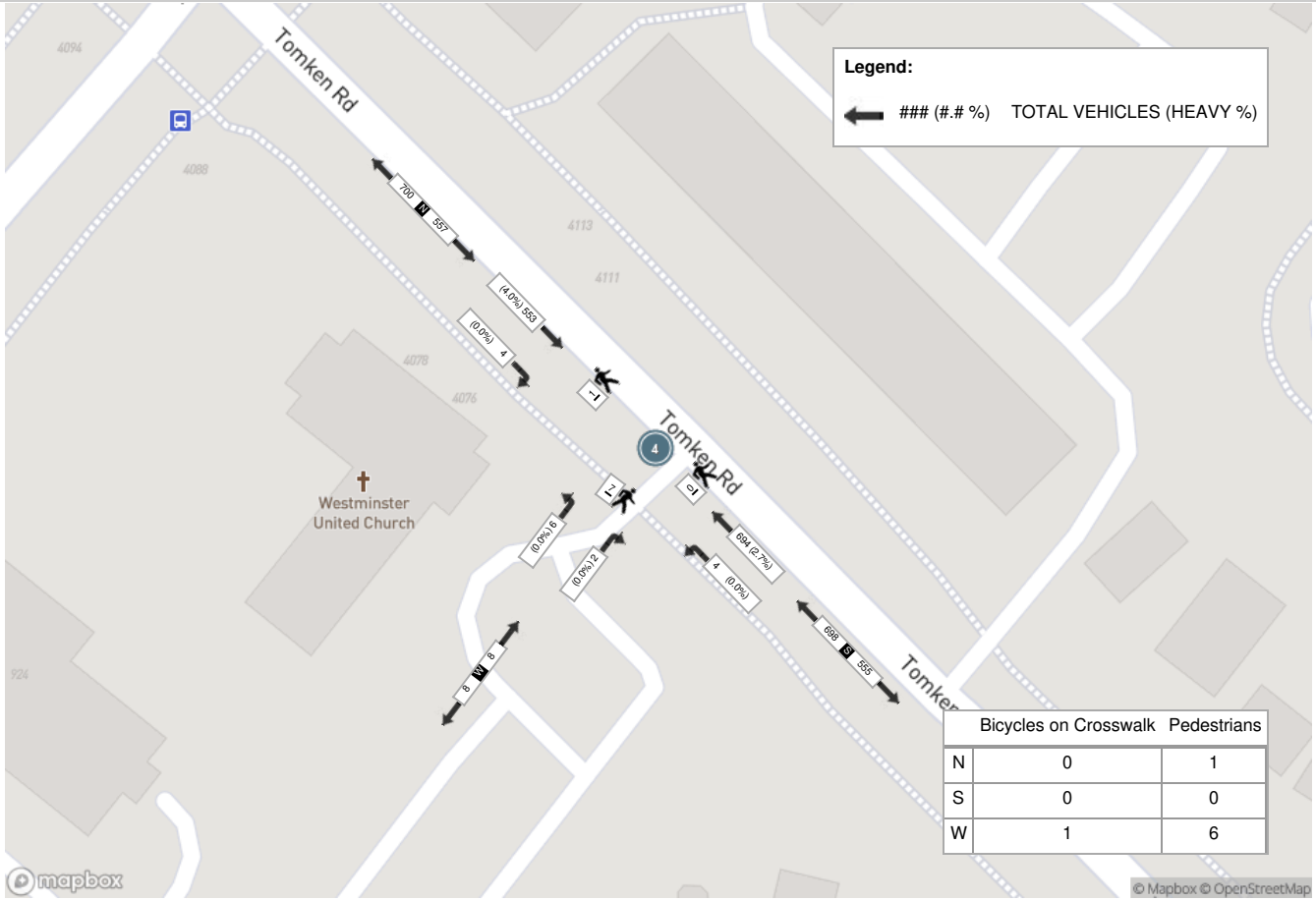
Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (4.68 °C)

Start Time	N Approach TOMKEN RD					S Approach TOMKEN RD					W Approach WESTMINSTER CHURCH ACCESS					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
07:30:00	2	102	0	1	104	186	0	0	0	186	1	2	0	3	3	293
07:45:00	0	174	0	0	174	200	1	0	0	201	0	1	0	3	1	376
08:00:00	0	175	0	0	175	134	2	0	0	136	1	1	0	1	2	313
08:15:00	2	102	0	0	104	174	1	0	0	175	0	2	0	0	2	281
Grand Total	4	553	0	1	557	694	4	0	0	698	2	6	0	7	8	**1263**
Approach%	0.7%	99.3%	0%		-	99.4%	0.6%	0%		-	25%	75%	0%		-	**-**
Totals %	0.3%	43.8%	0%		44.1%	54.9%	0.3%	0%		55.3%	0.2%	0.5%	0%		0.6%	**-**
PHF	0.5	0.79	0		0.8	0.87	0.5	0		0.87	0.5	0.75	0		0.67	**-**
Heavy	0	22	0		22	19	0	0		19	0	0	0		0	**-**
Heavy %	0%	4%	0%		3.9%	2.7%	0%	0%		2.7%	0%	0%	0%		0%	**-**
Lights	4	531	0		535	675	4	0		679	2	6	0		8	**-**
Lights %	100%	96%	0%		96.1%	97.3%	100%	0%		97.3%	100%	100%	0%		100%	**-**
Single-Unit Trucks	0	3	0		3	1	0	0		1	0	0	0		0	**-**
Single-Unit Trucks %	0%	0.5%	0%		0.5%	0.1%	0%	0%		0.1%	0%	0%	0%		0%	**-**
Buses	0	18	0		18	18	0	0		18	0	0	0		0	**-**
Buses %	0%	3.3%	0%		3.2%	2.6%	0%	0%		2.6%	0%	0%	0%		0%	**-**
Articulated Trucks	0	1	0		1	0	0	0		0	0	0	0		0	**-**
Articulated Trucks %	0%	0.2%	0%		0.2%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	6	-	**-**
Pedestrians%	-	-	-	12.5%		-	-	-	0%		-	-	-	75%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	12.5%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (10.64 °C)

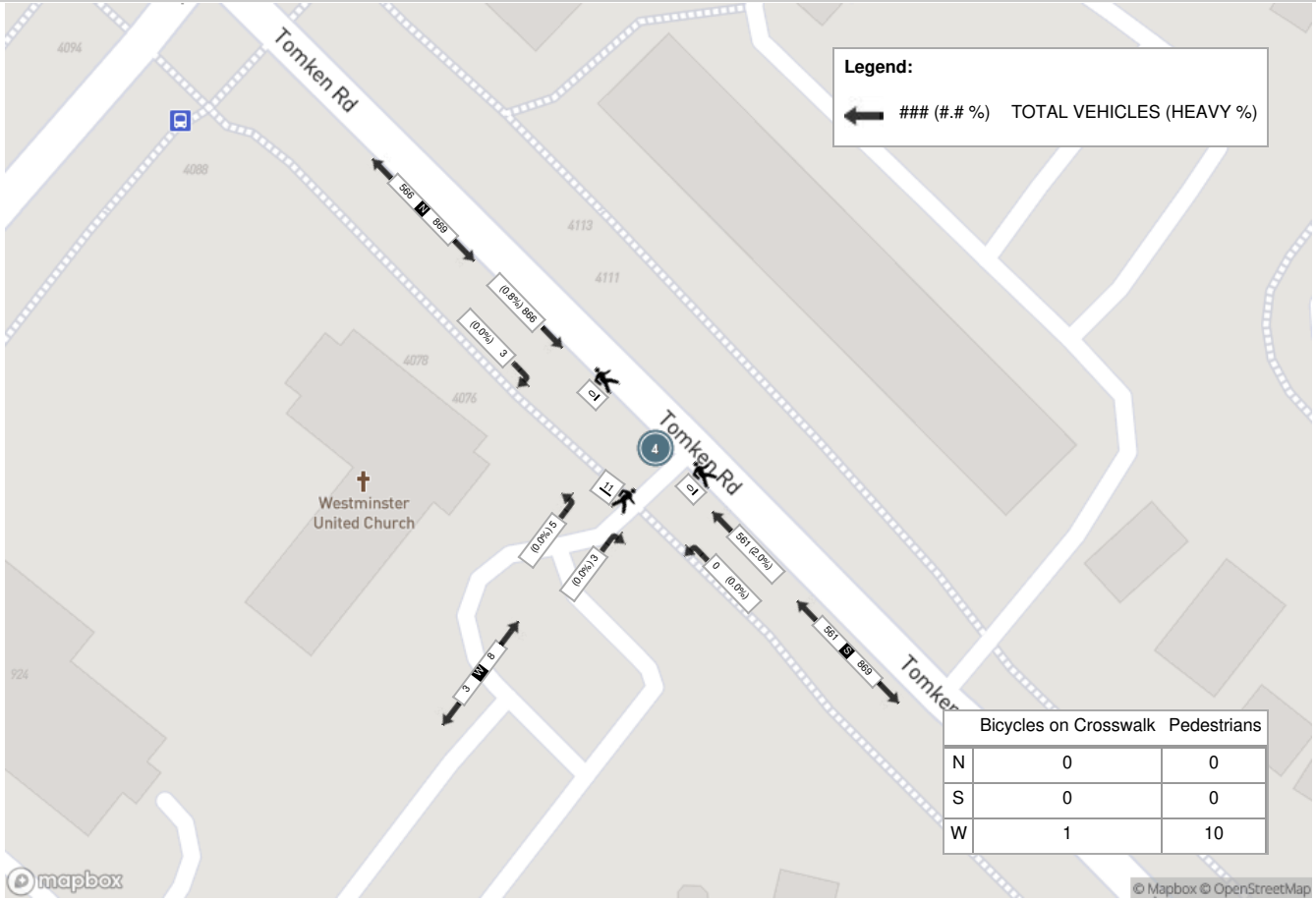
Start Time	N Approach TOMKEN RD					S Approach TOMKEN RD					W Approach WESTMINSTER CHURCH ACCESS					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
16:30:00	1	210	0	0	211	139	0	0	0	139	0	0	0	4	0	350
16:45:00	1	187	0	0	188	127	0	0	0	127	1	0	0	6	1	316
17:00:00	0	199	0	0	199	148	0	0	0	148	1	1	0	1	2	349
17:15:00	1	270	0	0	271	147	0	0	0	147	1	4	0	0	5	423
Grand Total	3	866	0	0	869	561	0	0	0	561	3	5	0	11	8	**1438**
Approach%	0.3%	99.7%	0%		-	100%	0%	0%		-	37.5%	62.5%	0%		-	**-**
Totals %	0.2%	60.2%	0%		60.4%	39%	0%	0%		39%	0.2%	0.3%	0%		0.6%	**-**
PHF	0.75	0.8	0		0.8	0.95	0	0		0.95	0.75	0.31	0		0.4	**-**
Heavy	0	7	0		7	11	0	0		11	0	0	0		0	**-**
Heavy %	0%	0.8%	0%		0.8%	2%	0%	0%		2%	0%	0%	0%		0%	**-**
Lights	3	859	0		862	550	0	0		550	3	5	0		8	**-**
Lights %	100%	99.2%	0%		99.2%	98%	0%	0%		98%	100%	100%	0%		100%	**-**
Single-Unit Trucks	0	1	0		1	3	0	0		3	0	0	0		0	**-**
Single-Unit Trucks %	0%	0.1%	0%		0.1%	0.5%	0%	0%		0.5%	0%	0%	0%		0%	**-**
Buses	0	6	0		6	7	0	0		7	0	0	0		0	**-**
Buses %	0%	0.7%	0%		0.7%	1.2%	0%	0%		1.2%	0%	0%	0%		0%	**-**
Articulated Trucks	0	0	0		0	1	0	0		1	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%		0%	0.2%	0%	0%		0.2%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	10	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	90.9%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	9.1%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (4.68 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	1
S	0	0
W	1	6

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (10.64 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
W	1	10

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (4 . TOMKEN RD & WESTMINSTER CHURCH ACCESS)

Start Time	N Approach TOMKEN RD					S Approach TOMKEN RD					W Approach WESTMINSTER CHURCH ACCESS					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
08:00:00	1	23	0	0	24	22	0	0	0	22	0	0	0	0	0	46	
08:15:00	1	24	0	0	25	26	0	0	0	26	0	0	0	0	0	51	
08:30:00	0	29	0	0	29	40	0	0	0	40	0	0	0	2	0	69	
08:45:00	0	38	0	0	38	40	0	0	0	40	0	0	0	0	0	78	244
09:00:00	2	45	0	0	47	34	1	0	0	35	0	0	0	0	0	82	280
09:15:00	1	47	0	0	48	63	2	0	0	65	0	0	0	0	0	113	342
09:30:00	6	61	0	0	67	44	1	0	0	45	0	0	0	2	0	112	385
09:45:00	6	76	0	2	82	54	2	0	0	56	0	0	0	3	0	138	445
10:00:00	2	70	0	0	72	46	0	0	0	46	0	0	0	0	0	118	481
10:15:00	0	67	0	0	67	43	0	0	0	43	0	0	0	1	0	110	478
10:30:00	0	57	0	0	57	67	0	0	0	67	0	0	0	0	0	124	490
10:45:00	1	73	0	0	74	82	0	0	0	82	0	0	0	0	0	156	508
11:00:00	1	55	0	0	56	73	0	0	0	73	0	1	0	1	1	130	520
11:15:00	1	86	0	0	87	65	0	0	0	65	1	3	0	1	4	156	566
11:30:00	1	85	0	0	86	76	0	0	0	76	0	5	0	1	5	167	609
11:45:00	0	90	0	0	90	81	0	0	0	81	5	3	0	0	8	179	632
12:00:00	1	109	0	0	110	93	0	0	0	93	3	4	0	0	7	210	712
12:15:00	4	112	0	0	116	78	0	0	0	78	0	2	0	1	2	196	752
12:30:00	0	110	0	0	110	85	0	0	0	85	1	1	0	1	2	197	782
12:45:00	1	115	0	0	116	85	0	0	0	85	0	0	0	0	0	201	804
13:00:00	1	86	0	0	87	113	0	0	0	113	0	0	0	3	0	200	794
13:15:00	2	119	0	0	121	112	1	0	0	113	0	0	0	2	0	234	832
13:30:00	0	97	0	0	97	91	0	0	0	91	1	0	0	3	1	189	824
13:45:00	0	109	0	0	109	92	0	0	0	92	0	0	0	2	0	201	824
14:00:00	0	107	0	1	107	92	0	0	0	92	0	0	0	5	0	199	823
14:15:00	0	88	0	0	88	89	0	0	0	89	0	1	0	1	1	178	767
14:30:00	1	98	0	0	99	94	1	0	0	95	0	0	0	1	0	194	772
14:45:00	0	112	0	0	112	78	1	0	0	79	3	0	0	0	3	194	765
Grand Total	33	2188	0	3	2221	1958	9	0	0	1967	14	20	0	30	34	**4222**	-
Approach%	1.5%	98.5%	0%		-	99.5%	0.5%	0%		-	41.2%	58.8%	0%		-	**-**	-
Totals %	0.8%	51.8%	0%		52.6%	46.4%	0.2%	0%		46.6%	0.3%	0.5%	0%		0.8%	**-**	-
Heavy	0	10	0		-	3	0	0		-	0	0	0		-	**-**	-
Heavy %	0%	0.5%	0%		-	0.2%	0%	0%		-	0%	0%	0%		-	**-**	-

Bicycles	0	1	0	-	0	0	0	-	0	0	0	-	**-**	-
Bicycle %	0%	0%	0%	-	0%	0%	0%	-	0%	0%	0%	-	**-**	-

Peak Hour: 12:30 PM - 01:30 PM Weather: Light Snow (1.59 °C)

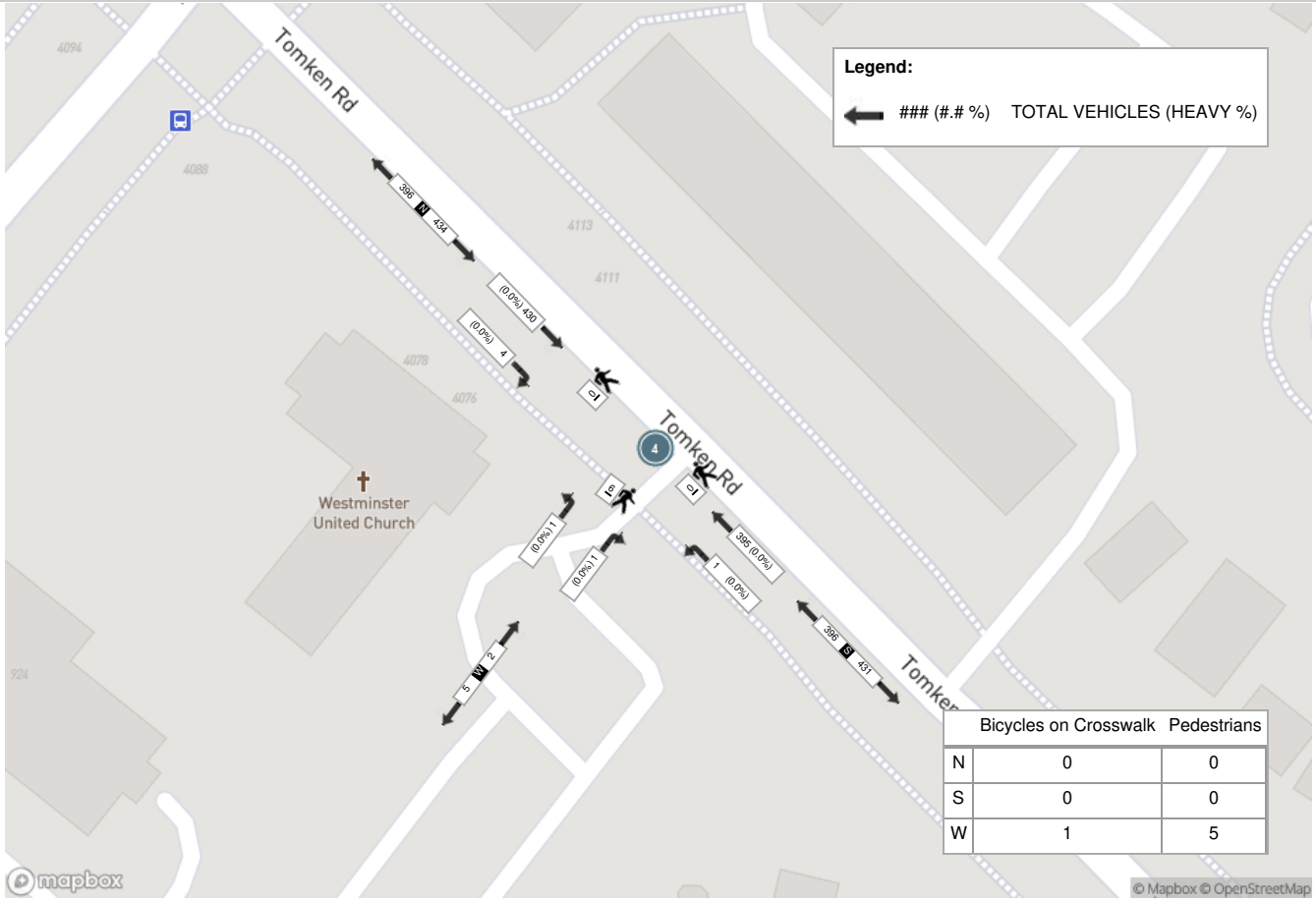
Start Time	N Approach TOMKEN RD					S Approach TOMKEN RD					W Approach WESTMINSTER CHURCH ACCESS					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
12:30:00	0	110	0	0	110	85	0	0	0	85	1	1	0	1	2	197
12:45:00	1	115	0	0	116	85	0	0	0	85	0	0	0	0	0	201
13:00:00	1	86	0	0	87	113	0	0	0	113	0	0	0	3	0	200
13:15:00	2	119	0	0	121	112	1	0	0	113	0	0	0	2	0	234
Grand Total	4	430	0	0	434	395	1	0	0	396	1	1	0	6	2	**832**
Approach%	0.9%	99.1%	0%		-	99.7%	0.3%	0%		-	50%	50%	0%		-	**-**
Totals %	0.5%	51.7%	0%		52.2%	47.5%	0.1%	0%		47.6%	0.1%	0.1%	0%		0.2%	**-**
PHF	0.5	0.9	0		0.9	0.87	0.25	0		0.88	0.25	0.25	0		0.25	**-**
Heavy	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Lights	4	430	0		434	395	1	0		396	1	1	0		2	**-**
Lights %	100%	100%	0%		100%	100%	100%	0%		100%	100%	100%	0%		100%	**-**
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Buses	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	5	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	83.3%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	16.7%		**-**
Bicycles on Road	0	1	0	0	-	0	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 11:15 AM - 12:15 PM Weather:

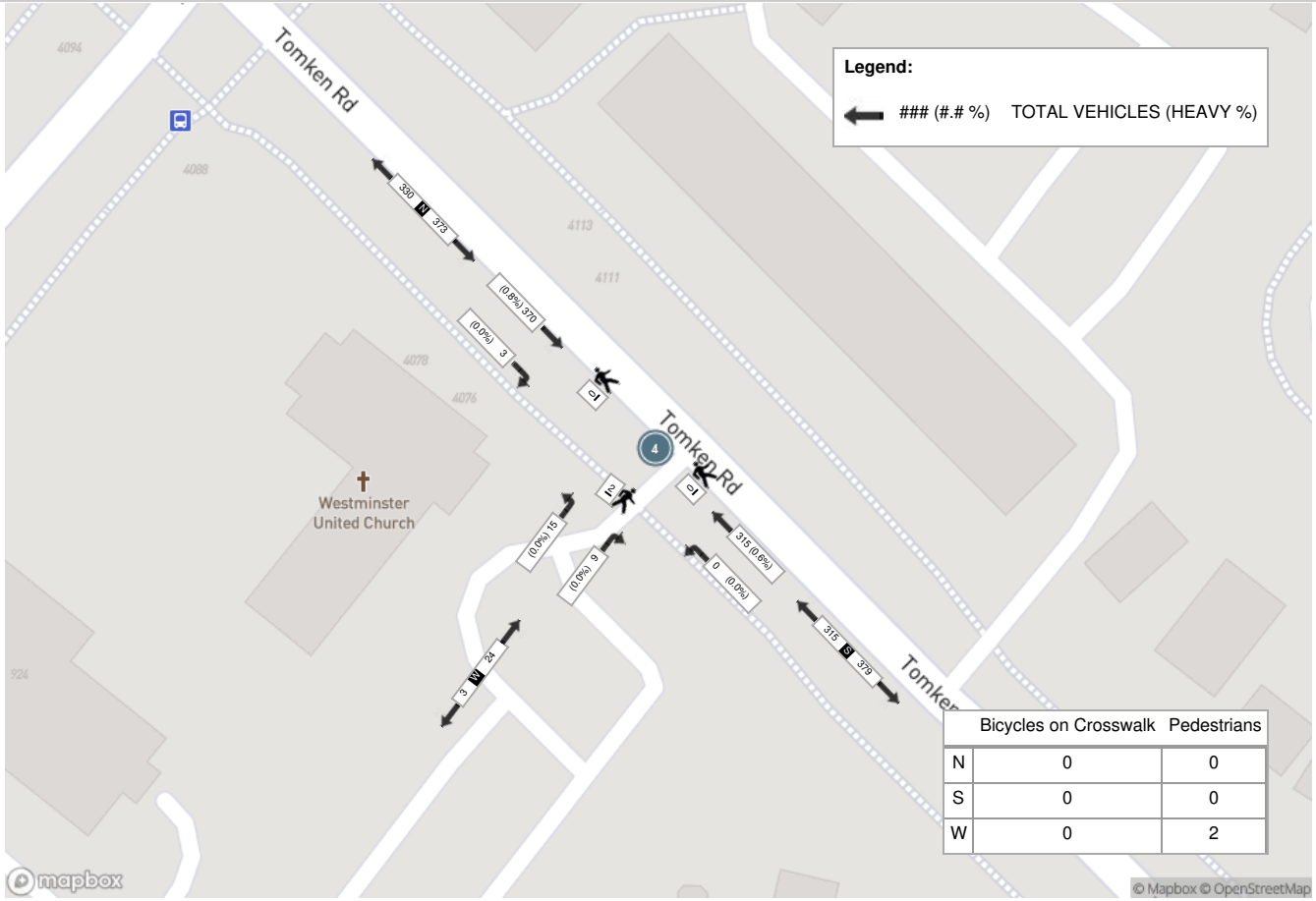
Start Time	N Approach TOMKEN RD					S Approach TOMKEN RD					W Approach WESTMINSTER CHURCH ACCESS					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
11:15:00	1	86	0	0	87	65	0	0	0	65	1	3	0	1	4	156
11:30:00	1	85	0	0	86	76	0	0	0	76	0	5	0	1	5	167
11:45:00	0	90	0	0	90	81	0	0	0	81	5	3	0	0	8	179
12:00:00	1	109	0	0	110	93	0	0	0	93	3	4	0	0	7	210
Grand Total	3	370	0	0	373	315	0	0	0	315	9	15	0	2	24	**712**
Approach%	0.8%	99.2%	0%		-	100%	0%	0%		-	37.5%	62.5%	0%		-	**-**
Totals %	0.4%	52%	0%		52.4%	44.2%	0%	0%		44.2%	1.3%	2.1%	0%		3.4%	**-**
PHF	0.75	0.85	0		0.85	0.85	0	0		0.85	0.45	0.75	0		0.75	**-**
Heavy	0	3	0		3	2	0	0		2	0	0	0		0	**-**
Heavy %	0%	0.8%	0%		0.8%	0.6%	0%	0%		0.6%	0%	0%	0%		0%	**-**
Lights	3	367	0		370	313	0	0		313	9	15	0		24	**-**
Lights %	100%	99.2%	0%		99.2%	99.4%	0%	0%		99.4%	100%	100%	0%		100%	**-**
Single-Unit Trucks	0	3	0		3	1	0	0		1	0	0	0		0	**-**
Single-Unit Trucks %	0%	0.8%	0%		0.8%	0.3%	0%	0%		0.3%	0%	0%	0%		0%	**-**
Buses	0	0	0		0	1	0	0		1	0	0	0		0	**-**
Buses %	0%	0%	0%		0%	0.3%	0%	0%		0.3%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	100%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 12:30 PM - 01:30 PM Weather: Light Snow (1.59 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
W	1	5

Selected Hour: 11:15 AM - 12:15 PM Weather:



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
W	0	2

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN RD
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (3 . RATHBURN RD E & TOMKEN RD)

Start Time	N Approach TOMKEN RD						E Approach RATHBURN RD E						S Approach TOMKEN RD						W Approach RATHBURN RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	6	36	7	0	0	49	9	7	0	0	0	16	2	77	5	0	0	84	7	10	5	0	0	22	171	
07:15:00	6	47	4	0	4	57	15	15	2	0	1	32	2	94	4	0	0	100	6	12	6	0	3	24	213	
07:30:00	6	90	14	0	2	110	24	22	3	0	2	49	3	174	6	0	3	183	11	19	16	0	4	46	388	
07:45:00	17	151	19	0	1	187	22	9	5	0	2	36	6	187	16	0	2	209	23	26	17	0	3	66	498	1270
08:00:00	10	134	16	0	3	160	31	29	4	0	2	64	5	103	24	0	2	132	34	36	12	0	3	82	438	1537
08:15:00	11	90	17	0	1	118	20	25	2	0	0	47	5	150	24	0	2	179	13	20	10	0	2	43	387	1711
08:30:00	3	86	15	0	3	104	26	23	3	0	2	52	9	112	9	1	4	131	15	32	11	0	2	58	345	1668
08:45:00	10	100	22	0	3	132	24	27	5	0	3	56	4	128	19	0	1	151	15	25	16	0	2	56	395	1565
09:00:00	5	102	22	1	2	130	18	11	2	0	1	31	0	107	19	0	0	126	12	25	3	0	5	40	327	1454
09:15:00	5	73	15	0	2	93	14	20	2	0	4	36	3	86	9	0	2	98	12	28	9	0	1	49	276	1343
09:30:00	8	77	18	0	1	103	19	18	2	0	1	39	0	59	15	0	0	74	10	16	4	0	2	30	246	1244
09:45:00	4	60	17	0	1	81	19	23	4	0	0	46	5	69	7	0	0	81	10	18	5	0	4	33	241	1090
BREAK																										
16:00:00	22	176	19	0	5	217	14	48	4	0	2	66	7	116	19	0	0	142	7	27	7	0	6	41	466	
16:15:00	12	164	18	0	4	194	23	62	5	0	0	90	4	105	22	0	3	131	11	45	13	0	2	69	484	
16:30:00	29	197	27	0	4	253	22	58	3	0	5	83	5	122	16	0	4	143	10	35	3	0	10	48	527	
16:45:00	25	173	31	0	4	229	19	62	7	0	2	88	3	97	28	0	0	128	10	36	6	0	7	52	497	1974
17:00:00	27	189	20	0	5	236	20	70	3	0	3	93	8	112	31	0	0	151	8	40	9	0	7	57	537	2045
17:15:00	17	235	30	0	6	282	14	69	6	0	6	89	6	111	29	0	0	146	24	34	8	0	0	66	583	2144
17:30:00	17	185	28	0	6	230	25	58	7	0	3	90	4	110	18	0	5	132	19	39	7	0	8	65	517	2134
17:45:00	12	141	24	0	7	177	21	37	1	0	4	59	4	101	22	0	3	127	15	28	2	0	3	45	408	2045
18:00:00	12	119	27	0	3	158	22	50	5	0	1	77	4	106	29	0	3	139	14	43	8	0	5	65	439	1947
18:15:00	24	137	29	0	3	190	17	54	4	0	6	75	5	92	24	0	3	121	12	31	8	0	3	51	437	1801
18:30:00	6	110	19	0	1	135	7	42	2	0	4	51	1	71	21	0	5	93	12	26	6	0	1	44	323	1607
18:45:00	8	118	22	0	5	148	11	28	2	0	5	41	5	67	10	0	3	82	9	31	9	0	2	49	320	1519
19:00:00	13	81	17	0	5	111	11	23	6	0	1	40	3	78	20	0	0	101	7	25	3	0	2	35	287	1367
19:15:00	4	77	15	0	3	96	18	37	1	0	1	56	2	54	13	0	4	69	14	30	7	0	6	51	272	1202
19:30:00	10	71	7	0	0	88	13	18	3	0	0	34	2	64	15	0	0	81	11	19	6	0	3	36	239	1118
19:45:00	10	73	19	0	2	102	10	24	3	0	2	37	1	66	17	0	1	84	14	30	5	0	4	49	272	1070
Grand Total	339	3292	538	1	86	4170	508	969	96	0	63	1573	108	2818	491	1	50	3418	365	786	221	0	100	1372	**10533**	-
Approach%	8.1%	78.9%	12.9%	0%		-	32.3%	61.6%	6.1%	0%		-	3.2%	82.4%	14.4%	0%		-	26.6%	57.3%	16.1%	0%		-	**-**	-
Totals %	3.2%	31.3%	5.1%	0%		39.6%	4.8%	9.2%	0.9%	0%		14.9%	1%	26.8%	4.7%	0%		32.5%	3.5%	7.5%	2.1%	0%		13%	**-**	-
Heavy	3	76	7	0		-	13	38	0	0		-	2	93	6	0		-	12	35	3	0		-	**-**	-
Heavy %	0.9%	2.3%	1.3%	0%		-	2.6%	3.9%	0%	0%		-	1.9%	3.3%	1.2%	0%		-	3.3%	4.5%	1.4%	0%		-	**-**	-
Bicycles	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	0	0	0	0		-	**-**	-
Bicycle %	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	**-**	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (4.68 °C)

Start Time	N Approach TOMKEN RD						E Approach RATHBURN RD E						S Approach TOMKEN RD						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:30:00	6	90	14	0	2	110	24	22	3	0	2	49	3	174	6	0	3	183	11	19	16	0	4	46	388
07:45:00	17	151	19	0	1	187	22	9	5	0	2	36	6	187	16	0	2	209	23	26	17	0	3	66	498
08:00:00	10	134	16	0	3	160	31	29	4	0	2	64	5	103	24	0	2	132	34	36	12	0	3	82	438
08:15:00	11	90	17	0	1	118	20	25	2	0	0	47	5	150	24	0	2	179	13	20	10	0	2	43	387
Grand Total	44	465	66	0	7	575	97	85	14	0	6	196	19	614	70	0	9	703	81	101	55	0	12	237	**1711**
Approach%	7.7%	80.9%	11.5%	0%		-	49.5%	43.4%	7.1%	0%		-	2.7%	87.3%	10%	0%		-	34.2%	42.6%	23.2%	0%		-	**-**
Totals %	2.6%	27.2%	3.9%	0%		33.6%	5.7%	5%	0.8%	0%		11.5%	1.1%	35.9%	4.1%	0%		41.1%	4.7%	5.9%	3.2%	0%		13.9%	**-**
PHF	0.65	0.77	0.87	0		0.77	0.78	0.73	0.7	0		0.77	0.79	0.82	0.73	0		0.84	0.6	0.7	0.81	0		0.72	**-**
Heavy	2	15	3	0		20	3	6	0	0		9	0	18	0	0		18	7	10	1	0		18	**-**
Heavy %	4.5%	3.2%	4.5%	0%		3.5%	3.1%	7.1%	0%	0%		4.6%	0%	2.9%	0%	0%		2.6%	8.6%	9.9%	1.8%	0%		7.6%	**-**
Lights	42	450	63	0		555	94	79	14	0		187	19	596	70	0		685	74	91	54	0		219	**-**
Lights %	95.5%	96.8%	95.5%	0%		96.5%	96.9%	92.9%	100%	0%		95.4%	100%	97.1%	100%	0%		97.4%	91.4%	90.1%	98.2%	0%		92.4%	**-**
Single-Unit Trucks	0	2	1	0		3	1	1	0	0		2	0	1	0	0		1	1	0	0	0		1	**-**
Single-Unit Trucks %	0%	0.4%	1.5%	0%		0.5%	1%	1.2%	0%	0%		1%	0%	0.2%	0%	0%		0.1%	1.2%	0%	0%	0%		0.4%	**-**
Buses	2	13	2	0		17	2	5	0	0		7	0	17	0	0		17	5	10	1	0		16	**-**
Buses %	4.5%	2.8%	3%	0%		3%	2.1%	5.9%	0%	0%		3.6%	0%	2.8%	0%	0%		2.4%	6.2%	9.9%	1.8%	0%		6.8%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	1.2%	0%	0%	0%		0.4%	**-**
Pedestrians	-	-	-	-	7	-	-	-	-	-	6	-	-	-	-	-	9	-	-	-	-	-	11	-	**-**
Pedestrians%	-	-	-	-	20.6%		-	-	-	-	17.6%		-	-	-	-	26.5%		-	-	-	-	32.4%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	2.9%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

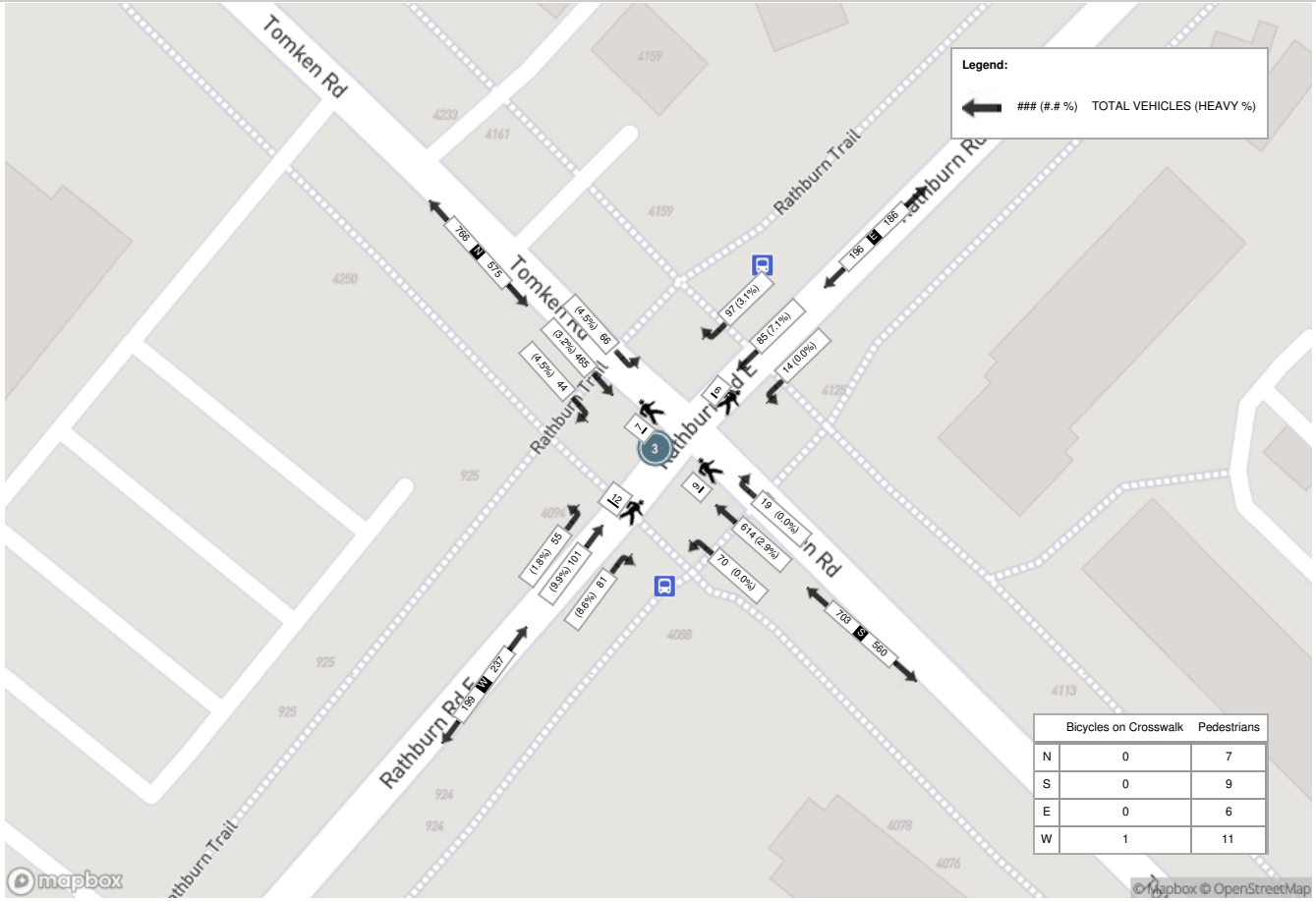
Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN RD
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (10.64 °C)

Start Time	N Approach TOMKEN RD						E Approach RATHBURN RD E						S Approach TOMKEN RD						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	29	197	27	0	4	253	22	58	3	0	5	83	5	122	16	0	4	143	10	35	3	0	10	48	527
16:45:00	25	173	31	0	4	229	19	62	7	0	2	88	3	97	28	0	0	128	10	36	6	0	7	52	497
17:00:00	27	189	20	0	5	236	20	70	3	0	3	93	8	112	31	0	0	151	8	40	9	0	7	57	537
17:15:00	17	235	30	0	6	282	14	69	6	0	6	89	6	111	29	0	0	146	24	34	8	0	0	66	583
Grand Total	98	794	108	0	19	1000	75	259	19	0	16	353	22	442	104	0	4	568	52	145	26	0	24	223	**2144**
Approach%	9.8%	79.4%	10.8%	0%		-	21.2%	73.4%	5.4%	0%		-	3.9%	77.8%	18.3%	0%		-	23.3%	65%	11.7%	0%		-	**-**
Totals %	4.6%	37%	5%	0%		46.6%	3.5%	12.1%	0.9%	0%		16.5%	1%	20.6%	4.9%	0%		26.5%	2.4%	6.8%	1.2%	0%		10.4%	**-**
PHF	0.84	0.84	0.87	0		0.89	0.85	0.93	0.68	0		0.95	0.69	0.91	0.84	0		0.94	0.54	0.91	0.72	0		0.84	**-**
Heavy	0	7	1	0		8	2	4	0	0		6	0	12	0	0		12	0	5	0	0		5	**-**
Heavy %	0%	0.9%	0.9%	0%		0.8%	2.7%	1.5%	0%	0%		1.7%	0%	2.7%	0%	0%		2.1%	0%	3.4%	0%	0%		2.2%	**-**
Lights	98	787	107	0		992	73	255	19	0		347	22	430	104	0		556	52	140	26	0		218	**-**
Lights %	100%	99.1%	99.1%	0%		99.2%	97.3%	98.5%	100%	0%		98.3%	100%	97.3%	100%	0%		97.9%	100%	96.6%	100%	0%		97.8%	**-**
Single-Unit Trucks	0	2	1	0		3	2	0	0	0		2	0	3	0	0		3	0	2	0	0		2	**-**
Single-Unit Trucks %	0%	0.3%	0.9%	0%		0.3%	2.7%	0%	0%	0%		0.6%	0%	0.7%	0%	0%		0.5%	0%	1.4%	0%	0%		0.9%	**-**
Buses	0	5	0	0		5	0	4	0	0		4	0	8	0	0		8	0	3	0	0		3	**-**
Buses %	0%	0.6%	0%	0%		0.5%	0%	1.5%	0%	0%		1.1%	0%	1.8%	0%	0%		1.4%	0%	2.1%	0%	0%		1.3%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	17	-	-	-	-	-	15	-	-	-	-	-	4	-	-	-	-	-	22	-	**-**
Pedestrians%	-	-	-	-	27%		-	-	-	-	23.8%		-	-	-	-	6.3%		-	-	-	-	34.9%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	3.2%		-	-	-	-	1.6%		-	-	-	-	0%		-	-	-	-	3.2%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 07:30 AM - 08:30 AM **Weather: Mist (4.68 °C)**

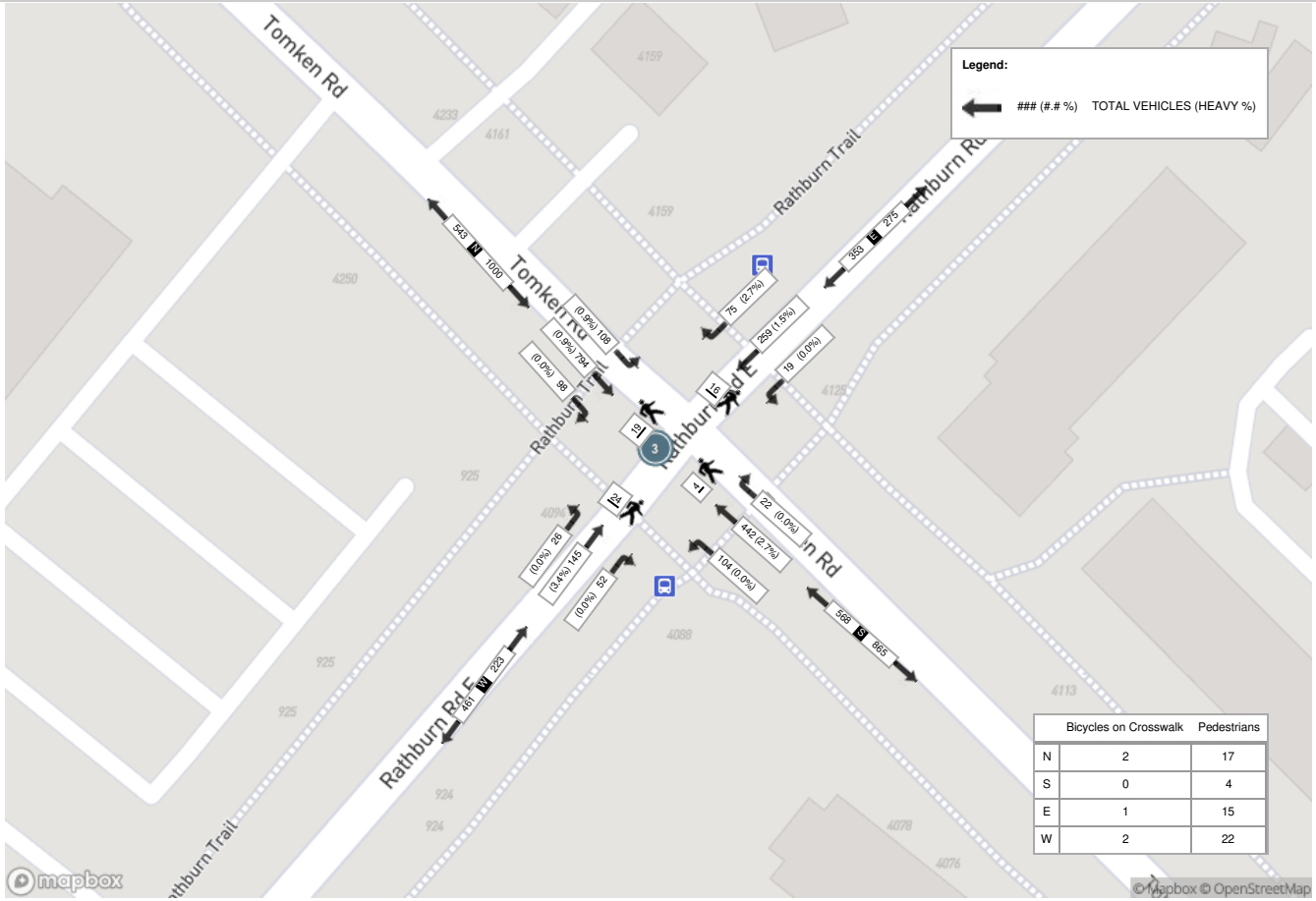


Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN RD
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (10.64 °C)



Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN RD
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (3 . RATHBURN RD E & TOMKEN RD)

Start Time	N Approach TOMKEN RD						E Approach RATHBURN RD E						S Approach TOMKEN RD						W Approach RATHBURN RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
08:00:00	1	20	3	0	1	24	10	3	2	0	2	15	1	13	8	0	1	22	3	2	2	0	1	7	68	
08:15:00	1	20	5	0	2	26	8	5	1	0	1	14	1	18	7	0	0	26	4	4	0	0	0	8	74	
08:30:00	4	24	4	0	1	32	11	10	1	0	0	22	1	31	9	0	0	41	6	7	2	0	0	15	110	
08:45:00	1	30	8	0	1	39	13	4	1	0	0	18	3	33	5	0	0	41	7	10	2	0	0	19	117	369
09:00:00	6	38	10	0	1	54	12	13	1	0	0	26	2	28	6	0	2	36	10	25	3	0	0	38	154	455
09:15:00	5	39	14	0	2	58	13	14	2	0	0	29	6	40	17	0	0	63	7	17	8	0	0	32	182	563
09:30:00	7	52	14	0	0	73	14	18	2	0	0	34	3	32	7	0	1	42	13	21	3	0	0	37	186	639
09:45:00	7	65	11	0	2	83	8	10	5	0	0	23	3	47	6	0	1	56	12	16	5	0	2	33	195	717
10:00:00	5	59	13	0	1	77	13	14	1	0	2	28	3	33	11	0	0	47	11	18	0	0	0	29	181	744
10:15:00	3	56	10	0	2	69	9	29	0	0	0	38	3	33	6	0	1	42	12	22	3	0	1	37	186	748
10:30:00	6	47	19	0	0	72	20	24	1	0	0	45	1	53	14	0	0	68	8	32	5	0	0	45	230	792
10:45:00	4	57	23	0	2	84	18	36	3	0	3	57	1	66	15	0	3	82	15	22	4	0	4	41	264	861
11:00:00	7	50	18	0	1	75	15	16	4	0	0	35	3	63	8	0	1	74	3	17	2	0	1	22	206	886
11:15:00	12	72	16	0	2	100	9	30	4	0	1	43	1	49	18	0	1	68	9	25	5	0	0	39	250	950
11:30:00	4	70	14	0	2	88	22	18	4	0	0	44	3	64	14	0	0	81	15	21	5	0	0	41	254	974
11:45:00	5	74	21	0	3	100	18	27	2	0	1	47	2	66	17	0	2	85	13	20	8	0	6	41	273	983
12:00:00	4	83	16	0	6	103	15	27	2	0	2	44	8	67	14	0	2	89	25	42	4	0	8	71	307	1084
12:15:00	12	99	17	0	1	128	14	24	1	0	1	39	0	72	16	0	1	88	16	24	5	0	2	45	300	1134
12:30:00	10	89	21	0	3	120	20	33	2	0	3	55	1	71	14	0	2	86	20	36	8	0	2	64	325	1205
12:45:00	10	109	17	0	3	136	19	36	0	0	1	55	4	62	21	0	1	87	7	29	9	0	0	45	323	1255
13:00:00	10	77	19	0	5	106	23	33	3	0	1	59	4	93	14	0	5	111	7	14	4	0	6	25	301	1249
13:15:00	10	105	23	0	2	138	10	27	6	0	0	43	3	95	16	0	2	114	13	33	6	0	2	52	347	1296
13:30:00	8	84	17	0	3	109	16	26	2	0	5	44	1	80	11	0	0	92	9	34	7	0	2	50	295	1266
13:45:00	13	96	18	0	2	127	24	34	5	0	2	63	3	77	11	0	1	91	11	30	16	0	6	57	338	1281
14:00:00	3	80	14	0	4	97	16	32	4	0	2	52	2	77	16	0	2	95	23	55	2	0	5	80	324	1304
14:15:00	8	74	20	0	5	102	23	46	1	0	0	70	4	73	13	0	0	90	10	39	7	0	4	56	318	1275
14:30:00	13	87	22	0	1	122	15	32	3	0	3	50	3	78	13	0	2	94	9	31	11	0	2	51	317	1297
14:45:00	13	90	17	0	4	120	19	35	5	0	0	59	2	59	15	0	0	76	17	29	1	0	1	47	302	1261
Grand Total	192	1846	424	0	62	2462	427	656	68	0	30	1151	72	1573	342	0	31	1987	315	675	137	0	55	1127	**6727**	-
Approach%	7.8%	75%	17.2%	0%		-	37.1%	57%	5.9%	0%		-	3.6%	79.2%	17.2%	0%		-	28%	59.9%	12.2%	0%		-	**-**	-
Totals %	2.9%	27.4%	6.3%	0%		36.6%	6.3%	9.8%	1%	0%		17.1%	1.1%	23.4%	5.1%	0%		29.5%	4.7%	10%	2%	0%		16.8%	**-**	-
Heavy	2	9	1	0		-	1	13	0	0		-	0	3	0	0		-	1	13	0	0		-	**-**	-
Heavy %	1%	0.5%	0.2%	0%		-	0.2%	2%	0%	0%		-	0%	0.2%	0%	0%		-	0.3%	1.9%	0%	0%		-	**-**	-
Bicycles	0	0	0	0		-	0	0	0	0		-	0	1	0	0		-	1	1	0	0		-	**-**	-
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	0.3%	0.1%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN RD
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 01:15 PM - 02:15 PM Weather: Light Snow (1.59 °C)

Start Time	N Approach TOMKEN RD						E Approach RATHBURN RD E						S Approach TOMKEN RD						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
13:15:00	10	105	23	0	2	138	10	27	6	0	0	43	3	95	16	0	2	114	13	33	6	0	2	52	347
13:30:00	8	84	17	0	3	109	16	26	2	0	5	44	1	80	11	0	0	92	9	34	7	0	2	50	295
13:45:00	13	96	18	0	2	127	24	34	5	0	2	63	3	77	11	0	1	91	11	30	16	0	6	57	338
14:00:00	3	80	14	0	4	97	16	32	4	0	2	52	2	77	16	0	2	95	23	55	2	0	5	80	324
Grand Total	34	365	72	0	11	471	66	119	17	0	9	202	9	329	54	0	5	392	56	152	31	0	15	239	**1304**
Approach%	7.2%	77.5%	15.3%	0%		-	32.7%	58.9%	8.4%	0%		-	2.3%	83.9%	13.8%	0%		-	23.4%	63.6%	13%	0%		-	**-**
Totals %	2.6%	28%	5.5%	0%		36.1%	5.1%	9.1%	1.3%	0%		15.5%	0.7%	25.2%	4.1%	0%		30.1%	4.3%	11.7%	2.4%	0%		18.3%	**-**
PHF	0.65	0.87	0.78	0		0.85	0.69	0.88	0.71	0		0.8	0.75	0.87	0.84	0		0.86	0.61	0.69	0.48	0		0.75	**-**
Heavy	0	0	1	0		1	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	**-**
Heavy %	0%	0%	1.4%	0%		0.2%	0%	1.7%	0%	0%		1%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		0.8%	**-**
Lights	34	365	71	0		470	66	117	17	0		200	9	329	54	0		392	56	150	31	0		237	**-**
Lights %	100%	100%	98.6%	0%		99.8%	100%	98.3%	100%	0%		99%	100%	100%	100%	0%		100%	100%	98.7%	100%	0%		99.2%	**-**
Single-Unit Trucks	0	0	1	0		1	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	1.4%	0%		0.2%	0%	0.8%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		0.8%	**-**
Pedestrians	-	-	-	-	11	-	-	-	-	-	9	-	-	-	-	-	5	-	-	-	-	-	15	-	**-**
Pedestrians%	-	-	-	-	27.5%		-	-	-	-	22.5%		-	-	-	-	12.5%		-	-	-	-	37.5%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

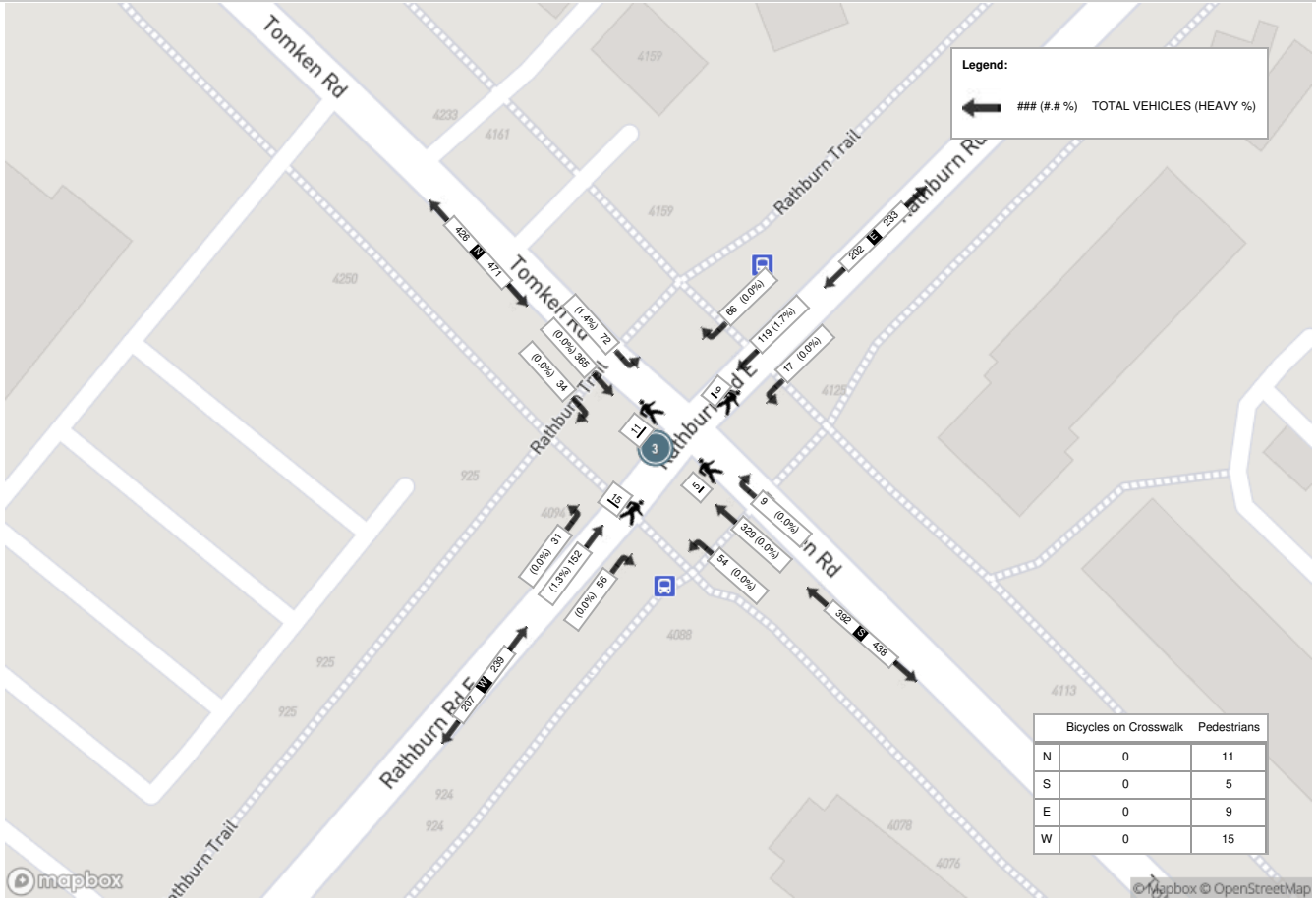
Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN RD
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 11:15 AM - 12:15 PM **Weather:**

Start Time	N Approach TOMKEN RD						E Approach RATHBURN RD E						S Approach TOMKEN RD						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
11:15:00	12	72	16	0	2	100	9	30	4	0	1	43	1	49	18	0	1	68	9	25	5	0	0	39	250
11:30:00	4	70	14	0	2	88	22	18	4	0	0	44	3	64	14	0	0	81	15	21	5	0	0	41	254
11:45:00	5	74	21	0	3	100	18	27	2	0	1	47	2	66	17	0	2	85	13	20	8	0	6	41	273
12:00:00	4	83	16	0	6	103	15	27	2	0	2	44	8	67	14	0	2	89	25	42	4	0	8	71	307
Grand Total	25	299	67	0	13	391	64	102	12	0	4	178	14	246	63	0	5	323	62	108	22	0	14	192	**1084**
Approach%	6.4%	76.5%	17.1%	0%		-	36%	57.3%	6.7%	0%		-	4.3%	76.2%	19.5%	0%		-	32.3%	56.3%	11.5%	0%		-	**-**
Totals %	2.3%	27.6%	6.2%	0%		36.1%	5.9%	9.4%	1.1%	0%		16.4%	1.3%	22.7%	5.8%	0%		29.8%	5.7%	10%	2%	0%		17.7%	**-**
PHF	0.52	0.9	0.8	0		0.95	0.73	0.85	0.75	0		0.95	0.44	0.92	0.88	0		0.91	0.62	0.64	0.69	0		0.68	**-**
Heavy	0	3	0	0		3	0	2	0	0		2	0	2	0	0		2	0	1	0	0		1	**-**
Heavy %	0%	1%	0%	0%		0.8%	0%	2%	0%	0%		1.1%	0%	0.8%	0%	0%		0.6%	0%	0.9%	0%	0%		0.5%	**-**
Lights	25	296	67	0		388	64	100	12	0		176	14	244	63	0		321	62	107	22	0		191	**-**
Lights %	100%	99%	100%	0%		99.2%	100%	98%	100%	0%		98.9%	100%	99.2%	100%	0%		99.4%	100%	99.1%	100%	0%		99.5%	**-**
Single-Unit Trucks	0	3	0	0		3	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	1%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	0	1	0	0		1	0	1	0	0		1	**-**
Buses %	0%	0%	0%	0%		0%	0%	2%	0%	0%		1.1%	0%	0.4%	0%	0%		0.3%	0%	0.9%	0%	0%		0.5%	**-**
Pedestrians	-	-	-	-	13	-	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	14	-	**-**
Pedestrians%	-	-	-	-	36.1%		-	-	-	-	11.1%		-	-	-	-	11.1%		-	-	-	-	38.9%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	2.8%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 01:15 PM - 02:15 PM **Weather: Light Snow (1.59 °C)**



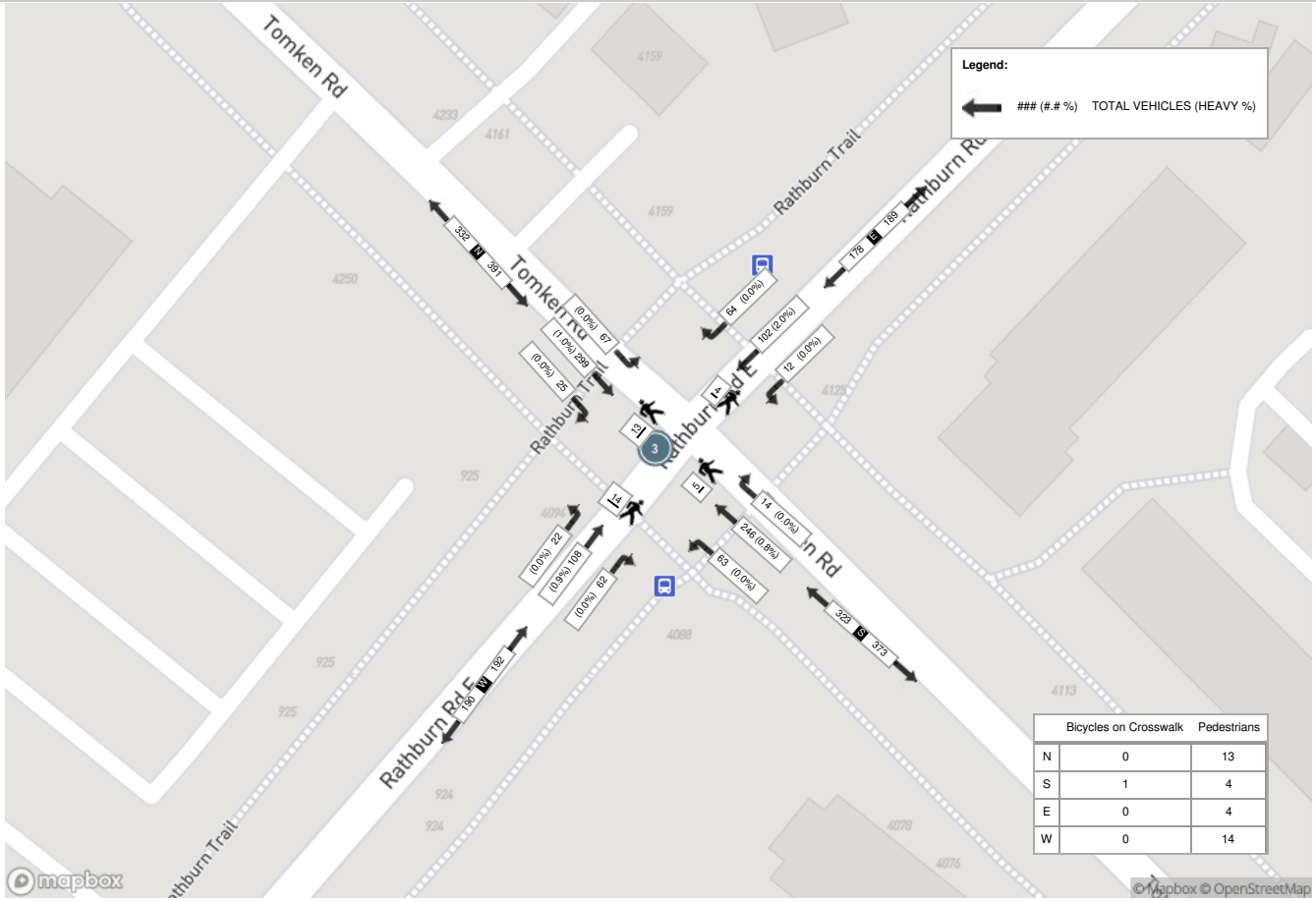
	Bicycles on Crosswalk	Pedestrians
N	0	11
S	0	5
E	0	9
W	0	15

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN RD
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 11:15 AM - 12:15 PM **Weather:**



Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN PLAZA / TOMKEN GROVE
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (2 . RATHBURN RD E & TOMKEN PLAZA / TOMKEN GROVE)

Start Time	N Approach TOMKEN PLAZA						E Approach RATHBURN RD E						S Approach TOMKEN GROVE						W Approach RATHBURN RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	2	0	0	0	0	2	1	17	0	0	0	18	1	0	0	0	0	1	0	20	9	0	0	29	50	
07:15:00	2	0	0	0	1	2	0	23	0	0	0	23	1	0	0	0	1	1	0	26	1	1	0	28	54	
07:30:00	3	0	1	0	1	4	4	30	0	0	0	34	0	0	1	0	0	1	0	46	9	0	0	55	94	
07:45:00	6	0	1	0	4	7	5	35	0	0	0	40	2	0	1	0	3	3	0	68	8	0	0	76	126	324
08:00:00	7	0	2	0	1	9	3	63	0	0	0	66	2	1	1	0	1	4	0	76	8	0	0	84	163	437
08:15:00	7	1	0	0	3	8	10	47	2	0	3	59	0	0	1	0	4	1	1	41	12	0	2	54	122	505
08:30:00	13	1	4	0	3	18	7	25	0	0	0	32	1	0	2	0	3	3	1	52	9	0	0	62	115	526
08:45:00	10	0	4	0	2	14	10	46	2	0	2	58	0	0	2	0	3	2	0	53	16	0	1	69	143	543
09:00:00	15	0	3	0	1	18	10	25	0	0	1	35	1	0	1	0	4	2	2	38	17	0	4	57	112	492
09:15:00	14	0	4	0	2	18	9	26	0	0	2	35	0	0	0	0	2	0	1	42	9	0	1	52	105	475
09:30:00	12	0	5	0	2	17	10	30	1	0	0	41	2	0	1	0	1	3	1	27	26	0	0	54	115	475
09:45:00	15	0	1	0	2	16	8	26	0	0	0	34	1	0	1	0	1	2	1	32	10	0	0	43	95	427
BREAK																										
16:00:00	34	0	12	0	5	46	8	81	0	0	0	89	0	0	0	0	1	0	1	33	27	0	1	61	196	
16:15:00	27	0	6	0	3	33	14	83	0	0	0	97	2	1	1	0	2	4	2	58	14	0	1	74	208	
16:30:00	28	2	7	0	7	37	21	80	1	0	0	102	0	0	0	0	3	0	1	46	22	0	0	69	208	
16:45:00	24	1	4	0	3	29	29	82	1	0	2	112	0	0	1	0	2	1	1	46	27	0	0	74	216	828
17:00:00	38	0	17	0	2	55	24	106	1	0	0	131	1	0	0	0	2	1	3	40	20	0	0	63	250	882
17:15:00	27	1	14	0	2	42	24	90	1	0	0	115	1	0	1	0	3	2	1	51	22	0	0	74	233	907
17:30:00	31	0	10	0	3	41	15	77	0	0	0	92	0	0	2	0	6	2	0	51	19	0	2	70	205	904
17:45:00	20	0	8	0	8	28	14	55	3	0	0	72	1	0	1	0	2	2	2	40	21	0	1	63	165	853
18:00:00	30	0	11	0	2	41	23	68	1	1	1	93	1	0	1	0	1	2	1	48	13	0	1	62	198	801
18:15:00	30	0	12	0	0	42	23	75	2	0	0	100	3	0	0	0	1	3	0	40	18	0	0	58	203	771
18:30:00	23	0	5	0	0	28	16	48	2	0	0	66	0	0	1	0	4	1	0	37	24	0	0	61	156	722
18:45:00	21	0	5	0	2	26	8	41	2	0	1	51	2	0	0	0	2	2	1	42	15	0	0	58	137	694
19:00:00	21	0	12	0	4	33	14	43	0	0	0	57	0	0	2	0	1	2	0	22	18	0	0	40	132	628
19:15:00	26	0	8	0	3	34	12	42	0	0	0	54	0	0	1	0	1	1	2	42	19	0	0	63	152	577
19:30:00	28	0	8	0	2	36	8	36	0	0	1	44	1	0	0	0	0	1	1	33	13	0	0	47	128	549
19:45:00	15	0	7	0	5	22	16	30	0	0	2	46	3	0	0	0	1	3	1	35	18	0	0	54	125	537
Grand Total	529	6	171	0	73	706	346	1430	19	1	15	1796	26	2	22	0	55	50	24	1185	444	1	14	1654	**4206**	-
Approach%	74.9%	0.8%	24.2%	0%		-	19.3%	79.6%	1.1%	0.1%		-	52%	4%	44%	0%		-	1.5%	71.6%	26.8%	0.1%		-	**-**	-
Totals %	12.6%	0.1%	4.1%	0%		16.8%	8.2%	34%	0.5%	0%		42.7%	0.6%	0%	0.5%	0%		1.2%	0.6%	28.2%	10.6%	0%		39.3%	**-**	-
Heavy	3	0	0	0		-	2	45	0	0		-	0	0	0	0		-	0	51	1	0		-	**-**	-
Heavy %	0.6%	0%	0%	0%		-	0.6%	3.1%	0%	0%		-	0%	0%	0%	0%		-	0%	4.3%	0.2%	0%		-	**-**	-
Bicycles	1	0	0	0		-	0	1	0	0		-	0	0	0	0		-	0	0	0	0		-	**-**	-
Bicycle %	0.2%	0%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN PLAZA / TOMKEN GROVE
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Mist (4.68 °C)

Start Time	N Approach TOMKEN PLAZA						E Approach RATHBURN RD E						S Approach TOMKEN GROVE						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	7	0	2	0	1	9	3	63	0	0	0	66	2	1	1	0	1	4	0	76	8	0	0	84	163
08:15:00	7	1	0	0	3	8	10	47	2	0	3	59	0	0	1	0	4	1	1	41	12	0	2	54	122
08:30:00	13	1	4	0	3	18	7	25	0	0	0	32	1	0	2	0	3	3	1	52	9	0	0	62	115
08:45:00	10	0	4	0	2	14	10	46	2	0	2	58	0	0	2	0	3	2	0	53	16	0	1	69	143
Grand Total	37	2	10	0	9	49	30	181	4	0	5	215	3	1	6	0	11	10	2	222	45	0	3	269	**543**
Approach%	75.5%	4.1%	20.4%	0%		-	14%	84.2%	1.9%	0%		-	30%	10%	60%	0%		-	0.7%	82.5%	16.7%	0%		-	**-**
Totals %	6.8%	0.4%	1.8%	0%		9%	5.5%	33.3%	0.7%	0%		39.6%	0.6%	0.2%	1.1%	0%		1.8%	0.4%	40.9%	8.3%	0%		49.5%	**-**
PHF	0.71	0.5	0.63	0		0.68	0.75	0.72	0.5	0		0.81	0.38	0.25	0.75	0		0.63	0.5	0.73	0.7	0		0.8	**-**
Heavy	0	0	0	0		0	0	8	0	0		8	0	0	0	0		0	0	12	0	0		12	**-**
Heavy %	0%	0%	0%	0%		0%	0%	4.4%	0%	0%		3.7%	0%	0%	0%	0%		0%	0%	5.4%	0%	0%		4.5%	**-**
Lights	37	2	10	0		49	30	173	4	0		207	3	1	6	0		10	2	210	45	0		257	**-**
Lights %	100%	100%	100%	0%		100%	100%	95.6%	100%	0%		96.3%	100%	100%	100%	0%		100%	100%	94.6%	100%	0%		95.5%	**-**
Single-Unit Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.7%	**-**
Buses	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	0	10	0	0		10	**-**
Buses %	0%	0%	0%	0%		0%	0%	3.9%	0%	0%		3.3%	0%	0%	0%	0%		0%	0%	4.5%	0%	0%		3.7%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	9	-	-	-	-	-	5	-	-	-	-	-	11	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	32.1%		-	-	-	-	17.9%		-	-	-	-	39.3%		-	-	-	-	10.7%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (10.64 °C)

Start Time	N Approach TOMKEN PLAZA						E Approach RATHBURN RD E						S Approach TOMKEN GROVE						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	28	2	7	0	7	37	21	80	1	0	0	102	0	0	0	0	3	0	1	46	22	0	0	69	208
16:45:00	24	1	4	0	3	29	29	82	1	0	2	112	0	0	1	0	2	1	1	46	27	0	0	74	216
17:00:00	38	0	17	0	2	55	24	106	1	0	0	131	1	0	0	0	2	1	3	40	20	0	0	63	250
17:15:00	27	1	14	0	2	42	24	90	1	0	0	115	1	0	1	0	3	2	1	51	22	0	0	74	233
Grand Total	117	4	42	0	14	163	98	358	4	0	2	460	2	0	2	0	10	4	6	183	91	0	0	280	**907**
Approach%	71.8%	2.5%	25.8%	0%		-	21.3%	77.8%	0.9%	0%		-	50%	0%	50%	0%		-	2.1%	65.4%	32.5%	0%		-	**-**
Totals %	12.9%	0.4%	4.6%	0%		18%	10.8%	39.5%	0.4%	0%		50.7%	0.2%	0%	0.2%	0%		0.4%	0.7%	20.2%	10%	0%		30.9%	**-**
PHF	0.77	0.5	0.62	0		0.74	0.84	0.84	1	0		0.88	0.5	0	0.5	0		0.5	0.5	0.9	0.84	0		0.95	**-**
Heavy	1	0	0	0		1	0	4	0	0		4	0	0	0	0		0	0	5	1	0		6	**-**
Heavy %	0.9%	0%	0%	0%		0.6%	0%	1.1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	2.7%	1.1%	0%		2.1%	**-**
Lights	116	4	42	0		162	98	354	4	0		456	2	0	2	0		4	6	178	90	0		274	**-**
Lights %	99.1%	100%	100%	0%		99.4%	100%	98.9%	100%	0%		99.1%	100%	0%	100%	0%		100%	100%	97.3%	98.9%	0%		97.9%	**-**
Single-Unit Trucks	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	2	1	0		3	**-**
Single-Unit Trucks %	0.9%	0%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1.1%	1.1%	0%		1.1%	**-**
Buses	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	3	0	0		3	**-**
Buses %	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		1.1%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	13	-	-	-	-	-	2	-	-	-	-	-	9	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	50%		-	-	-	-	7.7%		-	-	-	-	34.6%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	3.8%		-	-	-	-	0%		-	-	-	-	3.8%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

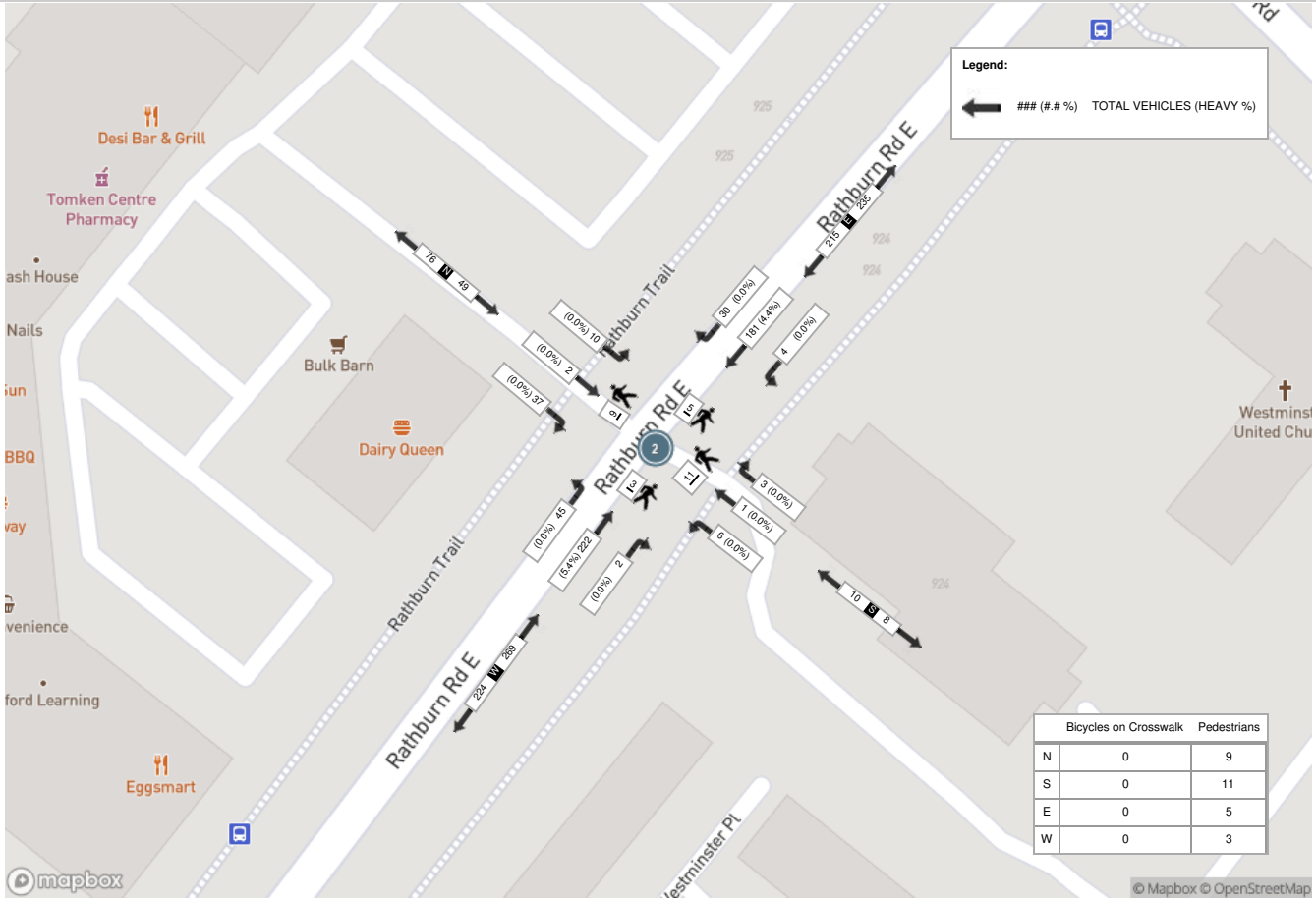
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 07:30 AM - 08:30 AM **Weather:**

Start Time	N Approach TOMKEN PLAZA						E Approach RATHBURN RD E						S Approach TOMKEN GROVE						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:30:00	3	0	1	0	1	4	4	30	0	0	0	34	0	0	1	0	0	1	0	46	9	0	0	55	94
07:45:00	6	0	1	0	4	7	5	35	0	0	0	40	2	0	1	0	3	3	0	68	8	0	0	76	126
08:00:00	7	0	2	0	1	9	3	63	0	0	0	66	2	1	1	0	1	4	0	76	8	0	0	84	163
08:15:00	7	1	0	0	3	8	10	47	2	0	3	59	0	0	1	0	4	1	1	41	12	0	2	54	122
Grand Total	23	1	4	0	9	28	22	175	2	0	3	199	4	1	4	0	8	9	1	231	37	0	2	269	**505**
Approach%	82.1%	3.6%	14.3%	0%		-	11.1%	87.9%	1%	0%		-	44.4%	11.1%	44.4%	0%		-	0.4%	85.9%	13.8%	0%		-	**-**
Totals %	4.6%	0.2%	0.8%	0%		5.5%	4.4%	34.7%	0.4%	0%		39.4%	0.8%	0.2%	0.8%	0%		1.8%	0.2%	45.7%	7.3%	0%		53.3%	**-**
PHF	0.82	0.25	0.5	0		0.78	0.55	0.69	0.25	0		0.75	0.5	0.25	1	0		0.56	0.25	0.76	0.77	0		0.8	**-**
Heavy	1	0	0	0		1	0	9	0	0		9	0	0	0	0		0	0	19	0	0		19	**-**
Heavy %	4.3%	0%	0%	0%		3.6%	0%	5.1%	0%	0%		4.5%	0%	0%	0%	0%		0%	0%	8.2%	0%	0%		7.1%	**-**
Lights	22	1	4	0		27	22	166	2	0		190	4	1	4	0		9	1	212	37	0		250	**-**
Lights %	95.7%	100%	100%	0%		96.4%	100%	94.9%	100%	0%		95.5%	100%	100%	100%	0%		100%	100%	91.8%	100%	0%		92.9%	**-**
Single-Unit Trucks	1	0	0	0		1	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	**-**
Single-Unit Trucks %	4.3%	0%	0%	0%		3.6%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	**-**
Buses	0	0	0	0		0	0	8	0	0		8	0	0	0	0		0	0	17	0	0		17	**-**
Buses %	0%	0%	0%	0%		0%	0%	4.6%	0%	0%		4%	0%	0%	0%	0%		0%	0%	7.4%	0%	0%		6.3%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	**-**
Pedestrians	-	-	-	-	8	-	-	-	-	-	3	-	-	-	-	-	8	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	36.4%		-	-	-	-	13.6%		-	-	-	-	36.4%		-	-	-	-	9.1%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	4.5%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

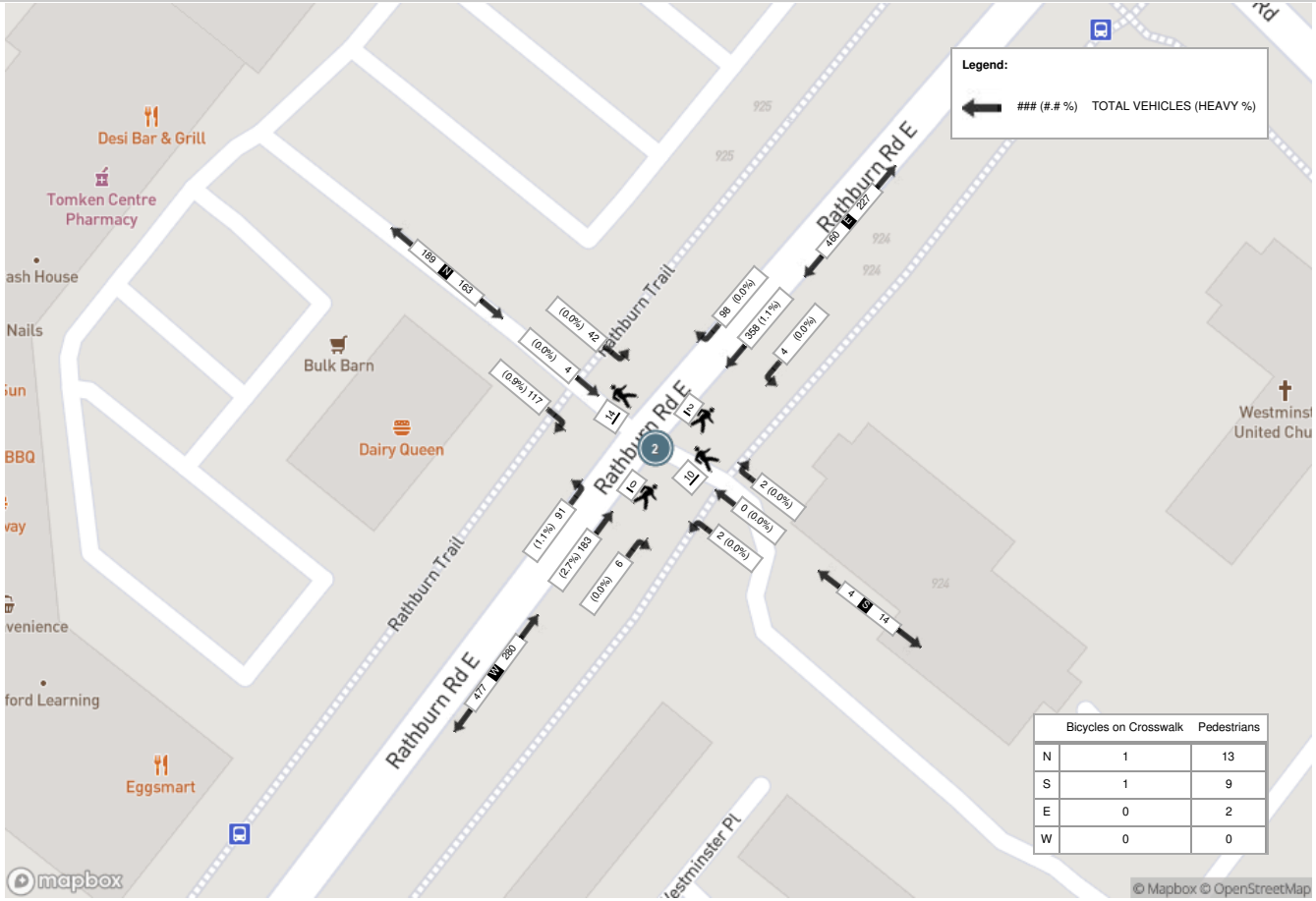
Peak Hour: 08:00 AM - 09:00 AM **Weather: Mist (4.68 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	9
S	0	11
E	0	5
W	0	3

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (10.64 °C)



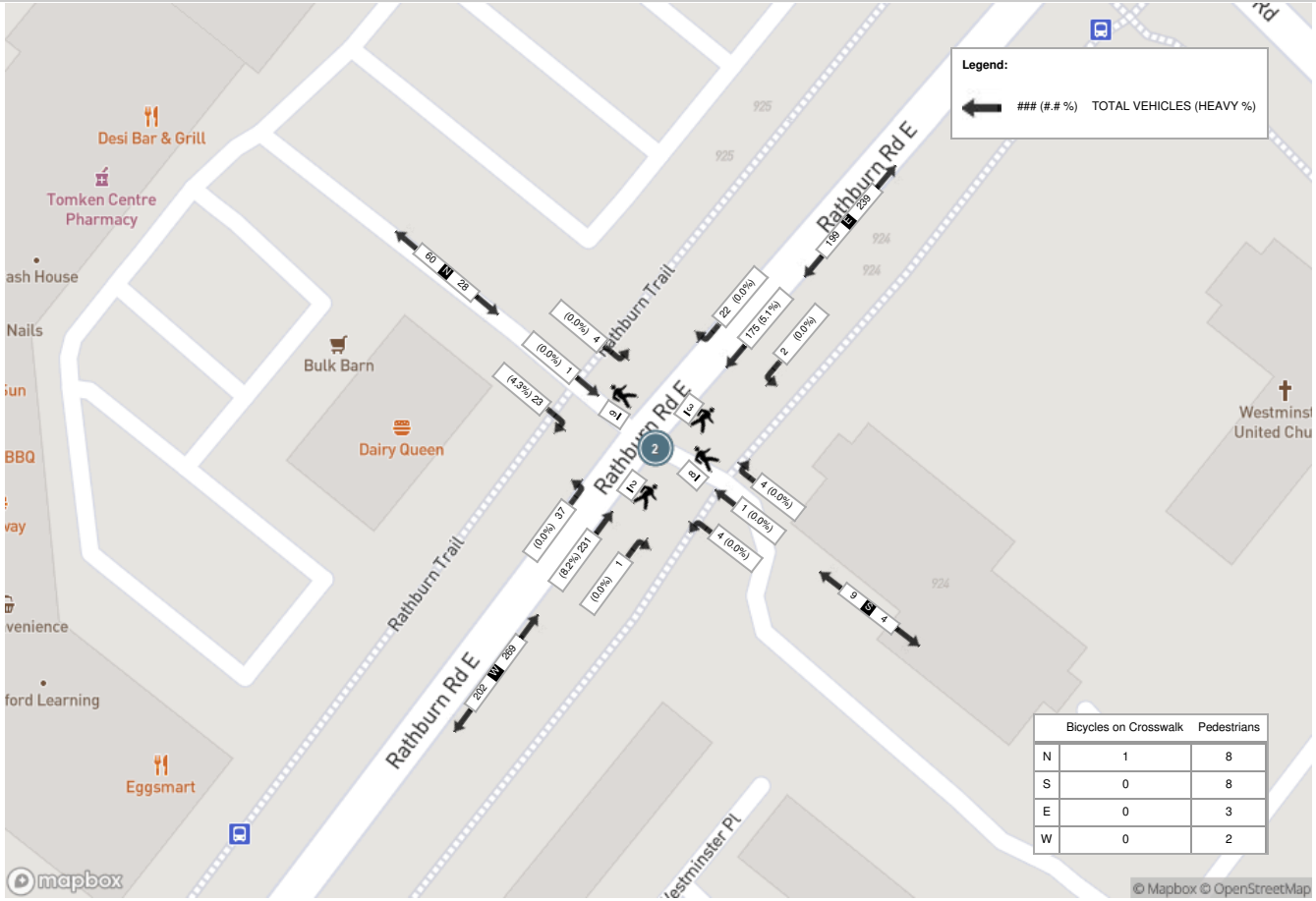
	Bicycles on Crosswalk	Pedestrians
N	1	13
S	1	9
E	0	2
W	0	0

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN PLAZA / TOMKEN GROVE
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 07:30 AM - 08:30 AM **Weather:**



Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN PLAZA / TOMKEN GROVE
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (2 . RATHBURN RD E & TOMKEN PLAZA / TOMKEN GROVE)

Start Time	N Approach TOMKEN PLAZA						E Approach RATHBURN RD E						S Approach TOMKEN GROVE						W Approach RATHBURN RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
08:00:00	2	0	1	0	0	3	3	7	1	0	0	11	2	0	0	0	2	2	1	4	10	0	1	15	31	
08:15:00	4	0	1	0	2	5	6	7	1	0	0	14	0	0	1	0	0	1	0	10	7	0	0	17	37	
08:30:00	4	0	4	0	1	8	7	16	0	0	0	23	0	0	1	0	2	1	0	9	7	0	1	16	48	
08:45:00	7	0	2	0	2	9	3	6	1	0	1	10	0	0	0	0	0	0	1	18	17	0	0	36	55	171
09:00:00	7	0	6	0	0	13	4	18	1	0	0	23	0	0	1	0	2	1	1	32	8	0	0	41	78	218
09:15:00	7	0	3	0	1	10	8	30	0	0	1	38	0	0	1	0	0	1	0	29	6	0	0	35	84	265
09:30:00	4	0	3	0	0	7	10	18	0	1	0	29	1	0	0	0	1	1	0	31	18	0	0	49	86	303
09:45:00	15	0	5	0	3	20	6	18	0	1	0	25	2	0	0	0	1	2	0	26	19	0	1	45	92	340
10:00:00	6	0	2	0	0	8	10	22	0	0	0	32	0	0	1	0	0	1	1	28	14	0	1	43	84	346
10:15:00	15	0	5	0	0	20	7	29	1	0	0	37	1	0	0	0	1	1	0	29	15	0	0	44	102	364
10:30:00	21	0	6	0	0	27	8	35	1	0	1	44	0	0	0	0	0	0	0	45	18	0	1	63	134	412
10:45:00	14	0	2	0	2	16	14	40	0	0	2	54	1	0	1	0	0	2	1	34	15	0	1	50	122	442
11:00:00	24	0	6	0	1	30	6	27	0	0	1	33	0	0	0	0	3	0	0	18	19	0	1	37	100	458
11:15:00	16	0	7	0	2	23	12	43	0	0	0	55	0	1	3	0	1	4	0	28	15	0	0	43	125	481
11:30:00	15	0	11	0	2	26	12	28	0	0	1	40	1	0	1	0	0	2	1	30	15	0	0	46	114	461
11:45:00	18	0	9	0	2	27	16	33	1	0	0	50	1	0	0	0	0	1	0	38	27	0	0	65	143	482
12:00:00	28	0	8	0	1	36	10	35	0	0	1	45	0	0	0	0	0	0	0	56	27	0	0	83	164	546
12:15:00	15	0	9	0	1	24	11	40	0	0	1	51	0	0	1	0	0	1	1	42	20	0	1	63	139	560
12:30:00	23	0	8	0	2	31	13	42	1	0	0	56	0	1	0	0	0	1	0	50	22	1	0	73	161	607
12:45:00	14	1	7	0	3	22	12	57	1	0	1	70	1	0	0	0	2	1	3	38	15	0	0	56	149	613
13:00:00	19	0	2	0	2	21	14	41	0	0	1	55	1	0	0	0	0	1	1	21	18	0	0	40	117	566
13:15:00	26	0	9	0	3	35	11	42	1	0	0	54	1	0	1	0	1	2	0	42	21	0	1	63	154	581
13:30:00	21	0	8	0	3	29	10	35	0	1	0	46	2	0	0	0	0	2	0	43	19	0	0	62	139	559
13:45:00	14	0	3	0	1	17	15	41	1	0	0	57	1	0	0	0	1	1	0	49	16	0	0	65	140	550
14:00:00	21	1	10	0	2	32	16	36	0	0	1	52	1	0	0	0	3	1	2	73	24	0	1	99	184	617
14:15:00	25	0	7	0	6	32	15	48	0	0	1	63	1	1	0	0	2	2	0	43	29	0	2	72	169	632
14:30:00	21	0	8	0	3	29	12	50	1	0	1	63	0	0	1	0	1	1	2	46	21	0	0	69	162	655
14:45:00	16	0	7	0	2	23	15	44	0	0	0	59	0	0	3	0	0	3	2	38	20	0	0	60	145	660
Grand Total	422	2	159	0	47	583	286	888	12	3	14	1189	17	3	16	0	23	36	17	950	482	1	12	1450	**3258**	-
Approach%	72.4%	0.3%	27.3%	0%		-	24.1%	74.7%	1%	0.3%		-	47.2%	8.3%	44.4%	0%		-	1.2%	65.5%	33.2%	0.1%		-	-	-
Totals %	13%	0.1%	4.9%	0%		17.9%	8.8%	27.3%	0.4%	0.1%		36.5%	0.5%	0.1%	0.5%	0%		1.1%	0.5%	29.2%	14.8%	0%		44.5%	-	-
Heavy	0	0	0	0		-	0	15	0	0		-	0	0	0	0		-	0	12	1	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0%	1.7%	0%	0%		-	0%	0%	0%	0%		-	0%	1.3%	0.2%	0%		-	-	-
Bicycles	0	0	1	0		-	1	0	0	0		-	0	0	0	0		-	0	1	0	0		-	-	-
Bicycle %	0%	0%	0.6%	0%		-	0.3%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN PLAZA / TOMKEN GROVE
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 02:00 PM - 03:00 PM Weather: Light Snow (1.59 °C)

Start Time	N Approach TOMKEN PLAZA						E Approach RATHBURN RD E						S Approach TOMKEN GROVE						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
14:00:00	21	1	10	0	2	32	16	36	0	0	1	52	1	0	0	0	3	1	2	73	24	0	1	99	184
14:15:00	25	0	7	0	6	32	15	48	0	0	1	63	1	1	0	0	2	2	0	43	29	0	2	72	169
14:30:00	21	0	8	0	3	29	12	50	1	0	1	63	0	0	1	0	1	1	2	46	21	0	0	69	162
14:45:00	16	0	7	0	2	23	15	44	0	0	0	59	0	0	3	0	0	3	2	38	20	0	0	60	145
Grand Total	83	1	32	0	13	116	58	178	1	0	3	237	2	1	4	0	6	7	6	200	94	0	3	300	**660**
Approach%	71.6%	0.9%	27.6%	0%		-	24.5%	75.1%	0.4%	0%		-	28.6%	14.3%	57.1%	0%		-	2%	66.7%	31.3%	0%		-	**-**
Totals %	12.6%	0.2%	4.8%	0%		17.6%	8.8%	27%	0.2%	0%		35.9%	0.3%	0.2%	0.6%	0%		1.1%	0.9%	30.3%	14.2%	0%		45.5%	**-**
PHF	0.83	0.25	0.8	0		0.91	0.91	0.89	0.25	0		0.94	0.5	0.25	0.33	0		0.58	0.75	0.68	0.81	0		0.76	**-**
Heavy	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	**-**
Heavy %	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Lights	83	1	32	0		116	58	176	1	0		235	2	1	4	0		7	6	200	94	0		300	**-**
Lights %	100%	100%	100%	0%		100%	100%	98.9%	100%	0%		99.2%	100%	100%	100%	0%		100%	100%	100%	100%	0%		100%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	**-**
Buses %	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	12	-	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	48%		-	-	-	-	12%		-	-	-	-	20%		-	-	-	-	12%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	4%		-	-	-	-	0%		-	-	-	-	4%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & TOMKEN PLAZA / TOMKEN GROVE
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

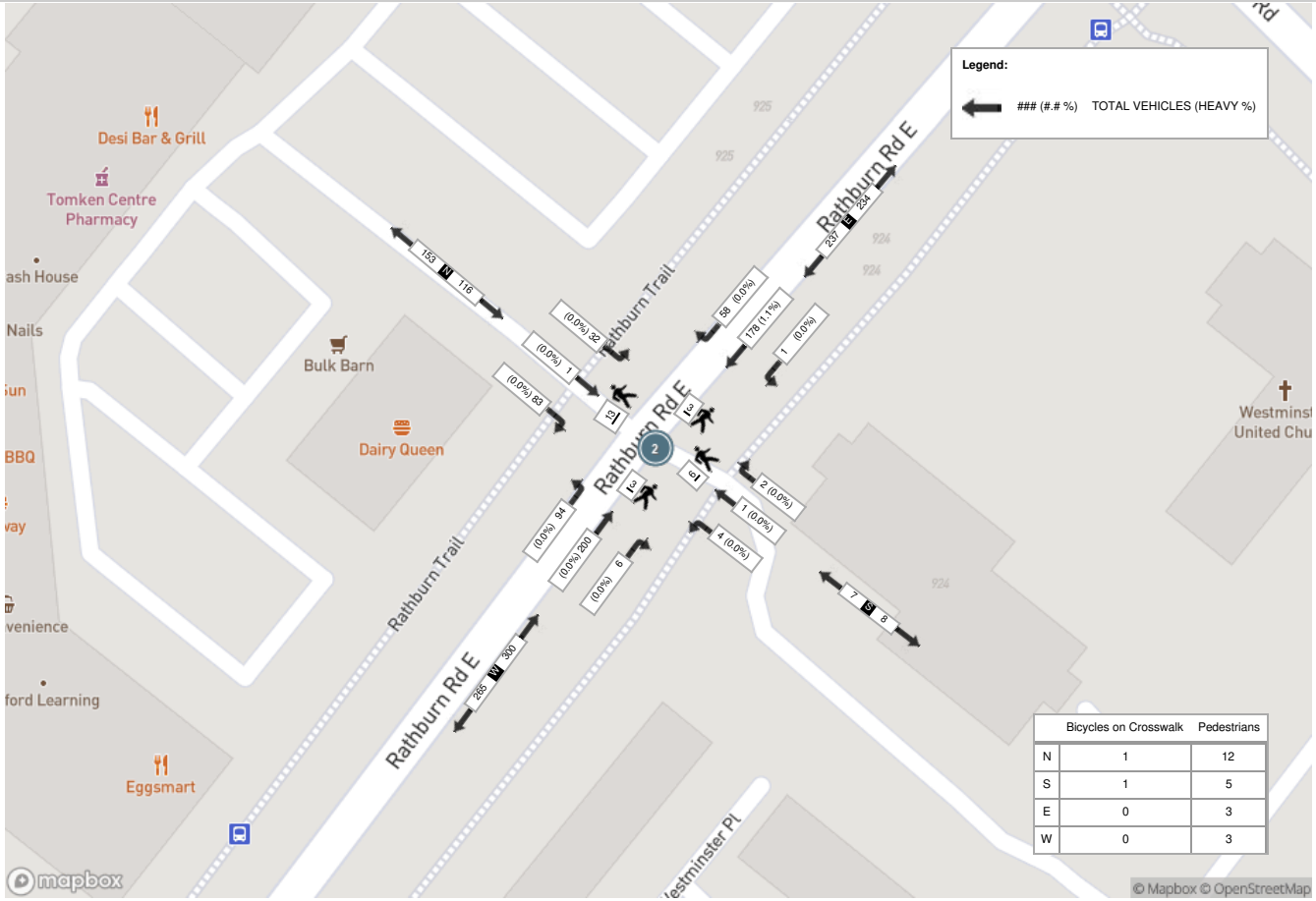
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 11:15 AM - 12:15 PM **Weather:**

Start Time	N Approach TOMKEN PLAZA						E Approach RATHBURN RD E						S Approach TOMKEN GROVE						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
11:15:00	16	0	7	0	2	23	12	43	0	0	0	55	0	1	3	0	1	4	0	28	15	0	0	43	125
11:30:00	15	0	11	0	2	26	12	28	0	0	1	40	1	0	1	0	0	2	1	30	15	0	0	46	114
11:45:00	18	0	9	0	2	27	16	33	1	0	0	50	1	0	0	0	0	1	0	38	27	0	0	65	143
12:00:00	28	0	8	0	1	36	10	35	0	0	1	45	0	0	0	0	0	0	0	56	27	0	0	83	164
Grand Total	77	0	35	0	7	112	50	139	1	0	2	190	2	1	4	0	1	7	1	152	84	0	0	237	**546**
Approach%	68.8%	0%	31.3%	0%		-	26.3%	73.2%	0.5%	0%		-	28.6%	14.3%	57.1%	0%		-	0.4%	64.1%	35.4%	0%		-	**-**
Totals %	14.1%	0%	6.4%	0%		20.5%	9.2%	25.5%	0.2%	0%		34.8%	0.4%	0.2%	0.7%	0%		1.3%	0.2%	27.8%	15.4%	0%		43.4%	**-**
PHF	0.69	0	0.8	0		0.78	0.78	0.81	0.25	0		0.86	0.5	0.25	0.33	0		0.44	0.25	0.68	0.78	0		0.71	**-**
Heavy	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	**-**
Heavy %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.4%	**-**
Lights	77	0	35	0		112	50	137	1	0		188	2	1	4	0		7	1	151	84	0		236	**-**
Lights %	100%	0%	100%	0%		100%	100%	98.6%	100%	0%		98.9%	100%	100%	100%	0%		100%	100%	99.3%	100%	0%		99.6%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	**-**
Buses %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.4%	**-**
Pedestrians	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	70%		-	-	-	-	20%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	10%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

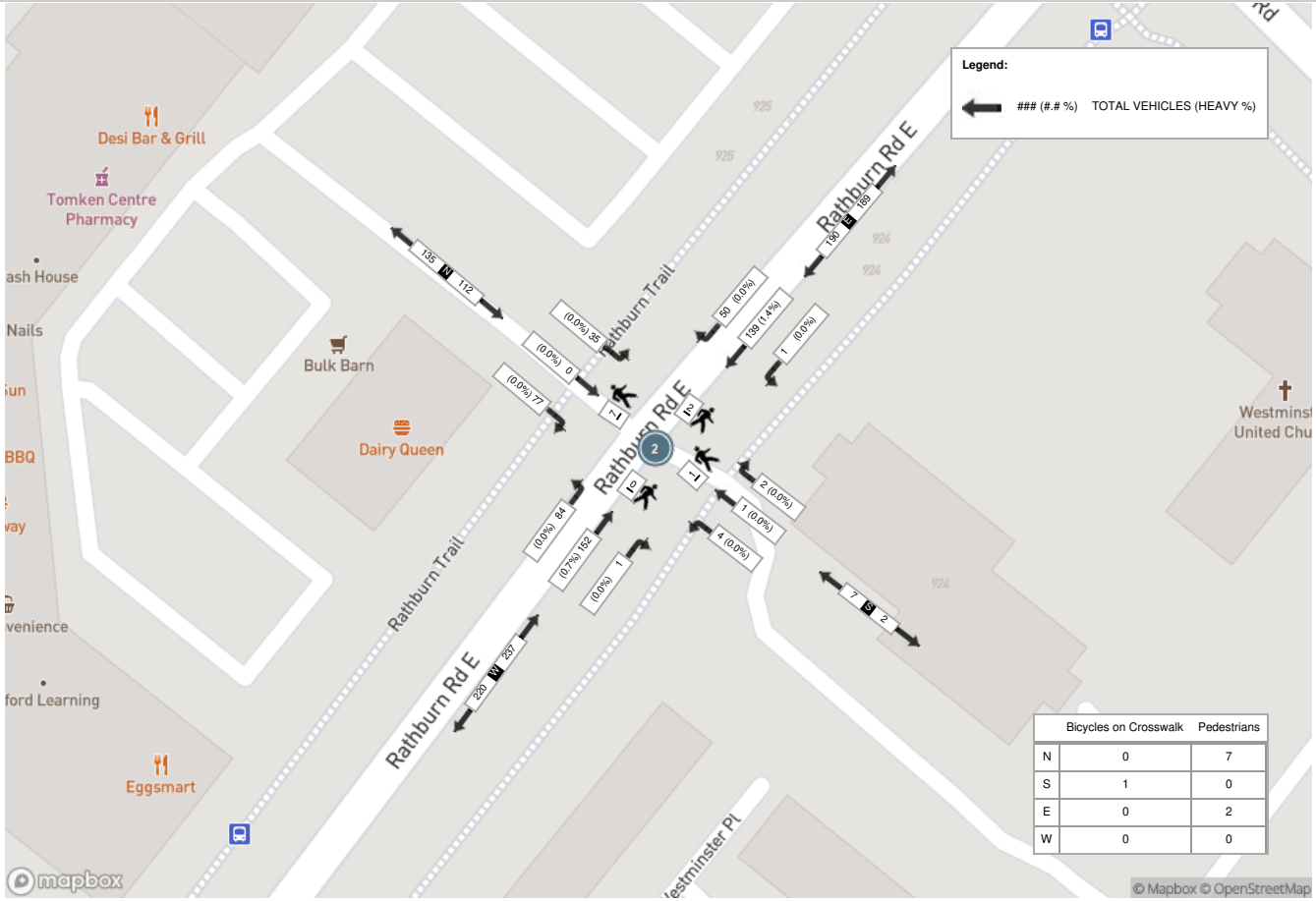
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 02:00 PM - 03:00 PM **Weather: Light Snow (1.59 °C)**



BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 11:15 AM - 12:15 PM **Weather:**



	Bicycles on Crosswalk	Pedestrians
N	0	7
S	1	0
E	0	2
W	0	0

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & WESTMINSTER PL
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (1 . RATHBURN RD E & WESTMINSTER PL)

Start Time	N Approach WESTMINSTER PL						E Approach RATHBURN RD E						S Approach WESTMINSTER PL						W Approach RATHBURN RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	4	1	2	0	0	7	1	20	1	0	0	22	5	0	8	0	1	13	2	21	1	0	0	24	66	
07:15:00	3	2	1	0	2	6	3	19	3	0	2	25	6	2	2	0	2	10	2	20	5	0	4	27	68	
07:30:00	5	2	3	0	0	10	0	31	3	0	0	34	8	1	3	0	0	12	0	44	2	0	1	46	102	
07:45:00	7	1	8	0	8	16	2	37	3	0	0	42	8	0	5	0	4	13	2	59	7	0	1	68	139	375
08:00:00	2	3	7	0	2	12	1	67	3	0	1	71	5	2	7	0	2	14	6	73	1	0	0	80	177	486
08:15:00	3	2	0	0	2	5	3	51	1	0	2	55	8	4	4	0	3	16	1	46	1	0	2	48	124	542
08:30:00	7	6	4	0	4	17	6	32	2	0	2	40	6	2	5	0	11	13	2	52	6	0	5	60	130	570
08:45:00	6	1	7	0	1	14	1	54	3	0	3	58	4	3	13	0	6	20	6	62	4	0	4	72	164	595
09:00:00	3	0	2	0	4	5	2	36	4	0	0	42	4	2	4	0	1	10	3	46	7	0	2	56	113	531
09:15:00	5	4	5	0	6	14	5	31	4	0	5	40	2	0	3	0	1	5	1	45	4	0	4	50	109	516
09:30:00	4	4	3	0	9	11	3	35	5	0	1	43	8	3	2	0	3	13	1	42	2	0	6	45	112	498
09:45:00	2	1	1	0	2	4	4	34	3	0	4	41	3	0	2	0	2	5	1	40	3	0	1	44	94	428
BREAK																										
16:00:00	2	1	0	0	9	3	10	93	8	0	5	111	9	4	3	0	1	16	8	47	6	0	1	61	191	
16:15:00	5	4	6	0	3	15	11	83	10	0	3	104	3	3	3	0	2	9	8	68	4	0	2	80	208	
16:30:00	4	3	6	0	2	13	6	101	10	0	4	117	2	3	4	0	2	9	6	59	8	0	3	73	212	
16:45:00	6	2	6	0	5	14	6	91	8	0	4	105	6	3	5	0	5	14	3	62	7	0	3	72	205	816
17:00:00	4	3	4	0	0	11	7	126	13	0	7	146	5	7	4	0	2	16	6	57	11	0	3	74	247	872
17:15:00	12	4	3	0	4	19	5	102	10	0	3	117	10	3	2	0	3	15	5	61	7	0	3	73	224	888
17:30:00	5	2	0	0	7	7	13	87	9	0	11	109	5	4	6	0	7	15	6	66	3	0	6	75	206	882
17:45:00	7	3	2	0	5	12	6	62	4	0	5	72	8	5	4	0	3	17	4	47	3	0	0	54	155	832
18:00:00	3	1	2	0	5	6	7	81	10	0	4	98	10	2	5	0	1	17	3	49	2	0	3	54	175	760
18:15:00	3	3	5	0	2	11	11	87	10	0	2	108	10	3	3	0	1	16	4	43	4	0	0	51	186	722
18:30:00	5	1	2	0	2	8	6	61	3	0	3	70	4	2	3	0	3	9	4	55	2	0	0	61	148	664
18:45:00	11	2	4	0	2	17	4	53	5	0	1	62	6	4	4	0	2	14	6	50	2	0	1	58	151	660
19:00:00	2	4	0	0	4	6	4	55	7	0	5	66	4	0	3	0	1	7	4	40	1	0	1	45	124	609
19:15:00	5	6	2	0	3	13	7	57	5	0	2	69	5	5	3	0	1	13	2	49	3	0	3	54	149	572
19:30:00	2	1	1	0	4	4	8	49	6	0	4	63	4	5	2	0	3	11	9	44	1	0	1	54	132	556
19:45:00	2	0	6	0	6	8	3	36	7	0	6	46	4	4	5	0	2	13	4	42	5	0	7	51	118	523
Grand Total	129	67	92	0	103	288	145	1671	160	0	89	1976	162	76	117	0	75	355	109	1389	112	0	67	1610	**4229**	-
Approach%	44.8%	23.3%	31.9%	0%		-	7.3%	84.6%	8.1%	0%		-	45.6%	21.4%	33%	0%		-	6.8%	86.3%	7%	0%		-	**-**	-
Totals %	3.1%	1.6%	2.2%	0%		6.8%	3.4%	39.5%	3.8%	0%		46.7%	3.8%	1.8%	2.8%	0%		8.4%	2.6%	32.8%	2.6%	0%		38.1%	**-**	-
Heavy	2	4	2	0		-	2	44	4	0		-	4	0	4	0		-	2	48	4	0		-	**-**	-
Heavy %	1.6%	6%	2.2%	0%		-	1.4%	2.6%	2.5%	0%		-	2.5%	0%	3.4%	0%		-	1.8%	3.5%	3.6%	0%		-	**-**	-
Bicycles	0	0	0	0		-	0	1	0	0		-	0	1	0	0		-	0	0	0	0		-	**-**	-
Bicycle %	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	0%	1.3%	0%	0%		-	0%	0%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & WESTMINSTER PL
Date: Thu, Mar 24, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Mist (4.68 °C)

Start Time	N Approach WESTMINSTER PL						E Approach RATHBURN RD E						S Approach WESTMINSTER PL						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	2	3	7	0	2	12	1	67	3	0	1	71	5	2	7	0	2	14	6	73	1	0	0	80	177
08:15:00	3	2	0	0	2	5	3	51	1	0	2	55	8	4	4	0	3	16	1	46	1	0	2	48	124
08:30:00	7	6	4	0	4	17	6	32	2	0	2	40	6	2	5	0	11	13	2	52	6	0	5	60	130
08:45:00	6	1	7	0	1	14	1	54	3	0	3	58	4	3	13	0	6	20	6	62	4	0	4	72	164
Grand Total	18	12	18	0	9	48	11	204	9	0	8	224	23	11	29	0	22	63	15	233	12	0	11	260	**595**
Approach%	37.5%	25%	37.5%	0%		-	4.9%	91.1%	4%	0%		-	36.5%	17.5%	46%	0%		-	5.8%	89.6%	4.6%	0%		-	**-**
Totals %	3%	2%	3%	0%		8.1%	1.8%	34.3%	1.5%	0%		37.6%	3.9%	1.8%	4.9%	0%		10.6%	2.5%	39.2%	2%	0%		43.7%	**-**
PHF	0.64	0.5	0.64	0		0.71	0.46	0.76	0.75	0		0.79	0.72	0.69	0.56	0		0.79	0.63	0.8	0.5	0		0.81	**-**
Heavy	1	2	2	0		5	1	6	1	0		8	1	0	0	0		1	1	9	1	0		11	**-**
Heavy %	5.6%	16.7%	11.1%	0%		10.4%	9.1%	2.9%	11.1%	0%		3.6%	4.3%	0%	0%	0%		1.6%	6.7%	3.9%	8.3%	0%		4.2%	**-**
Lights	17	10	16	0		43	10	198	8	0		216	22	11	29	0		62	14	224	11	0		249	**-**
Lights %	94.4%	83.3%	88.9%	0%		89.6%	90.9%	97.1%	88.9%	0%		96.4%	95.7%	100%	100%	0%		98.4%	93.3%	96.1%	91.7%	0%		95.8%	**-**
Single-Unit Trucks	1	0	1	0		2	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	**-**
Single-Unit Trucks %	5.6%	0%	5.6%	0%		4.2%	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	**-**
Buses	0	2	1	0		3	1	5	1	0		7	1	0	0	0		1	1	8	1	0		10	**-**
Buses %	0%	16.7%	5.6%	0%		6.3%	9.1%	2.5%	11.1%	0%		3.1%	4.3%	0%	0%	0%		1.6%	6.7%	3.4%	8.3%	0%		3.8%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	9	-	-	-	-	-	8	-	-	-	-	-	22	-	-	-	-	-	11	-	**-**
Pedestrians%	-	-	-	-	18%		-	-	-	-	16%		-	-	-	-	44%		-	-	-	-	22%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

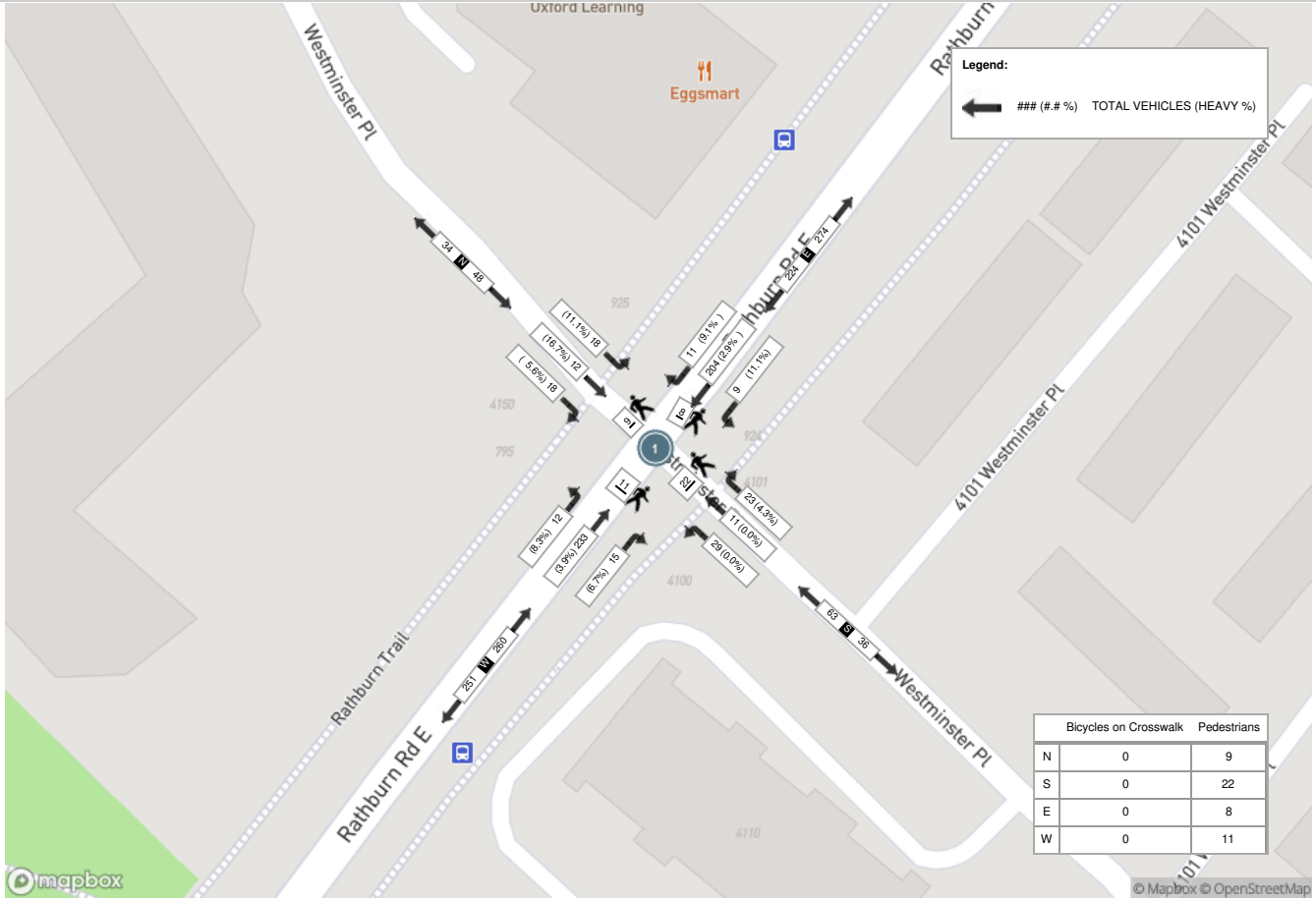
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (10.64 °C)

Start Time	N Approach WESTMINSTER PL						E Approach RATHBURN RD E						S Approach WESTMINSTER PL						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	4	3	6	0	2	13	6	101	10	0	4	117	2	3	4	0	2	9	6	59	8	0	3	73	212
16:45:00	6	2	6	0	5	14	6	91	8	0	4	105	6	3	5	0	5	14	3	62	7	0	3	72	205
17:00:00	4	3	4	0	0	11	7	126	13	0	7	146	5	7	4	0	2	16	6	57	11	0	3	74	247
17:15:00	12	4	3	0	4	19	5	102	10	0	3	117	10	3	2	0	3	15	5	61	7	0	3	73	224
Grand Total	26	12	19	0	11	57	24	420	41	0	18	485	23	16	15	0	12	54	20	239	33	0	12	292	**888**
Approach%	45.6%	21.1%	33.3%	0%		-	4.9%	86.6%	8.5%	0%		-	42.6%	29.6%	27.8%	0%		-	6.8%	81.8%	11.3%	0%		-	**-**
Totals %	2.9%	1.4%	2.1%	0%		6.4%	2.7%	47.3%	4.6%	0%		54.6%	2.6%	1.8%	1.7%	0%		6.1%	2.3%	26.9%	3.7%	0%		32.9%	**-**
PHF	0.54	0.75	0.79	0		0.75	0.86	0.83	0.79	0		0.83	0.58	0.57	0.75	0		0.84	0.83	0.96	0.75	0		0.99	**-**
Heavy	0	0	0	0		0	0	6	0	0		6	0	0	2	0		2	0	6	0	0		6	**-**
Heavy %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.2%	0%	0%	13.3%	0%		3.7%	0%	2.5%	0%	0%		2.1%	**-**
Lights	26	12	19	0		57	24	414	41	0		479	23	16	13	0		52	20	233	33	0		286	**-**
Lights %	100%	100%	100%	0%		100%	100%	98.6%	100%	0%		98.8%	100%	100%	86.7%	0%		96.3%	100%	97.5%	100%	0%		97.9%	**-**
Single-Unit Trucks	0	0	0	0		0	0	1	0	0		1	0	0	1	0		1	0	4	0	0		4	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	6.7%	0%		1.9%	0%	1.7%	0%	0%		1.4%	**-**
Buses	0	0	0	0		0	0	5	0	0		5	0	0	1	0		1	0	2	0	0		2	**-**
Buses %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1%	0%	0%	6.7%	0%		1.9%	0%	0.8%	0%	0%		0.7%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	10	-	-	-	-	-	18	-	-	-	-	-	12	-	-	-	-	-	11	-	**-**
Pedestrians%	-	-	-	-	18.9%		-	-	-	-	34%		-	-	-	-	22.6%		-	-	-	-	20.8%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	1.9%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	1.9%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

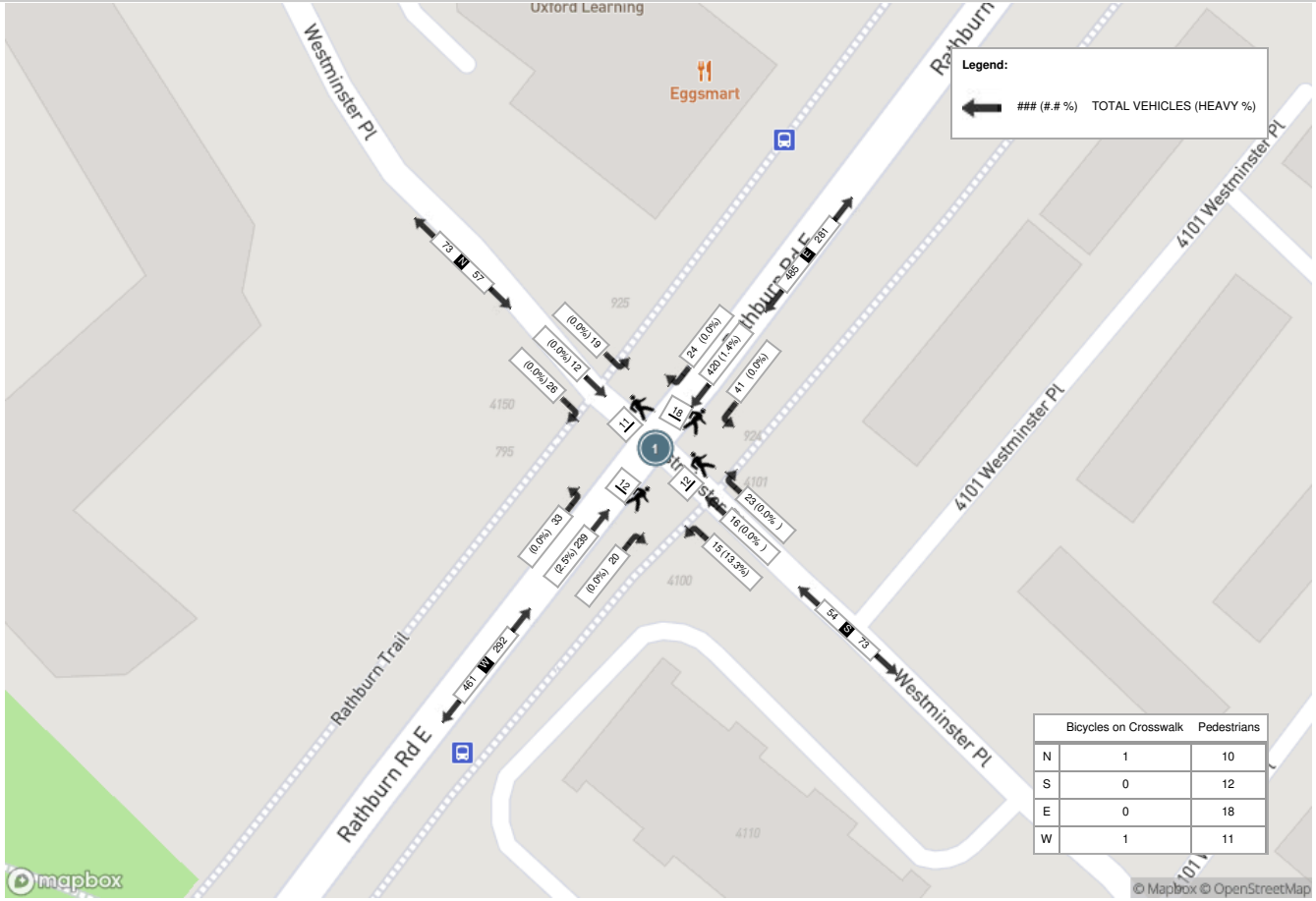
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather: Mist (4.68 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	9
S	0	22
E	0	8
W	0	11

Peak Hour: 04:30 PM - 05:30 PM **Weather: Overcast Clouds (10.64 °C)**



	Bicycles on Crosswalk	Pedestrians
N	1	10
S	0	12
E	0	18
W	1	11

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & WESTMINSTER PL
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (1 . RATHBURN RD E & WESTMINSTER PL)

Start Time	N Approach WESTMINSTER PL						E Approach RATHBURN RD E						S Approach WESTMINSTER PL						W Approach RATHBURN RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
08:00:00	0	1	1	0	0	2	2	7	0	0	0	9	3	3	0	0	1	6	0	10	0	0	0	10	27	
08:15:00	1	1	3	0	2	5	3	9	0	0	1	12	3	2	1	0	0	6	0	9	0	0	0	9	32	
08:30:00	3	0	1	0	1	4	2	18	0	0	2	20	2	0	3	0	2	5	1	13	1	0	0	15	44	
08:45:00	3	0	1	0	2	4	1	11	1	0	0	13	7	0	2	0	0	9	0	30	1	0	0	31	57	160
09:00:00	0	1	4	0	0	5	3	17	3	0	2	23	2	4	0	0	1	6	0	34	3	0	1	37	71	204
09:15:00	2	4	2	0	1	8	4	34	3	0	2	41	4	0	3	0	1	7	1	29	2	0	0	32	88	260
09:30:00	2	2	7	0	0	11	2	17	3	0	1	22	6	3	0	0	1	9	1	36	2	0	0	39	81	297
09:45:00	3	0	2	0	4	5	3	26	3	0	1	32	4	2	5	0	0	11	0	42	0	0	0	42	90	330
10:00:00	4	1	2	0	2	7	4	19	6	0	1	29	3	0	3	0	0	6	2	35	4	0	0	41	83	342
10:15:00	7	1	7	0	0	15	2	39	5	0	0	46	6	2	3	0	0	11	4	31	1	0	0	36	108	362
10:30:00	2	1	3	0	0	6	4	48	4	0	3	56	4	3	3	0	0	10	3	56	4	0	0	63	135	416
10:45:00	1	2	5	0	0	8	4	44	6	0	0	54	5	6	4	0	0	15	3	41	4	0	2	48	125	451
11:00:00	2	1	3	0	4	6	6	40	6	0	1	52	9	2	3	0	3	14	3	27	2	0	2	32	104	472
11:15:00	2	3	4	0	1	9	11	46	4	0	4	61	4	3	3	0	4	10	1	34	2	0	0	37	117	481
11:30:00	4	1	4	0	2	9	1	39	5	0	1	45	6	3	5	0	1	14	2	37	1	0	3	40	108	454
11:45:00	3	2	4	0	0	9	4	42	5	0	9	51	9	1	4	0	2	14	1	51	7	0	0	59	133	462
12:00:00	3	2	5	0	2	10	4	51	8	0	6	63	5	0	3	0	4	8	3	72	5	0	1	80	161	519
12:15:00	4	0	3	0	0	7	3	48	5	0	1	56	5	4	5	0	0	14	4	57	3	0	0	64	141	543
12:30:00	4	2	7	0	6	13	2	50	10	0	2	62	12	3	4	0	0	19	5	53	4	0	1	62	156	591
12:45:00	10	1	4	0	3	15	10	55	6	0	0	71	5	2	5	0	2	12	5	47	4	0	1	56	154	612
13:00:00	4	2	3	0	5	9	3	49	6	0	2	58	7	1	5	0	3	13	5	30	5	0	0	40	120	571
13:15:00	9	2	4	0	4	15	9	56	5	0	3	70	6	3	3	0	2	12	4	53	4	0	2	61	158	588
13:30:00	2	1	5	0	2	8	3	47	6	0	2	56	6	2	3	0	2	11	6	59	4	0	4	69	144	576
13:45:00	2	1	1	0	2	4	7	48	1	0	0	56	11	2	3	0	0	16	2	46	2	0	0	50	126	548
14:00:00	3	2	5	0	4	10	5	46	5	0	1	56	7	7	5	0	3	19	3	87	6	0	2	96	181	609
14:15:00	6	0	4	0	4	10	7	58	6	0	1	71	13	2	3	0	2	18	7	55	2	0	1	64	163	614
14:30:00	6	1	0	0	4	7	11	58	5	0	5	74	13	3	1	0	3	17	4	56	4	0	2	64	162	632
14:45:00	8	3	8	0	4	19	6	52	5	0	3	63	4	3	5	0	3	12	1	47	2	0	1	50	144	650
Grand Total	100	38	102	0	59	240	126	1074	122	0	54	1322	171	66	87	0	40	324	71	1177	79	0	23	1327	**3213**	-
Approach%	41.7%	15.8%	42.5%	0%		-	9.5%	81.2%	9.2%	0%		-	52.8%	20.4%	26.9%	0%		-	5.4%	88.7%	6%	0%		-	**-**	-
Totals %	3.1%	1.2%	3.2%	0%		7.5%	3.9%	33.4%	3.8%	0%		41.1%	5.3%	2.1%	2.7%	0%		10.1%	2.2%	36.6%	2.5%	0%		41.3%	**-**	-
Heavy	2	0	1	0		-	1	14	0	0		-	1	1	0	0		-	0	13	0	0		-	**-**	-
Heavy %	2%	0%	1%	0%		-	0.8%	1.3%	0%	0%		-	0.6%	1.5%	0%	0%		-	0%	1.1%	0%	0%		-	**-**	-
Bicycles	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	0	1	0	0		-	**-**	-
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & WESTMINSTER PL
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 02:00 PM - 03:00 PM Weather: Light Snow (1.59 °C)

Start Time	N Approach WESTMINSTER PL						E Approach RATHBURN RD E						S Approach WESTMINSTER PL						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
14:00:00	3	2	5	0	4	10	5	46	5	0	1	56	7	7	5	0	3	19	3	87	6	0	2	96	181
14:15:00	6	0	4	0	4	10	7	58	6	0	1	71	13	2	3	0	2	18	7	55	2	0	1	64	163
14:30:00	6	1	0	0	4	7	11	58	5	0	5	74	13	3	1	0	3	17	4	56	4	0	2	64	162
14:45:00	8	3	8	0	4	19	6	52	5	0	3	63	4	3	5	0	3	12	1	47	2	0	1	50	144
Grand Total	23	6	17	0	16	46	29	214	21	0	10	264	37	15	14	0	11	66	15	245	14	0	6	274	**650**
Approach%	50%	13%	37%	0%		-	11%	81.1%	8%	0%		-	56.1%	22.7%	21.2%	0%		-	5.5%	89.4%	5.1%	0%		-	**-**
Totals %	3.5%	0.9%	2.6%	0%		7.1%	4.5%	32.9%	3.2%	0%		40.6%	5.7%	2.3%	2.2%	0%		10.2%	2.3%	37.7%	2.2%	0%		42.2%	**-**
PHF	0.72	0.5	0.53	0		0.61	0.66	0.92	0.88	0		0.89	0.71	0.54	0.7	0		0.87	0.54	0.7	0.58	0		0.71	**-**
Heavy	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	**-**
Heavy %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	**-**
Lights	23	6	17	0		46	29	212	21	0		262	37	15	14	0		66	15	244	14	0		273	**-**
Lights %	100%	100%	100%	0%		100%	100%	99.1%	100%	0%		99.2%	100%	100%	100%	0%		100%	100%	99.6%	100%	0%		99.6%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	**-**
Pedestrians	-	-	-	-	14	-	-	-	-	-	10	-	-	-	-	-	8	-	-	-	-	-	6	-	**-**
Pedestrians%	-	-	-	-	32.6%		-	-	-	-	23.3%		-	-	-	-	18.6%		-	-	-	-	14%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	4.7%		-	-	-	-	0%		-	-	-	-	7%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

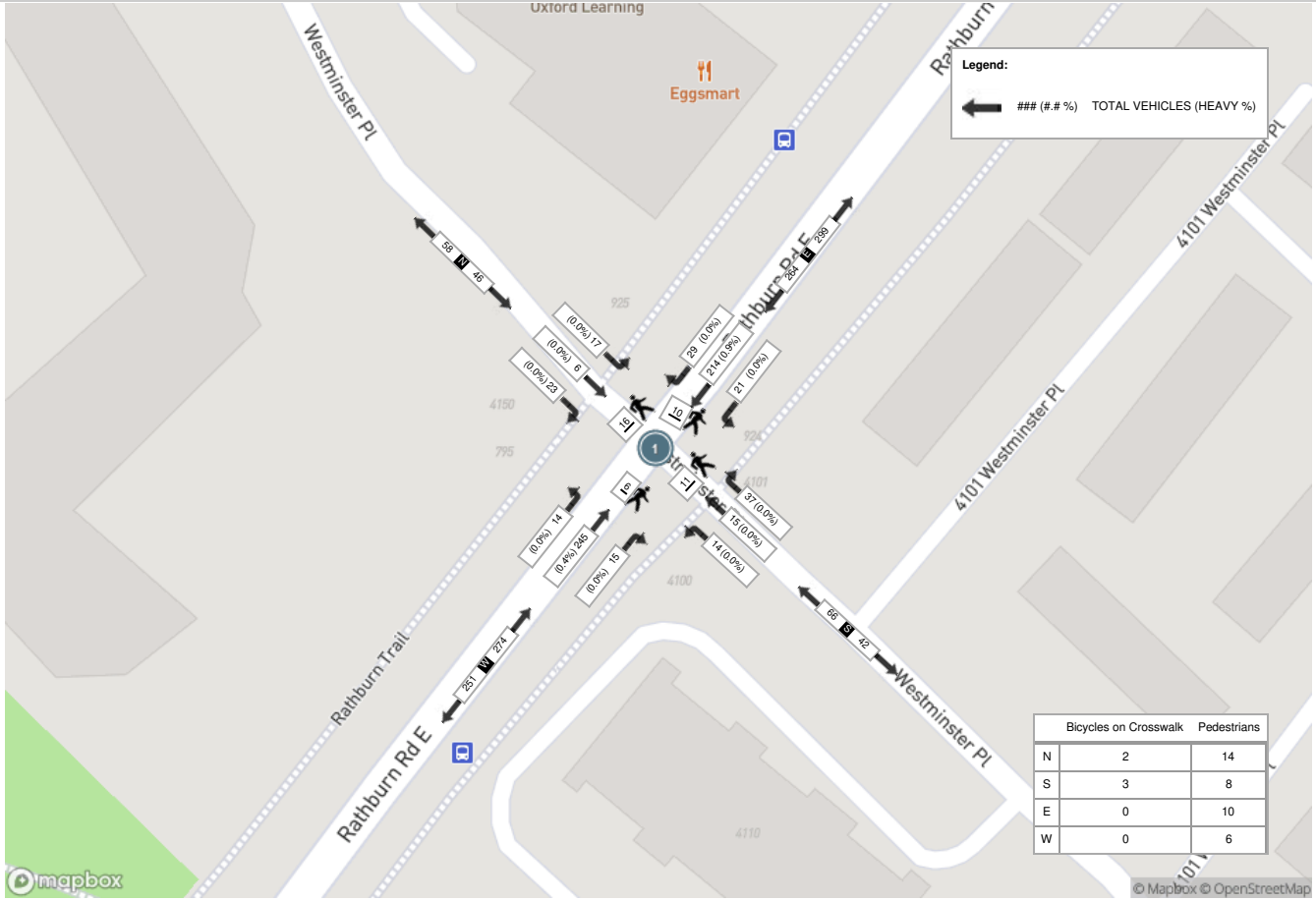
Turning Movement Count
Location Name: RATHBURN RD E & WESTMINSTER PL
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 11:15 AM - 12:15 PM **Weather:**

Start Time	N Approach WESTMINSTER PL						E Approach RATHBURN RD E						S Approach WESTMINSTER PL						W Approach RATHBURN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
11:15:00	2	3	4	0	1	9	11	46	4	0	4	61	4	3	3	0	4	10	1	34	2	0	0	37	117
11:30:00	4	1	4	0	2	9	1	39	5	0	1	45	6	3	5	0	1	14	2	37	1	0	3	40	108
11:45:00	3	2	4	0	0	9	4	42	5	0	9	51	9	1	4	0	2	14	1	51	7	0	0	59	133
12:00:00	3	2	5	0	2	10	4	51	8	0	6	63	5	0	3	0	4	8	3	72	5	0	1	80	161
Grand Total	12	8	17	0	5	37	20	178	22	0	20	220	24	7	15	0	11	46	7	194	15	0	4	216	**519**
Approach%	32.4%	21.6%	45.9%	0%		-	9.1%	80.9%	10%	0%		-	52.2%	15.2%	32.6%	0%		-	3.2%	89.8%	6.9%	0%		-	**-**
Totals %	2.3%	1.5%	3.3%	0%		7.1%	3.9%	34.3%	4.2%	0%		42.4%	4.6%	1.3%	2.9%	0%		8.9%	1.3%	37.4%	2.9%	0%		41.6%	**-**
PHF	0.75	0.67	0.85	0		0.93	0.45	0.87	0.69	0		0.87	0.67	0.58	0.75	0		0.82	0.58	0.67	0.54	0		0.68	**-**
Heavy	1	0	0	0		1	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	**-**
Heavy %	8.3%	0%	0%	0%		2.7%	0%	1.1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	**-**
Lights	11	8	17	0		36	20	176	22	0		218	24	7	15	0		46	7	193	15	0		215	**-**
Lights %	91.7%	100%	100%	0%		97.3%	100%	98.9%	100%	0%		99.1%	100%	100%	100%	0%		100%	100%	99.5%	100%	0%		99.5%	**-**
Single-Unit Trucks	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	8.3%	0%	0%	0%		2.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	**-**
Buses %	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	**-**
Pedestrians	-	-	-	-	5	-	-	-	-	-	19	-	-	-	-	-	9	-	-	-	-	-	4	-	**-**
Pedestrians%	-	-	-	-	12.5%		-	-	-	-	47.5%		-	-	-	-	22.5%		-	-	-	-	10%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	2.5%		-	-	-	-	5%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 02:00 PM - 03:00 PM **Weather: Light Snow (1.59 °C)**



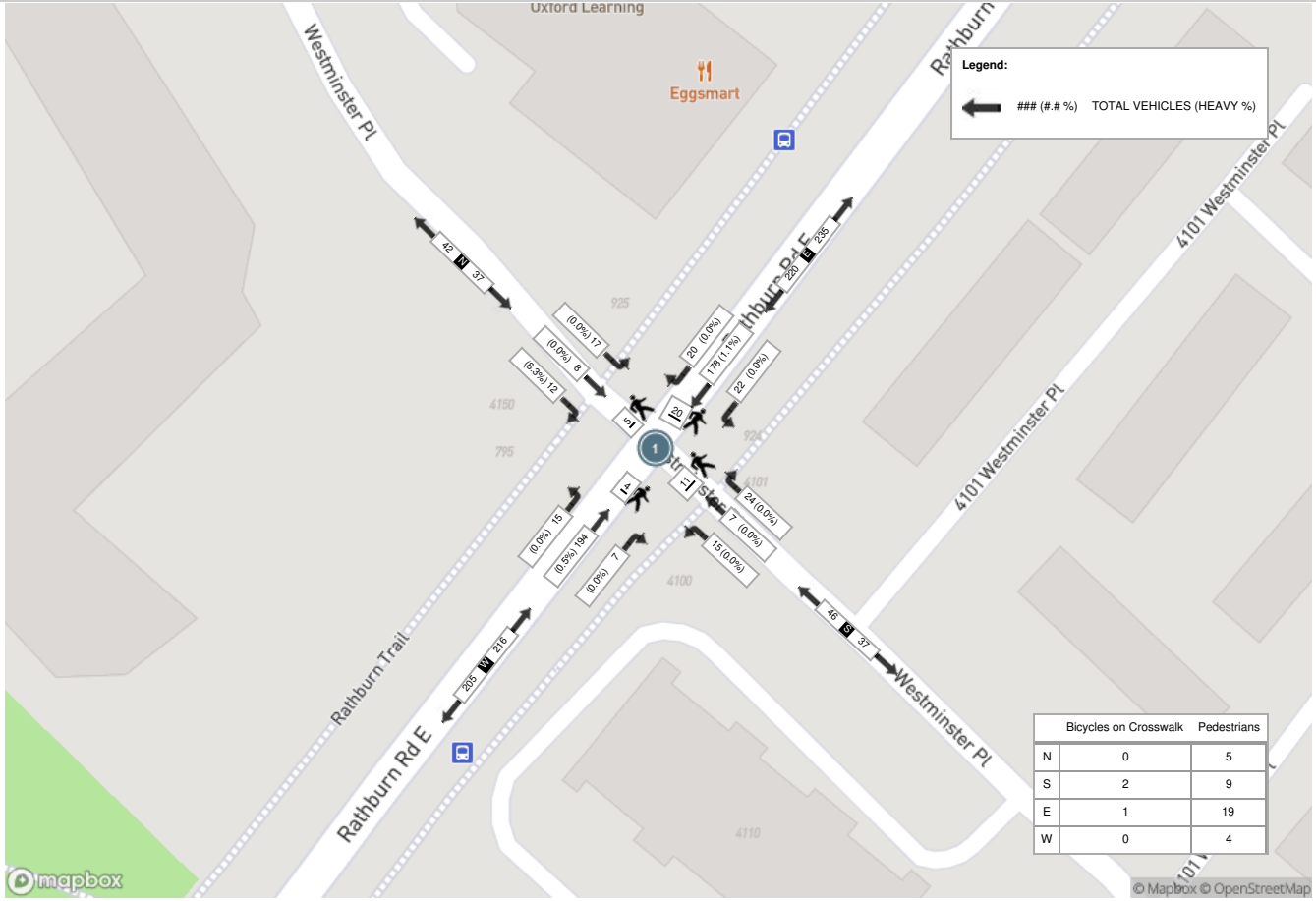
	Bicycles on Crosswalk	Pedestrians
N	2	14
S	3	8
E	0	10
W	0	6

Spectrum

Turning Movement Count
Location Name: RATHBURN RD E & WESTMINSTER PL
Date: Sun, Apr 03, 2022 Deployment Lead: Tasos Issaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Selected Hour: 11:15 AM - 12:15 PM **Weather:**



	Bicycles on Crosswalk	Pedestrians
N	0	5
S	2	9
E	1	19
W	0	4

APPENDIX E:
Signal Timing Plans

District: Mississauga **ID:** 2002 **Location:** BURNHAMTHORPE ROAD E @ Tomken Road

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	10	0	10	0	10	0	10
Ped Clear	Sec	0	30	0	33	0	30	0	33
Min Green	Sec	0	10	7	10	7	10	7	10
Passage	Sec	0.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Maximum 1	Sec	0	11	10	40	10	11	10	40
Maximum 2	Sec	0	11	10	40	10	11	10	40
Yellow Change	Sec	3.0	4.0	3.0	3.5	3.0	4.0	3.0	3.5
Red Clearance	Sec	0.0	3.0	0.0	4.0	0.0	3.0	0.0	4.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	phaseNotOn	phaseNotOn	phaseNotOn	redClear	phaseNotOn	phaseNotOn
[P2] Options	Bit	Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det Dual Entry	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det Dual Entry
[P2] Ring	Ring	0	1	1	1	2	2	2	2
[P2] Concurrency	Phase (,)	()	(5,6)	(7,8)	(7,8)	(2)	(2)	(3,4)	(3,4)

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	39	121	120	0	0	0	0	0
Split	Split	1	2	3	1	1	1	1	1
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	none	none	phaseOmitted	none
Split 1 - Time	Sec	0	85	16	59	16	69	0	75
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	none	phaseOmitted	none	phaseOmitted	none
Split 2 - Time	Sec	0	75	16	69	0	75	0	85
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	87	14	59	13	74	14	59
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	------S	S------	-M-----	-M-----	-----F-	-M-----	-----F-
Day of Month	Bit	12345678901234567890123456789011	12345678901234567890123456789011	12345678901234567890123456789011	--3---------- ------	----------1---- ------	----------5--------	----------3-- ------	1---------- ------
Day Plan	Number	1	2	3	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	--------A----	--------S---	---------O--	----------D	----------D	----------D	--------S---	0
Day of Week	Bit	-M-----	-M-----	-M-----	--T----	-M-----	---W---	-----F-	SMTWTFS
Day of Month	Bit	1---------- -----	----5---------- ------	---------0---------- -----	---------- 7----	---------- 6-----	---------- ---8---	---------- ---0-	0
Day Plan	Number	3	3	3	3	3	3	3	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Interconnect	Interconnect	Interconnect	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

District: Mississauga **ID:** 2712 **Location:** TOMKEN ROAD N @ Rathburn Road E

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	12	0	14	0	0	0	0
Ped Clear	Sec	0	24	0	31	0	0	0	0
Min Green	Sec	5	8	0	8	0	0	0	0
Passage	Sec	2.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	10	26	0	25	0	0	0	0
Maximum 2	Sec	10	26	0	25	0	0	0	0
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.0	0.0	3.5	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	1	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	140	140	140	0	0	0	0	0
Offset	Sec	40	6	72	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	phaseOmitted	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	73	0	67	0	0	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false	false	false
Split 2 - Mode	Enum	phaseOmitted	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	86	0	54	0	0	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	17	70	0	53	0	0	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false	false	false

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	-M-----	-M-----	-----F-	-M-----	-----F-
Day of Month	Bit	12345678901234567890 1	12345678901234567890 1	12345678901234567890 1	--3---------- ------	----------1---- ------	----------5-------- --------	----------3-- ------	1---------- ------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	--------A----	--------S---	---------O--	----------D	----------D	----------D	--------S---	0
Day of Week	Bit	-M-----	-M-----	-M-----	--T----	-M-----	---W---	-----F-	SMTWTFS
Day of Month	Bit	1---------- -----	----5---------- ------	---------0---------- -----	---------- 7----	---------- 6-----	---------- ---8---	---------- ---0-	0
Day Plan	Number	3	3	3	3	3	3	3	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	0	0	0	3	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	0	0	0	7	0	0
Plan 3 Hour	Hour	0	8	23	0	0	3	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	0	0	7	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	Special Func 1

District: Mississauga **ID:** 2711 **Location:** RATHBURN ROAD E @ Westminister Place

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	9	0	10	0	0	0	0
Ped Clear	Sec	0	18	0	17	0	0	0	0
Min Green	Sec	0	8	0	8	0	0	0	0
Passage	Sec	0.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	0	30	0	20	0	0	0	0
Maximum 2	Sec	0	30	0	20	0	0	0	0
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	70	0	70	0	0	0	0	0
Offset	Sec	55	0	42	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	36	0	34	0	0	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	0	0	0	0	0	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false	false	false
Split 3 - Mode	Enum	none	none	none	pedRecall	none	none	none	none
Split 3 - Time	Sec	0	36	0	34	0	0	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false	false	false

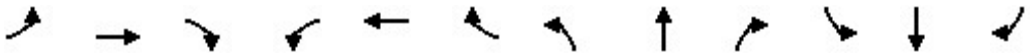
TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	-M-----	-M-----	-----F-	-M-----	-----F-
Day of Month	Bit	12345678901234 56789012345678 901	12345678901234 56789012345678 901	12345678901234 56789012345678 901	--3---------- ------	----------1---- ------	----------5-------- --------	----------3-- ------	1---------- ------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	--------A----	--------S---	---------O--	----------D	----------D	----------D	--------S---	0
Day of Week	Bit	-M-----	-M-----	-M-----	--T----	-M-----	---W---	-----F-	SMTWTFS
Day of Month	Bit	1---------- ------	----5---------- ------	---------0---------- -----	---------- 7----	---------- 6-----	---------- ---8---	---------- ---0-	0
Day Plan	Number	3	3	3	3	3	3	3	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	8	3	8	7	0	0
Plan 2 Hour	Hour	0	0	0	0	0	3	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	0	0	0	0	7	0	0
Plan 3 Hour	Hour	0	0	0	0	0	3	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	0	0	0	0	7	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

APPENDIX F:
Synchro Sheets

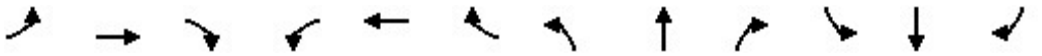


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	125	680	100	80	430	120	60	445	95	115	380	60
v/c Ratio	0.18	0.31	0.10	0.28	0.31	0.18	0.30	0.57	0.25	0.39	0.35	0.12
Control Delay	13.1	15.9	3.1	36.0	33.7	5.3	53.4	57.9	9.0	39.1	41.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	15.9	3.1	36.0	33.7	5.3	53.4	57.9	9.0	39.1	41.8	7.3
Queue Length 50th (m)	12.5	44.7	0.0	15.8	45.2	0.0	15.3	63.7	0.0	24.5	46.5	0.0
Queue Length 95th (m)	25.6	69.1	8.0	29.2	58.0	11.9	25.8	72.1	13.0	34.3	52.6	8.9
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	708	2159	967	282	1377	675	309	1196	540	297	1506	683
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.31	0.10	0.28	0.31	0.18	0.19	0.37	0.18	0.39	0.25	0.09

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Tomken Road & Burnhamthorpe Road E

Existing AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	680	100	80	430	120	60	445	95	115	380	60
Future Volume (vph)	125	680	100	80	430	120	60	445	95	115	380	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1738	3476	1497	1707	3444	1508	1656	3544	1415	1761	3444	1485
Flt Permitted	0.43	1.00	1.00	0.39	1.00	1.00	0.53	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	779	3476	1497	707	3444	1508	918	3544	1415	537	3444	1485
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	125	680	100	80	430	120	60	445	95	115	380	60
RTOR Reduction (vph)	0	0	38	0	0	72	0	0	74	0	0	41
Lane Group Flow (vph)	125	680	62	80	430	48	60	445	21	115	380	19
Confl. Peds. (#/hr)	29		11	11		29	11		28	28		11
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	5%	4%	4%	6%	1%	7%	3%	5%	1%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	7	0	0	7
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2			6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	97.4	97.4	97.4	62.0	62.0	62.0	32.5	32.5	32.5	48.1	48.1	48.1
Effective Green, g (s)	99.4	99.4	99.4	64.0	64.0	64.0	35.0	35.0	35.0	50.1	50.6	50.6
Actuated g/C Ratio	0.62	0.62	0.62	0.40	0.40	0.40	0.22	0.22	0.22	0.31	0.32	0.32
Clearance Time (s)	3.0	7.0	7.0	7.0	7.0	7.0	7.5	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	690	2159	930	282	1377	603	200	775	309	279	1089	469
v/s Ratio Prot	0.04	c0.20			0.12			c0.13		c0.04	0.11	
v/s Ratio Perm	0.07		0.04	0.11		0.03	0.07		0.01	0.09		0.01
v/c Ratio	0.18	0.31	0.07	0.28	0.31	0.08	0.30	0.57	0.07	0.41	0.35	0.04
Uniform Delay, d1	12.7	14.3	12.0	32.5	32.9	29.7	52.3	55.8	49.6	41.2	42.0	37.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.4	0.1	2.5	0.6	0.3	1.8	1.6	0.2	2.1	0.4	0.1
Delay (s)	13.3	14.7	12.1	35.0	33.5	30.0	54.0	57.5	49.8	43.2	42.4	38.0
Level of Service	B	B	B	C	C	C	D	E	D	D	D	D
Approach Delay (s)		14.2			33.0			55.9			42.1	
Approach LOS		B			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

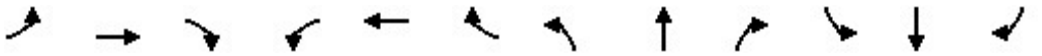
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	0	5	685	555	5
Future Volume (Veh/h)	5	0	5	685	555	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	0	5	685	555	5
Pedestrians	7				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.91	0.97	0.97			
vC, conflicting volume	918	287	567			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	576	211	498			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	407	775	1040			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	5	233	457	370	190
Volume Left	5	5	0	0	0
Volume Right	0	0	0	0	5
cSH	407	1040	1700	1700	1700
Volume to Capacity	0.01	0.00	0.27	0.22	0.11
Queue Length 95th (m)	0.3	0.1	0.0	0.0	0.0
Control Delay (s)	14.0	0.2	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	14.0	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

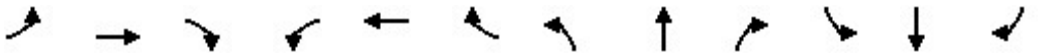
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	55	195	15	185	70	605	15	65	465	45
v/c Ratio	0.34	0.36	0.09	0.33	0.10	0.22	0.01	0.11	0.17	0.04
Control Delay	50.7	27.4	44.9	24.2	6.9	6.1	0.7	7.2	5.8	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	27.4	44.9	24.2	6.9	6.1	0.7	7.2	5.8	2.7
Queue Length 50th (m)	12.7	12.6	3.5	11.1	3.0	15.2	0.0	2.8	11.1	0.0
Queue Length 95th (m)	18.2	17.8	7.4	16.2	14.6	48.3	0.7	14.2	36.5	4.8
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	472	1400	468	1452	703	2744	1213	573	2744	1165
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.14	0.03	0.13	0.10	0.22	0.01	0.11	0.17	0.04

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	115	80	15	90	95	70	605	15	65	465	45
Future Volume (vph)	55	115	80	15	90	95	70	605	15	65	465	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	0.94		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1741	3063		1774	3161		1778	3544	1556	1690	3544	1492
Flt Permitted	0.58	1.00		0.57	1.00		0.48	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	1069	3063		1057	3161		908	3544	1556	740	3544	1492
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	55	115	80	15	90	95	70	605	15	65	465	45
RTOR Reduction (vph)	0	68	0	0	80	0	0	0	3	0	0	10
Lane Group Flow (vph)	55	127	0	15	105	0	70	605	12	65	465	35
Confl. Peds. (#/hr)	7		9	9		7	6		12	12		6
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	10%	9%	0%	7%	3%	0%	3%	0%	5%	3%	5%
Bus Blockages (#/hr)	0	6	0	0	3	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	19.1	19.1		19.1	19.1		106.4	106.4	106.4	106.4	106.4	106.4
Effective Green, g (s)	21.6	21.6		21.6	21.6		108.4	108.4	108.4	108.4	108.4	108.4
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.77	0.77	0.77	0.77	0.77	0.77
Clearance Time (s)	7.5	7.5		7.5	7.5		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	164	472		163	487		703	2744	1204	572	2744	1155
v/s Ratio Prot		0.04			0.03			c0.17			0.13	
v/s Ratio Perm	c0.05			0.01			0.08		0.01	0.09		0.02
v/c Ratio	0.34	0.27		0.09	0.21		0.10	0.22	0.01	0.11	0.17	0.03
Uniform Delay, d1	52.8	52.2		50.8	51.8		3.9	4.3	3.6	3.9	4.1	3.7
Progression Factor	0.93	0.90		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.6		0.5	0.5		0.3	0.2	0.0	0.4	0.1	0.0
Delay (s)	51.8	47.7		51.3	52.2		4.1	4.5	3.6	4.3	4.2	3.7
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		48.6			52.2			4.4			4.2	
Approach LOS		D			D			A			A	

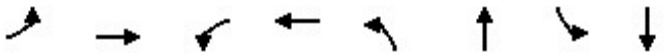
Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	240	0	0	185	20	5	0	5	5	0	25
Future Volume (Veh/h)	35	240	0	0	185	20	5	0	5	5	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	35	240	0	0	185	20	5	0	5	5	0	25
Pedestrians		3			2			8			9	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked												
vC, conflicting volume	214			248			438	532	130	401	522	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	214			248			438	532	130	401	522	114
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	7.0
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 %	97			100			99	100	99	99	100	97
cM capacity (veh/h)	1358			1320			473	438	894	514	444	901

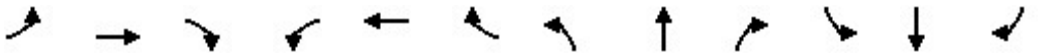
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	155	120	92	112	10	30
Volume Left	35	0	0	0	5	5
Volume Right	0	0	0	20	5	25
cSH	1358	1700	1320	1700	619	800
Volume to Capacity	0.03	0.07	0.00	0.07	0.02	0.04
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.3	0.8
Control Delay (s)	1.9	0.0	0.0	0.0	10.9	9.7
Lane LOS	A				B	A
Approach Delay (s)	1.1		0.0		10.9	9.7
Approach LOS					B	A

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	31.0%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	245	5	210	30	35	20	30
v/c Ratio	0.01	0.09	0.01	0.08	0.11	0.10	0.09	0.10
Control Delay	7.3	5.0	6.2	3.8	21.0	10.5	20.2	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	5.0	6.2	3.8	21.0	10.5	20.2	11.4
Queue Length 50th (m)	0.3	3.5	0.2	2.4	3.2	1.1	2.1	1.1
Queue Length 95th (m)	2.7	13.7	1.5	12.6	6.4	5.1	4.9	4.8
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	828	2652	771	2701	570	695	510	657
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.09	0.01	0.08	0.05	0.05	0.04	0.05

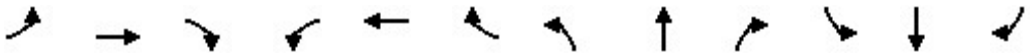
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	230	15	5	200	10	30	10	25	20	10	20
Future Volume (vph)	10	230	15	5	200	10	30	10	25	20	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1638	3420		1575	3482		1774	1643		1595	1558	
Flt Permitted	0.62	1.00		0.60	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	1070	3420		994	3482		1378	1643		1233	1558	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	230	15	5	200	10	30	10	25	20	10	20
RTOR Reduction (vph)	0	3	0	0	3	0	0	21	0	0	17	0
Lane Group Flow (vph)	10	242	0	5	207	0	30	14	0	20	13	0
Confl. Peds. (#/hr)	9		22	22		9	8		11	11		8
Heavy Vehicles (%)	8%	4%	7%	11%	3%	9%	0%	0%	4%	11%	17%	6%
Bus Blockages (#/hr)	0	6	0	0	3	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	48.8	48.8		48.8	48.8		9.2	9.2		9.2	9.2	
Effective Green, g (s)	49.8	49.8		49.8	49.8		10.2	10.2		10.2	10.2	
Actuated g/C Ratio	0.71	0.71		0.71	0.71		0.15	0.15		0.15	0.15	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	761	2433		707	2477		200	239		179	227	
v/s Ratio Prot		c0.07			0.06			0.01			0.01	
v/s Ratio Perm	0.01			0.01			c0.02			0.02		
v/c Ratio	0.01	0.10		0.01	0.08		0.15	0.06		0.11	0.06	
Uniform Delay, d1	2.9	3.1		2.9	3.1		26.1	25.8		26.0	25.8	
Progression Factor	1.00	1.00		0.86	0.84		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.0	0.1		0.7	0.2		0.6	0.2	
Delay (s)	3.0	3.2		2.5	2.7		26.8	26.0		26.5	26.0	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.2			2.7			26.4			26.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.11		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

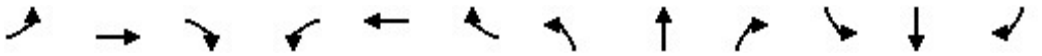


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	70	650	95	80	835	90	105	400	65	135	555	180
v/c Ratio	0.14	0.30	0.10	0.25	0.54	0.13	0.43	0.48	0.17	0.43	0.65	0.36
Control Delay	13.1	15.8	2.9	31.5	35.4	5.5	39.9	53.7	9.1	39.6	58.1	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	15.8	2.9	31.5	35.4	5.5	39.9	53.7	9.1	39.6	58.1	7.5
Queue Length 50th (m)	7.3	44.7	0.0	14.8	94.7	0.2	21.5	53.8	0.0	28.1	78.5	0.0
Queue Length 95th (m)	15.2	63.1	7.6	27.2	113.2	10.2	32.5	64.5	10.2	40.3	90.6	17.1
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	486	2200	994	326	1543	688	253	1207	531	317	1207	634
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.30	0.10	0.25	0.54	0.13	0.42	0.33	0.12	0.43	0.46	0.28

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Tomken Road & Burnhamthorpe Road E

Existing PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	650	95	80	835	90	105	400	65	135	555	180
Future Volume (vph)	70	650	95	80	835	90	105	400	65	135	555	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	1.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1730	3579	1559	1777	3579	1480	1767	3579	1440	1776	3579	1525
Flt Permitted	0.22	1.00	1.00	0.40	1.00	1.00	0.23	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	392	3579	1559	757	3579	1480	424	3579	1440	666	3579	1525
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	650	95	80	835	90	105	400	65	135	555	180
RTOR Reduction (vph)	0	0	37	0	0	51	0	0	50	0	0	137
Lane Group Flow (vph)	70	650	58	80	835	39	105	400	15	135	555	43
Confl. Peds. (#/hr)	36		9	9		36	4		29	29		4
Confl. Bikes (#/hr)			3			1			1			1
Heavy Vehicles (%)	3%	2%	0%	0%	2%	2%	1%	2%	3%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	7	0	0	7
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2			6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	96.3	96.3	96.3	67.0	67.0	67.0	45.7	35.2	35.2	46.7	35.7	35.7
Effective Green, g (s)	98.3	98.3	98.3	69.0	69.0	69.0	49.7	37.7	37.7	50.7	38.2	38.2
Actuated g/C Ratio	0.61	0.61	0.61	0.43	0.43	0.43	0.31	0.24	0.24	0.32	0.24	0.24
Clearance Time (s)	3.0	7.0	7.0	7.0	7.0	7.0	3.0	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	477	2198	957	326	1543	638	236	843	339	301	854	364
v/s Ratio Prot	0.03	c0.18			c0.23		0.03	0.11		c0.04	c0.16	
v/s Ratio Perm	0.06		0.04	0.11		0.03	0.10		0.01	0.11		0.03
v/c Ratio	0.15	0.30	0.06	0.25	0.54	0.06	0.44	0.47	0.05	0.45	0.65	0.12
Uniform Delay, d1	14.7	14.5	12.4	28.9	33.8	26.6	41.6	52.6	47.2	40.9	54.9	47.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.3	0.1	1.8	1.4	0.2	1.3	0.9	0.1	2.2	2.3	0.3
Delay (s)	15.3	14.9	12.5	30.7	35.1	26.8	42.9	53.5	47.4	43.1	57.2	48.0
Level of Service	B	B	B	C	D	C	D	D	D	D	E	D
Approach Delay (s)		14.6			34.0			50.9			53.1	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

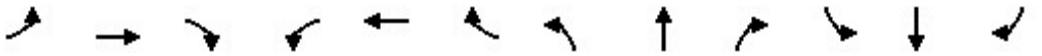
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	0	560	865	5
Future Volume (Veh/h)	5	5	0	560	865	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	5	0	560	865	5
Pedestrians	11					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.95	0.90	0.90			
vC, conflicting volume	1158	446	881			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	643	175	656			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	385	756	843			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	10	187	373	577	293
Volume Left	5	0	0	0	0
Volume Right	5	0	0	0	5
cSH	511	843	1700	1700	1700
Volume to Capacity	0.02	0.00	0.22	0.34	0.17
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	12.2	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.2	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

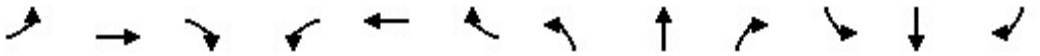
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	25	200	20	335	105	440	20	110	795	100
v/c Ratio	0.18	0.30	0.10	0.50	0.23	0.27	0.03	0.12	0.33	0.10
Control Delay	51.4	40.8	42.8	47.6	10.2	23.5	0.1	6.0	12.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	40.8	42.8	47.6	10.2	23.5	0.1	6.0	12.5	6.0
Queue Length 50th (m)	5.7	19.7	4.4	38.5	5.9	35.5	0.0	5.1	38.2	2.9
Queue Length 95th (m)	13.2	28.5	9.0	41.4	17.5	46.3	0.0	18.2	83.8	14.3
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	253	1188	371	1184	527	1645	742	880	2393	1045
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.17	0.05	0.28	0.20	0.27	0.03	0.13	0.33	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	145	55	20	260	75	105	440	20	110	795	100
Future Volume (vph)	25	145	55	20	260	75	105	440	20	110	795	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	0.96		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	3383		1780	3399		1781	3544	1533	1757	3614	1548
Flt Permitted	0.40	1.00		0.58	1.00		0.35	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	740	3383		1082	3399		658	3544	1533	820	3614	1548
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	25	145	55	20	260	75	105	440	20	110	795	100
RTOR Reduction (vph)	0	35	0	0	24	0	0	0	11	0	0	21
Lane Group Flow (vph)	25	165	0	20	311	0	105	440	9	110	795	79
Confl. Peds. (#/hr)	19		4	4		19	16		24	24		16
Confl. Bikes (#/hr)						2			1			2
Heavy Vehicles (%)	0%	3%	0%	0%	2%	3%	0%	3%	0%	1%	1%	0%
Bus Blockages (#/hr)	0	4	0	0	4	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	24.0	24.0		24.0	24.0		70.8	63.0	63.0	101.5	90.7	90.7
Effective Green, g (s)	26.5	26.5		26.5	26.5		74.8	65.0	65.0	103.5	92.7	92.7
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.53	0.46	0.46	0.74	0.66	0.66
Clearance Time (s)	7.5	7.5		7.5	7.5		3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	140	640		204	643		430	1645	711	857	2392	1024
v/s Ratio Prot		0.05			c0.09		c0.02	0.12		0.03	c0.22	
v/s Ratio Perm	0.03			0.02			0.11		0.01	0.06		0.05
v/c Ratio	0.18	0.26		0.10	0.48		0.24	0.27	0.01	0.13	0.33	0.08
Uniform Delay, d1	47.6	48.4		46.9	50.7		16.1	22.9	20.2	5.3	10.2	8.4
Progression Factor	1.13	1.10		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4		0.4	1.2		0.3	0.4	0.0	0.3	0.4	0.1
Delay (s)	54.9	53.7		47.3	51.9		16.4	23.3	20.2	5.6	10.6	8.6
Level of Service	D	D		D	D		B	C	C	A	B	A
Approach Delay (s)		53.8			51.6			21.9			9.9	
Approach LOS		D			D			C			A	

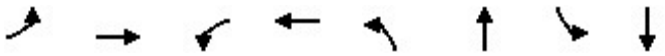
Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	185	5	5	360	100	0	0	0	40	5	120
Future Volume (Veh/h)	90	185	5	5	360	100	0	0	0	40	5	120
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	90	185	5	5	360	100	0	0	0	40	5	120
Pedestrians		2						10			14	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	474			200			692	862	105	706	814	246
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	288			200			522	704	105	538	653	43
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 %	92			100			100	100	100	89	98	87
cM capacity (veh/h)	1176			1372			325	306	928	367	327	938

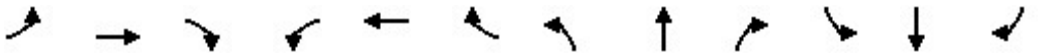
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	182	98	185	280	0	165
Volume Left	90	0	5	0	0	40
Volume Right	0	5	0	100	0	120
cSH	1176	1700	1372	1700	1700	654
Volume to Capacity	0.08	0.06	0.00	0.16	0.02	0.25
Queue Length 95th (m)	1.7	0.0	0.1	0.0	0.0	7.0
Control Delay (s)	4.4	0.0	0.2	0.0	0.0	12.4
Lane LOS	A		A		A	B
Approach Delay (s)	2.9		0.1		0.0	12.4
Approach LOS					A	B

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	43.3%	ICU Level of Service		A
Analysis Period (min)	15			



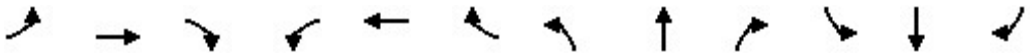
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	255	40	440	15	40	20	35
v/c Ratio	0.05	0.09	0.05	0.16	0.07	0.12	0.08	0.10
Control Delay	6.8	4.9	6.8	5.2	19.9	11.6	20.3	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	4.9	6.8	5.2	19.9	11.6	20.3	10.6
Queue Length 50th (m)	1.0	3.5	0.7	3.8	1.6	1.6	2.2	1.1
Queue Length 95th (m)	6.6	14.1	9.8	36.0	4.0	5.8	4.9	5.1
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	721	2705	859	2769	498	726	563	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.05	0.16	0.03	0.06	0.04	0.05

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	235	20	40	420	20	15	15	25	20	10	25
Future Volume (vph)	35	235	20	40	420	20	15	15	25	20	10	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1771	3472		1765	3557		1559	1718		1769	1682	
Flt Permitted	0.50	1.00		0.59	1.00		0.73	1.00		0.73	1.00	
Satd. Flow (perm)	926	3472		1104	3557		1205	1718		1361	1682	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	235	20	40	420	20	15	15	25	20	10	25
RTOR Reduction (vph)	0	5	0	0	3	0	0	21	0	0	21	0
Lane Group Flow (vph)	35	250	0	40	437	0	15	19	0	20	14	0
Confl. Peds. (#/hr)	11		12	12		11	18		12	12		18
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	13%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	4	0	0	4	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	49.1	49.1		49.1	49.1		8.9	8.9		8.9	8.9	
Effective Green, g (s)	50.1	50.1		50.1	50.1		9.9	9.9		9.9	9.9	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.14	0.14		0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	662	2484		790	2545		170	242		192	237	
v/s Ratio Prot		0.07			c0.12			0.01			0.01	
v/s Ratio Perm	0.04			0.04			0.01			c0.01		
v/c Ratio	0.05	0.10		0.05	0.17		0.09	0.08		0.10	0.06	
Uniform Delay, d1	2.9	3.0		2.9	3.2		26.1	26.1		26.2	26.0	
Progression Factor	1.00	1.00		1.13	1.13		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.1	0.1		0.5	0.3		0.5	0.2	
Delay (s)	3.1	3.1		3.4	3.8		26.6	26.4		26.7	26.2	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.1			3.8			26.4			26.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	30	460	55	40	440	80	50	205	40	65	250	65
v/c Ratio	0.05	0.18	0.05	0.06	0.17	0.07	0.31	0.38	0.15	0.21	0.31	0.16
Control Delay	11.0	9.6	3.2	11.0	9.6	2.7	62.7	61.9	9.8	43.8	50.4	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	9.6	3.2	11.0	9.6	2.7	62.7	61.9	9.8	43.8	50.4	8.6
Queue Length 50th (m)	2.3	20.5	0.0	3.1	19.5	0.0	13.8	30.0	0.0	15.2	32.9	0.0
Queue Length 95th (m)	9.1	44.8	6.2	11.2	42.9	7.3	22.0	34.3	6.9	21.2	35.0	9.3
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	651	2575	1129	637	2575	1135	444	1445	657	314	1807	803
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.18	0.05	0.06	0.17	0.07	0.11	0.14	0.06	0.21	0.14	0.08

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	460	55	40	440	80	50	205	40	65	250	65
Future Volume (vph)	30	460	55	40	440	80	50	205	40	65	250	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1776	3614	1563	1776	3614	1562	1781	3614	1571	1782	3614	1542
Flt Permitted	0.49	1.00	1.00	0.48	1.00	1.00	0.60	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	913	3614	1563	893	3614	1562	1119	3614	1571	944	3614	1542
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	30	460	55	40	440	80	50	205	40	65	250	65
RTOR Reduction (vph)	0	0	16	0	0	23	0	0	34	0	0	50
Lane Group Flow (vph)	30	460	39	40	440	57	50	205	6	65	250	15
Confl. Peds. (#/hr)	8		8	8		8	3		4	4		3
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	1%	0%	0%	1%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	111.4	111.4	111.4	111.4	111.4	111.4	21.3	21.3	21.3	34.1	34.1	34.1
Effective Green, g (s)	113.4	113.4	113.4	113.4	113.4	113.4	23.3	23.8	23.8	36.1	36.6	36.6
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.71	0.71	0.15	0.15	0.15	0.23	0.23	0.23
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.5	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	647	2561	1107	632	2561	1107	162	537	233	274	826	352
v/s Ratio Prot		c0.13			0.12			c0.06		0.02	c0.07	
v/s Ratio Perm	0.03		0.02	0.04		0.04	0.04		0.00	0.04		0.01
v/c Ratio	0.05	0.18	0.04	0.06	0.17	0.05	0.31	0.38	0.03	0.24	0.30	0.04
Uniform Delay, d1	7.0	7.8	7.0	7.1	7.7	7.0	61.1	61.5	58.2	49.9	51.1	48.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.1	0.2	0.1	0.1	2.3	0.9	0.1	0.9	0.4	0.1
Delay (s)	7.2	7.9	7.0	7.3	7.9	7.1	63.4	62.4	58.3	50.8	51.6	48.2
Level of Service	A	A	A	A	A	A	E	E	E	D	D	D
Approach Delay (s)		7.8			7.7			62.0			50.8	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

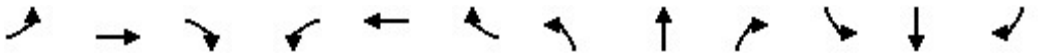
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	10	0	315	370	5
Future Volume (Veh/h)	15	10	0	315	370	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	10	0	315	370	5
Pedestrians	2					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.97	0.99	0.99			
vC, conflicting volume	532	190	377			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	426	168	357			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	545	845	1202			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	25	105	210	247	128
Volume Left	15	0	0	0	0
Volume Right	10	0	0	0	5
cSH	635	1202	1700	1700	1700
Volume to Capacity	0.04	0.00	0.12	0.15	0.08
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0
Control Delay (s)	10.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

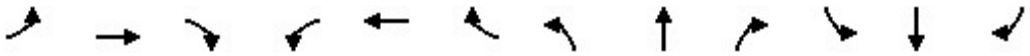
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	20	175	10	165	65	245	20	65	300	25
v/c Ratio	0.12	0.32	0.06	0.30	0.08	0.09	0.02	0.07	0.11	0.02
Control Delay	48.8	33.1	44.4	30.9	6.4	5.3	1.6	6.4	5.4	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	33.1	44.4	30.9	6.4	5.3	1.6	6.4	5.4	2.2
Queue Length 50th (m)	4.8	14.2	2.3	12.6	2.5	5.0	0.0	2.5	6.2	0.0
Queue Length 95th (m)	9.6	21.4	5.6	16.8	13.4	19.6	1.6	13.3	23.7	2.5
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	400	1228	390	1214	834	2830	1222	872	2830	1237
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.14	0.03	0.14	0.08	0.09	0.02	0.07	0.11	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	110	65	10	100	65	65	245	20	65	300	25
Future Volume (vph)	20	110	65	10	100	65	65	245	20	65	300	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1768	3389		1779	3348		1779	3614	1552	1764	3614	1571
Flt Permitted	0.61	1.00		0.60	1.00		0.57	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	1142	3389		1115	3348		1065	3614	1552	1114	3614	1571
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	20	110	65	10	100	65	65	245	20	65	300	25
RTOR Reduction (vph)	0	56	0	0	56	0	0	0	4	0	0	5
Lane Group Flow (vph)	20	119	0	10	109	0	65	245	16	65	300	20
Confl. Peds. (#/hr)	13		5	5		13	4		14	14		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	1%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	2	0	0	2	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	17.9	17.9		17.9	17.9		107.6	107.6	107.6	107.6	107.6	107.6
Effective Green, g (s)	20.4	20.4		20.4	20.4		109.6	109.6	109.6	109.6	109.6	109.6
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	7.5	7.5		7.5	7.5		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	166	493		162	487		833	2829	1214	872	2829	1229
v/s Ratio Prot		c0.04			0.03			0.07			c0.08	
v/s Ratio Perm	0.02			0.01			0.06		0.01	0.06		0.01
v/c Ratio	0.12	0.24		0.06	0.22		0.08	0.09	0.01	0.07	0.11	0.02
Uniform Delay, d1	52.0	53.0		51.5	52.8		3.5	3.5	3.3	3.5	3.6	3.3
Progression Factor	1.04	1.03		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.5		0.3	0.5		0.2	0.1	0.0	0.2	0.1	0.0
Delay (s)	54.5	54.9		51.9	53.3		3.7	3.6	3.4	3.7	3.7	3.4
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		54.9			53.2			3.6			3.7	
Approach LOS		D			D			A			A	

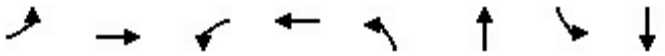
Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	155	0	0	140	50	5	0	5	35	0	75
Future Volume (Veh/h)	85	155	0	0	140	50	5	0	5	35	0	75
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	85	155	0	0	140	50	5	0	5	35	0	75
Pedestrians		2						1			7	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked												
vC, conflicting volume	197			156			473	523	78	424	498	104
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	197			156			473	523	78	424	498	104
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 %	94			100			99	100	99	93	100	92
cM capacity (veh/h)	1379			1435			416	430	972	486	444	930

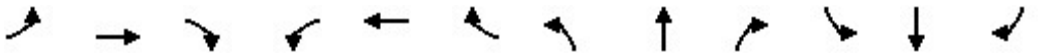
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	162	78	70	120	10	110
Volume Left	85	0	0	0	5	35
Volume Right	0	0	0	50	5	75
cSH	1379	1700	1435	1700	583	720
Volume to Capacity	0.06	0.05	0.00	0.07	0.02	0.15
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.4	3.8
Control Delay (s)	4.3	0.0	0.0	0.0	11.3	10.9
Lane LOS	A				B	B
Approach Delay (s)	2.9		0.0		11.3	10.9
Approach LOS					B	B

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	32.0%	ICU Level of Service	A	
Analysis Period (min)	15			



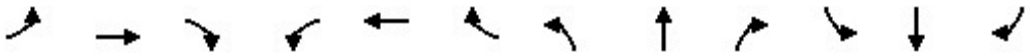
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	200	20	200	15	30	20	20
v/c Ratio	0.02	0.07	0.02	0.07	0.06	0.09	0.08	0.06
Control Delay	7.1	5.1	7.5	5.3	19.7	9.5	20.3	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	5.1	7.5	5.3	19.7	9.5	20.3	13.8
Queue Length 50th (m)	0.4	2.8	1.4	7.1	1.6	0.5	2.2	1.1
Queue Length 95th (m)	3.6	11.6	4.7	13.4	4.0	4.5	4.9	4.1
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	910	2789	905	2759	570	701	572	703
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.07	0.02	0.07	0.03	0.04	0.03	0.03

Intersection Summary



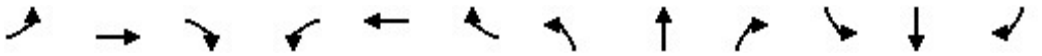
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	195	5	20	180	20	15	5	25	20	10	10
Future Volume (vph)	15	195	5	20	180	20	15	5	25	20	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.88		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1776	3584		1766	3540		1758	1658		1780	1685	
Flt Permitted	0.63	1.00		0.63	1.00		0.74	1.00		0.74	1.00	
Satd. Flow (perm)	1171	3584		1164	3540		1377	1658		1382	1685	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	15	195	5	20	180	20	15	5	25	20	10	10
RTOR Reduction (vph)	0	1	0	0	6	0	0	21	0	0	9	0
Lane Group Flow (vph)	15	199	0	20	194	0	15	9	0	20	11	0
Confl. Peds. (#/hr)	5		11	11		5	20		4	4		20
Confl. Bikes (#/hr)			2						1			
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	8%
Bus Blockages (#/hr)	0	2	0	0	2	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	49.1	49.1		49.1	49.1		8.9	8.9		8.9	8.9	
Effective Green, g (s)	50.1	50.1		50.1	50.1		9.9	9.9		9.9	9.9	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.14	0.14		0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	838	2565		833	2533		194	234		195	238	
v/s Ratio Prot		c0.06			0.05			0.01			0.01	
v/s Ratio Perm	0.01			0.02			0.01			c0.01		
v/c Ratio	0.02	0.08		0.02	0.08		0.08	0.04		0.10	0.05	
Uniform Delay, d1	2.9	3.0		2.9	3.0		26.1	25.9		26.2	26.0	
Progression Factor	1.00	1.00		1.19	1.23		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.1	0.1		0.4	0.1		0.5	0.2	
Delay (s)	2.9	3.1		3.5	3.8		26.4	26.1		26.7	26.2	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.0			3.7			26.2			26.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	125	755	100	80	490	120	60	535	95	115	435	60
v/c Ratio	0.18	0.35	0.10	0.33	0.39	0.19	0.22	0.67	0.24	0.45	0.48	0.14
Control Delay	12.6	16.0	2.8	41.2	38.3	5.9	35.9	60.5	9.2	41.4	51.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	16.0	2.8	41.2	38.3	5.9	35.9	60.5	9.2	41.4	51.5	7.3
Queue Length 50th (m)	13.3	54.1	0.0	16.8	55.5	0.0	12.0	76.2	0.0	23.7	58.1	0.0
Queue Length 95th (m)	25.2	76.8	7.8	31.4	70.2	12.6	20.1	87.4	13.0	34.6	68.2	8.4
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	699	2156	966	241	1269	631	280	1284	573	258	1334	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.35	0.10	0.33	0.39	0.19	0.21	0.42	0.17	0.45	0.33	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	755	100	80	490	120	60	535	95	115	435	60
Future Volume (vph)	125	755	100	80	490	120	60	535	95	115	435	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	1.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1741	3476	1497	1708	3444	1508	1664	3544	1415	1764	3444	1485
Flt Permitted	0.37	1.00	1.00	0.37	1.00	1.00	0.40	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	681	3476	1497	657	3444	1508	709	3544	1415	411	3444	1485
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	125	755	100	80	490	120	60	535	95	115	435	60
RTOR Reduction (vph)	0	0	38	0	0	76	0	0	73	0	0	44
Lane Group Flow (vph)	125	755	62	80	490	44	60	535	22	115	435	16
Confl. Peds. (#/hr)	29		11	11		29	11		28	28		11
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	5%	4%	4%	6%	1%	7%	3%	5%	1%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	7	0	0	7
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2			6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	96.7	96.7	96.7	57.0	57.0	57.0	40.4	34.0	34.0	48.8	39.4	39.4
Effective Green, g (s)	98.7	98.7	98.7	59.0	59.0	59.0	44.4	36.5	36.5	50.8	41.9	41.9
Actuated g/C Ratio	0.62	0.62	0.62	0.37	0.37	0.37	0.28	0.23	0.23	0.32	0.26	0.26
Clearance Time (s)	3.0	7.0	7.0	7.0	7.0	7.0	3.0	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	676	2144	923	242	1269	556	246	808	322	247	901	388
v/s Ratio Prot	0.04	c0.22			c0.14		0.01	c0.15		c0.04	0.13	
v/s Ratio Perm	0.07		0.04	0.12		0.03	0.05		0.02	0.11		0.01
v/c Ratio	0.18	0.35	0.07	0.33	0.39	0.08	0.24	0.66	0.07	0.47	0.48	0.04
Uniform Delay, d1	13.3	15.0	12.2	36.3	37.2	32.8	43.5	56.1	48.4	41.2	49.9	44.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5	0.1	3.6	0.9	0.3	0.5	2.7	0.2	2.9	0.9	0.1
Delay (s)	13.9	15.5	12.4	39.9	38.1	33.1	44.0	58.9	48.6	44.0	50.7	44.1
Level of Service	B	B	B	D	D	C	D	E	D	D	D	D
Approach Delay (s)		14.9			37.4			56.1			48.8	
Approach LOS		B			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

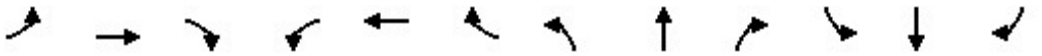
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	0	5	775	610	5
Future Volume (Veh/h)	5	0	5	775	610	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	0	5	775	610	5
Pedestrians	7				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.89	0.97	0.97			
vC, conflicting volume	1018	314	622			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	591	222	540			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	99			
cM capacity (veh/h)	387	757	998			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	5	263	517	407	208
Volume Left	5	5	0	0	0
Volume Right	0	0	0	0	5
cSH	387	998	1700	1700	1700
Volume to Capacity	0.01	0.01	0.30	0.24	0.12
Queue Length 95th (m)	0.3	0.1	0.0	0.0	0.0
Control Delay (s)	14.4	0.2	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	14.4	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

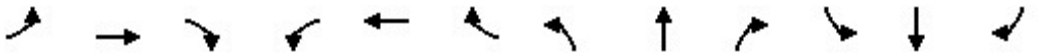
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	55	195	15	185	70	695	15	65	520	45
v/c Ratio	0.34	0.36	0.09	0.33	0.11	0.25	0.01	0.13	0.19	0.04
Control Delay	50.9	27.6	45.0	24.2	7.0	6.3	0.7	7.5	5.9	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	27.6	45.0	24.2	7.0	6.3	0.7	7.5	5.9	2.7
Queue Length 50th (m)	12.3	12.0	3.5	11.1	3.0	18.1	0.0	2.9	12.7	0.0
Queue Length 95th (m)	17.4	15.4	7.4	16.2	14.8	56.6	0.7	14.5	41.1	4.8
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	427	1272	422	1321	662	2744	1213	518	2744	1165
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.15	0.04	0.14	0.11	0.25	0.01	0.13	0.19	0.04

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	115	80	15	90	95	70	695	15	65	520	45
Future Volume (vph)	55	115	80	15	90	95	70	695	15	65	520	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	0.94		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1741	3063		1774	3161		1779	3544	1556	1691	3544	1492
Flt Permitted	0.58	1.00		0.57	1.00		0.46	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	1069	3063		1057	3161		855	3544	1556	670	3544	1492
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	55	115	80	15	90	95	70	695	15	65	520	45
RTOR Reduction (vph)	0	68	0	0	80	0	0	0	3	0	0	10
Lane Group Flow (vph)	55	127	0	15	105	0	70	695	12	65	520	35
Confl. Peds. (#/hr)	7		9	9		7	6		12	12		6
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	10%	9%	0%	7%	3%	0%	3%	0%	5%	3%	5%
Bus Blockages (#/hr)	0	6	0	0	3	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	19.1	19.1		19.1	19.1		106.4	106.4	106.4	106.4	106.4	106.4
Effective Green, g (s)	21.6	21.6		21.6	21.6		108.4	108.4	108.4	108.4	108.4	108.4
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.77	0.77	0.77	0.77	0.77	0.77
Clearance Time (s)	7.5	7.5		7.5	7.5		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	164	472		163	487		662	2744	1204	518	2744	1155
v/s Ratio Prot		0.04			0.03			c0.20			0.15	
v/s Ratio Perm	c0.05			0.01			0.08		0.01	0.10		0.02
v/c Ratio	0.34	0.27		0.09	0.21		0.11	0.25	0.01	0.13	0.19	0.03
Uniform Delay, d1	52.8	52.2		50.8	51.8		3.9	4.4	3.6	4.0	4.2	3.7
Progression Factor	0.94	0.91		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.6		0.5	0.5		0.3	0.2	0.0	0.5	0.2	0.0
Delay (s)	52.0	48.0		51.3	52.2		4.2	4.7	3.6	4.4	4.3	3.7
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		48.8			52.2			4.6			4.3	
Approach LOS		D			D			A			A	

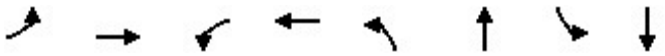
Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	240	0	0	185	20	5	0	5	5	0	25
Future Volume (Veh/h)	35	240	0	0	185	20	5	0	5	5	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	35	240	0	0	185	20	5	0	5	5	0	25
Pedestrians		3			2			8			9	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked												
vC, conflicting volume	214			248			438	532	130	401	522	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	214			248			438	532	130	401	522	114
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	7.0
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 %	97			100			99	100	99	99	100	97
cM capacity (veh/h)	1358			1320			473	438	894	514	444	901

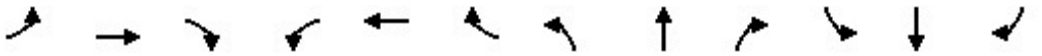
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	155	120	92	112	10	30
Volume Left	35	0	0	0	5	5
Volume Right	0	0	0	20	5	25
cSH	1358	1700	1320	1700	619	800
Volume to Capacity	0.03	0.07	0.00	0.07	0.02	0.04
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.3	0.8
Control Delay (s)	1.9	0.0	0.0	0.0	10.9	9.7
Lane LOS	A				B	A
Approach Delay (s)	1.1		0.0		10.9	9.7
Approach LOS					B	A

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	31.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	245	5	210	30	35	20	30
v/c Ratio	0.01	0.09	0.01	0.08	0.11	0.10	0.09	0.10
Control Delay	7.3	5.0	5.8	3.7	21.0	10.5	20.2	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	5.0	5.8	3.7	21.0	10.5	20.2	11.4
Queue Length 50th (m)	0.3	3.5	0.2	4.0	3.2	1.1	2.1	1.1
Queue Length 95th (m)	2.7	13.7	1.0	7.6	6.4	5.1	4.9	4.8
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	828	2652	771	2701	570	695	510	657
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.09	0.01	0.08	0.05	0.05	0.04	0.05

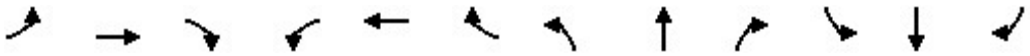
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	230	15	5	200	10	30	10	25	20	10	20
Future Volume (vph)	10	230	15	5	200	10	30	10	25	20	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1638	3420		1575	3482		1774	1643		1595	1558	
Flt Permitted	0.62	1.00		0.60	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	1070	3420		994	3482		1378	1643		1233	1558	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	230	15	5	200	10	30	10	25	20	10	20
RTOR Reduction (vph)	0	3	0	0	3	0	0	21	0	0	17	0
Lane Group Flow (vph)	10	242	0	5	207	0	30	14	0	20	13	0
Confl. Peds. (#/hr)	9		22	22		9	8		11	11		8
Heavy Vehicles (%)	8%	4%	7%	11%	3%	9%	0%	0%	4%	11%	17%	6%
Bus Blockages (#/hr)	0	6	0	0	3	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	48.8	48.8		48.8	48.8		9.2	9.2		9.2	9.2	
Effective Green, g (s)	49.8	49.8		49.8	49.8		10.2	10.2		10.2	10.2	
Actuated g/C Ratio	0.71	0.71		0.71	0.71		0.15	0.15		0.15	0.15	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	761	2433		707	2477		200	239		179	227	
v/s Ratio Prot		c0.07			0.06			0.01			0.01	
v/s Ratio Perm	0.01			0.01			c0.02			0.02		
v/c Ratio	0.01	0.10		0.01	0.08		0.15	0.06		0.11	0.06	
Uniform Delay, d1	2.9	3.1		2.9	3.1		26.1	25.8		26.0	25.8	
Progression Factor	1.00	1.00		0.81	0.81		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.0	0.1		0.7	0.2		0.6	0.2	
Delay (s)	3.0	3.2		2.4	2.6		26.8	26.0		26.5	26.0	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.2			2.6			26.4			26.2	
Approach LOS		A			A			C			C	

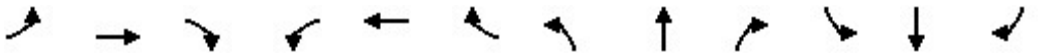
Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.11		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	70	740	95	80	930	90	105	450	65	135	685	180
v/c Ratio	0.16	0.35	0.10	0.28	0.63	0.14	0.49	0.48	0.15	0.42	0.70	0.34
Control Delay	14.6	18.3	3.2	34.6	39.7	8.0	39.9	51.2	8.5	37.0	56.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	18.3	3.2	34.6	39.7	8.0	39.9	51.2	8.5	37.0	56.0	9.3
Queue Length 50th (m)	7.9	56.8	0.0	15.5	113.2	2.1	20.5	59.2	0.0	26.8	95.7	3.9
Queue Length 95th (m)	16.4	78.5	8.1	28.7	133.9	12.6	30.8	69.7	9.8	38.2	107.4	20.4
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	429	2111	958	286	1476	656	216	1163	513	322	1207	622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.35	0.10	0.28	0.63	0.14	0.49	0.39	0.13	0.42	0.57	0.29

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	740	95	80	930	90	105	450	65	135	685	180
Future Volume (vph)	70	740	95	80	930	90	105	450	65	135	685	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	1.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1731	3579	1559	1778	3579	1480	1767	3579	1440	1777	3579	1526
Flt Permitted	0.16	1.00	1.00	0.37	1.00	1.00	0.18	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	300	3579	1559	694	3579	1480	335	3579	1440	616	3579	1526
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	740	95	80	930	90	105	450	65	135	685	180
RTOR Reduction (vph)	0	0	39	0	0	46	0	0	48	0	0	118
Lane Group Flow (vph)	70	740	56	80	930	44	105	450	17	135	685	62
Confl. Peds. (#/hr)	36		9	9		36	4		29	29		4
Confl. Bikes (#/hr)			3			1			1			1
Heavy Vehicles (%)	3%	2%	0%	0%	2%	2%	1%	2%	3%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	7	0	0	7
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2			6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	92.4	92.4	92.4	64.0	64.0	64.0	48.1	39.1	39.1	52.1	41.1	41.1
Effective Green, g (s)	94.4	94.4	94.4	66.0	66.0	66.0	52.1	41.6	41.6	55.1	43.6	43.6
Actuated g/C Ratio	0.59	0.59	0.59	0.41	0.41	0.41	0.33	0.26	0.26	0.34	0.27	0.27
Clearance Time (s)	3.0	7.0	7.0	7.0	7.0	7.0	3.0	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	422	2111	919	286	1476	610	207	930	374	306	975	415
v/s Ratio Prot	0.03	c0.21			c0.26		c0.03	0.13		c0.04	c0.19	
v/s Ratio Perm	0.07		0.04	0.12		0.03	0.13		0.01	0.12		0.04
v/c Ratio	0.17	0.35	0.06	0.28	0.63	0.07	0.51	0.48	0.05	0.44	0.70	0.15
Uniform Delay, d1	17.5	17.0	13.9	31.2	37.3	28.5	40.5	50.1	44.3	37.9	52.4	44.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.5	0.1	2.4	2.1	0.2	4.0	0.8	0.1	2.1	2.9	0.4
Delay (s)	18.3	17.4	14.1	33.6	39.4	28.7	44.5	50.9	44.4	40.0	55.3	44.5
Level of Service	B	B	B	C	D	C	D	D	D	D	E	D
Approach Delay (s)		17.1			38.1			49.2			51.3	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

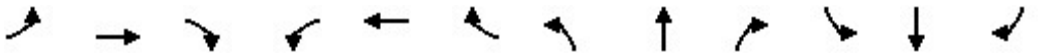
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	0	610	995	5
Future Volume (Veh/h)	5	5	0	610	995	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	5	0	610	995	5
Pedestrians	11					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.93	0.88	0.88			
vC, conflicting volume	1314	511	1011			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	711	177	744			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	343	735	762			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	10	203	407	663	337
Volume Left	5	0	0	0	0
Volume Right	5	0	0	0	5
cSH	468	762	1700	1700	1700
Volume to Capacity	0.02	0.00	0.24	0.39	0.20
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0
Control Delay (s)	12.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

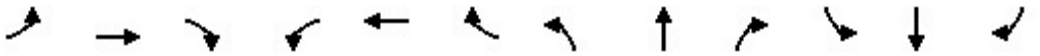
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	25	200	20	335	105	490	20	110	925	100
v/c Ratio	0.18	0.30	0.10	0.50	0.26	0.31	0.03	0.13	0.39	0.10
Control Delay	50.1	39.3	42.8	47.4	11.4	25.9	0.1	6.0	13.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	39.3	42.8	47.4	11.4	25.9	0.1	6.0	13.2	6.2
Queue Length 50th (m)	5.6	19.1	4.4	38.4	6.6	41.8	0.0	5.1	46.7	3.1
Queue Length 95th (m)	13.0	27.8	9.0	41.3	17.5	54.1	0.0	18.2	100.9	14.7
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	274	1285	402	1280	428	1569	711	867	2393	1044
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.16	0.05	0.26	0.25	0.31	0.03	0.13	0.39	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	145	55	20	260	75	105	490	20	110	925	100
Future Volume (vph)	25	145	55	20	260	75	105	490	20	110	925	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	3383		1780	3399		1782	3544	1533	1759	3614	1548
Flt Permitted	0.40	1.00		0.58	1.00		0.31	1.00	1.00	0.41	1.00	1.00
Satd. Flow (perm)	740	3383		1082	3399		579	3544	1533	750	3614	1548
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	25	145	55	20	260	75	105	490	20	110	925	100
RTOR Reduction (vph)	0	36	0	0	24	0	0	0	11	0	0	20
Lane Group Flow (vph)	25	164	0	20	311	0	105	490	9	110	925	80
Confl. Peds. (#/hr)	19		4	4		19	16		24	24		16
Confl. Bikes (#/hr)						2			1			2
Heavy Vehicles (%)	0%	3%	0%	0%	2%	3%	0%	3%	0%	1%	1%	0%
Bus Blockages (#/hr)	0	4	0	0	4	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	24.0	24.0		24.0	24.0		67.8	60.0	60.0	101.5	90.7	90.7
Effective Green, g (s)	26.5	26.5		26.5	26.5		71.8	62.0	62.0	103.5	92.7	92.7
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.51	0.44	0.44	0.74	0.66	0.66
Clearance Time (s)	7.5	7.5		7.5	7.5		3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	140	640		204	643		381	1569	678	846	2392	1024
v/s Ratio Prot		0.05			c0.09		c0.02	0.14		0.04	c0.26	
v/s Ratio Perm	0.03			0.02			0.12		0.01	0.06		0.05
v/c Ratio	0.18	0.26		0.10	0.48		0.28	0.31	0.01	0.13	0.39	0.08
Uniform Delay, d1	47.6	48.3		46.9	50.6		17.7	25.2	21.9	5.4	10.7	8.4
Progression Factor	1.10	1.07		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4		0.4	1.2		0.4	0.5	0.0	0.3	0.5	0.1
Delay (s)	53.5	52.4		47.3	51.8		18.0	25.7	21.9	5.7	11.2	8.6
Level of Service	D	D		D	D		B	C	C	A	B	A
Approach Delay (s)		52.5			51.6			24.3			10.5	
Approach LOS		D			D			C			B	

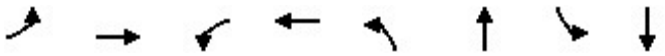
Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	185	5	5	360	100	0	0	0	40	5	120
Future Volume (Veh/h)	90	185	5	5	360	100	0	0	0	40	5	120
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	90	185	5	5	360	100	0	0	0	40	5	120
Pedestrians		2						10			14	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	474			200			692	862	105	706	814	246
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	288			200			522	704	105	538	653	43
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 %	92			100			100	100	100	89	98	87
cM capacity (veh/h)	1176			1372			325	306	928	367	327	938

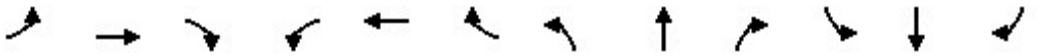
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	182	98	185	280	0	165
Volume Left	90	0	5	0	0	40
Volume Right	0	5	0	100	0	120
cSH	1176	1700	1372	1700	1700	654
Volume to Capacity	0.08	0.06	0.00	0.16	0.02	0.25
Queue Length 95th (m)	1.7	0.0	0.1	0.0	0.0	7.0
Control Delay (s)	4.4	0.0	0.2	0.0	0.0	12.4
Lane LOS	A		A		A	B
Approach Delay (s)	2.9		0.1		0.0	12.4
Approach LOS					A	B

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	43.3%	ICU Level of Service		A
Analysis Period (min)	15			



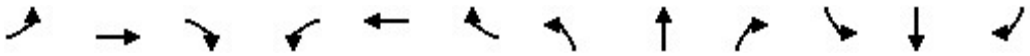
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	255	40	440	15	40	20	35
v/c Ratio	0.05	0.09	0.05	0.16	0.07	0.12	0.08	0.10
Control Delay	6.8	4.9	6.9	5.5	19.9	11.6	20.3	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	4.9	6.9	5.5	19.9	11.6	20.3	10.6
Queue Length 50th (m)	1.0	3.5	0.7	5.5	1.6	1.6	2.2	1.1
Queue Length 95th (m)	6.6	14.0	9.9	36.2	4.0	5.8	4.9	5.1
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	721	2706	859	2769	481	702	544	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.05	0.16	0.03	0.06	0.04	0.05

Intersection Summary



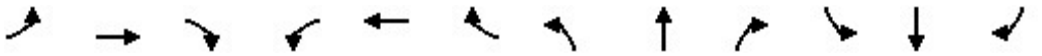
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	235	20	40	420	20	15	15	25	20	10	25
Future Volume (vph)	35	235	20	40	420	20	15	15	25	20	10	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1771	3472		1765	3557		1559	1718		1769	1682	
Flt Permitted	0.50	1.00		0.59	1.00		0.73	1.00		0.73	1.00	
Satd. Flow (perm)	926	3472		1104	3557		1205	1718		1361	1682	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	235	20	40	420	20	15	15	25	20	10	25
RTOR Reduction (vph)	0	5	0	0	3	0	0	21	0	0	21	0
Lane Group Flow (vph)	35	250	0	40	437	0	15	19	0	20	14	0
Confl. Peds. (#/hr)	11		12	12		11	18		12	12		18
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	13%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	4	0	0	4	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	49.1	49.1		49.1	49.1		8.9	8.9		8.9	8.9	
Effective Green, g (s)	50.1	50.1		50.1	50.1		9.9	9.9		9.9	9.9	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.14	0.14		0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	662	2484		790	2545		170	242		192	237	
v/s Ratio Prot		0.07			c0.12			0.01			0.01	
v/s Ratio Perm	0.04			0.04			0.01			c0.01		
v/c Ratio	0.05	0.10		0.05	0.17		0.09	0.08		0.10	0.06	
Uniform Delay, d1	2.9	3.0		2.9	3.2		26.1	26.1		26.2	26.0	
Progression Factor	1.00	1.00		1.15	1.20		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.1	0.1		0.5	0.3		0.5	0.2	
Delay (s)	3.1	3.1		3.5	4.0		26.6	26.4		26.7	26.2	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.1			4.0			26.4			26.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	30	520	55	40	495	80	50	230	40	65	310	65
v/c Ratio	0.05	0.20	0.05	0.07	0.19	0.07	0.31	0.41	0.14	0.21	0.37	0.16
Control Delay	11.5	10.2	3.3	11.5	10.1	2.8	62.4	61.7	9.7	42.9	50.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	10.2	3.3	11.5	10.1	2.8	62.4	61.7	9.7	42.9	50.8	8.4
Queue Length 50th (m)	2.4	24.3	0.0	3.2	23.0	0.0	13.7	33.6	0.0	15.1	41.2	0.0
Queue Length 95th (m)	9.2	51.6	6.3	11.4	49.0	7.4	22.1	38.0	6.9	20.9	42.4	9.2
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	603	2544	1116	586	2544	1122	366	1264	581	318	1648	738
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.20	0.05	0.07	0.19	0.07	0.14	0.18	0.07	0.20	0.19	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	520	55	40	495	80	50	230	40	65	310	65
Future Volume (vph)	30	520	55	40	495	80	50	230	40	65	310	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1777	3614	1563	1777	3614	1562	1781	3614	1571	1783	3614	1542
Flt Permitted	0.46	1.00	1.00	0.44	1.00	1.00	0.56	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	856	3614	1563	832	3614	1562	1056	3614	1571	884	3614	1542
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	30	520	55	40	495	80	50	230	40	65	310	65
RTOR Reduction (vph)	0	0	17	0	0	24	0	0	34	0	0	50
Lane Group Flow (vph)	30	520	39	40	495	56	50	230	6	65	310	15
Confl. Peds. (#/hr)	8		8	8		8	3		4	4		3
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	1%	0%	0%	1%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	110.0	110.0	110.0	110.0	110.0	110.0	22.4	22.4	22.4	35.5	35.5	35.5
Effective Green, g (s)	112.0	112.0	112.0	112.0	112.0	112.0	24.4	24.9	24.9	37.5	38.0	38.0
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.15	0.16	0.16	0.23	0.24	0.24
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.5	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	599	2529	1094	582	2529	1093	161	562	244	275	858	366
v/s Ratio Prot		c0.14			0.14			c0.06		0.02	c0.09	
v/s Ratio Perm	0.04		0.02	0.05		0.04	0.05		0.00	0.04		0.01
v/c Ratio	0.05	0.21	0.04	0.07	0.20	0.05	0.31	0.41	0.03	0.24	0.36	0.04
Uniform Delay, d1	7.5	8.4	7.4	7.6	8.3	7.5	60.3	60.9	57.3	48.8	50.9	47.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.1	0.2	0.2	0.1	2.3	1.0	0.1	0.9	0.5	0.1
Delay (s)	7.6	8.6	7.4	7.8	8.5	7.6	62.6	61.9	57.4	49.7	51.4	47.1
Level of Service	A	A	A	A	A	A	E	E	E	D	D	D
Approach Delay (s)		8.4			8.3			61.5			50.5	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

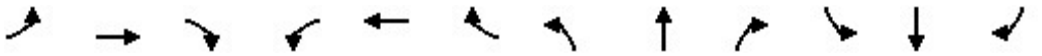
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	10	0	340	430	5
Future Volume (Veh/h)	15	10	0	340	430	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	10	0	340	430	5
Pedestrians	2					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.97	0.99	0.99			
vC, conflicting volume	604	220	437			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	455	179	399			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	520	826	1151			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	25	113	227	287	148
Volume Left	15	0	0	0	0
Volume Right	10	0	0	0	5
cSH	610	1151	1700	1700	1700
Volume to Capacity	0.04	0.00	0.13	0.17	0.09
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0
Control Delay (s)	11.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.1	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

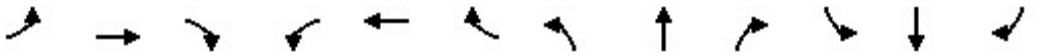
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	20	175	10	165	65	270	20	65	360	25
v/c Ratio	0.12	0.32	0.06	0.30	0.08	0.10	0.02	0.08	0.13	0.02
Control Delay	46.6	31.5	44.4	30.9	6.5	5.3	1.6	6.4	5.4	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	31.5	44.4	30.9	6.5	5.3	1.6	6.4	5.4	2.2
Queue Length 50th (m)	4.8	14.2	2.3	12.6	2.5	5.5	0.0	2.5	7.5	0.0
Queue Length 95th (m)	7.4	14.4	5.6	16.8	13.5	21.4	1.6	13.4	28.2	2.5
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	457	1394	446	1378	787	2830	1222	851	2830	1237
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.13	0.02	0.12	0.08	0.10	0.02	0.08	0.13	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	110	65	10	100	65	65	270	20	65	360	25
Future Volume (vph)	20	110	65	10	100	65	65	270	20	65	360	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1768	3389		1779	3348		1780	3614	1552	1765	3614	1571
Flt Permitted	0.61	1.00		0.60	1.00		0.54	1.00	1.00	0.59	1.00	1.00
Satd. Flow (perm)	1142	3389		1115	3348		1006	3614	1552	1088	3614	1571
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	20	110	65	10	100	65	65	270	20	65	360	25
RTOR Reduction (vph)	0	56	0	0	56	0	0	0	4	0	0	5
Lane Group Flow (vph)	20	119	0	10	109	0	65	270	16	65	360	20
Confl. Peds. (#/hr)	13		5	5		13	4		14	14		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	1%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	2	0	0	2	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	17.9	17.9		17.9	17.9		107.6	107.6	107.6	107.6	107.6	107.6
Effective Green, g (s)	20.4	20.4		20.4	20.4		109.6	109.6	109.6	109.6	109.6	109.6
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	7.5	7.5		7.5	7.5		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	166	493		162	487		787	2829	1214	851	2829	1229
v/s Ratio Prot		c0.04			0.03			0.07			c0.10	
v/s Ratio Perm	0.02			0.01			0.06		0.01	0.06		0.01
v/c Ratio	0.12	0.24		0.06	0.22		0.08	0.10	0.01	0.08	0.13	0.02
Uniform Delay, d1	52.0	53.0		51.5	52.8		3.5	3.6	3.3	3.5	3.7	3.3
Progression Factor	0.99	0.97		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.5		0.3	0.5		0.2	0.1	0.0	0.2	0.1	0.0
Delay (s)	52.1	52.1		51.9	53.3		3.7	3.6	3.4	3.7	3.8	3.4
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		52.1			53.2			3.6			3.7	
Approach LOS		D			D			A			A	

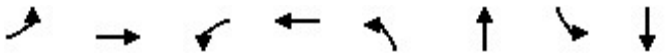
Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	155	0	0	140	50	5	0	5	35	0	75
Future Volume (Veh/h)	85	155	0	0	140	50	5	0	5	35	0	75
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	85	155	0	0	140	50	5	0	5	35	0	75
Pedestrians		2						1			7	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked												
vC, conflicting volume	197			156			473	523	78	424	498	104
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	197			156			473	523	78	424	498	104
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 %	94			100			99	100	99	93	100	92
cM capacity (veh/h)	1379			1435			416	430	972	486	444	930

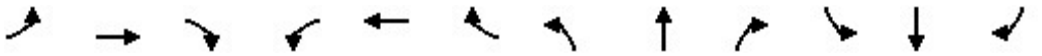
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	162	78	70	120	10	110
Volume Left	85	0	0	0	5	35
Volume Right	0	0	0	50	5	75
cSH	1379	1700	1435	1700	583	720
Volume to Capacity	0.06	0.05	0.00	0.07	0.02	0.15
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.4	3.8
Control Delay (s)	4.3	0.0	0.0	0.0	11.3	10.9
Lane LOS	A				B	B
Approach Delay (s)	2.9		0.0		11.3	10.9
Approach LOS					B	B

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	32.0%	ICU Level of Service		A
Analysis Period (min)	15			



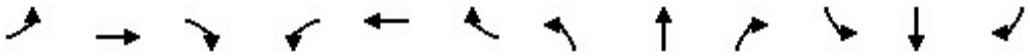
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	200	20	200	15	30	20	20
v/c Ratio	0.02	0.07	0.02	0.07	0.06	0.09	0.08	0.06
Control Delay	7.1	5.1	8.9	6.4	19.7	9.5	20.3	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	5.1	8.9	6.4	19.7	9.5	20.3	13.8
Queue Length 50th (m)	0.4	2.8	1.4	7.3	1.6	0.5	2.2	1.1
Queue Length 95th (m)	3.6	11.6	4.8	13.7	4.0	4.5	4.9	4.1
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	910	2789	905	2759	550	678	552	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.07	0.02	0.07	0.03	0.04	0.04	0.03

Intersection Summary



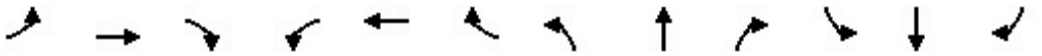
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	195	5	20	180	20	15	5	25	20	10	10
Future Volume (vph)	15	195	5	20	180	20	15	5	25	20	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.88		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1776	3584		1766	3540		1758	1658		1780	1685	
Flt Permitted	0.63	1.00		0.63	1.00		0.74	1.00		0.74	1.00	
Satd. Flow (perm)	1171	3584		1164	3540		1377	1658		1382	1685	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	15	195	5	20	180	20	15	5	25	20	10	10
RTOR Reduction (vph)	0	1	0	0	6	0	0	21	0	0	9	0
Lane Group Flow (vph)	15	199	0	20	194	0	15	9	0	20	11	0
Confl. Peds. (#/hr)	5		11	11		5	20		4	4		20
Confl. Bikes (#/hr)			2						1			
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	8%
Bus Blockages (#/hr)	0	2	0	0	2	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	49.1	49.1		49.1	49.1		8.9	8.9		8.9	8.9	
Effective Green, g (s)	50.1	50.1		50.1	50.1		9.9	9.9		9.9	9.9	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.14	0.14		0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	838	2565		833	2533		194	234		195	238	
v/s Ratio Prot		c0.06			0.05			0.01			0.01	
v/s Ratio Perm	0.01			0.02			0.01			c0.01		
v/c Ratio	0.02	0.08		0.02	0.08		0.08	0.04		0.10	0.05	
Uniform Delay, d1	2.9	3.0		2.9	3.0		26.1	25.9		26.2	26.0	
Progression Factor	1.00	1.00		1.42	1.51		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.1	0.1		0.4	0.1		0.5	0.2	
Delay (s)	2.9	3.1		4.1	4.6		26.4	26.1		26.7	26.2	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.0			4.5			26.2			26.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	125	755	100	80	490	125	60	540	95	120	440	65
v/c Ratio	0.18	0.35	0.10	0.33	0.39	0.20	0.22	0.67	0.24	0.47	0.48	0.15
Control Delay	12.7	16.2	2.9	41.2	38.3	5.8	35.7	60.3	9.1	41.7	51.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	16.2	2.9	41.2	38.3	5.8	35.7	60.3	9.1	41.7	51.3	8.5
Queue Length 50th (m)	13.4	54.2	0.0	16.8	55.5	0.0	12.0	76.8	0.0	24.8	58.8	0.0
Queue Length 95th (m)	25.2	76.8	7.8	31.4	70.2	12.8	20.1	88.2	13.0	36.0	69.1	9.9
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	695	2148	963	241	1269	634	280	1284	573	258	1334	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.35	0.10	0.33	0.39	0.20	0.21	0.42	0.17	0.47	0.33	0.11

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	755	100	80	490	125	60	540	95	120	440	65
Future Volume (vph)	125	755	100	80	490	125	60	540	95	120	440	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	1.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1741	3476	1497	1708	3444	1508	1664	3544	1415	1764	3444	1485
Flt Permitted	0.37	1.00	1.00	0.37	1.00	1.00	0.40	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	681	3476	1497	657	3444	1508	703	3544	1415	410	3444	1485
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	125	755	100	80	490	125	60	540	95	120	440	65
RTOR Reduction (vph)	0	0	39	0	0	79	0	0	73	0	0	48
Lane Group Flow (vph)	125	755	61	80	490	46	60	540	22	120	440	17
Confl. Peds. (#/hr)	29		11	11		29	11		28	28		11
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	5%	4%	4%	6%	1%	7%	3%	5%	1%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	7	0	0	7
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2			6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	96.3	96.3	96.3	57.0	57.0	57.0	40.8	34.4	34.4	49.2	39.8	39.8
Effective Green, g (s)	98.3	98.3	98.3	59.0	59.0	59.0	44.8	36.9	36.9	51.2	42.3	42.3
Actuated g/C Ratio	0.61	0.61	0.61	0.37	0.37	0.37	0.28	0.23	0.23	0.32	0.26	0.26
Clearance Time (s)	3.0	7.0	7.0	7.0	7.0	7.0	3.0	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	672	2135	919	242	1269	556	247	817	326	247	910	392
v/s Ratio Prot	0.04	c0.22			c0.14		0.01	c0.15		c0.04	0.13	
v/s Ratio Perm	0.07		0.04	0.12		0.03	0.06		0.02	0.11		0.01
v/c Ratio	0.19	0.35	0.07	0.33	0.39	0.08	0.24	0.66	0.07	0.49	0.48	0.04
Uniform Delay, d1	13.4	15.2	12.4	36.3	37.2	32.9	43.2	55.9	48.1	41.0	49.6	43.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5	0.1	3.6	0.9	0.3	0.5	2.7	0.2	3.1	0.8	0.1
Delay (s)	14.0	15.7	12.5	39.9	38.1	33.2	43.7	58.5	48.3	44.1	50.5	43.9
Level of Service	B	B	B	D	D	C	D	E	D	D	D	D
Approach Delay (s)		15.1			37.4			55.9			48.6	
Approach LOS		B			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

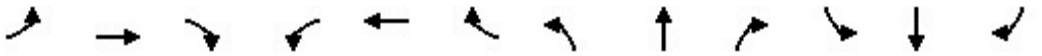
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	15	15	775	610	10
Future Volume (Veh/h)	15	15	15	775	610	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	15	15	775	610	10
Pedestrians	7				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.88	0.96	0.96			
vC, conflicting volume	1040	317	627			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	607	219	541			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	98	98			
cM capacity (veh/h)	375	759	996			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	30	273	517	407	213
Volume Left	15	15	0	0	0
Volume Right	15	0	0	0	10
cSH	501	996	1700	1700	1700
Volume to Capacity	0.06	0.02	0.30	0.24	0.13
Queue Length 95th (m)	1.3	0.3	0.0	0.0	0.0
Control Delay (s)	12.6	0.6	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	12.6	0.2		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

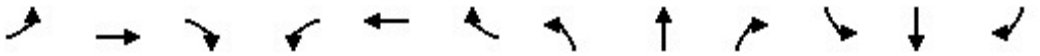
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	65	195	15	185	70	705	15	65	525	50
v/c Ratio	0.38	0.35	0.09	0.32	0.11	0.26	0.01	0.13	0.19	0.04
Control Delay	52.2	27.2	44.3	23.7	7.2	6.5	0.7	7.7	6.1	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	27.2	44.3	23.7	7.2	6.5	0.7	7.7	6.1	2.6
Queue Length 50th (m)	14.3	11.9	3.4	11.0	3.2	19.4	0.0	3.1	13.6	0.0
Queue Length 95th (m)	19.9	15.5	7.4	16.2	14.8	57.4	0.7	14.5	41.4	5.0
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	429	1272	425	1321	653	2724	1204	508	2724	1158
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.15	0.04	0.14	0.11	0.26	0.01	0.13	0.19	0.04

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	115	80	15	90	95	70	705	15	65	525	50
Future Volume (vph)	65	115	80	15	90	95	70	705	15	65	525	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	0.94		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1741	3063		1774	3161		1779	3544	1556	1691	3544	1492
Flt Permitted	0.59	1.00		0.57	1.00		0.45	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	1075	3063		1064	3161		850	3544	1556	661	3544	1492
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	65	115	80	15	90	95	70	705	15	65	525	50
RTOR Reduction (vph)	0	67	0	0	80	0	0	0	3	0	0	12
Lane Group Flow (vph)	65	128	0	15	105	0	70	705	12	65	525	38
Confl. Peds. (#/hr)	7		9	9		7	6		12	12		6
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	10%	9%	0%	7%	3%	0%	3%	0%	5%	3%	5%
Bus Blockages (#/hr)	0	6	0	0	3	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	19.9	19.9		19.9	19.9		105.6	105.6	105.6	105.6	105.6	105.6
Effective Green, g (s)	22.4	22.4		22.4	22.4		107.6	107.6	107.6	107.6	107.6	107.6
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.77	0.77	0.77	0.77	0.77	0.77
Clearance Time (s)	7.5	7.5		7.5	7.5		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	172	490		170	505		653	2723	1195	508	2723	1146
v/s Ratio Prot		0.04			0.03			c0.20			0.15	
v/s Ratio Perm	c0.06			0.01			0.08		0.01	0.10		0.03
v/c Ratio	0.38	0.26		0.09	0.21		0.11	0.26	0.01	0.13	0.19	0.03
Uniform Delay, d1	52.6	51.5		50.1	51.1		4.1	4.7	3.8	4.2	4.4	3.8
Progression Factor	0.94	0.91		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.6		0.5	0.4		0.3	0.2	0.0	0.5	0.2	0.1
Delay (s)	52.4	47.5		50.6	51.5		4.4	4.9	3.8	4.7	4.6	3.9
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		48.7			51.5			4.8			4.5	
Approach LOS		D			D			A			A	

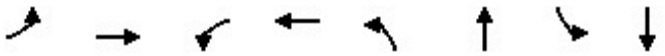
Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	240	5	5	185	20	15	0	15	5	0	25
Future Volume (Veh/h)	35	240	5	5	185	20	15	0	15	5	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	35	240	5	5	185	20	15	0	15	5	0	25
Pedestrians		3			2			8			9	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked												
vC, conflicting volume	214			253			451	544	132	421	537	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	214			253			451	544	132	421	537	114
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	7.0
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 %	97			100			97	100	98	99	100	97
cM capacity (veh/h)	1358			1315			462	429	891	491	433	901

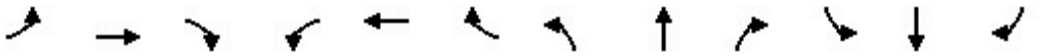
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	155	125	98	112	30	30
Volume Left	35	0	5	0	15	5
Volume Right	0	5	0	20	15	25
cSH	1358	1700	1315	1700	609	791
Volume to Capacity	0.03	0.07	0.00	0.07	0.05	0.04
Queue Length 95th (m)	0.6	0.0	0.1	0.0	1.1	0.8
Control Delay (s)	1.9	0.0	0.4	0.0	11.2	9.7
Lane LOS	A		A		B	A
Approach Delay (s)	1.1		0.2		11.2	9.7
Approach LOS					B	A

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	250	10	215	30	35	20	30
v/c Ratio	0.01	0.09	0.01	0.08	0.11	0.10	0.09	0.10
Control Delay	7.3	5.0	5.7	3.7	21.0	10.5	20.2	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	5.0	5.7	3.7	21.0	10.5	20.2	11.4
Queue Length 50th (m)	0.3	3.6	0.4	4.0	3.2	1.1	2.1	1.1
Queue Length 95th (m)	2.7	14.0	1.6	7.9	6.4	5.1	4.9	4.8
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	824	2653	767	2701	570	695	510	657
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.09	0.01	0.08	0.05	0.05	0.04	0.05

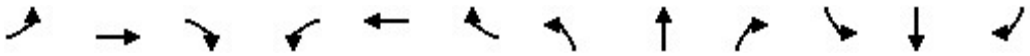
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	235	15	10	205	10	30	10	25	20	10	20
Future Volume (vph)	10	235	15	10	205	10	30	10	25	20	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1638	3421		1576	3483		1774	1643		1595	1558	
Flt Permitted	0.62	1.00		0.60	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	1064	3421		990	3483		1378	1643		1233	1558	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	235	15	10	205	10	30	10	25	20	10	20
RTOR Reduction (vph)	0	3	0	0	3	0	0	21	0	0	17	0
Lane Group Flow (vph)	10	247	0	10	212	0	30	14	0	20	13	0
Confl. Peds. (#/hr)	9		22	22		9	8		11	11		8
Heavy Vehicles (%)	8%	4%	7%	11%	3%	9%	0%	0%	4%	11%	17%	6%
Bus Blockages (#/hr)	0	6	0	0	3	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	48.8	48.8		48.8	48.8		9.2	9.2		9.2	9.2	
Effective Green, g (s)	49.8	49.8		49.8	49.8		10.2	10.2		10.2	10.2	
Actuated g/C Ratio	0.71	0.71		0.71	0.71		0.15	0.15		0.15	0.15	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	756	2433		704	2477		200	239		179	227	
v/s Ratio Prot		c0.07			0.06			0.01			0.01	
v/s Ratio Perm	0.01			0.01			c0.02			0.02		
v/c Ratio	0.01	0.10		0.01	0.09		0.15	0.06		0.11	0.06	
Uniform Delay, d1	2.9	3.1		2.9	3.1		26.1	25.8		26.0	25.8	
Progression Factor	1.00	1.00		0.83	0.82		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.0	0.1		0.7	0.2		0.6	0.2	
Delay (s)	3.0	3.2		2.5	2.6		26.8	26.0		26.5	26.0	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.2			2.6			26.4			26.2	
Approach LOS		A			A			C			C	

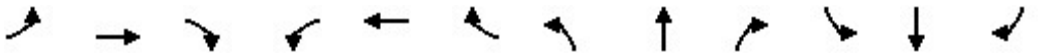
Intersection Summary			
HCM 2000 Control Delay	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.11		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	740	95	80	930	95	105	460	65	140	690	185
v/c Ratio	0.18	0.35	0.10	0.28	0.63	0.14	0.49	0.49	0.15	0.44	0.70	0.34
Control Delay	14.8	18.4	3.2	34.6	39.7	7.8	39.9	51.3	8.4	37.4	56.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	18.4	3.2	34.6	39.7	7.8	39.9	51.3	8.4	37.4	56.0	9.3
Queue Length 50th (m)	8.5	57.0	0.0	15.5	113.2	2.3	20.5	60.6	0.0	27.9	96.4	4.1
Queue Length 95th (m)	17.4	78.7	8.2	28.7	133.9	13.0	30.7	71.1	9.8	39.4	108.3	20.6
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	427	2107	957	286	1476	658	216	1163	513	319	1207	625
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.35	0.10	0.28	0.63	0.14	0.49	0.40	0.13	0.44	0.57	0.30

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	740	95	80	930	95	105	460	65	140	690	185
Future Volume (vph)	75	740	95	80	930	95	105	460	65	140	690	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	1.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1731	3579	1559	1778	3579	1480	1767	3579	1440	1778	3579	1526
Flt Permitted	0.16	1.00	1.00	0.37	1.00	1.00	0.18	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	300	3579	1559	694	3579	1480	332	3579	1440	602	3579	1526
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	75	740	95	80	930	95	105	460	65	140	690	185
RTOR Reduction (vph)	0	0	39	0	0	48	0	0	48	0	0	121
Lane Group Flow (vph)	75	740	56	80	930	47	105	460	17	140	690	64
Confl. Peds. (#/hr)	36		9	9		36	4		29	29		4
Confl. Bikes (#/hr)			3			1			1			1
Heavy Vehicles (%)	3%	2%	0%	0%	2%	2%	1%	2%	3%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	7	0	0	7
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2			6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	92.2	92.2	92.2	64.0	64.0	64.0	48.3	39.3	39.3	52.3	41.3	41.3
Effective Green, g (s)	94.2	94.2	94.2	66.0	66.0	66.0	52.3	41.8	41.8	55.3	43.8	43.8
Actuated g/C Ratio	0.59	0.59	0.59	0.41	0.41	0.41	0.33	0.26	0.26	0.35	0.27	0.27
Clearance Time (s)	3.0	7.0	7.0	7.0	7.0	7.0	3.0	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	419	2107	917	286	1476	610	207	935	376	303	979	417
v/s Ratio Prot	0.03	c0.21			c0.26		c0.03	0.13		c0.04	c0.19	
v/s Ratio Perm	0.07		0.04	0.12		0.03	0.13		0.01	0.12		0.04
v/c Ratio	0.18	0.35	0.06	0.28	0.63	0.08	0.51	0.49	0.05	0.46	0.70	0.15
Uniform Delay, d1	17.6	17.1	14.0	31.2	37.3	28.5	40.4	50.1	44.2	37.9	52.3	44.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5	0.1	2.4	2.1	0.2	4.0	0.9	0.1	2.3	2.9	0.4
Delay (s)	18.6	17.5	14.2	33.6	39.4	28.8	44.4	51.0	44.3	40.3	55.2	44.4
Level of Service	B	B	B	C	D	C	D	D	D	D	E	D
Approach Delay (s)		17.3			38.0			49.2			51.2	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

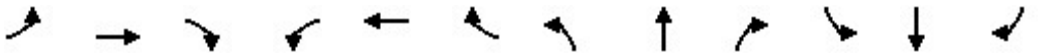
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	20	20	610	995	15
Future Volume (Veh/h)	15	20	20	610	995	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	20	20	610	995	15
Pedestrians	11					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.93	0.88	0.88			
vC, conflicting volume	1358	516	1021			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	745	177	751			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	97	97			
cM capacity (veh/h)	318	734	756			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	35	223	407	663	347
Volume Left	15	20	0	0	0
Volume Right	20	0	0	0	15
cSH	470	756	1700	1700	1700
Volume to Capacity	0.07	0.03	0.24	0.39	0.20
Queue Length 95th (m)	1.7	0.6	0.0	0.0	0.0
Control Delay (s)	13.3	1.2	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	13.3	0.4		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

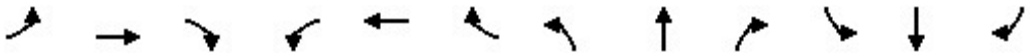
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	200	20	335	105	500	20	110	935	110
v/c Ratio	0.25	0.30	0.10	0.50	0.27	0.32	0.03	0.13	0.39	0.11
Control Delay	52.2	39.2	42.8	47.4	11.4	26.0	0.1	6.0	13.3	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	39.2	42.8	47.4	11.4	26.0	0.1	6.0	13.3	6.6
Queue Length 50th (m)	8.0	19.1	4.4	38.4	6.6	42.8	0.0	5.1	47.4	3.8
Queue Length 95th (m)	16.4	27.3	9.0	41.3	17.5	55.1	0.0	18.2	102.3	16.5
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	274	1285	402	1280	426	1569	711	862	2393	1044
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.16	0.05	0.26	0.25	0.32	0.03	0.13	0.39	0.11

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	145	55	20	260	75	105	500	20	110	935	110
Future Volume (vph)	35	145	55	20	260	75	105	500	20	110	935	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		1.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	3383		1780	3399		1782	3544	1533	1759	3614	1548
Flt Permitted	0.40	1.00		0.58	1.00		0.31	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	740	3383		1082	3399		574	3544	1533	739	3614	1548
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	145	55	20	260	75	105	500	20	110	935	110
RTOR Reduction (vph)	0	36	0	0	24	0	0	0	11	0	0	20
Lane Group Flow (vph)	35	164	0	20	311	0	105	500	9	110	935	90
Confl. Peds. (#/hr)	19		4	4		19	16		24	24		16
Confl. Bikes (#/hr)						2			1			2
Heavy Vehicles (%)	0%	3%	0%	0%	2%	3%	0%	3%	0%	1%	1%	0%
Bus Blockages (#/hr)	0	4	0	0	4	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	24.0	24.0		24.0	24.0		67.8	60.0	60.0	101.5	90.7	90.7
Effective Green, g (s)	26.5	26.5		26.5	26.5		71.8	62.0	62.0	103.5	92.7	92.7
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.51	0.44	0.44	0.74	0.66	0.66
Clearance Time (s)	7.5	7.5		7.5	7.5		3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	140	640		204	643		378	1569	678	841	2392	1024
v/s Ratio Prot		0.05			c0.09		c0.02	0.14		0.04	c0.26	
v/s Ratio Perm	0.05			0.02			0.12		0.01	0.06		0.06
v/c Ratio	0.25	0.26		0.10	0.48		0.28	0.32	0.01	0.13	0.39	0.09
Uniform Delay, d1	48.3	48.3		46.9	50.6		17.7	25.3	21.9	5.4	10.8	8.5
Progression Factor	1.08	1.07		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.4		0.4	1.2		0.4	0.5	0.0	0.3	0.5	0.2
Delay (s)	54.2	52.3		47.3	51.8		18.1	25.8	21.9	5.8	11.3	8.7
Level of Service	D	D		D	D		B	C	C	A	B	A
Approach Delay (s)		52.6			51.6			24.4			10.5	
Approach LOS		D			D			C			B	

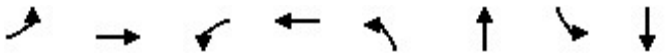
Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	185	15	15	360	100	5	0	10	40	5	120
Future Volume (Veh/h)	90	185	15	15	360	100	5	0	10	40	5	120
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	90	185	15	15	360	100	5	0	10	40	5	120
Pedestrians		2						10			14	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	474			210			717	886	110	736	844	246
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	288			210			549	731	110	570	685	43
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 %	92			99			98	100	99	88	98	87
cM capacity (veh/h)	1176			1361			309	293	921	342	311	938

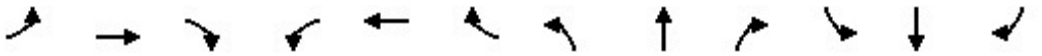
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	182	108	195	280	15	165
Volume Left	90	0	15	0	5	40
Volume Right	0	15	0	100	10	120
cSH	1176	1700	1361	1700	555	632
Volume to Capacity	0.08	0.06	0.01	0.16	0.03	0.26
Queue Length 95th (m)	1.7	0.0	0.2	0.0	0.6	7.3
Control Delay (s)	4.4	0.0	0.7	0.0	11.7	12.7
Lane LOS	A		A		B	B
Approach Delay (s)	2.8		0.3		11.7	12.7
Approach LOS					B	B

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	45.6%	ICU Level of Service		A
Analysis Period (min)	15			



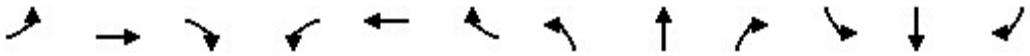
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	260	40	445	15	40	25	35
v/c Ratio	0.05	0.10	0.05	0.16	0.07	0.12	0.10	0.10
Control Delay	6.8	4.9	7.0	5.6	19.7	11.5	20.7	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	4.9	7.0	5.6	19.7	11.5	20.7	10.5
Queue Length 50th (m)	1.0	3.6	0.7	7.2	1.6	1.6	2.7	1.1
Queue Length 95th (m)	6.6	14.3	9.7	35.7	4.0	5.8	5.6	5.1
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	715	2698	852	2762	481	702	544	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.10	0.05	0.16	0.03	0.06	0.05	0.05

Intersection Summary



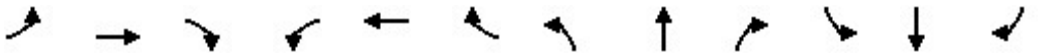
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	240	20	40	425	20	15	15	25	25	10	25
Future Volume (vph)	35	240	20	40	425	20	15	15	25	25	10	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1771	3473		1766	3557		1559	1718		1769	1682	
Flt Permitted	0.49	1.00		0.59	1.00		0.73	1.00		0.73	1.00	
Satd. Flow (perm)	922	3473		1099	3557		1205	1718		1361	1682	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	240	20	40	425	20	15	15	25	25	10	25
RTOR Reduction (vph)	0	5	0	0	3	0	0	21	0	0	21	0
Lane Group Flow (vph)	35	255	0	40	442	0	15	19	0	25	14	0
Confl. Peds. (#/hr)	11		12	12		11	18		12	12		18
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	13%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	4	0	0	4	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	48.9	48.9		48.9	48.9		9.1	9.1		9.1	9.1	
Effective Green, g (s)	49.9	49.9		49.9	49.9		10.1	10.1		10.1	10.1	
Actuated g/C Ratio	0.71	0.71		0.71	0.71		0.14	0.14		0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	657	2475		783	2535		173	247		196	242	
v/s Ratio Prot		0.07			c0.12			0.01			0.01	
v/s Ratio Perm	0.04			0.04			0.01			c0.02		
v/c Ratio	0.05	0.10		0.05	0.17		0.09	0.08		0.13	0.06	
Uniform Delay, d1	3.0	3.1		3.0	3.3		26.0	25.9		26.1	25.8	
Progression Factor	1.00	1.00		1.15	1.20		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.1	0.1		0.5	0.3		0.6	0.2	
Delay (s)	3.2	3.2		3.6	4.1		26.4	26.2		26.7	26.0	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.2			4.1			26.2			26.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	520	55	40	495	85	50	235	40	70	315	70
v/c Ratio	0.06	0.21	0.05	0.07	0.20	0.08	0.31	0.43	0.14	0.22	0.35	0.16
Control Delay	11.7	10.7	3.3	11.7	10.6	2.8	62.0	62.2	9.7	42.6	49.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	10.7	3.3	11.7	10.6	2.8	62.0	62.2	9.7	42.6	49.3	8.1
Queue Length 50th (m)	2.8	24.6	0.0	3.2	23.3	0.0	13.7	34.4	0.0	16.2	41.7	0.0
Queue Length 95th (m)	10.3	51.7	6.3	11.5	49.1	7.5	22.0	39.0	6.9	22.3	43.0	9.6
Internal Link Dist (m)		244.3			229.6			356.2			284.7	
Turn Bay Length (m)	135.0		100.0	70.0		40.0	90.0		90.0	60.0		60.0
Base Capacity (vph)	590	2495	1096	572	2495	1104	368	1264	581	326	1648	741
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.21	0.05	0.07	0.20	0.08	0.14	0.19	0.07	0.21	0.19	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	520	55	40	495	85	50	235	40	70	315	70
Future Volume (vph)	35	520	55	40	495	85	50	235	40	70	315	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1777	3614	1563	1777	3614	1562	1781	3614	1571	1783	3614	1542
Flt Permitted	0.46	1.00	1.00	0.44	1.00	1.00	0.56	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	854	3614	1563	830	3614	1562	1051	3614	1571	862	3614	1542
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	520	55	40	495	85	50	235	40	70	315	70
RTOR Reduction (vph)	0	0	17	0	0	26	0	0	34	0	0	53
Lane Group Flow (vph)	35	520	38	40	495	59	50	235	6	70	315	17
Confl. Peds. (#/hr)	8		8	8		8	3		4	4		3
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	1%	0%	0%	1%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	108.5	108.5	108.5	108.5	108.5	108.5	21.9	21.9	21.9	37.0	37.0	37.0
Effective Green, g (s)	110.5	110.5	110.5	110.5	110.5	110.5	24.4	24.4	24.4	39.0	39.5	39.5
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.15	0.15	0.15	0.24	0.25	0.25
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.5	7.5	7.5	3.0	7.5	7.5
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	589	2495	1079	573	2495	1078	160	551	239	291	892	380
v/s Ratio Prot		c0.14			0.14			c0.07		0.02	c0.09	
v/s Ratio Perm	0.04		0.02	0.05		0.04	0.05		0.00	0.04		0.01
v/c Ratio	0.06	0.21	0.04	0.07	0.20	0.05	0.31	0.43	0.03	0.24	0.35	0.05
Uniform Delay, d1	8.0	8.9	7.8	8.0	8.9	8.0	60.3	61.5	57.7	47.7	49.7	45.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.1	0.2	0.2	0.1	2.3	1.1	0.1	0.9	0.5	0.1
Delay (s)	8.2	9.1	7.9	8.3	9.1	8.1	62.7	62.6	57.8	48.6	50.2	46.0
Level of Service	A	A	A	A	A	A	E	E	E	D	D	D
Approach Delay (s)		9.0			8.9			62.0			49.3	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

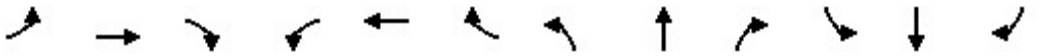
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	25	15	340	430	15
Future Volume (Veh/h)	25	25	15	340	430	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	25	25	15	340	430	15
Pedestrians	2					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				309	118	
pX, platoon unblocked	0.97	0.98	0.98			
vC, conflicting volume	640	224	447			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	482	181	407			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	97	99			
cM capacity (veh/h)	493	823	1143			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	50	128	227	287	158
Volume Left	25	15	0	0	0
Volume Right	25	0	0	0	15
cSH	616	1143	1700	1700	1700
Volume to Capacity	0.08	0.01	0.13	0.17	0.09
Queue Length 95th (m)	1.8	0.3	0.0	0.0	0.0
Control Delay (s)	11.4	1.1	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	11.4	0.4		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

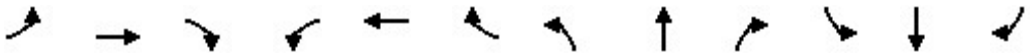
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	30	175	10	165	65	280	20	65	370	35
v/c Ratio	0.18	0.32	0.06	0.30	0.08	0.10	0.02	0.08	0.13	0.03
Control Delay	48.6	31.6	44.4	30.9	6.5	5.4	1.6	6.4	5.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	31.6	44.4	30.9	6.5	5.4	1.6	6.4	5.4	2.9
Queue Length 50th (m)	7.2	14.2	2.3	12.6	2.5	5.7	0.0	2.5	7.7	0.0
Queue Length 95th (m)	10.5	14.6	5.6	16.8	13.5	22.2	1.6	13.4	29.0	4.2
Internal Link Dist (m)		85.4		255.6		94.1			295.9	
Turn Bay Length (m)	45.0		45.0		60.0		35.0	40.0		30.0
Base Capacity (vph)	457	1394	446	1378	780	2830	1222	844	2830	1237
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.13	0.02	0.12	0.08	0.10	0.02	0.08	0.13	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	110	65	10	100	65	65	280	20	65	370	35
Future Volume (vph)	30	110	65	10	100	65	65	280	20	65	370	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1768	3389		1779	3348		1780	3614	1552	1765	3614	1571
Flt Permitted	0.61	1.00		0.60	1.00		0.53	1.00	1.00	0.58	1.00	1.00
Satd. Flow (perm)	1142	3389		1115	3348		996	3614	1552	1077	3614	1571
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	30	110	65	10	100	65	65	280	20	65	370	35
RTOR Reduction (vph)	0	56	0	0	56	0	0	0	4	0	0	8
Lane Group Flow (vph)	30	119	0	10	109	0	65	280	16	65	370	27
Confl. Peds. (#/hr)	13		5	5		13	4		14	14		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	1%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	2	0	0	2	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	17.9	17.9		17.9	17.9		107.6	107.6	107.6	107.6	107.6	107.6
Effective Green, g (s)	20.4	20.4		20.4	20.4		109.6	109.6	109.6	109.6	109.6	109.6
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	7.5	7.5		7.5	7.5		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	166	493		162	487		779	2829	1214	843	2829	1229
v/s Ratio Prot		c0.04			0.03			0.08			c0.10	
v/s Ratio Perm	0.03			0.01			0.07		0.01	0.06		0.02
v/c Ratio	0.18	0.24		0.06	0.22		0.08	0.10	0.01	0.08	0.13	0.02
Uniform Delay, d1	52.5	53.0		51.5	52.8		3.5	3.6	3.3	3.5	3.7	3.4
Progression Factor	0.98	0.98		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.5		0.3	0.5		0.2	0.1	0.0	0.2	0.1	0.0
Delay (s)	52.7	52.2		51.9	53.3		3.7	3.6	3.4	3.7	3.8	3.4
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		52.3			53.2			3.6			3.7	
Approach LOS		D			D			A			A	

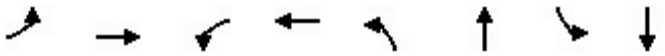
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	155	10	10	140	50	10	0	15	35	0	75
Future Volume (Veh/h)	85	155	10	10	140	50	10	0	15	35	0	75
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	85	155	10	10	140	50	10	0	15	35	0	75
Pedestrians		2						1			7	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		141			109							
pX, platoon unblocked												
vC, conflicting volume	197			166			498	548	84	454	528	104
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	197			166			498	548	84	454	528	104
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 %	94			99			97	100	98	92	100	92
cM capacity (veh/h)	1379			1423			398	413	965	456	424	930

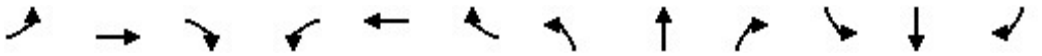
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	162	88	80	120	25	110
Volume Left	85	0	10	0	10	35
Volume Right	0	10	0	50	15	75
cSH	1379	1700	1423	1700	614	698
Volume to Capacity	0.06	0.05	0.01	0.07	0.04	0.16
Queue Length 95th (m)	1.4	0.0	0.1	0.0	0.9	3.9
Control Delay (s)	4.3	0.0	1.0	0.0	11.1	11.1
Lane LOS	A		A		B	B
Approach Delay (s)	2.8		0.4		11.1	11.1
Approach LOS					B	B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	205	20	205	15	35	20	20
v/c Ratio	0.02	0.07	0.02	0.07	0.06	0.11	0.08	0.06
Control Delay	7.1	5.1	8.7	6.2	19.7	8.9	20.3	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	5.1	8.7	6.2	19.7	8.9	20.3	13.8
Queue Length 50th (m)	0.4	2.9	1.4	7.1	1.6	0.5	2.2	1.1
Queue Length 95th (m)	3.6	12.0	4.6	13.4	4.0	4.7	4.9	4.1
Internal Link Dist (m)		206.7		116.5		125.9		93.7
Turn Bay Length (m)	50.0		40.0		25.0		20.0	
Base Capacity (vph)	906	2789	901	2759	550	678	550	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.07	0.02	0.07	0.03	0.05	0.04	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	200	5	20	185	20	15	5	30	20	10	10
Future Volume (vph)	15	200	5	20	185	20	15	5	30	20	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.87		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1776	3584		1766	3541		1758	1650		1780	1685	
Flt Permitted	0.62	1.00		0.62	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	1165	3584		1158	3541		1377	1650		1376	1685	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	15	200	5	20	185	20	15	5	30	20	10	10
RTOR Reduction (vph)	0	1	0	0	6	0	0	26	0	0	9	0
Lane Group Flow (vph)	15	204	0	20	199	0	15	9	0	20	11	0
Confl. Peds. (#/hr)	5		11	11		5	20		4	4		20
Confl. Bikes (#/hr)			2						1			
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	8%
Bus Blockages (#/hr)	0	2	0	0	2	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	49.1	49.1		49.1	49.1		8.9	8.9		8.9	8.9	
Effective Green, g (s)	50.1	50.1		50.1	50.1		9.9	9.9		9.9	9.9	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.14	0.14		0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	833	2565		828	2534		194	233		194	238	
v/s Ratio Prot		c0.06			0.06			0.01			0.01	
v/s Ratio Perm	0.01			0.02			0.01			c0.01		
v/c Ratio	0.02	0.08		0.02	0.08		0.08	0.04		0.10	0.05	
Uniform Delay, d1	2.9	3.0		2.9	3.0		26.1	25.9		26.2	26.0	
Progression Factor	1.00	1.00		1.39	1.46		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.1	0.1		0.4	0.1		0.5	0.2	
Delay (s)	2.9	3.1		4.1	4.4		26.4	26.1		26.7	26.2	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		3.0			4.4			26.2			26.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			