

48 ISABELLA STREET PROPOSED RESIDENTIAL DEVELOPMENT

Official Plan Amendment and Zoning By-law Amendment Application
City of Toronto



Prepared For: Land's Edge Properties Ltd.

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BA Group

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1.0 INTRODUCTION

BA Group has been retained by Land's Edge Properties Ltd. to provide transportation consulting services related to an Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) application being made to the City of Toronto to permit the development of a 69-storey residential building municipally known as 48 Isabella Street (herein referred to as the "site").

1.1 Existing Site

The site is located mid-block on Isabella Street between Yonge Street to the west and Church Street to the east with Macy Dubois Lane to the north.

The site is currently an existing operational rental apartment building. As a part of the development proposal, the existing building will be demolished; however, rental replacement units are proposed to be incorporated into the new development. Further detail related to the development proposal is provided in **Section 2.0**.

The site is highly walkable, transit-accessible area of the City, near the Yonge Street / Bloor Street intersection. The site is located approximately 350 metres (~5-minute walk) to the Toronto Transit Commission (TTC) Bloor-Yonge Station, 450 metres (~6-minute walk) to Wellesley Station, 650 metres (~9-minute walk) to Bay Station, and 900-metres (~12-minute walk) to Sherbourne Station, providing transit connections to TTC Line 1 and Line 2 subway service.

The site location and site context is illustrated in **Figure 1** and **Figure 2**.

1.2 Scope of Work

BA Group has undertaken a comprehensive review of the key transportation-related aspects of the site as part of the initial ZBA application. Key aspects reviewed include the following:

Development Proposal

- A summary of the development programme; and
- A review of the transportation elements of the proposed development plan, including vehicle access and circulation, loading, and parking facilities (both vehicular and bicycle parking).

Policy Context

- A review of the evolving area planning context, including key provincial and municipal policies, plans, and programs relevant to the proposed development.

Transportation Context

- A review of existing and future transportation context including key municipal roads, transit, pedestrian, and cycling infrastructure, and other alternative travel options (e.g., shared mobility services) in the area.

Site Planning

- A review of the vehicle parking requirements and proposed supply for the site;
- A review of the bicycle parking requirements and proposed supply for the site;
- A review of the loading space requirements and proposed supply for the site; and
- A review of the functionality and appropriateness of the proposed facilities incorporated into the site plan, including loading / garbage collection and pick-up / drop-off facility arrangements.



Transportation Demand Management (TDM) and Toronto Green Standard (TGS)

- A review of TDM measures to encourage, facilitate, and support non-automobile travel to / from the site; and
- A review of the TGS Version 4 (Tier 1) requirements and proposed measures for the site.

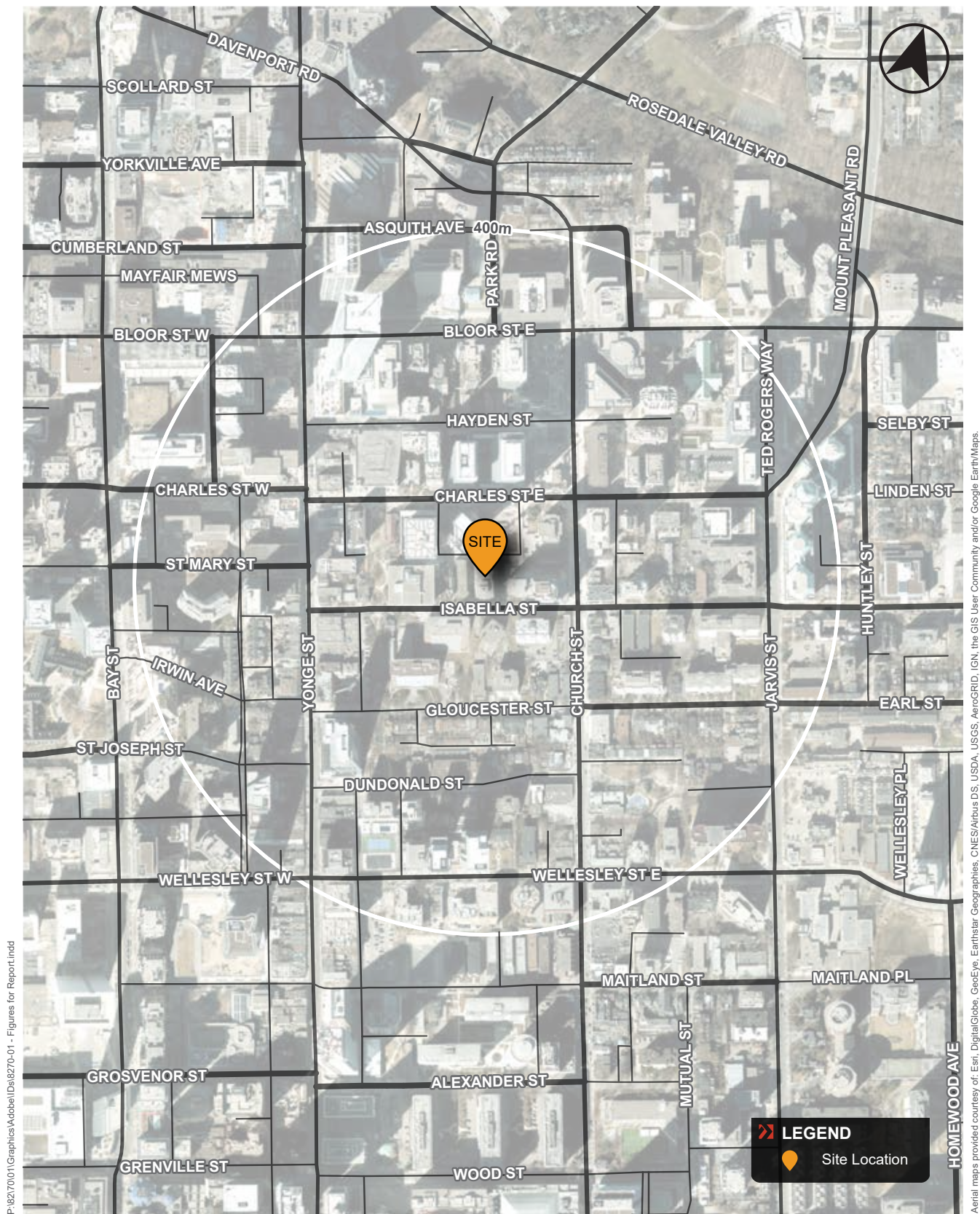
Multi-Modal Travel Demand

- A summary of expected travel characteristics and associated travel demand forecasts for pedestrians, cyclists, transit users, and automobile users of the proposed development;
- An assessment of the site-related forecasts for the transit, pedestrians, and cyclists of the proposed development;
- An assessment of vehicle traffic activity related to the site during the weekday morning and afternoon peak hours, including:
 - Existing vehicle traffic activity patterns and volumes;
 - Traffic changes that may occur in the area in the future with the development of several other area development projects;
 - Site-related vehicle traffic impacts associated with the redevelopment, including existing traffic removals and net new site traffic added to the network; and
- An assessment of traffic volume changes on the area street network.

Traffic Operations Assessment

- An assessment of the traffic operations at intersections in the area under existing and future traffic conditions including an assessment of the operational impacts of the proposed development on the area street network





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Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 1 SITE LOCATION

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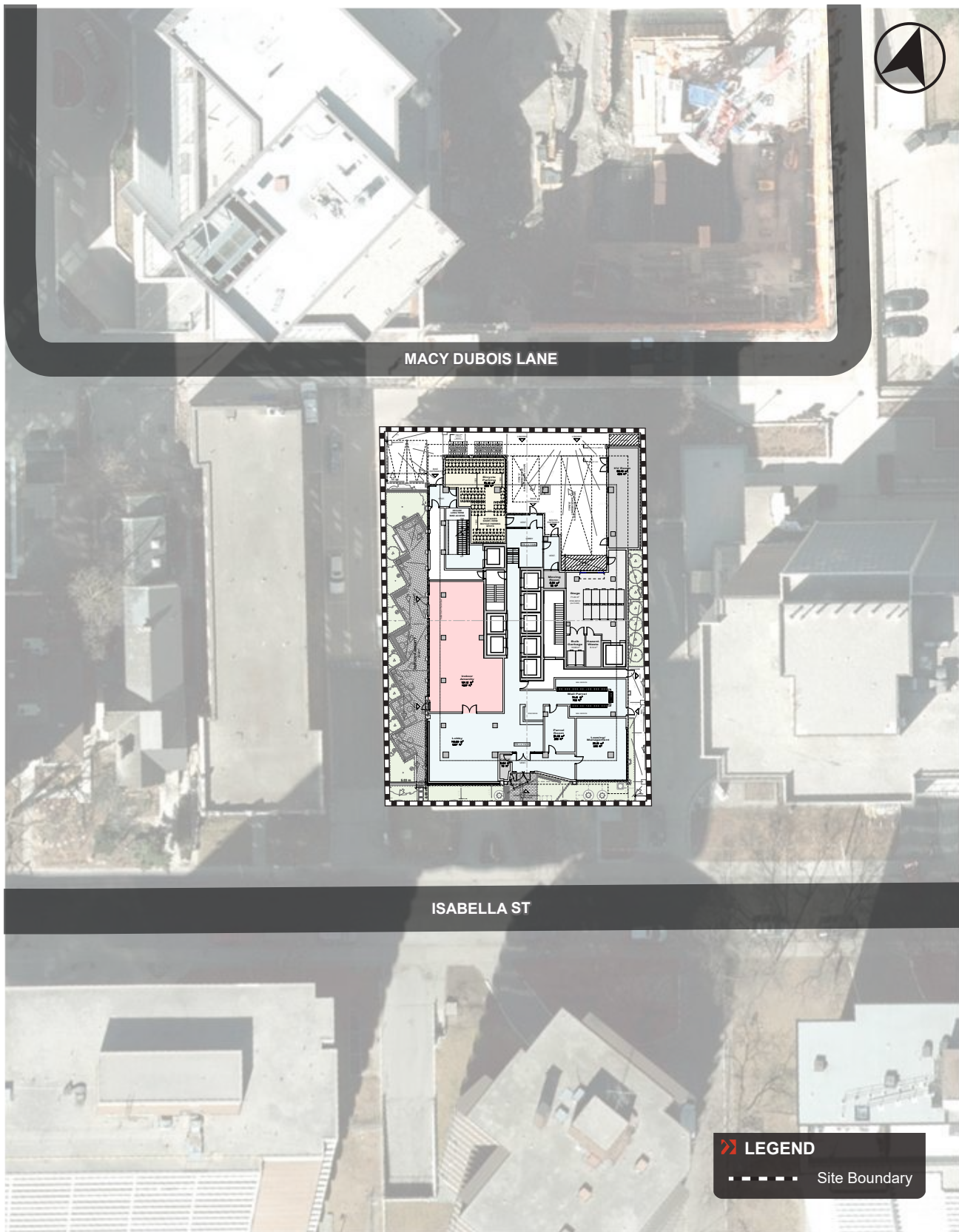


FIGURE 2 SITE PLAN






2.0 PROPOSED DEVELOPMENT

The following provides an overview of the proposed development programme for the site. Reduced scale architectural plans of the proposed development are provided in **Appendix A**.

2.1 Development Programme

The proposed development programme includes 814 residential units provided in a high-rise building. A total of 825 bicycle parking spaces as well and one (1) Type 'G' and one (1) Type 'C' loading space are provided to support the transportation related aspects of the site.

Table 1 Development Programme

Use / Aspect		Type	Units / GFA / Description ¹
Development			
	Residential	Studio	27 units
		1-Bedroom	554 units
		2-Bedroom	152 units
		3 Bedroom	81 units
		Total	814 units
Site Plan / Facilities			
	Vehicular Accommodations	2 Pick-Up / Drop-Off spaces located at-grade	
	Bicycle Parking	Long-Term	733 bicycle parking spaces
		Short-Term	82 bicycle parking spaces
		Publicly Accessible	10 bicycle parking spaces
		Total	825 bicycle parking spaces
	Loading	1 Type 'G' and 1 Type 'C' loading space provided at-grade	
	Site Vehicle Access	Vehicular access provided off Macy DuBois Lane	

Notes:

1. Based upon site statistics provided by Kirkor Architects and Planners, dated May 30th, 2025.



2.2 Vehicular Parking Provisions and Access

Vehicular access to / from the site will be provided via Macy DuBois Lane, facilitating connections to the proposed pick-up / drop-off (PUDO) spaces and loading area, located at-grade.

No resident or residential visitor parking spaces are proposed for the site, as discussed in greater detail in **Section 5.0**. The 2 PUDO spaces, located at the northwest corner of the site, are proposed to accommodate vehicular activity associated with passenger pick-up / drop-off and informal deliveries .

2.3 Bicycle Parking Provisions and Access

Bicycle parking will be provided on level P1 underground, at-grade, and on the second storey of the site. Short-term bicycle parking will be provided at-grade, and can be accessed via a dedicated entrance along the north frontage of the site. Long-term bicycle parking will be provided on P1 and on the second storey, and can be accessed via dedicated bicycle stairs and bicycle elevator adjacent to the short-term bicycle parking room at grade.

A total of 825 bicycle parking spaces (733 long-term spaces, 82 short-term spaces, and 10 publicly accessible short-term spaces) are proposed for the site. The additional 10 publicly accessible bicycle parking spaces will be located at-grade, along the north frontage of the site. **Section 6.0** provides additional details regarding the proposed bicycle parking supply for the site.

2.4 Loading Provisions and Access

The development program proposes two dedicated loading spaces, including one (1) Type 'G' loading space and one (1) Type 'C' loading space within an at-grade loading facility along the north frontage of the site. Access to the loading facility will be provided via Macy DuBois Lane. **Section 7.0** provides additional details regarding the proposed loading supply for the site.

2.5 Pedestrian Access

Pedestrian walkways are proposed along the south and east frontages of the site, providing access to the main lobby and additional pedestrian accesses for the site.

Primary pedestrian access to the residential lobby is provided along Isabella Street (the south frontage of the site). Additional pedestrian accesses are located along the east and north frontages of the site.

2.6 Pick-Up / Drop-Off Provisions and Access

Two pick-up and drop-off spaces are proposed along Macy DuBois Lane on the north frontage of the site to manage short-term deliveries and passenger activities.



3.0 PLANNING & POLICY CONTEXT

3.1 Provincial Legislation

3.1.1 Bill 185: Cutting Red Tape to Build More Homes Act, 2024

On April 10th, 2024, the Province of Ontario introduced *Bill 185: Cutting Red Tape to Build More Homes Act, 2024*. This provincial Bill introduced numerous changes to Acts within the Province of Ontario, including the Planning Act. Notably, Bill 185 amended the Planning Act to prohibit and / or limit the ability for municipal official plans and zoning by-laws to require that an owner provide parking facilities (other than for bicycle parking) in Protected Major Transit Station Areas (PMTSAs) and other specified areas around transit stations.

Bill 185 received Royal Assent on June 6th, 2024, and is now in force and effect in municipalities with provincially-approved PMTSAs.

On February 2nd, 2022, City of Toronto Council adopted Official Plan Amendment (OPA) 524 (OPA 524) which establishes 16 PMTSAs in Downtown Toronto, including the Bloor-Yonge PMTSA, within which the site is located. OPA 524 represents the City's intent towards managing and promoting growth in the City through specific development policy for areas well served by higher order transit. OPA 524 is currently before the Province of Ontario Ministry of Municipal Affairs and Housing for review. Once approved by the Ministry, the changes to parking regulation stipulated in Bill 185 will formally apply to the 16 PMTSAs identified in OPA 524, including the Bloor-Yonge PMTSA.

Notwithstanding that the proposed PMTSAs have not yet been approved by the Ministry of Municipal Affairs and Housing, their adoption by City Council indicates that the 16 PMTSAs represent the will of the City, and are considered reflective of the City's planning context for the intents and purposes of the zoning by-law review conducted as part of this study.

3.2 City of Toronto Policies

3.2.1 City of Toronto Official Plan

The City of Toronto Official Plan (the "Toronto Official Plan") provides a robust policy framework to manage and guide development across the City. The Toronto Official Plan recognizes and acknowledges the benefits of reduced auto dependence and peak hour congestion on the City's transportation networks, and provides overarching policies encouraging planning for transit, cycling, and walking as viable alternatives to the person automobile.

Official Plan Amendment 524

Consistent with the requirements of the Province of Ontario's Provincial Planning Statement (superseding the former Provincial Policy Statement and Growth Plan for the Greater Horseshoe), the City of Toronto has identified 180 Major Transit Station Areas and Protected Major Transit Station Areas (MTSAs / PMTSAs) across the City to direct and manage growth in the vicinity of higher order transit services. Official Plan Amendment 524 (OPA 524) was enacted by City Council in 2022 to introduce 16 PMTSAs in Downtown Toronto, including the Bloor-Yonge PMTSA, within which the site is located.

Notwithstanding that the proposed PMTSAs have not yet been approved by the Ministry of Municipal Affairs and Housing, OPA 524 confirms the City's latest direction with respect to planning for growth in Downtown Toronto. The proposed PMTSAs are therefore considered in effect for the purposes of the zoning by-law reviews conducted for this study, particularly with regard for the parking requirements for the site.



3.2.2 TOcore: Planning Downtown & the Downtown Mobility Strategy

The site is located within Downtown Toronto, and is therefore subject to the City's Downtown planning framework, TOcore: Planning Downtown (TOcore). TOcore is an integrated planning framework that sets a 25-year vision and provides a blueprint to manage growth, sustain liveability, achieve complete communities and ensure there is space for the economy to grow. TOcore responds to rapid population and employment growth in the core as well as the associated travel to / from and within Downtown, all of which place pressure on existing infrastructure.

The City has developed 5 infrastructure-related strategies that are intended to support implementing TOcore. Specifically, the Downtown Mobility Strategy identifies numerous key transportation characteristics with respect to the existing transportation context:

- The overwhelming majority of people living in Downtown walk, cycle, or take transit to work, with half of households not owning a car.
- Active transportation and streetcar ridership are increasing; and
- Peak hour traffic volumes on the roads crossing into Downtown have remained relatively stable over the past 30 years, essentially operating under capacity-constrained conditions.

In recognition of these existing conditions, the Downtown Mobility Strategy presents priority actions under 5 key objectives:

- Make Downtown streets more complete.
- Make Downtown more walkable.
- Build a long-term Downtown cycling network, including increasing the supply of bicycle parking.
- Get the most from public transit; and
- Manage motor vehicle traffic and parking, including facilitating a shift towards more sustainable travel.

The development programme for the site supports the overarching objectives of the Downtown Mobility Strategy.



4.0 AREA TRANSPORTATION CONTEXT

4.1 Area Street Network

4.1.1 Existing Street Network

The site is well-located relative to the area road network, providing strong connections across the City and the Greater Toronto Area (GTA). A detailed description of the area road network is provided in **Table 2**.

The existing and future lane configurations and traffic control are illustrated in **Figure 3** and the area road network is illustrated in **Figure 4**.

Table 2 Area Street Network

Street Name	Road Cross Section (Proximate to Site)	Parking / Traffic Regulations	Posted Speed	Description
Major Arterial Road				
Bloor Street East	2-lane cross-section (1 lane in each direction) Parking provided on south side	In the vicinity of the site, 15-minute parking is permitted at the south side of the road	40 km/h	Bloor Street East is a major east-west Arterial Road that extends from Danforth Avenue near Broadview Avenue in the east to Yonge Street in the west, where it continues as Bloor Street West. Signalized intersections near the site include at Yonge Street and Church Street. Dedicated turning lanes are provided at select intersections.
Yonge Street	4-lane cross-section (2 lanes in each direction)	In the vicinity of the site, no parking permitted at all times	40 km/h	Yonge Street is a major north-south Arterial Road that extends from Queens Quay in the south and terminates in East Gwillimbury. Signalized intersections near the site include at Bloor Street, Charles Street and Gloucester Street. I
Minor Arterial Road				
Church Street	4-lane cross-section (2 lanes in each direction) Parking provided on both sides of the road	In the vicinity of the site, parking is permitted on east and west side of the road	30 km/h	Church Street is a north-south Minor Arterial Road that extends from Yonge Street in the north to Conger Coal Lane in the south. Signalized intersections near the site include including at Yonge Street and Church Street.
Wellesley Street East	2-lane cross-section (1 lane in each direction)	Near the vicinity of the site, no parking permitted at all times	40 km/h	Wellesley Street East is an east-west minor arterial road that extends from Yonge Street and terminates at Wellesley Park in Toronto. Signalized intersections near the site include at Yonge Street and Church Street.



Collector Road				
Charles Street	1-lane cross-section (one-way westbound) Parking provided on the north side of the road	In the vicinity of the site, no parking permitted between 7:30 am and 9:30 am from Monday to Friday	40 km/h	Charles Street is an east-west Collector Road that extends from Queens Park in the west to Jarvis Street in the east, travelling parallel to Bloor Street. Signalized intersections near the site include at Yonge Street and Church Street.
Isabella Street	1-lane one-way to the east Parking provided on the south side of the road	In the vicinity of the site, parking is permitted on south side of the road	40 km/h	Isabella Street is an east-west Collector Road extending from Yonge Street in the west to Sherbourne Street in the east, travelling parallel to Bloor Street East. Isabella Street is unsignalized at Yonge Street; however, its intersections with major intersections are signalized.
Laneways				
Macy DuBois Lane	1-lane cross-section	No parking permitted	30 km/h (assumed)	Macy DuBois Lane is an east-west Laneway off Charles Street. There are no signalized intersections near the site.



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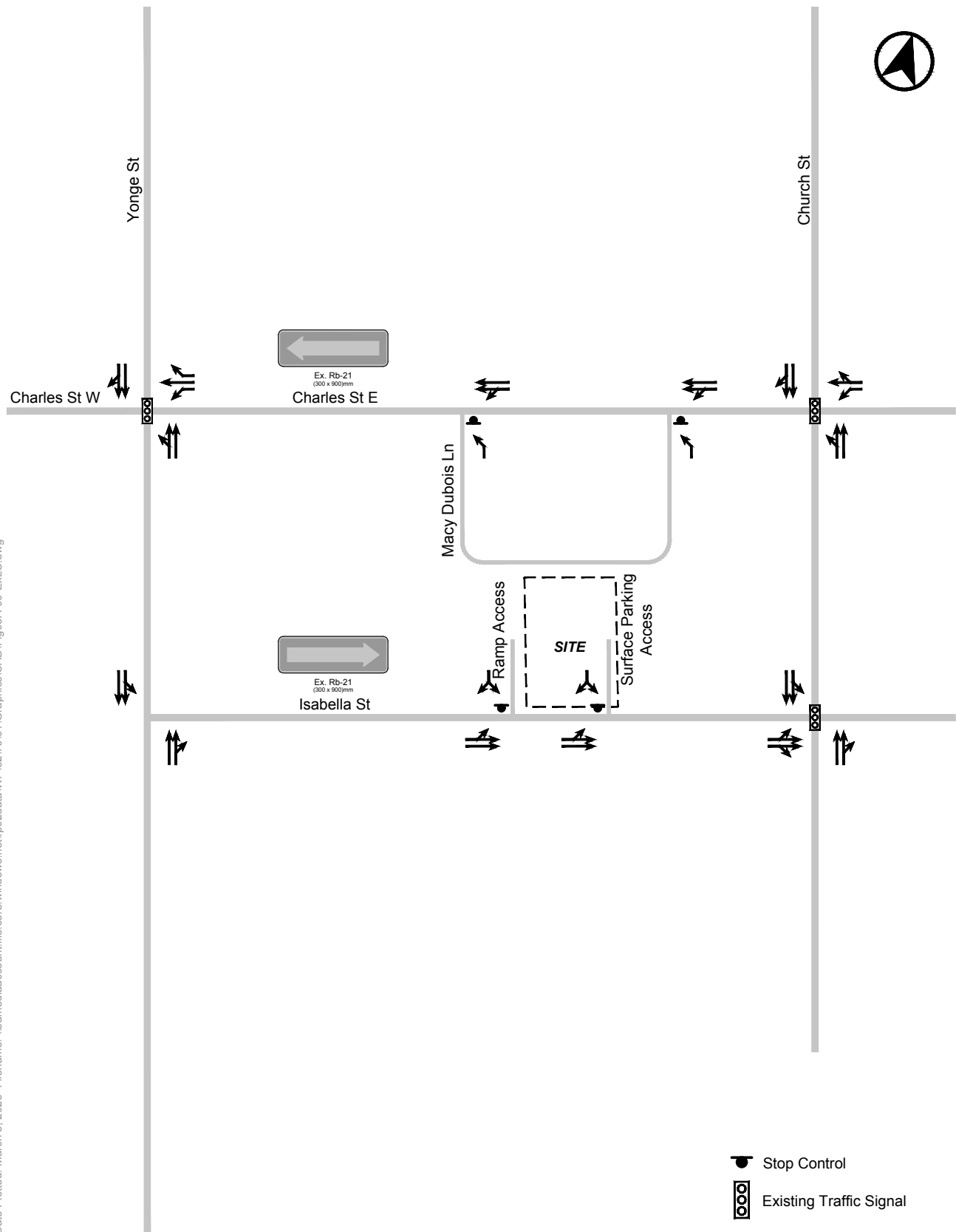


FIGURE 3A EXISTING LANE CONFIGURATION & TRAFFIC CONTROL

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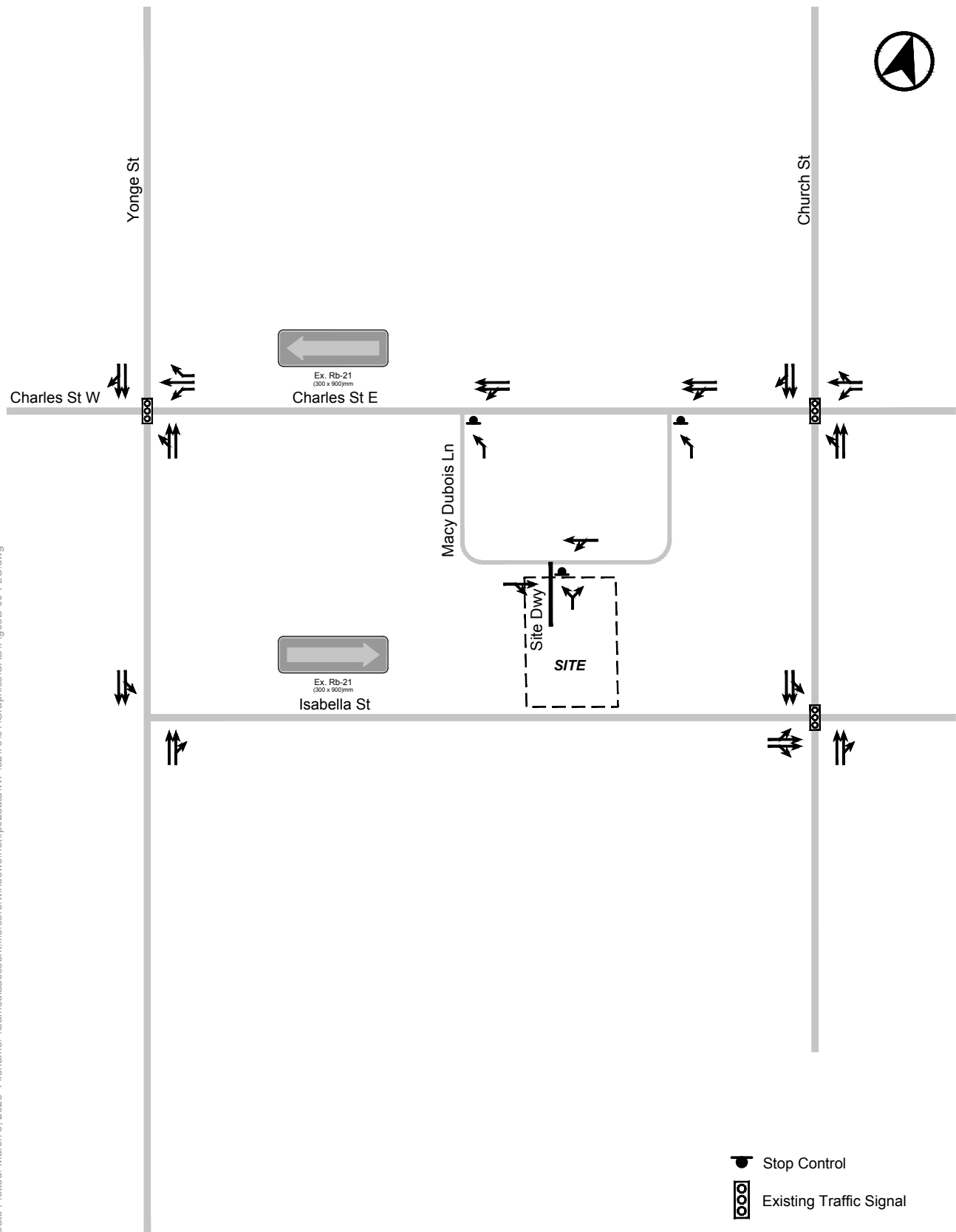


FIGURE 3B FUTURE LANE CONFIGURATION & TRAFFIC CONTROL

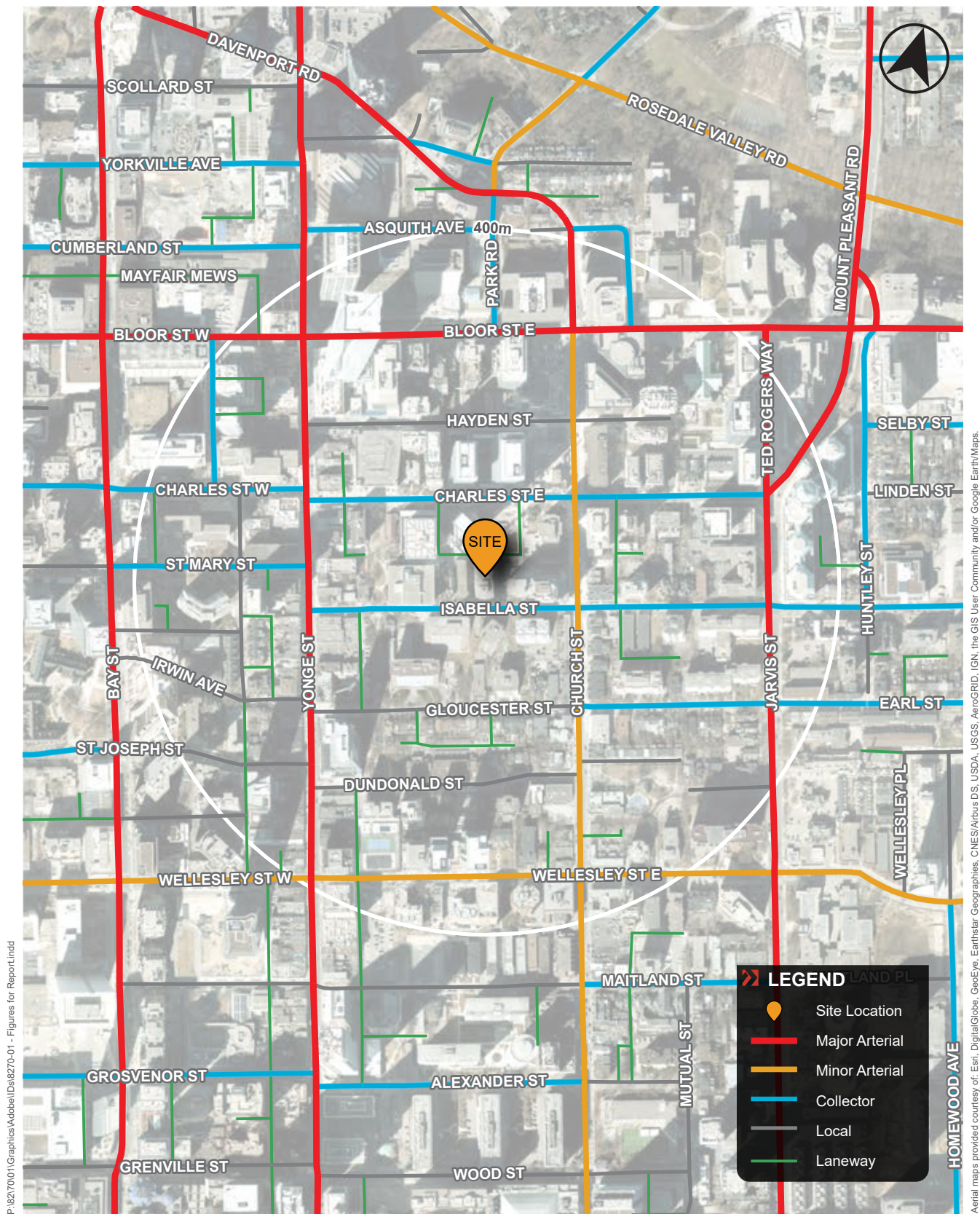


FIGURE 4 AREA STREET NETWORK

4.2 Area Transit Network

4.2.1 Existing Transit Network

The proposed development is situated in the northeastern area of downtown Toronto, proximate to multiple higher order transit connections operated by the Toronto Transit Commission (TTC). In relation to higher order transit, the site is well situated relative to numerous TTC Line 1 and Line 2 stations, including within 350 metres (~5-minute walk) to Bloor-Yonge Station, 450 metres (~6-minute walk) to Wellesley Station, 650 metres (~9-minute walk) to Bay Station, and 900-metres (~12-minute walk) to Sherbourne Station, providing transit connections to TTC Line 1 and Line 2 subway service.

The existing area transit services are summarized in **Table 3** and illustrated in **Figure 5**.

Table 3 Area Transit Services

Route	Nearby Stops	Headways	Route Description
Subway Services			
Line 1 Yonge - University	Bloor-Yonge Station (~350 m)	Weekday & Weekend 2 to 3 minutes during peak periods	Line 1 Yonge-University travels along Yonge Street and University Avenue, between Finch Station and VMC Station.
	Wellesley Station (~450 m)	4 to 5 minutes during off-peak periods	Line 1 connects to Line 2 (Bloor – Danforth) at Bloor-Yonge, Spadina, and St. George Stations, and is planned to connect to the future Eglinton Crosstown LRT.
Line 2 Bloor – Danforth	Bloor-Yonge Station (~350 m)	Weekday 3 to 4 minutes during peak periods	Line 2 Bloor-Danforth travels along Bloor Street from its western terminus at Kipling Station along the Prince Edward Viaduct and continues along Danforth Avenue. The route operates in a north-east direction along a grade separated track to its eastern terminus, Kennedy Station. Line 2 connects to Line 1 (Yonge-University Line) at Bloor-Yonge, Spadina, and St. George Stations, as well as GO Train station (Stouffville Line) the future Eglinton Crosstown LRT at its eastern terminus, Kennedy Station.
	Bay Station (~650 m)	5 to 6 minutes during off-peak periods	
	Sherbourne Station (~900 m)	Weekend 4 to 6 minutes all day	
Bus Services			
Route 19 Bay	Bay Street / Charles Street West (~600 m)	Weekday 20-25 minutes during peak periods 30 minutes during off-peak periods Weekend 25-30 minutes all day	Route 19 Bay operates in a predominantly north-south direction between Davenport Road at Dupont Street in the north and Front Street West at Bay Street in the south. The route connects with Bay Station on Line 2.
Table continued on next page			



Route 75 Sherbourne	Sherbourne Street / Isabella Street (~650 m)	<p><i>Weekday</i> 6 to 8 minutes during peak periods 8 to 24 minutes during off-peak periods</p> <p><i>Saturday</i> 12 to 14 minutes during peak periods 20 minutes during off- peak periods</p> <p><i>Sunday/ Holiday</i> 20 to 30 minutes all day</p>	<p>Route 75 Sherbourne operates in a predominantly north-south direction between South Drive and Glen Road in the north and Queens Quay East in the south via Sherbourne Street. This route connects with Sherbourne Station on Line 2.</p> <p>Occasionally, this route will alternate with the Route 82 Rosedale, identified as Route 75A (Queens Quay-South Drive & Summerhill).</p>
Route 94A / B Wellesley	Wellesley Street East / Church Street West (~400 m)	20 minutes all day	<p>Route 94 Wellesley operates in a predominantly east-west direction via two branches to service three subway stations: Ossington and Castle Frank Stations on Line 2 and Wellesley Station on Line 1. The two branches consist of the 94A (spanning Castle Frank Station to Ossington Station) and 94B (spanning Castle Frank Station to Wellesley Station). The 94A route operates all day while the 94B only operates when additional service to Wellesley Station is needed.</p>
Streetcar Service			
Route 506 Carlton	Carlton Street / Church Street East (~850 m)	10 minutes all day	<p>The 506 Carlton street car route general operates in an east-west direction from Main Street station in the east and the High Park Loop in the west.</p> <p>It is noted that the 506 Carlton street car makes a stop at College Station and Queens Park Station providing transit connections to line 1 subway service.</p>



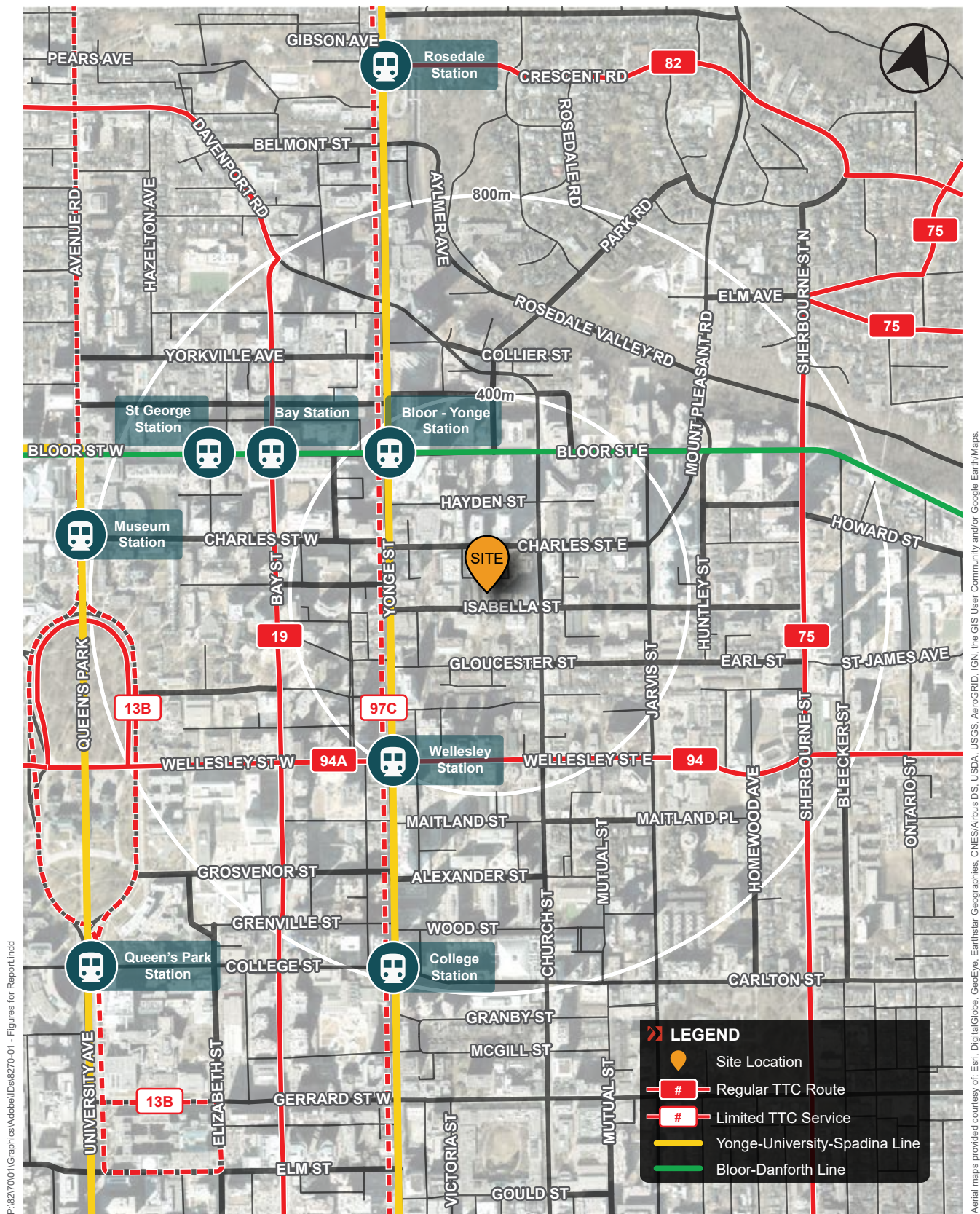


FIGURE 5 AREA TRANSIT NETWORK

4.3 Area Pedestrian Network

4.3.1 Pedestrian Facilities

The pedestrian-oriented environment surrounding the site is supported by comprehensive pedestrian infrastructure, including sidewalks on both sides of area streets. At major intersections, such as Bloor Street / Yonge Street, traffic signals are provided to regulate vehicular traffic and ensure pedestrian crossing opportunities. Additionally, a mid-block pedestrian connection is provided via a crosswalk (PXO) along Wellesley Street between Yonge Street and Church Street, facilitating pedestrian movement and accessibility near Wellesley Station.

Overall, the combination of traffic control measures, pedestrian crossings, wide sidewalks, and dedicated walkways contributes to a safe, accessible, and inviting pedestrian environment, fostering connectivity between residents and the surrounding urban fabric.

4.3.2 Walkable Destinations

The site is located within walking distance to a range of commercial, retail, and institutional destinations, primarily along the Bloor Street and Yonge Street corridors. Additionally, the site is situated within walking distance to transit facilities that provide convenient access to other services and amenities across the neighborhood and the broader City. Within a 500-meter radius of the site, the following existing uses / destinations are highlighted:

- Higher-order transit connections at nearby subway stations, including Bloor-Yonge Station and Wellesley Station.
- A variety of retail, commercial, institutional, and office uses along Bloor Street East and Yonge Street; and
- Several parks and schools.

The existing area pedestrian network is illustrated in **Figure 6**.



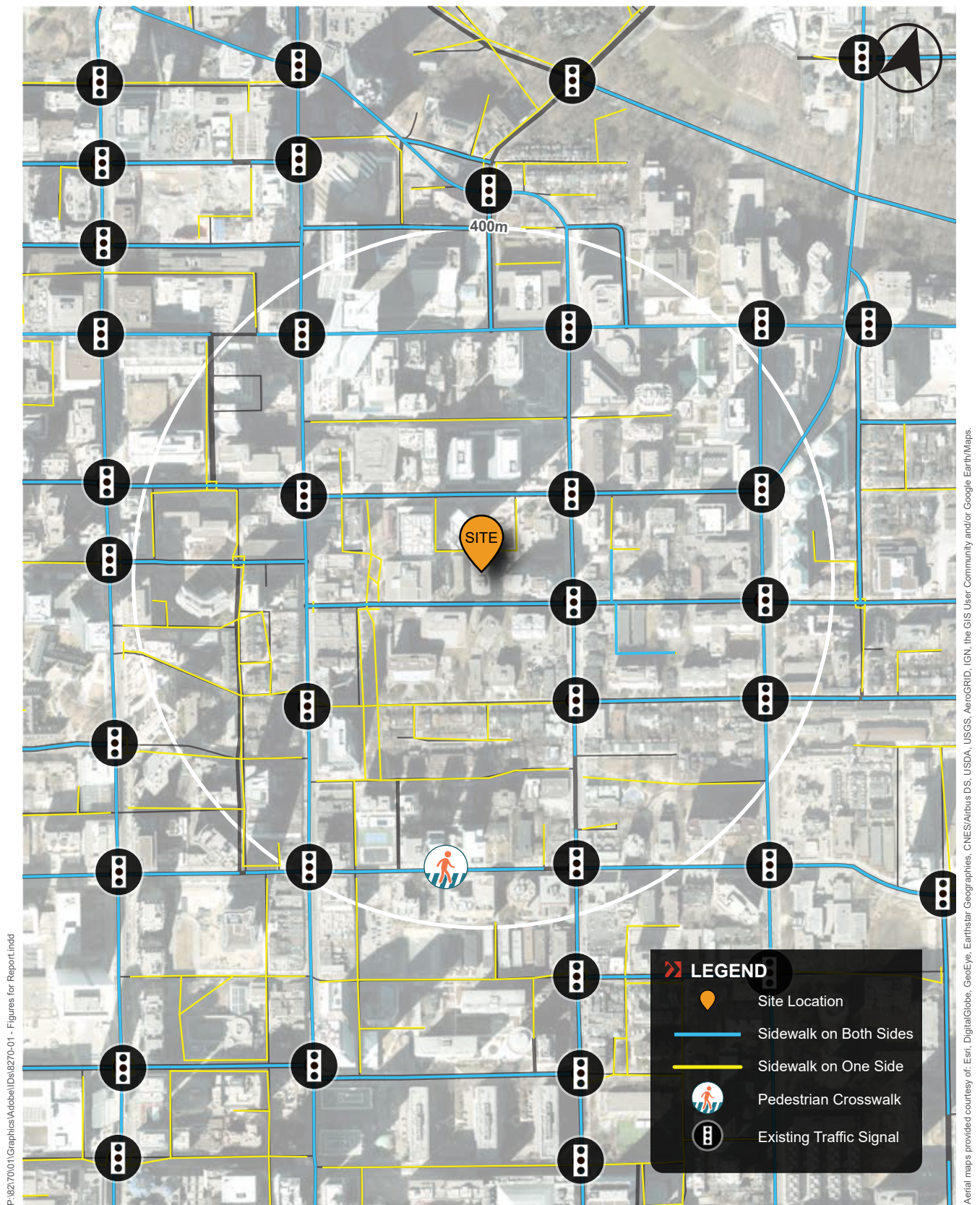


FIGURE 6 AREA PEDESTRIAN CONTEXT

4.4 Area Cycling Network

4.4.1 Existing Cycling Network

The site is well connected with respect to cycling infrastructure, primarily with east-west cycle tracks (in both directions) along Bloor Street, Sherbourne Street and Wellesley Street East, which provide strong connections to a variety of other cycling routes and facilities around the site.

Within the general area, other cycling infrastructure exists, including multi-use paths and 11 Toronto Bike Share docks within a 400-metre radius of the site. **Table 4** provides an overview of the area cycling infrastructure.

Table 4 Existing Area Cycling Network

Route	Direction	Distance from site	Description
Cycle Tracks Routes			
Bloor Street East	East-West	~450 m	The Bloor Street East – Sherbourne to Broadview cycle track extends from Victoria Park Avenue in the east to Runnymede Road in the west. Protected uni-directional cycle tracks run along both the north side (for westbound cyclists) and south side (for eastbound cyclists) of the Bloor Street corridor. Safety posts and vehicle parking lanes are used to separate the cycling lanes from traffic.
Sherbourne Street	North-South	~650 m	The Sherbourne Street cycle track extends from Bloor Street East in the north to Queens Quay East in the south. Protected uni-directional cycle tracks run along both the east side (for northbound travel) and west side (for southbound travel) of the Sherbourne Street corridor. Paved bicycle lanes with sharrows and vehicle parking lanes are provided along this route to separate cyclists from vehicular traffic.
Wellesley Street East – Parliament Street to Queens Park Crescent West	East-West	~425 m	The Wellesley Street cycle track extends from Parliament Street in the east to Queens Park Crescent West in the west. Protected uni-directional cycle tracks run along the north side (for westbound travel) and south side (for eastbound travel) of the Wellesley Street East corridor. Safety posts and vehicle parking lanes are used to separate cycling lanes from traffic.
Yonge Street	North-South	~500 m	The Yonge Street cycle track extends from Davisville Avenue in the north to Bloor Street in the south. Protected uni-directional cycle tracks run along the east side (for northbound travel) and west side (for southbound travel) of the Yonge Street corridor. Safety posts and vehicle parking lanes are used to separate cycling lanes from traffic.
Multi-Use Trail Route			
Rosedale Valley Trail	East-West	~900 m	The Rosedale Valley Trail extends from Bayview Avenue in the East to Park Road in the West. The trail is a paved multi-use trail located along the south side of Rosedale Valley Road, providing separation from vehicular traffic. The closest access point to the trail from the site is at Bloor Street East and Mount Pleasant Road.



4.4.2 Future Cycling Network

The City of Toronto's Cycling Network Plan aims to expand upon the existing cycling network across the City. Approved in 2016, the City of Toronto's Cycling Network Plan focuses primarily on connecting gaps in the current network, growing the network into new parts of the City, and renewing existing parts of the network to improve safety. There are three main components to the plan: the near-term implementation program, long-term cycling network vision, and the Major City-Wide Cycling Routes. The plan's components, objectives, and indicators are aligned with many City policies, including the Official Plan, TransformTO, and the Vision Zero Road Network Safety Plan.

Per the City of Toronto City-Wide Cycling Program 2025 – 2027, the following improvements are planned in the area of the site:

- Yonge Street cycle track study from north of Bloor Street to College Street and Queen Street to The Esplanade.
- Wellesley Street cycle track from Sherbourne Street to Jarvis Street to be renewed.

The existing and proposed area cycling network is illustrated in **Figure 7**.



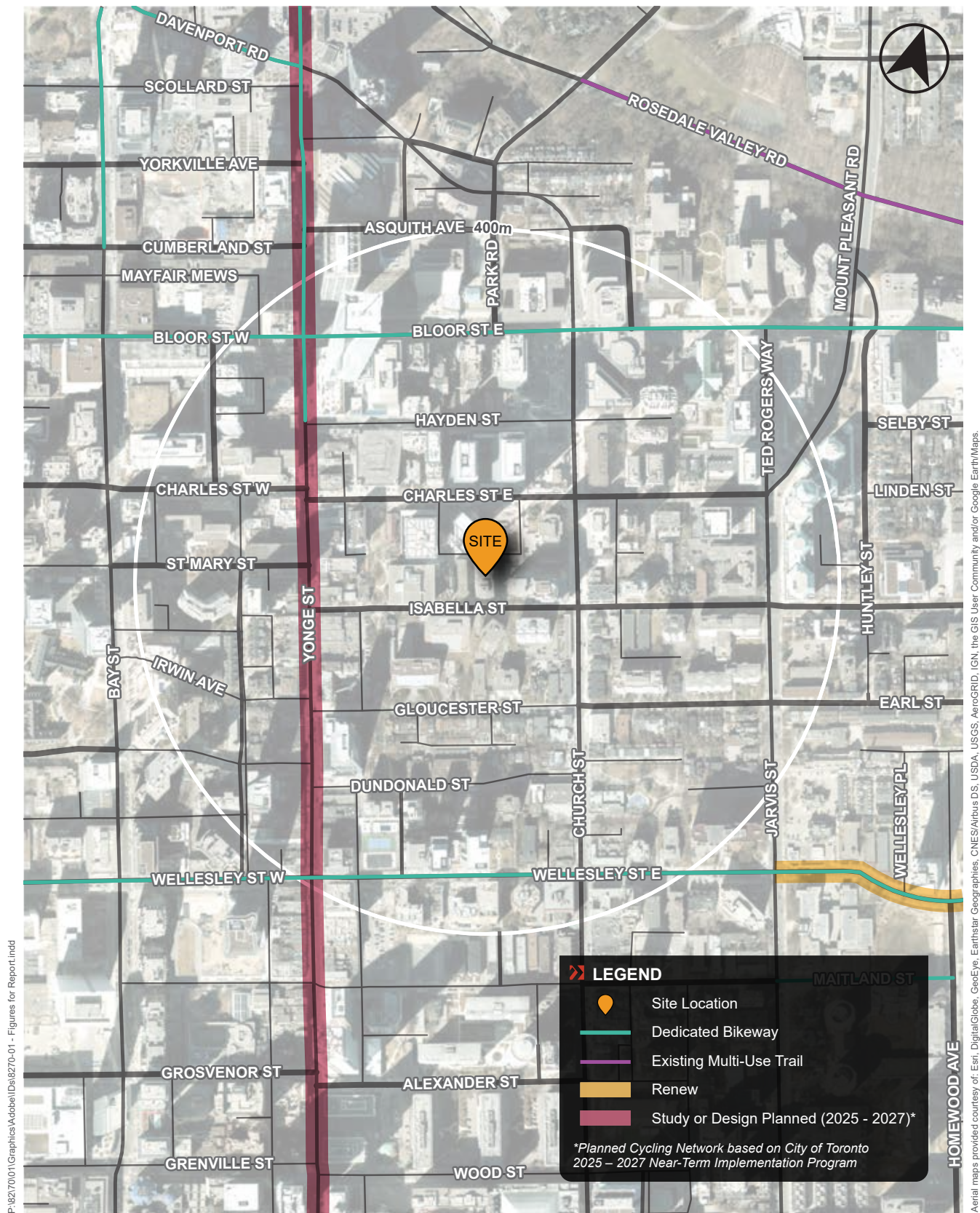


FIGURE 7 EXISTING AND PROPOSED CYCLING CONTEXT

4.5 Area Shared Mobility Services

4.5.1 Car-Share Facilities

Local car-share programs facilitate convenient automobile travel opportunities for thousands of residents, employees, and visitors of the City by providing vehicles ‘on demand’ without the need for car ownership. The availability of car-share vehicles near developments can strongly support reduced car ownership, particularly among building residents, thereby lowering parking demand.

There are three primary car-sharing companies operating in Toronto (Zipcar, Enterprise Car-share, and Communauto), which offer their members access to vehicles conveniently located around the City. Both Zipcar and Enterprise Car-Share typically require parking spaces for their vehicles either in private garages or within Toronto Parking Authority (TPA) parking lots. Vehicles rented from either of these programs must be returned to the same parking space from where they were picked up and are therefore beneficial for home-based travel.

In April 2018, City Council approved a Free-Floating Car-Share Pilot. Unlike the other car-share programs, a free-floating car-sharing program allows its users to undertake one-way trips that begin in one location and terminate in another location. Users can park the vehicles on the street near their destination, and vehicles do not have a designated space where they need to be returned to at the end of the trip, as long as the destination is within the designated zone, which covers most of the urban area in Toronto, including the site. By June 2020, City Council permanently established the program, with one primary car-sharing platform, Communauto, participating. Communauto operates Canada-wide and offers two services in Ontario, including the one-way FLEX service and round-trip reservation service. Hundreds of vehicles can be rented under each service, where the one-way FLEX option does not require a reservation.

Within a 400-metre radius of the site (equivalent to a 5-minute walk), there is one (1) Enterprise and seven (7) Zipcar car-share stations. The location of the existing car-share station in proximity to the site is illustrated in **Figure 8**.

4.5.2 Bike-Share Facilities

Bike Share Toronto offers bike share services in the Downtown-Midtown Toronto area. This sharing service provides a low-commitment and low-risk (to bike theft) transportation alternative. Bike Share Toronto provides a network of 9000+ bicycles contained in 700+ stations across Downtown-Midtown Toronto. Boasting a user base of 465,000 annual memberships, any of the system’s users may pick-up and drop-off bikes where stations have available docks.

Within 400 metres of the site (equivalent to a 3-minute bike ride), there are 11 available bike share locations with the nearest station located east of the site (Isabella Street and Church Street). The accessibility of the services is enhanced by its real-time bike / dock availability feed at each station, which can be accessed through a public mobile phone application



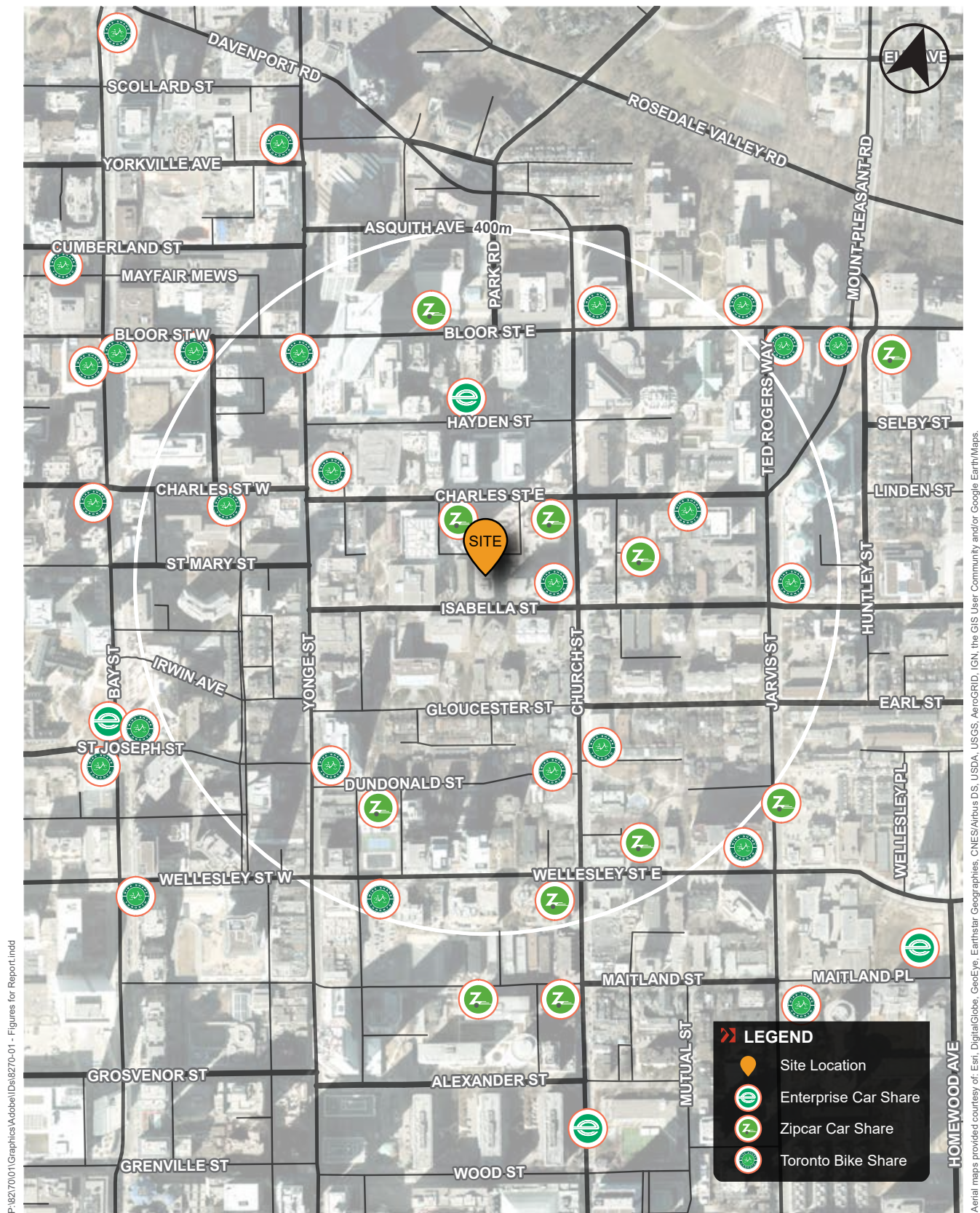


FIGURE 8 AREA CAR-SHARE AND BIKE-SHARE FACILITIES & PROPOSED ADDITIONS

5.0 VEHICULAR PARKING CONSIDERATIONS

5.1 City of Toronto Zoning By-law 569-2013

The site is subject to the parking requirements set out in Zoning By-law 569-2013, which have been amended to remove parking minimums for many uses, including residential units, in the City of Toronto **Table 5** summarizes the parking requirements for the site.

Table 5 Zoning By-law 569-2013 – Parking Zone ‘A’ – Parking Requirements

Use	Units ¹		Minimum Parking Requirement		Maximum Parking Permission	
			Rate	Spaces ²	Rate	Spaces ²
Resident						
Resident	Studio	27 units	None	0 sps	0.3 sps / unit	8 sps
	1-Bed	554 units	None	0 sps	0.5 sps / unit	277 sps
	2-Bed	152 units	None	0 sps	0.8 sps / unit	121 sps
	3-Bed	81 units	None	0 sps	1.0 sps / unit	81 sps
Resident Sub-Total			-	0 sps	-	487 sps
Non-Residential						
Residential Visitor	814 units		2 + 0.01 sps / unit	10 sps	1.0 sps / unit (first 5 units) + 0.1 sps / unit (subsequent units)	85 sps
Non-Residential Sub-Total			-	10 sps	-	85 sps
TOTAL			-	10 sps	-	572 sps

Notes:

1. Based on site statistics provided by Kirkor Architects and Planners., dated May 30th, 2025.
2. If the number of required parking spaces results in a number with a fraction, the number is rounded down to the nearest whole number but there may not be less than one parking space.

Application of the City of Toronto Zoning By-law 569-2013 results in a minimum parking requirement of 10 residential visitor parking spaces.

5.1.1 By-law 223-2025 Accessible Parking Requirements

On March 31st, 2025 City of Toronto Council enacted and passed By-law 223-2025 which, in part, amends the accessible parking requirements for new development in the City. The appeal period for By-law 223-2025 closed on May 7th, 2025 without appeal; therefore, the By-law 223-2025 accessible parking requirements apply to the site.

Council-passed By-law 223-2025 introduces two approaches to determining accessible parking requirements, with the overarching accessible requirements corresponding to the approach which yields the higher required accessible parking supply.

- **Accessible Requirement A** applies an accessible parking rate on a per unit basis based on land use and parking zone.
- **Accessible Requirement B** applies an accessible parking rate based on the provided supply of parking based on land use and parking zone.



Table 6 summarizes the overall accessible parking requirements for the site based on the application of Accessible Requirements A and B.

Table 6 Council-Passed By-law 223-2025 Accessible Parking Requirements – Parking Zone ‘A’

Use	Units / Parking Supply	Minimum Rate	Required Accessible Parking
Accessible Requirement A			
Resident	814 units	0.02 spaces / unit	16 spaces
Residential visitor		No rates to apply other than those required by other sections.	0 spaces
Accessible Parking Requirement			16 spaces
Accessible Requirement B			
Parking Supply	0 spaces ¹	7% of parking supply	0 spaces
Accessible Parking Requirement			0 spaces
Overall Accessible Parking Requirement			16 spaces

Notes:

1. Based on site statistics provided by Kirkor Architects and Planners., dated May 30th, 2025.

Per Council-passed By-law 223-2025, the overall accessible parking requirement for the site is 16 spaces. Since the accessible parking requirement exceeds the minimum residential visitor parking requirement, it is assumed that the overall minimum parking requirement for the site is 16 accessible parking spaces, which at least of 10 of these accessible spaces must be designated for residential visitor use.

5.2 Proposed Vehicular Parking Supply

The parking strategy for the site proposes no parking for residents or residential visitors. Although, an additional 2 pick-up / drop-off (PUDO) spaces will be provided at-grade along the north frontage of the site.

The proposed 0 resident parking spaces complies with the parking requirements stipulated in Zoning By-law 569-2013.

The proposed 0 residential visitor parking represents a reduction relative to the Zoning By-law requirements; however, is considered appropriate for the site as discussed in greater detail in **Section 5.3**.

5.2.1 Accessible Parking Supply

No accessible parking is proposed for the site, given that no resident or residential visitor spaces are proposed.

Per Zoning By-law 569-2013 (Section 200.15.10.10 (1)), if the number of parking spaces associated with dwelling units is less than 5 spaces, no accessible parking is required to be provided. The proposed accessible parking strategy therefore complies with the requirements stipulated in Zoning By-law 569-2013.



5.3 Acceptability of Proposed Vehicular Parking Supply

The proposed residential visitor vehicular parking supply is considered appropriate for the site based on the following:

- **The strong area transportation context**, including access to higher order transit routes and quality active transportation connections.
- **Recent residential visitor reduction approvals for nearby development proposals**, including sites approved to provide no resident or residential visitor parking; and
- **The availability of publicly accessible parking** in off-street parking lots near the site.

The above considerations are discussed in greater detail, below.

5.3.1 Area Transportation Context

The site's location in Downtown Toronto is strongly conducive to reduced reliance on the personal automobile based on the availability of area transit and active transportation connections and the variety of nearby commercial, institutional, and employment uses which collectively increase the frequency of short-duration trips. The transportation context for the site is discussed in detail in **Section 4.0** and is summarized below:

- The site is located approximately 350 metres from Bloor-Yonge Station, providing direct access to both Line 1 Yonge-University and Line 2 Bloor-Danforth which offer north-south and east-west connections across the City. The site is also located approximately 450 metres from Wellesley Station, providing an alternative access to Line 1.
- The site is proximate to numerous surface transit routes within 800 metres walking distance, which provide finer-grained connections across Downtown Toronto.
- Strong pedestrian transportation connections are available around the site. All nearby streets provide sidewalks on both sides of the street with signalized pedestrian crossings at all major intersections.
- Cycling infrastructure is provided in the area of the site, including the Rosedale Multi-Use Trail and dedicated cycling infrastructure along Bloor Street East, Sherbourne Street, Wellesley Street East, and Yonge Street.
- Downtown Toronto consists of a wide range of land uses in compact built forms, providing opportunities to reduce travel distance to meet daily needs.

Collectively, this strong area context reduces the demand for personal vehicle travel by Downtown Toronto residents, thereby supporting a reduced parking supply for the site.

5.3.2 Residential Visitor Parking Reduction Approvals

Numerous residential visitor parking reductions have been approved in Downtown and Midtown Toronto in recent years, which permit no residential visitor parking to be provided. These approvals have been secured through Zoning By-law Amendment (ZBA) applications through City Council, the Ontario Land Tribunal (OLT) (formerly the Ontario Municipal Board (OMB) and Local Planning Appeal Tribunal (LPAT)), and Minor Variance approvals at the Committee of Adjustment.

Residential visitor reduction approvals (allowing no residential visitor parking to be provided) in Downtown and Midtown Toronto reflect the area's quality of transit service and accessibility, the range of land uses in the area which support non-auto modes of travel, the availability of publicly accessible parking that can be used by residential visitors, and the City's broader policy objectives of reducing reliance and managing congestion on the road network (as discussed in **Section 3.2**).

A summary of recent residential visitor parking reduction approvals is provided in **Table 7**.



Table 7 Recent Residential Visitor Parking Reduction Approvals

Site Address	Units	Major Intersection	Effective Residential Visitor Supply Rate	Approval Mechanism	Notes
646-664 Yonge Street	647 units	Yonge Street / Wellesley Street	0.00 spaces / unit	Approved by Council (Item 2024.TE12.8)	Zero parking site
208 Bloor Street West	142 units	Bloor Street West / Avenue Road	0.00 spaces / unit	Approved by Council (Item 2023.TE4.10)	Zero parking site
475 Yonge Street	1,791 units (two buildings)	Yonge Street / College Street	0.00 spaces / unit	SSBL 1303-2023	2 visitor spaces required in by-law (provided as accessible spaces)
1235 & 1255 Bay Street	364 units	Bloor Street / Bay Street	0.00 spaces / unit	SSBL 302-2023	1 visitor space required in by-law (provided as accessible space)
98-100 Bond Street & 54-74 Dundas Street East	336 units	Yonge Street / Dundas Street	0.00 spaces / unit	Approved by Council (Item 2023.TE9.14)	--

5.3.3 Publicly Accessible Off-Street Parking

Numerous publicly accessible off-street parking facilities exist in the area of the site which can be leveraged by any potential site visitors travelling by personal automobile. There are approximately 17 publicly accessible parking lots in the area of the site, collectively providing approximately 5,161 parking spaces for public use.



Table 8 Area Publicly Accessible Off-Street Parking

Lot Address	Ownership	Parking Supply
20 Charles Street East	Toronto Parking Authority	636 spaces
13 Isabella Street	Toronto Parking Authority	33 spaces
15 Wellesley Street East	Toronto Parking Authority	135 spaces
9 Wellesley Street East	Toronto Parking Authority	134 spaces
27 Grosvenor Street	Privately-Owned Commercial Parking	249 spaces
512-516 Church Street	Privately-Owned Commercial Parking	35 spaces
65 Wellesley Street East	Privately-Owned Commercial Parking	131 spaces
56 Wellesley Street West	Privately-Owned Commercial Parking	140 spaces
1033 Bay Street	Privately-Owned Commercial Parking	154 spaces
1075 Bay Street	Privately-Owned Commercial Parking	250 spaces
44 Charles Street West	Privately-Owned Commercial Parking	1,093 spaces
1 Bloor Street East	Privately-Owned Commercial Parking	52 spaces
650 Church Street	Privately-Owned Commercial Parking	64 spaces
250 Bloor Street East	Privately-Owned Commercial Parking	610 spaces
160 Bloor Street East	Privately-Owned Commercial Parking	306 spaces
2 Bloor Street East	Privately-Owned Commercial Parking	414 spaces
30 Asquith Avenue	Privately-Owned Commercial Parking	725 spaces
Total Parking Supply		5,161 spaces

5.3.4 Residential Visitor Parking Reduction Summary

Based on the foregoing, a residential visitor parking supply of 0 spaces is considered appropriate, given the strong area transportation context, the numerous examples of 0 residential visitor parking sites, and the large supply of publicly accessible off-street parking near the site.



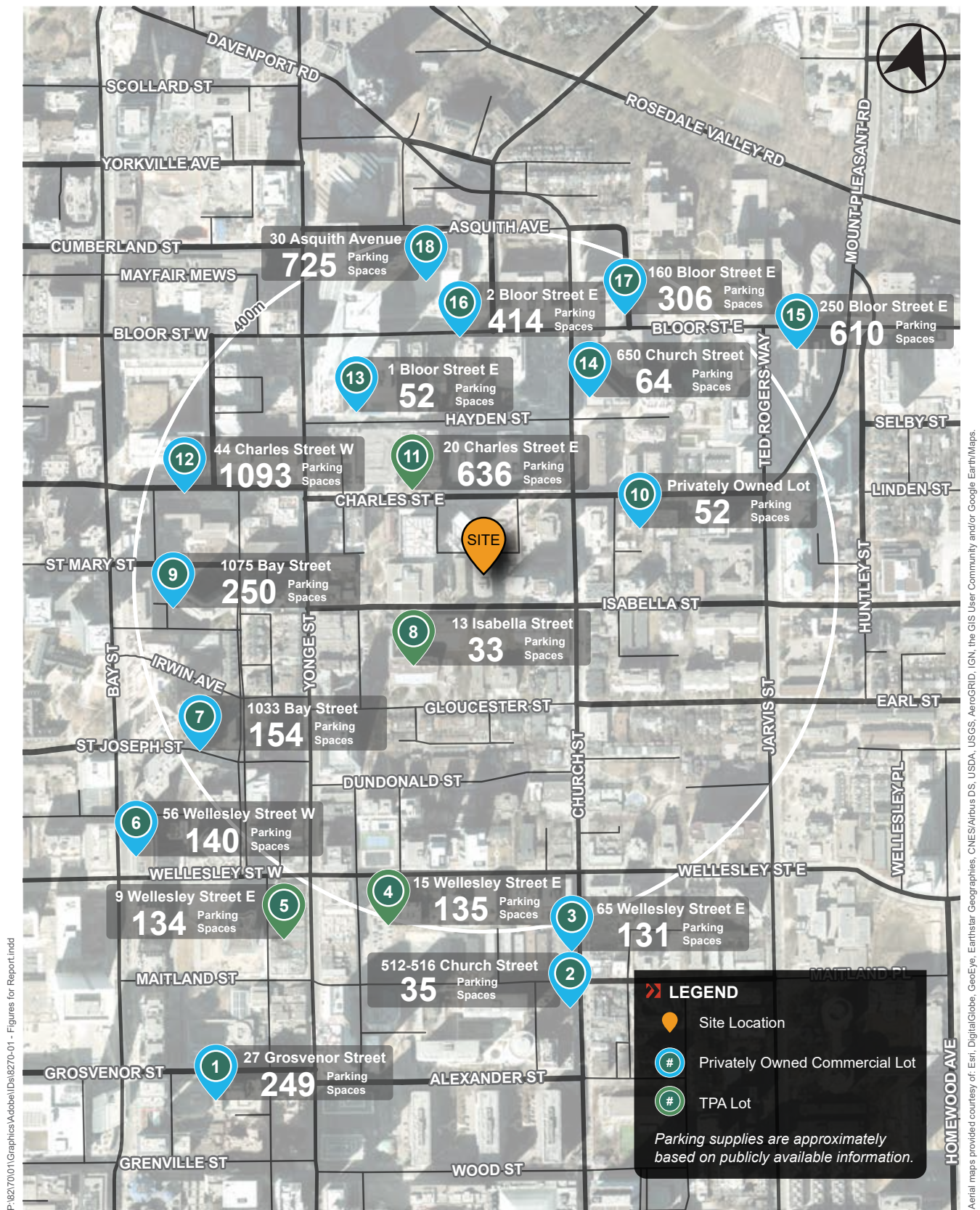


FIGURE 9 AREA PUBLICLY ACCESSIBLE PARKING

6.0 BICYCLE PARKING CONSIDERATIONS

6.1 City of Toronto Zoning By-law 569-2013 (As-Amended)

The bicycle parking requirements per City of Toronto Zoning By-law 569-2013 (as-amended) are applied in **Table 9**.

Table 9 Zoning By-law 569-2013 (as amended) – Bicycle Zone 1 Parking Requirements

Land Use	Units ¹	Minimum Rates	Minimum Requirements ^{2,3}
Residential	814 units	0.9 “long-term” bicycle spaces per unit	733 spaces
		0.2 “short-term” bicycle spaces per unit	163 spaces
Required Residential Spaces			896 spaces
Additional Publicly Accessible Spaces			10 spaces
Total Bicycle Parking Requirement			906 spaces
Total Energized Outlet ³			110 spaces

Notes:

1. Based upon site statistics provided by Kirkor Architects and Planners, dated May 30th, 2025.
2. Section 230.5.1.10 (2) of City of Toronto Zoning By-law 569-2013 states that bicycle parking calculations resulting in a fraction shall be rounded up to the nearest whole number.
3. Toronto Green Standard (TGS) Version 4.0 requires at least 15 percent of required residential long-term bicycle parking spaces to include an Energized Outlet (120 V) adjacent to the bicycle rack or parking space.

Application of the City of Toronto Zoning By-law 569-2013 (as amended) results in a minimum of 959 bicycle parking spaces consisting of 776 long-term and 173 short-term bicycle parking spaces.

6.1.1 By-law 223-2025 Bicycle Parking Requirements

Recently enacted and adopted By-law 223-2025 in-part provides new regulations for bicycle parking requirements for new development in the City. The appeal period for By-law 223-2025 recently closed on May 7th, 2025; therefore, the regulations in By-law 223-2025 are applicable to the site.

By-law 223-2025 in-part introduces the following regulations related to bicycle parking:

- A requirement to provide at least 5% of the long-term bicycle parking requirement for oversized bicycles with the following dimensions:
 - Minimum length of 2.4 metres
 - Minimum width of 1.0 metres; and
 - Minimum vertical clearance from the ground of 1.9 metres.
- Expansion of the bicycle parking cash-in-lieu program, whereby both long-term and short-term bicycle parking requirements may be reduced by 50% in exchange for a predetermined contribution to the City of Toronto to support expansion of the Toronto Bikeshare program.

Application of the oversized bicycle parking requirement to the required long-term bicycle parking supply in **Table 9** results in a requirement to provide 37 oversized long-term bicycle parking spaces.



6.2 Proposed Bicycle Parking Supply and Facilities

A total of 825 bicycle parking spaces, inclusive of 82 short-term spaces, 733 long term spaces, and 10 publicly accessible short-term spaces, are provided for the site. Of the proposed 733 long-term spaces, 37 spaces are designed for oversized / cargo bikes, consistent with the requirements of By-law 223-2025.

Payment-in-lieu is proposed to be provided for the remaining required 81 short-term bicycle parking spaces, consistent with Section 230.5.10.20 of Zoning By-law 569-2013. On this basis, the proposed long-term and short-term bicycle parking supplies comply with the requirements of Zoning By-law 569-2013.

All short-term bicycle parking spaces will be provided in a publicly accessible bike room on the ground floor of the site. The short-term bicycle parking room can be accessed via a dedicated entrance on the north frontage of the site.

All long-term bicycle parking spaces will be provided on P1 underground and level two of the development. The long-term bicycle parking room can be accessed via a dedicated bicycle staircase and bicycle elevator located adjacent to the short-term bicycle parking room on the north frontage of the site.

A total of 10 publicly accessible bicycle parking spaces will be provided along the north frontage of the site, adjacent to the dedicated bicycle entrance.

The development program also proposes one bicycle repair station located within the long-term bicycle parking area on the second storey of the development.

6.2.1 Proposed Toronto Green Standards (TGS) Version 4.0 Bicycle Parking Provisions

In accordance with the Toronto Green Standards (TGS) Version 4, the site provides energized outlets for 15% of residential long-term bicycle parking spaces (110 spaces) meeting the TGS V4.0, AQ 2.4 requirement.

Additionally, 10 publicly accessible bicycle parking spaces located on the north and east frontages of the site are provided meeting the TGS V4.0, AQ 2.6 requirement.



7.0 LOADING CONSIDERATIONS

7.1 City of Toronto Zoning By-law 569-2013

The site is subject to the loading requirements stipulated in the City of Toronto Zoning By-law 569-2013, as summarized in Table 10.

Table 10 Zoning By-law 569-2013 (as amended) – Loading Requirements

Use	Units / GFA ¹	Range	Type of Loading Spaces				
			Type A	Type B	Type C	Type G	Total
Residential	814 units	400 dwelling units or more	0	0	1	1	2
Total			0	0	1	1	2

Notes:

1. Site statistics based on site plans prepared by Kirkor Architects and Planners., dated May 30th, 2025.

Application of the City of Toronto Zoning By-law 569-2013 (as amended) results in a minimum of one (1) Type C loading space and one (1) Type G loading space.

7.2 Proposed Loading Supply

The architectural plans illustrate two formal loading spaces, inclusive of one (1) Type 'C' space and one (1) Type 'G' space, located at-grade in an enclosed loading facility. Access to the facility will be provided via Macy DuBois Lane.

The proposed loading supply meets the minimum loading requirements and applies the dimension standards as per City of Toronto Zoning By-law 569-2013.

7.2.1 Residential Garbage and Recycling Facilities

Residential and non-residential refuse / recycling collection for the building will occur within the proposed Type 'G' loading space. Bin staging areas are provided in front of the Type 'G' loading space in accordance with the design requirements outlined in the *City of Toronto Requirements for Garbage and Recycling Collection for New Developments and Redevelopments*, dated April 2024.

A minimum total bin staging area of 81.3 m² has been provided adjacent to the Type 'G' loading space. This staging area has been provided in accordance with the City of Toronto Waste Management Guidelines (April 2024) (i.e., size of bin staging area is equal to 5 m² plus an additional 5 m² for every 50 units provided in excess of the first 50 units).

A minimum total waste storage room of 223.4 m² has been provided to accommodate containers and the compactor in accordance with the City of Toronto Waste Management Guidelines – April 2024 (i.e., 25 m² for the first 50 units and an additional 0.26 m² for each additional unit, over 50 units).

In addition, 10 m² of bulk waste storage is provided for oversized items and a minimum of 8.13 m² (i.e., 1 m² for every 100 units) for hazardous waste has been provided in accordance with the City of Toronto Waste Management Guidelines – April 2024.

A residential garbage room is provided on level two of the site. Garbage bins will be transferred from the waste storage room to the bin staging area via a service elevator.



7.2.2 Operations and Manoeuvring

Vehicular manoeuvring diagrams (VMDs) are provided in **Appendix B** which demonstrate the ability of service and delivery vehicles to manoeuvre within the site when entering / exiting the loading area.

Each of the vehicles enters and leaves using Macy DuBois Lane, using the public laneway to manoeuvre into / out of the proposed loading facilities. The vehicular manoeuvring diagrams provided confirm that the proposed loading arrangements are appropriate and will facilitate the manoeuvring requirements of the vehicles that are expected to access the site.

The design vehicles used in assessing the configuration of the proposed loading space are the City of Toronto front-loading garbage truck, City of Toronto rear-pack waste collection vehicle, a medium single unit truck (TAC MSU) a single unit truck (TAC SU) and a cube van.

7.2.3 Height Clearances

A minimum height clearance of 6.1 metres is maintained throughout the entire Type 'G' loading area, satisfying the minimum height clearance requirements of the City of Toronto design requirements (i.e. 4.4 metres for access to a Type 'G' loading space).

A minimum 6.1m height clearance is maintained for the 2.0 metres of exterior staging area located in front of the Type 'G' loading space while the remaining interior staging area will have a reduced height clearance of 4.0 metres. The interior staging area is enclosed with an overhead door access to manoeuvre bins to and from the exterior staging area upon collection day. Since this interior staging area will not be accessible by vehicle, it does not require the typical 6.1m vertical clearance and therefore, the reduced height clearance of 4.0 metres is, in our opinion, appropriate. Personnel will be on site to facilitate manoeuvring for waste, recycling and organics collection.

A proposed minimum height clearance of 4.8 metres is maintained throughout the entire Type 'C' loading area and its access, which meets and exceeds the minimum height clearance requirements of the City of Toronto design requirements (i.e. 3.0 metres for a Type 'C' loading space).



8.0 TRANSPORTATION DEMAND MANAGEMENT

A Transportation Demand Management (TDM) Plan is proposed to guide the provision of viable alternative personal transportation options beyond the single-occupant, private automobile. This plan intends to support the development plan by outlining specific measures and the suite of strategies under consideration to 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.

Four specific objectives define the policy framework for the TDM Plan:

- Encourage the use of alternate travel modes (transit, cycling, walking).
- Increase vehicle occupancy.
- Shift travel to off-peak periods; and
- Reduce vehicle kilometres traveled.

A comprehensive framework has been developed that will serve as a guideline for the implementation of effective TDM strategies during the site plan / design stage, as well as in its operations following the full redevelopment of the property. A detailed and refined TDM Plan will be developed and secured through the approvals process in consultation with the City of Toronto.

8.1 Organizational Framework

Measures intended to fulfill the above objectives may be classified into the following categories:

- Facilitate reduced car ownership and usage;
- Manage vehicular parking supply;
- Encourage transit use;
- Encourage and facilitate bicycle use;
- Enhance pedestrian access and walkability; and
- Coordinate, communicate, and promote TDM strategies.

Within each of these six categories, strategies proposed may be further classified by the stage of implementation within the development program, including:

- **Infrastructure (external links and facilities)**, including measures to improve the active transportation realm along the boundaries of the site and to facilitate the integration of the site with surrounding pedestrian, cycling, and transit infrastructure.
- **Facilities and features of the development concept plan and design**, including physical components of the proposed development plan, such as the amenities and connections within the site footprint that facilitate and encourage alternative travel modes.
- **Building operations and property management**, including user-focused programs and policies enacted once the site is operational and occupied to encourage alternative travel modes.
- **Monitoring travel behaviours**, including post-occupancy data collection programs used to assess travel patterns and gauge the effectiveness of the incorporated TDM strategies as a collective.



8.2 TDM Plan Strategies

The site context provides for access to public transit services and good pedestrian connectivity. While strong opportunities exist in the area's infrastructure to accommodate sustainable transportation practices, the ability to fully leverage these opportunities, ensuring the success for the TDM strategies is important. To this end, TDM Plan strategies are presented with targeted "intents" (i.e. what it is trying to achieve and for whom), accompanied by methods of implementation. Potential strategies are then framed in the context of the development and the strategies most appropriate for application are proposed.

A summary of the TDM Plan is included in **Table 11** below. It is important to note that this TDM Plan and associated strategies will continue to be redefined through the development application process.

Table 11 TDM Strategies

Measure	Description	Cost Estimate	Implementation Strategy
Hard Measures			
Pedestrian/Cycling Connections	Provide enhanced sidewalks along Isabella Street.	Integrated into overall development cost.	Construct as part of development.
Bicycle Parking	Provide oversized / cargo bicycle parking spaces within long-term bicycle parking storage area.	Integrated into overall development cost.	Construct as part of development.
Contribution to Toronto Bikeshare	Reduce bicycle parking through the payment-in-lieu program, consistent with Section 230.5.10.20 of Zoning By-law 569-2013, which financially contributes to the expansion of the Toronto Bikeshare program.	Integrated into overall development cost.	Construct as part of development.
Bicycle Repair Station	Provide bicycle repair / maintenance station in long-term bicycle parking area in accordance with the City of Toronto Zoning By-law 569-2013.	Integrated into overall development cost.	Construct as part of development.
Bicycle Elevator	Provide a bicycle elevator to access the long-term bicycle parking on the second storey and P1 of the site.	Integrated into overall development cost.	Construct as part of development.
Reduced Car Ownership and Usage	Provide 2 pick-up / drop-off parking spaces	Integrated into overall development cost.	Construct as part of development.
Vehicle Parking	Provide 0 parking on the site.	Integrated into overall development cost.	Construct as part of development.
Soft Measures			
Travel Mode Information Packages	Implement programs to inform new residents of available travel mode choices and existing mobile apps providing transit information.	To be determined.	Travel mode information packages will be distributed at the sales centre or property management office.
Transit Use	Provide presto cards to new residents (one per unit).	To be determined.	Presto cards will be distributed at the sales centre or property management office.



9.0 MULTI-MODAL TRAVEL DEMAND

The site is located within one of the most transit-oriented and accessible areas of the Greater Toronto Area, and within a transportation context that prioritizes non-automobile modes of travel. This location provides numerous opportunities for non-automobile modes of travel (i.e., transit, walking and cycling). Consistent with the zero-parking strategy for the site, travel demand forecasts have been generated for auto-based (pick-up / drop-off only) trips and non-auto-based trips. Further details are provided in the following sections.

Residential travel demands have been estimated using person trip rates as derived from area proxy sites and applying a representative mode split from the 2016 Transportation Tomorrow Survey (TTS) to the site generated person trips. The adopted mode split reflects the zero-parking strategy on the site, whereby alternative modes of travel will be relied upon, with limited vehicle trips (pick-up / drop-off) being made to and from the site.

9.1 Residential Person Trip Rates

Residential person travel demands have been developed for the site, in-part through the review of area proxy site data collected by BA Group. Proxy sites are reflective of geographic and transportation contexts comparable to the proposed development. A summary of surveyed sites is provided in **Table 12**.

Table 12 Residential Person Trip Proxy Sites

Proxy Site	Survey Date	Units	AM Peak Hour			PM Peak Hour		
			In	Out	2-Way	In	Out	2-Way
22 Wellesley Street E	Thursday November 2, 2023	162 units	0.11	0.25	0.36	0.37	0.22	0.59
28 Wellesley Street E	Thursday November 2, 2023	337 units	0.05	0.23	0.28	0.23	0.16	0.39
500 Sherborne	Wednesday, November 15, 2023	363 units	0.06	0.21	0.27	0.29	0.18	0.47
1000 Bay Street	Wednesday, February 1, 2023	458 units	0.06	0.21	0.27	0.13	0.13	0.26
403 Church Street	Wednesday, August 2, 2023	537 units	0.06	0.21	0.27	0.24	0.19	0.43
77 Mutual Street	Wednesday, August 2, 2023	383 units	0.09	0.21	0.30	0.29	0.27	0.56
223 St. Clair Avenue West	Tuesday, June 13, 2023	164 units	0.11	0.4	0.51	0.27	0.2	0.47
6 Parkwood Avenue	Tuesday, June 13, 2023	116 units	0.08	0.35	0.43	0.22	0.15	0.37
Average Person Trip Rates (trips / unit)			0.07	0.25	0.33	0.25	0.18	0.43
Adopted Person Trip Rates (trips / unit)			0.10	0.35	0.45	0.26	0.19	0.45
Adopted Person Trips (814 units)			80	285	365	210	155	365

Note:

1. Person trip rates are expressed on a per unit basis.
2. This information is property of BA Group Ltd. It should not be altered, abbreviated, taken out of context, or used for any other purpose other than the intended purpose in connection with the 48 Isabella Street development application.



Notwithstanding the observed average two-way person trip rates during the morning and afternoon peak hours, this analysis conservatively adopts a two-way rate of **0.45 trips / unit** as a representative approach to person trip generation for the site during both the weekday morning and afternoon peak hours.

Based on the adopted person trip rate, the proposed development is forecast to generate in the order of **365 two-way person trips** during both the weekday morning peak hour and weekday afternoon peak hour.

9.2 Mode Split

Modal split and time of travel information have been reviewed in the context of the 2016 and 2022 Transportation Tomorrow Survey (TTS). Detailed TTS queries are provided in **Appendix C**.

9.2.1 Existing Mode Split Review

2016 TTS Mode Split

Data from the 2016 TTS represents an established baseline for mode split data in the Greater Toronto and Hamilton Area (GTHA), and was reviewed as the base existing mode split for the site. 2016 TTS queries consist of home-based trips during weekday morning and afternoon peak hours. The mode splits from the 2016 TTS query reflects a range of residential unit types with and without access to parking on-site but can be considered to represent a base or average pattern of travel choice.

Table 13 summarizes the 2016 TTS mode split for the area of the site.

Table 13 Existing Mode Split – 2016 TTS

Travel Mode	AM	PM
Auto Driver	13%	14%
Auto Passenger	3%	2%
PUDO	1%	2%
Transit	45%	39%
Walk	34%	39%
Cycle	4%	4%
Total	100%	100%

Notes:

1. Based on residential two-way 2016 TTS queries of 2006 TTS zones 42,46,48,40,41,39,47,49,21,45

The mode split presented above indicates that the majority of trips in the area of the site are made by transit and walking, with some trips (under 20%) made by automobiles, either as auto driver, auto passenger, or ride hailing (PUDO).

2022 TTS Mode Split

In January 2025, TTS released its new data, collected in 2022. It is noted that at the time of data collection for the 2022 TTS, travel characteristics in urban areas may have been impacted by the ramifications of the COVID-19 pandemic, particularly in areas where transit is a primary means of travel. **Table 14** summarizes the 2022 TTS mode split for the area of the site.



Table 14 Existing Mode Split – 2022 TTS

Travel Mode	AM	PM
Auto Driver	12%	10%
Auto Passenger	4%	3%
PUDO	1%	1%
Transit	39%	28%
Walk	38%	52%
Cycle	6%	6%
Total	100%	100%

Notes:

1. Based on residential two-way 2022 TTS queries of 2006 TTS zones 42,46,48,40,41,39,47,49,21,45

Notably, transit ridership underwent a significant downturn in the 2022 TTS, believed to be related to pandemic restrictions and regulations. While it is unclear the extent to which the pandemic has influenced long-term travel characteristics, it is anticipated that transit ridership will continue to recover and potentially reach pre-pandemic levels reflected in the 2016 TTS mode split.

2016 & 2022 TTS Mode Split Comparison

For review purposes, **Table 15** compares the 2022 TTS mode split to the base 2016 TTS mode split.

Table 15 2022 & 2016 TTS Mode Split Comparison

Travel Mode	2022 TTS Mode Split		2016 TTS Mode Split		Change	
	AM	PM	AM	PM	AM	PM
Auto Driver	12%	10%	13%	14%	-1%	-4%
Auto Passenger	4%	3%	3%	2%	+1%	+1%
PUDO	1%	1%	1%	2%	--	-1%
Transit	39%	28%	45%	39%	-6%	-11%
Walk	38%	52%	34%	39%	+4%	+13%
Cycle	6%	6%	4%	4%	+2%	+2%
Total	100%	100%	100%	100%	--	--

Given the uncertainty of COVID-19-related impacts to travel behaviours in Downtown Toronto at the time of the 2022 TTS (particularly related to transit ridership), the 2016 TTS mode split has been maintained as the baseline mode split to be calibrated as part of this analysis.



9.2.2 Mode Split Calibration

The baseline mode split derived from the 2016 TTS was reviewed in the context of site specific characteristics. Since there is zero parking provided on-site, the proposed development is anticipated to not generate any personal automobile trips (auto driver or auto passenger). Therefore, the auto-driver trips will be offset by trips using other modes. Zero parking on-site is anticipated to impact pick-up / drop-off (PUDO) and non-auto mode shares as residents will opt for alternative travel options including taxis and ride share services (such as Uber and Lyft), transit, walking, and cycling as alternatives.

PUDO Mode Split Calibration

Ride hailing and PUDO (e.g. taxi, Uber, Lyft, etc.) have become increasingly prevalent mobility options in downtown urban contexts. Both the 2016 TTS and 2022 TTS mode split queries indicate a relatively small proportion of trips (in the order of 1% - 2%) being made by PUDO. To validate and calibrate the forecast PUDO mode split for the site, proxy sites were reviewed to gauge the rate at which PUDO trips are made at sites with comparable transportation contexts to the proposed development.

Table 16 summarizes the PUDO person trip rates observed at proxy sites during the weekday morning and afternoon peak hours as well as the adopted PUDO person trip rates and corresponding PUDO person trips expected to be generated by the site.

Table 16 Pick-Up / Drop-Off Proxy Rates – Person Trips

Proxy Site	Study Date	Units	AM			PM		
			In	Out	2-Way	In	Out	2-Way
22 Wellesley Street E	Thursday November 2, 2023	158	0.01	0.02	0.03	0.00	0.00	0.00
28 Wellesley Street E	Thursday November 2, 2023	337	0.01	0.01	0.02	0.03	0.03	0.06
403 Church Street	Wednesday, August 2, 2023	537	0.00	0.01	0.01	0.01	0.01	0.02
77 Mutual Street	Wednesday, August 2, 2023	383	0.01	0.01	0.02	0.01	0.00	0.01
Average PUDO Person Trip Rates			0.01	0.01	0.02	0.01	0.01	0.02
Adopted PUDO Person Trip Rates			0.01	0.01	0.02	0.01	0.01	0.02
Adopted PUDO Person Trips (814 units)			10	10	20	10	10	20

The adopted two-way PUDO person trip rate of **0.02 trips / unit** corresponds to **20 two-way PUDO person trips** during both the morning and afternoon peak hours, respectively.

These trips correspond to a 5% overall share of total two-way person trips generated by the site, as illustrated in **Table 17**, reflecting the increased prevalence of such activity as a viable mobility option in urban contexts.



Table 17 Pick-Up / Drop-Off Mode Split Calibration

	AM			PM		
	In	Out	2-Way	In	Out	2-Way
Total PUDO Person Trips	10	10	20	10	10	20
Total Site Person Trips	80	285	365	210	155	365
Adopted PUDO Mode Split	5%			5%		

9.2.3 Adopted Mode Split Summary

The adopted mode split reflects the zero parking strategy for the site and PUDO calibrations conducted in **Section 9.2.2**, which are intended to represent site and area-specific travel characteristics related to vehicular mobility.

The adopted mode split updates the baseline 2016 TTS mode split presented in **Table 13** to reflect the adopted 0% auto driver mode share, 0% auto passenger mode share, and the adopted 5% PUDO mode share. **Table 18** summarizes the adopted mode split for this analysis.

To account for the changes in auto driver and auto passenger mode share between the adopted mode split and the 2016 TTS existing mode split, a portion of the net reduction in auto driver and auto passenger mode share was added to the PUDO mode share to achieve the 5% target, the remainder was proportionately distributed across the other modes.

Table 18 Adopted Mode Share

Travel Mode	AM	PM
Auto Driver	0%	0%
Auto Passenger	0%	0%
PUDO ¹	5%	5%
Transit	51%	45%
Walk	39%	45%
Cycle	5%	5%
Total	100%	100%

Notes:

1. PUDO mode share reflects the calibrated mode share in **Table 17**.



9.2.4 Site Multi-Modal Trip Generation Summary

The adopted mode split was applied to the site generated person trips to forecast the anticipated number of person trips to be generated by each mode, summarized in **Appendix C**.

Table 19 Site Multi-Modal Trip Generation Summary

Mode	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Adopted Proxy Site Person Trip Rates (Person Trip / Unit)	0.10	0.35	0.45	0.26	0.19	0.45
Site Person Trips (814 Units)	80	285	365	210	155	365
Adopted Site Mode Split						
Auto Driver	0%			0%		
Auto Passenger	0%			0%		
PUDO	5%			5%		
Transit	51%			45%		
Walk	39%			45%		
Cycle	5%			5%		
Multi-Modal Trip Generation						
Auto Driver	0	0	0	0	0	0
Auto Passenger	0	0	0	0	0	0
PUDO	10	10	20	10	10	20
Transit	35	150	185	95	70	165
Walk	30	110	140	95	65	160
Cycle	5	15	20	10	10	20
Total	80	285	365	210	155	365

The proposed development is anticipated to generate **20 two-way auto-related person trips** during both the weekday morning and afternoon peak hours, respectively. In addition, the site is expected to generate approximately 345 two-way non-auto-related person trips during the weekday morning and afternoon peak hours, respectively.

9.3 Pick-Up / Drop-Off Proxy Site Vehicle Trip Generation

In addition to the forecast PUDO person trip generation noted in **Section 9.2.2**, PUDO vehicle trip generation has been estimated for the site. It should be noted that the PUDO vehicle trip generation forecast below is based on total PUDO vehicle trips, which are inclusive of both resident-related pick-up and drop-off activity, as well as short-term delivery activity (e.g. food deliveries, courier activity, etc.).



Proxy site traffic data collected by BA Group at developments with similar geographic and transportation contexts was used to forecast PUDO vehicle activity at the site. Proxy site PUDO trip rates and forecast PUDO trip generation for the site is summarized in **Table 20**.

Table 20 Pick-Up / Drop-Off Proxy Rates – Vehicle Trips

Proxy Survey Location	Units	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
22 Wellesley Street E	158	0.02	0.02	0.04	0.00	0.00	0.00
28 Wellesley Street E	337	0.01	0.01	0.02	0.02	0.02	0.04
500 Sherborne	363	0.02	0.02	0.04	0.01	0.01	0.02
1000 Bay Street	458	0.013	0.013	0.026	0.013	0.013	0.026
403 Church Street	537	0.01	0.01	0.02	0.01	0.01	0.02
77 Mutual Street	383	0.01	0.01	0.02	0.02	0.02	0.04
6 Parkwood Avenue	116	0.03	0.03	0.06	0.03	0.03	0.06
Adopted PUDO Trip Rates (vehicle trips / unit)		0.02	0.02	0.04	0.02	0.02	0.04
PUDO Vehicle Trips		15	15	30	15	15	30

Notes:

1. This information is property of BA Group Ltd. It should not be altered, abbreviated, taken out of context, or used for any other purpose other than the intended purpose in connection with the 48 Isabella Street development application.

Based on the foregoing, the site is expected to generate in the order of 30 two-way PUDO vehicle trips during the morning and afternoon peak hours. These 30 two-way PUDO trips are incorporated into the traffic volumes forecasting and traffic operations analysis presented in **Section 10.0** and **Section Error! Reference source not found.**, respectively.

9.4 Transit Considerations

As summarized in **Table 19**, the proposed development is projected to generate in the order of **185 and 165 two-way transit trips** in the weekday morning and afternoon peak hours, respectively.

9.4.1 Transit Trip Distribution

Transit trips generated by the proposed development were assigned to the area transit network based on trip distribution data from the 2016 Transportation Tomorrow Survey (TTS). Outbound distribution was derived based on trips made during the weekday morning peak period whereas inbound distribution was derived based on trips made during the weekday afternoon peak period, both of which reflect peak hour of travel during the morning and afternoon peak periods.

The area transit distribution and resultant site transit trips by higher-order transit route is summarized in **Table 21**.



Table 21 Site Transit Trip Assignment by Route

Route	AM Peak Hour			PM Peak Hour		
	In ¹	Out ¹	2-Way	In ¹	Out ¹	2-Way
Area Transit Distribution						
Line 1 Yonge - University	51%	52%	--	51%	52%	
Line 2 Bloor - Dundas	49%	48%	--	49%	48%	
Total	100%	100%		100%	100%	
Site-Generated Transit Trips						
Line 1 Yonge - University	17	72	89	47	34	81
Line 2 Bloor - Dundas	18	78	96	48	36	84
Total	35	150	185	95	70	165

Notes:

1. Based on inbound and outbound residential trips to / from 2006 TTS zones 21,39,40,41,42,46,47,48,49.
2. Outbound trips based on weekday morning peak hour; inbound trips based on weekday afternoon peak hour.

Of the forecast site transit trips, **89 and 81 two-way transit** users are anticipated to utilize the subway service along the TTC Line 1 Yonge – University, during the weekday morning and afternoon peak hours, respectively. The transit users utilizing TTC Line 2 Bloor – Dundas are forecast in the order of **96 and 84 two-way transit trips** during the weekday morning and afternoon peak hours, respectively.

Inbound and outbound site-generated trips were further distributed to the respective directions for each route. site-transit trips distributed by route and direction are summarized in **Table 22**.

Table 22 Site Transit Trip Assignment by Route and Direction

Transit Route		AM Peak Hour			PM Peak Hour		
		Boarding	Alighting	2-way	In (Boarding)	Out (Alighting)	2-way
Line 1 Yonge - University	NB	5	25	30	20	10	30
	SB	10	50	60	25	25	50
Line 2 Bloor - Dundas	EB	10	20	30	20	10	30
	WB	10	55	65	30	25	55
Total		35	150	185	95	70	165

Notes:

1. Based on residential trips to/from 2006 TTS zones 21,39,40,41,42,46,47,48,49.
2. Outbound trips based on weekday morning peak hour; inbound trips based on weekday afternoon peak hour.

The majority of transit users are anticipated to utilize Line 1 for trips to and from the north and south, and Line 2 for trips to and from the east and west to connect to the broader transit network.



9.4.2 Summary of Transit Considerations

The site is projected to generate in the order of **185 and 165 two-way transit trips** in the weekday morning and afternoon peak hours, respectively. Approximately 52% of these transit trips are associated with the Line 1 – Yonge - University subway, while the remaining 48% of transit trips are associated with the Line 2 Bloor – Danforth subway.

These transit trips are expected to have a minimal impact on the local area transit network when spread over the peak hour considering the high frequency of TTC subway headways in at Bloor-Yonge and Wellesley Stations. The average transit activity per vehicle contributed by the proposed development is low and the local area transit vehicles are expected to be able to, in our opinion, acceptably accommodate this future transit demand. On this basis, area transit services are anticipated to reasonably accommodate and further encourage ridership and increased demand changes.

9.5 Pedestrian Considerations

Site-generated pedestrian trips are classified into two categories:

- **Primary Pedestrian Trips** – Trips made to / from the development site solely by walking, thus excluding pedestrians routing to / from transit stops and stations (i.e. the primary mode of travel is walking).
- **Transit-based pedestrian Trips** – Trips that reflect pedestrian routing between the development site and nearby transit services. The primary mode of travel is transit.

Primary and transit-based pedestrian trips as discussed in **Section 9.0**, are summarized in **Table 23**.

Table 23 Site Pedestrian Trip Generation

Mode	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Primary Pedestrian Trips	30	110	140	95	65	160
Transit-Based Pedestrian Trips	35	150	185	95	70	165
Total	65	260	325	190	135	325

The proposed development is projected to generate in the order of **325 total two-way pedestrian trips** in both the weekday morning and afternoon peak hours, respectively, inclusive of both primary and transit-based pedestrian trips.

Primary pedestrian trips are anticipated to be generally dispersed in all directions to the north, east, south, and west given the range of nearby destinations within Downtown Toronto. As discussed in **Section 9.4.1**, the majority of transit users are anticipated to utilize Line 1 Yonge – University, and Line 2 Bloor - Danforth subways to get to or from the site.

Given the site location southeast of Bloor-Yonge Station, providing access to both Line 1 Yonge – University and Line 2 Bloor – Danforth, the majority of transit-based pedestrian trips would be expected to occur to or from the west on Isabella Street towards Yonge Street to access Bloor-Yonge Station.

Summary of Pedestrian Considerations

The proposed development is projected to generate in the order of **325 total two-way pedestrian trips** in both the weekday morning and afternoon peak hours, respectively, inclusive of both primary and transit-based pedestrian trips. Given the robust pedestrian infrastructure present in the existing area (including sidewalks on both sides of the street and signalized crossings at major intersections), site-generated pedestrian trips are expected to be acceptably accommodated by area pedestrian facilities.



9.6 Cycling Considerations

As discussed in **Section 0**, the proposed development is projected to generate in the order of **10 and 15 two-way cycling trips** in the weekday morning and afternoon peak hours, respectively. It is anticipated that cyclists will use Yonge Street to access the wider cycling network within the City.

9.7 Pick-Up / Drop-Off Considerations

As discussed in **Section 0**, the proposed development is projected to generate in the order of **20 pick-up / drop-off (PUDO) person trips** in both the weekday morning and afternoon peak hours, respectively. It should be noted that each PUDO person-trip corresponds to one inbound and one outbound vehicle trip. The proposed development plans illustrate 2 dedicated PUDO spaces on the ground floor, accessible from Macy DuBois Lane.

Given the relatively low number of PUDO trips projected to be generated by the site, it is anticipated that the 2 proposed PUDO spaces are sufficient to accommodate the forecasted PUDO demand.

9.7.1 Toronto Green Standard Version 4

The Toronto Green Standard (TGS) is Toronto's sustainable design requirements for new developments that aim to promote sustainable site and building design across five areas. TGS consists of multiple tiers of sustainable performance measures (from Tier 1 to Tier 4) where Tier 1 is mandatory as part of the planning approval process and Tiers 2 to 4 are voluntary. A new Version 4 of the TGS is applicable to development applications submitted after May 1, 2022.

The Tier 1 standard within the updated TGS requires all development proposals to reduce single occupancy auto vehicle trips generated by the proposed development by 25% through the adopted TDM measures and multi-modal infrastructure strategies for the site. The zero-parking strategy for the site inherently limits the overall vehicle activity to PUDO trips (including resident-related and service / delivery trips). **Table 24** summarizes the comparison of a default vehicle trip generation derived from the ITE *Trip Generation Manual 11th Edition* to the proposed site trip generation for the site.

Table 24 Vehicle Trip Generation Reduction Summary

Land Use	In	Out	2-Way
Residential			
ITE (Land Use 222) – Multifamily Housing – Close to Transit – Dense Multi-Use Urban (High – Rise) (814 units)	0.02 (0.13)	0.20 (0.07)	0.22 (0.19)
	20 (105)	160 (60)	180 (115)
Site Vehicle Trip Generation (PUDO) ²	15 (15)	15 (15)	30 (30)
Reduction	25% (86%)	91% (75%)	83% (81%)

Note:

- 00 (00) [00] – weekday morning peak hour (weekday afternoon peak hour).
- Per forecast vehicle trips summarized in **Table 20**.

As outlined above, a comparison of the projected site trip generation to the trip generation based on a review of ITE *Trip Generation Manual 11th Edition* suggests a two-way trip reduction of approximately 83% and 81% during the morning and afternoon peak hours, respectively. As such, these reductions meet and exceed the requirements set out within the TGS Version 4 Tier 1 of a 25% reduction.



10.0 TRAFFIC VOLUMES FORECASTING

10.1 Scope

Traffic volumes forecasts, intersection and driveway operations and new site traffic related impacts have been reviewed as part of this study. The scope of this study includes the following intersections:

Signalized Intersections

- Church Street / Charles Street East
- Church Street / Isabella Street
- Yonge Street / Charles Street West / Charles Street East

Unsignalized Intersections

- Yonge Street / Isabella Street
- Charles Street East / Macy Dubois Lane East
- Charles Street East / Macy Dubois Lane West

Existing network lane configurations and traffic control are illustrated in **Figure 3**.

10.2 Existing Traffic Volumes

The existing baseline traffic and pedestrian volumes were established at for the weekday morning and afternoon peak hours using turning movement count information from surveys undertaken by Spectrum Traffic Data Inc., on behalf on BA Group. A list of the traffic count dates and sources is provided in **Appendix D**. **Figure 10** illustrates existing traffic volumes.

Table 25 Existing Traffic Data Sources

Intersection	Count Date	Source
Church Street / Charles Street E	Wednesday October 16 th , 2024	Spectrum Traffic Data Inc.
Church Street / Isabella Street		
Yonge Street / Charles Street West / Charles Street East		
Yonge Street / Isabella Street		
Charles Street East / Macy Dubois Lane East		
Charles Street East / Macy Dubois Lane West		

The existing turning movement counts were reviewed to ensure general consistency in the traffic volumes on links between intersections. Where necessary, minor volume adjustments were made to balance traffic volumes between intersections to provide a balanced and representative traffic volume base for the purpose of the traffic operations analyses undertaken as part of this assessment. Detailed traffic data summaries are attached in **Appendix D**.



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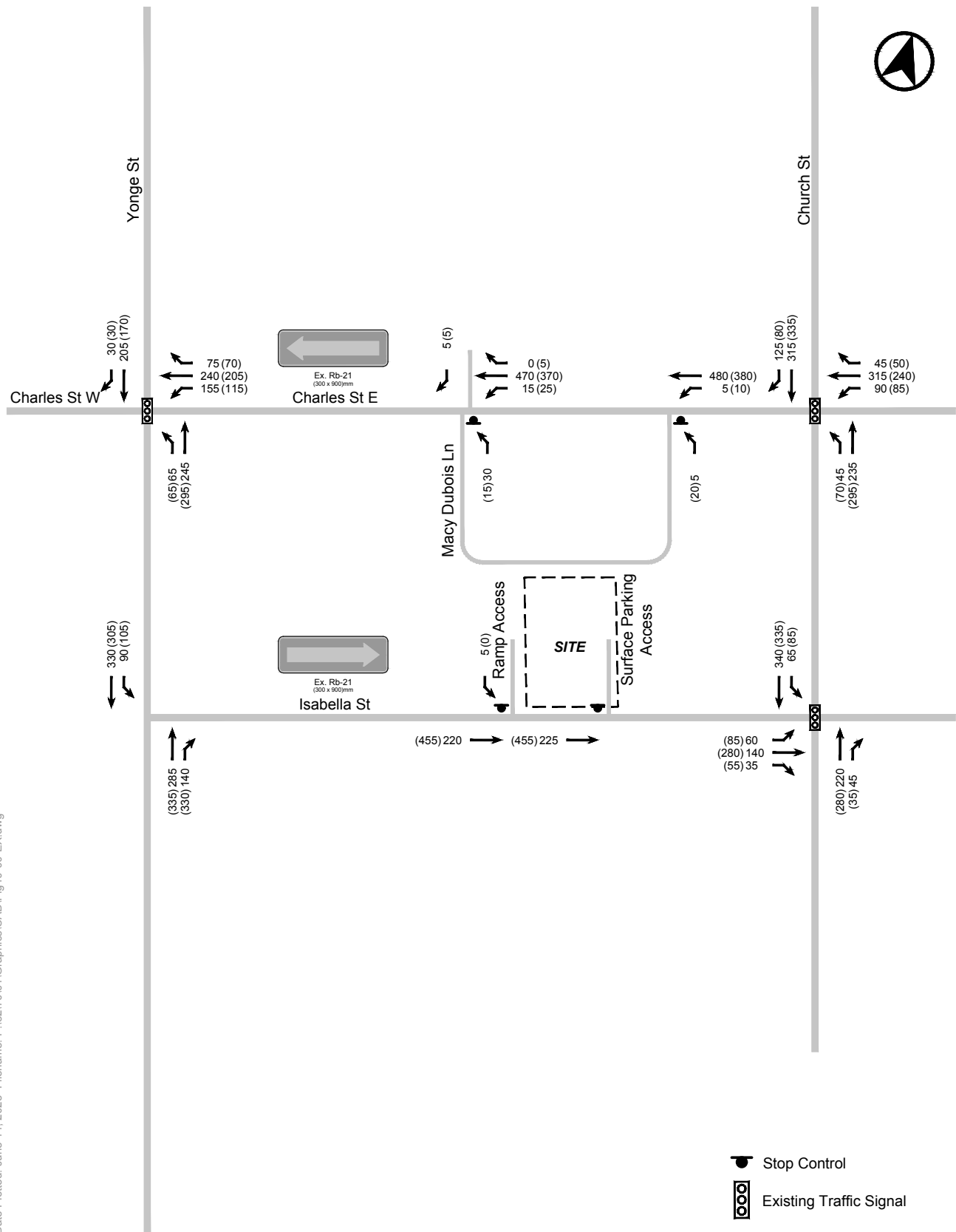


FIGURE 10 EXISTING TRAFFIC VOLUMES

10.1 Future Background Traffic Volumes

10.1.1 General Corridor Growth

Based upon the review of traffic counts along the Yonge Corridor which is generally a negative trend, and the extensive number of specific background developments considered within this study, no corridor growth has been applied to existing traffic volumes in consideration of general corridor growth. The corridor growth raw data is summarized in **Appendix E**.

10.1.2 Background Developments

A series of background development traffic allowances have been made to account for new traffic activity related to several other developments in the vicinity of the site that are either approved but not constructed or are in the City's approval process.

Traffic allowances associated with these developments were generally established based upon assignment information incorporated into traffic impact studies prepared as part of the approval processes for these developments. These sites represent development in the order of 5,811 residential units, 29,941 m² of non-residential GFA.

Area developments that have been considered are summarized in **Table 26** together with a description of the development programme adopted for the purpose of this study. **Figure 11** illustrates area background developments and **Figure 12** illustrates future background traffic volumes for the weekday morning and afternoon peak hours, which include existing traffic volumes plus allowances made for area background developments, as discussed above.

Table 26 Site Specific Background Developments

Development Location		Development Statistics	Transportation Study
1	15 Charles Street East 16 Isabella Street	601 residential units	WSP Canada Inc.
2	55,61 Charles Street East	648 residential units	BA Consulting Group Ltd
3	587, 593, 599 Yonge Street 7,9 Gloucester Street 4 Dundonald Street	528 residential units	BA Consulting Group Ltd.
4	619-637 Yonge St 1-9 Isabella St	606 residential units, 2,933 m ² of retail space	The Municipal Infrastructure Group Ltd.
5	10 St Mary St	495 residential units 8,923 m ² of office/retail space	LEA Consulting Ltd.
6	25 St Mary St	1,143 residential units	WSP Canada Inc.
7	66 Charles Street East	16 residential units	BA Consulting Group Ltd.
8	88 Isabella Street	720 residential units	LEA Consulting Ltd.
9	646 – 664 Yonge Street & 2-4 Irwin Avenue	548 residential units, 500 m ² of retail space	BA Consulting Group Ltd.
10	1 Bloor Street W	505 residential units, 5,472 m ² retail / commercial space, 1,741 m ² office space and 10,472 m ² hotel space	BA Consulting Group Ltd.
Total		5, 811 residential units and 29,941 m² of non-residential GFA	



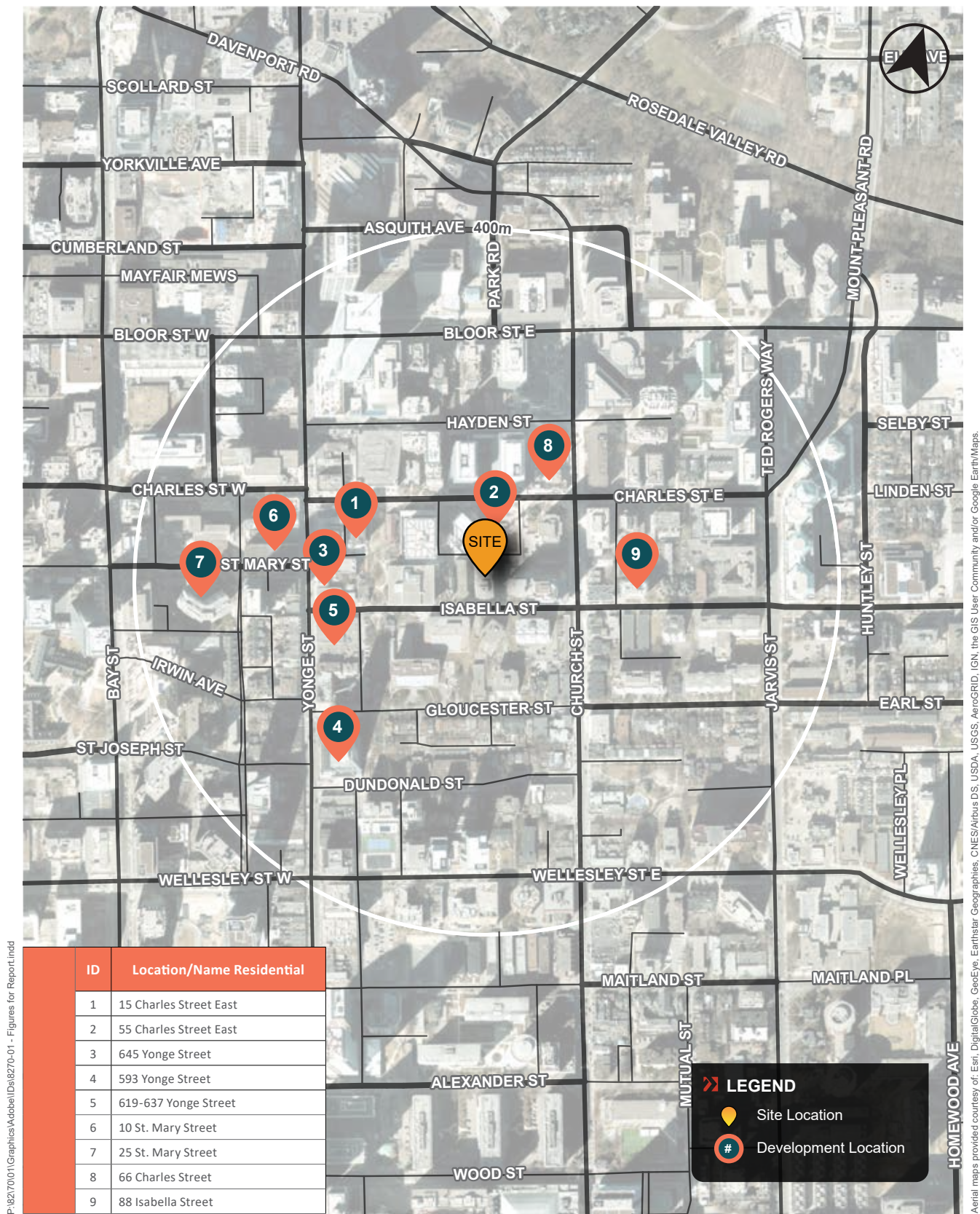


FIGURE 11 BACKGROUND AREA DEVELOPMENTS

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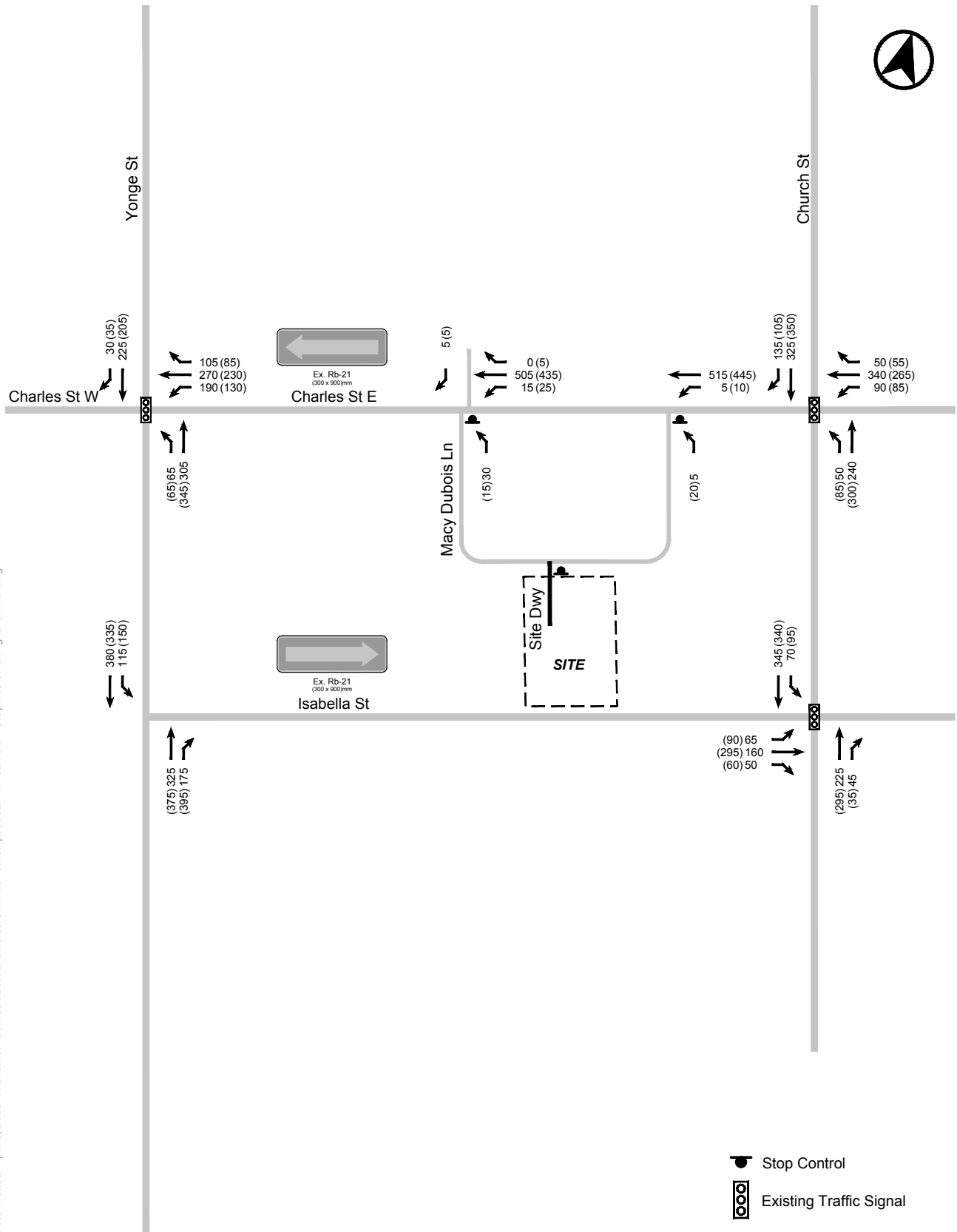


FIGURE 12 FUTURE BACKGROUND TRAFFIC VOLUMES

10.2 Site Traffic volumes

10.2.1 Existing Site Vehicular Trips

Counts at existing site driveways were undertaken by BA Group on Wednesday October 16th, 2024, to determine the number of trips made to and from the site. The site is currently occupied by a residential apartment building with both surface parking and underground parking off Isabella Street. The proposed new site access will be off Macy Dubois Lane, resulting in the closure of the existing site access on Isabella Street. The existing site-related traffic volumes surveyed are summarized in **Table 27**.

Table 27 Existing Site Trips

Existing Trips	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Isabella UG parking (unrounded)	0	6	6	0	0	0
Isabella UG parking (rounded)	0	5	5	0	0	0
Isabella Surface Parking (unrounded)	1	2	3	1	0	1
Isabella UG parking (rounded)	0	0	0	0	0	0
Total Existing Site Trips	1	8	9	1	0	1
Total Existing Site Trips (rounded)	0	5	5	0	0	0

The existing site surveyed generated in the order of **5 and 0 two-way vehicle trips** during the weekday morning and afternoon peak hours, respectively.

For the purpose of the analysis, the existing trips were removed from the road network, as illustrated in **Figure 13**.

10.2.2 Future Site Traffic Generation

Auto trip generation for the proposed residential units is based upon a review of data collected by BA Group for similar developments in the City of Toronto for pick-up / drop-off vehicular trips only, due to the zero-parking provision, according to the trip forecasting methodologies outlined in **Section 9.0**. A summary of forecasted site vehicular traffic is provided in **Table 28**.

The site auto trips generated by the proposed development are in the order of **30 two-way vehicle PUDO trips** during both the weekday morning and afternoon peak hours, respectively.

Table 28 Site PUDO Traffic Generation

Parameter	AM Peak			PM Peak		
	In	Out	2-way	In	Out	2-way
Pick-Up / Drop-Off Trips (814 units ²)	15	15	30	15	15	30



10.2.3 Site Trip Distribution and Assignment

The residential travel pattern for the forecast vehicular site traffic has been developed based on a review of data for home (apartment) based vehicle trips to and from the study area (2006 TTS traffic zones 21, 39, 40, 41, 42, 46, 47, 48, 49) during the weekday morning and afternoon peak hours. The distribution of inbound and outbound vehicle trips is derived from the peak direction of travel during the peak periods. A summary of the adopted residential vehicle distribution is provided in **Table 29**. The trip distribution and assignment details are in **Appendix C**.

Table 29 Residential Trip Distribution

Direction	Orientation to / from Site	AM (Outbound)	PM (Inbound)
North	Church Street	0%	70%
	Yonge Street	50%	0%
South	Church Street	0%	10%
	Yonge Street	10%	5%
East	Isabella Street	15%	0%
	Charles Street East	0%	15%
West	St Mary Street	0%	0%
	Charles Street West	25%	0%
Total		100%	100%

Notes:

1. Residential (home-based trips) trip distribution is based on 2016 TTS data for vehicle trips to and from 2006 TTS traffic zones 21, 39, 40, 41, 42, 46, 47, 48, 49 during the morning and afternoon peak hours.
2. Inbound residential traffic distribution is based upon afternoon peak period residential inbound trips; outbound residential traffic distribution is based upon morning peak period outbound trips.
3. Trip distributions are rounded to the nearest 5%.

The forecast site traffic is assigned to the road network based on the aforementioned distributions. Site traffic volumes and net new site traffic are provided in Figure 14 and **Figure 15**, respectively.



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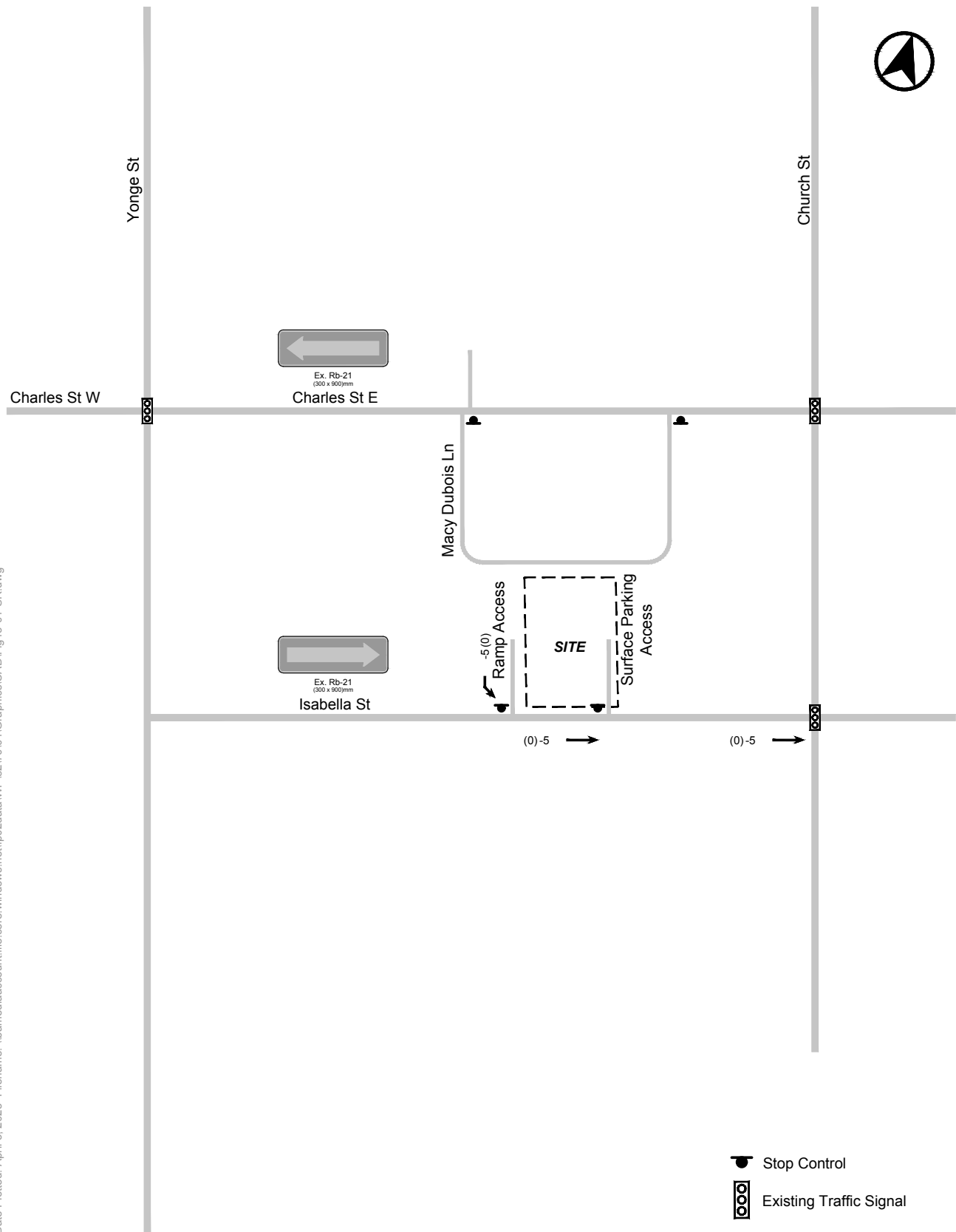


FIGURE 13 SITE REMOVAL TRAFFIC VOLUMES

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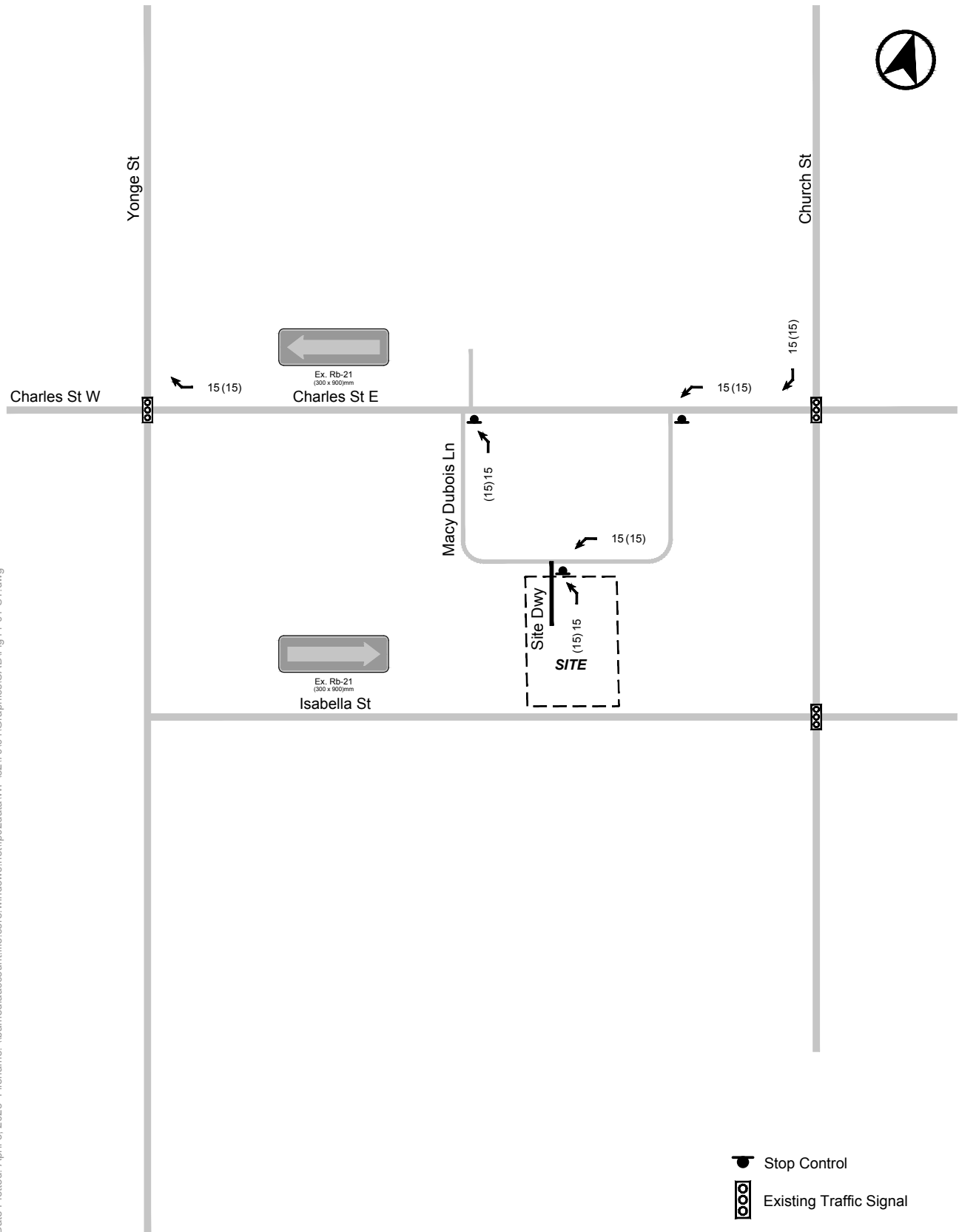


FIGURE 14 SITE TRAFFIC VOLUMES

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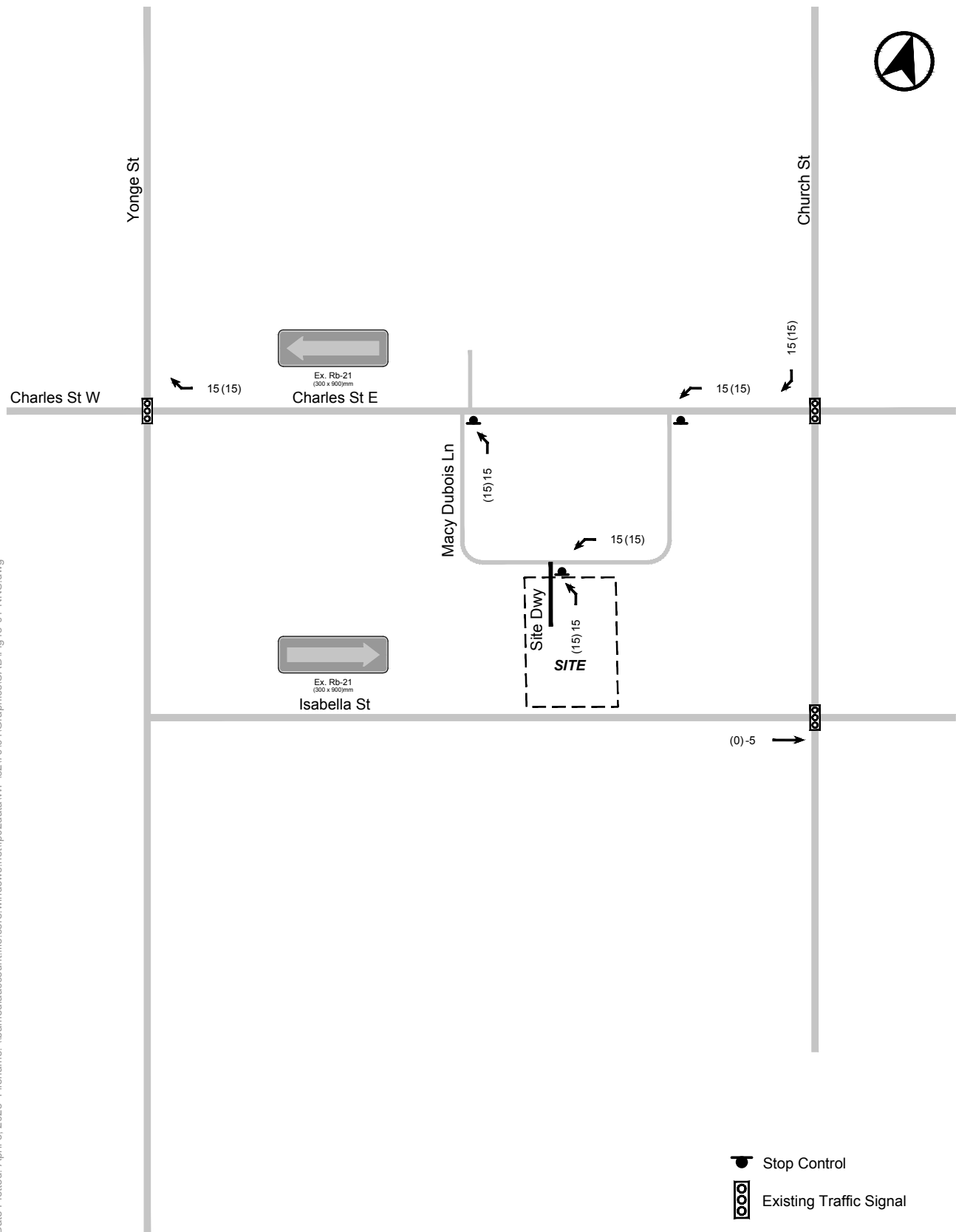


FIGURE 15 NET NEW SITE TRAFFIC VOLUMES

10.3 Future Total Traffic Volumes

Future total traffic volumes were established by adding the site-generated traffic to the future background traffic volumes. **Figure 16** illustrates the future total traffic volumes for the weekday morning and afternoon peak hours.



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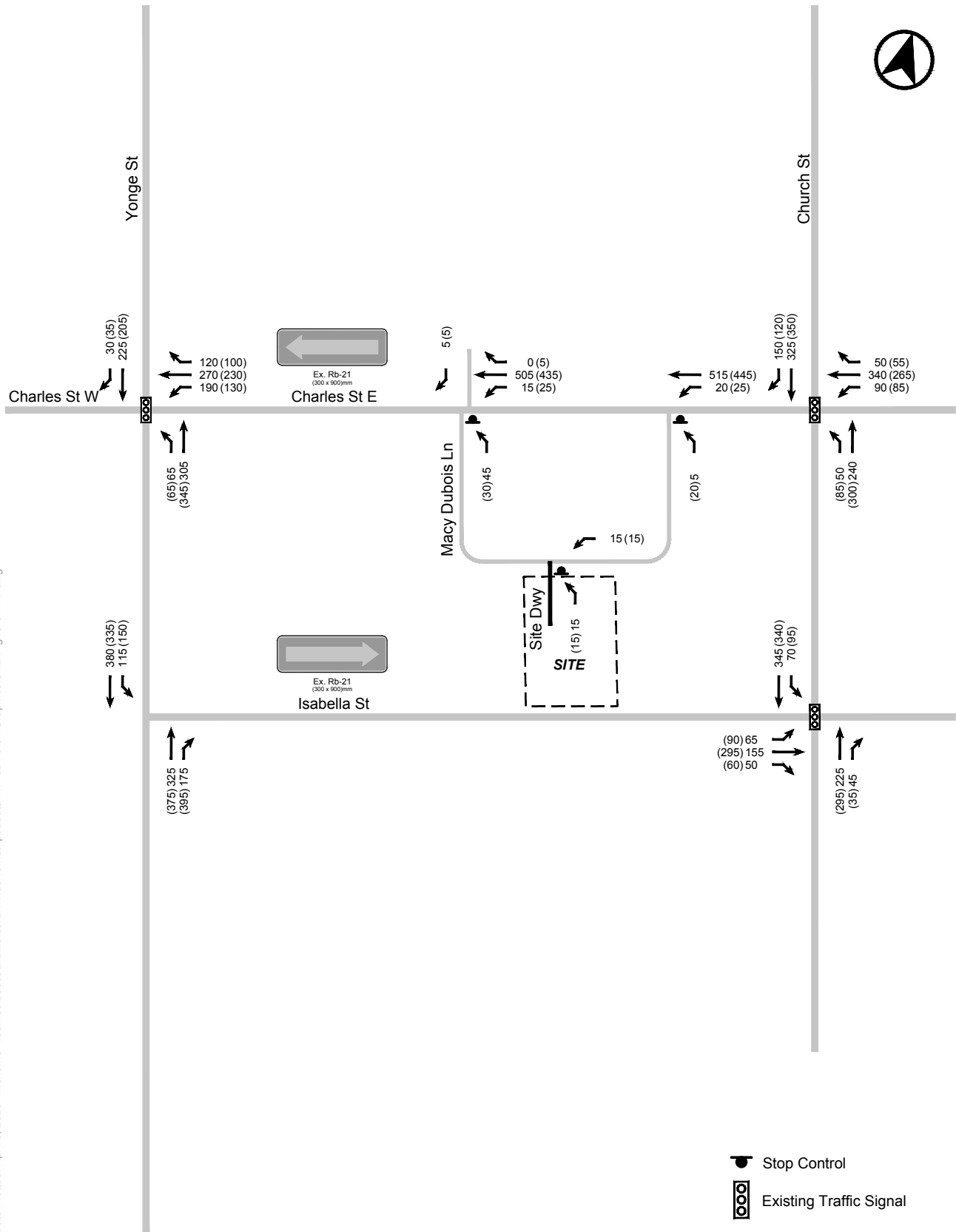


FIGURE 16 FUTURE TOTAL TRAFFIC VOLUMES

11.0 TRAFFIC OPERATIONS ASSESSMENT

11.1 Capacity Analysis Methodology

Traffic operations analyses have been undertaken at the area intersections using standard capacity analysis procedures as follows.

Signalized Intersection Methodology

Analyses undertaken at intersections operating under traffic signal control have been undertaken using the methodologies and procedures outlined in the Highway Capacity Manual (HCM) 2000, and in accordance with the City's guidelines for analyses undertaken using Synchro 9.0 software. The product of the signalized intersection evaluation is an intersection performance index (volume to capacity ratio or V/C), where a V/C index of 1.00 indicates 'at or near capacity' conditions.

Unsignalized Intersection Methodology

Unsignalized intersection analyses have been carried out using standard capacity procedures for intersections operating under "Two-way" and "All-Way" STOP control and in accordance with the methodologies outlined in the Highway Capacity Manual 2000 (HCM, 2000).

The product of these analyses is a level of service (LOS) designation, ranging from LOS A to F, which provides a relative indication of the level of delay experienced by motorists completing a turning manoeuvre at an intersection. LOS A represents conditions under which motorists would experience little delay and LOS F reflects conditions where more extended delays can be expected.

11.2 Analysis Parameters

Heavy Vehicle Assumptions

Heavy and medium truck percentages incorporated into the analysis were based upon information provided as part of intersection turning movement counts.

Saturation Flow Assumptions

The City of Toronto Guidelines for using Synchro 9 (including Simtraffic 9), dated April 28, 2016, specifies a base saturation flow rate of 1,900 passenger cars per hour of green time per lane (pcphgpl) for signalized and unsignalized intersections. These default rates were adopted in the analysis for the proposed development.

Lost Time Adjustments

The City of Toronto Guidelines for using Synchro 9 (including Simtraffic 9), dated April 28, 2016, specify a base lost time adjustment factor of -1.0 seconds (i.e. a total loss time per phase equal to the amber plus all-red time minus 1 second). This default value was adopted in the analysis.



Signal Timings

The most current available signal timings were obtained for signalized intersections within the study area from the City of Toronto. Existing Signal timing data sheets are included in **Appendix F**.

Peak Hour Factor

The City of Toronto Guidelines for using Synchro 9 (including Simtraffic 9), dated April 28, 2016, specifies that default peak hour factors should be used except where site-specific values can be calculated from existing traffic count information. These guidelines specify that a default peak hour factor of 0.90 should be used for through and turn movements during the weekday morning peak hour; and 0.95 for the through movements and 0.90 for turn movements during the weekday afternoon peak hour.

The City of Toronto default values were used in the analysis of the proposed site driveway. At other area intersections, peak hour factors were calculated based on the existing traffic volume data extracted from the traffic counts utilized in this study for the operations analysis. The calculated peak hour factors are summarized in **Table 30**.

Table 30 Summary of Calculated Peak Hour Factors

Intersection	AM Peak Hour	PM Peak Hour
Yonge Street / Charles Street East	0.97	0.95
Church Street / Charles Street East	0.91	0.88
Church Street / Isabella Street	0.91	0.86
Yonge Street / Isabella Street	0.95	0.95
Macy Dubois Lane (West) / Charles Street E	0.91	0.95
Macy Dubois Lane (East) / Charles Street E	0.90	0.98
Macy Dubois Lane / Site Access ¹	0.90	0.95 & 0.90

Notes:

1. Default PHF values used for new site access, 0.95 for through movements and 0.90 for turn movements

Lane Utilization Factors

Under existing conditions, default Synchro lane utilization factors (LUF) were adopted, which take into consideration the distribution of individual lane usage within each movement group.



11.3 Signalized Intersections

Traffic operations analysis results and discussion for the area signalized intersections for the existing, future background, and future total conditions are summarized in the following sections. Detailed capacity analysis reports are provided in **Appendix G**.

Overall intersection and movement volume to capacity (V/C) ratios are summarized at all signalized intersections for each of the analyzed traffic conditions in **Table 31** and the following sections.

Table 31 Signalized Intersection Analysis Summary

Movement	Existing Traffic		Future Background Traffic		Future Total Traffic	
	V/C	LOS	V/C	LOS	V/C	LOS
Yonge Street / Charles Street East / Charles Street West						
WBL	0.45 (0.38)	C (D)	0.51 (0.39)	C (D)	0.51 (0.39)	C (D)
WBT	0.66 (0.64)	C (D)	0.69 (0.66)	C (D)	0.69 (0.66)	C (D)
WBR	0.05 (0.05)	C (E)	0.07 (0.06)	C (E)	0.08 (0.07)	C (E)
NBTLR	0.18 (0.19)	A (A)	0.20 (0.22)	A (A)	0.20 (0.22)	A (A)
SBTR	0.11 (0.09)	A (A)	0.12 (0.11)	A (A)	0.12 (0.11)	A (A)
Overall	0.30 (0.29)	B (C)	0.33 (0.33)	B (C)	0.33 (0.33)	B (C)
Church Street / Charles Street East						
WBL	0.21 (0.23)	C (C)	0.19 (0.21)	C (C)	0.19 (0.21)	C (C)
WBTR	0.78 (0.75)	D (D)	0.80 (0.77)	D (D)	0.80 (0.77)	D (D)
NBTLR	0.18 (0.23)	B (A)	0.20 (0.26)	A (A)	0.20 (0.26)	A (B)
SBTR	0.23 (0.20)	A (A)	0.24 (0.23)	B (A)	0.25 (0.23)	B (A)
Overall	0.40 (0.37)	B (B)	0.43 (0.41)	C (B)	0.43 (0.41)	B (B)
Church Street / Isabella Street						
EBTLR	0.35 (0.61)	C (D)	0.20 (0.64)	A (C)	0.40 (0.64)	C (C)
NBTR	0.12 (0.15)	A (A)	0.19 (0.15)	A (A)	0.12 (0.16)	A (A)
SBTL	0.22 (0.25)	A (A)	0.37 (0.26)	B (A)	0.23 (0.26)	A (B)
Overall	0.25 (0.33)	B (B)	0.28 (0.36)	B (B)	0.27 (0.36)	B (B)

Notes:

1. XX (XX) – AM (PM)



Yonge Street / Charles Street East / Charles Street West

Under existing traffic conditions, the intersection operates under acceptable conditions with overall V/C ratios of 0.30 and 0.29 in the weekday morning and afternoon peak hours, respectively.

With future background traffic conditions with the allowances of specific area development and general corridor traffic growth, the intersection operates at an acceptable level of service with overall v/c ratios of 0.33 and 0.33 in the weekday morning and afternoon peak hours, respectively.

With the addition of site related traffic under future total traffic conditions, the intersection operates at an acceptable level of service with overall v/c ratios of 0.33 and 0.33 in the weekday morning and afternoon peak hours, respectively.

Church Street / Charles Street East

Under existing traffic conditions, the intersection operates under acceptable conditions with overall V/C ratios of 0.40 and 0.37 in the weekday morning and afternoon peak hours, respectively.

With future background traffic conditions with the allowances of specific area development and general corridor traffic growth, the intersection operates at an acceptable level of service with overall v/c ratios of 0.43 and 0.41 in the weekday morning and afternoon peak hours, respectively.

With the addition of site related traffic under future total traffic conditions, the intersection operates at an acceptable level of service with overall v/c ratios of 0.43 and 0.41 in the weekday morning and afternoon peak hours, respectively.

Future traffic volumes can be readily accommodated at the area signalized intersections surrounding the site. The site related traffic is acceptable and will not noticeably affect traffic operations at the intersections relative to the future background conditions.

Church Street / Isabella Street

Under existing traffic conditions, the intersection operates under acceptable conditions with overall V/C ratios of 0.25 and 0.33 in the weekday morning and afternoon peak hours, respectively.

With future background traffic conditions with the allowances of specific area development and general corridor traffic growth, the intersection operates at an acceptable level of service with overall v/c ratios of 0.28 and 0.36 in the weekday morning and afternoon peak hours, respectively.

With the addition of site related traffic under future total traffic conditions, the intersection operates at an acceptable level of service with overall v/c ratios of 0.27 and 0.36 in the weekday morning and afternoon peak hours, respectively.

Future traffic volumes can be readily accommodated at the area signalized intersections surrounding the site. The site related traffic is acceptable and will not noticeably affect traffic operations at the intersections relative to the future background conditions.



11.4 Unsignalized Analysis

Traffic operations analysis results for the unsignalized intersections in the study area are summarized in **Table 32**. Detailed capacity analysis reports are provided in **Appendix G**.

Table 32 Unsignalized Intersection Analysis Summary

Movement	Existing Traffic		Future Background Traffic		Future Total Traffic	
	LOS	Delay	LOS	Delay	LOS	Delay
Yonge Street / Isabella Street						
SBL	A (A)	4.3 (5.6)	A (A)	4.9 (7.2)	A (A)	4.9 (7.2)
Macy Dubois Lane (West) / Charles Street E						
WBTL	A (A)	0.7 (1.3)	A (A)	0.7 (1.2)	A (A)	0.7 (1.2)
NBL	B (B)	10.6 (10.3)	B (B)	10.8 (10.5)	B (B)	10.9 (10.7)
Macy Dubois Lane (East) / Charles Street E						
WBL	A (A)	0.2 (0.6)	A (A)	0.2 (0.5)	A (A)	0.9 (1.2)
NBL	B (B)	10.2 (10.1)	B (B)	10.4 (10.3)	B (B)	10.7 (10.6)
Macy Dubois Lane / Site Access						
WBTL	Intersection does not exist in existing and future background conditions				A (A)	7.2 (7.2)
NBL					A (A)	8.8 (8.8)

Notes:

1. XX (XX) – AM (PM)

Under existing and future conditions, the study area unsignalized intersections operate with a LOS of B or better during the weekday morning and afternoon peak hour periods.

The site driveway operates at a LOS of A or better under future traffic volumes.



12.0 SUMMARY AND CONCLUSIONS

BA Group has been retained by Land's Edge Properties Ltd. to provide transportation consulting services in support of the proposed redevelopment of the lands municipally known as 48 Isabella Street (the 'site').

Key findings related to our review of the transportation-related aspects of the proposed development plan, including our traffic impact assessment analysis are as follows:

Proposed Development

1. An Official Plan Amendment and Zoning By-law Amendment application is being made to the City of Toronto to permit the development of a 69-storey residential building municipally addressed as 48 Isabella Street in the City of Toronto
2. The development proposal for the site consists of 814 residential units, 825 bicycle parking spaces (including 733 long-term spaces, 82 secured short-term spaces, and 10 publicly accessible short-term spaces), 1 Type 'G' and 1 Type 'C' loading space, and no vehicular parking.

Planning and Policy Context

3. The proposed redevelopment is supported by the Provincial and municipal policy which encourages efficient, sustainable developments which enhance mobility reduce reliance on the personal automobile.

Area Transportation Context

4. The site is well-located relative to the area road network, providing connectivity across the City and the broader Greater Toronto Area (GTA).
5. The site is situated in Downtown Toronto and is proximate to multiple higher order transit stations providing connection to Line 1 Yonge-University and Line 2 Bloor Danforth, including Bloor-Yonge Station, Wellesley Station, Bay Station, and Sherbourne Station.
6. The existing site location is well served by dedicated pedestrian infrastructure along both sides of Yonge Street, Church Street and Isabella Street.
7. The site is within walking distance of a range of commercial, retail, and institutional destinations. Traffic signals are provided at major intersections such as Bloor Street / Yonge Street to ensure pedestrian crossing opportunities, as well as a midblock crossing along Wellesley Street between Yonge Street and Church Street to enhance accessibility near Wellesley Station.
8. The area is served by a strong and growing cycling network with dedicated cycling infrastructure along Bloor Street, Sherbourne Street, Wellesley Street East, and Yonge Street, which provide strong connections to a variety of other cycling routes and facilities around the site.
9. The City of Toronto's City-Wide Cycling Program 2025-2027 indicates additional planned improvements to further enhance area cycling connectivity.

Vehicular Parking Considerations

10. The site is subject to Zoning By-law 569-2013, the application of which requires a minimum of 10 residential visitor spaces.
11. Application of recently enacted and passed By-law 223-2025 results in a requirement to supply 16 accessible spaces.
12. The development program proposes 0 parking for the site.



13. The proposed zero-parking strategy meets the minimum requirement for resident parking and represents a reduction of 10 spaces for residential visitor parking relative to the Zoning By-law requirements.
14. Section 200.15.10.10 (1) of Zoning By-law 569-2013 indicates that if the number of parking spaces associated with dwelling units is less than 5 spaces, no accessible parking is required to be provided. Therefore, the proposed zero-parking strategy adheres to the Zoning By-law requirement for accessible parking.
15. The proposed zero-parking strategy is considered appropriate on the following bases:
 - a. The strong area transportation context.
 - b. Recent residential visitor reduction approvals; and
 - c. The availability of publicly accessible parking in the area.

Bicycle Parking Considerations

16. Application of the Zoning By-law 569-2013 standard for Bicycle Zone 1 and the applicable TGS Version 4 requirements results in a minimum required supply of 906 bicycle parking spaces (733 long-term, 163 secured short-term, and 10 publicly accessible short-term spaces).
17. The development program proposes a total of 825 bicycle parking spaces, including 733 long term bicycle parking spaces, 82 secured short-term bicycle parking spaces, and 10 publicly accessible short-term bicycle parking spaces.
18. Payment-in-lieu is proposed to be provided for the remaining required 81 short-term bicycle parking spaces, consistent with Section 230.5.10.20 of Zoning By-law 569-2013. On this basis, the proposed long-term and short-term bicycle parking supplies comply with the requirements of Zoning By-law 569-2013.
19. The current proposal also includes one bicycle repair station located within the long-term bicycle parking area on the second storey of the development.

Loading Considerations

20. Application of Zoning By-law 569-2013 standard to the current proposal requires the provision of a total of two loading spaces, including one Type 'C' loading space and Type 'G' loading space.
21. The current proposal provides for two formal loading spaces, including one Type 'C' spaces and one Type 'G' space, located at-grade in an enclosed loading facility. Access to the facility will be provided via Macy DuBois Lane. The proposed loading supply meets the minimum loading requirements and applies the dimension standards as per City of Toronto Zoning By-law 569-2013.
22. Residential and non-residential refuse / recycling collection for the building will occur within the proposed Type 'G' loading space. Bin staging areas are provided in front of the Type 'G' loading space in accordance with the design requirements outlined in the *City of Toronto Requirements for Garbage and Recycling Collection for New Developments and Redevelopments*, dated April 2024.

Transportation Demand Management

23. A Transportation Demand Management (TDM) plan has been developed to encourage a change in travel behavior that reduces automobile travel. Key strategies include providing:
 - Provision of enhanced sidewalks along Isabella Street;
 - Provision of oversized / cargo bicycle parking spaces within long-term bicycle parking;
 - Provision of Toronto Bikeshare contribution via the reduced bicycle parking payment-in-lieu program;



- Provision of bicycle repair / maintenance station in long – term bicycle parking area(s) in accordance with the City of Toronto Zoning By-law 569-2013;
- Provision a bicycle elevator to assess the long-term bicycle parking on the second storey and P1 of the site;
- Provision of 2 pick-up / drop-off parking spaces to reduce car ownership and usage;
- Implementing programs to inform new residents of available travel mode choices and existing mobile apps providing transit information; and
- Provision of presto cards for new residents (one per unit).

Site Travel Demand Forecasting

24. Travel demand forecasts for resident-related trips have been derived from proxy site travel data. BA Group has undertaken a review of trip generation surveys of residential proxy developments at comparable sites with similar travel characteristics and within similar transportation contexts.
25. The proposed development is forecasted to generate in the order of **365 two-way residential person trips** during the weekday morning and weekday afternoon peak hour periods, respectively.
26. A total of **345 two-way new residential non-automobile person trips** are anticipated during the weekday morning and weekday afternoon peak hour periods. Of those, **185 and 165 two-way person trips** are anticipated as travelled on local transit services during the weekday morning and afternoon peak hours, respectively.
27. The site is expected to generate **0 residential vehicle trips** as a result of the zero-parking strategy for the site.
28. During the weekday morning and afternoon peak hours, up to **20 two-way PUDO vehicle trips** are expected to be generated by the site during the morning and afternoon peak hours, respectively.

Traffic Volumes Forecast

29. Allowances for new traffic from other area developments have been established based upon a review of area development applications and traffic activity that would be generated by these developments that are either approved but not yet constructed or are currently in the City's approval process. A total of 10 development proposals have been considered, which represents in the order of 5,811 residential units, 29,941 m² of non-residential GFA.
30. Historical weekday traffic volume counts at the Yonge Street and Bloor Street intersection in 2017, 2018, 2022 and 2023 were reviewed to determine if there have been any changes in traffic activity due to general corridor traffic growth along Yonge Street within the study area. The observed trends indicated negative traffic growth in the north-south direction along Yonge Street in the weekday morning and afternoon peak hours.

Traffic Operations Analysis

31. All signalized intersections in the vicinity of the site are projected to operate with overall intersection V/C ratios below capacity. In all cases, site-related traffic impacts are considered minor in relation to the significant planned growth in the study area road network.
32. Based on the foregoing, the future total operations at the area signalized intersections are considered to be acceptable with volume / capacity ratio below 1.0.



33. All unsignalized intersections in the vicinity of the site are projected to operate acceptably with overall delays and LOS generally below capacity. The unsignalized intersections are projected to operate an LOS B or better in future total conditions.
34. Overall, site-related traffic impacts at all intersections are considered negligible.

Overall Conclusion

35. The proposed on-site transportation facilities at 48 Isabella Street are expected to acceptably accommodate the functional and operational requirements of the redevelopment.
36. The transportation systems (pedestrian, cycling, transit, and public street vehicular capacity) in the immediate and surrounding area are expected to adequately accommodate the forecast travel demands associated with the site without undue impact and without the need for any off-site physical or operational improvements.



Appendix A: Reduced Architectural Plans



Proposed Residential Development



CLIENT	ARCHITECT	PLANNER	CIVIL ENGINEER	LANDSCAPE ARCHITECT	GEOTECHNICAL ENGINEER	TRAFFIC CONSULTANT	SURVEYOR
LAND'S EDGE PROPERTIES	KIRKOR ARCHITECTS & PLANNERS	BOUSFIELDS INC.	COUNTERPOINT	THE MBTW GROUP	TORONTO INSPECTION	BA CONSULTING GROUP LTD.	JD BARNES
20 PRINCE ARTHUR AVE. TORONTO, ON M5R 1B1	20 BE BOERS DR #400 TORONTO, ON M3J 0H1	3 CHURCH STREET, SUITE 200 TORONTO, ON CANADA M5E 1M2	8395 JANE STREET, SUITE 100, VAUGHAN, ON, L4K 5Y2	255 WICKSTEEP AVE., UNIT 1A TORONTO, ON, CANADA M4H 1G8	110 KONRAD CRESCENT, MARKHAM ON L3R 9XR	95 ST. CLAIR AVENUE WEST, SUITE 1000	411 RICHMOND ST E#107, TORONTO, ON M5A 3S5

DRAWING LIST		
Sheet Number	Sheet Name	
01-001	Project Statistics	
01-002	Site Plan	
01-003	Site Context	
01-004	Roof Mass Underpinnings	
01-005	Roof Mass Level 1	
01-006	Roof Mass Level 1 to 2	
01-007	Roof Mass Level 2 to 3	
01-008	Roof Mass Level 3 to 4	
01-009	Roof Mass Level 4 to 5	
01-010	Roof Mass Level 5 to 6	
01-011	Roof Mass Level 6 to 7	
01-012	Roof Mass Level 7 to 8	
01-013	Roof Mass Level 8 to 9	
01-014	Roof Mass Level 9 to 10	
01-015	Roof Mass Level 10 to 11	
01-016	Roof Mass Level 11 to 12	
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01-101	Roof Mass Level 96 to 97	
01-102	Roof Mass Level 97 to 98	
01-103	Roof Mass Level 98 to 99	
01-104	Roof Mass Level 99 to 100	
01-105	Roof Mass Level 100 to 1	

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KIRKOR
ARCHITECTS AND PLANNERS

Revisions:		
No.:	Revision:	Date:

01	ZBA/CPA Submission	May 30, 2025
No.:	Issued For:	Date:

Client:
LAND'S EDGE PROPERTIES.

48 ISABELLA ST
Proposed Residential Development

Drawing Title:
Cover Sheet

Scale:

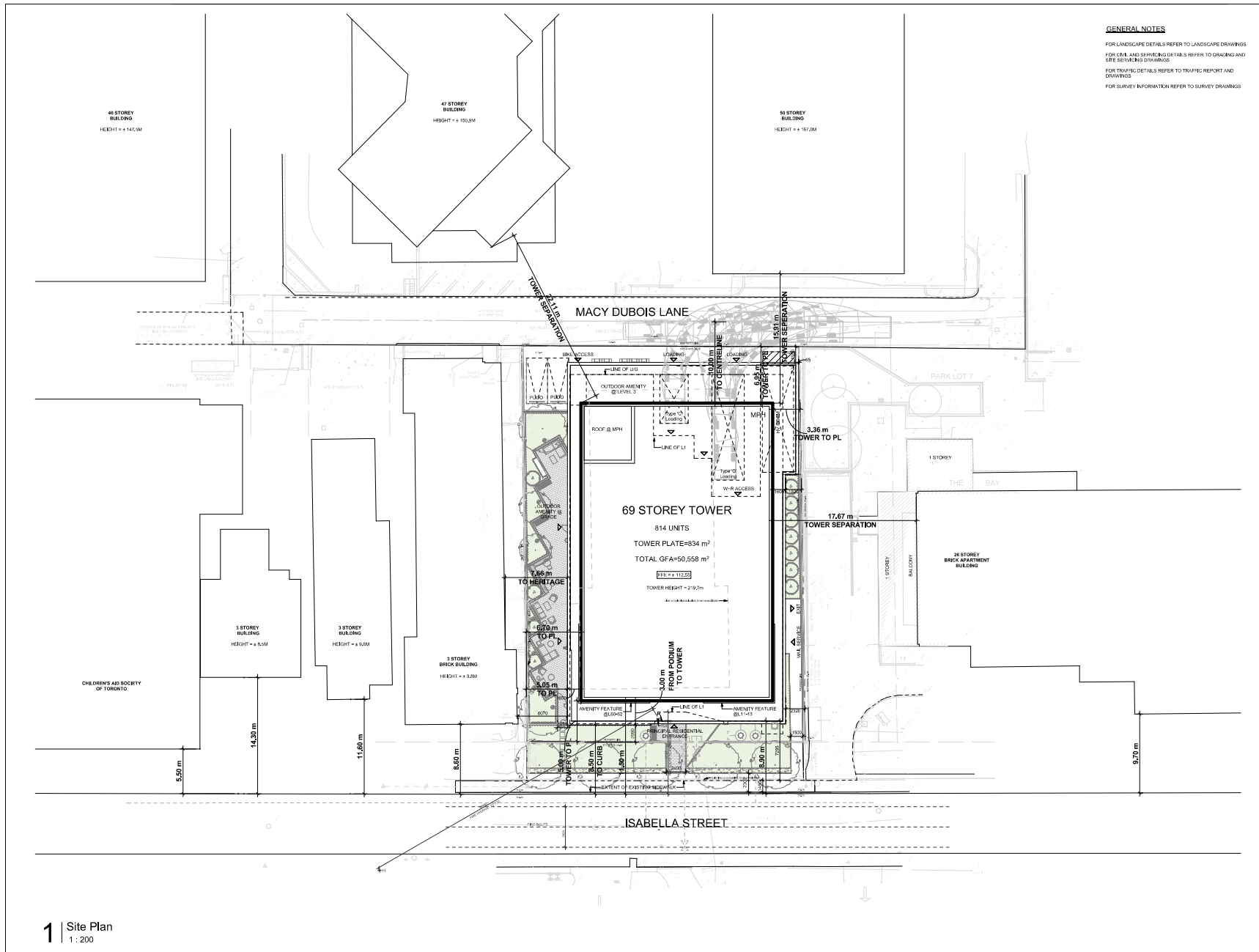
Drawn by:
B.B, J.S
Checked by:

R.P
Project No.:
23114

Date: 30, 2025
Drawing No.:

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dA0-00



GENERAL NOTES

FOR LANDSCAPE DETAILS REFER TO LANDSCAPE DRAWINGS

FOR CIVIL AND SERVICES DETAILS REFER TO GRADING AND SITE SERVICES DRAWINGS

FOR TRAFFIC DETAILS REFER TO TRAFFIC REPORT AND DRAWINGS

FOR SURVEY INFORMATION REFER TO SURVEY DRAWINGS

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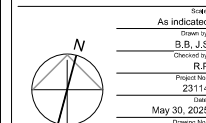
No.	Revision	Date
-----	----------	------

01	25A/C/P/A Submission	May 30, 2025
02	Revised For	Date

LAND'S EDGE PROPERTIES.

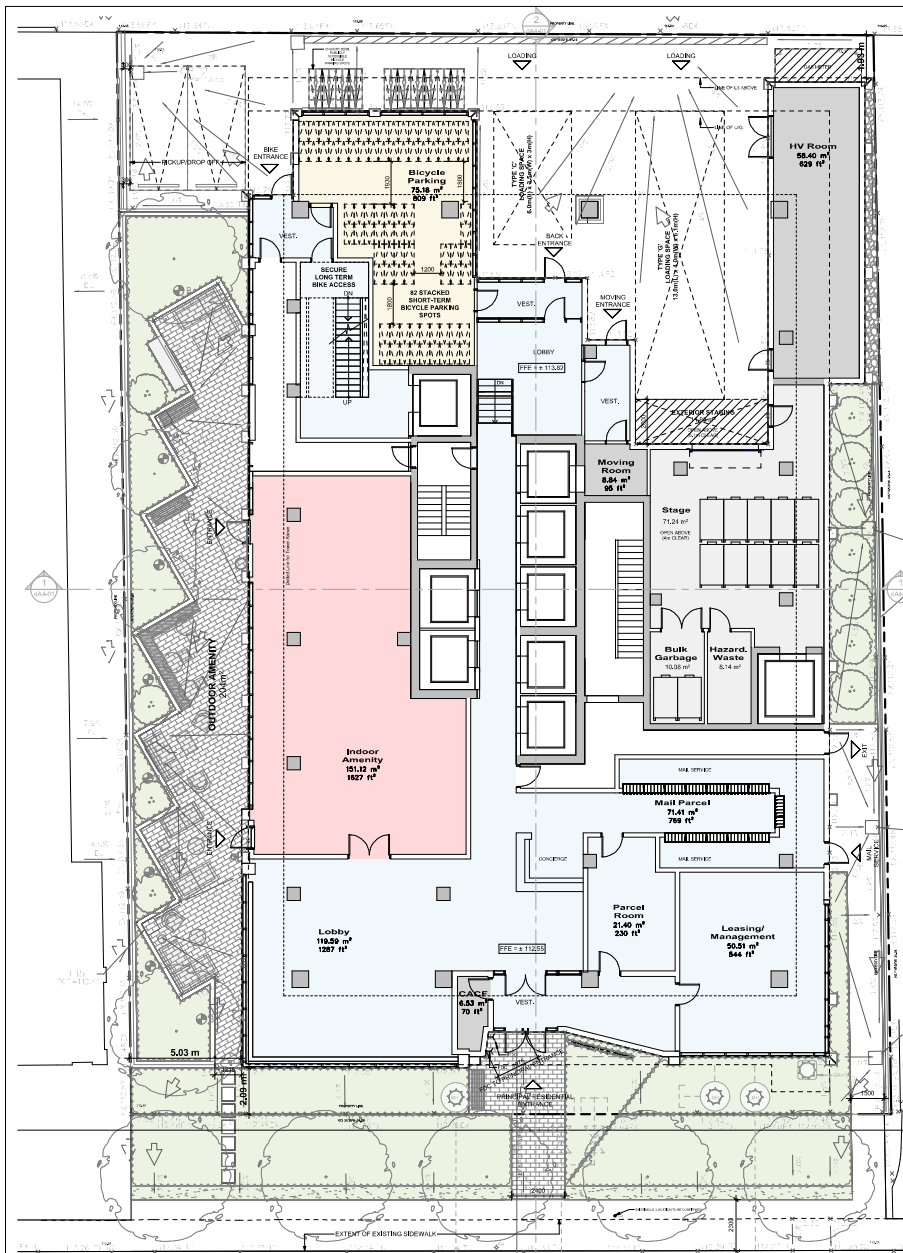
48 ISABELLA ST
Proposed Residential Development

Drawing Title
Site Plan

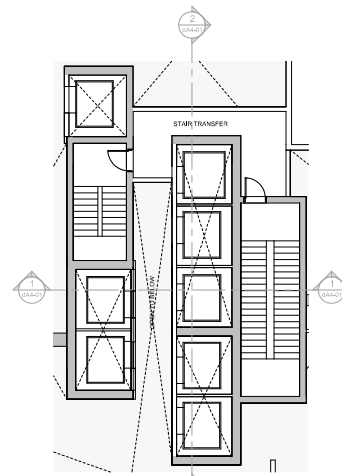


Client: B.B. J.S.
Checked by: R.P.
Project No.: 23114
Date: May 30, 2025
Drawing No.:

dA1-02



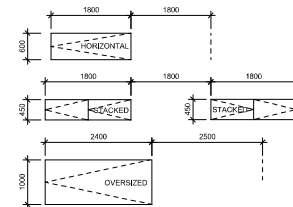
1 | Level 1
1 : 100



2 | Level 1 - Mezz
1 : 100

TYPICAL BICYCLE PARKING SPACE:

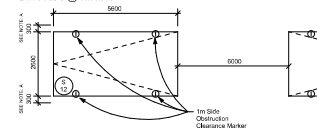
HORIZONTAL PARKING SPACE: 1800mm (L) x 900mm (W)
STACKED PARKING SPACE: 1800mm (L) x 450mm (W)
OVERSIZED PARKING SPACE: 2400mm (L) x 1000mm (W)



4 | Bicycle Parking Legend
NTS

TYPICAL PARKING SPACE:

Drive Aisle @ 6m MIN.

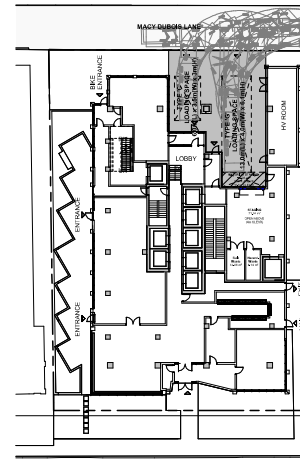


NOTES:
A. PROVIDE AN ADDITIONAL 300mm FOR PARKING SPACE WIDTH WHEN OBSTRUCTIONS OCCUR BETWEEN THE FRONT AND REAR 100%HA.
B. PROVIDE A 100%HA WALKWAY ON AT LEAST ONE SIDE OF AN ACCESSIBLE PARKING STALL. THE WALKWAY MAY BE SHARED WITH ADJACENT ACCESSIBLE SPACE.

5 | Parking Legend
NTS

GENERAL NOTES

FOR LANDSCAPE DETAILS REFER TO LANDSCAPE DRAWINGS
FOR CURB AND SIDEWALK DETAILS REFER TO GRADING AND SITE SERVING DRAWINGS
FOR TRAFFIC DETAILS REFER TO TRAFFIC REPORT AND DRAWINGS
FOR SURVEY INFORMATION REFER TO SURVEY DRAWINGS



3 | Waste Plan
1 : 300

LEGEND

PROPOSED ACCESS ROUTE FOR WASTE COLLECTION VEHICLE
LOADING AREA, 300MM REINFORCED CONCRETE WITH GRADE (NOT TO EXCEED 2%)

STAGING AND RECYCLING NOTES:

RESIDENTIAL GARBAGE / RECYCLING STORAGE ROOM
WASTE EMERGENCY SYSTEM: DOUBLE CHUTE WITH BAGGETER AND COMPACTOR
CITY OF TORONTO REQUIREMENTS:
GARBAGE/RECYCLING:
20m³ (100 TONNES) x 1.25 = EACH ADDITIONAL 10 UNITS x 10m³ (BULKY GARBAGE) x 8.14m³ (HAZARDOUS WASTE)
CALCULATED GARBAGE/RECYCLING REQUIREMENT:
81.45 x 1.25 = 101.81 x 8.14m³ = 831.81m³
CALCULATED STAGING AREA REQUIREMENT:
831.81m³ / 10m³ = 83.18m²
TOTAL REQUIRED STAGING AREA: (81.45) / (5) x 5m² = 81.45m²

RESIDENTIAL WASTE / RECYCLING/ORGANIC BIN COUNT
CITY OF TORONTO RECOMMENDED WEEKLY WASTE STORAGE VOLUME:
COMPOSTED GARBAGE VOLUME: 48 m³ x 1.18 = 56.64m³
RECYCLING VOLUME: 48 m³ x 2.22 = 106.56m³
ORGANICS VOLUME: 16 m³ x 1.18 = 18.88m³
TOTAL WASTE/RECYCLING/ORGANIC BIN COUNT: 76 BINS (24m³)

NOTES:

PAVEMENT DESIGN OF ACCESS ROUTE SHALL MEET THE FOLLOWING DEPTH REQUIREMENTS:
• 150MM COMPACTED DEPTH 1/2" ASPHALT FOR TOP COURSE
• 75MM COMPACTED DEPTH 1/2" ASPHALT FOR BASE COURSE
• 150MM COMPACTED DEPTH OF 20MM Ø CRUSHER RUN LIMESTONE
• 300MM COMPACTED DEPTH OF 20MM Ø CRUSHER RUN LIMESTONE
DRIVEWAY WIDTH SHALL BE A MINIMUM 5.0 METRES FROM FACE OF CURB TO FACE OF CURB
RADIUS THROUGHOUT ENTIRE ACCESS ROUTE SHALL BE NO LESS THAN 12.2 METRES (40 FEET) LINE
ACCESS ROUTE TO HAVE MINIMUM VERTICAL CLEARANCE OF 4.8M AND SLOPE SHALL NOT BE GREATER THAN 2%
STRUCTURE BELOW CAN SAFELY SUPPORT A FULLY LOADED COLLECTION VEHICLE WITH PENDING LOADS AND SHALL CONFORM ALL APPLICABLE LEGISLATION
LOADING AREA AND LOADING PAD TO HAVE MINIMUM VERTICAL CLEARANCE OF 2.13M
LOADING PAD SHALL HAVE A MINIMUM BASE OF 300MM COMPACTED 20MM CRUSHER RUN LIMESTONE AND SHALL BE FINISHED TO A MINIMUM OF 200MM DEPTH OF CONCRETE OR A CITY APPROVED ALTERNATIVE
GRADE OF LOADING PAD SHALL BE NO GREATER THAN 2%
ISOLATION OR OTHER TYPE DAMPING AREA TO BE INSTALLED ON EITHER SIDE OF THE LOADING DOCK
SNOW STORAGE AREAS MUST NOT INTERFERE OR COMPROMISE THE MINIMUM SPECIFICATIONS OF THE ACCESS ROUTE OR TURNING OPERATIONS
RESPONSIBILITY OF OWNER TO MEET NO LESS THAN MINIMUM STANDARDS FORBIDDEN TO CHARGE BULK AND CODE AND APPROPRIATE COLOUR CONTROLS REQUIREMENTS FOR WASTE STORAGE FACILITY
THIRDS PARTY PERSONNEL WILL BE AVAILABLE TO MANAGE BINS FOR THE COLLECTION DRIVER AND TO ACT AS A FLAG PERSON WHEN THE TRUCK IS ON CURB. IF THIRD PARTY PERSONNEL IS UNAVAILABLE AT THE TIME OF COLLECTION, THE COLLECTION VEHICLE WILL RETURN FOR THE NEXT SCHEDULED COLLECTION DAY

6 | Waste Management Notes
NTS

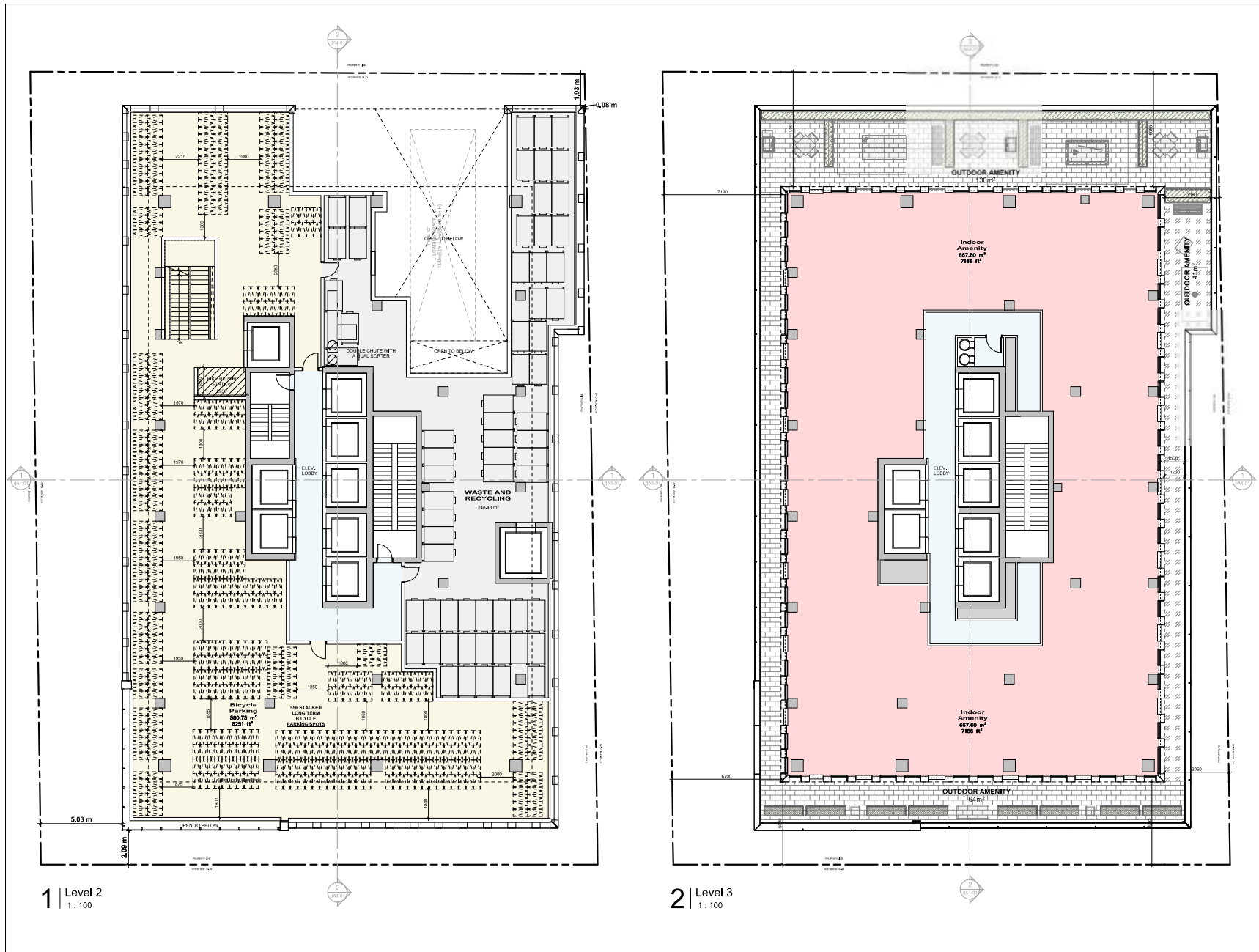
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No.	Revision	Date
01	ZBA/OPA Submission	May 30, 2025
No.	Revised For	Date

LAND'S EDGE PROPERTIES.
48 ISABELLA ST
Proposed Residential Development
Drawing Title
Floor Plan - Level 1
Scale
As indicated
Drawn by
B.B. J.S.
Checked by
R.P.
Project No.
23114
Date
May 30, 2025
Drawing No.



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Date:

KIRKOR
ARCHITECTS AND PLANNERS
20 The Queens Drive Suite 400
Toronto, ON M5S 1A7

No.	Revision	Date
01	25A/CPA Submission	May 30, 2025
02	Revised For	Date

Client:

LAND'S EDGE PROPERTIES.

48 ISABELLA ST
Proposed Residential Development

Drawing Title:
Floor Plan - Level 2 to 3

Scale:
1:100

Drawn by:
B.B.J.S.

Checked by:
R.P.

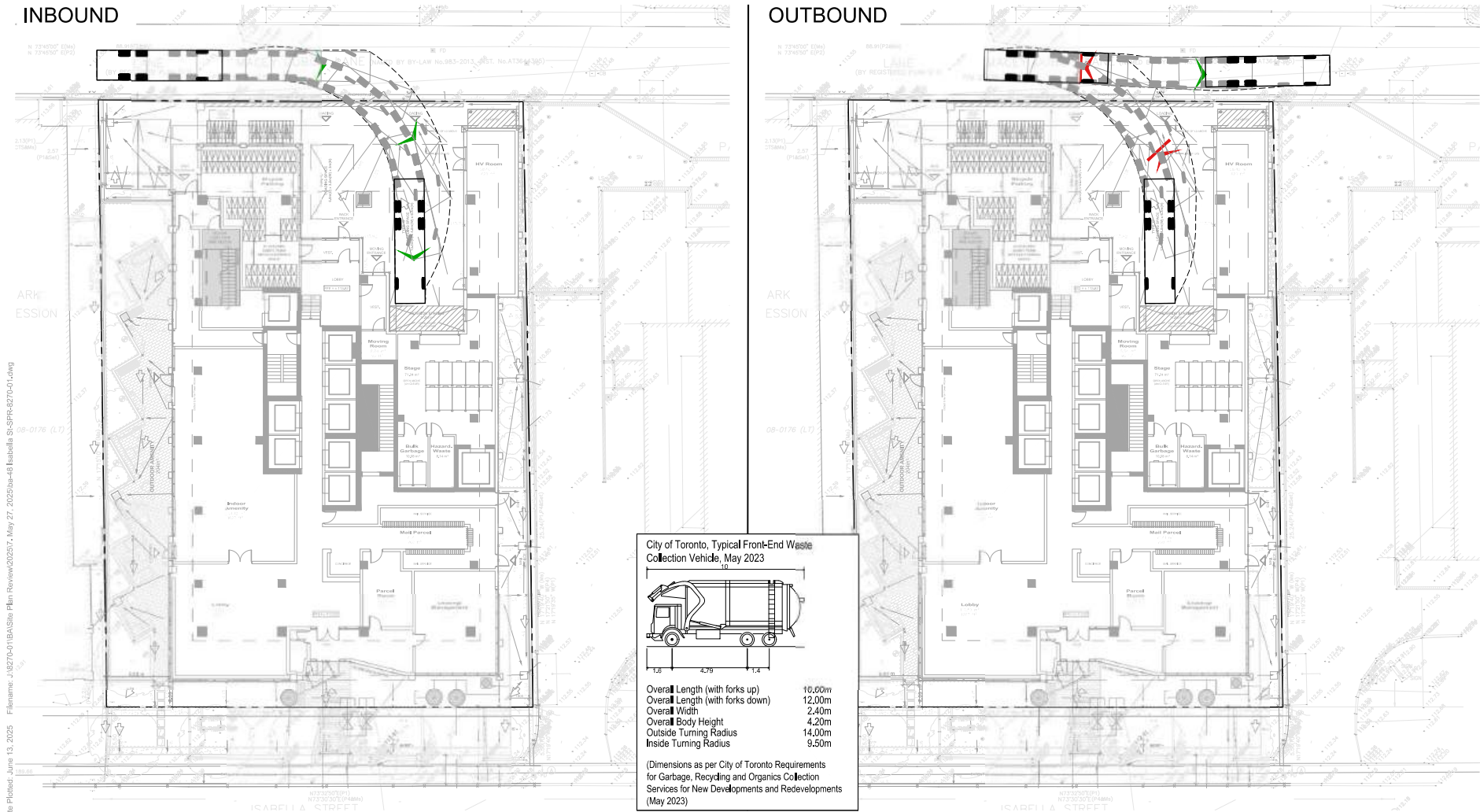
Project No.:
23114

Date:
May 30, 2025

Drawing No.:
dA2-03

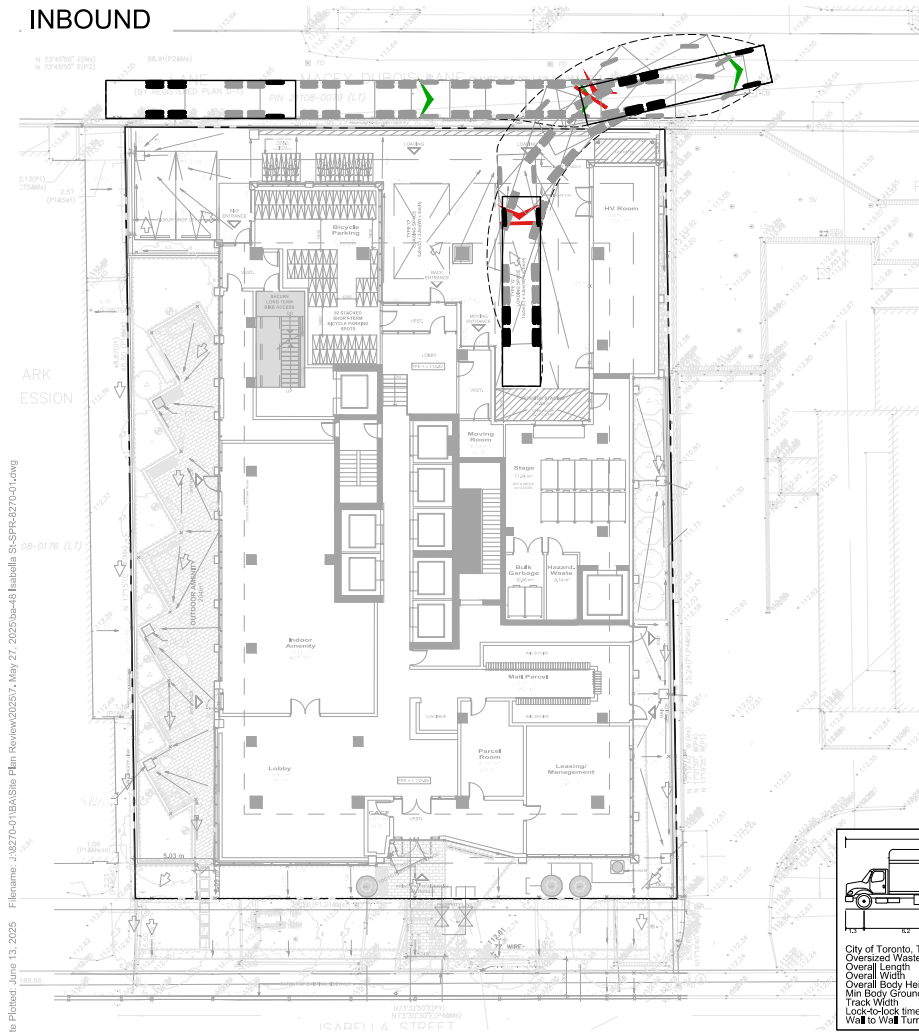
Appendix B: Vehicle Manoeuvring Diagram





	<h2 style="margin: 0;">48 ISABELLA STREET</h2> <h3 style="margin: 0;">VEHICLE MANOEUVRING DIAGRAM</h3> <h4 style="margin: 0;">GROUND FLOOR</h4> <h4 style="margin: 0;">CITY OF TORONTO - FRONT LOADER</h4>	Project: 48 Isabella St Project No. 8270-01 Date: March 12, 2025 Revised: June 13, 2025	Scale 1:300
		Drawing No. VMD-01	

Date Plotted: June 13, 2025
 Filename: J:\8270-01\BA\Site Plan Review\2025\7_May 27_2025\ba-48 Isabella St\SPR-8270-01.dwg



City of Toronto, Typical Rear-Pack Oversized Waste Collection Vehicle	12,000m
Overall Length	2,400m
Overall Width	4,200m
Overall Body Height	0,322m
Min Body Ground Clearance	2,400m
Track Width	5,000m
Lock-to-lock time	14,000m
Wheel to Wheel Turning Radius	

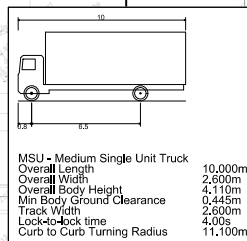
	<p align="center">48 ISABELLA STREET VEHICLE MANOEUVRING DIAGRAM GROUND FLOOR REAR-PACK WASTE COLLECTION VEHICLE</p>	<p>Project: 48 Isabella St Project No. 8270-01 Date: March 12, 2025 Revised: June 13, 2025</p>	<p>Scale: 1:300 Drawing No. VMD-02</p>
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Date Plotted: June 13, 2025
 Filename: J:\8270-01\BA\Site Plan Review\2025\7_May_27_2025\ba-48 Isabella SI-SPR-8270-01.dwg

INBOUND



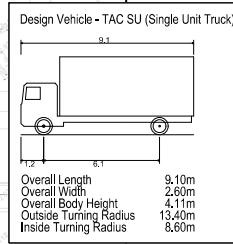
OUTBOUND



48 ISABELLA STREET VEHICLE MANOEUVRING DIAGRAM GROUND FLOOR TAC MEDIUM SINGLE UNIT (MSU) TRUCK

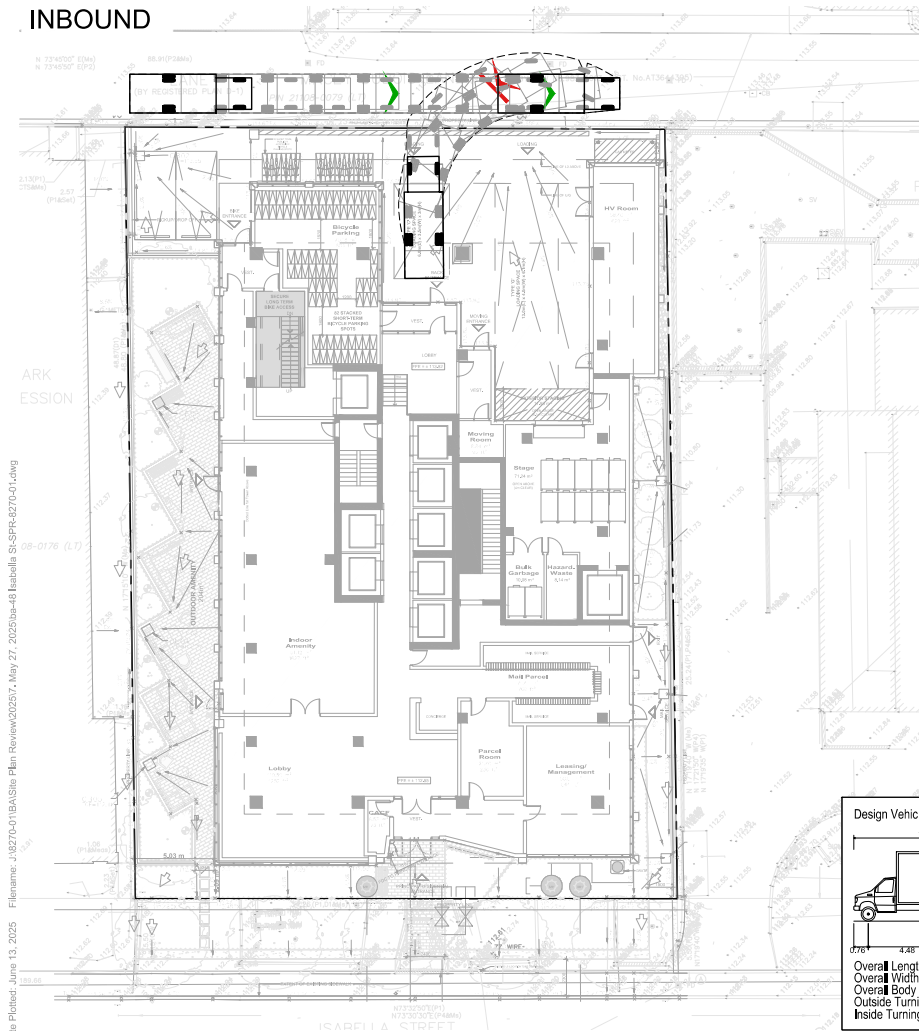
Project: 48 Isabella St
 Project No. 8270-01
 Date: March 12, 2025
 Revised: June 13, 2025

Scale: 1:300
 Drawing No. VMD-03

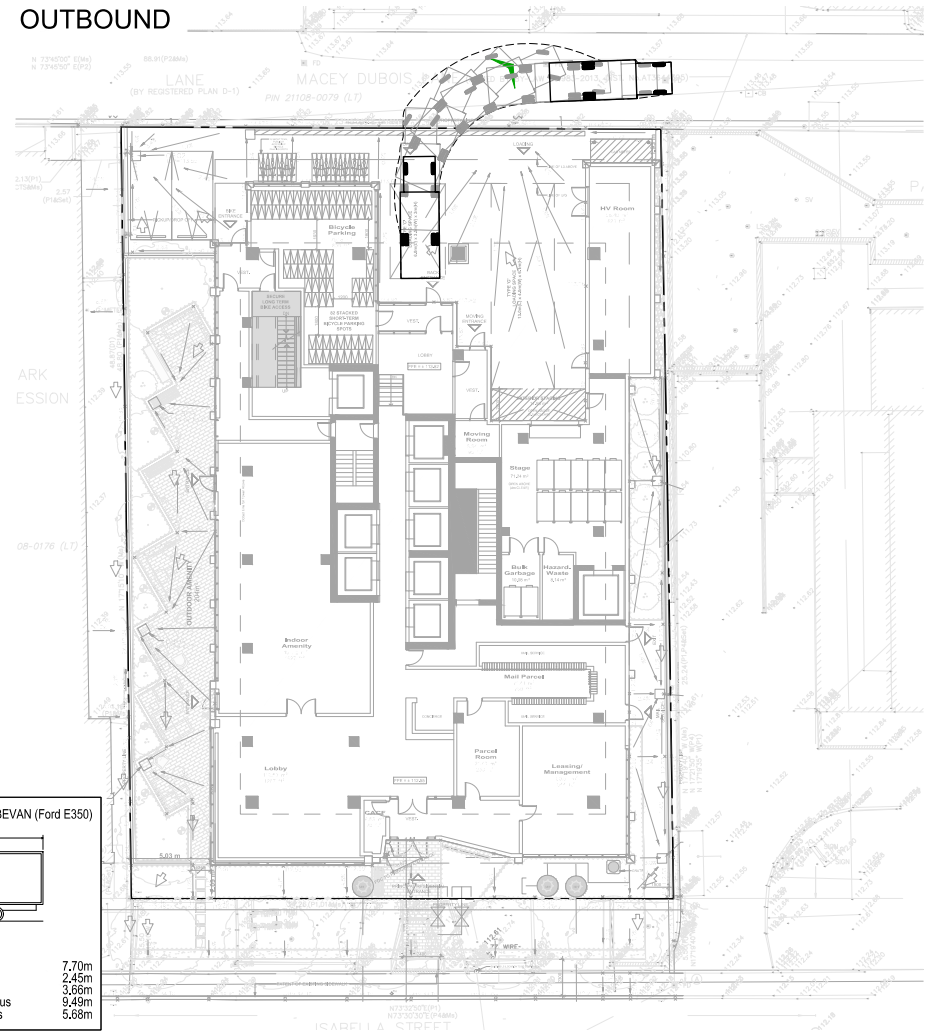


	<h2>48 ISABELLA STREET</h2> <h3>VEHICLE MANOEUVRING DIAGRAM</h3> <h4>GROUND FLOOR</h4> <h4>TAC SINGLE UNIT (SU) TRUCK</h4>	Project: 48 Isabella St Project No. 8270-01 Date: March 12, 2025 Revised: June 13, 2025	Scale: 1:300
		Drawing No. VMD-04	

INBOUND



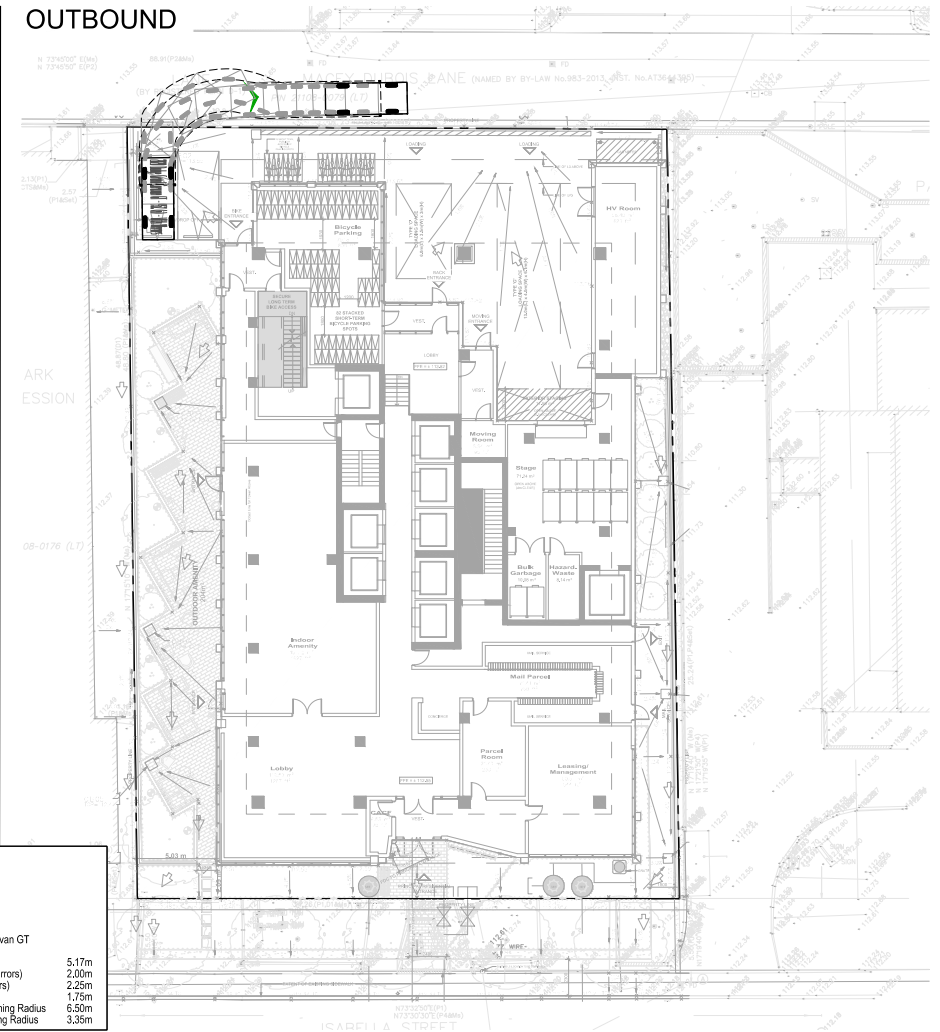
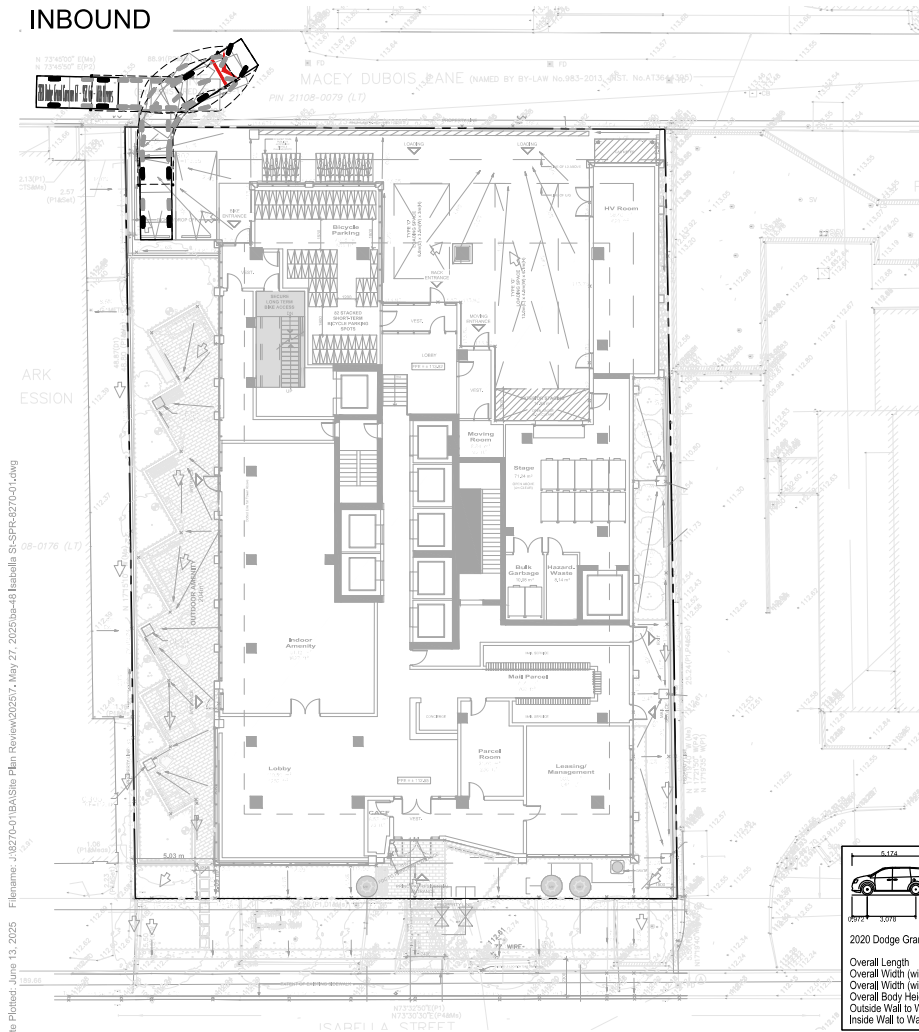
OUTBOUND



48 ISABELLA STREET VEHICLE MANOEUVRING DIAGRAM GROUND FLOOR CUBEVAN

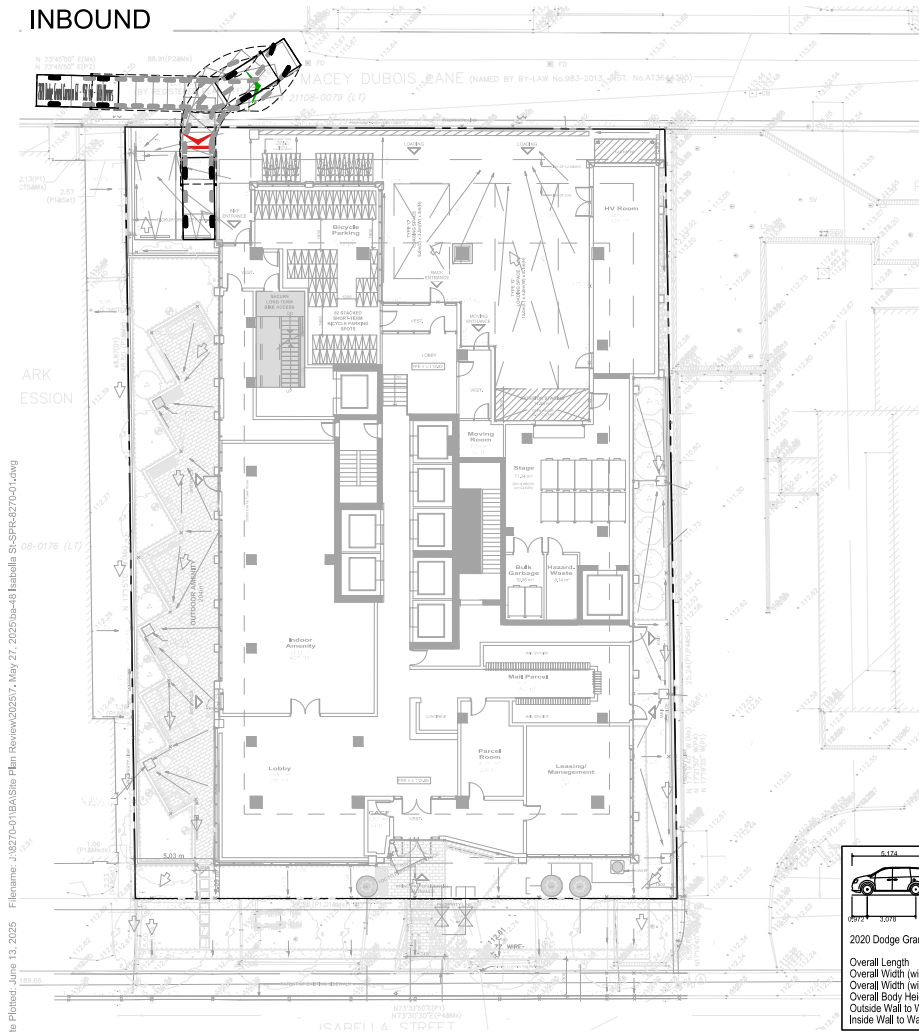
Project: 48 Isabella St
Project No. 8270-01
Date: March 12, 2025
Revised: June 13, 2025

Scale
1:300
0 5 10m
Drawing No. VMD-05



	<h2>48 ISABELLA STREET</h2> <h3>VEHICLE MANOEUVRING DIAGRAM</h3> <p>PICK-UP / DROP-OFF</p> <p>DODGE GRAND CARAVAN</p>	Project: 48 Isabella St Project No. 8270-01 Date: March 12, 2025 Revised: June 13, 2025	Scale 1:300
		Drawing No. VMD-06	

Date Plotted: June 13, 2025
 Filename: J:\0270-01\BA\Site Plan Review\2025\7_May 27, 2025\ba-48 Isabella St\SPR-8270-01.dwg



	<h2>48 ISABELLA STREET</h2> <h3>VEHICLE MANOEUVRING DIAGRAM</h3> <h4>PICK-UP / DROP-OFF</h4> <h4>DODGE GRAND CARAVAN</h4>	Project: 48 Isabella St Project No. 8270-01 Date: March 12, 2025 Revised: June 13, 2025	Scale: 1:300
		Drawing No. VMD-07	

Date Plotted: June 13, 2025
Filename: J:\8270-01\BA\Site Plan Review\2025\1 May 27, 2025\ba-48 Isabella SI-SPR-8270-01.dwg

Appendix C: TTS Queries



AM OUTBOUND

Fri Nov 22 2024 12:29:40 GMT-0500 (Eastern Standard Time) - Run Time: 980ms

Cross Tabulation Query Form - Transit - 2016

Row: Route used on link #1 - route_1
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(21,39,40,41,42,46,47,48,49)
TblG:

Filters:
Start time of trip - start_time In 600-859
and
Type of dwelling unit - dwell_type In 2

undefined
Table:

	1	
T006	280	NOW ROUTE 19
T065	117	
T075	284	
T094	435	
TTC Wheel Trans	29	
T504	10	
T506	122	
T593	447	
T594	3576	
T596	3573	
Grey Hound	35	
Erindale School	23	
Private Bus	98	
Handi-Transit / Wheel Trans	16	

Fri Nov 22 2024 12:31:46 GMT-0500 (Eastern Standard Time) - Run Time: 916ms

Cross Tabulation Query Form - Transit - 2016

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(21,39,40,41,42,46,47,48,49)
TblG:

Filters:
Start time of trip - start_time In 600-859
and
Trip purpose of origin - purp_orig In H
and
Type of dwelling unit - dwell_type In 2

undefined
Table:

Code	Route	Passenger	Proportion
T094	Wellesley	435	5%
T019	Bay Street	280	3%
T593	Yonge-University West	447	5%
T594	Yonge-University East	3576	43%
T596	Bloor Danforth Line 2	3573	43%
	Total	8311	100%
	Consolidated	Passenger	Proportion
	Line 1	4303	52%
	Line 2	4008	48%
	Total	8311	100%

Fri Nov 22 2024 12:30:57 GMT-0500 (Eastern Standard Time) - Run Time: 846ms

Cross Tabulation Query Form - Transit - 2016

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

RowG:
ColG:(21,39,40,41,42,46,47,48,49)
TblG:

Filters:
Start time of trip - start_time In 600-859
and
Trip purpos
and
Type of dwelling unit - dwell_type In 2
and
Planning district of destination - pd_dest In 1

	1
PD 1 of Toronto	3939
PD 2 of Toronto	629
PD 3 of Toronto	279
PD 4 of Toronto	1147
PD 5 of Toronto	198
PD 6 of Toronto	416
PD 7 of Toronto	47
PD 8 of Toronto	81
PD 9 of Toronto	147
PD 10 of Toronto	538
PD 11 of Toronto	294
PD 12 of Toronto	200
PD 13 of Toronto	172
PD 14 of Toronto	31
PD 15 of Toronto	40
PD 16 of Toronto	58
Pickering	20
Richmond Hill	83
Markham	88
Vaughan	12
Brampton	58
Mississauga	303
Oakville	19
Waterloo	20
City of Guelph	35
Brantford	4

undefined
Table:

	1
14	15
17	34
20	10
25	95
26	31
28	23
29	110
33	22
34	46
35	38
36	269
37	36
38	110
42	38
43	35
44	29
45	91
47	55
50	53
51	57
52	81
53	34
54	248
55	245
56	215
57	481
59	20
60	24
62	11
63	19
65	266
66	170
67	99
68	225
69	58
70	44
72	20
73	116
75	23
77	86
78	44
79	31
80	21
84	74
89	14
90	72
	3938

TRANSIT DISTRIBUTION

TRANSIT-PM INBOUND

Fri Nov 22 2024 12:21:05 GMT-0500 (Eastern Standard Time) - Run Time: 1282ms

Cross Tabulation Query Form - Transit - 2016

Row: Route used on link #1 - route_1
Column: 2006 GTA zone of destination - gta06_dest
Table: Number of transit links used - n_route

RowG:
ColG:(21,39,40,41,42,46,47,48,49)
TblG:

Filters:
Start time of trip - start_time In 1500-1759
and
Type of dwelling unit - dwell_type In 2

undefined
Table: 1

	1
T006	96
T030	8
T065	35
T075	42
T081	33
T094	190
T192	21
TTC Wheel Trans	99
T504	38
T505	49
T506	140
T593	66
T594	2170
T596	732
Grey Hound	35
Erindale School	23
Private Bus	92
Handi-Transit / Wheel Tra	16

undefined
Table: 2

	1
BR11	24
GT09	20
GT10	35
MS108	20
MS71	19
T011	14
T012	31
T022	33
T024	39
T029	81
T031	24
T032	143
T046	39
T051	15
T053	13
T061	30
T063	124
T065	16

undefined
Table: 3

	1
MS70	62
MS76	10
T024	20
T034	27
T043	53
T044	
T047	74
T054	31
T060	74
T066	38
T081	16
T085	35
T096	18
T100	14
T107	62
T109	23
T124	25
T132	15

T072	22	T135	28
T075	37	T185	13
T076	20	T191	13
T089	45	T196	28
T090	18	T501	24
T091	18	T504	29
T094	11	T506	117
T095	52	T509	28
T097	14	T512	12
T100	126	T593	37
T102	18	T594	14
T105	13	T598	20
T110	36	Private Bus	90
T117	18	Y090	23
T124	54	Y300	29
T165	14	Y900	35
T188	66	Y902	18
T191	36		
T192	19	undefined	
T196	24	Table: 4	
T501	63		
T504	126		1
T505	29	BR511	58
T506	58	T034	13
T509	32	T072	19
T510	130	T095	38
T511	145	T104	29
T593	1051	T105	33
T594	749	T108	13
T596	308	T132	27
T597	81	T134	39
T598	14	T165	13
Y077	12	T190	42
Y300	18	T196	63
		T593	28
		Y090	19
		Y904	16

Cross Tabulation Query Form - Transit - 2016

Row: Route used on link #2 - route_2
Column: 2006 GTA zone of destination - gta06_dest
Table: Number of transit links used - n_route

RowG:
ColG:(21,39,40,41,42,46,47,48,49)
TblG:

Filters:
Start time of trip - start_time In 1500-1759
and
Type of dwelling unit - dwell_type In 2

undefined
Table: 1

	1
Not Used	3884

undefined
Table: 2

	1
T006	58
T065	35
T075	51
T094	201
T097	6
T506	75
T593	73
T594	1273
T596	2423

undefined
Table: 3

	1
T053	19
T593	200

Cross Tabulation Query Form - Transit - 2016

Row: Route used on link #3 - route_3
Column: 2006 GTA zone of destination - gta06_dest
Table: Number of transit links used - n_route

RowG:
ColG:(21,39,40,41,42,46,47,48,49)
TblG:

Filters:
Start time of trip - start_time In 1500-1759
and
Type of dwelling unit - dwell_type In 2

undefined
Table: 1

	1
Not Used	3884

undefined
Table: 2

	1
Not Used	4196

undefined
Table: 3

	1
T075	43
T094	65
T594	668
T596	411

undefined
Table: 4

	1
T594	166

T594	260	T596	285
T596	582		
T597	15		
T598	109		

undefined
Table: 4

	1
GB31	58
T185	13
T593	167
T594	38
T596	47
T597	67
T598	61

Fri Nov 22 2024 12:23:21 GMT-0500 (Eastern Standard Time) - Run Time: 995ms

Cross Tabulation Query Form - Transit - 2016

Row: Route used on link #4 - route_4
Column: 2006 GTA zone of destination - gta06_dest
Table: Number of transit links used - n_route

RowG:
ColG:(21,39,40,41,42,46,47,48,49)
TblG:

Filters:
Start time of trip - start_time In 1500-1759
and
Type of dwelling unit - dwell_type In 2

undefined
Table: 1

	1
Not Used	3884

undefined
Table: 2

Not Used 1
4196

undefined
Table: 3

Not Used 1
1186

undefined
Table: 4

	1
T065	38
T075	29
T094	240
T594	82
T596	61

Fri Nov 22 2024 12:28:26 GMT-0500 (Eastern Standard Time) - Run Time: 848ms

Cross Tabulation Query Form - Transit - 2016

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:{21 39 40
TblG:

Filters:
Start time of trip - start_time In 1500-1759
and
Trip purpose of destination
and
Type of dwelling unit - dwell_type In 2

undefined
Table:

	1
PD 1 of Toronto	3272
PD 2 of Toronto	277

Fri Nov 22 2024 12:27:28 GMT-0500 (Eastern Standard Time) - Run Time: 1242ms

Cross Tabulation Query Form - Transit - 2016

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

RowG:
ColG:{21
TblG:

Filters:
Start time of trip - start_time In 1500-1759
and
Trip purpose of destination - purp_dest In H
and
Type of dwelling unit - dwell_type In 2
and
Planning district of origin - pd_orig In 1

undefined
Table:

	1
6	22

PD 3 of Toronto	196	16	35
PD 4 of Toronto	919	21	36
PD 5 of Toronto	110	25	73
PD 6 of Toronto	279	29	24
PD 7 of Toronto	85	34	46
PD 8 of Toronto	98	35	74
PD 9 of Toronto	164	36	164
PD 10 of Toronto	372	37	11
PD 11 of Toronto	240	38	123
PD 12 of Toronto	200	42	38
PD 13 of Toronto	181	44	34
PD 14 of Toronto	31	45	16
PD 15 of Toronto	18	46	20
PD 16 of Toronto	63	47	55
Pickering	20	48	20
Richmond Hill	54	49	28
Markham	88	50	99
Vaughan	12	51	100
Brampton	58	52	125
Mississauga	239	53	26
City of Guelph	35	54	161

Code	Route	Passenger	Proportion
T094	Wellesley	696	8%
T019	Bay Street	154	2%
T593	Yonge-Univ	139	2%
T594	Yonge-Univ	4193	48%
T596	Bloor Danf	3627	41%
	Total	8809	100%
Consolidated		Passenger	Proportion
	Line 1	4486	51%
	Line 2	4323	49%
	Total	8809	100%

55	209
56	141
57	191
58	31
60	32
62	51
63	42
65	183
66	83
67	132
68	215
69	22
70	114
73	78
75	53
76	12
77	164
79	13
81	13
84	74
89	16
90	74

PM Peak Hour
Inbound

Zone	Trips	%	North Line 1	South Line 1	East Line 2	West Line 2	TOTAL	North Line 1	South Line 1	East Line 2	West Line 2	TOTAL
6	22	0%		100%			100%	0%	0%	0%	0%	0%
16	35	0%		100%			100%	0%	0%	0%	0%	0%
21	36	1%			100%		100%	0%	0%	1%	0%	1%
25	73	1%		100%			100%	0%	1%	0%	0%	1%
29	24	0%		100%			100%	0%	0%	0%	0%	0%
34	46	1%		100%			100%	0%	1%	0%	0%	1%
35	74	1%		100%			100%	0%	1%	0%	0%	1%
36	164	2%		100%			100%	0%	2%	0%	0%	2%
37	11	0%		100%			100%	0%	0%	0%	0%	0%
38	123	2%		100%			100%	0%	2%	0%	0%	2%
42	38	1%	20%	40%	20%	20%	100%	0%	0%	0%	0%	1%
44	34	0%	100%				100%	0%	0%	0%	0%	0%
45	16	0%	50%			50%	100%	0%	0%	0%	0%	0%
46	20	0%		100%			100%	0%	0%	0%	0%	0%
47	55	1%				100%	100%	0%	0%	0%	1%	1%
48	20	0%				100%	100%	0%	0%	0%	0%	0%
49	28	0%		100%			100%	0%	0%	0%	0%	0%
50	99	1%		100%			100%	0%	1%	0%	0%	1%
51	100	1%		100%			100%	0%	1%	0%	0%	1%
52	125	2%		100%			100%	0%	2%	0%	0%	2%
53	26	0%		100%			100%	0%	0%	0%	0%	0%
54	161	2%		100%			100%	0%	2%	0%	0%	2%
55	209	3%		100%			100%	0%	3%	0%	0%	3%
56	141	2%		100%			100%	0%	2%	0%	0%	2%
57	191	3%		100%			100%	0%	3%	0%	0%	3%
58	31	0%		100%			100%	0%	0%	0%	0%	0%
60	32	0%		100%			100%	0%	0%	0%	0%	0%
62	51	1%		100%			100%	0%	1%	0%	0%	1%
63	42	1%		100%			100%	0%	1%	0%	0%	1%
65	183	3%		100%			100%	0%	3%	0%	0%	3%
66	83	1%		100%			100%	0%	1%	0%	0%	1%
67	132	2%		100%			100%	0%	2%	0%	0%	2%
68	215	3%		100%			100%	0%	3%	0%	0%	3%
69	22	0%		100%			100%	0%	0%	0%	0%	0%
70	114	2%				100%	100%	0%	0%	0%	2%	2%
73	78	1%				100%	100%	0%	0%	0%	1%	1%
75	53	1%		100%			100%	0%	1%	0%	0%	1%
76	12	0%		100%			100%	0%	0%	0%	0%	0%
77	164	2%		100%			100%	0%	2%	0%	0%	2%
79	13	0%		100%			100%	0%	0%	0%	0%	0%

81	13	0%		100%		100%	0%	0%	0%	0%	0%
84	74	1%		100%		100%	0%	1%	0%	0%	1%
89	16	0%		100%		100%	0%	0%	0%	0%	0%
90	74	1%		100%		100%	0%	1%	0%	0%	1%
PD 2 of Toronto	277	4%		20%	80%	100%	0%	1%	0%	3%	4%
PD 3 of Toronto	196	3%		50%	50%	100%	0%	1%	0%	1%	3%
PD 4 of Toronto	919	13%	50%		50%	100%	7%	0%	7%	0%	13%
PD 5 of Toronto	110	2%	100%			100%	2%	0%	0%	0%	2%
PD 6 of Toronto	279	4%	30%		70%	100%	1%	0%	3%	0%	4%
PD 7 of Toronto	85	1%				100%	0%	0%	0%	1%	1%
PD 8 of Toronto	98	1%				100%	0%	0%	0%	1%	1%
PD 9 of Toronto	164	2%	100%			100%	2%	0%	0%	0%	2%
PD 10 of Toronto	372	5%	100%			100%	5%	0%	0%	0%	5%
PD 11 of Toronto	240	3%	100%			100%	3%	0%	0%	0%	3%
PD 12 of Toronto	200	3%	100%			100%	3%	0%	0%	0%	3%
PD 13 of Toronto	181	3%	50%		50%	100%	1%	0%	1%	0%	3%
PD 14 of Toronto	31	0%			100%	100%	0%	0%	0%	0%	0%
PD 15 of Toronto	18	0%			100%	100%	0%	0%	0%	0%	0%
PD 16 of Toronto	63	1%	100%			100%	1%	0%	0%	0%	1%
Pickering	20	0%			100%	100%	0%	0%	0%	0%	0%
Richmond Hill	54	1%	100%			100%	1%	0%	0%	0%	1%
Markham	88	1%	100%			100%	1%	0%	0%	0%	1%
Vaughan	12	0%	100%			100%	0%	0%	0%	0%	0%
Brampton	58	1%				100%	0%	0%	0%	1%	1%
Mississauga	239	3%				100%	0%	0%	0%	3%	3%
City of Guelph	35	0%				100%	0%	0%	0%	0%	0%
TOTAL TRIPS	7012	100%					28.33%	43.51%	12.23%	15.93%	100.00%

Line 1 North 28.00%
 South 44.00%
 Line 2 East 12.00%
 West 16.00%
 100.00%

28.00%	44.00%	12.00%	16.00%		100.00%
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AM Peak Hour
Outbound

Zone	Trips	%	North Line 1	South Line 1	East Line 2	West Line 2	TOTAL	North Line 1	South Line 1	East Line 2	West Line 2	TOTAL
14	15	0%					0%	0%	0%	0%	0%	0%
17	34	0%					0%	0%	0%	0%	0%	0%
20	10	0%					0%	0%	0%	0%	0%	0%
25	95	1%					0%	0%	0%	0%	0%	0%
26	31	0%					0%	0%	0%	0%	0%	0%
28	23	0%					0%	0%	0%	0%	0%	0%
29	110	1%					0%	0%	0%	0%	0%	0%
33	22	0%					0%	0%	0%	0%	0%	0%
34	46	1%					0%	0%	0%	0%	0%	0%
35	38	0%					0%	0%	0%	0%	0%	0%
36	269	3%					0%	0%	0%	0%	0%	0%
37	36	0%					0%	0%	0%	0%	0%	0%
38	110	1%					0%	0%	0%	0%	0%	0%
42	38	0%					0%	0%	0%	0%	0%	0%
43	35	0%					0%	0%	0%	0%	0%	0%
44	29	0%					0%	0%	0%	0%	0%	0%
45	91	1%					0%	0%	0%	0%	0%	0%
47	55	1%					0%	0%	0%	0%	0%	0%
50	53	1%					0%	0%	0%	0%	0%	0%
51	57	1%					0%	0%	0%	0%	0%	0%
52	81	1%					0%	0%	0%	0%	0%	0%
53	34	0%					0%	0%	0%	0%	0%	0%
54	248	3%					0%	0%	0%	0%	0%	0%
55	245	3%					0%	0%	0%	0%	0%	0%
56	215	2%					0%	0%	0%	0%	0%	0%
57	481	5%					0%	0%	0%	0%	0%	0%
59	20	0%					0%	0%	0%	0%	0%	0%
60	24	0%					0%	0%	0%	0%	0%	0%
62	11	0%					0%	0%	0%	0%	0%	0%
63	19	0%					0%	0%	0%	0%	0%	0%
65	266	3%					0%	0%	0%	0%	0%	0%
66	170	2%					0%	0%	0%	0%	0%	0%
67	99	1%					0%	0%	0%	0%	0%	0%
68	225	3%					0%	0%	0%	0%	0%	0%
69	58	1%					0%	0%	0%	0%	0%	0%
70	44	0%					0%	0%	0%	0%	0%	0%

	72	20	0%					0%	0%	0%	0%	0%	0%
	73	116	1%					0%	0%	0%	0%	0%	0%
	75	23	0%					0%	0%	0%	0%	0%	0%
	77	86	1%					0%	0%	0%	0%	0%	0%
	78	44	0%					0%	0%	0%	0%	0%	0%
	79	31	0%					0%	0%	0%	0%	0%	0%
	80	21	0%					0%	0%	0%	0%	0%	0%
	84	74	1%					0%	0%	0%	0%	0%	0%
	89	14	0%					0%	0%	0%	0%	0%	0%
	90	72	1%					0%	0%	0%	0%	0%	0%
PD 2 of Toronto		629	7%					0%	0%	0%	0%	0%	0%
PD 3 of Toronto		279	3%					0%	0%	0%	0%	0%	0%
PD 4 of Toronto		1147	13%					0%	0%	0%	0%	0%	0%
PD 5 of Toronto		198	2%					0%	0%	0%	0%	0%	0%
PD 6 of Toronto		416	5%					0%	0%	0%	0%	0%	0%
PD 7 of Toronto		47	1%					0%	0%	0%	0%	0%	0%
PD 8 of Toronto		81	1%					0%	0%	0%	0%	0%	0%
PD 9 of Toronto		147	2%					0%	0%	0%	0%	0%	0%
PD 10 of Toronto		538	6%					0%	0%	0%	0%	0%	0%
PD 11 of Toronto		294	3%					0%	0%	0%	0%	0%	0%
PD 12 of Toronto		200	2%					0%	0%	0%	0%	0%	0%
PD 13 of Toronto		172	2%					0%	0%	0%	0%	0%	0%
PD 14 of Toronto		31	0%					0%	0%	0%	0%	0%	0%
PD 15 of Toronto		40	0%					0%	0%	0%	0%	0%	0%
PD 16 of Toronto		58	1%					0%	0%	0%	0%	0%	0%
Pickering		20	0%					0%	0%	0%	0%	0%	0%
Richmond Hill		83	1%					0%	0%	0%	0%	0%	0%
Markham		88	1%					0%	0%	0%	0%	0%	0%
Vaughan		12	0%					0%	0%	0%	0%	0%	0%
Brampton		58	1%					0%	0%	0%	0%	0%	0%
Mississauga		303	3%					0%	0%	0%	0%	0%	0%
Oakville		19	0%					0%	0%	0%	0%	0%	0%
Waterloo		20	0%					0%	0%	0%	0%	0%	0%
City of Guelph		35	0%					0%	0%	0%	0%	0%	0%
Brantford		4	0%					0%	0%	0%	0%	0%	0%
TOTAL TRIPS		8857	100%						0.00%	0.00%	0.00%	0.00%	0.00%
				Line 1	North	2.00%							
					South	5.00%							
				Line 2	East	30.00%							
					West	63.00%							
										2.00%	5.00%	30.00%	63.00%
										100.00%			

			AM			PM		
Transit Route	IN	OUT	IN	OUT	2-WAY	IN	OUT	2-WAY
Line 2	49%	48%	17	72	89	47	34	81
Line 1	51%	52%	18	78	96	48	36	84
Total	100%	100%	35	150	185	95	70	165
		Check	35	150	185	95	70	165

		DOA		Relative DOA		AM Trips		PM Trips		AM Trips (Rounded)			PM Trips (Rounded)		
Route		Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	2-way	Inbound	Outbound	2-way
Line 2	EB	12%	30%	43%	32%	7.29	23.23	20.14	10.97	5	25	30	20	10	30
	WB	16%	63%	57%	68%	9.71	48.77	26.86	23.03	10	50	60	25	25	50
Line 1	NB	28%	2%	39%	29%	7.00	22.29	18.67	10.29	10	20	30	20	10	30
	SB	44%	5%	61%	71%	11.00	55.71	29.33	25.71	10	55	65	30	25	55
Total						35	150	95	70	35	150	185	95	70	165

Appendix D: Turning Movement Counts





Turning Movement Count (7 . CHARLES ST E & MACY DUBOIS LN (EAST))

Start Time	N Approach North Laneway						E Approach CHARLES ST E						S Approach MACY DUBOIS LN (EAST)						W Approach CHARLES ST 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			
07:30:00	0	0	0	0	8	0	0	64	3	0	2	67	0	0	2	0	21	2	0	0	0	0	10	0	69		
07:45:00	0	0	0	0	3	0	0	75	0	0	3	75	0	0	0	0	16	0	0	0	0	0	4	0	75		
08:00:00	0	0	0	0	8	0	0	87	5	0	3	92	0	0	1	0	17	1	0	0	0	0	5	0	93		
08:15:00	0	0	0	0	12	0	0	114	2	0	3	116	0	0	0	0	36	0	0	0	0	0	8	0	116	353	
08:30:00	0	0	0	0	22	0	0	135	2	0	5	137	0	0	1	0	47	1	0	0	0	0	11	0	138	422	
08:45:00	0	0	0	0	17	0	0	121	1	0	5	122	0	0	1	0	50	1	0	0	0	0	13	0	123	470	
09:00:00	0	0	0	0	14	0	0	113	2	0	4	115	0	0	3	0	42	3	0	0	0	0	6	0	118	495	
09:15:00	0	0	0	0	14	0	0	107	3	0	2	110	0	0	5	0	32	5	0	0	0	0	12	0	115	494	
BREAK																											
16:00:00	0	0	0	0	18	0	0	77	3	0	2	80	0	0	1	0	27	1	0	0	0	0	7	0	81		
16:15:00	0	0	0	0	42	0	0	98	2	0	7	100	0	0	4	0	46	4	0	0	0	0	6	0	104		
16:30:00	0	0	0	0	34	0	0	70	2	0	5	72	1	0	4	0	35	5	0	0	0	0	8	0	77		
16:45:00	0	0	0	0	43	0	0	88	5	0	4	93	0	0	3	0	44	3	0	0	0	0	12	0	96	358	
17:00:00	0	0	0	0	29	0	0	91	2	0	15	93	0	0	10	0	55	10	0	0	0	0	5	0	103	380	
17:15:00	0	0	0	0	40	0	0	98	3	0	1	101	0	0	2	0	48	2	0	0	0	0	12	0	103	379	
17:30:00	0	0	0	0	37	0	0	90	5	0	4	95	0	0	5	0	58	5	0	0	0	0	8	0	100	402	
17:45:00	0	0	0	0	24	0	0	101	2	0	2	103	0	0	2	0	59	2	0	0	0	0	11	0	105	411	
Grand Total	0	0	0	0	365	0	0	1529	42	0	67	1571	1	0	44	0	633	45	0	0	0	0	138	0	1616	-	
Approach%	0%	0%	0%	0%	-	-	0%	97.3%	2.7%	0%	-	-	2.2%	0%	97.8%	0%	-	-	0%	0%	0%	0%	-	-	-		
Totals %	0%	0%	0%	0%	-	0%	0%	94.6%	2.6%	0%	-	97.2%	0.1%	0%	2.7%	0%	-	2.8%	0%	0%	0%	0%	0%	0%	-		
Heavy	0	0	0	0	-	-	0	33	0	0	-	-	0	0	0	0	-	-	0	0	0	0	-	-	-		
Heavy %	0%	0%	0%	0%	-	0%	0%	2.2%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	-	-	-		
Bicycles	0	0	0	0	-	-	0	72	1	1	-	-	0	0	1	0	-	-	0	9	0	0	-	-	-		
Bicycle %	0%	0%	0%	0%	-	-	0%	4.7%	2.4%	0%	-	-	0%	0%	2.3%	0%	-	-	0%	0%	0%	0%	-	-	-		



Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (4.71 °C)

Start Time	N Approach North Laneway						E Approach CHARLES ST E						S Approach MACY DUBOIS LN (EAST)						W Approach CHARLES ST 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	
08:15:00	0	0	0	0	12	0	0	114	2	0	3	116	0	0	0	0	36	0	0	0	0	0	8	0	116
08:30:00	0	0	0	0	22	0	0	135	2	0	5	137	0	0	1	0	47	1	0	0	0	0	11	0	138
08:45:00	0	0	0	0	17	0	0	121	1	0	5	122	0	0	1	0	50	1	0	0	0	0	13	0	123
09:00:00	0	0	0	0	14	0	0	113	2	0	4	115	0	0	3	0	42	3	0	0	0	0	6	0	118
Grand Total	0	0	0	0	65	0	0	483	7	0	17	490	0	0	5	0	175	5	0	0	0	0	38	0	495
Approach%	0%	0%	0%	0%	-	-	0%	98.6%	1.4%	0%	-	-	0%	0%	100%	0%	-	-	0%	0%	0%	0%	-	-	-
Totals %	0%	0%	0%	0%	0%	0%	0%	97.6%	1.4%	0%	99%	99%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-
PHF	0	0	0	0	0	0	0	0.89	0.88	0	0.89	0.89	0	0	0.42	0	0.42	0	0	0	0	0	0	0	-
Heavy	0	0	0	0	0	0	0	15	0	0	15	15	0	0	0	0	0	0	0	0	0	0	0	0	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	3.1%	0%	0%	3.1%	3.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Lights	0	0	0	0	0	0	0	468	7	0	475	475	0	0	5	0	5	0	0	0	0	0	0	0	-
Lights %	0%	0%	0%	0%	0%	0%	0%	96.9%	100%	0%	96.9%	96.9%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	-
Single-Unit Trucks	0	0	0	0	0	0	0	13	0	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	2.7%	0%	0%	2.7%	2.7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Buses	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0.4%	0%	0%	0.4%	0.4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	65	-	-	-	-	-	17	-	-	-	-	-	173	-	-	-	-	-	37	-	-
Pedestrians%	-	-	-	-	22%	-	-	-	-	-	5.8%	-	-	-	-	-	58.6%	-	-	-	-	-	12.5%	-	-
Bicycles on Road	0	0	0	0	0	-	0	14	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0.7%	-	-	-	-	-	0.3%	-	-



Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)

Start Time	N Approach North Laneway						E Approach CHARLES ST E						S Approach MACY DUBOIS LN (EAST)						W Approach CHARLES ST 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	
17:00:00	0	0	0	0	29	0	0	91	2	0	15	93	0	0	10	0	55	10	0	0	0	0	5	0	103
17:15:00	0	0	0	0	40	0	0	98	3	0	1	101	0	0	2	0	48	2	0	0	0	0	12	0	103
17:30:00	0	0	0	0	37	0	0	90	5	0	4	95	0	0	5	0	58	5	0	0	0	0	8	0	100
17:45:00	0	0	0	0	24	0	0	101	2	0	2	103	0	0	2	0	59	2	0	0	0	0	11	0	105
Grand Total	0	0	0	0	130	0	0	380	12	0	22	392	0	0	19	0	220	19	0	0	0	0	36	0	411
Approach%	0%	0%	0%	0%	-	-	0%	96.9%	3.1%	0%	-	-	0%	0%	100%	0%	-	-	0%	0%	0%	0%	-	-	-
Totals %	0%	0%	0%	0%	0%	0%	0%	92.5%	2.9%	0%	95.4%	0%	0%	4.6%	0%	4.6%	0%	0%	0%	0%	0%	0%	0%	0%	-
PHF	0	0	0	0	0	0	0	0.94	0.6	0	0.95	0	0	0.48	0	0.48	0	0	0	0	0	0	0	0	-
Heavy	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	0.8%	0%	0%	0.8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Lights	0	0	0	0	0	0	0	377	12	0	389	0	0	19	0	19	0	0	0	0	0	0	0	0	-
Lights %	0%	0%	0%	0%	0%	0%	0%	99.2%	100%	0%	99.2%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	-
Single-Unit Trucks	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0.8%	0%	0%	0.8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	128	-	-	-	-	-	22	-	-	-	-	-	213	-	-	-	-	-	36	-	-
Pedestrians%	-	-	-	-	31.4%	-	-	-	-	-	5.4%	-	-	-	-	-	52.2%	-	-	-	-	-	8.8%	-	-
Bicycles on Road	0	0	0	0	0	-	0	29	1	1	0	-	0	0	1	0	0	-	0	4	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0.5%	-	-	-	-	-	0%	-	-	-	-	-	1.7%	-	-	-	-	-	0%	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (4.71 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)



Bicycles on Crosswalk		Pedestrians
N	2	128
S	7	213
E	0	22
W	0	36



Turning Movement Count (6 . CHARLES ST E & MACY DUBOIS LN (WEST))

Start Time	N Approach North Driveway						E Approach CHARLES ST E						S Approach MACY DUBOIS LN (WEST)						W Approach CHARLES ST 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		
07:30:00	0	0	0	0	19	0	0	64	2	0	5	66	0	0	5	0	15	5	0	0	0	0	5	0	71	
07:45:00	0	0	0	0	10	0	0	74	0	0	10	74	0	0	5	0	26	5	0	0	0	0	7	0	79	
08:00:00	0	0	0	0	24	0	0	90	4	0	7	94	0	0	7	0	22	7	0	0	0	0	7	0	101	
08:15:00	0	0	0	0	26	0	0	110	1	0	13	111	0	0	7	0	31	7	0	0	0	0	9	0	118	369
08:30:00	1	0	0	0	36	1	0	127	4	0	21	131	0	0	9	0	58	9	0	0	0	0	7	0	141	439
08:45:00	1	0	0	0	57	1	0	118	6	0	20	124	0	0	8	0	44	8	0	0	0	0	11	0	133	493
09:00:00	1	0	0	0	50	1	1	112	4	0	13	117	0	0	5	0	53	5	0	0	0	0	8	0	123	515
09:15:00	0	0	0	0	27	0	1	107	0	0	20	108	0	0	3	0	41	3	0	0	0	0	11	0	111	508
BREAK																										
16:00:00	0	0	0	0	58	0	1	79	3	0	9	83	0	0	1	0	66	1	0	0	0	0	4	0	84	
16:15:00	3	0	1	0	58	4	1	98	5	0	6	104	0	0	5	0	72	5	0	0	0	0	5	0	113	
16:30:00	0	0	0	0	65	0	0	65	7	0	8	72	0	0	7	0	60	7	0	0	0	0	21	0	79	
16:45:00	1	0	0	0	74	1	3	85	5	0	14	93	0	0	3	0	75	3	0	0	0	0	16	0	97	373
17:00:00	3	0	0	0	76	3	5	83	8	0	19	96	0	0	5	0	74	5	0	0	0	0	17	0	104	393
17:15:00	2	0	0	0	85	2	1	99	5	0	13	105	0	0	5	0	81	5	0	0	0	0	24	0	112	392
17:30:00	0	0	0	0	83	0	0	92	8	0	11	100	0	0	5	0	84	5	2	0	0	0	14	2	107	420
17:45:00	2	0	0	0	79	2	1	95	4	0	27	100	0	0	2	0	89	2	0	0	0	0	13	0	104	427
Grand Total	14	0	1	0	827	15	14	1498	66	0	216	1578	0	0	82	0	891	82	2	0	0	0	179	2	1677	-
Approach%	93.3%	0%	6.7%	0%	-	-	0.9%	94.9%	4.2%	0%	-	-	0%	0%	100%	0%	-	-	100%	0%	0%	0%	-	-	-	-
Totals %	0.8%	0%	0.1%	0%	-	0.9%	0.8%	89.3%	3.9%	0%	94.1%	0%	0%	4.9%	0%	4.9%	0.1%	0%	0%	0%	0%	0%	0.1%	-	-	
Heavy	0	0	0	0	-	-	0	31	1	0	-	-	0	0	2	0	-	-	0	0	0	0	-	-	-	-
Heavy %	0%	0%	0%	0%	-	-	0%	2.1%	1.5%	0%	-	-	0%	0%	2.4%	0%	-	-	0%	0%	0%	0%	-	-	-	-
Bicycles	4	0	0	0	-	-	1	89	1	0	-	-	0	1	11	0	-	-	5	12	1	0	-	-	-	-
Bicycle %	28.6%	0%	0%	0%	-	-	7.1%	5.9%	1.5%	0%	-	-	0%	0%	13.4%	0%	-	-	250%	0%	0%	0%	-	-	-	-



Turning Movement Count
Location Name: CHARLES ST E & MACY DUBOIS LN (WEST)
Date: Wed, Oct 16, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (4.71 °C)

Start Time	N Approach North Driveway						E Approach CHARLES ST E						S Approach MACY DUBOIS LN (WEST)						W Approach CHARLES ST 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	
08:15:00	0	0	0	0	26	0	0	110	1	0	13	111	0	0	7	0	31	7	0	0	0	0	9	0	118
08:30:00	1	0	0	0	36	1	0	127	4	0	21	131	0	0	9	0	58	9	0	0	0	0	7	0	141
08:45:00	1	0	0	0	57	1	0	118	6	0	20	124	0	0	8	0	44	8	0	0	0	0	11	0	133
09:00:00	1	0	0	0	50	1	1	112	4	0	13	117	0	0	5	0	53	5	0	0	0	0	8	0	123
Grand Total	3	0	0	0	169	3	1	467	15	0	67	483	0	0	29	0	186	29	0	0	0	0	35	0	515
Approach%	100%	0%	0%	0%	-	-	0.2%	96.7%	3.1%	0%	-	-	0%	0%	100%	0%	-	-	0%	0%	0%	0%	-	-	-
Totals %	0.6%	0%	0%	0%	0.6%	0.6%	0.2%	90.7%	2.9%	0%	93.8%	93.8%	0%	0%	5.6%	0%	5.6%	5.6%	0%	0%	0%	0%	0%	0%	0%
PHF	0.75	0	0	0	0.75	0.75	0.25	0.92	0.63	0	0.92	0.92	0	0	0.81	0	0.81	0.81	0	0	0	0	0	0	0
Heavy	0	0	0	0	0	0	0	14	1	0	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy %	0%	0%	0%	0%	0%	0%	0%	3%	6.7%	0%	3.1%	3.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lights	3	0	0	0	3	3	1	453	14	0	468	468	0	0	29	0	29	29	0	0	0	0	0	0	0
Lights %	100%	0%	0%	0%	100%	100%	100%	97%	93.3%	0%	96.9%	96.9%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%
Single-Unit Trucks	0	0	0	0	0	0	0	12	1	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	2.6%	6.7%	0%	2.7%	2.7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0%	0%	0%	0%	0%	0%	0%	0.4%	0%	0%	0.4%	0.4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pedestrians	-	-	-	-	169	-	-	-	-	67	-	-	-	-	-	-	186	-	-	-	-	-	35	-	-
Pedestrians%	-	-	-	-	37%	-	-	-	-	14.7%	-	-	-	-	-	-	40.7%	-	-	-	-	-	7.7%	-	-
Bicycles on Road	3	0	0	0	0	-	0	15	0	0	0	-	0	0	4	0	0	-	0	1	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

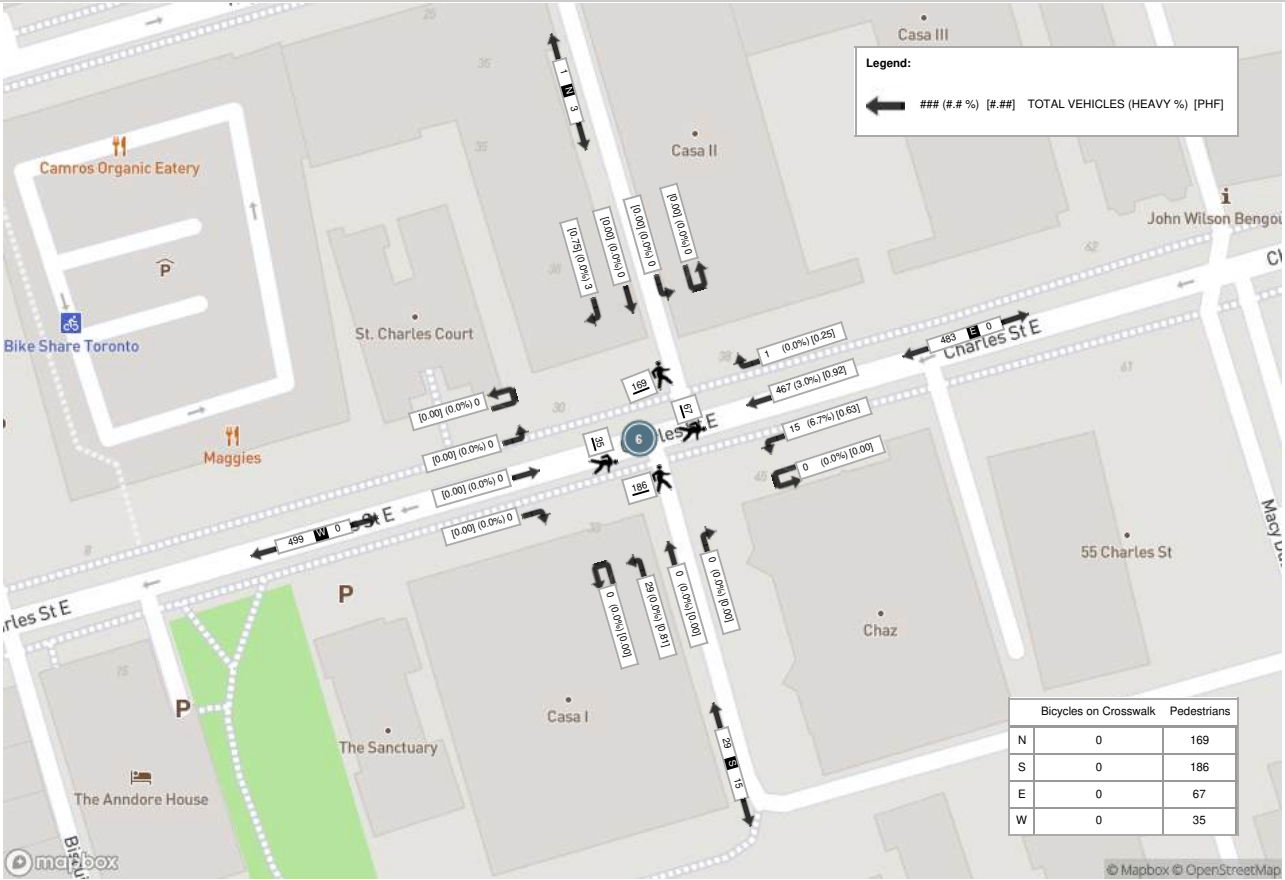


Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)

Start Time	N Approach North Driveway						E Approach CHARLES ST E						S Approach MACY DUBOIS LN (WEST)						W Approach CHARLES ST 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	
17:00:00	3	0	0	0	76	3	5	83	8	0	19	96	0	0	5	0	74	5	0	0	0	0	17	0	104
17:15:00	2	0	0	0	85	2	1	99	5	0	13	105	0	0	5	0	81	5	0	0	0	0	24	0	112
17:30:00	0	0	0	0	83	0	0	92	8	0	11	100	0	0	5	0	84	5	2	0	0	0	14	2	107
17:45:00	2	0	0	0	79	2	1	95	4	0	27	100	0	0	2	0	89	2	0	0	0	0	13	0	104
Grand Total	7	0	0	0	323	7	7	369	25	0	70	401	0	0	17	0	328	17	2	0	0	0	68	2	427
Approach%	100%	0%	0%	0%	-	-	1.7%	92%	6.2%	0%	-	-	0%	0%	100%	0%	-	-	100%	0%	0%	0%	-	-	-
Totals %	1.6%	0%	0%	0%	1.6%	1.6%	1.6%	86.4%	5.9%	0%	93.9%	0%	0%	4%	0%	4%	0.5%	0%	0%	0%	0%	0.5%	-	-	
PHF	0.58	0	0	0	0.58	0.35	0.93	0.78	0	0.95	0	0	0.85	0	0.85	0.25	0	0	0	0	0	0.25	-	-	
Heavy	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	0	0	0	1	
Heavy %	0%	0%	0%	0%	0%	0%	0%	0.8%	0%	0%	0.7%	0%	0%	5.9%	0%	5.9%	0%	0%	0%	0%	0%	0%	0%	-	
Lights	7	0	0	0	7	7	366	25	0	398	0	0	16	0	16	2	0	0	0	0	0	2	-	-	
Lights %	100%	0%	0%	0%	100%	100%	99.2%	100%	0%	99.3%	0%	0%	94.1%	0%	94.1%	100%	0%	0%	0%	0%	0%	100%	-	-	
Single-Unit Trucks	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	0	0	0	-	
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0.8%	0%	0%	0.7%	0%	0%	5.9%	0%	5.9%	0%	0%	0%	0%	0%	0%	0%	-	-	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	
Buses %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	
Pedestrians	-	-	-	-	323	-	-	-	-	70	-	-	-	-	319	-	-	-	-	-	68	-	-	-	
Pedestrians%	-	-	-	-	40.9%	-	-	-	-	8.9%	-	-	-	-	40.4%	-	-	-	-	-	8.6%	-	-	-	
Bicycles on Road	0	0	0	0	0	-	0	40	0	0	0	-	0	1	2	0	0	-	3	5	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	9	-	-	-	-	-	-	0	-	-	
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	1.1%	-	-	-	-	-	-	0%	-	-	

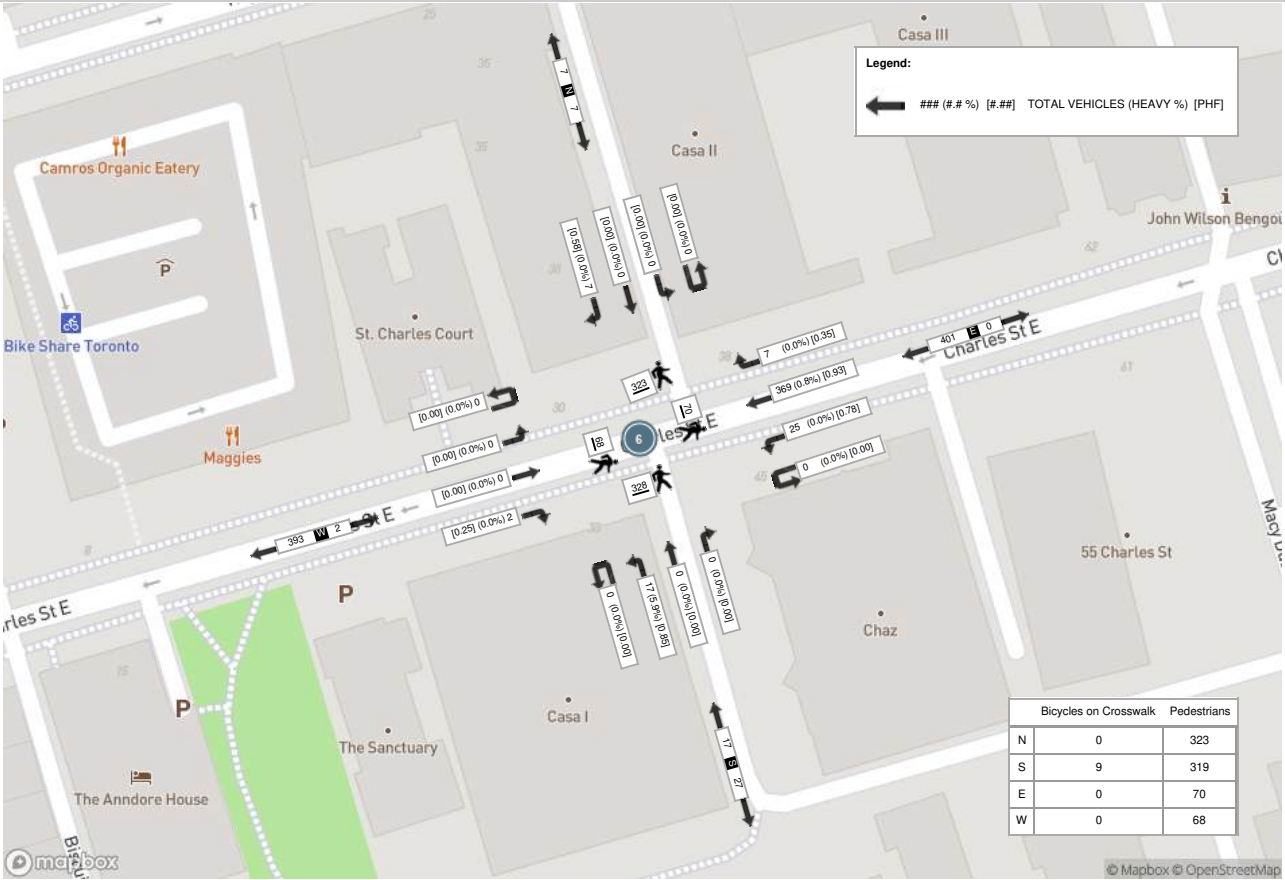


Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (4.71 °C)





Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)





Turning Movement Count (3 . CHURCH STREET & CHARLES ST E)

Start Time	N Approach CHURCH ST						E Approach CHARLES ST						S Approach CHURCH ST						W Approach CHARLES ST						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			
07:30:00	23	67	0	0	24	90	15	40	17	0	15	72	0	27	5	0	17	32	0	0	0	0	37	0	194		
07:45:00	26	75	0	0	17	101	5	44	14	0	17	63	0	49	6	0	13	55	0	0	0	0	23	0	219		
08:00:00	27	65	0	0	13	92	11	56	15	0	68	82	0	46	9	0	11	55	0	0	0	0	57	0	229		
08:15:00	30	75	0	0	24	105	15	76	16	0	29	107	0	47	9	0	29	56	0	0	0	0	41	0	268	910	
08:30:00	34	89	0	0	38	123	14	91	26	0	58	131	0	55	12	0	40	67	0	0	0	0	45	0	321	1037	
08:45:00	32	63	0	0	25	95	10	79	23	0	64	112	0	50	9	0	39	59	0	0	0	0	50	0	266	1084	
09:00:00	25	88	0	0	28	113	15	78	28	0	66	121	0	62	12	0	34	74	0	0	0	0	58	0	308	1163	
09:15:00	32	75	0	0	22	107	8	67	15	0	41	90	0	66	12	0	30	78	0	0	0	0	26	0	275	1170	
BREAK																											
16:00:00	19	75	0	0	21	94	9	50	12	0	35	71	0	89	11	0	25	100	0	0	0	0	59	0	265		
16:15:00	33	56	0	0	36	89	11	56	24	0	32	91	0	67	13	0	35	80	0	0	0	0	66	0	260		
16:30:00	25	84	0	0	34	109	12	37	19	0	55	68	0	83	9	0	30	92	1	0	0	0	63	1	270		
16:45:00	24	74	0	0	47	98	12	58	13	0	69	83	0	83	11	0	49	94	0	0	0	0	66	0	275	1070	
17:00:00	13	86	0	0	32	99	11	63	20	0	70	94	0	76	15	0	47	91	0	0	0	0	71	0	284	1089	
17:15:00	21	71	0	0	33	92	8	62	19	0	76	89	0	65	16	0	57	81	0	0	0	0	92	0	262	1091	
17:30:00	27	77	0	0	35	104	16	49	19	0	60	84	0	72	19	0	46	91	0	0	0	0	78	0	279	1100	
17:45:00	17	103	0	0	29	120	16	64	28	0	60	108	0	81	21	0	52	102	0	0	0	0	79	0	330	1155	
Grand Total	408	1223	0	0	458	1631	188	970	308	0	815	1466	0	1018	189	0	554	1207	1	0	0	0	911	1	4305	-	
Approach%	25%	75%	0%	0%		-	12.8%	66.2%	21%	0%		-	0%	84.3%	15.7%	0%		-	100%	0%	0%	0%		-	-	-	
Totals %	9.5%	28.4%	0%	0%		37.9%	4.4%	22.5%	7.2%	0%		34.1%	0%	23.6%	4.4%	0%		28%	0%	0%	0%	0%		0%	-	-	
Heavy	11	47	0	0		-	2	16	8	0		-	0	31	6	0		-	0	0	0	0		-	-	-	
Heavy %	2.7%	3.8%	0%	0%		-	1.1%	1.6%	2.6%	0%		-	0%	3%	3.2%	0%		-	0%	0%	0%	0%		-	-	-	
Bicycles	10	124	0	0		-	5	41	24	0		-	2	131	24	0		-	7	0	6	0		-	-	-	
Bicycle %	2.5%	10.1%	0%	0%		-	2.7%	4.2%	7.8%	0%		-	0%	12.9%	12.7%	0%		-	700%	0%	0%	0%		-	-	-	



Turning Movement Count
Location Name: CHURCH STREET & CHARLES ST E
Date: Wed, Oct 16, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)

Start Time	N Approach CHURCH ST						E Approach CHARLES ST						S Approach CHURCH ST						W Approach CHARLES ST						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	
08:30:00	34	89	0	0	38	123	14	91	26	0	58	131	0	55	12	0	40	67	0	0	0	0	45	0	321
08:45:00	32	63	0	0	25	95	10	79	23	0	64	112	0	50	9	0	39	59	0	0	0	0	50	0	266
09:00:00	25	88	0	0	28	113	15	78	28	0	66	121	0	62	12	0	34	74	0	0	0	0	58	0	308
09:15:00	32	75	0	0	22	107	8	67	15	0	41	90	0	66	12	0	30	78	0	0	0	0	26	0	275
Grand Total	123	315	0	0	113	438	47	315	92	0	229	454	0	233	45	0	143	278	0	0	0	0	179	0	1170
Approach%	28.1%	71.9%	0%	0%	-	-	10.4%	69.4%	20.3%	0%	-	-	0%	83.8%	16.2%	0%	-	-	0%	0%	0%	0%	-	-	-
Totals %	10.5%	26.9%	0%	0%	-	37.4%	4%	26.9%	7.9%	0%	-	38.8%	0%	19.9%	3.8%	0%	-	23.8%	0%	0%	0%	0%	-	0%	-
PHF	0.9	0.88	0	0	-	0.89	0.78	0.87	0.82	0	-	0.87	0	0.88	0.94	0	-	0.89	0	0	0	0	-	0	-
Heavy	7	13	0	0	-	20	1	7	2	0	-	10	0	11	2	0	-	13	0	0	0	0	-	0	-
Heavy %	5.7%	4.1%	0%	0%	-	4.6%	2.1%	2.2%	2.2%	0%	-	2.2%	0%	4.7%	4.4%	0%	-	4.7%	0%	0%	0%	0%	-	0%	-
Lights	116	302	0	0	-	418	46	308	90	0	-	444	0	222	43	0	-	265	0	0	0	0	-	0	-
Lights %	94.3%	95.9%	0%	0%	-	95.4%	97.9%	97.8%	97.8%	0%	-	97.8%	0%	95.3%	95.6%	0%	-	95.3%	0%	0%	0%	0%	-	0%	-
Single-Unit Trucks	7	12	0	0	-	19	0	6	1	0	-	7	0	6	2	0	-	8	0	0	0	0	-	0	-
Single-Unit Trucks %	5.7%	3.8%	0%	0%	-	4.3%	0%	1.9%	1.1%	0%	-	1.5%	0%	2.6%	4.4%	0%	-	2.9%	0%	0%	0%	0%	-	0%	-
Buses	0	1	0	0	-	1	1	1	1	0	-	3	0	5	0	0	-	5	0	0	0	0	-	0	-
Buses %	0%	0.3%	0%	0%	-	0.2%	2.1%	0.3%	1.1%	0%	-	0.7%	0%	2.1%	0%	0%	-	1.8%	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	-
Articulated Trucks %	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	-
Pedestrians	-	-	-	-	113	-	-	-	-	-	228	-	-	-	-	-	140	-	-	-	-	-	178	-	-
Pedestrians%	-	-	-	-	17%	-	-	-	-	-	34.3%	-	-	-	-	-	21.1%	-	-	-	-	-	26.8%	-	-
Bicycles on Road	0	29	0	0	0	-	2	9	6	0	0	-	0	27	5	0	0	-	1	0	1	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0.2%	-	-	-	-	-	0.5%	-	-	-	-	-	0.2%	-	-

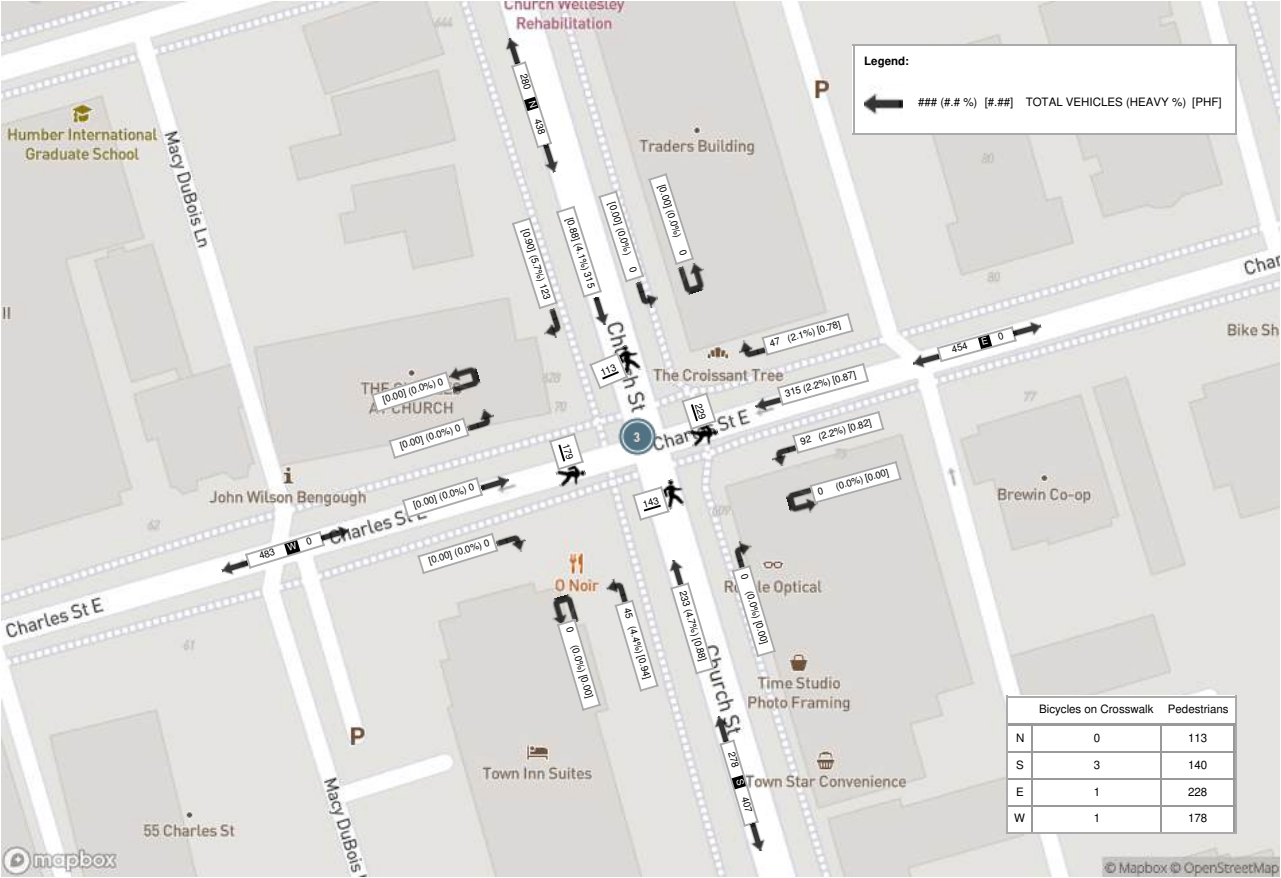


Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)

Start Time	N Approach CHURCH ST						E Approach CHARLES ST						S Approach CHURCH ST						W Approach CHARLES ST						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	
17:00:00	13	86	0	0	32	99	11	63	20	0	70	94	0	76	15	0	47	91	0	0	0	0	71	0	284
17:15:00	21	71	0	0	33	92	8	62	19	0	76	89	0	65	16	0	57	81	0	0	0	0	92	0	262
17:30:00	27	77	0	0	35	104	16	49	19	0	60	84	0	72	19	0	46	91	0	0	0	0	78	0	279
17:45:00	17	103	0	0	29	120	16	64	28	0	60	108	0	81	21	0	52	102	0	0	0	0	79	0	330
Grand Total	78	337	0	0	129	415	51	238	86	0	266	375	0	294	71	0	202	365	0	0	0	0	320	0	1155
Approach%	18.8%	81.2%	0%	0%	-	-	13.6%	63.5%	22.9%	0%	-	-	0%	80.5%	19.5%	0%	-	-	0%	0%	0%	0%	-	-	-
Totals %	6.8%	29.2%	0%	0%	-	35.9%	4.4%	20.6%	7.4%	0%	-	32.5%	0%	25.5%	6.1%	0%	-	31.6%	0%	0%	0%	0%	-	0%	-
PHF	0.72	0.82	0	0	-	0.86	0.8	0.93	0.77	0	-	0.87	0	0.91	0.85	0	-	0.89	0	0	0	0	-	0	-
Heavy	0	5	0	0	-	5	0	2	2	0	-	4	0	7	1	0	-	8	0	0	0	0	-	0	-
Heavy %	0%	1.5%	0%	0%	-	1.2%	0%	0.8%	2.3%	0%	-	1.1%	0%	2.4%	1.4%	0%	-	2.2%	0%	0%	0%	0%	-	0%	-
Lights	78	332	0	0	-	410	51	236	84	0	-	371	0	287	70	0	-	357	0	0	0	0	-	0	-
Lights %	100%	98.5%	0%	0%	-	98.8%	100%	99.2%	97.7%	0%	-	98.9%	0%	97.6%	98.6%	0%	-	97.8%	0%	0%	0%	0%	-	0%	-
Single-Unit Trucks	0	4	0	0	-	4	0	2	1	0	-	3	0	6	1	0	-	7	0	0	0	0	-	0	-
Single-Unit Trucks %	0%	1.2%	0%	0%	-	1%	0%	0.8%	1.2%	0%	-	0.8%	0%	2%	1.4%	0%	-	1.9%	0%	0%	0%	0%	-	0%	-
Buses	0	1	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	-
Buses %	0%	0.3%	0%	0%	-	0.2%	0%	0%	1.2%	0%	-	0.3%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	-
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%	0.3%	0%	0%	-	0.3%	0%	0%	0%	0%	-	0%	-
Pedestrians	-	-	-	-	128	-	-	-	-	-	263	-	-	-	-	-	195	-	-	-	-	-	319	-	-
Pedestrians%	-	-	-	-	14%	-	-	-	-	-	28.7%	-	-	-	-	-	21.3%	-	-	-	-	-	34.8%	-	-
Bicycles on Road	5	53	0	0	0	-	0	18	8	0	0	-	2	48	10	0	0	-	2	0	1	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	7	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0.1%	-	-	-	-	-	0.3%	-	-	-	-	-	0.8%	-	-	-	-	-	0.1%	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)





Turning Movement Count (4 . CHURCH STREET & ISABELLA STREET)

Start Time	N Approach CHURCH ST						E Approach ISABELLA ST						S Approach CHURCH ST						W Approach ISABELLA ST						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		
07:30:00	0	76	8	0	13	84	0	0	0	0	13	0	13	22	0	0	11	35	6	20	10	0	21	36	155	
07:45:00	0	78	10	0	15	88	0	0	0	0	12	0	5	42	0	0	19	47	7	28	12	0	24	47	182	
08:00:00	0	71	12	0	24	83	0	0	0	0	72	0	9	44	0	0	30	53	9	31	11	0	54	51	187	
08:15:00	0	64	13	0	25	77	0	0	0	0	30	0	7	40	0	0	23	47	3	29	14	0	34	46	170	694
08:30:00	0	101	21	0	15	122	0	0	0	0	48	0	14	51	0	0	31	65	10	41	18	0	33	69	256	795
08:45:00	0	75	15	0	22	90	0	0	0	0	67	0	10	52	0	0	33	62	9	32	12	0	53	53	205	818
09:00:00	0	103	14	0	23	117	0	0	0	0	40	0	12	55	0	0	21	67	10	30	15	0	56	55	239	870
09:15:00	0	77	17	0	15	94	0	0	0	0	39	0	11	64	0	0	18	75	6	37	17	0	26	60	229	929
BREAK																										
16:00:00	0	78	12	0	22	90	0	0	0	0	34	0	10	66	0	0	23	76	13	88	35	0	55	136	302	
16:15:00	0	64	10	0	33	74	0	0	0	0	57	0	9	65	0	0	39	74	12	74	20	0	52	106	254	
16:30:00	0	90	13	0	31	103	0	0	0	0	52	0	11	68	0	0	26	79	17	64	23	0	53	104	286	
16:45:00	0	79	18	0	31	97	0	0	0	0	67	0	11	62	0	0	41	73	15	57	39	0	61	111	281	1123
17:00:00	0	76	21	0	43	97	0	0	0	0	68	0	9	53	0	0	48	62	11	52	33	0	70	96	255	1076
17:15:00	0	73	22	0	29	95	0	0	0	0	81	0	10	67	0	0	35	77	9	66	17	0	70	92	264	1086
17:30:00	0	74	13	0	41	87	0	0	0	0	69	0	11	76	0	0	33	87	16	87	16	0	64	119	293	1093
17:45:00	0	101	30	0	43	131	0	0	0	0	56	0	4	81	0	0	38	85	21	75	21	0	72	117	333	1145
Grand Total	0	1280	249	0	425	1529	0	0	0	0	805	0	156	908	0	0	469	1064	174	811	313	0	798	1298	3891	-
Approach%	0%	83.7%	16.3%	0%	-	-	0%	0%	0%	0%	-	-	14.7%	85.3%	0%	0%	-	-	13.4%	62.5%	24.1%	0%	-	-	-	-
Totals %	0%	32.9%	6.4%	0%	-	39.3%	0%	0%	0%	0%	0%	0%	4%	23.3%	0%	0%	0%	27.3%	4.5%	20.8%	8%	0%	-	33.4%	-	-
Heavy	0	49	9	0	-	-	0	0	0	0	-	-	5	33	0	0	-	-	5	6	5	0	-	-	-	-
Heavy %	0%	3.8%	3.6%	0%	-	-	0%	0%	0%	0%	-	-	3.2%	3.6%	0%	0%	-	-	2.9%	0.7%	1.6%	0%	-	-	-	-
Bicycles	2	163	12	1	-	-	10	1	11	0	-	-	29	138	0	0	-	-	24	41	18	0	-	-	-	-
Bicycle %	0%	12.7%	4.8%	0%	-	-	0%	0%	0%	0%	-	-	18.6%	15.2%	0%	0%	-	-	13.8%	5.1%	5.8%	0%	-	-	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)

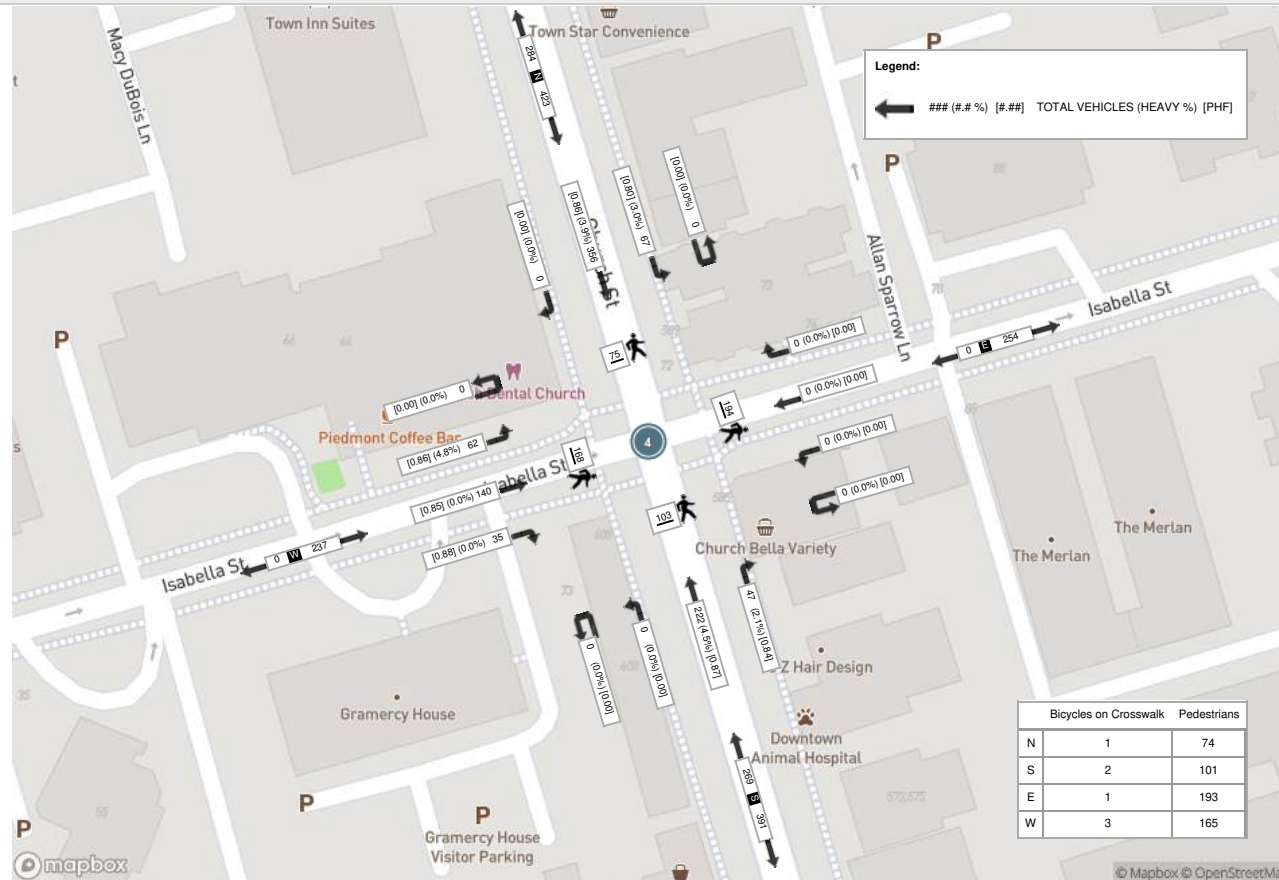
Start Time	N Approach CHURCH ST						E Approach ISABELLA ST						S Approach CHURCH ST						W Approach ISABELLA ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:30:00	0	101	21	0	15	122	0	0	0	0	48	0	14	51	0	0	31	65	10	41	18	0	33	69	256
08:45:00	0	75	15	0	22	90	0	0	0	0	67	0	10	52	0	0	33	62	9	32	12	0	53	53	205
09:00:00	0	103	14	0	23	117	0	0	0	0	40	0	12	55	0	0	21	67	10	30	15	0	56	55	239
09:15:00	0	77	17	0	15	94	0	0	0	0	39	0	11	64	0	0	18	75	6	37	17	0	26	60	229
Grand Total	0	356	67	0	75	423	0	0	0	0	194	0	47	222	0	0	103	269	35	140	62	0	168	237	929
Approach%	0%	84.2%	15.8%	0%		-	0%	0%	0%	0%		-	17.5%	82.5%	0%	0%		-	14.8%	59.1%	26.2%	0%		-	-
Totals %	0%	38.3%	7.2%	0%		45.5%	0%	0%	0%	0%		0%	5.1%	23.9%	0%	0%		29%	3.8%	15.1%	6.7%	0%		25.5%	-
PHF	0	0.86	0.8	0		0.87	0	0	0	0		0	0.84	0.87	0	0		0.9	0.88	0.85	0.86	0		0.86	-
Heavy	0	14	2	0		16	0	0	0	0		0	1	10	0	0		11	0	0	3	0		3	-
Heavy %	0%	3.9%	3%	0%		3.8%	0%	0%	0%	0%		0%	2.1%	4.5%	0%	0%		4.1%	0%	0%	4.8%	0%		1.3%	-
Lights	0	342	65	0		407	0	0	0	0		0	46	212	0	0		258	35	140	59	0		234	-
Lights %	0%	96.1%	97%	0%		96.2%	0%	0%	0%	0%		0%	97.9%	95.5%	0%	0%		95.9%	100%	100%	95.2%	0%		98.7%	-
Single-Unit Trucks	0	12	1	0		13	0	0	0	0		0	1	6	0	0		7	0	0	2	0		2	-
Single-Unit Trucks %	0%	3.4%	1.5%	0%		3.1%	0%	0%	0%	0%		0%	2.1%	2.7%	0%	0%		2.6%	0%	0%	3.2%	0%		0.8%	-
Buses	0	2	0	0		2	0	0	0	0		0	0	4	0	0		4	0	0	1	0		1	-
Buses %	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.5%	0%	0%	1.6%	0%		0.4%	-
Articulated Trucks	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	1.5%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	74	-	-	-	-	-	193	-	-	-	-	-	101	-	-	-	-	-	165	-	-
Pedestrians%	-	-	-	-	13.7%	-	-	-	-	-	35.7%	-	-	-	-	-	18.7%	-	-	-	-	-	30.6%	-	-
Bicycles on Road	0	36	1	0	0	-	3	0	2	0	0	-	4	29	0	0	0	-	9	8	2	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	3	-	-
Bicycles on Crosswalk%	-	-	-	-	0.2%	-	-	-	-	-	0.2%	-	-	-	-	-	0.4%	-	-	-	-	-	0.6%	-	-



Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)

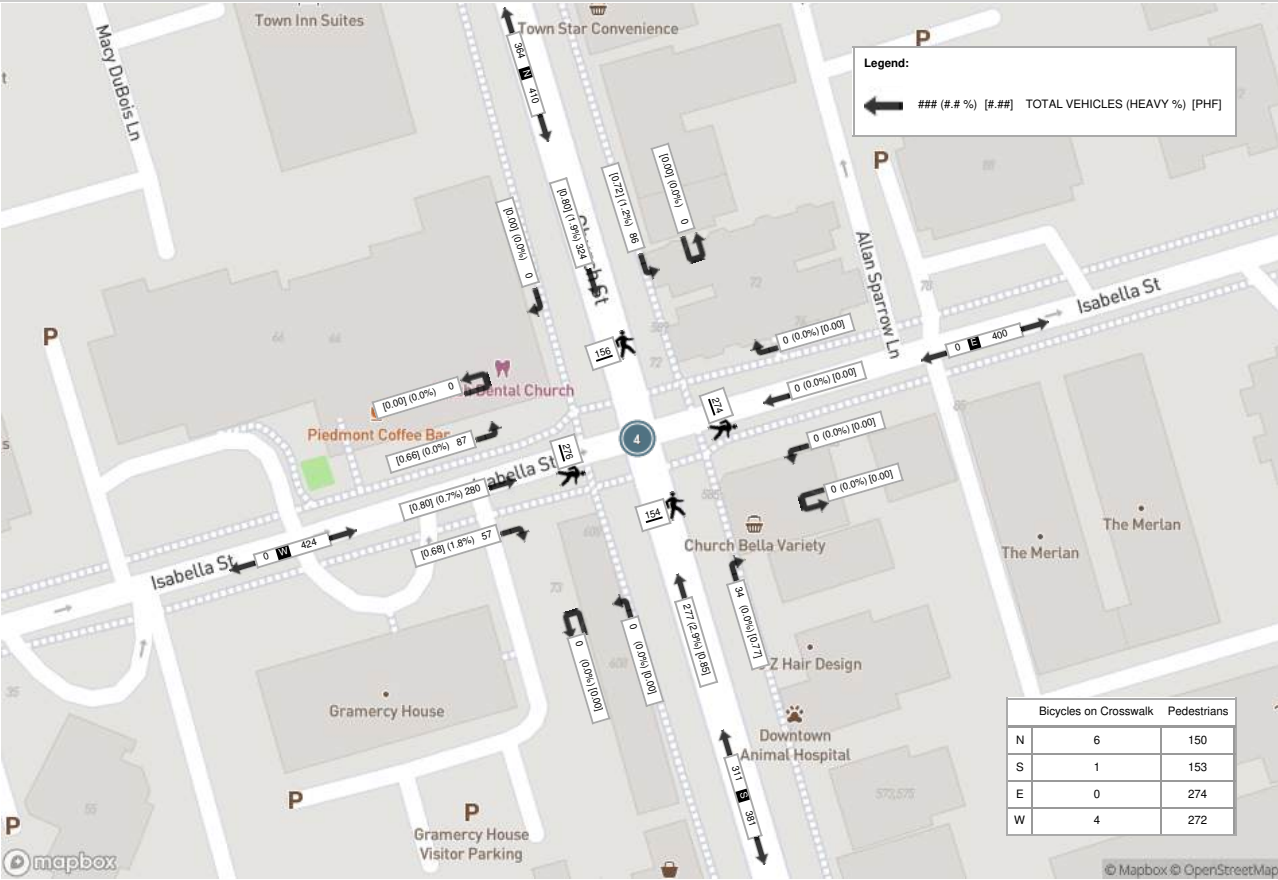
Start Time	N Approach CHURCH ST						E Approach ISABELLA ST						S Approach CHURCH ST						W Approach ISABELLA ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	0	76	21	0	43	97	0	0	0	0	68	0	9	53	0	0	48	62	11	52	33	0	70	96	255
17:15:00	0	73	22	0	29	95	0	0	0	0	81	0	10	67	0	0	35	77	9	66	17	0	70	92	264
17:30:00	0	74	13	0	41	87	0	0	0	0	69	0	11	76	0	0	33	87	16	87	16	0	64	119	293
17:45:00	0	101	30	0	43	131	0	0	0	0	56	0	4	81	0	0	38	85	21	75	21	0	72	117	333
Grand Total	0	324	86	0	156	410	0	0	0	0	274	0	34	277	0	0	154	311	57	280	87	0	276	424	1145
Approach%	0%	79%	21%	0%	-	-	0%	0%	0%	0%	-	-	10.9%	89.1%	0%	0%	-	-	13.4%	66%	20.5%	0%	-	-	-
Totals %	0%	28.3%	7.5%	0%	-	35.8%	0%	0%	0%	0%	-	-	3%	24.2%	0%	0%	-	-	5%	24.5%	7.6%	0%	-	-	37%
PHF	0	0.8	0.72	0	-	0.78	0	0	0	0	-	-	0.77	0.85	0	0	-	-	0.68	0.8	0.66	0	-	-	0.89
Heavy	0	6	1	0	-	7	0	0	0	0	-	-	0	8	0	0	-	-	1	2	0	0	-	-	3
Heavy %	0%	1.9%	1.2%	0%	-	1.7%	0%	0%	0%	0%	-	-	0%	2.9%	0%	0%	-	-	1.8%	0.7%	0%	0%	-	-	0.7%
Lights	0	318	85	0	-	403	0	0	0	0	-	-	34	269	0	0	-	-	56	278	87	0	-	-	421
Lights %	0%	98.1%	98.8%	0%	-	98.3%	0%	0%	0%	0%	-	-	100%	97.1%	0%	0%	-	-	98.2%	99.3%	100%	0%	-	-	99.3%
Single-Unit Trucks	0	5	0	0	-	5	0	0	0	0	-	-	0	7	0	0	-	-	1	2	0	0	-	-	3
Single-Unit Trucks %	0%	1.5%	0%	0%	-	1.2%	0%	0%	0%	0%	-	-	0%	2.5%	0%	0%	-	-	1.8%	0.7%	0%	0%	-	-	0.7%
Buses	0	1	1	0	-	2	0	0	0	0	-	-	0	0	0	0	-	-	0	0	0	0	-	-	0
Buses %	0%	0.3%	1.2%	0%	-	0.5%	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	1	0	0	-	-	0	0	0	0	-	-	0
Articulated Trucks %	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	0.4%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%
Pedestrians	-	-	-	-	150	-	-	-	-	-	274	-	-	-	-	-	153	-	-	-	-	-	272	-	-
Pedestrians%	-	-	-	-	17.4%	-	-	-	-	-	31.9%	-	-	-	-	-	17.8%	-	-	-	-	-	31.6%	-	-
Bicycles on Road	1	75	4	1	0	-	4	0	3	0	0	-	9	48	0	0	0	-	7	20	7	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	4	-	-
Bicycles on Crosswalk%	-	-	-	-	0.7%	-	-	-	-	-	0%	-	-	-	-	-	0.1%	-	-	-	-	-	0.5%	-	-

Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)





Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)





Turning Movement Count (5 . ISABELLA ST & 48 ISABELLA ST ACCESS)

Start Time	N Approach 48 ISABELLA ST ACCESS					E Approach ISABELLA ST					W Approach ISABELLA ST					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:30:00	0	0	0	10	0	0	0	0	0	0	38	0	0	5	38	38	
07:45:00	0	0	0	21	0	0	0	0	1	0	42	0	0	3	42	42	
08:00:00	0	0	0	16	0	0	1	0	1	1	49	0	0	0	49	50	
08:15:00	0	0	0	12	0	0	0	0	3	0	46	0	0	1	46	46	176
08:30:00	0	0	0	22	0	0	0	0	5	0	67	0	0	3	67	67	205
08:45:00	0	2	0	27	2	0	0	0	3	0	50	0	0	3	50	52	215
09:00:00	0	0	0	22	0	0	0	0	5	0	49	0	0	2	49	49	214
09:15:00	0	0	0	18	0	0	0	0	0	0	59	1	0	1	60	60	228
BREAK																	
16:00:00	0	0	0	28	0	0	0	0	3	0	132	0	0	2	132	132	
16:15:00	0	0	0	25	0	0	0	0	3	0	106	1	0	1	107	107	
16:30:00	0	0	0	25	0	0	0	0	3	0	113	0	0	1	113	113	
16:45:00	0	0	0	27	0	0	0	0	4	0	99	0	0	4	99	99	451
17:00:00	0	0	0	39	0	0	0	0	5	0	98	0	0	2	98	98	417
17:15:00	0	0	0	32	0	0	0	0	2	0	93	1	0	3	94	94	404
17:30:00	0	0	0	35	0	0	0	0	1	0	119	0	0	2	119	119	410
17:45:00	0	1	0	38	1	0	0	0	4	0	119	0	0	6	119	120	431
Grand Total	0	3	0	397	3	0	1	0	43	1	1279	3	0	39	1282	1286	-
Approach%	0%	100%	0%	-	-	0%	100%	0%	-	-	99.8%	0.2%	0%	-	-	-	-
Totals %	0%	0.2%	0%	0.2%	0.2%	0%	0.1%	0%	0.1%	0.1%	99.5%	0.2%	0%	99.7%	-	-	-
Heavy	0	0	0	-	-	0	0	0	-	-	16	0	0	-	-	-	-
Heavy %	0%	0%	0%	-	-	0%	0%	0%	-	-	1.3%	0%	0%	-	-	-	-
Bicycles	0	0	0	-	-	0	10	0	-	-	63	0	0	-	-	-	-
Bicycle %	0%	0%	0%	-	-	0%	1000%	0%	-	-	4.9%	0%	0%	-	-	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)

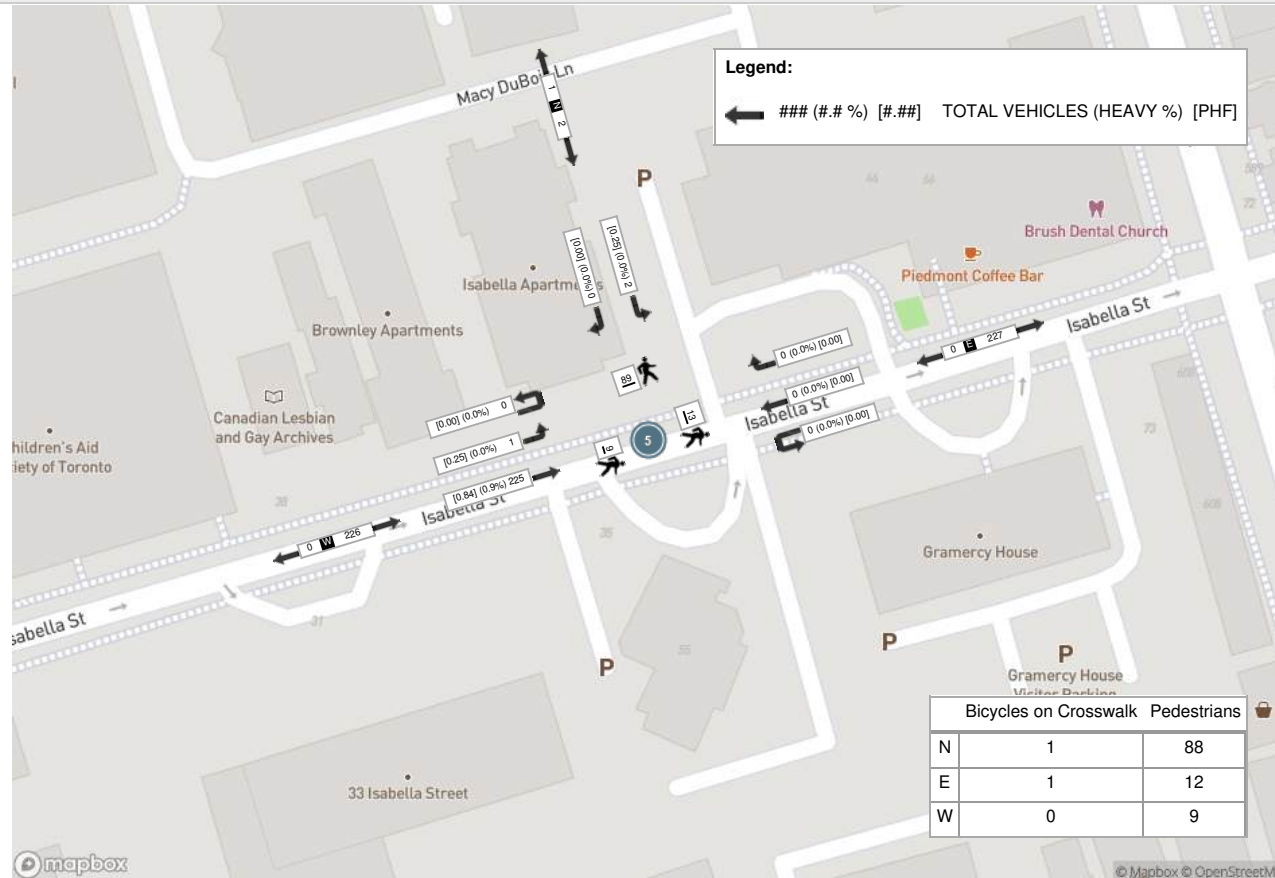
Start Time	N Approach 48 ISABELLA ST ACCESS					E Approach ISABELLA ST					W Approach ISABELLA ST					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
08:30:00	0	0	0	22	0	0	0	0	5	0	67	0	0	3	67	67
08:45:00	0	2	0	27	2	0	0	0	3	0	50	0	0	3	50	52
09:00:00	0	0	0	22	0	0	0	0	5	0	49	0	0	2	49	49
09:15:00	0	0	0	18	0	0	0	0	0	0	59	1	0	1	60	60
Grand Total	0	2	0	89	2	0	0	0	13	0	225	1	0	9	226	228
Approach%	0%	100%	0%		-	0%	0%	0%		-	99.6%	0.4%	0%		-	-
Totals %	0%	0.9%	0%		0.9%	0%	0%	0%		0%	98.7%	0.4%	0%		99.1%	-
PHF	0	0.25	0		0.25	0	0	0		0	0.84	0.25	0		0.84	-
Heavy	0	0	0		0	0	0	0		0	2	0	0		2	-
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0.9%	0%	0%		0.9%	-
Lights	0	2	0		2	0	0	0		0	223	1	0		224	-
Lights %	0%	100%	0%		100%	0%	0%	0%		0%	99.1%	100%	0%		99.1%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	1	0	0		1	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.4%	0%	0%		0.4%	-
Buses	0	0	0		0	0	0	0		0	1	0	0		1	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0.4%	0%	0%		0.4%	-
Pedestrians	-	-	-	88	-	-	-	-	12	-	-	-	-	9	-	-
Pedestrians%	-	-	-	79.3%		-	-	-	10.8%		-	-	-	8.1%		-
Bicycles on Road	0	0	0	0	-	0	2	0	0	-	10	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0.9%		-	-	-	0.9%		-	-	-	0%		-



Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (10.87 °C)

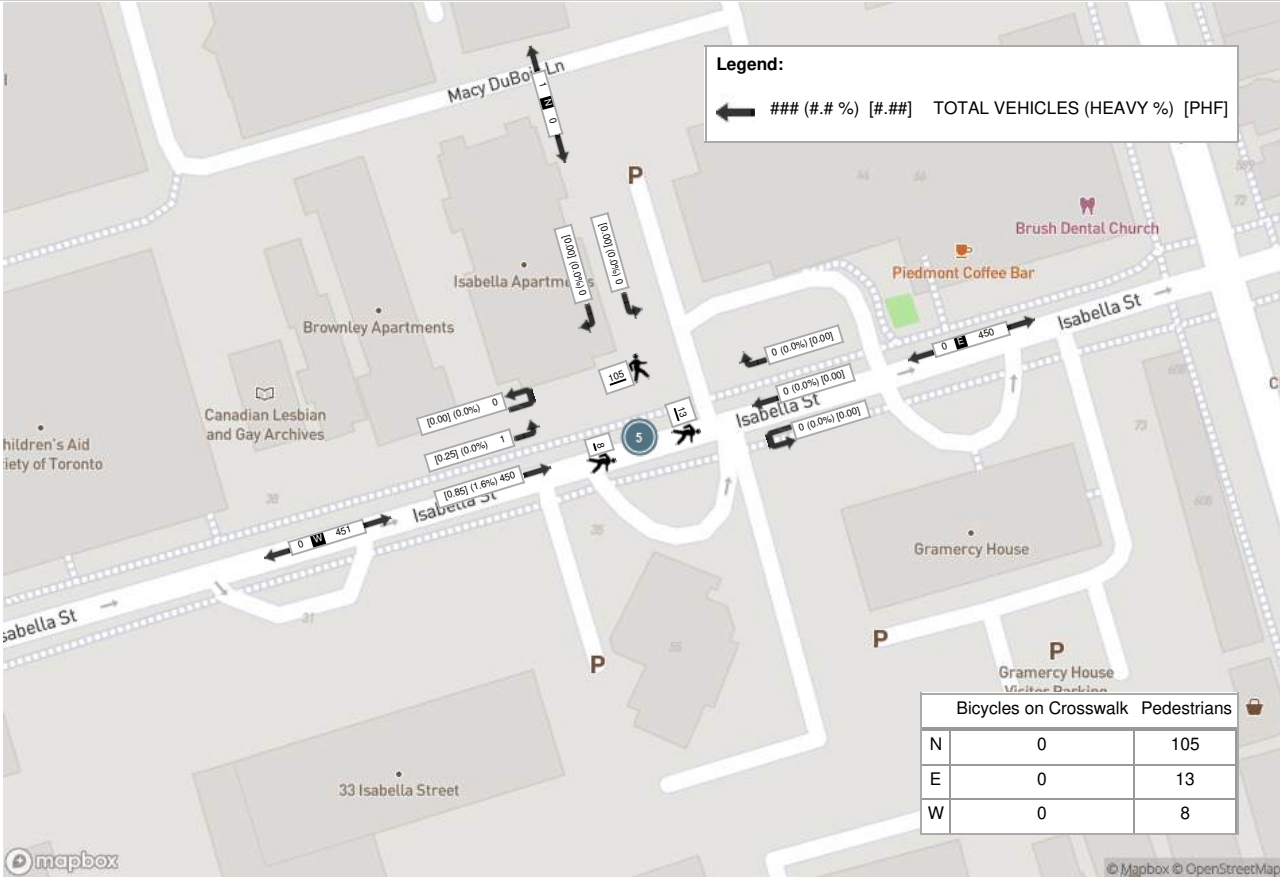
Start Time	N Approach 48 ISABELLA ST ACCESS					E Approach ISABELLA ST					W Approach ISABELLA ST					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	0	0	0	28	0	0	0	0	3	0	132	0	0	2	132	132
16:15:00	0	0	0	25	0	0	0	0	3	0	106	1	0	1	107	107
16:30:00	0	0	0	25	0	0	0	0	3	0	113	0	0	1	113	113
16:45:00	0	0	0	27	0	0	0	0	4	0	99	0	0	4	99	99
Grand Total	0	0	0	105	0	0	0	0	13	0	450	1	0	8	451	451
Approach%	0%	0%	0%		-	0%	0%	0%		-	99.8%	0.2%	0%		-	-
Totals %	0%	0%	0%		0%	0%	0%	0%		0%	99.8%	0.2%	0%		100%	-
PHF	0	0	0		0	0	0	0		0	0.85	0.25	0		0.85	-
Heavy	0	0	0		0	0	0	0		0	7	0	0		7	-
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	1.6%	0%	0%		1.6%	-
Lights	0	0	0		0	0	0	0		0	443	1	0		444	-
Lights %	0%	0%	0%		0%	0%	0%	0%		0%	98.4%	100%	0%		98.4%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	7	0	0		7	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	1.6%	0%	0%		1.6%	-
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	-	-	-	105	-	-	-	-	13	-	-	-	-	8	-	-
Pedestrians%	-	-	-	83.3%		-	-	-	10.3%		-	-	-	6.3%		-
Bicycles on Road	0	0	0	0	-	0	4	0	0	-	23	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-

Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)





Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (10.87 °C)





Turning Movement Count (8 . 48 ISABELLA ST UG & ISABELLA ST)

Start Time	N Approach 48 ISABELLA ST UG					E Approach ISABELLA ST					W Approach ISABELLA ST					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:30:00	0	0	0	8	0	0	0	0	5	0	40	0	0	0	40	40	
07:45:00	0	0	0	19	0	0	0	0	3	0	43	0	0	0	43	43	
08:00:00	0	1	0	17	1	0	0	0	1	0	49	0	0	0	49	50	
08:15:00	0	0	0	13	0	0	0	0	3	0	48	0	0	1	48	48	181
08:30:00	0	4	0	22	4	0	0	0	7	0	66	0	0	1	66	70	211
08:45:00	0	1	0	29	1	0	0	0	5	0	48	0	0	0	48	49	217
09:00:00	0	1	0	18	1	0	1	0	7	1	48	0	0	1	48	50	217
09:15:00	0	0	0	13	0	0	0	0	5	0	58	0	0	0	58	58	227
BREAK																	
16:00:00	0	0	0	29	0	0	0	0	3	0	136	0	0	0	136	136	
16:15:00	0	0	0	31	0	0	0	0	1	0	106	0	0	1	106	106	
16:30:00	0	0	0	25	0	0	0	0	1	0	114	0	0	0	114	114	
16:45:00	0	0	0	31	0	0	0	0	7	0	99	0	0	1	99	99	455
17:00:00	0	0	0	43	0	0	0	0	2	0	101	1	0	1	102	102	421
17:15:00	0	0	0	36	0	0	0	0	5	0	96	0	0	4	96	96	411
17:30:00	0	0	0	38	0	0	0	0	1	0	122	0	0	0	122	122	419
17:45:00	0	1	0	33	1	0	0	0	8	0	120	0	0	1	120	121	441
Grand Total	0	8	0	405	8	0	1	0	64	1	1294	1	0	11	1295	1304	-
Approach%	0%	100%	0%		-	0%	100%	0%		-	99.9%	0.1%	0%		-	-	-
Totals %	0%	0.6%	0%		0.6%	0%	0.1%	0%		0.1%	99.2%	0.1%	0%		99.3%	-	-
Heavy	0	0	0		-	0	0	0		-	16	0	0		-	-	-
Heavy %	0%	0%	0%		-	0%	0%	0%		-	1.2%	0%	0%		-	-	-
Bicycles	0	0	0		-	0	10	0		-	66	0	1		-	-	-
Bicycle %	0%	0%	0%		-	0%	1000%	0%		-	5.1%	0%	0%		-	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)

Start Time	N Approach 48 ISABELLA ST UG					E Approach ISABELLA ST					W Approach ISABELLA ST					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
08:30:00	0	4	0	22	4	0	0	0	7	0	66	0	0	1	66	70
08:45:00	0	1	0	29	1	0	0	0	5	0	48	0	0	0	48	49
09:00:00	0	1	0	18	1	0	1	0	7	1	48	0	0	1	48	50
09:15:00	0	0	0	13	0	0	0	0	5	0	58	0	0	0	58	58
Grand Total	0	6	0	82	6	0	1	0	24	1	220	0	0	2	220	227
Approach%	0%	100%	0%		-	0%	100%	0%		-	100%	0%	0%		-	-
Totals %	0%	2.6%	0%		2.6%	0%	0.4%	0%		0.4%	96.9%	0%	0%		96.9%	-
PHF	0	0.38	0		0.38	0	0.25	0		0.25	0.83	0	0		0.83	-
Heavy	0	0	0		0	0	0	0		0	2	0	0		2	-
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0.9%	0%	0%		0.9%	-
Lights	0	6	0		6	0	1	0		1	218	0	0		218	-
Lights %	0%	100%	0%		100%	0%	100%	0%		100%	99.1%	0%	0%		99.1%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	1	0	0		1	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.5%	0%	0%		0.5%	-
Buses	0	0	0		0	0	0	0		0	1	0	0		1	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0.5%	0%	0%		0.5%	-
Pedestrians	-	-	-	81	-	-	-	-	24	-	-	-	-	2	-	-
Pedestrians%	-	-	-	75%	-	-	-	-	22.2%	-	-	-	-	1.9%	-	-
Bicycles on Road	0	0	0	0	-	0	1	0	0	-	10	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0.9%	-	-	-	-	0%	-	-	-	-	0%	-	-

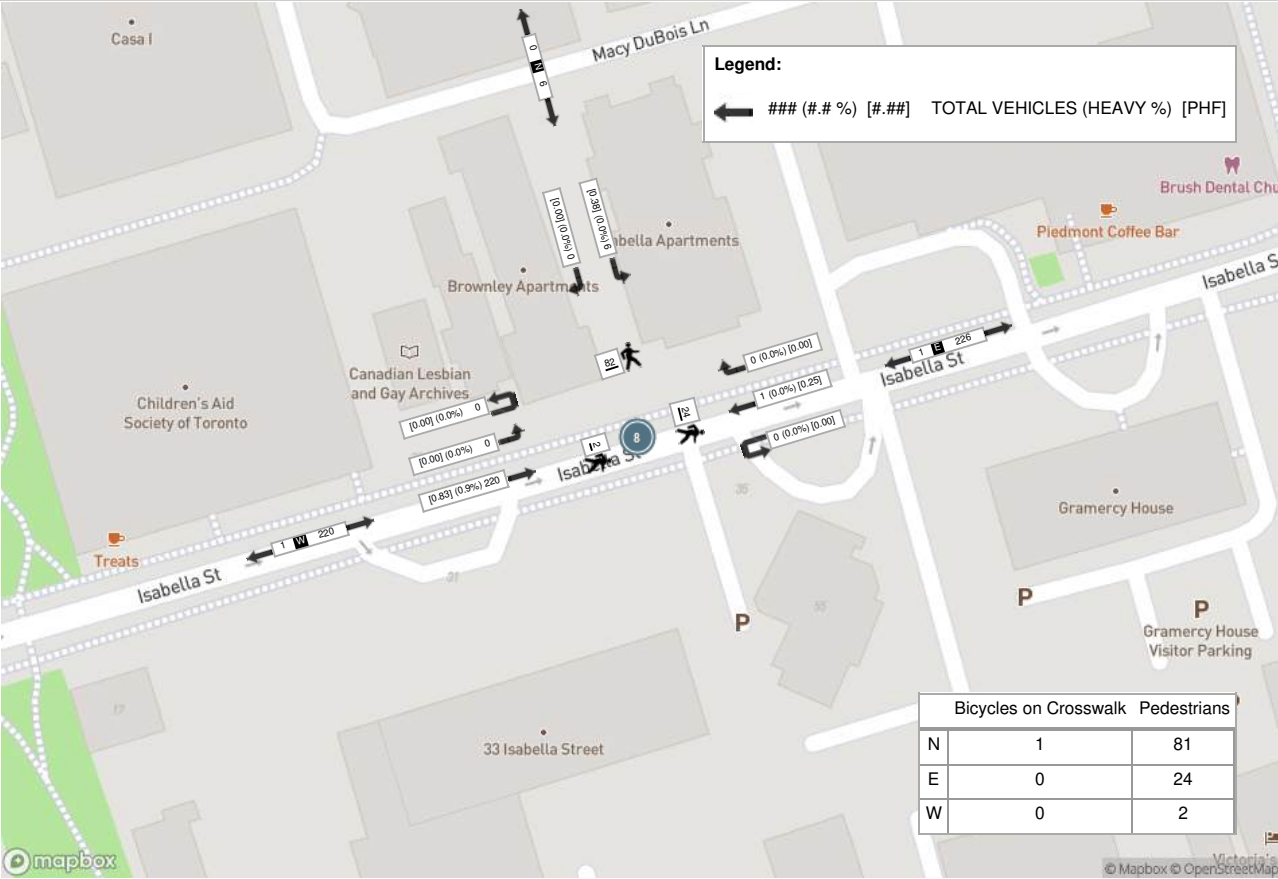


Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (10.87 °C)

Start Time	N Approach 48 ISABELLA ST UG					E Approach ISABELLA ST					W Approach ISABELLA ST					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	0	0	0	29	0	0	0	0	3	0	136	0	0	0	136	136
16:15:00	0	0	0	31	0	0	0	0	1	0	106	0	0	1	106	106
16:30:00	0	0	0	25	0	0	0	0	1	0	114	0	0	0	114	114
16:45:00	0	0	0	31	0	0	0	0	7	0	99	0	0	1	99	99
Grand Total	0	0	0	116	0	0	0	0	12	0	455	0	0	2	455	455
Approach%	0%	0%	0%		-	0%	0%	0%		-	100%	0%	0%		-	-
Totals %	0%	0%	0%		0%	0%	0%	0%		0%	100%	0%	0%		100%	-
PHF	0	0	0		0	0	0	0		0	0.84	0	0		0.84	-
Heavy	0	0	0		0	0	0	0		0	7	0	0		7	-
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	1.5%	0%	0%		1.5%	-
Lights	0	0	0		0	0	0	0		0	448	0	0		448	-
Lights %	0%	0%	0%		0%	0%	0%	0%		0%	98.5%	0%	0%		98.5%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	7	0	0		7	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	1.5%	0%	0%		1.5%	-
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	-	-	-	110	-	-	-	-	12	-	-	-	-	2	-	-
Pedestrians%	-	-	-	84.6%		-	-	-	9.2%		-	-	-	1.5%		-
Bicycles on Road	0	0	0	0	-	0	2	0	0	-	19	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	6	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	4.6%		-	-	-	0%		-	-	-	0%		-



Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)





Turning Movement Count (2 . YONGE STREET & ISABELLA STREET)

Start Time	N Approach YONGE ST					E Approach ISABELLA ST					S Approach YONGE ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:30:00	63	15	0	5	78	0	0	0	14	0	21	45	0	0	66	144	
07:45:00	82	14	0	4	96	0	0	0	33	0	23	58	0	0	81	177	
08:00:00	69	15	0	2	84	0	0	0	37	0	28	39	0	1	67	151	
08:15:00	85	20	0	1	105	0	0	0	40	0	25	54	0	2	79	184	656
08:30:00	93	27	0	7	120	0	0	0	67	0	42	59	0	7	101	221	733
08:45:00	89	21	0	3	110	0	0	0	290	0	29	51	0	6	80	190	746
09:00:00	75	25	0	6	100	0	0	0	362	0	36	87	0	3	123	223	818
09:15:00	71	19	0	2	90	0	0	0	128	0	33	87	0	2	120	210	844
BREAK																	
16:00:00	77	32	0	3	109	0	0	0	201	0	95	79	0	0	174	283	
16:15:00	76	24	0	1	100	1	0	0	185	1	85	91	0	7	176	277	
16:30:00	73	22	0	7	95	0	0	0	246	0	80	78	0	1	158	253	
16:45:00	80	28	0	11	108	0	0	0	222	0	68	88	1	2	157	265	1078
17:00:00	68	28	0	7	96	0	0	0	229	0	59	65	0	4	124	220	1015
17:15:00	77	31	0	5	108	0	0	0	209	0	63	65	0	7	128	236	974
17:30:00	78	31	0	3	109	0	0	0	237	0	83	105	0	4	188	297	1018
17:45:00	76	26	0	4	102	1	1	0	242	2	86	92	0	4	178	282	1035
Grand Total	1232	378	0	71	1610	2	1	0	2742	3	856	1143	1	50	2000	3613	-
Approach%	76.5%	23.5%	0%		-	66.7%	33.3%	0%		-	42.8%	57.2%	0.1%		-	-	-
Totals %	34.1%	10.5%	0%		44.6%	0.1%	0%	0%		0.1%	23.7%	31.6%	0%		55.4%	-	-
Heavy	31	7	0		-	0	0	0		-	12	39	0		-	-	-
Heavy %	2.5%	1.9%	0%		-	0%	0%	0%		-	1.4%	3.4%	0%		-	-	-
Bicycles	355	27	1		-	14	13	0		-	47	271	0		-	-	-
Bicycle %	28.8%	7.1%	0%		-	700%	1300%	0%		-	5.5%	23.7%	0%		-	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)

Start Time	N Approach YONGE ST					E Approach ISABELLA ST					S Approach YONGE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:30:00	93	27	0	7	120	0	0	0	67	0	42	59	0	7	101	221
08:45:00	89	21	0	3	110	0	0	0	290	0	29	51	0	6	80	190
09:00:00	75	25	0	6	100	0	0	0	362	0	36	87	0	3	123	223
09:15:00	71	19	0	2	90	0	0	0	128	0	33	87	0	2	120	210
Grand Total	328	92	0	18	420	0	0	0	847	0	140	284	0	18	424	844
Approach%	78.1%	21.9%	0%		-	0%	0%	0%		-	33%	67%	0%		-	-
Totals %	38.9%	10.9%	0%		49.8%	0%	0%	0%		0%	16.6%	33.6%	0%		50.2%	-
PHF	0.88	0.85	0		0.88	0	0	0		0	0.83	0.82	0		0.86	-
Heavy	11	2	0		13	0	0	0		0	0	11	0		11	-
Heavy %	3.4%	2.2%	0%		3.1%	0%	0%	0%		0%	0%	3.9%	0%		2.6%	-
Lights	317	90	0		407	0	0	0		0	140	273	0		413	-
Lights %	96.6%	97.8%	0%		96.9%	0%	0%	0%		0%	100%	96.1%	0%		97.4%	-
Single-Unit Trucks	9	1	0		10	0	0	0		0	0	8	0		8	-
Single-Unit Trucks %	2.7%	1.1%	0%		2.4%	0%	0%	0%		0%	0%	2.8%	0%		1.9%	-
Buses	2	1	0		3	0	0	0		0	0	3	0		3	-
Buses %	0.6%	1.1%	0%		0.7%	0%	0%	0%		0%	0%	1.1%	0%		0.7%	-
Articulated Trucks	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%	-
Pedestrians	-	-	-	18	-	-	-	-	846	-	-	-	-	18	-	-
Pedestrians%	-	-	-	2%		-	-	-	95.8%		-	-	-	2%		-
Bicycles on Road	76	7	0	0	-	5	2	0	0	-	5	28	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0.1%		-	-	-	0%		-

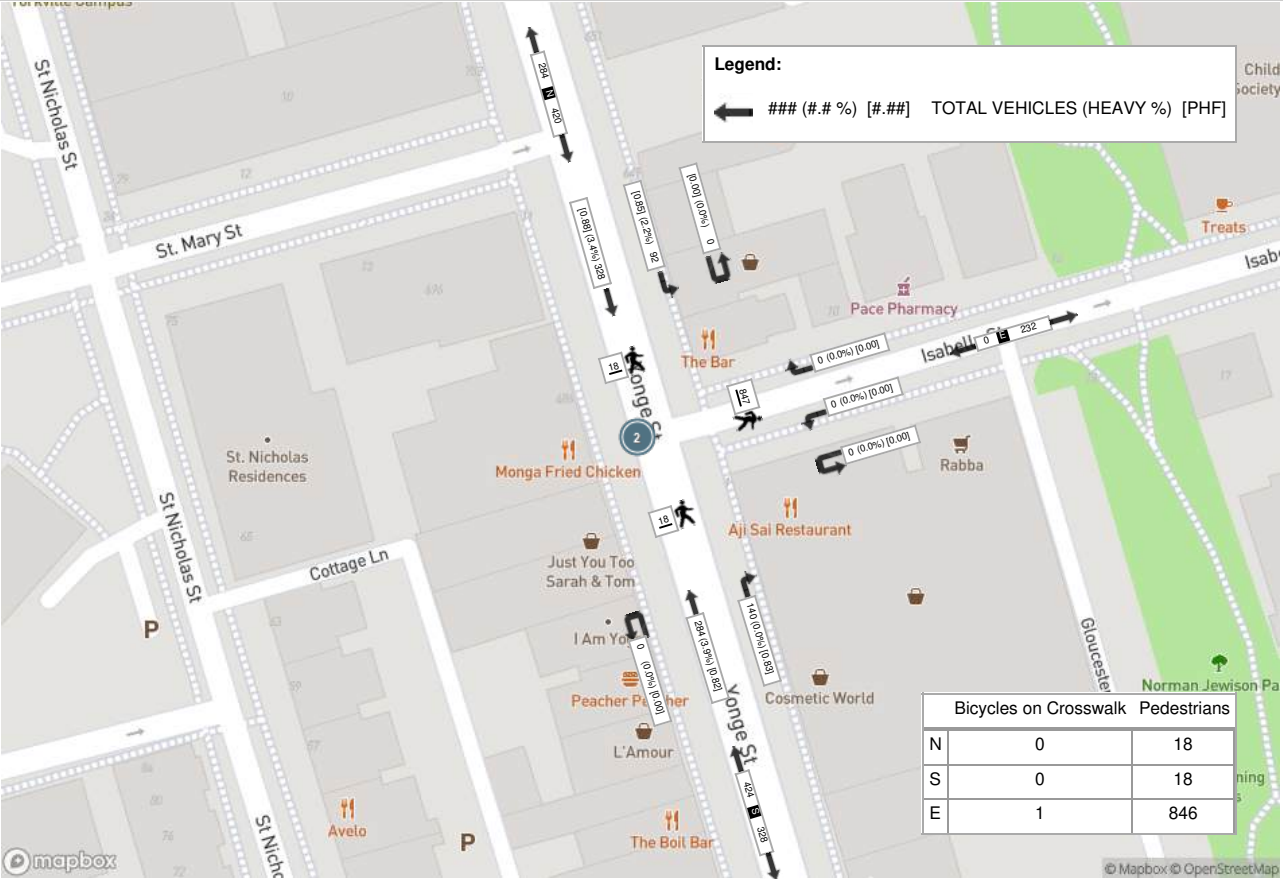


Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (10.87 °C)

Start Time	N Approach YONGE ST					E Approach ISABELLA ST					S Approach YONGE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:00:00	77	32	0	3	109	0	0	0	201	0	95	79	0	0	174	283
16:15:00	76	24	0	1	100	1	0	0	185	1	85	91	0	7	176	277
16:30:00	73	22	0	7	95	0	0	0	246	0	80	78	0	1	158	253
16:45:00	80	28	0	11	108	0	0	0	222	0	68	88	1	2	157	265
Grand Total	306	106	0	22	412	1	0	0	854	1	328	336	1	10	665	1078
Approach%	74.3%	25.7%	0%		-	100%	0%	0%		-	49.3%	50.5%	0.2%		-	-
Totals %	28.4%	9.8%	0%		38.2%	0.1%	0%	0%		0.1%	30.4%	31.2%	0.1%		61.7%	-
PHF	0.96	0.83	0		0.94	0.25	0	0		0.25	0.86	0.92	0.25		0.94	-
Heavy	8	2	0		10	0	0	0		0	6	9	0		15	-
Heavy %	2.6%	1.9%	0%		2.4%	0%	0%	0%		0%	1.8%	2.7%	0%		2.3%	-
Lights	298	104	0		402	1	0	0		1	322	327	1		650	-
Lights %	97.4%	98.1%	0%		97.6%	100%	0%	0%		100%	98.2%	97.3%	100%		97.7%	-
Single-Unit Trucks	5	2	0		7	0	0	0		0	6	4	0		10	-
Single-Unit Trucks %	1.6%	1.9%	0%		1.7%	0%	0%	0%		0%	1.8%	1.2%	0%		1.5%	-
Buses	3	0	0		3	0	0	0		0	0	5	0		5	-
Buses %	1%	0%	0%		0.7%	0%	0%	0%		0%	0%	1.5%	0%		0.8%	-
Articulated Trucks	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%	-
Pedestrians	-	-	-	22	-	-	-	-	845	-	-	-	-	10	-	-
Pedestrians%	-	-	-	2.5%	-	-	-	-	95.4%	-	-	-	-	1.1%	-	-
Bicycles on Road	95	4	1	0	-	2	3	0	0	-	15	99	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	9	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	1%	-	-	-	-	0%	-	-

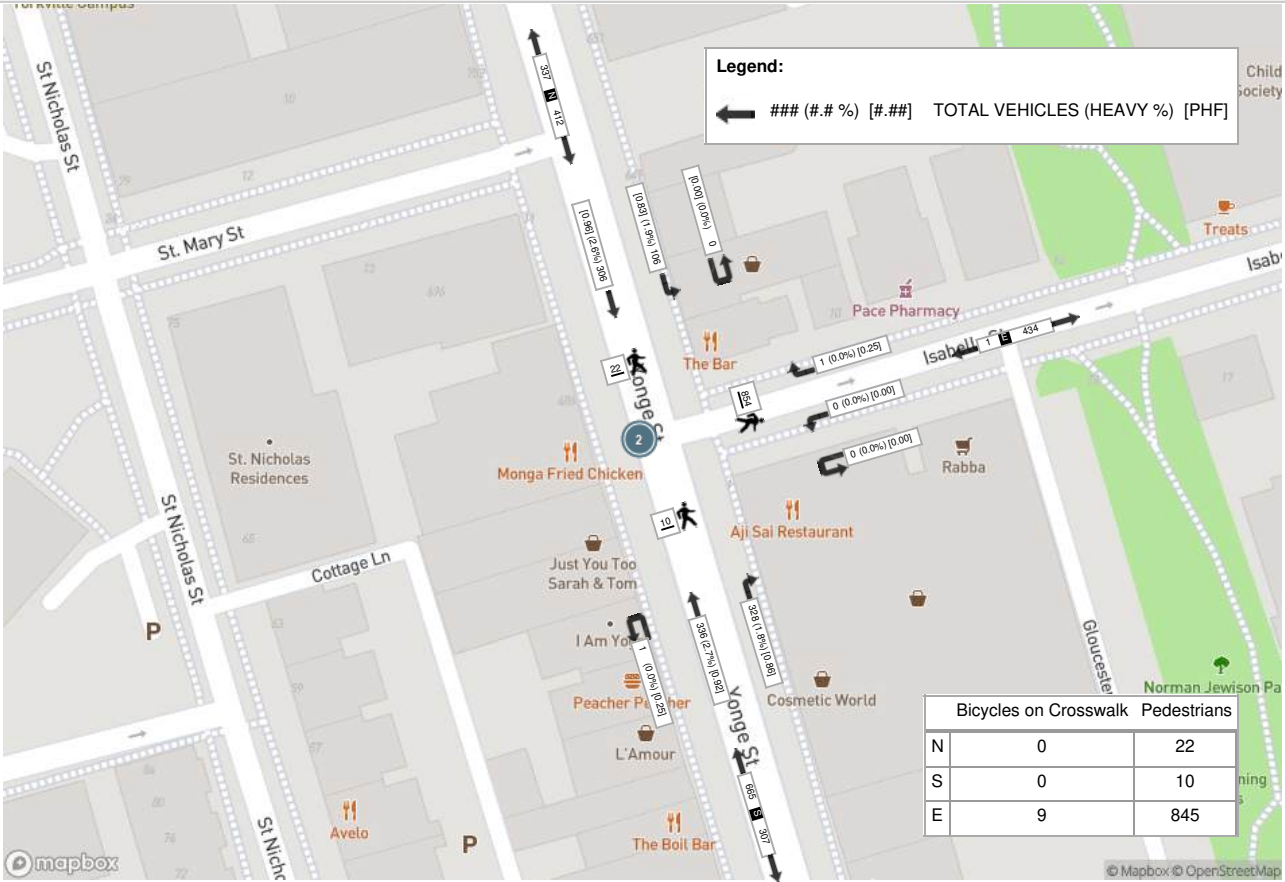


Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)





Peak Hour: 04:00 PM - 05:00 PM Weather: Scattered Clouds (10.87 °C)





Turning Movement Count (1 . YONGE STREET & CHARLES ST E)

Start Time	N Approach YONGE ST						E Approach CHARLES ST						S Approach YONGE ST						W Approach CHARLES ST						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		
07:30:00	7	48	0	0	32	55	15	30	21	0	47	66	0	42	5	0	16	47	0	0	0	0	9	0	168	
07:45:00	3	55	0	0	31	58	18	29	28	0	46	75	0	52	9	0	31	61	0	0	0	0	20	0	194	
08:00:00	5	50	0	0	52	55	22	36	28	0	62	86	0	31	9	0	39	40	0	0	0	0	27	0	181	
08:15:00	6	48	0	0	65	54	18	60	31	0	56	109	0	59	5	0	33	64	0	0	0	0	28	0	227	770
08:30:00	6	60	0	0	76	66	15	63	46	0	104	124	0	56	10	0	65	66	0	0	0	0	59	0	256	858
08:45:00	10	47	0	0	123	57	20	61	46	0	372	127	0	44	18	0	113	62	0	0	0	0	139	0	246	910
09:00:00	9	48	0	0	92	57	20	58	36	0	312	114	0	78	13	0	80	91	0	0	0	0	134	0	262	991
09:15:00	4	49	0	0	94	53	18	60	28	0	171	106	0	65	26	0	87	91	0	0	0	0	113	0	250	1014
BREAK																										
16:00:00	10	42	0	1	149	53	20	41	23	0	232	84	0	71	14	0	110	85	0	0	0	0	152	0	222	
16:15:00	14	40	0	0	133	54	29	53	29	0	184	111	0	95	10	0	113	105	1	0	0	0	146	1	271	
16:30:00	13	38	0	0	138	51	22	32	23	0	259	77	1	73	10	0	135	84	0	0	0	0	184	0	212	
16:45:00	8	47	1	0	164	56	16	44	24	0	256	84	1	70	18	0	127	89	0	0	0	0	196	0	229	934
17:00:00	7	41	0	0	171	48	22	49	29	0	234	100	0	60	15	1	134	76	0	1	0	0	198	1	225	937
17:15:00	9	42	0	0	207	51	11	50	36	0	227	97	0	76	12	0	168	88	0	0	0	0	228	0	236	902
17:30:00	6	37	0	0	167	43	17	48	28	0	254	93	0	87	16	0	182	103	1	0	0	0	247	1	240	930
17:45:00	10	48	1	0	184	59	20	57	21	0	285	98	0	72	22	0	160	94	0	0	0	0	229	0	251	952
Grand Total	127	740	2	1	1878	870	303	771	477	0	3101	1551	2	1031	212	1	1593	1246	2	1	0	0	2109	3	3670	-
Approach%	14.6%	85.1%	0.2%	0.1%	-	-	19.5%	49.7%	30.8%	0%	-	-	0.2%	82.7%	17%	0.1%	-	-	66.7%	33.3%	0%	0%	-	-	-	-
Totals %	3.5%	20.2%	0.1%	0%	23.7%	8.3%	21%	13%	0%	42.3%	0.1%	28.1%	5.8%	0%	34%	0.1%	0%	0%	0%	0%	0%	0%	0.1%	-	-	-
Heavy	4	27	0	0	-	14	12	5	0	-	0	35	6	0	-	0	0	0	0	0	0	0	-	-	-	-
Heavy %	3.1%	3.6%	0%	0%	-	4.6%	1.6%	1%	0%	-	0%	3.4%	2.8%	0%	-	0%	0%	0%	0%	0%	0%	0%	-	-	-	-
Bicycles	36	318	1	0	-	15	50	51	0	-	24	237	16	0	-	14	7	12	0	-	-	-	-	-	-	-
Bicycle %	28.3%	43%	50%	0%	-	5%	6.5%	10.7%	0%	-	1200%	23%	7.5%	0%	-	700%	700%	0%	0%	-	-	-	-	-	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)

Start Time	N Approach YONGE ST						E Approach CHARLES ST						S Approach YONGE ST						W Approach CHARLES ST						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	
08:30:00	6	60	0	0	76	66	15	63	46	0	104	124	0	56	10	0	65	66	0	0	0	0	59	0	256
08:45:00	10	47	0	0	123	57	20	61	46	0	372	127	0	44	18	0	113	62	0	0	0	0	139	0	246
09:00:00	9	48	0	0	92	57	20	58	36	0	312	114	0	78	13	0	80	91	0	0	0	0	134	0	262
09:15:00	4	49	0	0	94	53	18	60	28	0	171	106	0	65	26	0	87	91	0	0	0	0	113	0	250
Grand Total	29	204	0	0	385	233	73	242	156	0	959	471	0	243	67	0	345	310	0	0	0	0	445	0	1014
Approach%	12.4%	87.6%	0%	0%	-	-	15.5%	51.4%	33.1%	0%	-	-	0%	78.4%	21.6%	0%	-	-	0%	0%	0%	0%	-	-	-
Totals %	2.9%	20.1%	0%	0%	23%	23%	7.2%	23.9%	15.4%	0%	46.4%	46.4%	0%	24%	6.6%	0%	30.6%	30.6%	0%	0%	0%	0%	0%	0%	-
PHF	0.73	0.85	0	0	0.88	0.88	0.91	0.96	0.85	0	0.93	0.93	0	0.78	0.64	0	0.85	0.85	0	0	0	0	0	0	-
Heavy	0	10	0	0	10	10	4	6	2	0	12	12	0	10	1	0	11	11	0	0	0	0	0	0	-
Heavy %	0%	4.9%	0%	0%	4.3%	4.3%	5.5%	2.5%	1.3%	0%	2.5%	2.5%	0%	4.1%	1.5%	0%	3.5%	3.5%	0%	0%	0%	0%	0%	0%	-
Lights	29	194	0	0	223	223	69	236	154	0	459	459	0	233	66	0	299	299	0	0	0	0	0	0	-
Lights %	100%	95.1%	0%	0%	95.7%	95.7%	94.5%	97.5%	98.7%	0%	97.5%	97.5%	0%	95.9%	98.5%	0%	96.5%	96.5%	0%	0%	0%	0%	0%	0%	-
Single-Unit Trucks	0	7	0	0	7	7	4	5	2	0	11	11	0	7	1	0	8	8	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	3.4%	0%	0%	3%	3%	5.5%	2.1%	1.3%	0%	2.3%	2.3%	0%	2.9%	1.5%	0%	2.6%	2.6%	0%	0%	0%	0%	0%	0%	-
Buses	0	3	0	0	3	3	0	1	0	0	1	1	0	3	0	0	3	3	0	0	0	0	0	0	-
Buses %	0%	1.5%	0%	0%	1.3%	1.3%	0%	0.4%	0%	0%	0.2%	0.2%	0%	1.2%	0%	0%	1%	1%	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	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%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	384	-	-	-	-	-	954	-	-	-	-	-	341	-	-	-	-	-	445	-	-
Pedestrians%	-	-	-	-	18%	-	-	-	-	-	44.7%	-	-	-	-	-	16%	-	-	-	-	-	20.9%	-	-
Bicycles on Road	4	68	0	0	0	-	1	16	4	0	0	-	2	25	3	0	0	-	1	0	3	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	4	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0.2%	-	-	-	-	-	0.2%	-	-	-	-	-	0%	-	-



Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)

Start Time	N Approach YONGE ST						E Approach CHARLES ST						S Approach YONGE ST						W Approach CHARLES ST						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	
17:00:00	7	41	0	0	171	48	22	49	29	0	234	100	0	60	15	1	134	76	0	1	0	0	198	1	225
17:15:00	9	42	0	0	207	51	11	50	36	0	227	97	0	76	12	0	168	88	0	0	0	0	228	0	236
17:30:00	6	37	0	0	167	43	17	48	28	0	254	93	0	87	16	0	182	103	1	0	0	0	247	1	240
17:45:00	10	48	1	0	184	59	20	57	21	0	285	98	0	72	22	0	160	94	0	0	0	0	229	0	251
Grand Total	32	168	1	0	729	201	70	204	114	0	1000	388	0	295	65	1	644	361	1	1	0	0	902	2	952
Approach%	15.9%	83.6%	0.5%	0%	-	-	18%	52.6%	29.4%	0%	-	-	0%	81.7%	18%	0.3%	-	-	50%	50%	0%	0%	-	-	-
Totals %	3.4%	17.6%	0.1%	0%	-	21.1%	7.4%	21.4%	12%	0%	-	40.8%	0%	31%	6.8%	0.1%	-	37.9%	0.1%	0.1%	0%	0%	-	0.2%	-
PHF	0.8	0.88	0.25	0	-	0.85	0.8	0.89	0.79	0	-	0.97	0	0.85	0.74	0.25	-	0.88	0.25	0.25	0	0	-	0.5	-
Heavy	0	2	0	0	-	2	2	3	0	0	-	5	0	5	2	0	-	7	0	0	0	0	-	0	-
Heavy %	0%	1.2%	0%	0%	-	1%	2.9%	1.5%	0%	0%	-	1.3%	0%	1.7%	3.1%	0%	-	1.9%	0%	0%	0%	0%	-	0%	-
Lights	32	166	1	0	-	199	68	201	114	0	-	383	0	290	63	1	-	354	1	1	0	0	-	2	-
Lights %	100%	98.8%	100%	0%	-	99%	97.1%	98.5%	100%	0%	-	98.7%	0%	98.3%	96.9%	100%	-	98.1%	100%	100%	0%	0%	-	100%	-
Single-Unit Trucks	0	0	0	0	-	0	1	3	0	0	-	4	0	1	1	0	-	2	0	0	0	0	-	0	-
Single-Unit Trucks %	0%	0%	0%	0%	-	0%	1.4%	1.5%	0%	0%	-	1%	0%	0.3%	1.5%	0%	-	0.6%	0%	0%	0%	0%	-	0%	-
Buses	0	2	0	0	-	2	0	0	0	0	-	0	0	3	1	0	-	4	0	0	0	0	-	0	-
Buses %	0%	1.2%	0%	0%	-	1%	0%	0%	0%	0%	-	0%	0%	1%	1.5%	0%	-	1.1%	0%	0%	0%	0%	-	0%	-
Articulated Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	-
Articulated Trucks %	0%	0%	0%	0%	-	0%	1.4%	0%	0%	0%	-	0.3%	0%	0.3%	0%	0%	-	0.3%	0%	0%	0%	0%	-	0%	-
Pedestrians	-	-	-	-	712	-	-	-	-	-	994	-	-	-	-	-	639	-	-	-	-	-	893	-	-
Pedestrians%	-	-	-	-	21.7%	-	-	-	-	-	30.4%	-	-	-	-	-	19.5%	-	-	-	-	-	27.3%	-	-
Bicycles on Road	21	115	1	0	0	-	11	19	28	0	0	-	13	120	7	0	0	-	8	3	4	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	17	-	-	-	-	-	6	-	-	-	-	-	5	-	-	-	-	-	9	-	-
Bicycles on Crosswalk%	-	-	-	-	0.5%	-	-	-	-	-	0.2%	-	-	-	-	-	0.2%	-	-	-	-	-	0.3%	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Clear Sky (4.71 °C)





Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (10.87 °C)



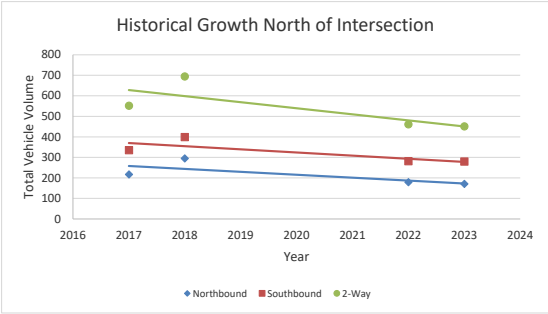
Appendix E: Corridor Growth



Project: 48 Isabella Street
Project ID: 8270-01
Intersection: Yonge Street / Bloor Street
Peak Hour: AM Peak

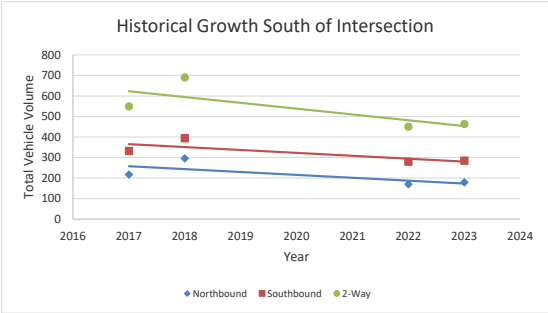
North of Intersection				
Date	Year	Northbound	Southbound	2-Way
Tuesday Dec 12, 2017	2017	217	335	552
Wednesday May 2, 2018	2018	295	399	694
Thursday June 23, 2022	2022	179	282	461
Thursday February 02, 2023	2023	171	280	451

Trend Point at start		258.2	370.0	628.2
Trend Point at end		172.8	278.0	450.8
Slope		-14.2	-15.3	-29.6
Annual Growth		-5.5%	-4.1%	-4.7%



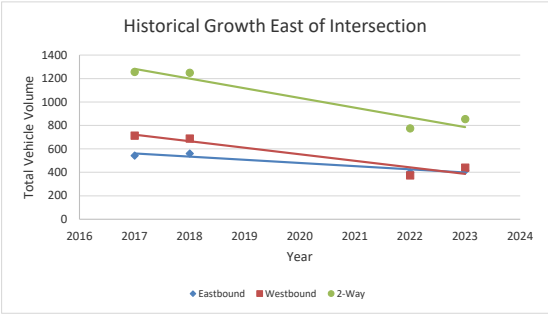
South of Intersection				
Date	Year	Northbound	Southbound	2-Way
Tuesday Dec 12, 2017	2017	217	332	549
Wednesday May 2, 2018	2018	296	394	690
Thursday June 23, 2022	2022	170	280	450
Thursday February 02, 2023	2023	179	285	464

Trend Point at start		257.7	365.3	623.1
Trend Point at end		173.3	280.2	453.4
Slope		-14.1	-14.2	-28.3
Annual Growth		-5.5%	-3.9%	-4.5%



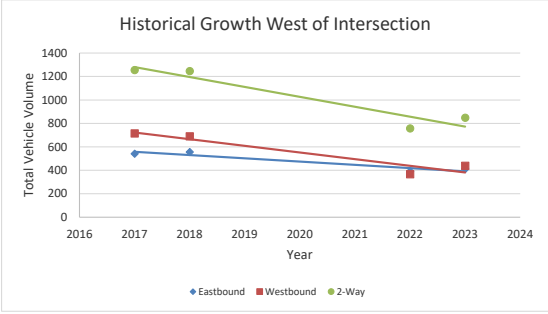
East of Intersection				
Date	Year	Eastbound	Westbound	2-Way
Tuesday Dec 12, 2017	2017	543	713	1256
Wednesday May 2, 2018	2018	561	689	1250
Thursday June 23, 2022	2022	401	374	775
Thursday February 02, 2023	2023	415	440	855

Trend Point at start		561.2	721.2	1282.4
Trend Point at end		398.8	386.8	785.6
Slope		-27.1	-55.7	-82.8
Annual Growth		-4.8%	-7.7%	-6.5%



West of Intersection				
Date	Year	Eastbound	Westbound	2-Way
Tuesday Dec 12, 2017	2017	541	714	1255
Wednesday May 2, 2018	2018	556	690	1246
Thursday June 23, 2022	2022	391	366	757
Thursday February 02, 2023	2023	410	438	848

Trend Point at start		557.9	722.3	1280.2
Trend Point at end		391.1	381.7	772.8
Slope		-27.8	-56.8	-84.6
Annual Growth		-5.0%	-7.9%	-6.6%



Project:
Project ID:
Intersection
Peak Hour

48 Isabella Street
8270-01
Yonge Street / Bloor Street
PM Peak

North of Intersection				
Date	Year	Northbound	Southbound	2-Way
Tuesday Dec 12, 2017	2017	450	338	788
Wednesday May 2, 2018	2018	558	333	891
Thursday June 23, 2022	2022	270	245	515
Thursday February 02, 2023	2023	230	216	446

Trend Point at start		519.6	345.5	865.2
Trend Point at end		234.4	220.5	454.8
Slope		-47.5	-20.8	-68.4
Annual Growth		-9.1%	-6.0%	-7.9%

South of Intersection				
Date	Year	Northbound	Southbound	2-Way
Tuesday Dec 12, 2017	2017	446	331	777
Wednesday May 2, 2018	2018	590	326	916
Thursday June 23, 2022	2022	271	242	513
Thursday February 02, 2023	2023	238	214	452

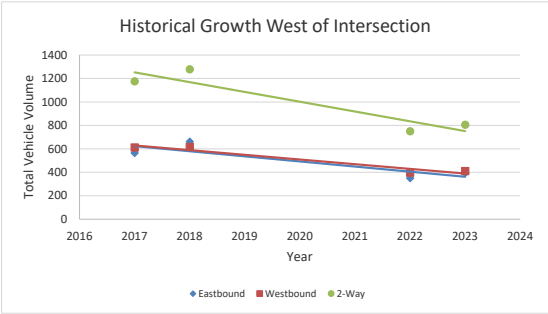
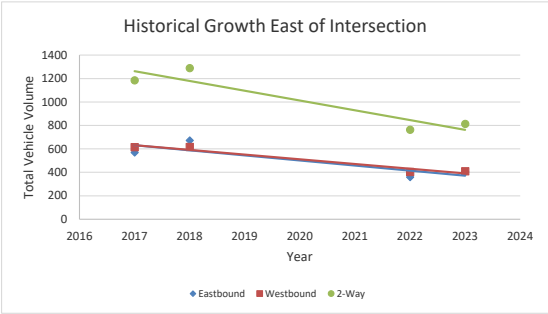
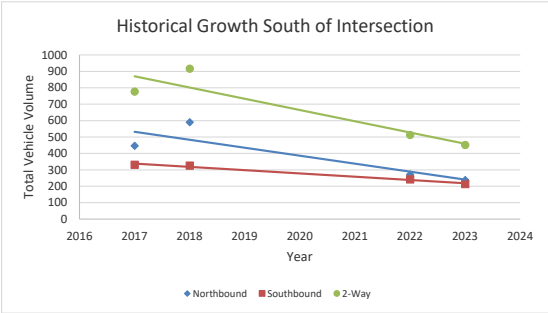
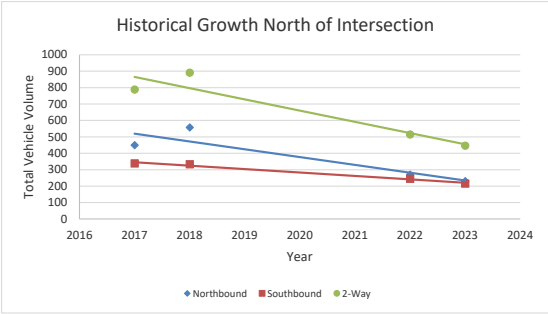
Trend Point at start		531.9	338.1	870.0
Trend Point at end		240.6	218.4	459.0
Slope		-48.5	-20.0	-68.5
Annual Growth		-9.1%	-5.9%	-7.9%

East of Intersection				
Date	Year	Eastbound	Westbound	2-Way
Tuesday Dec 12, 2017	2017	570	615	1185
Wednesday May 2, 2018	2018	672	617	1289
Thursday June 23, 2022	2022	360	403	763
Thursday February 02, 2023	2023	403	410	813

Trend Point at start		631.1	631.6	1262.7
Trend Point at end		371.4	390.9	762.3
Slope		-43.3	-40.1	-83.4
Annual Growth		-6.9%	-6.4%	-6.6%

West of Intersection				
Date	Year	Eastbound	Westbound	2-Way
Tuesday Dec 12, 2017	2017	564	612	1176
Wednesday May 2, 2018	2018	662	616	1278
Thursday June 23, 2022	2022	351	398	749
Thursday February 02, 2023	2023	394	411	805

Trend Point at start		623.4	629.1	1252.5
Trend Point at end		362.1	389.4	751.5
Slope		-43.5	-40.0	-83.5
Annual Growth		-7.0%	-6.4%	-6.7%



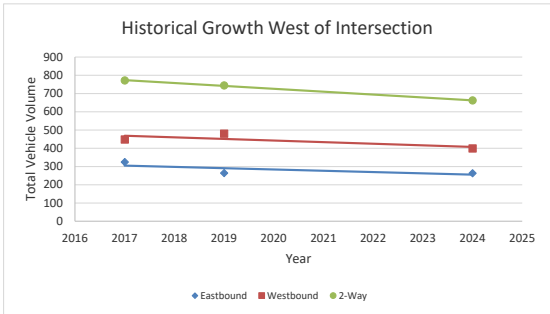
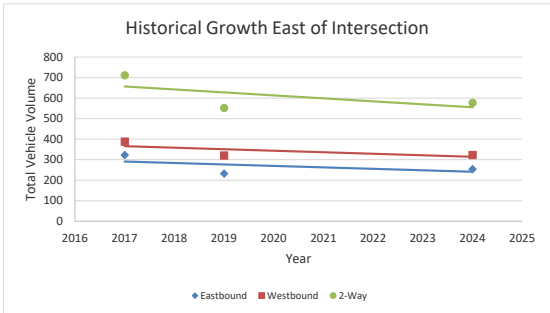
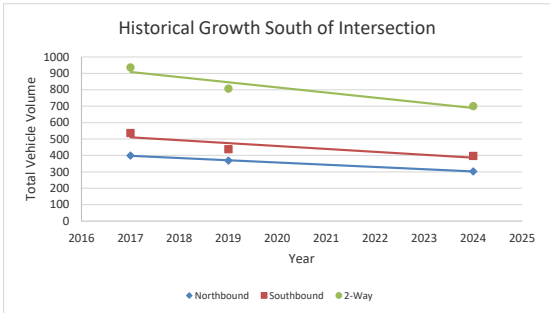
48 Isabella Street
8270-01
Yonge Street / Wellesley Street
AM Peak

Trend Point at start	393.7	595.3	989.0
Trend Point at end	301.1	463.9	765.0
Slope	-13.2	-18.8	-32.0
Annual Growth	-3.4%	-3.2%	-3.2%

Trend Point at start	397.8	510.5	908.4
Trend Point at end	302.5	386.4	688.9
Slope	-13.6%	-17.7%	-31.3%
Annual Growth	-3.4%	-3.5%	-3.5%

Trend Point at start	291.0	365.8	656.8
Trend Point at end	241.2	314.1	555.3
Slope	-7.1	-7.4	-14.5
Annual Growth	-2.4%	-2.0%	-2.2%

Trend Point at start	304.9	468.6	773.5
Trend Point at end	255.4	407.3	662.6
Slope	-7.1	-8.8	-15.8
Annual Growth	-2.3%	-1.9%	-2.0%



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8270-01
Yonge Street / Wellesley Street
AM Peak

[illegible]

Trend Point at start	666.3	494.9	1161.2
Trend Point at end	540.3	334.2	874.5
Slope	-18.0	-23.0	-41.0
Annual Growth	-2.7%	-4.6%	-3.5%

[illegible]

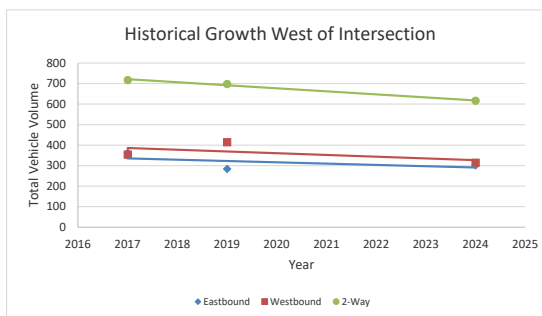
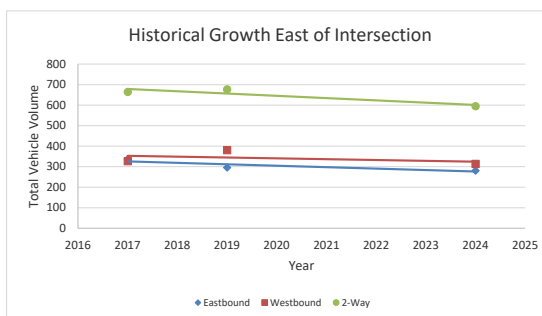
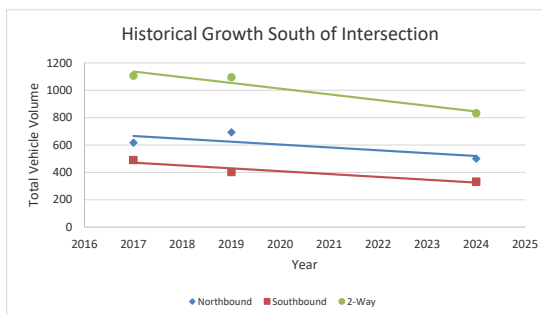
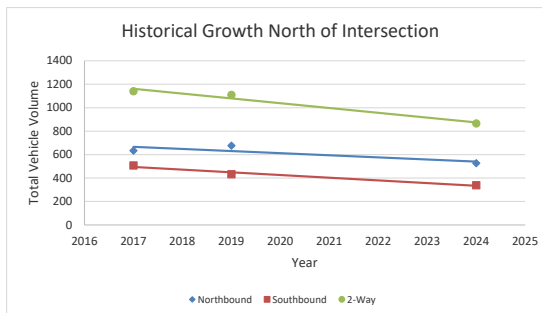
Trend Point at start	666.1	471.1	1137.2
Trend Point at end	519.6	325.4	845.1
Slope	-20.9	-20.8	-41.7
Annual Growth	-3.1%	-4.4%	-3.7%

[illegible]

Trend Point at start	325.8	352.9	678.7
Trend Point at end	276.5	324.4	600.9
Slope	-7.0	-4.1	-11.1
Annual Growth	-2.2%	-1.2%	-1.6%

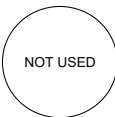
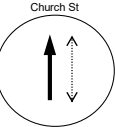
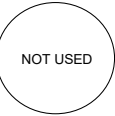
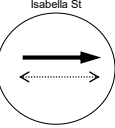
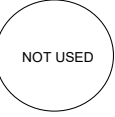
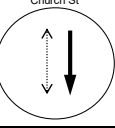
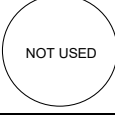
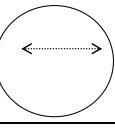
[illegible]

Trend Point at start	335.4	386.1	721.4
Trend Point at end	290.9	326.8	617.8
Slope	-6.3	-8.5	-14.8
Annual Growth	-1.9%	-2.2%	-2.1%

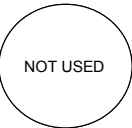
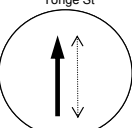
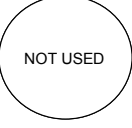
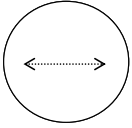
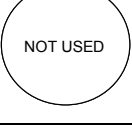
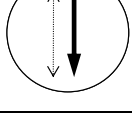
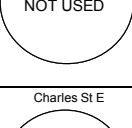
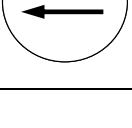


Appendix F: Signal Timing Plan



LOCATION: Church St & Isabella St		ATO (DISTRICT) / WARD: 1 (Toronto & East York) / 13						
MODE/COMMENT: FT with 2-Wire Polara APS & LPI		COMPUTER SYSTEM: TransSuite						
TCS: 572		CONTROLLER/CABINET TYPE: Peek ATC-1000 / TS2 T1						
PREPARED BY/DATE: IBI / December 10, 2021		CONFLICT FLASH: Red & Red						
CHECKED BY/DATE: Toni Hourani & Intesham Ahmad / April 01, 2022		DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s)						
IMPLEMENTATION DATE: April 12, 2022		CHANNEL/DROP: 4018/13						
		CONTROLLER FIRMWARE: 3.018.1.2976						
NEMA Phase		OFF	AM	PM	NGHT	WKND	Phase Mode (Fixed/Demanded/Callable)	Remarks
		All Other Times	06:30-09:30 M-F	15:00-19:00 M-F	23:00-06:30 Daily	10:00-20:30 Sat & Sun		
	Local Plan Split Table	Pattern 1 Split 1	Pattern 2 Split 2	Pattern 3 Split 3	Pattern 4 Split 4	Pattern 5 Split 5		
1		WLK FDW MIN MAX1 AMB ALR SPLIT						Pedestrian minimums: NSWK = 7 seconds, NSFD = 11 seconds EWWK = 7 seconds, EWFD = 16 seconds The following grades were used to calculate the AMB intervals: East Leg = 0.0% West Leg = -0.3% North Leg = -1.9% South Leg = 1.2% Leading Pedestrian Interval – NSWK & EWWK comes up 5 seconds before vehicle green
2		WLK DLY 5 WLK 7 FDW 11 MIN 13 MAX1 35 AMB 3.0 ALR 2.8 SPLIT					Fixed Split shown includes 5 seconds of NS LPI	
3		WLK FDW MIN MAX1 AMB ALR SPLIT						
4		WLK DLY 5 WLK 7 FDW 16 MIN 18 MAX1 18 AMB 3.0 ALR 3.5 SPLIT					Fixed Split shown includes 5 seconds of EW LPI	
5		WLK FDW MIN MAX1 AMB ALR SPLIT						
6		WLK DLY 5 WLK 7 FDW 11 MIN 13 MAX1 35 AMB 3.0 ALR 2.8 SPLIT					Fixed Split shown includes 5 seconds of NS LPI	
7		WLK FDW MIN MAX1 AMB ALR SPLIT						
8		WLK DLY 5 WLK 7 FDW 16 MIN 18 MAX1 18 AMB 3.0 ALR 3.5 SPLIT					Fixed Split shown includes 5 seconds of EW LPI	
	CL OF		76 69	90 69	90 45	66 35	76 21	

Notes: Isabella St is One-Way eastbound.

LOCATION: Yonge St & Charles St E		ATO / DISTRICT / WARD: Area 1 / Toronto & East York / Ward 11 & 13						
MODE/COMMENT: FT with 2-wire Polara APS and LPI		COMPUTER SYSTEM: TransSuite						
TCS: 921		CONTROLLER/CABINET TYPE: PEEK ATC-1000 / TS2T1						
PREPARED/DATE: Lina Elmorshedy / June 18, 2024		CONFLICT FLASH: Red & Red						
CHECKED BY/DATE: Ihtesham Ahmad / June 19, 2024		DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s)						
IMPLEMENTATION DATE: June 21, 2024		CHANNEL/DROP: 5010/16						
		CONTROLLER FIRMWARE: 3.018.2976						
NEMA Phase		OFF All Other Times	AM 06:30-09:30 M-F	PM 15:00-19:00 M-F	Night 23:00-06:30 Daily	TTC Closure	Phase Mode (Fixed/Demanded or Callable)	Remarks
	Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 6		
	Split Table	Split 1	Split 2	Split 3	Split 4	Split 6		
1		WLK FDW MIN MAX1 AMB ALR SPLIT						Pedestrian Minimums: NSWK = 7 sec, NSFD = 11 sec EWWK = 7 sec, EWFD = 11 sec Actuated APS on during FULL WALK periods. Extended APS Push Activation = 3 secs. EW Leading Pedestrian Interval - EWWK comes up 5 seconds before EW vehicle green.
2		WLK 7 FDW 11 MIN 18 MAX1 40 AMB 3.0 ALR 3.6 SPLIT	47	50	52	44	57	Fixed
3		WLK FDW MIN MAX1 AMB ALR SPLIT						
4		WLK DLY 5 WLK 7 FDW 11 MIN 13 MAX1 27 AMB 3.3 ALR 2.1 SPLIT	33	35	38	31	33	Fixed Split shown includes 5 sec of EW LPI
5		WLK FDW MIN MAX1 AMB ALR SPLIT						
6		WLK 7 FDW 11 MIN 18 MAX1 40 AMB 3.0 ALR 3.6 SPLIT	47	50	52	44	57	Fixed
7		WLK FDW MIN MAX1 AMB ALR SPLIT						
8		WLK DLY 5 WLK 7 FDW 11 MIN 13 MAX1 27 AMB 3.3 ALR 2.1 SPLIT	33	35	38	31	33	Fixed Split shown includes 5 sec of EW LPI
		CL OF	80 1	85 19	90 37	75 66	90 1	

NOTES:




















LOCATION:		Church St & Charles St E					ATO (DISTRICT) / WARD:		1 (Toronto & East York) / 11	
MODE/COMMENT:		FT with 2-wire Polara APS & LPI					COMPUTER SYSTEM:		TransSuite	
TCS:		225					CONTROLLER/CABINET TYPE:		Peek ATC-1000 / TS2 T1	
PREPARED BY/DATE:		IBI / December 10, 2021					CONFLICT FLASH:		Red & Red	
CHECKED BY/DATE:		Toni Hourani & Ihtesham Ahmad / April 01, 2022					DESIGN WALK SPEED:		1.0 m/s (FDW based on full crossing at 1.2 m/s)	
IMPLEMENTATION DATE:		April 12, 2022					CHANNEL/DROP:		4018/11	
							CONTROLLER FIRMWARE:		3.018.1.2976	
NEMA Phase		OFF	AM	PM	NGHT	WKND	Phase Mode	Remarks		
		All Other Times	06:30-09:30 M-F	15:00-19:00 M-F	23:00-06:30 Daily	10:00-20:30 Sat & Sun	(Fixed/Demanded/Callable)			
	Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5				
	Split Table	Split 1	Split 2	Split 3	Split 4	Split 5				
1		WLK FDW MIN MAX1 AMB ALR SPLIT						Pedestrian minimums: NSWK = 7 seconds, NSFD = 9 seconds EWWK = 7 seconds, EWFD = 12 seconds APS on during full walk of NSWK & EWWK when activated by pushbutton. Extended push activation = 3 seconds The following grades were used to calculate the AMB intervals: East Leg = 0.3% West Leg = 0.0% North Leg = -1.1% South Leg = 2.0% Leading Pedestrian Interval – NSWK & EWWK comes up 5 seconds before vehicle green		
2	Church St 	WLK DLY 5 WLK 7 FDW 9 MIN 12 MAX1 37 AMB 3.0 ALR 3.7 SPLIT					Fixed Split shown includes 5 seconds of NS LPI			
3		WLK FDW MIN MAX1 AMB ALR SPLIT								
4	Charles St E 	WLK DLY 5 WLK 7 FDW 12 MIN 14 MAX1 14 AMB 3.0 ALR 4.2 SPLIT					Fixed Split shown includes 5 seconds of EW LPI			
5		WLK FDW MIN MAX1 AMB ALR SPLIT								
6	Church St 	WLK DLY 5 WLK 7 FDW 9 MIN 12 MAX1 37 AMB 3.0 ALR 3.7 SPLIT					Fixed Split shown includes 5 seconds of NS LPI			
7		WLK FDW MIN MAX1 AMB ALR SPLIT								
8	Charles St E 	WLK DLY 5 WLK 7 FDW 12 MIN 14 MAX1 14 AMB 3.0 ALR 4.2 SPLIT					Fixed Split shown includes 5 seconds of EW LPI			
	CL OF	76 64	90 88	90 42	66 31	76 15				

Notes: Charles St E is One-Way westbound.

Appendix G: Synchro Operations Results















1: Yonge Street & Charles Street W/Charles Street E

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	155	240	75	65	245	0	0	205	30
Future Volume (vph)	0	0	0	155	240	75	65	245	0	0	205	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt						0.850					0.981	
Flt Protected				0.950				0.990				
Satd. Flow (prot)	0	0	0	1770	1863	1583	0	3504	0	0	3472	0
Flt Permitted				0.950				0.830				
Satd. Flow (perm)	0	0	0	1770	1863	1583	0	2938	0	0	3472	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						82					28	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		113.6			149.3			135.5			153.5	
Travel Time (s)		13.6			17.9			12.2			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	168	261	82	71	266	0	0	223	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	168	261	82	0	337	0	0	256	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2	1	1	2			2	
Detector Template				Left	Thru	Right	Left	Thru			Thru	
Leading Detector (m)				2.0	10.0	2.0	2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6	2.0	2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					

48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Existing AM Peak



















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8	8	2	2			6	
Switch Phase												
Minimum Initial (s)				13.0	13.0	13.0	18.0	18.0			18.0	
Minimum Split (s)				23.4	23.4	23.4	24.6	24.6			24.6	
Total Split (s)				35.0	35.0	35.0	50.0	50.0			50.0	
Total Split (%)				41.2%	41.2%	41.2%	58.8%	58.8%			58.8%	
Maximum Green (s)				29.6	29.6	29.6	43.4	43.4			43.4	
Yellow Time (s)				3.3	3.3	3.3	3.0	3.0			3.0	
All-Red Time (s)				2.1	2.1	2.1	3.6	3.6			3.6	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.4	5.4	5.4		6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Recall Mode				Min	Min	Min	C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0	0	0	0			0	
Act Effct Green (s)				18.1	18.1	18.1		54.9			54.9	
Actuated g/C Ratio				0.21	0.21	0.21		0.65			0.65	
v/c Ratio				0.45	0.66	0.20		0.18			0.11	
Control Delay				31.9	38.2	7.2		7.0			6.0	
Queue Delay				0.0	0.0	0.0		0.0			0.0	
Total Delay				31.9	38.2	7.2		7.0			6.0	
LOS				C	D	A		A			A	
Approach Delay					31.2			7.0			6.0	
Approach LOS					C			A			A	
Queue Length 50th (m)				25.4	41.6	0.0		10.3			6.6	
Queue Length 95th (m)				39.4	59.6	10.0		20.7			14.3	
Internal Link Dist (m)		89.6			125.3			111.5			129.5	
Turn Bay Length (m)						30.0						
Base Capacity (vph)				616	648	604		1898			2253	
Starvation Cap Reductn				0	0	0		0			0	
Spillback Cap Reductn				0	0	0		0			0	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				0.27	0.40	0.14		0.18			0.11	
Intersection Summary												
Area Type:	Other											
Cycle Length: 85												
Actuated Cycle Length: 85												
Offset: 19 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 50												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.66												
Intersection Signal Delay: 18.0	Intersection LOS: B											
Intersection Capacity Utilization 58.1%	ICU Level of Service B											
Analysis Period (min) 15												

Splits and Phases: 1: Yonge Street & Charles Street W/Charles Street E




















48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Existing AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	155	240	75	65	245	0	0	205	30
Future Volume (vph)	0	0	0	155	240	75	65	245	0	0	205	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.4	5.4	5.4		6.6			6.6	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frt				1.00	1.00	0.85		1.00			0.98	
Flt Protected				0.95	1.00	1.00		0.99			1.00	
Satd. Flow (prot)				1770	1863	1583		3502			3471	
Flt Permitted				0.95	1.00	1.00		0.83			1.00	
Satd. Flow (perm)				1770	1863	1583		2938			3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	168	261	82	71	266	0	0	223	33
RTOR Reduction (vph)	0	0	0	0	0	65	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	168	261	17	0	337	0	0	246	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases				8				2			6	
Permitted Phases				8		8	2					
Actuated Green, G (s)				18.1	18.1	18.1		54.9			54.9	
Effective Green, g (s)				18.1	18.1	18.1		54.9			54.9	
Actuated g/C Ratio				0.21	0.21	0.21		0.65			0.65	
Clearance Time (s)				5.4	5.4	5.4		6.6			6.6	
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)				376	396	337		1897			2241	
v/s Ratio Prot				c0.14							0.07	
v/s Ratio Perm				0.09		0.01		c0.11				
v/c Ratio				0.45	0.66	0.05		0.18			0.11	
Uniform Delay, d1				29.1	30.6	26.6		6.0			5.7	
Progression Factor				1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2				0.8	3.9	0.1		0.2			0.1	
Delay (s)				29.9	34.6	26.7		6.2			5.8	
Level of Service				C	C	C		A			A	
Approach Delay (s)		0.0			31.8			6.2			5.8	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.0	HCM 2000 Level of Service							B	
HCM 2000 Volume to Capacity ratio			0.30									
Actuated Cycle Length (s)			85.0	Sum of lost time (s)						12.0		
Intersection Capacity Utilization			58.1%	ICU Level of Service						B		
Analysis Period (min)			15									
c Critical Lane Group												













48 Isabella Street
2: Church Street & Charles Street E

Existing AM Peak

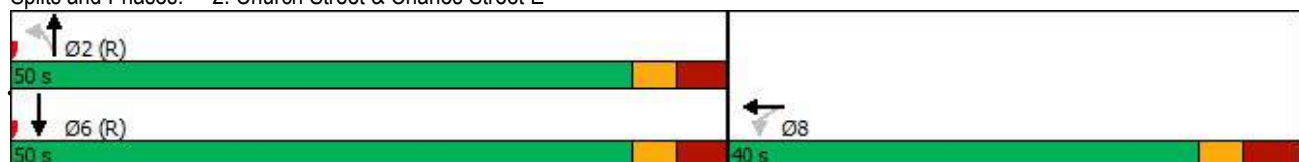
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	90	315	45	45	235	0	0	315	125
Future Volume (vph)	0	0	0	90	315	45	45	235	0	0	315	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Fr _t					0.981						0.957	
Flt Protected				0.950				0.992				
Satd. Flow (prot)	0	0	0	1770	1827	0	0	3511	0	0	3387	0
Flt Permitted				0.950				0.821				
Satd. Flow (perm)	0	0	0	1770	1827	0	0	2906	0	0	3387	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9						90	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.6			142.9			126.3			169.7	
Travel Time (s)		4.7			10.3			9.1			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	98	342	49	49	255	0	0	342	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	98	391	0	0	304	0	0	478	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (m)				2.0	10.0		2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6		2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Detector Phase				8	8		2	2			6	
Switch Phase												
Minimum Initial (s)				14.0	14.0		12.0	12.0			12.0	

48 Isabella Street
2: Church Street & Charles Street E

Existing AM Peak


















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				26.2	26.2		22.7	22.7			22.7	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	
Total Split (%)				44.4%	44.4%		55.6%	55.6%			55.6%	
Maximum Green (s)				32.8	32.8		43.3	43.3			43.3	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				4.2	4.2		3.7	3.7			3.7	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				7.2	7.2			6.7			6.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Min	Min		C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)				12.0	12.0		9.0	9.0			9.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)				24.3	24.3			51.8			51.8	
Actuated g/C Ratio				0.27	0.27			0.58			0.58	
v/c Ratio				0.21	0.78			0.18			0.24	
Control Delay				24.5	40.5			12.0			8.8	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay				24.5	40.5			12.0			8.8	
LOS				C	D			B			A	
Approach Delay					37.3			12.0			8.8	
Approach LOS					D			B			A	
Queue Length 50th (m)				13.8	64.2			15.7			16.5	
Queue Length 95th (m)				23.2	85.9			28.2			30.6	
Internal Link Dist (m)		40.6			118.9			102.3			145.7	
Turn Bay Length (m)												
Base Capacity (vph)				645	671			1671			1986	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.15	0.58			0.18			0.24	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 88 (98%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 50												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 20.5						Intersection LOS: C						
Intersection Capacity Utilization 59.2%						ICU Level of Service B						
Analysis Period (min) 15												

Splits and Phases: 2: Church Street & Charles Street E



48 Isabella Street
2: Church Street & Charles Street E
















Existing AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	90	315	45	45	235	0	0	315	125
Future Volume (vph)	0	0	0	90	315	45	45	235	0	0	315	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2	7.2			6.7			6.7	
Lane Util. Factor				1.00	1.00			0.95			0.95	
Frt				1.00	0.98			1.00			0.96	
Flt Protected				0.95	1.00			0.99			1.00	
Satd. Flow (prot)				1770	1828			3511			3388	
Flt Permitted				0.95	1.00			0.82			1.00	
Satd. Flow (perm)				1770	1828			2905			3388	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	98	342	49	49	255	0	0	342	136
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	38	0
Lane Group Flow (vph)	0	0	0	98	384	0	0	304	0	0	440	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				24.3	24.3			51.8			51.8	
Effective Green, g (s)				24.3	24.3			51.8			51.8	
Actuated g/C Ratio				0.27	0.27			0.58			0.58	
Clearance Time (s)				7.2	7.2			6.7			6.7	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				477	493			1671			1949	
v/s Ratio Prot					c0.21						c0.13	
v/s Ratio Perm				0.06				0.10				
v/c Ratio				0.21	0.78			0.18			0.23	
Uniform Delay, d1				25.4	30.4			9.1			9.3	
Progression Factor				1.00	1.00			1.15			1.00	
Incremental Delay, d2				0.2	7.7			0.2			0.3	
Delay (s)				25.6	38.0			10.6			9.6	
Level of Service				C	D			B			A	
Approach Delay (s)		0.0			35.5			10.6			9.6	
Approach LOS		A			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			19.8		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						13.9	
Intersection Capacity Utilization			59.2%		ICU Level of Service						B	
Analysis Period (min)			15									













c Critical Lane Group

48 Isabella Street
3: Church Street & Isabella Street/Isabella Street

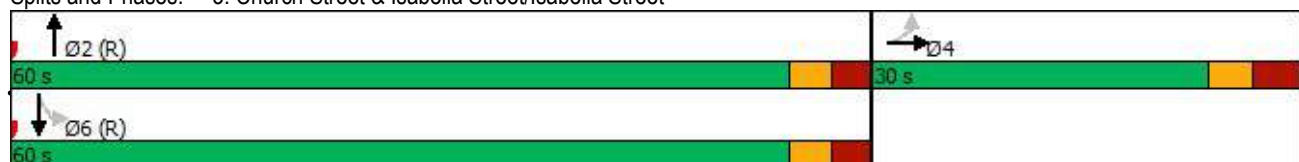
Existing AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	140	35	0	0	0	0	220	45	65	340	0
Future Volume (vph)	60	140	35	0	0	0	0	220	45	65	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.978						0.974				
Flt Protected		0.987									0.992	
Satd. Flow (prot)	0	3416	0	0	0	0	0	3447	0	0	3511	0
Flt Permitted		0.987									0.846	
Satd. Flow (perm)	0	3416	0	0	0	0	0	3447	0	0	2994	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21						48				
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		94.9			124.3			141.0			126.3	
Travel Time (s)		11.4			14.9			16.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	152	38	0	0	0	0	239	49	71	370	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	255	0	0	0	0	0	288	0	0	441	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (m)	2.0	10.0						10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6						0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0						0.0		0.0	0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Detector Phase	4	4						2		6	6	
Switch Phase												
Minimum Initial (s)	18.0	18.0						13.0		13.0	13.0	

3: Church Street & Isabella Street/Isabella Street
















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	29.5	29.5						23.8		23.8	23.8	
Total Split (s)	30.0	30.0						60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%						66.7%		66.7%	66.7%	
Maximum Green (s)	23.5	23.5						54.2		54.2	54.2	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	3.5	3.5						2.8		2.8	2.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		6.5						5.8			5.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	Min	Min						C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0						7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		18.0						59.7			59.7	
Actuated g/C Ratio		0.20						0.66			0.66	
v/c Ratio		0.36						0.13			0.22	
Control Delay		30.2						4.7			4.9	
Queue Delay		0.0						0.0			0.0	
Total Delay		30.2						4.7			4.9	
LOS		C						A			A	
Approach Delay		30.2						4.7			4.9	
Approach LOS		C						A			A	
Queue Length 50th (m)		19.3						7.3			11.0	
Queue Length 95th (m)		30.9						11.8			16.3	
Internal Link Dist (m)		70.9			100.3			117.0			102.3	
Turn Bay Length (m)												
Base Capacity (vph)		907						2302			1986	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.28						0.13			0.22	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 69 (77%), Referenced to phase 2:NBT and 6:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.36												
Intersection Signal Delay: 11.4						Intersection LOS: B						
Intersection Capacity Utilization 52.2%						ICU Level of Service A						
Analysis Period (min) 15												

Splits and Phases: 3: Church Street & Isabella Street/Isabella Street



48 Isabella Street
3: Church Street & Isabella Street/Isabella Street









Existing AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	140	35	0	0	0	0	220	45	65	340	0
Future Volume (vph)	60	140	35	0	0	0	0	220	45	65	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						5.8			5.8	
Lane Util. Factor		0.95						0.95			0.95	
Frt		0.98						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3417						3449			3511	
Flt Permitted		0.99						1.00			0.85	
Satd. Flow (perm)		3417						3449			2995	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	152	38	0	0	0	0	239	49	71	370	0
RTOR Reduction (vph)	0	17	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	0	238	0	0	0	0	0	272	0	0	441	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		18.0						59.7			59.7	
Effective Green, g (s)		18.0						59.7			59.7	
Actuated g/C Ratio		0.20						0.66			0.66	
Clearance Time (s)		6.5						5.8			5.8	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		683						2287			1986	
v/s Ratio Prot								0.08				
v/s Ratio Perm		0.07									c0.15	
v/c Ratio		0.35						0.12			0.22	
Uniform Delay, d1		31.0						5.5			6.0	
Progression Factor		1.00						1.00			0.77	
Incremental Delay, d2		0.3						0.1			0.3	
Delay (s)		31.3						5.6			4.8	
Level of Service		C						A			A	
Approach Delay (s)		31.3			0.0			5.6			4.8	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.9						HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio		0.25										
Actuated Cycle Length (s)		90.0						Sum of lost time (s)		12.3		
Intersection Capacity Utilization		52.2%						ICU Level of Service		A		
Analysis Period (min)		15										

c Critical Lane Group









48 Isabella Street
4: Yonge Street & Isabella Street

Existing AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	285	140	90	330
Future Volume (Veh/h)	0	0	285	140	90	330
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	310	152	98	359
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						136
pX, platoon unblocked						
vC, conflicting volume	762	231			462	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	762	231			462	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			91	
cM capacity (veh/h)	311	771			1095	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	207	255	218	239		
Volume Left	0	0	98	0		
Volume Right	0	152	0	0		
cSH	1700	1700	1095	1700		
Volume to Capacity	0.12	0.15	0.09	0.14		
Queue Length 95th (m)	0.0	0.0	2.4	0.0		
Control Delay (s)	0.0	0.0	4.3	0.0		
Lane LOS						
Approach Delay (s)	0.0		2.1			
Approach LOS						
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			30.8%	ICU Level of Service		A
Analysis Period (min)			15			









48 Isabella Street
5: Isabella Street & Surface Parking Access











Existing AM Peak

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	225	0	0	0	0
Future Volume (Veh/h)	0	225	0	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	245	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			95			
pX, platoon unblocked						
vC, conflicting volume	0				122	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				122	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1622				860	1084
Direction, Lane #	EB 1	EB 2	SB 1			
Volume Total	82	163	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1622	1700	1700			
Volume to Capacity	0.00	0.10	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0		0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			9.6%	ICU Level of Service		A
Analysis Period (min)			15			

48 Isabella Street
6: Macy Dubois Ln & Charles Street E









Existing AM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	15	470	30	0
Future Volume (Veh/h)	0	0	15	470	30	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	16	511	33	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	149			157		
pX, platoon unblocked						
vC, conflicting volume			0		288	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		288	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	100
cM capacity (veh/h)			1622		673	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	186	341	33			
Volume Left	16	0	33			
Volume Right	0	0	0			
cSH	1622	1700	673			
Volume to Capacity	0.01	0.20	0.05			
Queue Length 95th (m)	0.2	0.0	1.2			
Control Delay (s)	0.7	0.0	10.6			
Lane LOS	A		B			
Approach Delay (s)	0.2		10.6			
Approach LOS			B			
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			53.7%	ICU Level of Service		A
Analysis Period (min)			15			




















						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	0	0	5	480	5	0
Future Volume (Veh/h)	0	0	5	480	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	5	522	5	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	242			65		
pX, platoon unblocked						
vC, conflicting volume			0		271	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		271	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1622		694	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	179	348	5			
Volume Left	5	0	5			
Volume Right	0	0	0			
cSH	1622	1700	694			
Volume to Capacity	0.00	0.20	0.01			
Queue Length 95th (m)	0.1	0.0	0.2			
Control Delay (s)	0.2	0.0	10.2			
Lane LOS	A		B			
Approach Delay (s)	0.1		10.2			
Approach LOS			B			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			53.7%	ICU Level of Service	A	
Analysis Period (min)			15			

48 Isabella Street
8: Isabella Street & Ramp Access

Existing AM Peak













						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	220	0	0	5	0
Future Volume (Veh/h)	0	220	0	0	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	239	0	0	5	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			137			
pX, platoon unblocked						
vC, conflicting volume	0				120	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				120	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1622				864	1084
Direction, Lane #	EB 1	EB 2	SB 1			
Volume Total	80	159	5			
Volume Left	0	0	5			
Volume Right	0	0	0			
cSH	1622	1700	864			
Volume to Capacity	0.00	0.09	0.01			
Queue Length 95th (m)	0.0	0.0	0.1			
Control Delay (s)	0.0	0.0	9.2			
Lane LOS			A			
Approach Delay (s)	0.0		9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			16.1%	ICU Level of Service		A
Analysis Period (min)			15			

1: Yonge Street & Charles Street W/Charles Street E

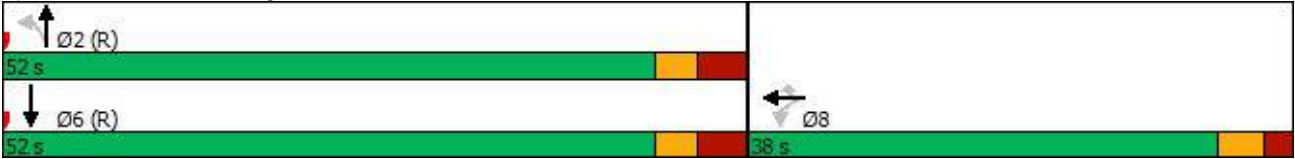
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	115	205	70	65	295	0	0	170	30
Future Volume (vph)	0	0	0	115	205	70	65	295	0	0	170	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt						0.850					0.977	
Flt Protected				0.950				0.991				
Satd. Flow (prot)	0	0	0	1770	1863	1583	0	3507	0	0	3458	0
Flt Permitted				0.950				0.851				
Satd. Flow (perm)	0	0	0	1770	1863	1583	0	3012	0	0	3458	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76					32	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		113.6			149.3			135.5			153.5	
Travel Time (s)		13.6			17.9			12.2			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	125	223	76	71	321	0	0	185	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	125	223	76	0	392	0	0	218	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2	1	1	2			2	
Detector Template				Left	Thru	Right	Left	Thru			Thru	
Leading Detector (m)				2.0	10.0	2.0	2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6	2.0	2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					

48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Existing PM Peak






















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8	8	2	2			6	
Switch Phase												
Minimum Initial (s)				13.0	13.0	13.0	18.0	18.0			18.0	
Minimum Split (s)				23.4	23.4	23.4	24.6	24.6			24.6	
Total Split (s)				38.0	38.0	38.0	52.0	52.0			52.0	
Total Split (%)				42.2%	42.2%	42.2%	57.8%	57.8%			57.8%	
Maximum Green (s)				32.6	32.6	32.6	45.4	45.4			45.4	
Yellow Time (s)				3.3	3.3	3.3	3.0	3.0			3.0	
All-Red Time (s)				2.1	2.1	2.1	3.6	3.6			3.6	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.4	5.4	5.4		6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Recall Mode				Min	Min	Min	C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0	0	0	0			0	
Act Effct Green (s)				16.9	16.9	16.9		61.1			61.1	
Actuated g/C Ratio				0.19	0.19	0.19		0.68			0.68	
v/c Ratio				0.38	0.64	0.21		0.19			0.09	
Control Delay				39.7	47.2	17.6		6.1			4.9	
Queue Delay				0.0	0.0	0.0		0.0			0.0	
Total Delay				39.7	47.2	17.6		6.1			4.9	
LOS				D	D	B		A			A	
Approach Delay					39.7			6.1			4.9	
Approach LOS					D			A			A	
Queue Length 50th (m)				22.9	42.0	3.6		11.7			5.1	
Queue Length 95th (m)				m36.9	63.8	m13.4		22.1			11.2	
Internal Link Dist (m)		89.6			125.3			111.5			129.5	
Turn Bay Length (m)						30.0						
Base Capacity (vph)				641	674	621		2046			2359	
Starvation Cap Reductn				0	0	0		0			0	
Spillback Cap Reductn				0	0	0		0			0	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				0.20	0.33	0.12		0.19			0.09	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 37 (41%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 50												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.64												
Intersection Signal Delay: 19.6						Intersection LOS: B						
Intersection Capacity Utilization 56.3%						ICU Level of Service B						
Analysis Period (min) 15												
m Volume for 95th percentile queue is metered by upstream signal.												

Splits and Phases: 1: Yonge Street & Charles Street W/Charles Street E




















48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Existing PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	0	0	0	115	205	70	65	295	0	0	170	30
Future Volume (vph)	0	0	0	115	205	70	65	295	0	0	170	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.4	5.4	5.4		6.6			6.6	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frt				1.00	1.00	0.85		1.00			0.98	
Flt Protected				0.95	1.00	1.00		0.99			1.00	
Satd. Flow (prot)				1770	1863	1583		3507			3459	
Flt Permitted				0.95	1.00	1.00		0.85			1.00	
Satd. Flow (perm)				1770	1863	1583		3011			3459	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	125	223	76	71	321	0	0	185	33
RTOR Reduction (vph)	0	0	0	0	0	62	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	125	223	14	0	392	0	0	208	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					
Actuated Green, G (s)				16.9	16.9	16.9		61.1			61.1	
Effective Green, g (s)				16.9	16.9	16.9		61.1			61.1	
Actuated g/C Ratio				0.19	0.19	0.19		0.68			0.68	
Clearance Time (s)				5.4	5.4	5.4		6.6			6.6	
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)				332	349	297		2044			2348	
v/s Ratio Prot					c0.12						0.06	
v/s Ratio Perm				0.07		0.01		c0.13				
v/c Ratio				0.38	0.64	0.05		0.19			0.09	
Uniform Delay, d1				31.9	33.7	30.0		5.3			4.9	
Progression Factor				1.18	1.18	2.31		1.00			1.00	
Incremental Delay, d2				0.7	3.5	0.1		0.2			0.1	
Delay (s)				38.5	43.4	69.1		5.5			5.0	
Level of Service				D	D	E		A			A	
Approach Delay (s)		0.0			46.5			5.5			5.0	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			22.2		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.29									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						12.0	
Intersection Capacity Utilization			56.3%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												













48 Isabella Street
2: Church Street & Charles Street E

Existing PM Peak

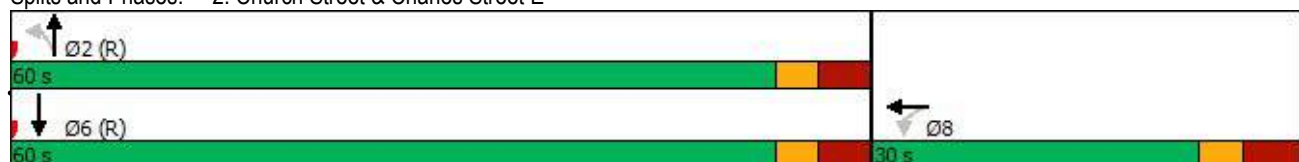
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	85	240	50	70	295	0	0	335	80
Future Volume (vph)	0	0	0	85	240	50	70	295	0	0	335	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Fr _t					0.974						0.971	
Flt Protected				0.950				0.991				
Satd. Flow (prot)	0	0	0	1770	1814	0	0	3507	0	0	3437	0
Flt Permitted				0.950				0.785				
Satd. Flow (perm)	0	0	0	1770	1814	0	0	2778	0	0	3437	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11						57	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.6			142.9			126.3			169.7	
Travel Time (s)		4.7			10.3			9.1			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	261	54	76	321	0	0	364	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	92	315	0	0	397	0	0	451	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (m)				2.0	10.0		2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6		2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Detector Phase				8	8		2	2			6	
Switch Phase												
Minimum Initial (s)				14.0	14.0		12.0	12.0			12.0	

48 Isabella Street
2: Church Street & Charles Street E

Existing PM Peak


















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				26.2	26.2		24.7	24.7			24.7	
Total Split (s)				30.0	30.0		60.0	60.0			60.0	
Total Split (%)				33.3%	33.3%		66.7%	66.7%			66.7%	
Maximum Green (s)				22.8	22.8		53.3	53.3			53.3	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				4.2	4.2		3.7	3.7			3.7	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				7.2	7.2			6.7			6.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Min	Min		C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)				12.0	12.0		9.0	9.0			9.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)				20.2	20.2			55.9			55.9	
Actuated g/C Ratio				0.22	0.22			0.62			0.62	
v/c Ratio				0.23	0.76			0.23			0.21	
Control Delay				28.4	42.9			6.9			7.4	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay				28.4	42.9			6.9			7.4	
LOS				C	D			A			A	
Approach Delay					39.6			6.9			7.4	
Approach LOS					D			A			A	
Queue Length 50th (m)				13.8	52.0			14.2			14.6	
Queue Length 95th (m)				24.5	74.3			19.5			26.3	
Internal Link Dist (m)		40.6			118.9			102.3			145.7	
Turn Bay Length (m)												
Base Capacity (vph)				464	483			1748			2184	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.20	0.65			0.23			0.21	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 42 (47%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.76												
Intersection Signal Delay: 17.7						Intersection LOS: B						
Intersection Capacity Utilization 54.8%						ICU Level of Service A						
Analysis Period (min) 15												

Splits and Phases: 2: Church Street & Charles Street E


















48 Isabella Street
2: Church Street & Charles Street E

Existing PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	85	240	50	70	295	0	0	335	80
Future Volume (vph)	0	0	0	85	240	50	70	295	0	0	335	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2	7.2			6.7			6.7	
Lane Util. Factor				1.00	1.00			0.95			0.95	
Frt				1.00	0.97			1.00			0.97	
Flt Protected				0.95	1.00			0.99			1.00	
Satd. Flow (prot)				1770	1815			3506			3437	
Flt Permitted				0.95	1.00			0.78			1.00	
Satd. Flow (perm)				1770	1815			2778			3437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	261	54	76	321	0	0	364	87
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	92	306	0	0	397	0	0	429	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				20.2	20.2			55.9			55.9	
Effective Green, g (s)				20.2	20.2			55.9			55.9	
Actuated g/C Ratio				0.22	0.22			0.62			0.62	
Clearance Time (s)				7.2	7.2			6.7			6.7	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				397	407			1725			2134	
v/s Ratio Prot					c0.17						0.12	
v/s Ratio Perm				0.05				c0.14				
v/c Ratio				0.23	0.75			0.23			0.20	
Uniform Delay, d1				28.6	32.6			7.5			7.4	
Progression Factor				1.00	1.00			0.79			1.00	
Incremental Delay, d2				0.3	7.7			0.3			0.2	
Delay (s)				28.9	40.3			6.2			7.6	
Level of Service				C	D			A			A	
Approach Delay (s)		0.0			37.7			6.2			7.6	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						13.9	
Intersection Capacity Utilization			54.8%		ICU Level of Service						A	
Analysis Period (min)			15									
c Critical Lane Group												













c Critical Lane Group

3: Church Street & Isabella Street/Isabella Street

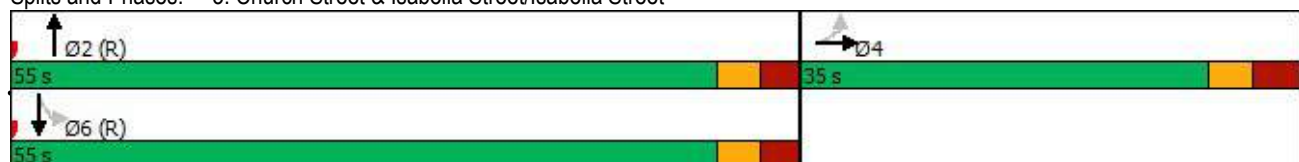
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	280	55	0	0	0	0	280	35	85	335	0
Future Volume (vph)	85	280	55	0	0	0	0	280	35	85	335	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.980						0.983				
Flt Protected		0.990									0.990	
Satd. Flow (prot)	0	3434	0	0	0	0	0	3479	0	0	3504	0
Flt Permitted		0.990									0.801	
Satd. Flow (perm)	0	3434	0	0	0	0	0	3479	0	0	2835	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20						24				
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		94.9			124.3			141.0			126.3	
Travel Time (s)		11.4			14.9			16.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	304	60	0	0	0	0	304	38	92	364	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	456	0	0	0	0	0	342	0	0	456	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (m)	2.0	10.0						10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6						0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0						0.0		0.0	0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Detector Phase	4	4						2		6	6	
Switch Phase												
Minimum Initial (s)	18.0	18.0						13.0		13.0	13.0	

48 Isabella Street
3: Church Street & Isabella Street/Isabella Street

Existing PM Peak
















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	29.5	29.5						23.8		23.8	23.8	
Total Split (s)	35.0	35.0						55.0		55.0	55.0	
Total Split (%)	38.9%	38.9%						61.1%		61.1%	61.1%	
Maximum Green (s)	28.5	28.5						49.2		49.2	49.2	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	3.5	3.5						2.8		2.8	2.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		6.5						5.8			5.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	Min	Min						C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0						7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		18.9						58.8			58.8	
Actuated g/C Ratio		0.21						0.65			0.65	
v/c Ratio		0.62						0.15			0.25	
Control Delay		35.2						5.9			5.9	
Queue Delay		0.0						0.0			0.0	
Total Delay		35.2						5.9			5.9	
LOS		D						A			A	
Approach Delay		35.2						5.9			5.9	
Approach LOS		D						A			A	
Queue Length 50th (m)		39.2						9.9			14.4	
Queue Length 95th (m)		52.4						17.5			19.5	
Internal Link Dist (m)		70.9			100.3			117.0			102.3	
Turn Bay Length (m)												
Base Capacity (vph)		1101						2281			1852	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.41						0.15			0.25	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 45 (50%), Referenced to phase 2:NBT and 6:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.62												
Intersection Signal Delay: 16.6						Intersection LOS: B						
Intersection Capacity Utilization 52.6%						ICU Level of Service A						
Analysis Period (min) 15												

Splits and Phases: 3: Church Street & Isabella Street/Isabella Street



48 Isabella Street
3: Church Street & Isabella Street/Isabella Street









Existing PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	280	55	0	0	0	0	280	35	85	335	0
Future Volume (vph)	85	280	55	0	0	0	0	280	35	85	335	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						5.8			5.8	
Lane Util. Factor		0.95						0.95			0.95	
Frt		0.98						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3435						3480			3504	
Flt Permitted		0.99						1.00			0.80	
Satd. Flow (perm)		3435						3480			2833	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	304	60	0	0	0	0	304	38	92	364	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	440	0	0	0	0	0	334	0	0	456	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		18.9						58.8			58.8	
Effective Green, g (s)		18.9						58.8			58.8	
Actuated g/C Ratio		0.21						0.65			0.65	
Clearance Time (s)		6.5						5.8			5.8	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		721						2273			1850	
v/s Ratio Prot								0.10				
v/s Ratio Perm		0.13									c0.16	
v/c Ratio		0.61						0.15			0.25	
Uniform Delay, d1		32.2						6.0			6.4	
Progression Factor		1.02						1.00			0.83	
Incremental Delay, d2		1.5						0.1			0.3	
Delay (s)		34.3						6.1			5.7	
Level of Service		C						A			A	
Approach Delay (s)		34.3			0.0			6.1			5.7	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		16.2						HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio		0.33										
Actuated Cycle Length (s)		90.0						Sum of lost time (s)		12.3		
Intersection Capacity Utilization		52.6%						ICU Level of Service		A		
Analysis Period (min)		15										

c Critical Lane Group









48 Isabella Street
4: Yonge Street & Isabella Street

Existing PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	335	330	105	305
Future Volume (Veh/h)	0	0	335	330	105	305
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	364	359	114	332
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						136
pX, platoon unblocked						
vC, conflicting volume	938	362			723	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	938	362			723	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			87	
cM capacity (veh/h)	229	635			875	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	243	480	225	221		
Volume Left	0	0	114	0		
Volume Right	0	359	0	0		
cSH	1700	1700	875	1700		
Volume to Capacity	0.14	0.28	0.13	0.13		
Queue Length 95th (m)	0.0	0.0	3.6	0.0		
Control Delay (s)	0.0	0.0	5.6	0.0		
Lane LOS						
Approach Delay (s)	0.0		2.8			
Approach LOS						
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			38.0%	ICU Level of Service		A
Analysis Period (min)			15			











48 Isabella Street
5: Isabella Street & Surface Parking Access









Existing PM Peak

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	455	0	0	0	0
Future Volume (Veh/h)	0	455	0	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	495	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			95			
pX, platoon unblocked						
vC, conflicting volume	0				248	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				248	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1622				719	1084
Direction, Lane #	EB 1	EB 2	SB 1			
Volume Total	165	330	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1622	1700	1700			
Volume to Capacity	0.00	0.19	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0		0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			15.9%	ICU Level of Service		A
Analysis Period (min)			15			

48 Isabella Street
6: Macy Dubois Ln & Charles Street E









Existing PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	0	0	25	370	15	0
Future Volume (Veh/h)	0	0	25	370	15	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	402	16	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	149			157		
pX, platoon unblocked						
vC, conflicting volume			0		255	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		255	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	100
cM capacity (veh/h)			1622		700	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	161	268	16			
Volume Left	27	0	16			
Volume Right	0	0	0			
cSH	1622	1700	700			
Volume to Capacity	0.02	0.16	0.02			
Queue Length 95th (m)	0.4	0.0	0.6			
Control Delay (s)	1.3	0.0	10.3			
Lane LOS	A		B			
Approach Delay (s)	0.5		10.3			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			53.7%	ICU Level of Service	A	
Analysis Period (min)			15			




















						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	10	380	20	0
Future Volume (Veh/h)	0	0	10	380	20	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	11	413	22	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	242			65		
pX, platoon unblocked						
vC, conflicting volume			0		228	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		228	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	100
cM capacity (veh/h)			1622		734	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	149	275	22			
Volume Left	11	0	22			
Volume Right	0	0	0			
cSH	1622	1700	734			
Volume to Capacity	0.01	0.16	0.03			
Queue Length 95th (m)	0.2	0.0	0.7			
Control Delay (s)	0.6	0.0	10.1			
Lane LOS	A		B			
Approach Delay (s)	0.2		10.1			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			53.7%	ICU Level of Service		A
Analysis Period (min)			15			

48 Isabella Street
8: Isabella Street & Ramp Access

Existing PM Peak













						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	455	0	0	0	0
Future Volume (Veh/h)	0	455	0	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	495	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			137			
pX, platoon unblocked						
vC, conflicting volume	0				248	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				248	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1622				719	1084
Direction, Lane #	EB 1	EB 2	SB 1			
Volume Total	165	330	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1622	1700	1700			
Volume to Capacity	0.00	0.19	0.01			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0		0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			15.9%	ICU Level of Service		A
Analysis Period (min)			15			

1: Yonge Street & Charles Street W/Charles Street E

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	190	270	105	65	305	0	0	225	30
Future Volume (vph)	0	0	0	190	270	105	65	305	0	0	225	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt						0.850					0.982	
Flt Protected				0.950				0.991				
Satd. Flow (prot)	0	0	0	1770	1863	1583	0	3507	0	0	3476	0
Flt Permitted				0.950				0.847				
Satd. Flow (perm)	0	0	0	1770	1863	1583	0	2998	0	0	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						114					27	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		113.6			150.4			135.5			153.5	
Travel Time (s)		13.6			18.0			12.2			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	207	293	114	71	332	0	0	245	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	207	293	114	0	403	0	0	278	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2	1	1	2			2	
Detector Template				Left	Thru	Right	Left	Thru			Thru	
Leading Detector (m)				2.0	10.0	2.0	2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6	2.0	2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					

48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Future Background AM Peak



















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8	8	2	2			6	
Switch Phase												
Minimum Initial (s)				13.0	13.0	13.0	18.0	18.0			18.0	
Minimum Split (s)				22.5	22.5	22.5	22.5	22.5			22.5	
Total Split (s)				35.0	35.0	35.0	50.0	50.0			50.0	
Total Split (%)				41.2%	41.2%	41.2%	58.8%	58.8%			58.8%	
Maximum Green (s)				30.5	30.5	30.5	45.5	45.5			45.5	
Yellow Time (s)				3.5	3.5	3.5	3.5	3.5			3.5	
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0			1.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				4.5	4.5	4.5		4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Recall Mode				Min	Min	Min	C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0	0	0	0			0	
Act Effct Green (s)				19.5	19.5	19.5		56.5			56.5	
Actuated g/C Ratio				0.23	0.23	0.23		0.66			0.66	
v/c Ratio				0.51	0.69	0.25		0.20			0.12	
Control Delay				32.1	37.8	6.2		6.6			5.6	
Queue Delay				0.0	0.0	0.0		0.0			0.0	
Total Delay				32.1	37.8	6.2		6.6			5.6	
LOS				C	D	A		A			A	
Approach Delay					30.0			6.6			5.6	
Approach LOS					C			A			A	
Queue Length 50th (m)				30.9	45.9	0.0		12.3			7.1	
Queue Length 95th (m)				46.4	64.7	11.3		23.6			14.8	
Internal Link Dist (m)		89.6			126.4			111.5			129.5	
Turn Bay Length (m)						30.0						
Base Capacity (vph)				635	668	641		1992			2319	
Starvation Cap Reductn				0	0	0		0			0	
Spillback Cap Reductn				0	0	0		0			0	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				0.33	0.44	0.18		0.20			0.12	
Intersection Summary												
Area Type:	Other											
Cycle Length: 85												
Actuated Cycle Length: 85												
Offset: 19 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 45												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.69												
Intersection Signal Delay: 17.5	Intersection LOS: B											
Intersection Capacity Utilization 55.5%	ICU Level of Service B											
Analysis Period (min) 15												

Splits and Phases: 1: Yonge Street & Charles Street W/Charles Street E




















48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Future Background AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	190	270	105	65	305	0	0	225	30
Future Volume (vph)	0	0	0	190	270	105	65	305	0	0	225	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5	4.5		4.5			4.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frt				1.00	1.00	0.85		1.00			0.98	
Flt Protected				0.95	1.00	1.00		0.99			1.00	
Satd. Flow (prot)				1770	1863	1583		3508			3476	
Flt Permitted				0.95	1.00	1.00		0.85			1.00	
Satd. Flow (perm)				1770	1863	1583		2997			3476	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	207	293	114	71	332	0	0	245	33
RTOR Reduction (vph)	0	0	0	0	0	88	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	207	293	26	0	403	0	0	269	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					
Actuated Green, G (s)				19.5	19.5	19.5		56.5			56.5	
Effective Green, g (s)				19.5	19.5	19.5		56.5			56.5	
Actuated g/C Ratio				0.23	0.23	0.23		0.66			0.66	
Clearance Time (s)				4.5	4.5	4.5		4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)				406	427	363		1992			2310	
v/s Ratio Prot					c0.16						0.08	
v/s Ratio Perm				0.12		0.02		c0.13				
v/c Ratio				0.51	0.69	0.07		0.20			0.12	
Uniform Delay, d1				28.6	30.0	25.7		5.5			5.2	
Progression Factor				1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2				1.0	4.5	0.1		0.2			0.1	
Delay (s)				29.6	34.5	25.7		5.7			5.3	
Level of Service				C	C	C		A			A	
Approach Delay (s)		0.0			31.2			5.7			5.3	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			17.7		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			85.0		Sum of lost time (s)						9.0	
Intersection Capacity Utilization			55.5%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												













48 Isabella Street
2: Church Street & Charles Street E

Future Background AM Peak

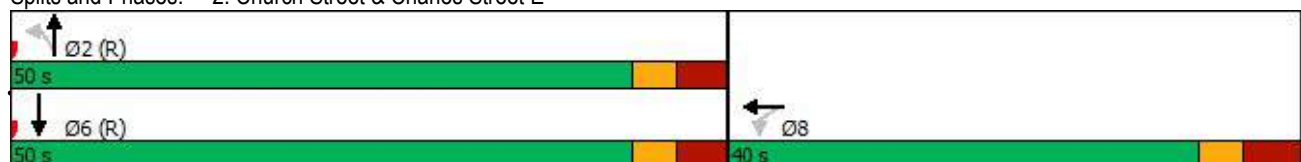
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	90	340	50	50	240	0	0	325	135
Future Volume (vph)	0	0	0	90	340	50	50	240	0	0	325	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Fr _t					0.981						0.956	
Flt Protected				0.950				0.992				
Satd. Flow (prot)	0	0	0	1770	1827	0	0	3511	0	0	3383	0
Flt Permitted				0.950				0.804				
Satd. Flow (perm)	0	0	0	1770	1827	0	0	2846	0	0	3383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9						98	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.0			142.9			126.3			169.7	
Travel Time (s)		4.7			10.3			9.1			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	98	370	54	54	261	0	0	353	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	98	424	0	0	315	0	0	500	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2		1	2				2
Detector Template				Left	Thru		Left	Thru				Thru
Leading Detector (m)				2.0	10.0		2.0	10.0				10.0
Trailing Detector (m)				0.0	0.0		0.0	0.0				0.0
Detector 1 Position(m)				0.0	0.0		0.0	0.0				0.0
Detector 1 Size(m)				2.0	0.6		2.0	0.6				0.6
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0				0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0				0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0				0.0
Detector 2 Position(m)					9.4			9.4				9.4
Detector 2 Size(m)					0.6			0.6				0.6
Detector 2 Type					Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				0.0
Turn Type				Perm	NA		Perm	NA				NA
Protected Phases					8			2				6
Permitted Phases				8			2					
Detector Phase				8	8		2	2				6
Switch Phase												
Minimum Initial (s)				14.0	14.0		12.0	12.0				12.0

48 Isabella Street
2: Church Street & Charles Street E

Future Background AM Peak


















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				26.2	26.2		22.7	22.7			24.7	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	
Total Split (%)				44.4%	44.4%		55.6%	55.6%			55.6%	
Maximum Green (s)				32.8	32.8		43.3	43.3			43.3	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				4.2	4.2		3.7	3.7			3.7	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				7.2	7.2			6.7			6.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Min	Min		C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)				12.0	12.0		9.0	9.0			9.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)				25.8	25.8			50.3			50.3	
Actuated g/C Ratio				0.29	0.29			0.56			0.56	
v/c Ratio				0.19	0.80			0.20			0.26	
Control Delay				23.2	40.2			11.1			9.4	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay				23.2	40.2			11.1			9.4	
LOS				C	D			B			A	
Approach Delay					37.0			11.1			9.4	
Approach LOS					D			B			A	
Queue Length 50th (m)				13.4	69.5			13.0			18.1	
Queue Length 95th (m)				22.6	91.9			25.5			33.1	
Internal Link Dist (m)		41.0			118.9			102.3			145.7	
Turn Bay Length (m)												
Base Capacity (vph)				648	675			1595			1939	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.15	0.63			0.20			0.26	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 88 (98%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.80												
Intersection Signal Delay: 20.6						Intersection LOS: C						
Intersection Capacity Utilization 61.4%						ICU Level of Service B						
Analysis Period (min) 15												

Splits and Phases: 2: Church Street & Charles Street E


















48 Isabella Street
2: Church Street & Charles Street E

Future Background AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	90	340	50	50	240	0	0	325	135
Future Volume (vph)	0	0	0	90	340	50	50	240	0	0	325	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2	7.2			6.7			6.7	
Lane Util. Factor				1.00	1.00			0.95			0.95	
Frt				1.00	0.98			1.00			0.96	
Flt Protected				0.95	1.00			0.99			1.00	
Satd. Flow (prot)				1770	1827			3509			3383	
Flt Permitted				0.95	1.00			0.80			1.00	
Satd. Flow (perm)				1770	1827			2847			3383	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	98	370	54	54	261	0	0	353	147
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	43	0
Lane Group Flow (vph)	0	0	0	98	418	0	0	315	0	0	457	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				25.8	25.8			50.3			50.3	
Effective Green, g (s)				25.8	25.8			50.3			50.3	
Actuated g/C Ratio				0.29	0.29			0.56			0.56	
Clearance Time (s)				7.2	7.2			6.7			6.7	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				507	523			1591			1890	
v/s Ratio Prot					c0.23						c0.14	
v/s Ratio Perm				0.06				0.11				
v/c Ratio				0.19	0.80			0.20			0.24	
Uniform Delay, d1				24.2	29.7			9.8			10.1	
Progression Factor				1.00	1.00			0.97			1.00	
Incremental Delay, d2				0.2	8.3			0.3			0.3	
Delay (s)				24.4	38.0			9.9			10.4	
Level of Service				C	D			A			B	
Approach Delay (s)		0.0			35.5			9.9			10.4	
Approach LOS		A			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			20.1		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						13.9	
Intersection Capacity Utilization			61.4%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												

48 Isabella Street
3: Church Street & Isabella Street/Isabella Street

Future Background AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	160	50	0	0	0	0	225	45	70	345	0
Future Volume (vph)	65	160	50	0	0	0	0	225	45	70	345	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.973						0.975				
Flt Protected		0.988									0.992	
Satd. Flow (prot)	0	3402	0	0	0	0	0	3451	0	0	3511	0
Flt Permitted		0.988									0.853	
Satd. Flow (perm)	0	3402	0	0	0	0	0	3451	0	0	3019	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54						49				
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		307.2			124.3			141.0			126.3	
Travel Time (s)		36.9			14.9			16.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	174	54	0	0	0	0	245	49	76	375	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	299	0	0	0	0	0	294	0	0	451	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Minimum Split (s)	22.5	22.5						22.5		22.5	22.5	
Total Split (s)	22.5	22.5						22.5		22.5	22.5	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	18.0	18.0						18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5						3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		4.5						4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		18.0						18.0			18.0	
Actuated g/C Ratio		0.40						0.40			0.40	
v/c Ratio		0.21						0.21			0.37	
Control Delay		7.7						7.8			13.2	
Queue Delay		0.0						0.0			0.0	
Total Delay		7.7						7.8			13.2	

48 Isabella Street
3: Church Street & Isabella Street/Isabella Street

Future Background AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A						A			B	
Approach Delay		7.7						7.8			13.2	
Approach LOS		A						A			B	
Queue Length 50th (m)		6.4						6.4			24.0	
Queue Length 95th (m)		12.5						12.4			33.4	
Internal Link Dist (m)		283.2			100.3			117.0			102.3	
Turn Bay Length (m)												
Base Capacity (vph)		1393						1409			1207	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.21						0.21			0.37	

Intersection Summary

Area Type: Other

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Pretimed

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 10.1

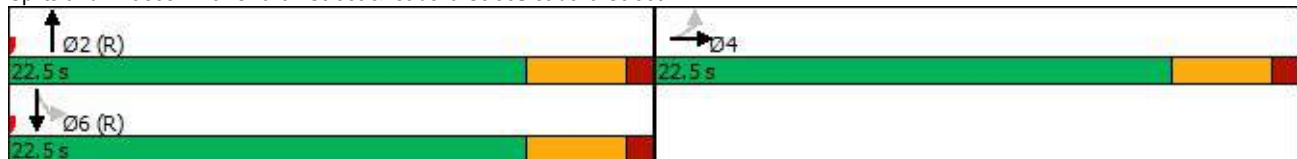
Intersection LOS: B

Intersection Capacity Utilization 38.4%

ICU Level of Service A
















Analysis Period (min) 15

Splits and Phases: 3: Church Street & Isabella Street/Isabella Street











48 Isabella Street
3: Church Street & Isabella Street/Isabella Street

Future Background AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	160	50	0	0	0	0	225	45	70	345	0
Future Volume (vph)	65	160	50	0	0	0	0	225	45	70	345	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5			4.5	
Lane Util. Factor		0.95						0.95			0.95	
Frt		0.97						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3403						3451			3510	
Flt Permitted		0.99						1.00			0.85	
Satd. Flow (perm)		3403						3451			3018	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	174	54	0	0	0	0	245	49	76	375	0
RTOR Reduction (vph)	0	32	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	0	267	0	0	0	0	0	265	0	0	451	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		18.0						18.0			18.0	
Effective Green, g (s)		18.0						18.0			18.0	
Actuated g/C Ratio		0.40						0.40			0.40	
Clearance Time (s)		4.5						4.5			4.5	
Lane Grp Cap (vph)		1361						1380			1207	
v/s Ratio Prot								0.08				
v/s Ratio Perm		0.08									c0.15	
v/c Ratio		0.20						0.19			0.37	
Uniform Delay, d1		8.8						8.8			9.5	
Progression Factor		1.00						1.00			1.28	
Incremental Delay, d2		0.3						0.3			0.9	
Delay (s)		9.1						9.1			13.1	
Level of Service		A						A			B	
Approach Delay (s)		9.1			0.0			9.1			13.1	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM 2000 Control Delay		10.8						HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio		0.28										
Actuated Cycle Length (s)		45.0						Sum of lost time (s)		9.0		
Intersection Capacity Utilization		38.4%						ICU Level of Service		A		
Analysis Period (min)		15										
c Critical Lane Group												









48 Isabella Street
4: Yonge Street & Isabella Street









Future Background AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	325	175	115	380
Future Volume (Veh/h)	0	0	325	175	115	380
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	353	190	125	413
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						136
pX, platoon unblocked						
vC, conflicting volume	904	272			543	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	904	272			543	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			88	
cM capacity (veh/h)	243	726			1022	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	235	308	263	275		
Volume Left	0	0	125	0		
Volume Right	0	190	0	0		
cSH	1700	1700	1022	1700		
Volume to Capacity	0.14	0.18	0.12	0.16		
Queue Length 95th (m)	0.0	0.0	3.3	0.0		
Control Delay (s)	0.0	0.0	4.9	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		2.4			
Approach LOS						
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			35.1%		ICU Level of Service	A
Analysis Period (min)			15			




















48 Isabella Street
6: Macy Dubois Ln & Charles Street E

Future Background AM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	15	505	30	0
Future Volume (Veh/h)	0	0	15	505	30	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	16	549	33	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	150			156		
pX, platoon unblocked						
vC, conflicting volume			0		306	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		306	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	100
cM capacity (veh/h)			1622		655	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	199	366	33			
Volume Left	16	0	33			
Volume Right	0	0	0			
cSH	1622	1700	655			
Volume to Capacity	0.01	0.22	0.05			
Queue Length 95th (m)	0.2	0.0	1.3			
Control Delay (s)	0.7	0.0	10.8			
Lane LOS	A		B			
Approach Delay (s)	0.2		10.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			51.0%	ICU Level of Service	A	
Analysis Period (min)			15			













						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	5	515	5	0
Future Volume (Veh/h)	0	0	5	515	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	5	560	5	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	241			65		
pX, platoon unblocked						
vC, conflicting volume			0		290	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		290	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1622		675	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	192	373	5			
Volume Left	5	0	5			
Volume Right	0	0	0			
cSH	1622	1700	675			
Volume to Capacity	0.00	0.22	0.01			
Queue Length 95th (m)	0.1	0.0	0.2			
Control Delay (s)	0.2	0.0	10.4			
Lane LOS	A		B			
Approach Delay (s)	0.1		10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			51.0%	ICU Level of Service	A	
Analysis Period (min)			15			

1: Yonge Street & Charles Street W/Charles Street E

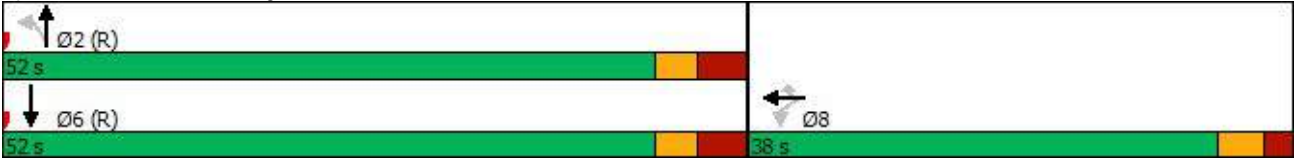
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	130	230	85	65	345	0	0	205	35
Future Volume (vph)	0	0	0	130	230	85	65	345	0	0	205	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt						0.850					0.978	
Flt Protected				0.950				0.992				
Satd. Flow (prot)	0	0	0	1770	1863	1583	0	3511	0	0	3461	0
Flt Permitted				0.950				0.851				
Satd. Flow (perm)	0	0	0	1770	1863	1583	0	3012	0	0	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						92					31	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		113.6			150.4			135.5			153.5	
Travel Time (s)		13.6			18.0			12.2			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	250	92	71	375	0	0	223	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	141	250	92	0	446	0	0	261	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2	1	1	2			2	
Detector Template				Left	Thru	Right	Left	Thru			Thru	
Leading Detector (m)				2.0	10.0	2.0	2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6	2.0	2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					

48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Future Background PM Peak



















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8	8	2	2			6	
Switch Phase												
Minimum Initial (s)				13.0	13.0	13.0	18.0	18.0			18.0	
Minimum Split (s)				23.4	23.4	23.4	24.6	24.6			24.6	
Total Split (s)				38.0	38.0	38.0	52.0	52.0			52.0	
Total Split (%)				42.2%	42.2%	42.2%	57.8%	57.8%			57.8%	
Maximum Green (s)				32.6	32.6	32.6	45.4	45.4			45.4	
Yellow Time (s)				3.3	3.3	3.3	3.0	3.0			3.0	
All-Red Time (s)				2.1	2.1	2.1	3.6	3.6			3.6	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.4	5.4	5.4		6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Recall Mode				Min	Min	Min	C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0	0	0	0			0	
Act Effct Green (s)				18.2	18.2	18.2		59.8			59.8	
Actuated g/C Ratio				0.20	0.20	0.20		0.66			0.66	
v/c Ratio				0.39	0.66	0.23		0.22			0.11	
Control Delay				37.5	45.5	15.3		6.9			5.6	
Queue Delay				0.0	0.0	0.0		0.0			0.0	
Total Delay				37.5	45.5	15.3		6.9			5.6	
LOS				D	D	B		A			A	
Approach Delay					37.4			6.9			5.6	
Approach LOS					D			A			A	
Queue Length 50th (m)				25.9	47.0	4.3		14.4			6.7	
Queue Length 95th (m)				m39.5	m68.1	m14.3		26.6			14.1	
Internal Link Dist (m)		89.6			126.4			111.5			129.5	
Turn Bay Length (m)						30.0						
Base Capacity (vph)				641	674	632		2002			2311	
Starvation Cap Reductn				0	0	0		0			0	
Spillback Cap Reductn				0	0	0		0			0	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				0.22	0.37	0.15		0.22			0.11	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 37 (41%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 50												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.66												
Intersection Signal Delay: 19.0						Intersection LOS: B						
Intersection Capacity Utilization 57.6%						ICU Level of Service B						
Analysis Period (min) 15												
m Volume for 95th percentile queue is metered by upstream signal.												

Splits and Phases: 1: Yonge Street & Charles Street W/Charles Street E




















48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Future Background PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	130	230	85	65	345	0	0	205	35
Future Volume (vph)	0	0	0	130	230	85	65	345	0	0	205	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.4	5.4	5.4		6.6			6.6	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frt				1.00	1.00	0.85		1.00			0.98	
Flt Protected				0.95	1.00	1.00		0.99			1.00	
Satd. Flow (prot)				1770	1863	1583		3511			3462	
Flt Permitted				0.95	1.00	1.00		0.85			1.00	
Satd. Flow (perm)				1770	1863	1583		3012			3462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	250	92	71	375	0	0	223	38
RTOR Reduction (vph)	0	0	0	0	0	73	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	141	250	19	0	446	0	0	251	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					
Actuated Green, G (s)				18.2	18.2	18.2		59.8			59.8	
Effective Green, g (s)				18.2	18.2	18.2		59.8			59.8	
Actuated g/C Ratio				0.20	0.20	0.20		0.66			0.66	
Clearance Time (s)				5.4	5.4	5.4		6.6			6.6	
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)				357	376	320		2001			2300	
v/s Ratio Prot					c0.13						0.07	
v/s Ratio Perm				0.08		0.01		c0.15				
v/c Ratio				0.39	0.66	0.06		0.22			0.11	
Uniform Delay, d1				31.1	33.1	29.0		5.9			5.5	
Progression Factor				1.15	1.15	2.28		1.00			1.00	
Incremental Delay, d2				0.6	4.0	0.1		0.3			0.1	
Delay (s)				36.5	42.1	66.2		6.2			5.6	
Level of Service				D	D	E		A			A	
Approach Delay (s)		0.0			45.0			6.2			5.6	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			21.8		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						12.0	
Intersection Capacity Utilization			57.6%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												













48 Isabella Street
2: Church Street & Charles Street E

Future Background PM Peak

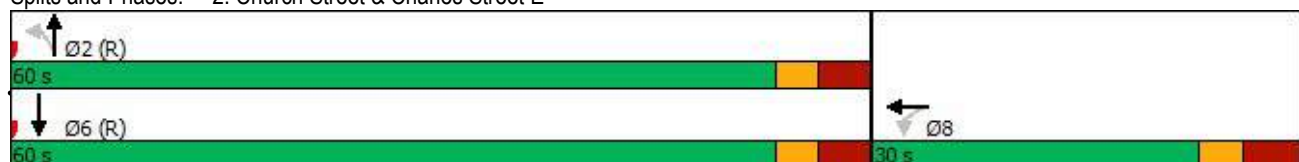
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	85	265	55	85	300	0	0	350	105
Future Volume (vph)	0	0	0	85	265	55	85	300	0	0	350	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt					0.974						0.965	
Flt Protected				0.950				0.989				
Satd. Flow (prot)	0	0	0	1770	1814	0	0	3500	0	0	3415	0
Flt Permitted				0.950				0.745				
Satd. Flow (perm)	0	0	0	1770	1814	0	0	2637	0	0	3415	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11						77	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.0			142.9			126.3			169.7	
Travel Time (s)		4.7			10.3			9.1			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	288	60	92	326	0	0	380	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	92	348	0	0	418	0	0	494	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (m)				2.0	10.0		2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6		2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Detector Phase				8	8		2	2			6	
Switch Phase												
Minimum Initial (s)				14.0	14.0		12.0	12.0			12.0	

48 Isabella Street
2: Church Street & Charles Street E

Future Background PM Peak



















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				26.2	26.2		24.7	24.7			24.7	
Total Split (s)				30.0	30.0		60.0	60.0			60.0	
Total Split (%)				33.3%	33.3%		66.7%	66.7%			66.7%	
Maximum Green (s)				22.8	22.8		53.3	53.3			53.3	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				4.2	4.2		3.7	3.7			3.7	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				7.2	7.2			6.7			6.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Min	Min		C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)				12.0	12.0		9.0	9.0			9.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)				21.9	21.9			54.2			54.2	
Actuated g/C Ratio				0.24	0.24			0.60			0.60	
v/c Ratio				0.21	0.78			0.26			0.24	
Control Delay				26.8	42.5			8.0			7.9	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay				26.8	42.5			8.0			7.9	
LOS				C	D			A			A	
Approach Delay					39.2			8.0			7.9	
Approach LOS					D			A			A	
Queue Length 50th (m)				13.4	57.2			15.1			16.7	
Queue Length 95th (m)				23.8	80.8			20.1			29.4	
Internal Link Dist (m)		41.0			118.9			102.3			145.7	
Turn Bay Length (m)												
Base Capacity (vph)				477	497			1633			2144	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.19	0.70			0.26			0.23	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 42 (47%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 18.1						Intersection LOS: B						
Intersection Capacity Utilization 58.2%						ICU Level of Service B						
Analysis Period (min) 15												

Splits and Phases: 2: Church Street & Charles Street E


















48 Isabella Street
2: Church Street & Charles Street E

Future Background PM Peak













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	85	265	55	85	300	0	0	350	105
Future Volume (vph)	0	0	0	85	265	55	85	300	0	0	350	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2	7.2			6.7			6.7	
Lane Util. Factor				1.00	1.00			0.95			0.95	
Frt				1.00	0.97			1.00			0.97	
Flt Protected				0.95	1.00			0.99			1.00	
Satd. Flow (prot)				1770	1815			3501			3417	
Flt Permitted				0.95	1.00			0.75			1.00	
Satd. Flow (perm)				1770	1815			2637			3417	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	288	60	92	326	0	0	380	114
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	92	340	0	0	418	0	0	463	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				21.9	21.9			54.2			54.2	
Effective Green, g (s)				21.9	21.9			54.2			54.2	
Actuated g/C Ratio				0.24	0.24			0.60			0.60	
Clearance Time (s)				7.2	7.2			6.7			6.7	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				430	441			1588			2057	
v/s Ratio Prot					c0.19						0.14	
v/s Ratio Perm				0.05				c0.16				
v/c Ratio				0.21	0.77			0.26			0.23	
Uniform Delay, d1				27.2	31.7			8.5			8.2	
Progression Factor				1.00	1.00			0.81			1.00	
Incremental Delay, d2				0.3	8.1			0.4			0.3	
Delay (s)				27.4	39.8			7.3			8.5	
Level of Service				C	D			A			A	
Approach Delay (s)		0.0			37.2			7.3			8.5	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			17.5	HCM 2000 Level of Service					B			
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			90.0	Sum of lost time (s)					13.9			
Intersection Capacity Utilization			58.2%	ICU Level of Service					B			
Analysis Period (min)			15									
c Critical Lane Group												

48 Isabella Street
3: Church Street & Isabella Street/Isabella Street

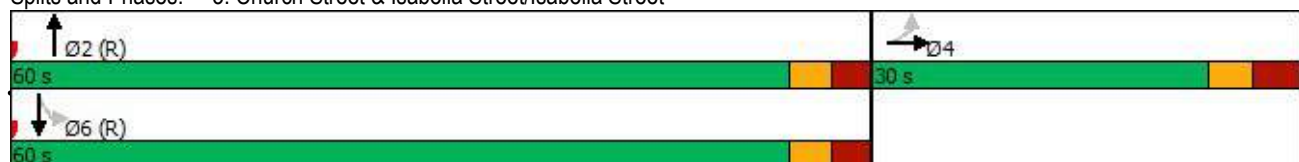
Future Background PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	295	60	0	0	0	0	295	35	95	340	0
Future Volume (vph)	90	295	60	0	0	0	0	295	35	95	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.980						0.984				
Flt Protected		0.990									0.989	
Satd. Flow (prot)	0	3434	0	0	0	0	0	3483	0	0	3500	0
Flt Permitted		0.990									0.782	
Satd. Flow (perm)	0	3434	0	0	0	0	0	3483	0	0	2768	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19						25				
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		307.2			124.3			141.0			126.3	
Travel Time (s)		36.9			14.9			16.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	321	65	0	0	0	0	321	38	103	370	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	484	0	0	0	0	0	359	0	0	473	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (m)	2.0	10.0						10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6						0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0						0.0		0.0	0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Detector Phase	4	4						2		6	6	
Switch Phase												
Minimum Initial (s)	18.0	18.0						13.0		13.0	13.0	

3: Church Street & Isabella Street/Isabella Street
















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	29.5	29.5						23.8		23.8	23.8	
Total Split (s)	30.0	30.0						60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%						66.7%		66.7%	66.7%	
Maximum Green (s)	23.5	23.5						54.2		54.2	54.2	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	3.5	3.5						2.8		2.8	2.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		6.5						5.8			5.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	None	None						C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0						7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		19.2						58.5			58.5	
Actuated g/C Ratio		0.21						0.65			0.65	
v/c Ratio		0.65						0.16			0.26	
Control Delay		35.7						6.1			6.1	
Queue Delay		0.0						0.0			0.0	
Total Delay		35.7						6.1			6.1	
LOS		D						A			A	
Approach Delay		35.7						6.1			6.1	
Approach LOS		D						A			A	
Queue Length 50th (m)		42.3						10.4			15.0	
Queue Length 95th (m)		55.8						18.6			20.4	
Internal Link Dist (m)		283.2			100.3			117.0			102.3	
Turn Bay Length (m)												
Base Capacity (vph)		910						2272			1799	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.53						0.16			0.26	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 45 (50%), Referenced to phase 2:NBT and 6:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.65												
Intersection Signal Delay: 17.0						Intersection LOS: B						
Intersection Capacity Utilization 53.1%						ICU Level of Service A						
Analysis Period (min) 15												

Splits and Phases: 3: Church Street & Isabella Street/Isabella Street



48 Isabella Street
3: Church Street & Isabella Street/Isabella Street









Future Background PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	295	60	0	0	0	0	295	35	95	340	0
Future Volume (vph)	90	295	60	0	0	0	0	295	35	95	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						5.8			5.8	
Lane Util. Factor		0.95						0.95			0.95	
Frt		0.98						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3433						3483			3501	
Flt Permitted		0.99						1.00			0.78	
Satd. Flow (perm)		3433						3483			2767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	321	65	0	0	0	0	321	38	103	370	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	469	0	0	0	0	0	350	0	0	473	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		19.2						58.5			58.5	
Effective Green, g (s)		19.2						58.5			58.5	
Actuated g/C Ratio		0.21						0.65			0.65	
Clearance Time (s)		6.5						5.8			5.8	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		732						2263			1798	
v/s Ratio Prot								0.10				
v/s Ratio Perm		0.14									c0.17	
v/c Ratio		0.64						0.15			0.26	
Uniform Delay, d1		32.3						6.1			6.6	
Progression Factor		1.02						1.00			0.82	
Incremental Delay, d2		1.9						0.1			0.4	
Delay (s)		34.7						6.3			5.8	
Level of Service		C						A			A	
Approach Delay (s)		34.7			0.0			6.3			5.8	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		16.5						HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio		0.36										
Actuated Cycle Length (s)		90.0						Sum of lost time (s)		12.3		
Intersection Capacity Utilization		53.1%						ICU Level of Service		A		
Analysis Period (min)		15										

c Critical Lane Group










48 Isabella Street
4: Yonge Street & Isabella Street









Future Background PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	375	395	150	335
Future Volume (Veh/h)	0	0	375	395	150	335
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	408	429	163	364
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						136
pX, platoon unblocked						
vC, conflicting volume	1130	418			837	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1130	418			837	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			79	
cM capacity (veh/h)	157	583			793	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	272	565	284	243		
Volume Left	0	0	163	0		
Volume Right	0	429	0	0		
cSH	1700	1700	793	1700		
Volume to Capacity	0.16	0.33	0.21	0.14		
Queue Length 95th (m)	0.0	0.0	6.2	0.0		
Control Delay (s)	0.0	0.0	7.2	0.0		
Lane LOS						
Approach Delay (s)	0.0		3.9			
Approach LOS						
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			43.3%	ICU Level of Service		A
Analysis Period (min)			15			




















48 Isabella Street
6: Macy Dubois Ln & Charles Street E

Future Background PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				 		
Traffic Volume (veh/h)	0	0	25	435	15	0
Future Volume (Veh/h)	0	0	25	435	15	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	473	16	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	150			156		
pX, platoon unblocked						
vC, conflicting volume			0		290	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		290	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	100
cM capacity (veh/h)			1622		665	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	185	315	16			
Volume Left	27	0	16			
Volume Right	0	0	0			
cSH	1622	1700	665			
Volume to Capacity	0.02	0.19	0.02			
Queue Length 95th (m)	0.4	0.0	0.6			
Control Delay (s)	1.2	0.0	10.5			
Lane LOS	A		B			
Approach Delay (s)	0.4		10.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			51.0%	ICU Level of Service		A
Analysis Period (min)			15			













						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	10	445	20	0
Future Volume (Veh/h)	0	0	10	445	20	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	11	484	22	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	241			65		
pX, platoon unblocked						
vC, conflicting volume			0		264	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		264	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	100
cM capacity (veh/h)			1622		698	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	172	323	22			
Volume Left	11	0	22			
Volume Right	0	0	0			
cSH	1622	1700	698			
Volume to Capacity	0.01	0.19	0.03			
Queue Length 95th (m)	0.2	0.0	0.8			
Control Delay (s)	0.5	0.0	10.3			
Lane LOS	A		B			
Approach Delay (s)	0.2		10.3			
Approach LOS			B			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			51.0%	ICU Level of Service		A
Analysis Period (min)			15			

1: Yonge Street & Charles Street W/Charles Street E

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	190	270	120	65	305	0	0	225	30
Future Volume (vph)	0	0	0	190	270	120	65	305	0	0	225	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt						0.850					0.982	
Flt Protected				0.950				0.991				
Satd. Flow (prot)	0	0	0	1770	1863	1583	0	3507	0	0	3476	0
Flt Permitted				0.950				0.847				
Satd. Flow (perm)	0	0	0	1770	1863	1583	0	2998	0	0	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						130					27	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		113.6			150.4			135.5			153.5	
Travel Time (s)		13.6			18.0			12.2			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	207	293	130	71	332	0	0	245	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	207	293	130	0	403	0	0	278	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2	1	1	2			2	
Detector Template				Left	Thru	Right	Left	Thru			Thru	
Leading Detector (m)				2.0	10.0	2.0	2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6	2.0	2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					

48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Future Total AM Peak








												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8	8	2	2			6	
Switch Phase												
Minimum Initial (s)				13.0	13.0	13.0	18.0	18.0			18.0	
Minimum Split (s)				22.5	22.5	22.5	22.5	22.5			22.5	
Total Split (s)				35.0	35.0	35.0	50.0	50.0			50.0	
Total Split (%)				41.2%	41.2%	41.2%	58.8%	58.8%			58.8%	
Maximum Green (s)				30.5	30.5	30.5	45.5	45.5			45.5	
Yellow Time (s)				3.5	3.5	3.5	3.5	3.5			3.5	
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0			1.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				4.5	4.5	4.5		4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Recall Mode				Min	Min	Min	C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0	0	0	0			0	
Act Effct Green (s)				19.5	19.5	19.5		56.5			56.5	
Actuated g/C Ratio				0.23	0.23	0.23		0.66			0.66	
v/c Ratio				0.51	0.69	0.28		0.20			0.12	
Control Delay				32.1	37.8	6.1		6.6			5.6	
Queue Delay				0.0	0.0	0.0		0.0			0.0	
Total Delay				32.1	37.8	6.1		6.6			5.6	
LOS				C	D	A		A			A	
Approach Delay					29.4			6.6			5.6	
Approach LOS					C			A			A	
Queue Length 50th (m)				30.9	45.9	0.0		12.3			7.1	
Queue Length 95th (m)				46.4	64.7	12.1		23.6			14.8	
Internal Link Dist (m)		89.6			126.4			111.5			129.5	
Turn Bay Length (m)						30.0						
Base Capacity (vph)				635	668	651		1992			2319	
Starvation Cap Reductn				0	0	0		0			0	
Spillback Cap Reductn				0	0	0		0			0	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				0.33	0.44	0.20		0.20			0.12	
Intersection Summary												
Area Type:	Other											
Cycle Length: 85												
Actuated Cycle Length: 85												
Offset: 19 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 45												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.69												
Intersection Signal Delay: 17.3	Intersection LOS: B											
Intersection Capacity Utilization 55.5%	ICU Level of Service B											
Analysis Period (min) 15												

Splits and Phases: 1: Yonge Street & Charles Street W/Charles Street E



48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E


















Future Total AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	190	270	120	65	305	0	0	225	30
Future Volume (vph)	0	0	0	190	270	120	65	305	0	0	225	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5	4.5		4.5			4.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frt				1.00	1.00	0.85		1.00			0.98	
Flt Protected				0.95	1.00	1.00		0.99			1.00	
Satd. Flow (prot)				1770	1863	1583		3508			3476	
Flt Permitted				0.95	1.00	1.00		0.85			1.00	
Satd. Flow (perm)				1770	1863	1583		2997			3476	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	207	293	130	71	332	0	0	245	33
RTOR Reduction (vph)	0	0	0	0	0	100	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	207	293	30	0	403	0	0	269	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					
Actuated Green, G (s)				19.5	19.5	19.5		56.5			56.5	
Effective Green, g (s)				19.5	19.5	19.5		56.5			56.5	
Actuated g/C Ratio				0.23	0.23	0.23		0.66			0.66	
Clearance Time (s)				4.5	4.5	4.5		4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)				406	427	363		1992			2310	
v/s Ratio Prot					c0.16						0.08	
v/s Ratio Perm				0.12		0.02		c0.13				
v/c Ratio				0.51	0.69	0.08		0.20			0.12	
Uniform Delay, d1				28.6	30.0	25.7		5.5			5.2	
Progression Factor				1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2				1.0	4.5	0.1		0.2			0.1	
Delay (s)				29.6	34.5	25.8		5.7			5.3	
Level of Service				C	C	C		A			A	
Approach Delay (s)		0.0			31.1			5.7			5.3	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			17.8	HCM 2000 Level of Service							B	
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			85.0	Sum of lost time (s)							9.0	
Intersection Capacity Utilization			55.5%	ICU Level of Service							B	
Analysis Period (min)			15									

c Critical Lane Group













48 Isabella Street
2: Church Street & Charles Street E

Future Total AM Peak

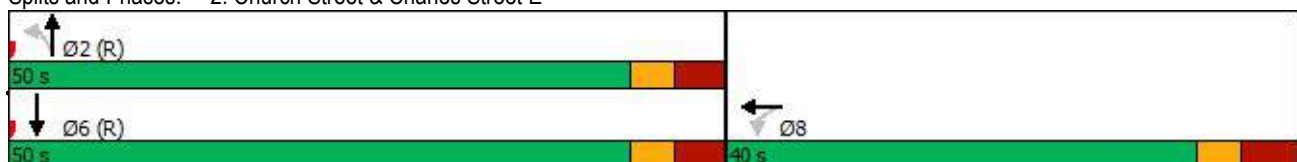
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	90	340	50	50	240	0	0	325	150
Future Volume (vph)	0	0	0	90	340	50	50	240	0	0	325	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Fr _t					0.981						0.953	
Flt Protected				0.950				0.992				
Satd. Flow (prot)	0	0	0	1770	1827	0	0	3511	0	0	3373	0
Flt Permitted				0.950				0.801				
Satd. Flow (perm)	0	0	0	1770	1827	0	0	2835	0	0	3373	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9						115	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.0			142.9			126.3			169.7	
Travel Time (s)		4.7			10.3			9.1			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	98	370	54	54	261	0	0	353	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	98	424	0	0	315	0	0	516	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (m)				2.0	10.0		2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6		2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Detector Phase				8	8		2	2			6	
Switch Phase												
Minimum Initial (s)				14.0	14.0		12.0	12.0			12.0	

48 Isabella Street
2: Church Street & Charles Street E

Future Total AM Peak


















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				26.2	26.2		24.7	24.7			24.7	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	
Total Split (%)				44.4%	44.4%		55.6%	55.6%			55.6%	
Maximum Green (s)				32.8	32.8		43.3	43.3			43.3	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				4.2	4.2		3.7	3.7			3.7	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				7.2	7.2			6.7			6.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Min	Min		C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)				12.0	12.0		9.0	9.0			9.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)				25.8	25.8			50.3			50.3	
Actuated g/C Ratio				0.29	0.29			0.56			0.56	
v/c Ratio				0.19	0.80			0.20			0.27	
Control Delay				23.2	40.2			9.0			9.1	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay				23.2	40.2			9.0			9.1	
LOS				C	D			A			A	
Approach Delay					37.0			9.0			9.1	
Approach LOS					D			A			A	
Queue Length 50th (m)				13.4	69.5			11.0			18.0	
Queue Length 95th (m)				22.6	91.9			19.8			33.2	
Internal Link Dist (m)		41.0			118.9			102.3			145.7	
Turn Bay Length (m)												
Base Capacity (vph)				648	675			1588			1941	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.15	0.63			0.20			0.27	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 88 (98%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.80												
Intersection Signal Delay: 19.9					Intersection LOS: B							
Intersection Capacity Utilization 61.9%					ICU Level of Service B							
Analysis Period (min) 15												

Splits and Phases: 2: Church Street & Charles Street E



48 Isabella Street
2: Church Street & Charles Street E
















Future Total AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	90	340	50	50	240	0	0	325	150
Future Volume (vph)	0	0	0	90	340	50	50	240	0	0	325	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2	7.2			6.7			6.7	
Lane Util. Factor				1.00	1.00			0.95			0.95	
Frt				1.00	0.98			1.00			0.95	
Flt Protected				0.95	1.00			0.99			1.00	
Satd. Flow (prot)				1770	1827			3509			3372	
Flt Permitted				0.95	1.00			0.80			1.00	
Satd. Flow (perm)				1770	1827			2835			3372	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	98	370	54	54	261	0	0	353	163
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	51	0
Lane Group Flow (vph)	0	0	0	98	418	0	0	315	0	0	465	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				25.8	25.8			50.3			50.3	
Effective Green, g (s)				25.8	25.8			50.3			50.3	
Actuated g/C Ratio				0.29	0.29			0.56			0.56	
Clearance Time (s)				7.2	7.2			6.7			6.7	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				507	523			1584			1884	
v/s Ratio Prot					c0.23						c0.14	
v/s Ratio Perm				0.06				0.11				
v/c Ratio				0.19	0.80			0.20			0.25	
Uniform Delay, d1				24.2	29.7			9.9			10.2	
Progression Factor				1.00	1.00			0.78			1.00	
Incremental Delay, d2				0.2	8.3			0.3			0.3	
Delay (s)				24.4	38.0			8.0			10.5	
Level of Service				C	D			A			B	
Approach Delay (s)		0.0			35.5			8.0			10.5	
Approach LOS		A			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			19.5		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						13.9	
Intersection Capacity Utilization			61.9%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group













48 Isabella Street
3: Church Street & Isabella Street/Isabella Street

Future Total AM Peak

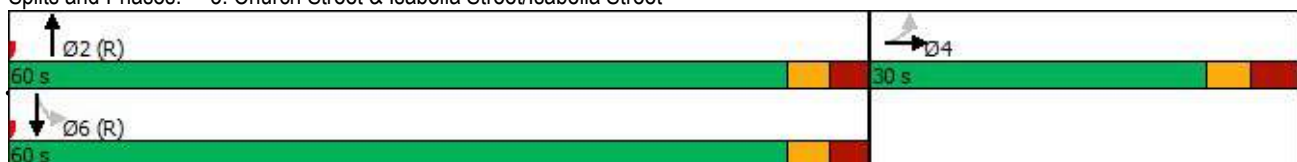
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	155	50	0	0	0	0	225	45	70	345	0
Future Volume (vph)	65	155	50	0	0	0	0	225	45	70	345	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Fr _t		0.972						0.975				
Fl _t Protected		0.988									0.992	
Satd. Flow (prot)	0	3399	0	0	0	0	0	3451	0	0	3511	0
Fl _t Permitted		0.988									0.838	
Satd. Flow (perm)	0	3399	0	0	0	0	0	3451	0	0	2966	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29						46				
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		307.2			124.3			141.0			126.3	
Travel Time (s)		36.9			14.9			16.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	168	54	0	0	0	0	245	49	76	375	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	293	0	0	0	0	0	294	0	0	451	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (m)	2.0	10.0						10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6						0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0						0.0		0.0	0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Detector Phase	4	4						2		6	6	
Switch Phase												
Minimum Initial (s)	18.0	18.0						13.0		13.0	13.0	

48 Isabella Street
3: Church Street & Isabella Street/Isabella Street

Future Total AM Peak
















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	29.5	29.5						23.8		23.8	23.8	
Total Split (s)	30.0	30.0						60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%						66.7%		66.7%	66.7%	
Maximum Green (s)	23.5	23.5						54.2		54.2	54.2	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	3.5	3.5						2.8		2.8	2.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		6.5						5.8			5.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	Min	Min						C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0						7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		18.0						59.7			59.7	
Actuated g/C Ratio		0.20						0.66			0.66	
v/c Ratio		0.42						0.13			0.23	
Control Delay		30.3						4.8			9.0	
Queue Delay		0.0						0.0			0.0	
Total Delay		30.3						4.8			9.0	
LOS		C						A			A	
Approach Delay		30.3						4.8			9.0	
Approach LOS		C						A			A	
Queue Length 50th (m)		22.1						7.5			23.4	
Queue Length 95th (m)		34.6						12.1			34.3	
Internal Link Dist (m)		283.2			100.3			117.0			102.3	
Turn Bay Length (m)												
Base Capacity (vph)		908						2304			1967	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.32						0.13			0.23	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 45 (50%), Referenced to phase 2:NBT and 6:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.42												
Intersection Signal Delay: 13.8						Intersection LOS: B						
Intersection Capacity Utilization 52.5%						ICU Level of Service A						
Analysis Period (min) 15												

Splits and Phases: 3: Church Street & Isabella Street/Isabella Street



48 Isabella Street
3: Church Street & Isabella Street/Isabella Street









Future Total AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	155	50	0	0	0	0	225	45	70	345	0
Future Volume (vph)	65	155	50	0	0	0	0	225	45	70	345	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						5.8			5.8	
Lane Util. Factor		0.95						0.95			0.95	
Frt		0.97						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3400						3451			3510	
Flt Permitted		0.99						1.00			0.84	
Satd. Flow (perm)		3400						3451			2967	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	168	54	0	0	0	0	245	49	76	375	0
RTOR Reduction (vph)	0	23	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	270	0	0	0	0	0	279	0	0	451	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		18.0						59.7			59.7	
Effective Green, g (s)		18.0						59.7			59.7	
Actuated g/C Ratio		0.20						0.66			0.66	
Clearance Time (s)		6.5						5.8			5.8	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		680						2289			1968	
v/s Ratio Prot								0.08				
v/s Ratio Perm		0.08									c0.15	
v/c Ratio		0.40						0.12			0.23	
Uniform Delay, d1		31.3						5.5			6.0	
Progression Factor		1.00						1.00			1.43	
Incremental Delay, d2		0.4						0.1			0.3	
Delay (s)		31.7						5.7			8.9	
Level of Service		C						A			A	
Approach Delay (s)		31.7			0.0			5.7			8.9	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		14.4						HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio		0.27										
Actuated Cycle Length (s)		90.0						Sum of lost time (s)		12.3		
Intersection Capacity Utilization		52.5%						ICU Level of Service		A		
Analysis Period (min)		15										

c Critical Lane Group









48 Isabella Street
4: Yonge Street & Isabella Street









Future Total AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	325	175	115	380
Future Volume (Veh/h)	0	0	325	175	115	380
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	353	190	125	413
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						136
pX, platoon unblocked						
vC, conflicting volume	904	272			543	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	904	272			543	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			88	
cM capacity (veh/h)	243	726			1022	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	235	308	263	275		
Volume Left	0	0	125	0		
Volume Right	0	190	0	0		
cSH	1700	1700	1022	1700		
Volume to Capacity	0.14	0.18	0.12	0.16		
Queue Length 95th (m)	0.0	0.0	3.3	0.0		
Control Delay (s)	0.0	0.0	4.9	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		2.4			
Approach LOS						
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			35.1%	ICU Level of Service		A
Analysis Period (min)			15			

48 Isabella Street
6: Macy Dubois Ln & Charles Street E










Future Total AM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	15	505	45	0
Future Volume (Veh/h)	0	0	15	505	45	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	16	549	49	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	150			156		
pX, platoon unblocked						
vC, conflicting volume			0		306	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		306	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	100
cM capacity (veh/h)			1622		655	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	199	366	49			
Volume Left	16	0	49			
Volume Right	0	0	0			
cSH	1622	1700	655			
Volume to Capacity	0.01	0.22	0.07			
Queue Length 95th (m)	0.2	0.0	1.9			
Control Delay (s)	0.7	0.0	10.9			
Lane LOS	A		B			
Approach Delay (s)	0.2		10.9			
Approach LOS			B			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			24.4%	ICU Level of Service		A
Analysis Period (min)			15			




















						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	20	515	5	0
Future Volume (Veh/h)	0	0	20	515	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	22	560	5	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	241			65		
pX, platoon unblocked						
vC, conflicting volume			0		324	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		324	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1622		636	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	209	373	5			
Volume Left	22	0	5			
Volume Right	0	0	0			
cSH	1622	1700	636			
Volume to Capacity	0.01	0.22	0.01			
Queue Length 95th (m)	0.3	0.0	0.2			
Control Delay (s)	0.9	0.0	10.7			
Lane LOS	A		B			
Approach Delay (s)	0.3		10.7			
Approach LOS			B			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			24.8%	ICU Level of Service		A
Analysis Period (min)			15			

48 Isabella Street
9: Site Access & Macy Dubois Ln

Future Total AM Peak













						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	15	0	15	0
Future Volume (Veh/h)	0	0	15	0	15	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	17	0	17	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			0		34	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		34	0
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	100
cM capacity (veh/h)			1623		969	1085
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	0	17	17			
Volume Left	0	17	17			
Volume Right	0	0	0			
cSH	1700	1623	969			
Volume to Capacity	0.00	0.01	0.02			
Queue Length 95th (m)	0.0	0.3	0.4			
Control Delay (s)	0.0	7.2	8.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	7.2	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			8.0			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

1: Yonge Street & Charles Street W/Charles Street E

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	130	230	100	65	345	0	0	205	35
Future Volume (vph)	0	0	0	130	230	100	65	345	0	0	205	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt						0.850					0.978	
Flt Protected				0.950				0.992				
Satd. Flow (prot)	0	0	0	1770	1863	1583	0	3511	0	0	3461	0
Flt Permitted				0.950				0.851				
Satd. Flow (perm)	0	0	0	1770	1863	1583	0	3012	0	0	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						109					31	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		113.6			150.4			135.5			153.5	
Travel Time (s)		13.6			18.0			12.2			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	250	109	71	375	0	0	223	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	141	250	109	0	446	0	0	261	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2	1	1	2			2	
Detector Template				Left	Thru	Right	Left	Thru			Thru	
Leading Detector (m)				2.0	10.0	2.0	2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6	2.0	2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					

48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Future Total PM Peak



















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8	8	2	2			6	
Switch Phase												
Minimum Initial (s)				13.0	13.0	13.0	18.0	18.0			18.0	
Minimum Split (s)				23.4	23.4	23.4	24.6	24.6			24.6	
Total Split (s)				38.0	38.0	38.0	52.0	52.0			52.0	
Total Split (%)				42.2%	42.2%	42.2%	57.8%	57.8%			57.8%	
Maximum Green (s)				32.6	32.6	32.6	45.4	45.4			45.4	
Yellow Time (s)				3.3	3.3	3.3	3.0	3.0			3.0	
All-Red Time (s)				2.1	2.1	2.1	3.6	3.6			3.6	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.4	5.4	5.4		6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Recall Mode				Min	Min	Min	C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0	0	0	0			0	
Act Effct Green (s)				18.3	18.3	18.3		59.7			59.7	
Actuated g/C Ratio				0.20	0.20	0.20		0.66			0.66	
v/c Ratio				0.39	0.66	0.27		0.22			0.11	
Control Delay				36.9	44.6	14.2		7.0			5.7	
Queue Delay				0.0	0.0	0.0		0.0			0.0	
Total Delay				36.9	44.6	14.2		7.0			5.7	
LOS				D	D	B		A			A	
Approach Delay					35.8			7.0			5.7	
Approach LOS					D			A			A	
Queue Length 50th (m)				25.3	46.2	4.7		14.4			6.7	
Queue Length 95th (m)				m38.9	m66.5	m16.1		27.2			14.4	
Internal Link Dist (m)		89.6			126.4			111.5			129.5	
Turn Bay Length (m)						30.0						
Base Capacity (vph)				641	674	642		1997			2306	
Starvation Cap Reductn				0	0	0		0			0	
Spillback Cap Reductn				0	0	0		0			0	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				0.22	0.37	0.17		0.22			0.11	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 37 (41%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 50												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.66												
Intersection Signal Delay: 18.6	Intersection LOS: B											
Intersection Capacity Utilization 57.6%	ICU Level of Service B											
Analysis Period (min) 15												
m Volume for 95th percentile queue is metered by upstream signal.												

Splits and Phases: 1: Yonge Street & Charles Street W/Charles Street E




















48 Isabella Street
1: Yonge Street & Charles Street W/Charles Street E

Future Total PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	130	230	100	65	345	0	0	205	35
Future Volume (vph)	0	0	0	130	230	100	65	345	0	0	205	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.4	5.4	5.4		6.6			6.6	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frt				1.00	1.00	0.85		1.00			0.98	
Flt Protected				0.95	1.00	1.00		0.99			1.00	
Satd. Flow (prot)				1770	1863	1583		3511			3462	
Flt Permitted				0.95	1.00	1.00		0.85			1.00	
Satd. Flow (perm)				1770	1863	1583		3012			3462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	250	109	71	375	0	0	223	38
RTOR Reduction (vph)	0	0	0	0	0	87	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	141	250	22	0	446	0	0	251	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					
Actuated Green, G (s)				18.3	18.3	18.3		59.7			59.7	
Effective Green, g (s)				18.3	18.3	18.3		59.7			59.7	
Actuated g/C Ratio				0.20	0.20	0.20		0.66			0.66	
Clearance Time (s)				5.4	5.4	5.4		6.6			6.6	
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)				359	378	321		1997			2296	
v/s Ratio Prot					c0.13						0.07	
v/s Ratio Perm				0.08		0.01		c0.15				
v/c Ratio				0.39	0.66	0.07		0.22			0.11	
Uniform Delay, d1				31.0	33.0	29.0		6.0			5.5	
Progression Factor				1.14	1.14	2.28		1.00			1.00	
Incremental Delay, d2				0.6	3.9	0.1		0.3			0.1	
Delay (s)				35.9	41.4	66.2		6.2			5.6	
Level of Service				D	D	E		A			A	
Approach Delay (s)		0.0			45.3			6.2			5.6	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			22.3		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						12.0	
Intersection Capacity Utilization			57.6%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												













48 Isabella Street
2: Church Street & Charles Street E

Future Total PM Peak

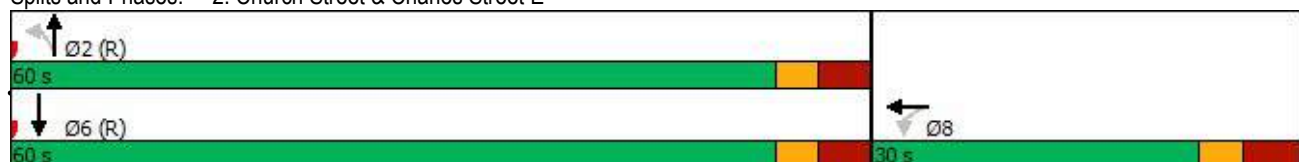
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	85	265	55	85	300	0	0	350	120
Future Volume (vph)	0	0	0	85	265	55	85	300	0	0	350	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Fr _t					0.974						0.962	
Flt Protected				0.950				0.989				
Satd. Flow (prot)	0	0	0	1770	1814	0	0	3500	0	0	3405	0
Flt Permitted				0.950				0.741				
Satd. Flow (perm)	0	0	0	1770	1814	0	0	2623	0	0	3405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11						92	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.0			142.9			126.3			169.7	
Travel Time (s)		4.7			10.3			9.1			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	288	60	92	326	0	0	380	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	92	348	0	0	418	0	0	510	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (m)				2.0	10.0		2.0	10.0			10.0	
Trailing Detector (m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Position(m)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Size(m)				2.0	0.6		2.0	0.6			0.6	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Detector Phase				8	8		2	2			6	
Switch Phase												
Minimum Initial (s)				14.0	14.0		12.0	12.0			12.0	

48 Isabella Street
2: Church Street & Charles Street E

Future Total PM Peak







												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				26.2	26.2		24.7	24.7			24.7	
Total Split (s)				30.0	30.0		60.0	60.0			60.0	
Total Split (%)				33.3%	33.3%		66.7%	66.7%			66.7%	
Maximum Green (s)				22.8	22.8		53.3	53.3			53.3	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				4.2	4.2		3.7	3.7			3.7	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				7.2	7.2			6.7			6.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Min	Min		C-Min	C-Min			C-Min	
Walk Time (s)				7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)				12.0	12.0		9.0	9.0			9.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)				21.9	21.9			54.2			54.2	
Actuated g/C Ratio				0.24	0.24			0.60			0.60	
v/c Ratio				0.21	0.78			0.26			0.24	
Control Delay				26.8	42.5			14.4			7.7	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay				26.8	42.5			14.4			7.7	
LOS				C	D			B			A	
Approach Delay					39.2			14.4			7.7	
Approach LOS					D			B			A	
Queue Length 50th (m)				13.4	57.2			18.1			16.6	
Queue Length 95th (m)				23.8	80.8			42.3			29.6	
Internal Link Dist (m)		41.0			118.9			102.3			145.7	
Turn Bay Length (m)												
Base Capacity (vph)				477	497			1624			2143	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.19	0.70			0.26			0.24	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 42 (47%), Referenced to phase 2:NBTL and 6:SBT, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 19.9						Intersection LOS: B						
Intersection Capacity Utilization 58.7%						ICU Level of Service B						
Analysis Period (min) 15												

Splits and Phases: 2: Church Street & Charles Street E



48 Isabella Street
2: Church Street & Charles Street E
















Future Total PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	85	265	55	85	300	0	0	350	120
Future Volume (vph)	0	0	0	85	265	55	85	300	0	0	350	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.2	7.2			6.7			6.7	
Lane Util. Factor				1.00	1.00			0.95			0.95	
Frt				1.00	0.97			1.00			0.96	
Flt Protected				0.95	1.00			0.99			1.00	
Satd. Flow (prot)				1770	1815			3501			3404	
Flt Permitted				0.95	1.00			0.74			1.00	
Satd. Flow (perm)				1770	1815			2622			3404	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	288	60	92	326	0	0	380	130
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	0	0	92	340	0	0	418	0	0	473	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				21.9	21.9			54.2			54.2	
Effective Green, g (s)				21.9	21.9			54.2			54.2	
Actuated g/C Ratio				0.24	0.24			0.60			0.60	
Clearance Time (s)				7.2	7.2			6.7			6.7	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				430	441			1579			2049	
v/s Ratio Prot					c0.19						0.14	
v/s Ratio Perm				0.05				c0.16				
v/c Ratio				0.21	0.77			0.26			0.23	
Uniform Delay, d1				27.2	31.7			8.5			8.3	
Progression Factor				1.00	1.00			1.48			1.00	
Incremental Delay, d2				0.3	8.1			0.4			0.3	
Delay (s)				27.4	39.8			13.0			8.5	
Level of Service				C	D			B			A	
Approach Delay (s)		0.0			37.2			13.0			8.5	
Approach LOS		A			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			19.1		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						13.9	
Intersection Capacity Utilization			58.7%		ICU Level of Service						B	
Analysis Period (min)			15									

c Critical Lane Group

48 Isabella Street
3: Church Street & Isabella Street/Isabella Street













Future Total PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	295	60	0	0	0	0	295	35	95	340	0
Future Volume (vph)	90	295	60	0	0	0	0	295	35	95	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.980						0.984				
Flt Protected		0.990									0.989	
Satd. Flow (prot)	0	3434	0	0	0	0	0	3483	0	0	3500	0
Flt Permitted		0.990									0.782	
Satd. Flow (perm)	0	3434	0	0	0	0	0	3483	0	0	2768	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20						22				
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		307.2			124.3			141.0			126.3	
Travel Time (s)		36.9			14.9			16.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	321	65	0	0	0	0	321	38	103	370	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	484	0	0	0	0	0	359	0	0	473	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (m)	2.0	10.0						10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6						0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0						0.0		0.0	0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Detector Phase	4	4						2		6	6	
Switch Phase												
Minimum Initial (s)	18.0	18.0						13.0		13.0	13.0	

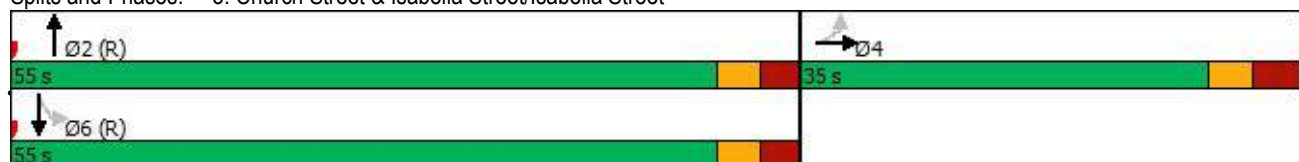
48 Isabella Street

Future Total PM Peak
















3: Church Street & Isabella Street/Isabella Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	29.5	29.5						23.8		23.8	23.8	
Total Split (s)	35.0	35.0						55.0		55.0	55.0	
Total Split (%)	38.9%	38.9%						61.1%		61.1%	61.1%	
Maximum Green (s)	28.5	28.5						49.2		49.2	49.2	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	3.5	3.5						2.8		2.8	2.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		6.5						5.8			5.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	None	None						C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0						7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		19.3						58.4			58.4	
Actuated g/C Ratio		0.21						0.65			0.65	
v/c Ratio		0.65						0.16			0.26	
Control Delay		34.9						6.2			11.8	
Queue Delay		0.0						0.0			0.0	
Total Delay		34.9						6.2			11.8	
LOS		C						A			B	
Approach Delay		34.9						6.2			11.8	
Approach LOS		C						A			B	
Queue Length 50th (m)		40.1						10.6			26.4	
Queue Length 95th (m)		56.3						18.9			41.4	
Internal Link Dist (m)		283.2			100.3			117.0			102.3	
Turn Bay Length (m)												
Base Capacity (vph)		1101						2269			1797	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.44						0.16			0.26	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.65												
Intersection Signal Delay: 18.8						Intersection LOS: B						
Intersection Capacity Utilization 53.1%						ICU Level of Service A						
Analysis Period (min) 15												

Splits and Phases: 3: Church Street & Isabella Street/Isabella Street











3: Church Street & Isabella Street/Isabella Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	295	60	0	0	0	0	295	35	95	340	0
Future Volume (vph)	90	295	60	0	0	0	0	295	35	95	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						5.8			5.8	
Lane Util. Factor		0.95						0.95			0.95	
Frt		0.98						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3433						3483			3501	
Flt Permitted		0.99						1.00			0.78	
Satd. Flow (perm)		3433						3483			2767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	321	65	0	0	0	0	321	38	103	370	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	468	0	0	0	0	0	351	0	0	473	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		19.3						58.4			58.4	
Effective Green, g (s)		19.3						58.4			58.4	
Actuated g/C Ratio		0.21						0.65			0.65	
Clearance Time (s)		6.5						5.8			5.8	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		736						2260			1795	
v/s Ratio Prot								0.10				
v/s Ratio Perm		0.14									c0.17	
v/c Ratio		0.64						0.16			0.26	
Uniform Delay, d1		32.2						6.2			6.7	
Progression Factor		0.99						1.00			1.63	
Incremental Delay, d2		1.8						0.1			0.4	
Delay (s)		33.7						6.3			11.3	
Level of Service		C						A			B	
Approach Delay (s)		33.7			0.0			6.3			11.3	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay		18.2									B	
HCM 2000 Volume to Capacity ratio		0.36										
Actuated Cycle Length (s)		90.0								12.3		
Intersection Capacity Utilization		53.1%								A		
Analysis Period (min)		15										

c Critical Lane Group









48 Isabella Street
4: Yonge Street & Isabella Street









Future Total PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	375	395	150	335
Future Volume (Veh/h)	0	0	375	395	150	335
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	408	429	163	364
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						136
pX, platoon unblocked						
vC, conflicting volume	1130	418			837	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1130	418			837	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			79	
cM capacity (veh/h)	157	583			793	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	272	565	284	243		
Volume Left	0	0	163	0		
Volume Right	0	429	0	0		
cSH	1700	1700	793	1700		
Volume to Capacity	0.16	0.33	0.21	0.14		
Queue Length 95th (m)	0.0	0.0	6.2	0.0		
Control Delay (s)	0.0	0.0	7.2	0.0		
Lane LOS						
Approach Delay (s)	0.0		3.9			
Approach LOS						
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			43.3%	ICU Level of Service		A
Analysis Period (min)			15			

48 Isabella Street
6: Macy Dubois Ln & Charles Street E










Future Total PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	25	435	30	0
Future Volume (Veh/h)	0	0	25	435	30	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	473	33	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	150			156		
pX, platoon unblocked						
vC, conflicting volume			0		290	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		290	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		95	100
cM capacity (veh/h)			1622		665	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	185	315	33			
Volume Left	27	0	33			
Volume Right	0	0	0			
cSH	1622	1700	665			
Volume to Capacity	0.02	0.19	0.05			
Queue Length 95th (m)	0.4	0.0	1.3			
Control Delay (s)	1.2	0.0	10.7			
Lane LOS	A		B			
Approach Delay (s)	0.4		10.7			
Approach LOS			B			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			22.8%	ICU Level of Service		A
Analysis Period (min)			15			

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	25	445	20	0
Future Volume (Veh/h)	0	0	25	445	20	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	484	22	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	241			65		
pX, platoon unblocked						
vC, conflicting volume			0		296	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		296	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		97	100
cM capacity (veh/h)			1622		660	1084
Direction, Lane #	WB 1	WB 2	NB 1			
Volume Total	188	323	22			
Volume Left	27	0	22			
Volume Right	0	0	0			
cSH	1622	1700	660			
Volume to Capacity	0.02	0.19	0.03			
Queue Length 95th (m)	0.4	0.0	0.8			
Control Delay (s)	1.2	0.0	10.6			
Lane LOS	A		B			
Approach Delay (s)	0.4		10.6			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			23.0%	ICU Level of Service		A
Analysis Period (min)			15			

48 Isabella Street
9: Site Access & Macy Dubois Ln

Future Total PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	15	0	15	0
Future Volume (Veh/h)	0	0	15	0	15	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.90	0.90	0.95	0.90	0.90
Hourly flow rate (vph)	0	0	17	0	17	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			0		34	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		34	0
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	100
cM capacity (veh/h)			1623		969	1085
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	0	17	17			
Volume Left	0	17	17			
Volume Right	0	0	0			
cSH	1700	1623	969			
Volume to Capacity	0.00	0.01	0.02			
Queue Length 95th (m)	0.0	0.3	0.4			
Control Delay (s)	0.0	7.2	8.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	7.2	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			8.0			
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)			15			