15 & 17 Elm Street
Proposed Mixed-Use Development
Urban Transportation Considerations

City of Toronto

Zoning By-law Amendment & Site Plan Approval Applications

Prepared For: Fora Developments

August 25, 2022

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1.0 INTRODUCTION

BA Group is retained by Fora Developments to provide urban transportation consulting services in relation to a Zoning By-law Amendment application being made to the City of Toronto for a proposed mixed-use development located at 15 & 17 Elm Street in the City of Toronto (herein referred to as the "Site").

The Site is located in the downtown Toronto area, west of the intersection of Yonge Street and Elm Street and approximately 220m from TTC Dundas Station. The existing Site currently is occupied by one and two storey non-residential buildings. Harry Barberian Lane runs along the east and south sides of the Site. The Site location is illustrated in **Figure 1**.

1.1 THE SITE TODAY

The Site is comprised of two commercial buildings (15 and 17 Elm Street). A public laneway, Harry Barberian Lane is located directly east of 15 Elm Street and turns to the west just south of the Site and runs along the south side of the Site intersecting again with Elm Street west of 45 Elm Street.

The Site is excellently located for intensification from a transportation perspective given the high degree of pedestrian, transit and cycling accessibility provided to the Site today and in the future. The Site is ideally located relative to TTC Line 1 Yonge-University-Spadina subway and TTC streetcar lines on Dundas Street and College Street. Cycling facilities are located on nearby streets provide good east-west and north-south connections and the Site is connected to a robust pedestrian network within the downtown Toronto area.

1.2 PROJECT OVERVIEW

1.2.1 Development Statistics

The development proposed for the Site includes a mixed-use building comprising 174 residential units, approximately 212 m^2 of retail gross floor area (GFA).

A summary of the site statistics is provided in **Table 1.** Reduced scale architectural plans are provided for reference in **Appendix A.**

TABLE 1 SUMMARY OF PROJECT STATISTICS

Use		Proposed
	Residential Units	Studio – 5 units 1 bedroom – 95 units 2 bedroom – 51 units 3 bedroom – 23 units **174 units**
	Retail	212 m^2
	Vehicular Parking	22 parking spaces
	Bicycle Parking	192 bicycle parking spaces (158 long-term, 34 short-term)
	Loading	1 Type 'G'

Notes:
1. Based on site statistics provided by Partisans dated August 18th, 2022.

A Site concept plan is illustrated on **Figure 2**.

1.2.2 Site Access and Circulation

Vehicle and Loading Access

Vehicle access to the Site is proposed to be provided via Harry Barberian Lane. The Type 'G' loading space and loading facilities are accessed on the east side of the Site. The parking garage is accessed via two (2) vehicle elevator cabins located on the south side of the building.

Pedestrian Access

Pedestrian access to both the residential lobby and retail space is via Elm Street.

Bicycle Access

Long-term bicycle parking is located at grade in a secure room south of the loading space and on Level 2 of the building. Bicycle facilities at grade are accessed via Harry Barberian Lane. Bicycle parking on Level 2 can be accessed via the elevators. Short-term bicycle parking is located along Elm Street and is publically accessible.

1.2.3 Laneway Widening

As part of the proposed development, Harry Barberian Lane would be widened to 6.0 metres to allow for two-way vehicle travel. A 3.0 metre widening is provided for the north-south portion of the laneway and a 0.56 metre widening is provide for the east-west portion of the laneway.

It is proposed to widen the laneway through a stratified agreement with the City whereby the laneway would be widened to 6.0m at grade and the parking garage would extend to under the laneway below grade.

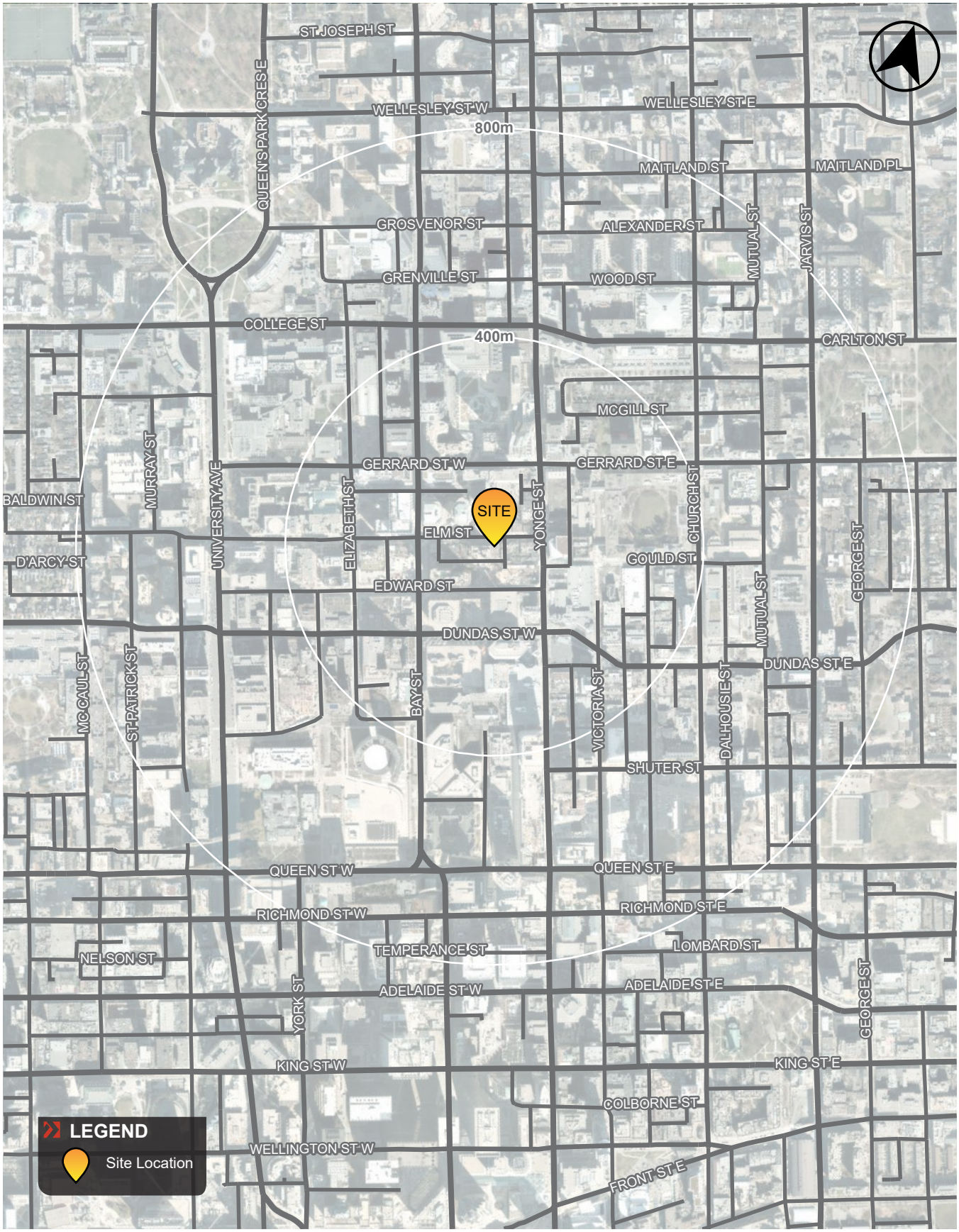

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FIGURE 1 SITE LOCATION

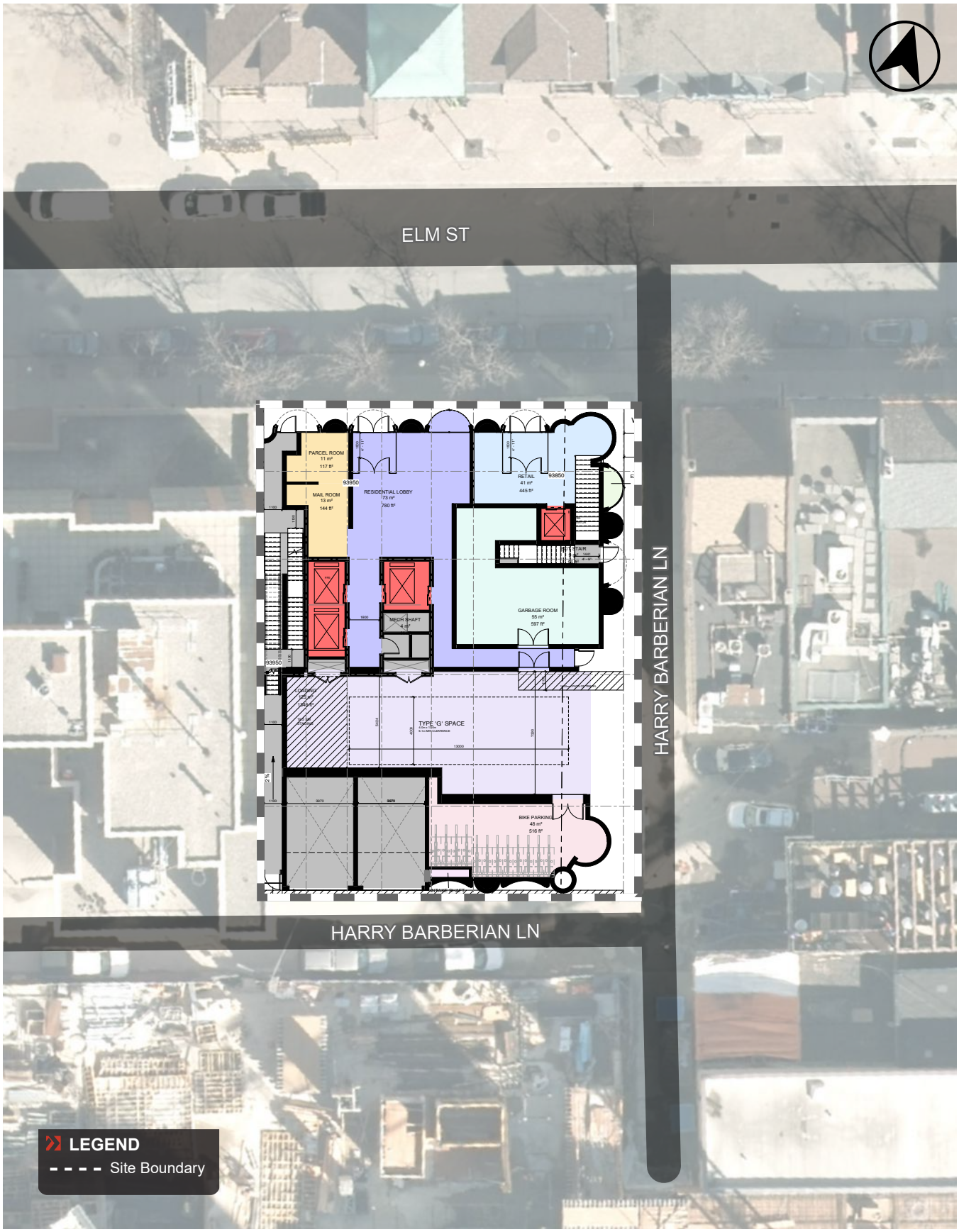

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FIGURE 2 SITE CONTEXT

2.0 STUDY APPROACH

The focus of this transportation study is to develop a transportation program for the Site to support non-automobile travel modes for prospective residents, and visitors to the Site.

The transportation program is developed through the adoption of multiple mobility strategies to support the anticipated pedestrian, bicycle, and transit travel while integrating the appropriate vehicular related facilities that support the service / loading vehicles requiring access to the Site's buildings.

Multi-modal travel demand, forecasts have been developed based upon local proxy data, demand levels, and prevailing travel characteristics. These forecasts also incorporate a review of trip origin / destination information and modal choice characteristics of people traveling to and from similar land uses in the area.

These forecasts consider the urban, mixed-use nature of the proposed development and the Site location relative to a range of excellent existing non-automobile travel options and a wide range of land uses / attractions.

Operational assessments have been undertaken for vehicle, pedestrian, bicycle, and transit travel assessing the way. The current transportation systems operate across typical weekday morning and afternoon peak hour periods. This includes commentary on any pressure points, strengths, or weaknesses, and / or levels of congestion on the transportation network that supports the area. Analysis of future conditions has been undertaken to assess the way in which Site travel demands would be absorbed and accommodated onto the area transportation system during the busiest periods of operation.

2.1 THIS STUDY

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

Transportation Context

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

Development Plan and Mobility Strategies

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

Travel Demand Forecasting

- An outline of multi-modal travel characteristics and travel demand projections for the component uses recognizing the urban context of the Site, its proximity to an array of employment, residential, recreational, retail, amenity, entertainment, and institutional facilities, the surrounding area population and the Site's location relative to higher-order transit services.

Multi-Modal Travel Assessment

- A review of prevailing area pedestrian, cycling, and transit context and activity;
- A review of existing and future Site-related transit ridership projections to assess Site-related impacts on the area transit network; and
- A review of area active transportation facilities and a preliminary assessment of projected Site-related walking and cycling trips.

Traffic Operations Review

- A review of area traffic activity levels today and in the future considering other area development activity that may influence traffic demands in the Site vicinity; and
- A review of Site-related traffic forecasts considering each of the proposed land uses, travel demand variations, automobile usage characteristics, and routing options available across the area road network.

Site Planning Elements

- A review of parking requirements and provisions,
- A review of bicycle parking requirements and provisions, and
- A review of loading requirements and provisions, including a functional review of the design of the proposed loading facilities.

3.0 PLANNING & POLICY CONTEXT

The following section outlines the Site's municipal policy framework; the scope of the policy review is limited to the transportation-related implications. The examined policy highlights the importance of mitigating vehicular traffic and its effects through the promotion and facilitation of non-auto based trips, the improvement of public transit access, and the reduction of the transportation-related carbon footprint.

3.1 PROVINCIAL POLICY STATEMENT

On a general basis, the Provincial Policy Statement (2020) encourages the provision of transportation demand management strategies within new developments to increase the efficiency of existing and planned transportation infrastructure. It also encourages transit-oriented development and higher density that adopts a mix of uses to promote non-auto based travel. This suggests limiting the number of vehicular site trips, partially through reduced parking.

3.2 CONNECTING THE GGH: A TRANSPORTATION PLAN FOR THE GREATER GOLDEN HORSESHOE

As the Greater Golden Horseshoe ("GGH") continues to expand, the region will require improvements to its transportation systems in order to accommodate increased demand. The *GGH Transportation Plan* (the "Plan") aims to address the impact of predicted growth through a well-connected transportation system that provides safe, efficient and convenient options for users. The 2051 vision of the Plan includes focuses on fighting gridlock and improving road performance, getting people moving on a connected transit system, supporting a more sustainable and resilient region, and efficiently moving goods.

Within the Plan, an improved transit network is a key focus. In order to achieve a more sustainable and resilient region, it is necessary to motivate people to use the transit system. Improving transit connectivity is key to ensuring this. Currently, the majority of the GGH's transit network connections are centered on Union Station and downtown Toronto. Expanding service across the region would allow for greater inter-regional travel and connections to destinations that might have previously been difficult to reach by transit alone. As such, the Plan aims to bring in more routes, more frequent services and more connections to enhance the network. In addition to expanding bus service, rapid transit networks across the region are also planned or underway.

The site is well-situated relative to planned expansions of the transit network. In addition to various new bus routes, the site is located within 30 minutes from the nearest Eglinton Crosstown West Extension. Users of the site will be able to access Pearson International Airport, the Ontario Line, the Yonge North Subway Extension and the three-stop Scarborough Subway Extension through direction connections by higher-order transit.

3.3 TORONTO OFFICIAL PLAN

The **Toronto Official Plan** (**OP**) implements Provincial directions identified in the previous section and outlines City Council's goals and visions. The OP is intended to ensure that the City evolves, improves and realizes its full potential in areas such as transit, land use development and the environment. Future growth will be steered by the OP to areas, which are well served by transit and the existing road network.

The site is located in the Downtown area, where minimum employment and residential densities are set. In order to support such development, the OP priority is given to improving transit connections and the pedestrian environment while discouraging automobile commuting / travel.

An amendment to the OP was adopted in mid-2018 to implement a **Downtown Plan** (discussed below) that will act as a planning framework for development within Toronto's Downtown area.

3.4 TORONTO DOWNTOWN PLAN (TOCORE)

In 2014, **TOcore** was established to plan for the future of the City's downtown area, bound by Lake Ontario to the south, Bathurst Street to the west, the mid-town rail corridor and Rosedale Valley Road to the north and the Don River to the east. A comprehensive update through a Proposals Report was presented and adopted by Council in 2016 to initiate a Downtown Plan for the next 25 years.

The **Downtown Plan** recognizes that Downtown residents do not rely solely on automobiles to get around, and often travel by foot, bike or transit. It also recognizes that mobility networks support economic growth and job creation by facilitating the movement of people and goods, and with finite space within the existing rights-of-way, the design of roads needs to improve mobility and accessibility for all users.

One of the goals of the **Downtown Plan** is to provide a well-connected and integrated transit network, as well as infrastructure to support walking and cycling. The **Downtown Plan** policies prioritize accommodating high-quality, accessible and safe networks for pedestrian, cycling and surface transit within the street network. In 2019, the OP was then amended to adopt **Official Plan Amendment 406 (OPA 406)**, which provides a number of modifications to the original Downtown Plan. Such policy modifications were made to address the provision of community benefits, rapid transit infrastructure as a first priority (particularly in major transit station areas), complete communities, and high density development in close proximity to transit stations, to name a few.

3.5 TORONTO CONGESTION MANAGEMENT PLAN (MOVETO) AND VISION ZERO ROAD SAFETY PLAN

The City launched the **Congestion Movement Plan** in 2020 to help manage and address congestion, as well as generally build a safer transportation system. The Plan focuses on a number of measures to help the City achieve a new level of resilience in terms of transportation, including actions related to smart traffic systems and transit-priority signals. It is noteworthy that the Plan also included the implementation of a Transportation Demand Management Strategy, which seeks to directly reduce and manage traffic and congestion (e.g. encourage people to make specific transportation choices that serve the overall system). Policies have been developed to improve environmental and equity benefits in conjunction with other municipal plans, such as the **Vision Zero Road Safety Plan**, which aims to improve safety and reduce traffic-related fatalities and conflicts for vulnerable users (e.g. most non-auto users) in the City streets. Currently, an interim action plan (2021-2025) for MoveTO is in place with short-term actions in response to the recovery period of the pandemic.

4.0 EVOLVING AREA TRANSPORTATION CONTEXT

4.1 AREA STREET NETWORK

The surrounding public street network of arterials, collectors, and local roads is outlined in **Table 2**. The area street network is illustrated in **Figure 4** and existing lane configurations and traffic control are illustrated in **Figure 5**.

TABLE 2 AREA ROAD NETWORK

Street Name	Street Cross Section	Parking Regulations	Posted Speeds	Description
MAJOR ARTERIAL				
Yonge Street	4 lanes cross-section (2 lanes in each direction)	No Parking No stopping weekdays 7:30am-9:30am (W) 3:30pm-6:30pm (E)	40 km/hr	Yonge Street is a major north–south street in Downtown Toronto. Beginning at Queens Quay West in the south, the street heads north and continues across the entire city of Toronto and into York Region.
Bay Street	4-lane cross-section (2 lanes in each direction) plus Curbside bicycle lanes	No Stopping	40 km/hr	Bay Street is a major north-south street in the City of Toronto. Beginning at Queens Quay West in the south and continuing to Davenport Road in the north.
COLLECTOR				
Elm Street	2 lanes	Paid parking permitted on north and south sides	30 km/hr	Elm Street is an east-west street beginning at McCaul Street in the west and terminating at Yonge Street in the east.
LOCAL				
Gould Street	2 lanes	No Stopping	30 km/hr	The section of Gould Street in vicinity of the Site is classified as a local road. Gould Street runs east-west, Yonge Street to Mutual Street however the section between Okeefe Lane and Bond Street is classified as a walkway and does not allow vehicle through travel
LANEWAY				
Harry Barberian Lane	1 lane			Harry Barberian Lane is a public laneway that travels primarily east-west. The laneway runs parallel to Elm Street and connects to Elm Street west of 45 Elm Street and east of 15 Elm Street.

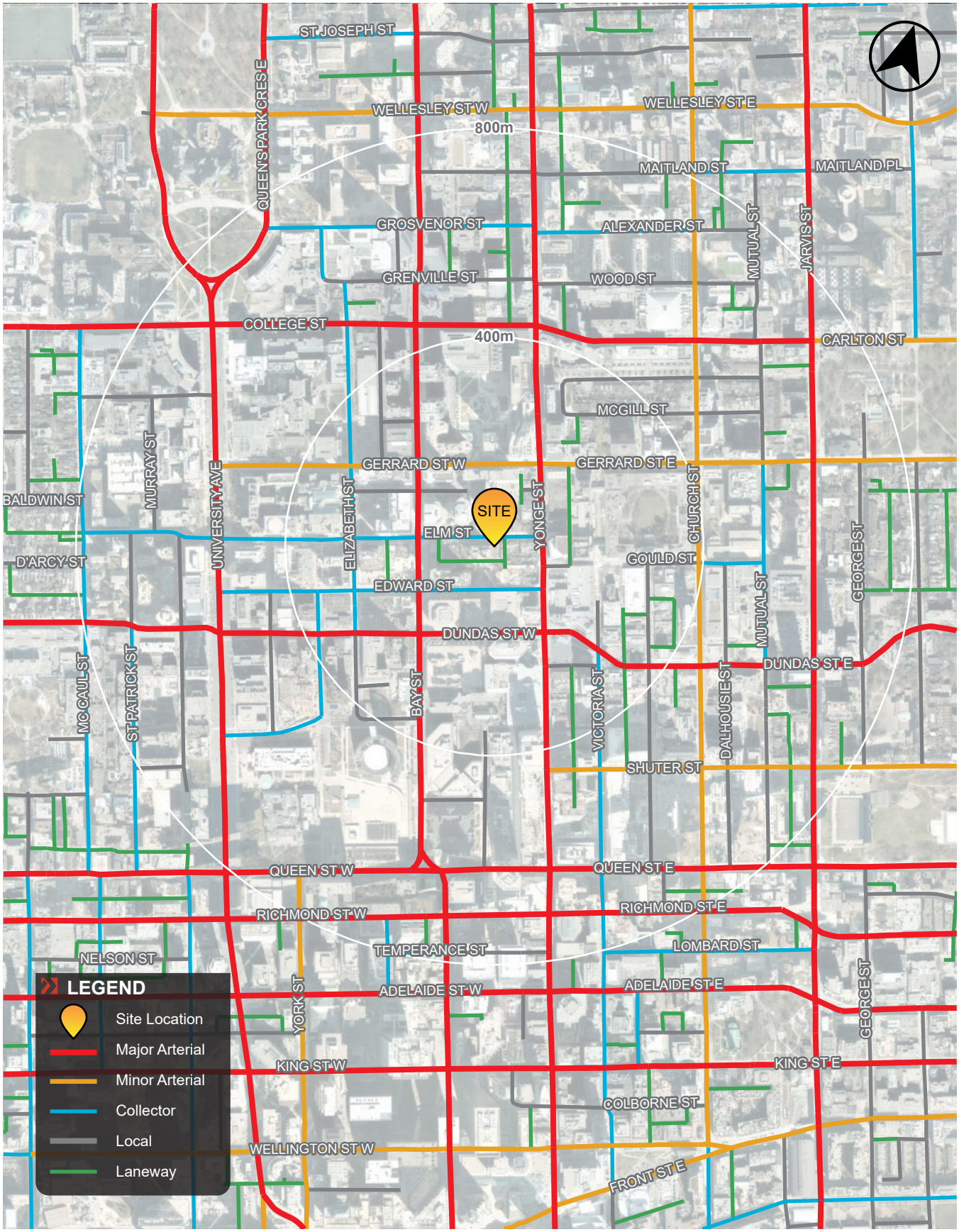

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FIGURE 3 EXISTING ROAD NETWORK

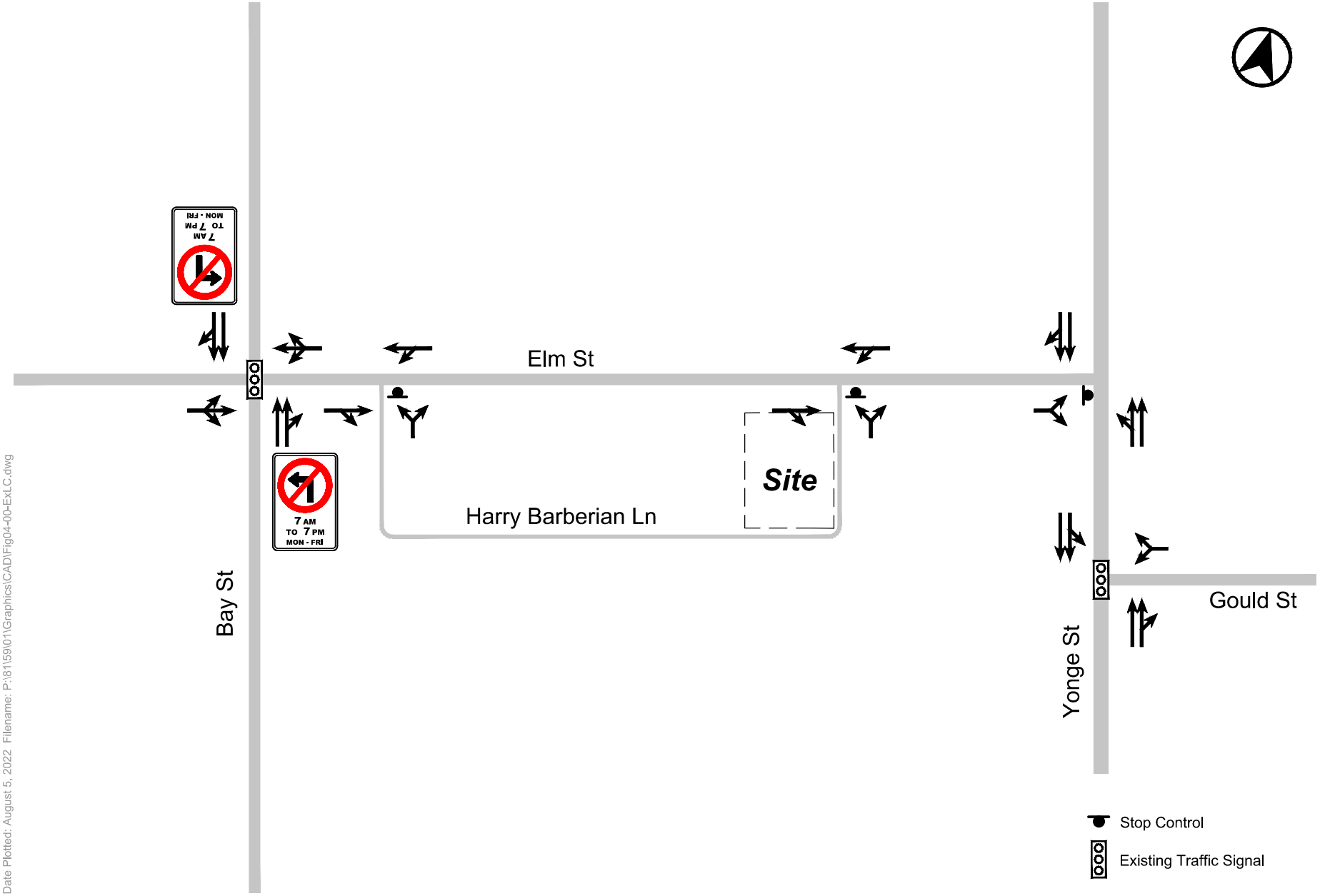

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FIGURE 4 EXISTING AREA TRAFFIC CONTROL & LANE CONFIGURATIONS

4.2 AREA TRANSIT NETWORK

4.2.1 Existing Transit Services

The site is in an ideal location with excellent transit access, notably with its proximity to the TTC Dundas Station on Line 1, which connects to the overall TTC network and other communities within the Greater Toronto Area. There is also access to streetcar services along Dundas Street West (and College Street), which offer east-west connections through the city. The transit connections are well serviced by pedestrian infrastructure.

The existing area transit services and walking distances to each service are found in **Table 3** and illustrated in **Figure 5**.

TABLE 3 AREA TRANSIT SERVICES

Routes	Headways	Closest Stop	Route Description
Subway (Line 1)			
Line 1 – Yonge - University	Trains every 2 – 5 minutes	Dundas Station (<300 metres)	Line 1 Yonge–University is a rapid transit line on the Toronto subway. It serves Toronto and the neighbouring city of Vaughan.
Streetcar (TTC)			
501 - Queen	Every 10 minutes during peak periods	Queen Street West / Bay Street (~800 metres)	The 501 Queen streetcar route operates generally east-west between Neville Park Loop and Long Branch Loop. It also connects to the Line 1 subway.
505 - Dundas	Every 10 minutes during peak periods	Dundas Street West / University Avenue (<300 metres)	The 505 Dundas streetcar route operates generally east-west between Broadview Station and Dundas West Station on the Line 2 subway. It also connects to Line 1.
506 – Carlton	Every 10 minutes during peak periods	Elm Street / Bay Street (<150 metres)	The 506 Carlton streetcar route operates generally east-west between Main Street Station and High Park. It connects to Line 1 and Line 2.
Bus (TTC)			
19 – Bay Street	Every 15 minutes	Elm Street at Bay Street (<150 metres)	The 19 Bay bus route operates generally north-south between Davenport road at Dupont and Queen's Quay. It connects to Line 1 at Union Station and Line 2 at Bay Station
97 – Yonge Street	Every 30 minutes during peak periods	Elm Street at Yonge Street (<150 metres)	The 97 Yonge bus route operates generally north-south. Routes 97B and 97C stop at Elm Street at Yonge Street. Route 97B operates between Steeles Avenue West and Queens Quay during peak periods Monday to Friday only. Route 97C operates weekdays only.

4.2.2 Future Transit Services

In addition to existing transit lines in the vicinity of the Site, recent and planned future changes to the transit network will improve transit access and service levels for those travelling to or from the Site.

In 2019, the Province of Ontario announced that the Ontario Line, would be one of four transit priority projects for the Greater Toronto and Hamilton Area. The Ontario Line is a 15.6 kilometre stand-along rapid transit line that will connect the Ontario Science Centre to Exhibition/ Ontario Place.
The Site is located approximately 750 metres (10 minute walking distance) from the planned Queen / Yonge Station and will benefit from having access to another higher order transit line under future conditions.

4.3 PEDESTRIAN CONTEXT

The site is located on Elm Street between Bay Street and Yonge Street, which is well situated within downtown Toronto and provides abundant pedestrian connections to all surrounding areas. The location provides a strong pedestrian-oriented environment that encourages the use of non-automobile modes for daily travel (e.g. cycling, transit, and on-foot). The site is served by a combination of road types – primarily along Elm Street, Bay Street and Yonge Street – where pedestrian sidewalks and crosswalks are provided on both sides within the area and major intersections are signalized for enhanced safety.

The sidewalks and pedestrian pathways are provided within the area to serve as primary pedestrian connections across major destinations in the downtown, including but not limited to: the Financial District, Nathan Philips Square and City Hall, Yonge- Dundas Square, St. Michael's Hospital, Eaton Centre shopping mall, Massey Hall, and University of Toronto and Ryerson University. Overall, area streets provide for an effective pedestrian network that connects to various commercial, institutional, and residential uses.

The site is also located in proximity (e.g. within 200 metres) to the north end of the PATH network located at the existing Toronto Coach Terminal. The Network provides a weather-protected (largely underground) series of pedestrian connections across the Downtown area and directly serves the vast majority of the major buildings and employment centres in the central area of Toronto. Such destinations include: major office tower complexes north and south of the CN / CP Union Station rail corridor, Scotiabank Arena, Dundas Square, Eaton Centre, City Hall, Roy Thomson Hall, Four Seasons Centre, Rogers Centre and Metro Toronto Convention Centre. The PATH system also connects to the key transportation hubs that support the Downtown area of Toronto such as Union Station, the Toronto Bus Terminal and each of the six key Downtown subway stations (e.g. Dundas, Queen, King, Union, St. Andrew and Osgoode). The network contains a vast range of convenience and retail shopping outlets as well as numerous restaurant and other food court facilities.

The proximity of the site to a range of amenities and destinations within walking distance will serve to reduce the need for residents of the building to use or own a car for the travel on a regular basis.

The pedestrian environment is illustrated on **Figure 6**.

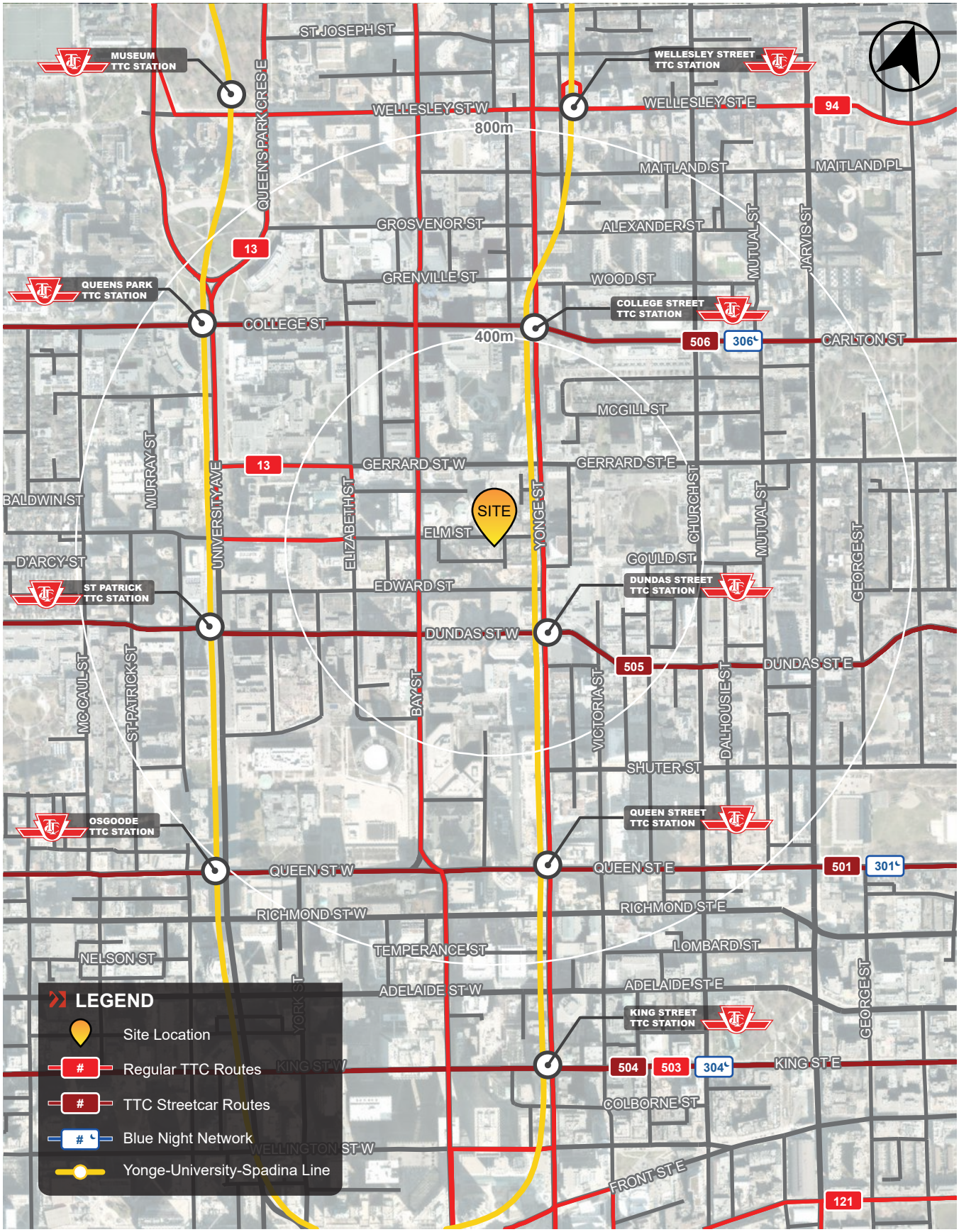

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FIGURE 5 EXISTING TRANSIT NETWORK

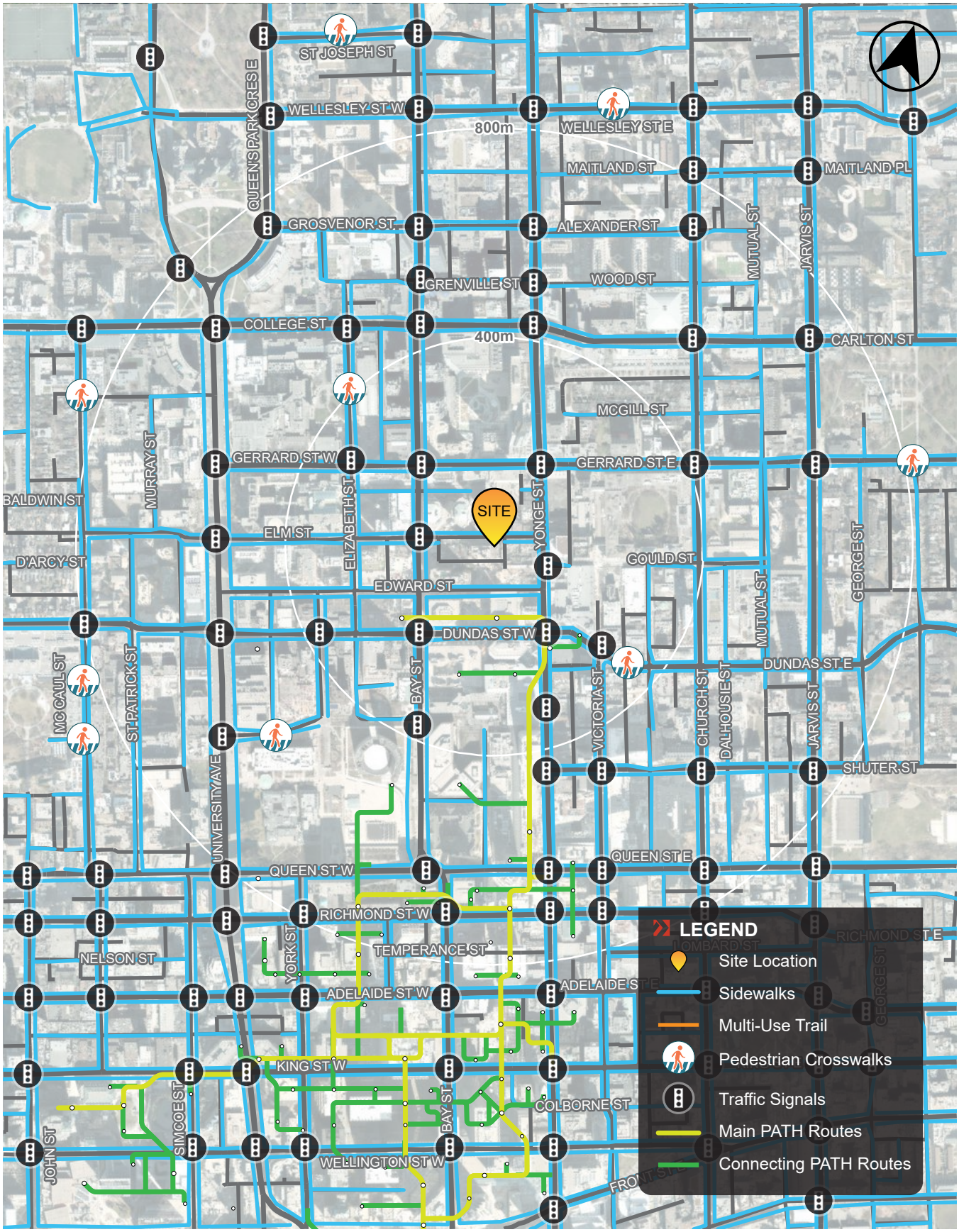

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FIGURE 6 PEDESTRIAN CONTEXT

4.4 CYCLING FACILITIES

4.4.1 Existing Cycling Network

The site is well-situated near a number of bicycle friendly routes and dedicated bike lanes. The existing cycling network is summarized in **Table 4** and illustrated on **Figure 7**.

TABLE 4 SUMMARY OF EXISTING CYCLING NETWORK

Route	Type of Cycling Infrastructure	Description	Image
North – South Bicycle Connections			
University Avenue	Cycle Tracks	This cycle track runs along University Avenue between Adelaide Street West and Queen's Park.	 University Avenue at Elm Street looking south
East – West Bicycle Connections			
Richmond Street West	Cycle Tracks	This cycle track runs along Richmond Street West between Bathurst Street and Parliament Street.	 Richmond Street at Bay Street looking west
Adelaide Street West	Cycle Tracks	This cycle track runs along Richmond Street West between Bathurst Street and Parliament Street.	 Adelaide Street at Bay Street looking east

Route	Type of Cycling Infrastructure	Description	Image
College Street	Bike Lanes	These bike lanes runs along College Street from Manning Avenue Bay Street.	 Bay Street at College Street looking west
Gerrard Street	Cycle Tracks / Bike Lanes	Cycle tracks run along Gerrard Street between Yonge Street and Berkley Street. Bike lanes continue from Yonge Street to Elizabeth Street.	 Gerrard Street at Yonge Street looking west

Notes:
1. Cycle tracks are separate lanes for bicycles that are adjacent to the roadway, but separated from vehicular traffic. Cycle tracks help distinguish the area for cycling from motor vehicle traffic (more than a painted bicycle lane). The tracks create an environment which is safer for cycling.
2. Designated bicycle lanes are a dedicated part of the roadway for the exclusive use of people cycling. Other road users may not lawfully drive, stand, stop or park in a designated bicycle lane.

Additional bicycle facilities are also available nearby in local streets and within convenient riding distance.

4.4.2 Future Cycling Network Improvements

The City of Toronto's near team cycling network plan includes improvements to the cycling infrastructure that would directly improve bicycle access to the Site area. Improvements include cycling infrastructure along Yonge Street between Carlton Street and Richmond Street with studies to extend to Davenport Road in the north and Front Street in the south.

The existing and future area cycling facilities are illustrated in **Figure 7**.

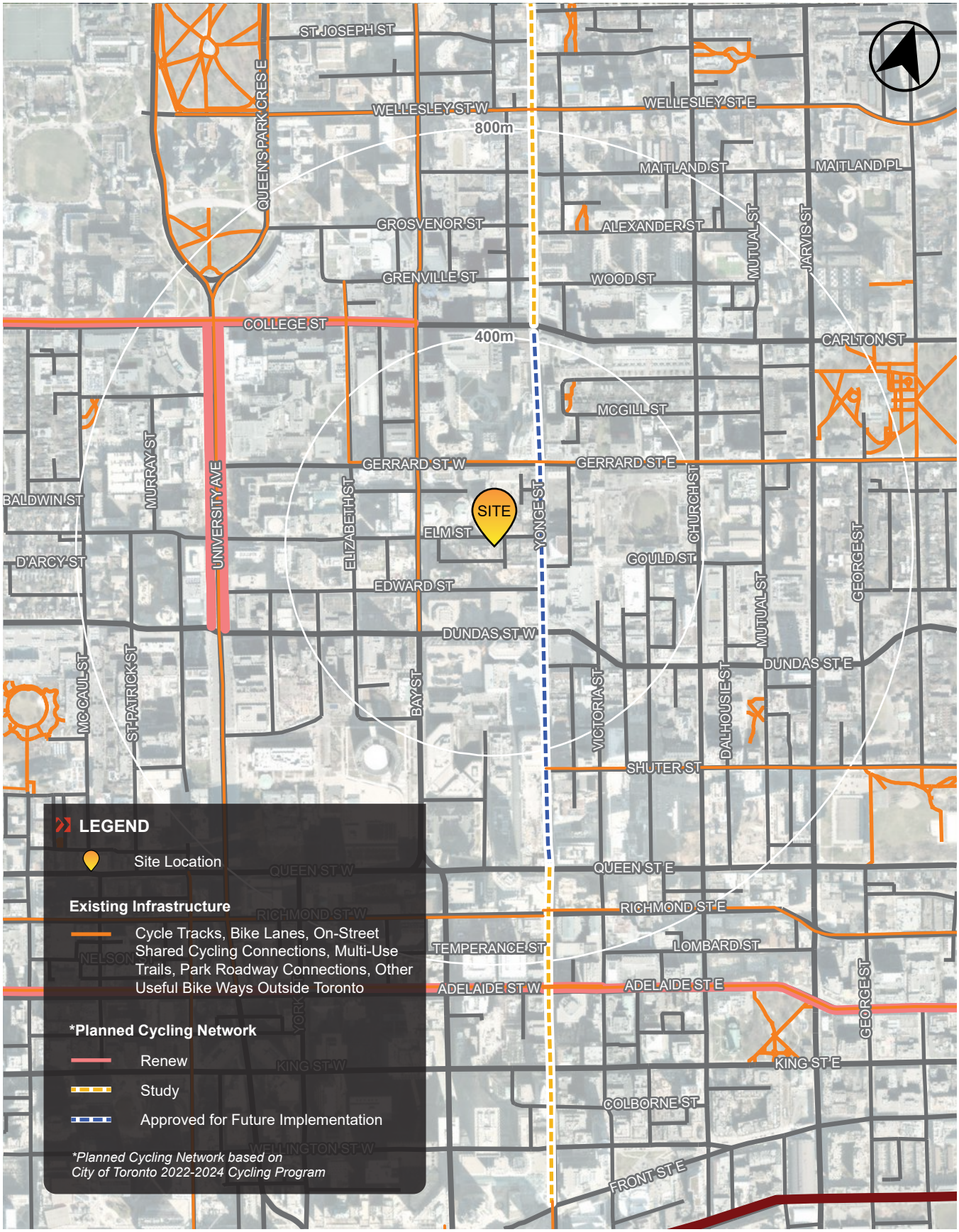

FIGURE 7 EXISTING AND PLANNED CYCLING CONTEXT

4.5 SHARED MOBILITY SERVICES

4.5.1 Car Share

The success and influence of car-share programs provide convenient, non-private automobile travel opportunities for thousands of residents, employees, and visitors of the City of Toronto. Vehicles are available "on demand" without the need for car ownership. The availability of car-share vehicles near developments strongly support reduced car ownership, particularly by building residents, which lowers parking demand and day-to-day commuting activity.

Car sharing has been recognized in the City of Toronto's Official Plan as a means of reducing automobile dependence. The provision of secured car share spaces in private lots may result in an appropriate reduction in residential parking requirements.

There are two primary car sharing companies operating in Toronto – ZipCar and Enterprise CarShare – that offer their members access to vehicles conveniently located around the City. In addition, 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 terminates in another location. Users park the vehicles on the street near their final destination and the vehicles do not have a designated space where they need to be returned to at the end of the trip. Toronto City Council made the program permanent in Summer 2020 with one primary car-sharing platform, CommunAuto, participating.

Within approximately 400 metres of the Site, there are three car-share locations. This provides an alternative travel resource, which residents, employees and visitors of the site can rely on when traveling to and from the site.

The existing car share station locations within the immediate site area are illustrated in **Figure 8**.

4.5.2 Bike-Share Facilities

The Bike Share Toronto program provides flexible cycling options within the City that can be used on a short-term basis and can be picked up and dropped off at stations across the City. There are currently 16 bike share locations within a 400-metre radius of the site, holding approximately 275 docks.

The existing bike share station locations within the immediate site area are illustrated in **Figure 8**.

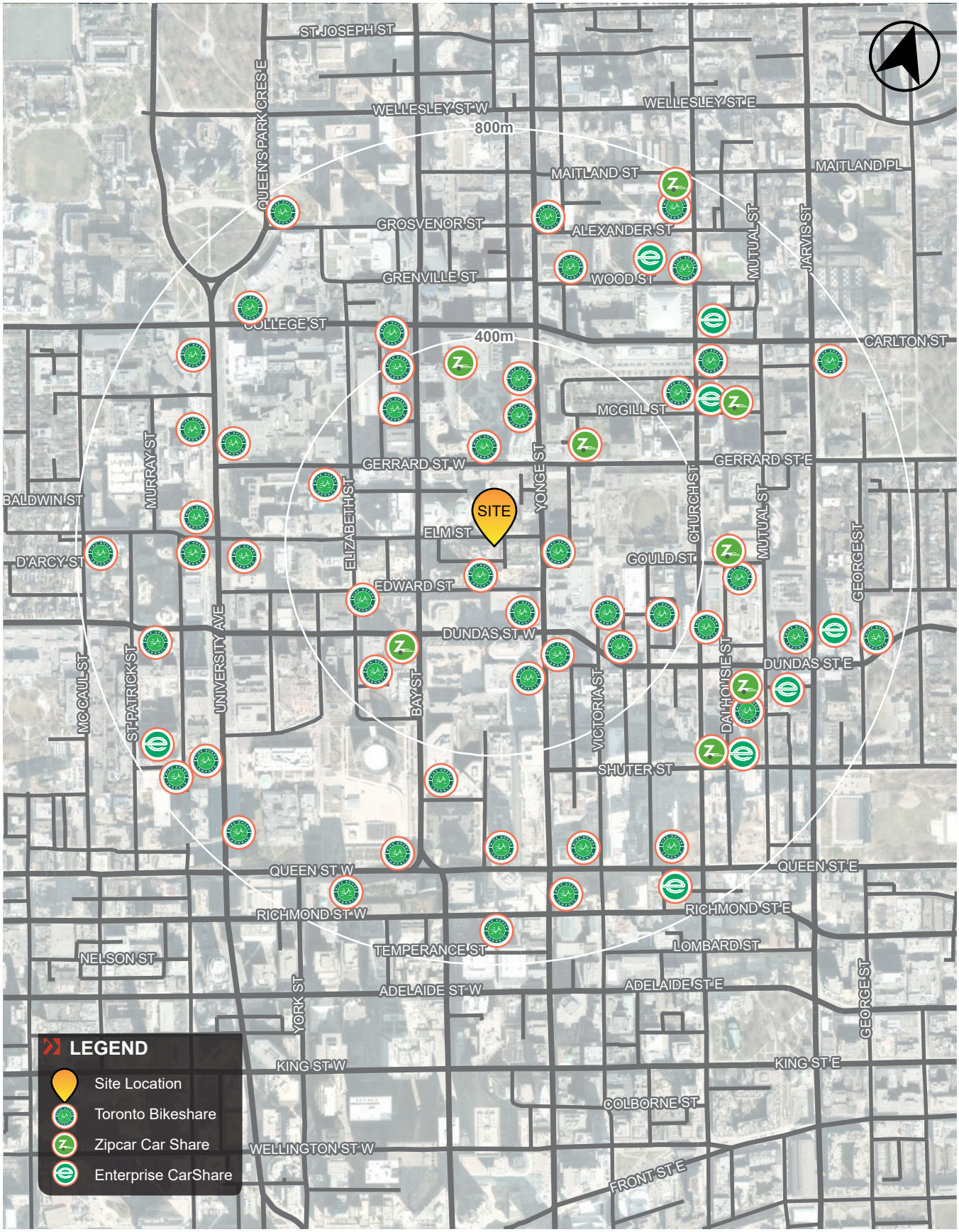

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FIGURE 8 EXISTING SHARED MOBILITY SERVICES

4.6 EXISTING AREA TRAVEL CHARACTERISTICS

A review of travel characteristics provided by the 2016 Transportation Tomorrow Survey ("TTS") for residents living in the area confirm that a high proportion of travel is undertaken largely by public transit.

The 2016 TTS data has been reviewed for the general site area. Mode share characteristics for resident (home-based) travel during the weekday morning and afternoon peak periods are summarized in **Table 5**.

TABLE 5 EXISTING RESIDENTIAL TRAVEL MODAL SPLIT IN THE STUDY AREA

Mode Choice	Weekday Morning Split	Weekday Afternoon Split
Transit	22%	19%
Auto driver	17%	16%
Auto passenger[2]	2%	3%
Cycle	4%	4%
Walk	56%	58%
Total	**100%**	**100%**

Notes:
1. Peak travel times assumed for resident related trips: 6:00 a.m. to 9:00 a.m., 3:00 p.m. to 6:00 p.m. Peak direction was used for both the AM and PM peak periods.
2. Includes auto passengers, taxi passengers, paid rideshare, and school bus passengers.
3. Based on trips to/from households in TTS zones 37, 38, 50-53 .

A review of this information confirms that a majority of travel by residents in the site vicinity during the weekday morning (81%) and afternoon (82%) peak periods is undertaken using non-auto means.

The area travel demand characteristics, and the substantial reliance on non-automobile based modes of travel, serves to reduce the traffic-related impact and parking supply needs of buildings in the study area.

5.0 TRANSPORTATION DEMAND MANAGEMENT

5.1 MOBILITY CHOICE TRAVEL PLAN

A detailed Mobility Choice Travel Plan will be developed through the approvals process in consultation with the City of Toronto. This is to ensure that the projects set a sustainable precedent in urban redevelopment and encourages the use of active and sustainable modes of transportation.

The Mobility Plan is intended to prioritize viable alternative personal transportation options beyond the single-occupant, private automobile. The objective is to encourage travel behaviour and patterns that are sustainable. The primary objectives are:

- Reducing demand on road infrastructure, thereby minimizing road and parking capital expenditures;
- Increasing travel efficiency;
- Reducing climate change emissions, and
- Improving air quality.

The Mobility Choice Travel Plan is organized into several categories that aim to effectively allow for sustainable transportation options to be viable, attractive, and preferred by the development residents, employees and visitors. The Mobility Travel Plan is proposed to guide the provision of viable alternatives to single occupant vehicle trips. This plan intends to support the proposed development by outlining Transportation Demand Management (TDM) strategies to promote the use of more active and sustainable transportation modes, respond to the mobility needs of residents, employees and patrons of the Site and reduce dependence on private vehicles.

5.2 ORGANIZATIONAL FRAMEWORK

The four broader objectives can be organized within the following categories:

- Encourage Transit Use;
- Encourage and Facilitate Bicycle Use;
- Enhance Pedestrian Access and Walkability;
- Facilitation of Reduced Car Ownership and Usage;
- Vehicular Parking Supply and Management;
- Land Use and Building Infrastructure; and
- Coordination, Communication and Promotion.

Measures from the Mobility Choice Travel Plan will be incorporated into this development to minimize the need to own a personal vehicle or use an automobile when travelling to and from the Site. It is important to encourage and facilitate the use of non-automobile travel modes on a daily basis.

A summary of the Mobility Choice Travel Plan Strategies are discussed in **Table 6**.

TABLE 6 POTENTIAL MOBILITY TRAVEL PLAN STRATEGIES

	Intent	Implementation
Transit Use	 Support for and the promotion of the use of area transit services for both short and long-distance travel by residents and visitors will reduce the overall use of a vehicle and the need to own one.	• Provision of on-Site communication items / information regarding local transit services and scheduling to facilitate resident and visitor transit travel to / from the Site. • Pre-paid presto card for each unit owner who does not purchase a parking space • Information packages on area transit services for new residents
Bicycle Facilities	 Provide cycling infrastructure that supports and promotes cycling as a convenient and viable travel alternative to the personal automobile.	• 157 long term and 28 short term bicycle parking spaces are proposed, meeting the Toronto Green Standard V4 Tier 1 requirements. • Electric bicycle infrastructure for 15% of required long-term spaces • Provide a bike repair station within each of the three buildings on site • Provide of on-site communication items / information to generate awareness of multi-use trail systems and cycling network in the site-vicinity.
Enhance access & walkability	 A high-quality, safe connection between the Site and transit stops, cycling network, and public street system encourages residents and visitors to travel around the Site area without a vehicle.	• All loading and parking operations will be accommodated internal to the building to avoid conflict with pedestrian movements. • The Site will provide residents with high quality, safe pedestrian connections along Site frontage on Elm Street and along the east-west portion of Harry Barberian Lane
Reduced Car Ownership	 Reduce the need for residents to own a car for occasional travel, and reduce the likelihood of privately-owned car use for general travel, particularly during peak periods.	• Provide information and communication to residents regarding availability of car share provided within the area. • Provide a reduced parking supply compared to the By-law requirements (0.13 spaces / unit. This can be achieved through the adopted TDM measures and multi-modal infrastructure strategies for the Site. • Sharing of non-residential spaces • 1-year car share membership for each unit owner who does not purchase a parking space
Parking Management	 Reduced parking standards within the proposed development encourages residents and visitors to reconsider the use or ownership of a vehicle.	• Offer parking to building residents “unbundled” from unit purchase.

6.0 PARKING CONSIDERATIONS

6.1 ZONING BY-LAW REQUIREMENTS

6.1.1 City of Toronto Zoning By-law 569-2013 (PA1)

Under Zoning By-law 569-2013, the site is zoned under the "PA1" zoning area. The parking requirements for the site with the application of the parking standards for City of Toronto Zoning By-law 569-2013 (PA1) are summarized in **Table 7**.

TABLE 7 ZONING BY-LAW 569-2013 (POLICY AREA 1) PARKING REQUIREMENTS

Use	Units / GFA	Rate (Minimum)	Requirement
Residential Parking			
Studio	5 units	0.3	1 spaces
1-Bedroom	95 units	0.5	47 spaces
2-Bedroom	51 units	0.8	40 spaces
3-Bedroom	23 units	1	23 spaces
Subtotal Residential Parking			**111 spaces**
Non-Residential Parking			
Residential Visitor	174 units	0.15	26 spaces
Retail	212	1 / 100 m^2 GFA	2 spaces
Subtotal Non-Residential			**28 spaces**
TOTAL			**139 spaces**

Notes:
1. Based on site statistics provided by Partisans Architects dated August 18, 2022
2. Zoning By-law 569-2013 specifies that parking calculations resulting in a fraction shall be rounded down to the nearest while number with a minimum of 1 parking space.

Application of Zoning By-law 569-2013 PA1 parking standards to the subject site would require minimum provision of 139 parking spaces (111 resident and 28 non-resident). The effective resident and non-resident parking rate is approximately 0.63 spaces per unit and 0.16 spaces per unit, respectively.

6.1.2 City of Toronto Zoning By-law 089-2022 'Parking Zone A' (Council Approved, Under Appeal)

The site is also subject to the recently passed City of Toronto Zoning By-law 089-2022 (currently under appeal) under Parking Zone A. The minimum and maximum parking supply standards of this Zoning By-law that apply for the proposed development are outlined in **Table 8**.

TABLE 8 MINIMUM ZONING BY-LAW 089-2022 (PARKING ZONE A) PARKING REQUIREMENT

Use	Units / GFA	Minimum Rate	Minimum Requirement	Maximum Rate	Maximum Permission
Resident					
Studio	5 units	No requirement	0 spaces	0.3 spaces / unit[3]	1 spaces
1-Bedroom	95 units		0 spaces	0.5 spaces / unit	47 spaces
2-Bedroom	51 units		0 spaces	0.8 spaces / unit	40 spaces
3-Bedroom	23 units		0 spaces	1.0 spaces / unit	23 spaces
Subtotal Resident	**174 units**	**0.00 spaces / unit**	**0 spaces**	**0.63 spaces / unit (blended)**	**111 spaces**
Non-Resident					
Residential Visitor	174 units	2 + 0.01 spaces / unit	3 spaces	1.0 spaces / unit (first 5 units) + 0.10 (remaining units)	17 spaces
Retail	212.0 m^2	No requirement	0 spaces	3.5 spaces / 100 m^2	7 spaces
Subtotal Non-resident			**3 spaces**	**-**	**24 spaces**
Total Parking Requirement			**3 spaces**	**-**	**135 spaces**

Notes:
1. Based on site statistics provided by Partisans Architects dated August 18, 2022
2. All parking calculations have been rounded down to the nearest whole number in accordance to Zoning By-law 569-2013.

Application of Zoning By-law 89-2021 for PZA to the proposed development requires a minimum of 3 spaces (for visitors) and maximum of 135 spaces (111 resident and 24 non-resident) for the site.

In addition to regular vehicle parking, the recently passed By-law also specifies amended accessible parking requirements based on the effective parking space calculations in Zoning By-law 89-2022 - Table 200.15.10.5. The minimum accessible parking requirements pertaining to the site are provided in **Table 9**.

TABLE 9 ZONING BY-LAW 089-2022 (PARKING ZONE A) ACCESSIBLE PARKING REQUIREMENT

Use	Units / GFA[1]	Effective Rate	Effective Requirement[2]
Resident			
Studio	5 units	0.3 spaces / unit	1 spaces
1-Bedroom	95 units	0.5 spaces / unit	47 spaces
2-Bedroom	51 units	0.8 spaces / unit	40 spaces
3-Bedroom	23 units	1.0 spaces / unit	23 spaces
Subtotal Resident	**174 units**	**0.68 spaces / unit**	**111 spaces**
Non-Resident			
Residential Visitor	174 units	0.10 spaces / unit	17 spaces
Retail	212 m^2	1.0 spaces / 100 m^2	2 spaces
Subtotal Non-Resident			**19 spaces**
Effective Accessible Parking Total			**130 spaces**
Total Accessible Parking Requirement[3]			**6 spaces**

Notes:
1. Based on site statistics provided by Partisans Architects dated August 18, 2022
2. Zoning By-law 569-2013 specifies that parking calculations resulting in a fraction shall be rounded down to the nearest while number with a minimum of 1 parking space.
3. If the number of effective parking spaces is greater than 100 spaces, a minimum of 5 accessible parking spaces + 1 accessible parking space for every 50 effective parking spaces or part thereof in excess of 100 parking spaces is required.

Application of the effective parking requirement of 130 spaces would result in a minimum of 6 accessible parking spaces.

6.2 PROPOSED PARKING SUPPLY

The current architectural plans illustrate a total of **22 parking spaces** (an effective supply of 0.13 spaces per unit) within a single level of a fully automated underground parking garage.

Appropriateness of the Proposed Parking Supply

The proposed parking supply is considered to be appropriate and aligned with the City's intention to reduce parking demand and the use of personal vehicles within the downtown area as demonstrated by the introduction of Zoning By-law 089-2022. By-law 569-2013, introduced a new perspective on the provision of parking supply in the City of Toronto. By-law 89-2022 eliminates minimum parking requirements and instead enforces maximum parking rates, demonstrating the City's long-term commitment to reducing its reliance on the automobile, and subsequently promoting alternative modes of travel.

A reduction in the site's vehicular parking supply below that which is required through By-law 569-2013 is consistent with broader transportation planning priorities and principles denoted by the Province of Ontario and the City of Toronto. Notably, the City of Toronto's Official Plan supports focused urban growth connected by public transportation and reductions in auto dependency. Additionally, the Province of Ontario's Provincial Growth Plan, *A Place to Grow: Growth Plan for the Greater Golden Horseshoe* and the *Provincial Policy Statement* (*PPS*) each prioritize developments that promote active transportation and are located in areas with strong connections to transit. The site's location, in conjunction with existing transportation infrastructure – including transit and active transportation improvements – reinforce its suitability for a reduced parking rate relative to existing By-law requirements.

From a travel demand perspective, the provision of additional parking, beyond the minimum required to satisfy the site's needs, encourages personal automobile ownership and subsequently automobile travel. Disincentivizing automobile ownership (e.g. reducing parking supplies) is a necessary step towards reducing vehicle kilometres travelled and increasing use of alternative travel modes. These results can be more easily achieved in highly transit accessible areas of the City, such as the site location, which incentivize alternative travel modes and reduce the perceived necessity of single-occupancy vehicle travel.

6.2.1 Automated Parking System

A fully automated parking system is proposed on the Site to provide access and egress to and from the underground parking levels.

A fully automated parking system offers "driver-less" parking and retrieval of a vehicle without the need for a ramp system to connect vehicles between all parking levels. The garage will be equipped with a purpose-built facility that utilizes mechanical devices (shuffling pallets and lifts) that take a vehicle between the transfer interface facility (i.e. the transfer cabin located at grade) and a parking space within the underground levels. This system uses individually controlled "pallets" which manoeuvre and "shuffle" each car independently to create a flexible and highly efficient parking and retrieval solution.

Two Parking Garage Lifts (PGLs) will serve the P2 underground garage level, where 22 parking spaces are located. Vehicle access to the PGLs is provided via Harry Barberian Lane. Users will park their vehicles in an available elevator cabin, exit the vehicle, and, if it is an electric vehicle, the user will plug the vehicle to the EV charging on the parking pallet.

6.2.2 Accessible Parking Supply

As discussed in **Section 6.1.2**, application of the accessible parking requirements outlined in City of Toronto By-law 89-2022 results in a requirement for 6 accessible spaces. As the elevator cabins will be accessible, all of the vehicle parking can be considered as accessible spaces. Therefore, the requirement of a minimum of 6 spaces is met by the proposed parking supply and configuration.

6.2.3 Electric Vehicle Infrastructure

Toronto Green Standard Version 4 (Tier 1) requires that all resident spaces and 25% of residential visitor and non-residential parking spaces are equipped with an energized outlet with Level 2 charging or higher (e.g. marked and identified for electric vehicle charging). All spaces within the automated parking garage can be energized and provided as EVSE spaces. Users can plug vehicles into the pallet and vehicle is charged while stored within the parking garage.

6.2.4 Toronto Green Standards Version 4

Toronto Green Standards (TGS) Version 4 came into effect on May 1, 2022 and sets sustainable design requirements for new private and City-owned developments. The TGS implements the environmental policies of the City of Toronto Official Plan and the requirements of multiple City divisions through the community planning and development approvals process administered by the City Planning Division. The TGS intends to aid in improving air quality, reduce urban heat island effect, and contribute towards achieving the City's greenhouse gas emission targets.

The TGS requires that developments be designed to encourage low-emission and non-automobile transportation options. The Standards also require that single-occupancy vehicle trips generated by the proposed development be reduced by 25% through a variety of multimodal infrastructure strategies and transportation demand management (TDM) measures.

To achieve the reduced automobile travel targets set in the TGS Version 4, the benefits of the aforementioned multimodal infrastructure strategies and TDM measures, as discussed in greater detail in **Section 5.0**, are most effectively realized when implemented in conjunction with reduced rates of automobile parking.

To ensure this trip reduction, a reduction in parking supply compared to the applicable requirements of Zoning By-law 569-2013 is proposed. While the latter requires 139 parking spaces for the development, a total of 22 parking spaces are proposed. Overall, this equates to a reduction of 84% parking supply reduction, exceeding the 25% trip reduction requirement.

7.0 BICYCLE PARKING CONSIDERATIONS

7.1 TORONTO GREEN STANDARD REQUIREMENT

The site is subject to the minimum bicycle parking requirements set out in the City of Toronto Zoning By-law 569-2013 as well as the Toronto Green Standard ("TGS") for Mid-to-High Rise Buildings (Version 4.0). The site is located within Bicycle Zone 1 and the Tier 1 TGS bicycle parking standards are consistent with the standards outlined in Zoning By-law 569-2013.

Application of the minimum bicycle parking requirements based on City of Toronto Zoning By-law 569-2013 (Bicycle Zone 1) is summarized in **Table 10**.

TABLE 10 ZONING BY-LAW 569-2013 BICYCLE PARKING REQUIREMENTS (ZONE 1) / TGS VERSION 4, TIER 1

Use	Units / GFA	Minimum Rate		Minimum Requirements
Residential	174 units	Short Term	0.1 spaces / unit	17 spaces
		Long Term	0.9 spaces / unit	157 spaces
Retail	212 m^2	Short Term	Not required	0 spaces
		Long Term		0 space
Total	**Short Term**			**17 spaces**
	Long Term			**157 spaces**
	Total			**174 spaces**

Notes:
1. Based on site statistics provided by Partisans Architects dated August 18, 2022
2. As per the City of Toronto Zoning By-law 569-2013, if the calculation of the number of required bicycle parking spaces results in a number with a fraction, the number is rounded up to the nearest whole number.
3. As per the City of Toronto Zoning By-law 569-2013, if a bicycle parking space is required for uses on a lot, other than a dwelling unit, and the total interior floor area of all such uses on the lot is 2000 m^2 or less, then no bicycle parking space is required.

Application of the Toronto Green Standard (Zone 1 – Tier 1) and Zoning By-Law 569-2013 standards to the proposed development would require the provision of a minimum of 174 bicycle parking spaces (157 long-term and 17 short-term).

7.2 PROPOSED BICYCLE PARKING SUPPLY

A total of 192 bicycle parking spaces, including 34 short term spaces and 158 long term spaces, are provided on the site.

The TGS Version 4 also provides specific provisions which must be adhered to for all new developments in the City of Toronto; these provisions are discussed below.

7.2.1 Proposed Toronto Green Standards Version 4 (TGS V4) Bicycle Parking Provisions

7.2.1.1 AQ 2.1 - 2.3 Bicycle Parking

These standards require bicycle parking to be provided as per Zoning By-law 569-2013. In addition, long-term bicycle spaces must be provided in a secure controlled-access bicycle facility or purpose-built bicycle locker on a near-surface level. Short-term bicycle spaces must be highly visible at-grade or on the first parking level below-grade.

Based on the above, the proposed bicycle parking supply currently meets the requirements as per Zoning By-law 569-2013 / TGS V4. Short-term bicycle parking will be located on the ground floor mezzanine, and can be accessed via the bicycle elevator. Long-term bicycle parking will be located on the P1 mezzanine or P1 level of the below grade garage, which can be accessed via bicycle elevator.

7.2.1.2 AQ 2.4 Electric Bicycle Infrastructure

This standard requires at least 15 percent of residential long-term bicycle parking spaces shall include an Energized Outlet (120 V) adjacent to the bicycle rack or parking space. The Energized Outlet is to be located at a maximum distance of 1100mm from the bike rack.

Based on the above, a total of 23 residential long-term bicycle parking spaces are required to have Energized Outlets.

7.2.1.3 AQ 2.6 Publicly Accessible Bicycle Parking

This standard requires that all uses within the proposed development located within 500 metres of a transit station entrance must provide at least 10 additional short-term bicycle parking spaces that are publicly accessible and located either at-grade or within the public boulevard . This requirement is in addition to the bicycle parking required as per AQ 2.1.

The proposed development will provide 10 publicly accessible, short-term bicycle parking spaces in addition to the requirements stipulated in Zoning By-law 569-2013. Therefore, the provision of these spaces meets the requirement outlined in the TGS V4.

8.0 LOADING CONSIDERATIONS

8.1 ZONING BY-LAW 569-2013 REQUIREMENTS

Application of the City of Toronto Zoning By-law 569-2013 loading space requirements to the proposed development are summarized in **Table 11**. Application of these standards requires 1 Type 'G' loading space.

TABLE 11 ZONING BY-LAW 569-2013 - LOADING REQUIREMENTS

Use	Area or Unit Count	Type 'A' Loading Spaces	Type 'B' Loading Spaces	Type 'C' Loading Spaces	Type 'G' Loading Spaces	Total
Residential	174 units	-	-	-	1	1
Retail	212 m^2	-	-	-	-	0
Total before sharing		**-**	**-**	**-**	**1**	**1**

Notes:
1. Based on site statistics provided by Partisans Architects dated August 18, 2022..

8.2 PROPOSED LOADING SUPPLY AND ARRANGEMENTS

The proposed loading supply consists of 1 Type 'G' loading space as required by Zoning By-law 569-2013. The loading space is provided within the at-grade loading facility which can be accessed off of Harry Barberian Lane. The at-grade loading facility will accommodate refuse collection and moving / delivery activity for the residential component of the building and general loading activity for the retail portion of the development.

Detailed vehicle maneuvering diagrams illustrating a City of Toronto refuse collection vehicle, TAC 'Heavy Single-Unit' (HSU), and TAC 'Single Unit' (SU) accessing these loading spaces by entering and exiting the site in a forward motion are provided in **Appendix B**.

It is also noted that the loading facilities on the site meet the design provisions outlined in the City of Toronto Requirements for Garbage and Recycling Collection for New Developments and Redevelopments.

The proposed loading facilities meet the requirements of By-law 569-2013 and are therefore considered to be appropriate.

9.0 MULTI-MODAL TRAVEL DEMAND FORECAST

The site is located within the Downtown area, approximately 220 meters from the TTC Line 1 Dundas Subway Station and within a transportation network that provides significant opportunities for non-automobile modes of travel (i.e. transit, walking and cycling). As part of this study, BA Group has established travel demand forecast for auto-based and non-auto based trips for the site. Further details are provided in the following sections.

9.1 APPROACH AND BASELINE PARAMETERS

As noted above, preliminary travel demand forecasts have been prepared, as part of this study, for the proposed development based upon the development programme. Multi-modal forecasts have been developed from a first principles approach using person trip making characteristics for the key component uses within the site.

As summarized in **Table 12**, the existing area travel characteristics reflect a high level of pedestrian, cycle and transit usage, given its location within a highly walkable and transit accessible neighbourhood. Based on existing multi-modal travel characteristics, it is anticipated that the proposed development will reflect a high level of non-auto based travel to and from the site. The proposed development is also located within an area of excellent transit services and active transportation facilities, as well as a mix of uses, which are supportive of non-auto based travel modes.

9.2 SITE MULTI-MODAL TRAVEL DEMAND FORECAST

9.2.1 Residential Person Trip Generation

Residential person trip rates were established based on a comparison between traffic counts at proxy developments, by first principles using 2016 TTS data, and ITE Trip Generation Manual 11th Edition formulations. Person trip generation rates at sites with similar transportation context have also been reviewed as proxy sites to compare

The adopted residential trip generation rates are summarized in **Table 12**.

The residential component is anticipated to have a person trip rates in the order of 0.60 and 0.55 two-way person trips per unit during the weekday morning and afternoon peak hours, respectively.

Application of these rates to the proposed residential development of 174 units results in the order of 110 and 95 two-way person trips during the weekday morning and afternoon peak hours, respectively

TABLE 12 RESIDENTIAL PERSON TRIP GENERATION

Methodology	AM Peak Hour (trips per unit)			PM Peak Hour (trips per unit)		
	In	Out	2-Way	In	Out	2-Way
TTS First Principles	0.10	0.59	0.69	0.42	0.18	0.60
ITE LUC 222 Dense Multi-Use Urban	0.15	0.58	0.73	0.36	0.25	0.61
ITE LUC 222 Centre City Core	0.17	0.49	0.67	0.30	0.23	0.53
Proxy Site 500-530 Bloor St W	0.12	0.67	0.79	0.54	0.27	0.81
Proxy Site 1638 Bloor St W	0.08	0.51	0.59	0.31	0.06	0.37
Proxy Site 224 King Street West	0.05	0.38	0.43	0.26	0.14	0.40
Proxy Site 60 John Street	0.06	0.51	0.57	0.39	0.14	0.53
Proxy Site 295 Adelaide Street W	0.05	0.45	0.50	0.27	0.13	0.40
Average Person Trip Generation Rate	0.10	0.52	0.62	0.36	0.17	0.53
Adopted Person Trip Generation Rate	0.10	0.50	0.60	0.35	0.20	0.55
Gross Person Trips *(174 units)*	20	90	110	60	35	95

Note:
1. Trips are rounded to the nearest 5.

9.2.2 Residential Multi-Modal Trip Generation

Residential travel demand to and from the site have been developed from a first principles approach based upon a review of the total number of residents anticipated to live on the site combined with data of residential travel characteristics in the vicinity of the site, particularly from the 2016 Transportation Tomorrow Survey (TTS) and data collected by BA Group. Forecast travel demand for residential trips to and from the site in the weekday morning and afternoon peak hours are summarized in **Table 13**.

As part of this study, BA Group has developed travel demand forecasts for the Site for each mode of travel (auto, transit, walking, cycling) in order to better assess the characteristics of each mode. Anticipated travel demand to / from the Site reflects a high level of multi-modal trips. The Site's location, the available pedestrian / cycling / transit supportive infrastructure and the proposed site plan are all supportive of sustainable modes of travel to and from the Site, particularly during the weekday peak periods of travel.

Travel demand forecasts for the Site have been developed to reflect pedestrian, cycle, and transit usage that is reflective of the existing travel characteristics of the area, while accounting for the proposed reduced parking provision. The Site is located adjacent to a higher-order transit service corridor, surface transit routes, active transportation facilities, and a mix of land uses, all of which are supportive of non-auto based travel to and from the Site, particularly during the weekday peak periods of travel. The reduced parking proposal alongside the proposed cycling infrastructure further supports the use of transit and active transportation by discouraging private automobile use and promoting an active mode of transportation.

TABLE 13 SITE MULTI-MODAL RESIDENTIAL TRIP GENERATION SUMMARY

Parameter	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Residential Units	**174 units**					
Building Occupancy (Persons)	95% Occupancy					
	2.0 persons / unit					
	335 people					
Travel Demands	35%			30%		
	115 people			100 people		
Mode Splits[1]						
Auto-Driver	17%			16%		
Auto-Passenger	2%			3%		
Transit	22%			19%		
Walk	56%			58%		
Cycle	4%			4%		
Person Trips						
Auto-Driver	20 people			15 people		
Auto-Passenger	people			5 people		
Transit	25 people			20 people		
Walk	65 people			60 people		
Cycle	5 people			5 people		
Site Traffic Demand (Trips)	**Portion of trips in peak hours by direction**					
	24%	76%	100%	61%	39%	100%
Auto-Driver	5	15	20	10	5	15
Auto-Passenger	0	0	0	5	0	5
Transit	5	20	25	10	10	20
Walk	15	50	65	35	25	60
Cycle	0	5	5	5	0	5
Auto Trip Rates						
	0.03	0.09	0.11	0.06	0.03	0.09

Notes:
1. Based on 2016 TTS data for residential apartment based trips within 2006 GTA Traffic Zones 37, 38, and 50-53 during the weekday morning (6:00 to 8:59 a.m.) and afternoon (3:00 to 5:59 p.m.) peak periods.

For the purposes of this analysis, travel demand to and from the Site has been forecast with a person-trip generation methodology by applying person occupancy, modal split, direction of travel and time of travel assumptions obtained from the 2016 Transportation Tomorrow Survey (TTS) and data collection studies conducted by BA Group.

Ancillary retail uses of the proposed redevelopment are assumed not to impact traffic operations, and have not been included in the analysis.

10.0 VEHICULAR TRAFFIC VOLUMES FORECAST

The traffic operations analysis has been undertaken during the weekday morning and afternoon street peak hours under the following traffic conditions:

- **Existing traffic conditions** that reflect activity levels and patterns on the area road network, based on the derived 2022 baseline existing traffic volumes ;
- **Future background traffic conditions** that include general corridor growth over a 5-year planning period and traffic activity generated by other new area developments; and
- **Future total traffic conditions** with the development of the site as planned, which includes traffic generated by the development proposal in addition to future background traffic volumes

10.1 EXISTING TRAFFIC VOLUMES

Existing traffic volumes for vehicles, cyclists and pedestrians were established for the weekday morning and afternoon peak hour periods on the area street network based upon intersection traffic count information collected by Spectrum Traffic Data Inc. on behalf of BA Group, and the City of Toronto. A summary of the turning movement count dates and sources is provided in **Table 14.** The raw turning movement counts are located within **Appendix C**.

TABLE 14 EXISTING TRAFFIC COUNT SUMMARY

Intersection	Control Type	Date of Count	Source
Bay Street / Elm Street	Signalized	Tuesday, June 28th, 2022	Spectrum Traffic Inc.
Elm Street / Harry Barberian Lane Westside	Unsignalized		
Elm Street / Harry Barberian Lane Eastside	Unsignalized		
Yonge Street / Elm Street	Unsignalized		
Yonge Street / Gould Street	Signalized		

The existing turning movement counts were reviewed in detail to ensure a general consistency in traffic volumes between intersections. It is worthy to note that no adjustments were made to balance the existing traffic volumes between intersections due to the driveways around the vicinity of the site. Hence, the unbalanced traffic volumes were used as an existing base for the purposes of the traffic operations analyses undertaken as part of this study.

The adopted existing traffic volumes for the weekday morning and afternoon peak periods are summarized in **Figure 9**.

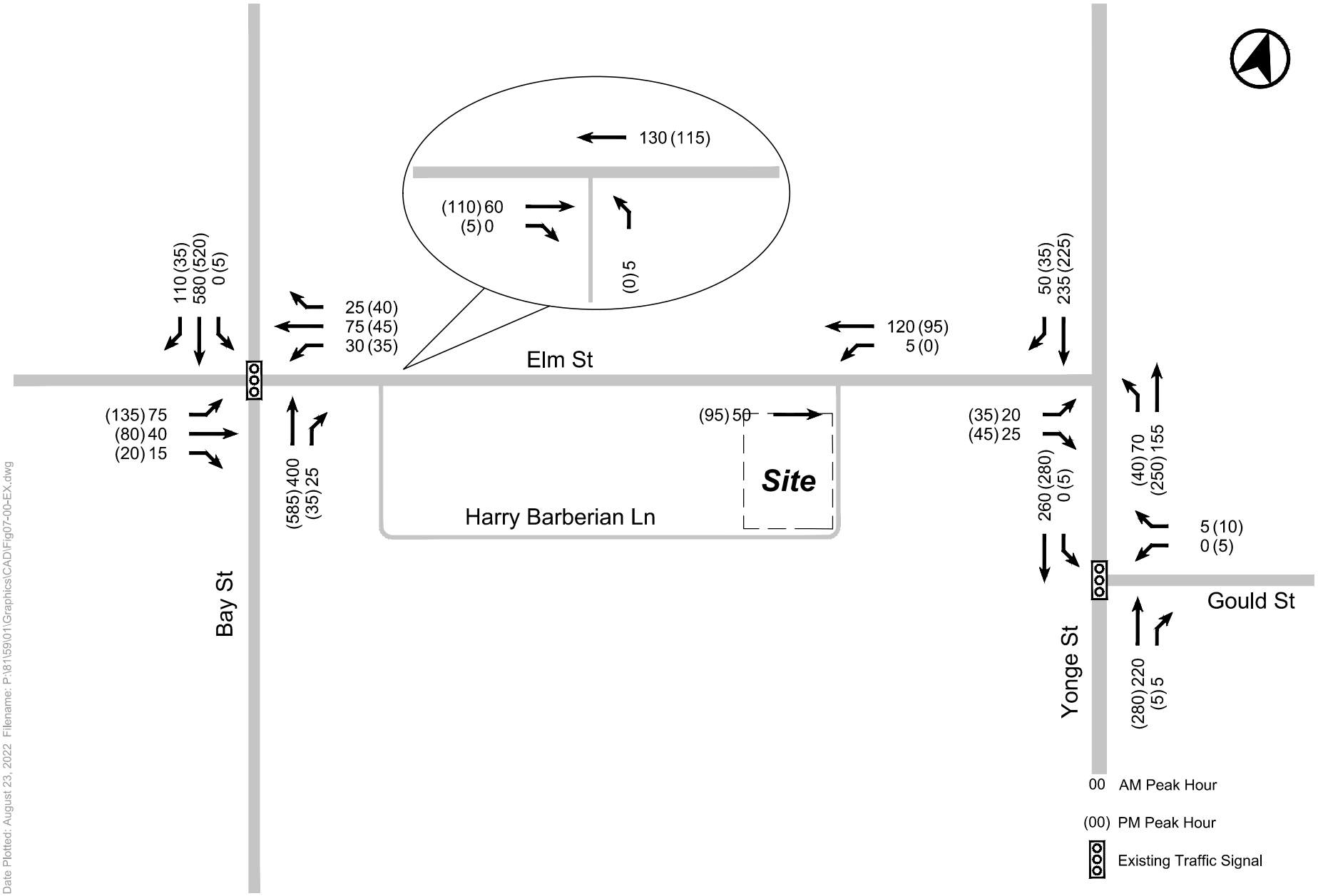

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FIGURE 9 EXISTING TRAFFIC VOLUMES

10.2 BACKGROUND TRAFFIC VOLUMES

Traffic growth in the site vicinity has been considered based upon an evaluation of traffic volume changes related to:

- general corridor growth on the area arterial roads (i.e. Bay Street and Yonge Street); and
- specific area development traffic (i.e. background development traffic);

10.2.1 Corridor Growth

Consistent with recently submitted traffic studies prepared by BA Group for proximate developments, no corridor growth rates are applied for general traffic growth along Bay Street or Yonge Street.

10.2.2 Background Developments

Background traffic includes specific allowances for traffic activity related to development proposals in the area that are either approved but not yet built or are being reviewed by the City of Toronto.

The City of Toronto Development Projects website was reviewed for other active development applications in the area. A total of twelve developments, amounting to over 7,000 residential units and over 30,000m^2 of commercial space, were included in the future background traffic forecast. The proposed developments, land uses and their respective sources of transportation study are summarized in **Table 15**.

TABLE 15 SUMMARY OF BACKGROUND DEVELOPMENTS

Background Development	Statistics	Transportation Study
8 Elm Street	819 condominium units, 1,000m^2 office space	WSP, September 2021
241 Church Street	592 condominium units, and 247m^2 retail	BA Group, February 2022
335 Yonge Street	165 apartment units, and 2,096m^2 retail	LEA Consulting Ltd., October 2019
372-378 Yonge Street	406 condominium units, 131m^2 retail and 2,043 m^2 commercial	LEA Consulting Ltd., August 2020
401 Yonge Street	828 condominium units, and 192m^2 retail	LEA Consulting Ltd., June 2022
415 Yonge Street	471 condominium units, 201m^2 retail and 6,394m^2 office	Paradigm Transportation Solutions Ltd., December 2021
412-418 Church Street	319 condominium units, and 307m^2 retail	BA Group, February 2021
483 Bay Street	538 condominium units and 5,704m^2 office	BA Group, December 2020
Atrium on Bay	317 condominium units, and 739m^2 retail	BA Group, November 2021
Yonge & Gerrard	1,106 condominium units, and 9,389m^2 retail	BA Group, April 2015
100 Edwards Street	527 condominium units, and 1,600m^2 retail	WSP, April 2016
Chelsea Green Mixed Use Development	1,709 residential units along with 400 hotel rooms, 9,134m2 of office space and 1,128m2 retail	BA Group, April 2022

10.2.3 Future Background Traffic

Future background traffic volumes have been established for the weekday morning and afternoon peak hours, which were developed by adding traffic volume allowances for the aforementioned area background developments to the base existing traffic volumes.

Future background traffic volumes on the area road network are summarized in **Figure 11**.

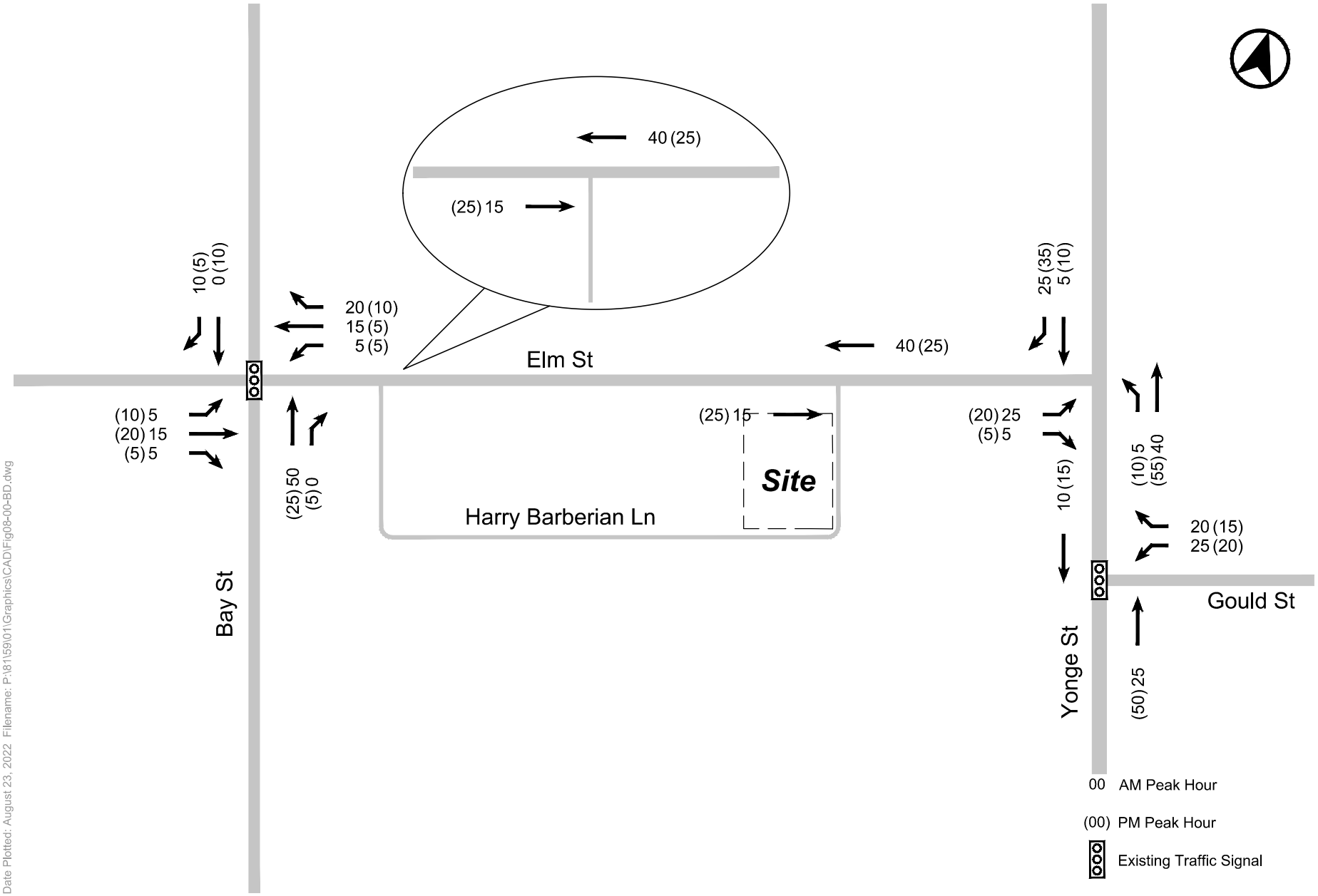

FIGURE 10 TOTAL BACKGROUND DEVELOPMENT TRAFFIC VOLUMES

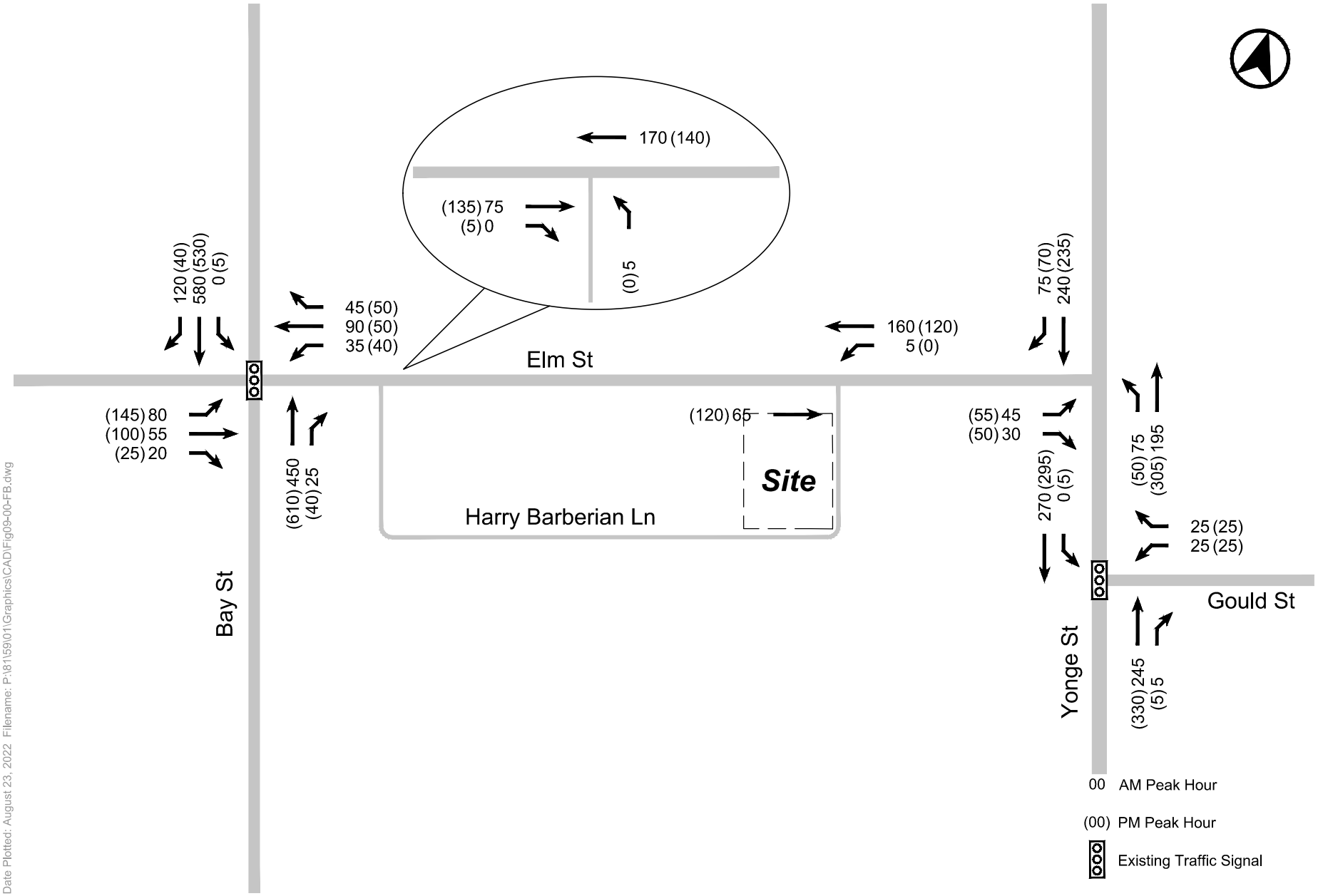

FIGURE 11 FUTURE BACKGROUND TRAFFIC VOLUMES

10.3 SITE TRAFFIC VOLUMES

10.3.1 Site Trip Generation

The residential vehicle trip generation rates adopted for the purposes of this study reflect trip generation characteristics considered appropriate for residential developments in the area. Multi-modal travel forecasts were generated for the proposed development in **Section 9.2.2**. Given that the proposed parking supply is constrained for the site, the parking garage activity will be attributed to the site's residential uses only. The resultant auto driver vehicular site traffic is summarized in **Table 16**.

TABLE 16 PROPOSED SITE AUTO DRIVER VEHICLE TRAFFIC

Site	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Residential Vehicle Trips	5	15	20	10	5	15
Total Vehicle Trips	**5**	**15**	**20**	**10**	**5**	**15**

The site is forecast to generate a total of 20 and 15 two-way vehicle trips during the weekday morning and afternoon peak hours, respectively. The trips will be made to/from the proposed site parking facilities.

The Site is located adjacent to a higher-order transit service corridor, surface transit routes, active transportation facilities, and a mix of land uses, all of which are supportive of non-auto based travel to and from the Site, particularly during the weekday peak periods of travel.

10.3.2 Site Trip Distribution and Assignment

The site parking garage-related traffic activity for residential uses is based on a review of 2016 Transportation Tomorrow Survey (TTS) Survey data for home-based and work-based vehicle trips to and from the study area during the weekday morning and afternoon peak periods for 2006 GTA Zones 37, 38, and 50-53. Queries for residential trips are provided in **Appendix D.**

The residential and office vehicle distribution is summarized in**Table 17**. The vehicle trips were assigned to the street network based on the reported distribution and prevailing traffic patterns / traffic control.

TABLE 17 SITE TRIP DISTRIBUTION

Direction	Residential Inbound	Residential Outbound
North – Bay Street	24%	39%
South – Bay Street	28%	24%
North – Yonge Street	45%	26%
South – Yonge Street	3%	11%

1. Based on 2016 TTS data for residential apartment based trips within 2006 GTA Traffic Zones 37, 38, and 50-53 during the weekday morning (6:00 to 8:59 a.m.) and afternoon (3:00 to 5:59 p.m.) peak periods.

It must be noted that existing area turning restrictions have been implemented along Bay Street at the intersection with Elm Street. This forces traffic destined to the development to use other local area streets to accomplish what would otherwise be a southbound left turn to Elm Street during the morning and afternoon peak periods. These turning restrictions, implemented to provide safety for pedestrians crossing Elm Street have the effect of forcing local area traffic to use alternative routes to the site.

The assigned site traffic volumes for the weekday morning and afternoon peak periods are illustrated in **Figure 12**.

10.3.3 Toronto Green Standard (Version 4) Requirement AQ 1.1

The Toronto Green Standard (TGS) is Toronto's sustainable design requirement 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, whereas Tiers 2 to 4 are voluntary.

The Tier 1 standard within the updated TGS requires all development proposals to reduce single-occupancy auto vehicle trips generated by the project by 25% through the adopted TDM measures and multi-modal infrastructure strategies for the site.

Single-occupant vehicle trips to and from the site will be reduced by a minimum of 25%. This is demonstrated through a comparison of the selected residential trip generation rate to the standard ITE Trip Generation Manual rates for a project of this nature. **Table 18** outlines a comparison of the two sets of rates, indicating that the development will reduce two-way residential vehicular trips by a projected **59% - 72%** during peak hours.

TABLE 18 TGS V4, AQ 1.1 - TRIP GENERATION RATE COMPARISON

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Multifamily Housing (High-Rise) - LUC 222[1]	*0.09*	*0.18*	*0.27*	*0.18*	*0.14*	*0.32*
Adopted Resident Trip Generation Rate	*0.03*	*0.09*	*0.11*	*0.06*	*0.03*	*0.09*
Difference	**-67%**	**-50%**	**-59%**	**-66%**	**-77%**	**-72%**

Notes:
1. ITE Trip Generation Manual, 11th Edition.

10.4 FUTURE TOTAL TRAFFIC VOLUMES

The future total traffic volumes during the weekday morning and afternoon peak hours reflect the sum of future background traffic volumes and new Site traffic volumes and are summarized in **Figure 13**.

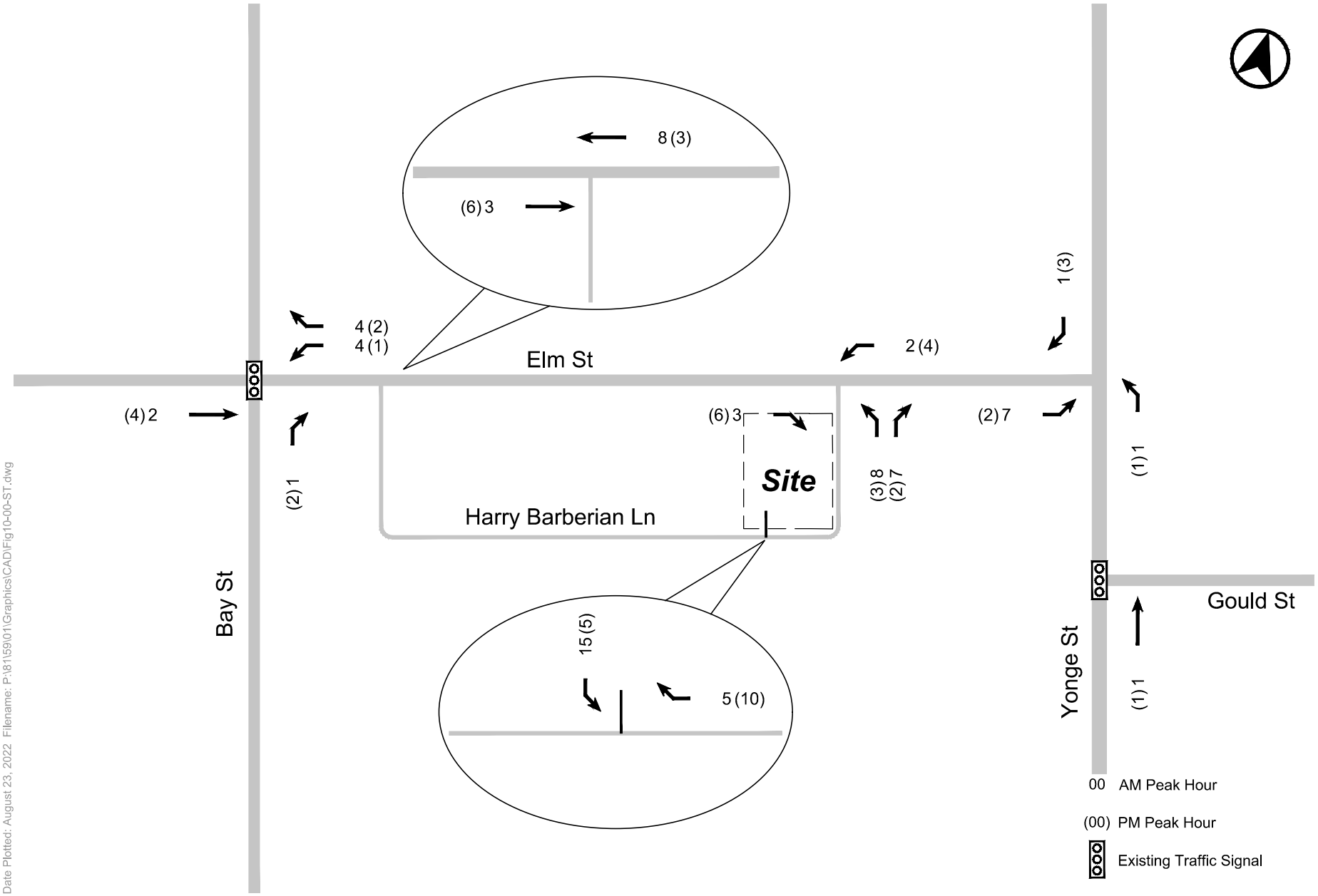

FIGURE 12 SITE TRAFFIC VOLUMES

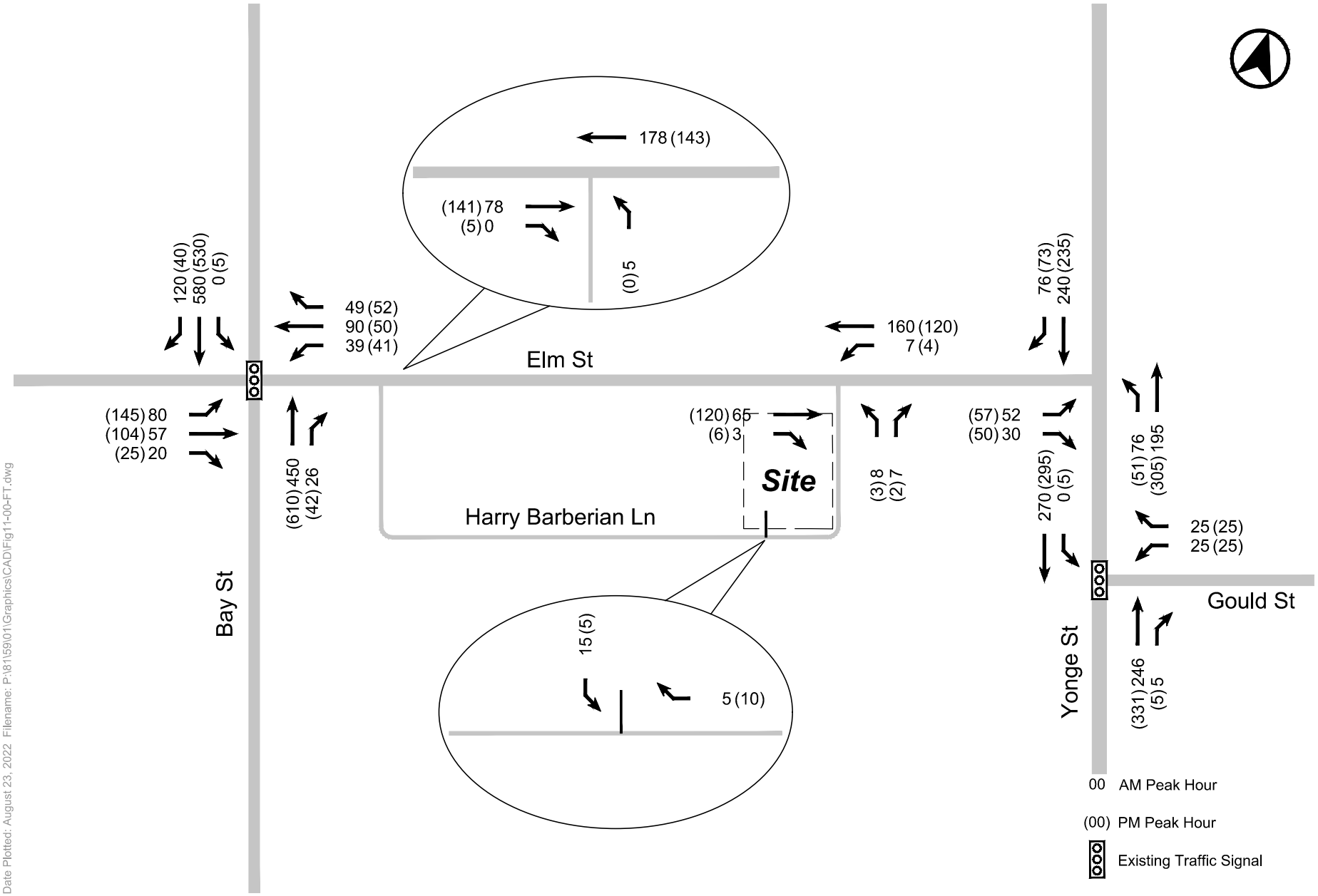

FIGURE 13 FUTURE TOTAL TRAFFIC VOLUMES

11.0 TRAFFIC OPERATIONS ANALYSIS

11.1 ANALYSIS METHODOLOGY AND ASSUMPTIONS

11.1.1 Intersection Capacity Analysis Methodology

Synchro Version 11.1 and the Highway Capacity Manual (HCM) methodology were used to analyze the study area intersections and site access points. All Synchro analyses performed conforms to the requirements of the City of Toronto's Guidelines for Using Synchro 11, January 15, 2021.

For signalized intersections, the volume-to-capacity ratio (v/c) is an indicator of the capacity utilization for the key movements in the intersection. A v/c of 1.00 indicates that a traffic movement through an intersection is operating at or near maximum capacity.

For unsignalized intersections, the level of service (LOS) characterizes operational conditions for key movements in terms of average delay experienced by vehicles attempting to complete a manoeuvre through the intersection. LOS 'A' represents a good level of service with short delays, while LOS 'F' represents a poor level of service with extended delays.

11.1.2 Heavy Vehicle Assumptions

Heavy and medium truck percentages incorporated into the analysis were based upon information provided as part of intersection turning movement counts. Where not available, a default value of 3 percent heavy vehicles was assumed.

11.1.3 Saturation Flow Assumptions

The City of Toronto Guidelines for using Synchro 11 (including SimTraffic 11) 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.

11.1.4 Lost Time Adjustments

The City of Toronto Guidelines for using Synchro 11 (including SimTraffic 11) specifies a base lost time adjustment factor of -1.0 seconds (i.e. a total lost time per phase equal to the amber plus all-red time minus 1 second). This default value was adopted in the analysis.

11.1.5 Signal Timings

Existing signal timing plans were obtained for all of the signalized intersections within the study area from the City of Toronto and included in **Appendix E**. These parameters were adopted for the analysis of existing conditions and under future conditions at all intersection, unless otherwise discussed in the following.

11.1.6 Peak Hour Factor

The City of Toronto Guidelines for using Synchro 11 (including SimTraffic 11) 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 driveways. 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.

11.1 STUDY AREA INTERSECTIONS

Traffic operations and impacts related to the net new traffic volumes generated by the site have been reviewed at the following area intersections:

Signalized Intersections

- Bay Street / Elm Street
- Yonge Street / Gould Street

Unsignalized Intersections

- Elm Street / Harry Barberian Lane Westside
- Elm Street / Harry Barberian Lane Eastside
- Elm Street / Yonge Street
- Harry Barberian Lane / Site Driveway

11.2 TRAFFIC ANALYSIS SUMMARY

A summary of the traffic analysis results for the signalized and unsignalized intersections within the study area is provided herein. Detailed Synchro analysis output sheets are included in **Appendix F**.

11.2.1 Signalized Intersection Analysis

11.2.1.1 Bay Street / Elm Street

The Bay Street / Elm Street intersection operates under traffic signal control with a cycle length of 80 seconds in the weekday morning and afternoon peak periods. The existing cycle length was maintained in all analysis scenarios. A summary of traffic analysis results for the intersection is summarized in **Table 19**.

TABLE 19 BAY STREET / ELM STREET CAPACITY ANALYSIS RESULTS

Key Movements	Existing		Future Background		Future Total	
	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.32 (0.47)	C (C)	0.35 (0.51)	C (C)	0.35 (0.51)	C (C)
EBTR	0.12 (0.20)	C (C)	0.16 (0.26)	C (C)	0.16 (0.26)	C (C)
WBL	0.11 (0.13)	C (C)	0.13 (0.15)	C (C)	0.15 (0.16)	C (C)
WBTR	0.23 (0.20)	C (C)	0.34 (0.24)	C (C)	0.35 (0.24)	C (C)
NBTR	0.21 (0.33)	A (A)	0.23 (0.35)	A (A)	0.23 (0.35)	A (A)
SBTR	0.35 (0.32)	A (A)	0.36 (0.33)	A (A)	0.36 (0.33)	A (A)
Overall	**0.35 (0.38)**	**B (B)**	**0.36 (0.40)**	**B (B)**	**0.36 (0.41)**	**B (B)**

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

Under existing traffic conditions, the intersection operates at an acceptable capacity during the weekday morning and afternoon peak hours with overall v/c ratios of 0.35 and 0.38, respectively.

Under future background conditions with allowances of specific area developments, the intersection operates at an acceptable capacity during the weekday morning and afternoon peak hours with overall v/c ratios of 0.36 and 0.40, respectively.

With the addition of site-generated traffic under future total traffic conditions, the intersection operates at an acceptable capacity during the weekday morning and afternoon peak hours with overall v/c ratios of 0.36 and 0.41, respectively.

Based on the foregoing, the traffic generated by the proposed development can be acceptably accommodated at the Bay Street / Elm Street intersection. No mitigation measures or improvements are recommended at this intersection.

11.2.1.2 Yonge Street / Gould Street

The Yonge Street / Gould Street intersection operates under traffic signal control with a cycle length of 80 seconds in the weekday morning and afternoon peak periods. The existing cycle length and signal timings were maintained in all analysis scenarios. A summary of traffic analysis results for the intersection is summarized in **Table 20**.

TABLE 20 YONGE STREET / GOULD STREET CAPACITY ANALYSIS RESULTS

Key Movements	Existing		Future Background		Future Total	
	v/c	LOS	v/c	LOS	v/c	LOS
WBLR	0.01 (0.04)	C (C)	0.10 (0.16)	C (C)	0.10 (0.16)	C (C)
NBTR	0.11 (0.15)	A (A)	0.13 (0.18)	A (A)	0.13 (0.18)	A (A)
SBLT	0.13 (0.16)	A (A)	0.13 (0.17)	A (A)	0.13 (0.17)	A (A)
Overall	**0.09 (0.13)**	**A (A)**	**0.13 (0.17)**	**A (A)**	**0.13 (0.18)**	**A (A)**

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

Under existing traffic conditions, the intersection operates at an acceptable capacity during the weekday morning and afternoon peak hours with overall v/c ratios of 0.09 and 0.13, respectively.

Under future background conditions with allowances of specific area developments, the intersection operates at an acceptable capacity during the weekday morning and afternoon peak hours with overall v/c ratios of 0.13 and 0.17, respectively.

With the addition of site generated traffic under future total traffic conditions, the intersection operates at an acceptable capacity during the weekday morning and afternoon peak hours with overall v/c ratios of 0.13 and 0.18, respectively.

Based on the foregoing, the traffic generated by the proposed development can be acceptably accommodated at the Yonge Street / Gould Street intersection. No mitigation measures or improvements are recommended at this intersection.

11.2.2 Unsignalized Intersection Analysis

Traffic operations at all unsignalized intersections within the study area are at acceptable level of service under all scenarios, without any need for road improvements or mitigation measures, with the exception of the intersection of **Elm Street / Yonge Street,** which is experiencing significant delays at the existing weekday afternoon peak period. The delay is exacerbated by over 2,000 pedestrians in the existing condition moving north-south across Elm Street during the weekday afternoon peak period.

As a result, a delay study was conducted at the Elm Street / Yonge Street intersection for both the eastbound movements and the northbound left turns during the afternoon peak hour. The results of the delay study were used to calibrate the critical gap and follow-up times in Synchro in order to get a more representative result of the existing condition. Details of the delay study is summarized in **Appendix G**.

Another calibration conducted for the weekday afternoon peak period involved dividing the number of pedestrian moving north-south along Yonge Street by 3. This was predicated on the assumption that in reality due to the number of pedestrians crossing Elm Street, they would most likely do so in groups of 3's. To better conceptualize this, approximately 2,000 pedestrians crossing the intersection during the peak hour translates to a pedestrian trying to cross every 2 seconds. In addition, it was observed that most vehicles make the turn into or out of Elm Street between groups of pedestrians crossing on Yonge Street.

The results of the capacity analysis undertaken at the unsignalized intersections are summarized in **Table 21**.

TABLE 21 UNSIGNALIZED INTERSECTIONS CAPACITY ANALYSIS RESULTS

Key Movements	Existing		Future Background		Future Total	
	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Elm Street / Harry Barberian Lane Westside						
NBLR	10.2 (0.0)	B (A)	10.6 (0.0)	B (A)	10.7 (0.0)	B (A)
Elm Street / Harry Barberian Lane Eastside						
WBLT	0.3 (0.0)	-- (--)	0.2 (0.0)	-- (--)	0.3 (0.2)	A (A)
NBLR	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	10.0 (11.7)	A (B)
Elm Street / Yonge Street						
EBLR	31.5 (51.8)	D (F)	49.8 (149.9)	E (F)	54.6 (169.7)	F (F)
NBLT	8.5 (29.2)	A (D)	8.3 (42.8)	A (E)	8.3 (44.1)	A (E)
Harry Barberian Lane / Site Driveway						
SBLR	-- (--)	-- (--)	-- (--)	-- (--)	8.6 (8.5)	A (A)

Notes:
1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour)
2. Blank cells reflect intersection movements that do not exist under that particular scenario.

12.0 TRANSIT CONSIDERATIONS

12.1 TRANSIT CONTEXT

12.1.1 Existing Transit Network

The Site is well-served by streetcar transit services operated by the Toronto Transit Commission (TTC). Specifically, TTC Line 1 Dundas Station is located 220 metres (4 minute walk) from the Site. Line 1 is a rapid transit line on the Toronto subway system and provides service throughout Toronto and service to North York and Vaughan.

Additionally, the Site is currently serviced by three streetcar routes within an 800 metre radius of the Site. The streetcar routes operate all day, everyday and are part of the 10 minute network.

The Site benefits from the excellent transit accessibility which provides access to local and citywide transit services within walking distance.

12.2 SITE TRANSIT TRIP GENERATION

Forecast net new Site transit trips for the proposed development were identified in **Section 9.2.2.** Transit trips to and from the Site during the weekday morning and afternoon peak hours are summarized in **Table 22**.

TABLE 22 SITE GENERATED TRANSIT TRIPS

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Total Site Transit Trips	5	20	25	10	10	20

1. Trips rounded to the nearest 5.

The Project is anticipated to generate in the order of approximately **25** and **20** two-way transit trips during the weekday morning and afternoon peak hours, respectively.

12.3 TRANSIT DISTRIBUTION AND ASSESSMENT

Transit trips on the existing transit network are analyzed for the key weekday morning and afternoon peak hours. Site transit trips will be predominately oriented to / from Dundas Station, as resident-based transit riders tend to route to / from the major employment areas in Downtown Toronto via the fast, frequent subway service on Line 1.

Within the broader transportation context, the 505 Dundas and 506 Carlton streetcars in conjunction with the TTC bus services around the site are highly capable of moving a large number of passengers between downtown Toronto and its surrounding neighbourhoods. Therefore, the addition of 25 and 20 passengers in the weekday morning and afternoon peak hours will not have a noticeable impact to the capacity or operations of the transit services.

12.3.1 Assessment Criteria

BA Group has undertaken a general review of the transit infrastructure located within the vicinity of the Site. Projected transit passenger volumes were accounted for in the assessment. The review considered the following assessment criteria:

Availability:

- Is higher order transit service is highly available to the Site, with stations and/or stops located in close proximity?
- Do transit options facilitate City-wide transit accessibility with minimal or no transfers required between routes?

Access:

- Do adjacent or nearby transit stations and/or stops offer convenient and accessible entrances and exits and do not encourage jaywalking activity?
- Are access points to stations and stops weather-protected?
- Are Multiple access points provided (preferable)?

Capacity:

- Is there capacity for nearby transit routes to accommodate an increase in transit usage?
- Where capacity is limited, are plans are in place to alleviate capacity concerns via service expansion and/or the construction of new higher order transit route(s)?

Operations:

- Do bus and/or streetcar stops have transit shelters?
- Are surface transit routes are well integrated with the general road network?
- Is the Site is functionally integrated with adjacent transit stops and/or stations, facilitating seamless access to transit?
- Are platforms are of a sufficient size for anticipated volumes?

12.3.2 Evaluation Results

Based on the foregoing, the Site is currently well served by both the local and regional transit services operating in the vicinity of the Site. Planned transit improvements will bring a new higher-order transit corridor, the Ontario Line, to the area, further supporting the development with improved service frequencies and new connections and ease capacity constraints on the existing TTC subway routes.

BA Group has undertaken a review of the area transit services based upon the four criteria of Availability, Access, Capacity, and Operations as outlined in **Section 12.3.1**. A summary of the key findings of the pedestrian assessment are provided below.

Availability

- The Site is located within a 5 minute walk of a Line 1 subway station, a 10 minute walk of a frequent service streetcar lines, and a 25 minute walk of Union Station.
- All area streetcar routes connect to higher-order transit including subways and GO Transit, as well as local bus routes.
- Transit riders can easily travel across the city or region from the Site via subway, streetcar and regional transit options.

Capacity

- The proposed development is expected to generate **25** and **20** net new two-way transit trips in the weekday morning and afternoon peak hours, respectively.
- The impacts of the proposed development on area transit services are expected to be minimal, and future transit expansion will further reduce impacts on individual routes.

Access

- Dundas Station is accessible with elevator access to platforms
- 505 Dundas, 506 Carlton and 501 Queen streetcar stops are very close to the proposed development and pedestrian accessible
- Overhead canopies are provided for weather protection most nearby streetcar stops,

Operations

- The 506 Carlton streetcar stop at Elm Street and Bay Street is located adjacent to the Site (150 metres), allowing for quick connections to this route.
- Dundas Station is located less than a 5 minute walk from the Site and provides service every 2 to 5 minutes

13.0 PEDESTRIAN CONSIDERATIONS

13.1 PEDESTRIAN CONTEXT

13.1.1 Existing Pedestrian Context

The Site is located in the Downtown Yonge District on the east side of the downtown Toronto core. The location of the Site is highly pedestrianized as it is situated within walking distance of numerous employment, entertainment, shopping, and amenity centres across downtown Toronto, including Yonge Street, the Toronto Eaton Centre, Nathan Phillips Square, the University of Toronto and Toronto Metropolitan University. As such, the Site location is an excellent candidate for intensification from a transportation perspective.

In the immediate vicinity of the Site, the existing pedestrian environment facilitates pedestrian movements with adequate efficiency and safety. Along the major arterial roads bordering the Site (Yonge Street and Bay Street), sidewalks are sufficiently large and the signalized intersection of Elm Street / Bay Street is equipped with a 4-directional crosswalk and pedestrian signal heads.

All roads in the Site vicinity have continuous sidewalks on both sides of the roadway with curb ramps at all signalized and unsignalized intersections. Signalized intersections with pedestrian crossings in the vicinity of the Site are spaced approximately 150-420 metres apart. The intersection at Elm Street and Yonge Street is an unsignalized intersection with a pedestrian crossing along the west side of the intersection and a signalized east-west crossing at .Gould Street and Yonge Street, 50 metres to the south of Elm Street.

13.1.2 Enhanced Pedestrian Environment

Adding vibrancy and mid-block connections that enhance the comfort and safety of pedestrians in the vicinity of the Site has been a key component of the Site plan design and proposed re-development. Significant enhancements to the public realm are proposed. To enhance pedestrian connections to the Site, there are direct connections to the retail entrance along Elm Street.

13.2 PEDESTRIAN FORECASTING

The following section provides a summary of the existing and forecast future pedestrian volumes on the external pedestrian network. Pedestrian volumes were established for the weekday morning and afternoon street peak hours.

13.2.1 Site Related Pedestrian Volumes

DIRECT PEDESTRIAN VOLUMES

Direct pedestrian trips are trips made solely by walking; they exclude pedestrians travelling to / from transit stops and stations or to / from parking facilities in the area.

A total of approximately **65** and **60** net new two-way direct pedestrian trips are forecast to be generated during the weekday morning and weekday afternoon peak hours, respectively.

TRANSIT-BASED PEDESTRIAN VOLUMES

As described in **Section 12.0**, net new transit trips generated by the proposed development have been assigned to area transit routes based on a review of 2016 TTS data.

Based on the transit trip assignment derived from the 2016 TTS, most transit-related pedestrian trips will board or alight transit routes at TTC Line 1 Dundas Station.

A total of **25** and **20** net new two-way transit-based pedestrian trips are forecast to and from the Site during the weekday morning and weekday afternoon peak hours, respectively.

TOTAL SITE PEDESTRIAN VOLUMES

Considering direct pedestrian trips, transit-based pedestrian trips, and auto-based pedestrian trips results in a total of **90** and **80** net new two-way pedestrian trips during the morning and afternoon peak hours, respectively.

The total pedestrian activity for the Site is summarized in **Table 23**.

TABLE 23 PEDESTRIAN TRIPS

Trip Type	AM Peak Hour			PM Peak Hour		
	In	Out	2-way	In	Out	2-way
Direct Pedestrian Trips	15	50	**65**	35	25	**60**
Transit Pedestrian Trips	5	20	**25**	10	10	**20**
Net New Pedestrian Trips	**20**	**70**	**90**	**45**	**35**	**80**

Notes:
1. Trips rounded to the nearest 5.

13.3 PEDESTRIAN ASSESSMENT

13.3.1 Assessment Criteria – Pedestrian Environment

BA Group has undertaken a review of the performance of the pedestrian system and facilities located within the vicinity of the Site. Existing and projected pedestrian volumes were considered in the assessment. The review considered the following assessment criteria:

Walking:

- Are pedestrian facilities wide enough to allow pedestrians to walk and pass comfortably under expected pedestrian volumes?
- Do walking paths have minimal interaction with vehicular crossings (i.e. driveways, laneways, etc.)?
- Are adequate sight lines provided in the case of vehicular interaction points?
- Are pedestrian facilities separated from roads carrying vehicular traffic by a setback or other barrier where appropriate to ensure pedestrian comfort?
- Is adequate lighting is provided along pedestrian facilities?
- Are the widths of sidewalks, walkways, stairs, ramps, and other pedestrian facilities maintained under winter/snow removal conditions?

Waiting:

- Are pedestrian waiting facilities provided at intersections designed to accommodate the volume of pedestrians expected to accumulate between crossing cycles and minimize pedestrians' exposure to hazards?
- Are there adequate sight distances and direct sight lines between pedestrians and vehicles at intersections?
- Are actuated/callable pedestrian signals provided at signalized crossings?

Crossing:

- Is a formal pedestrian crossing provided at the intersection or desired location of crossing?
- Do formal crossings in the area pedestrian network provide efficient routes for pedestrians to reach desired destinations and discourage jay-walking or informal crossings?
- Are crosswalks wide enough to accommodate expected two-way crossings volumes?

Connecting:

- Do pedestrian facilities make up a well-connected network providing a high level of area coverage without "gaps" or disconnected links in the network?
- Do pedestrian facilities provide efficient routes between key destinations?

Accessible:

- Are pedestrian facilities available to all regardless of age or ability and designed to be accessible, where possible and practical?

13.3.2 Evaluation Results

BA Group has undertaken a review of the area pedestrian network based upon five main criteria, evaluating area infrastructure with respect to walking, waiting, crossing, connecting, and accessible attributes.

A summary of the key findings of the pedestrian assessment are provided below.

Walking

- At most, the Site is expected to generate 90 net new two-way pedestrian trips on an external sidewalk segment in a peak hour; this reflects 2 or fewer new pedestrian trips per minute.
- Many pedestrian trips are made to access local streetcar stops and will stay within 150 metres of the Site, limiting area impacts.
- Most sidewalk segments on Elm Street, Bay Street and Yonge Street provide adequate space for pedestrians.
- Sidewalks are set back from curbs, often with bicycle posts, trees, or other street furniture between the sidewalk and the road, and are well illuminated by overhead lighting.
- The City of Toronto provides seasonal maintenance on all sidewalk segments in this area.

Waiting

- Street corners at the Elm Street / Bay Street intersection are large and free of obstacles, allowing pedestrians to comfortably wait between crossing cycles.
- Pedestrian signal heads are provided for all four crossing directions at the Elm Street / Bay Street intersection.

Crossing

- Formal pedestrian crossings are provided for all four crossing directions at the Elm Street / Bay Street intersection.
- Crossings provide direct routes to and from transit stops in the median of Spadina Avenue and do not encourage jaywalking.
- All four crosswalks at the Elm Street / Bay Street intersection are wide (> 4.0 m) and provide adequate space to accommodate all crossing pedestrians.

Connecting

- The pedestrian network is well-connected in the vicinity of the Site, providing easy and contiguous access to area destinations.
- The pedestrian network is also well-integrated with area transit stops, including those for TTC Line 1 Dundas Station, to support transit trips to and from the Site.

Accessible

- Pedestrian facilities at the Elm Street / Bay Street intersection, including sidewalks, waiting areas, and pedestrian signals, are designed to be accessible.
- Tactile strips are provided at some intersection curb ramps.

14.0 CYCLING CONSIDERATIONS

14.1.1 Existing Cycling Network

The Site is within a 500 metre radius to a number of cycle tracks, a bike lane and a series of short on-street shared cycling connections that connect to the wider cycling network of Toronto. The City's cycling network was summarized in **Section 4.4** of this report.

Bike Share Facilities

The Bike Share Toronto program offers flexible cycling options within the City of Toronto that can be used on a short-term basis and can be picked-up / dropped-off at stations across the City of Toronto.

Bike Share Toronto provides a network of 3,750 bicycles and 6,200 docking points in 360 stations across central Toronto. Boasting a user base of 13,000 active members, any of the system's users may pick-up and drop-off bikes at stations with available bikes and docks.

Within 500 metres of the Site, there are • There are 16 bike share locations within a 400-metre radius of the site, holding approximately 275 docks available to be used by travellers to and from the Site.The nearest bike share docking stations to the Site are directly south of the Site on Edward Street and on Gould Street east of Yonge.

14.2 CYCLING FORECASTING & ASSIGNMENT

14.2.1 Site Related Volumes

Cycling trip generated by the proposed development were forecast for the residential component of the development project, based upon the trip generation forecasting methods outlined in **Section 9.0**.

Due to the size of the proposed development, the volume of forecasted peak hour cycling trips is low. There are several route options for cyclists going to and from the Site and the volume of 5 two-way morning and afternoon peak hour trips is not anticipated to generate any impacts on the City's cycling infrastructure.

TABLE 24 SITE CYCLING VOLUMES

Land Use	AM Peak Hour			PM Peak Hour		
	In	Out	2-way	In	Out	2-way
Resident Trips	0	5	**5**	5	0	**5**
Total Trips	**0**	**5**	**5**	**5**	**0**	**5**

Notes:
1. Trips rounded to the nearest 5.

14.3 CYCLING ASSESSMENT

14.3.1 Assessment Criteria

BA Group has undertaken a general review of the cycling infrastructure provided on the development Site and within its vicinity.

The Site currently does not have any cycling infrastructure located on-Site. Providing convenient access and proper support for cycling can help encourage residents and visitors to make cycling trips. As part of the proposed development programme, a total of 192 bicycle spaces are proposed on-Site. These proposed bicycle facilities will encourage residents and visitors of the Site to bike to the Site and offers safe and secure bicycle infrastructure.

.

The review considered the following assessment criteria:

Bicycle Parking:

- The Site must have an adequate bicycle parking supply, inclusive of short-term bicycle parking that is located in highly visible and publicly accessible locations.

Sharing:

- Bike Share Toronto facilities can be conveniently located on-Site or in close proximity; it is preferable if bike sharing stations are located adjacent higher-order transit stations.

Connecting:

- It is beneficial if the Site is well-connected as part of the City of Toronto's cycling network via infrastructure that is safe, convenient, and has high capacity.

Support:

- Bicycle repair stations provided on-Site are an amenity that adds convenience to local cycling.

14.3.2 Evaluation Results

BA Group has undertaken a review of the area cycling network based upon criteria including; adequacy of Site parking supply to accommodate bicycle parking demand in accessible locations, provision of bike share infrastructure in convenient location, the cycling links between the local infrastructure and the city wide network, the safety of the infrastructure, and the ability to support the use of cycling infrastructure.

A summary of the key findings of the cycling assessment are provided below.

Parking

- Provision of 192 bicycle parking spaces in accordance with Toronto Green Standards Tier 1;
- Long term spaces will be provided within secure weather protected rooms and short term spaces will be provided in an easily accessible location in close proximity to the building entrances
- Consideration will be given to providing a bicycle repair station on the Site.
- An additional 10 short-term spaces are located at grade and are publically accessible

Connecting

- The Bay Street on-street bike lane operates to the west of the Site, connecting it to other bike routes within the City
- Cycling infrastructure is planned within the vicinity of the Site, which will connect the Site with transit and other planned cycling infrastructure.

Sharing

- There are 16 bike share locations within a 400-metre radius of the site, holding approximately 275 docks available to be used by travellers to and from the Site.

Support

- Information about cycling in the City can be provided to residents
- Bicycle repair station could be provided for residents

15.0 SUMMARY & CONCLUSIONS

BA Group is retained by Fora Developments to provide urban transportation consulting services in relation to a Zoning By-law Amendment application being made to the City of Toronto for a proposed mixed-use development located at 17 Elm Street in the City of Toronto (herein referred to as the "Site").

Findings of the transportation study are included in the following sections.

Project Overview

1. Today, the Site is occupied for 1 to 2 storey commercial buildings.

2. The development proposed for the Site includes a mixed-use building comprising 174 residential units, approximately 212 m^2 of retail gross floor area (GFA).

3. Vehicle access to the Site is proposed be provided via Harry Barberian Lane, which would be widened to 6.0 metres as part of the development to allow for two-way vehicle travel.

4. Transportation related elements of the development proposal includes a total of 22 vehicle parking spaces, one Type 'G' loading space and 192 bicycle parking spaces.

Transportation Context

5. The Site is excellently located for intensification from a transportation perspective given the high degree of pedestrian, transit and cycling accessibility provided to the Site today and in the future.

6. The Site is ideally located relative to TTC Line 1 Yonge-University-Spadina subway and TTC streetcar lines on Dundas Street and College Street.

7. Cycling facilities are located on nearby streets provide good east-west and north-south connections and the Site is connected to a robust pedestrian network within the downtown Toronto area.

Transportation Demand Management

8. A Mobility Choice Travel Plan, outlining Transportation Demand Management measures, is proposed to support the future development and sustainable transportation trips to / from the Site.

9. The objectives of the plan are:

    - Reducing demand on road infrastructure, thereby minimizing road and parking capital expenditures;
    - Increasing travel efficiency;
    - Reducing climate change emissions, and
    - Improving air quality.

10. Potential mobility plan measures include
    - Provision of on-Site communication items / information regarding local transit services and scheduling to facilitate resident and visitor transit travel to / from the Site.
    - Pre-paid presto card for each unit owner who does not purchase a parking space
    - 1-year car share membership for each unit owner who does not purchase a parking space

- Offer parking to building residents “unbundled” from unit purchase.

Vehicle Parking Considerations

11. Application of City of Toronto Zoning By-law 569-2013 (Policy Area 1) requires the provision of 139 (111 resident and 28 non-resident) parking spaces.

12. Application of Zoning By-law 89-2021 for PZA to the proposed development requires a minimum of 3 spaces (for visitors) and maximum of 135 spaces (111 resident and 24 non-resident) for the site.

13. It is proposed to provide 22 vehicle parking spaces within a fully automated parking garage. Access to the parking is provided via two (2) elevator cabins.

14. All spaces within the parking facilities are considered to be accessible as the elevator cabins meet accessibility requirement.

15. The proposed parking supply and arrangements are considered to be appropriate given context of the Site within the Downtown area and proximity to transit services and a amenities within walking and cycling distance.

Bicycle Parking Considerations

16. The site is subject to the minimum bicycle parking requirements set out in the City of Toronto Zoning By-law 569-2013 as well as the Toronto Green Standard (“TGS”) for Mid-to-High Rise Buildings (Version 4.0). The site is located within Bicycle Zone 1 and the Tier 1 TGS bicycle parking standards are consistent with the standards outlined in Zoning By-law 569-2013.

17. Application of the Toronto Green Standard (Zone 1 – Tier 1) and Zoning By-Law 569-2013 standards to the proposed development would require the provision of a minimum of 174 bicycle parking spaces (157 long-term and 17 short-term).

18. TGS (Zone 1 – Tier 1) requires at least 15 percent of residential long-term bicycle parking spaces shall include an Energized Outlet (120 V) adjacent to the bicycle rack or parking space. Based on the above, a total of 23 residential long-term bicycle parking spaces are required to have Energized Outlets.

19. TGS (Zone 1 – Tier 1) requires that all uses within the proposed development located within 500 metres of a transit station entrance must provide at least 10 additional short-term bicycle parking spaces that are publicly accessible and located either at-grade or within the public boulevard. Ten additional short-term spaces have been located at-grade along the Elm Street frontage to meet this requirement.

20. Current development plans illustrate a total of 192 bicycle parking spaces including 158 long-term and 34 short-term spaces. The proposed bicycle parking supply meets and exceeds the Zoning By-law and TGS requirements for the Site.

Loading Considerations

21. Application of the City of Toronto Zoning By-law 569-2013 requires 1 Type ‘G’ loading space.

22. The proposed loading supply consists of 1 Type ‘G’ loading space as required by Zoning By-law 569-2013. The loading space is provided within the at-grade loading facility, which can be accessed off of Harry Barberian Lane.

23. The at-grade loading facility will accommodate refuse collection and moving / delivery activity for the residential component of the building and general loading activity for the retail portion of the development.
24. Loading facilities proposed for the Site are appropriate and will meet the loading and refuse collection needs of the proposed development plan.

Multi-modal Travel Demand Forecast

25. Multi-modal forecasts have been developed from a first principles approach using person trip making characteristics for the key component uses within the site. The existing area travel characteristics reflect a high level of pedestrian, cycle and transit usage, given its location within a highly walkable and transit accessible neighbourhood.

26. Based on existing multi-modal travel characteristics, it is anticipated that the proposed development located within an area of excellent transit services and active transportation facilities, will reflect a high level of non-auto based travel to and from the site.

27. Residential person trip rates were established based on a comparison between traffic counts at proxy developments, by first principles using 2016 TTS data, and ITE Trip Generation Manual 11th Edition formulations.

28. The site is forecasted to generate a total of 20 and 15 two-way vehicle trips during the weekday morning and afternoon peak hours, respectively. The trips will be made to / from the proposed fully automated parking facility with 22 underground parking spaces.

29. In addition to the vehicular trip generation for the project, BA Group has projected the multi-modal travel demand for the residential component of the proposed development. The proposed development is expected to generate in the order of 95 and 85 non-automobile two-way trips during the weekday morning and afternoon peak hours, respectively.

30. The Site is located adjacent to a higher-order transit service corridor, surface transit routes, active transportation facilities, and a mix of land uses, all of which are supportive of non-auto based travel to and from the Site, particularly during the weekday peak periods of travel.

31. The reduced parking proposal alongside the proposed cycling infrastructure further supports the use of transit and active transportation by discouraging private automobile use and promoting an active mode of transportation

Traffic Operations

32. Under existing traffic conditions, all signalized intersections in the study area operate under capacity at overall v/c ratios of 0.35 or better during the weekday morning and 0.38 or better during the weekday afternoon peak hours.

33. Under future background traffic conditions with allowances for area development traffic and general area corridor growth, all signalized intersections in the study area operate under capacity with overall v/c ratios of 0.36 or better in the weekday morning and 0.40 or better in the weekday afternoon peak hours.

34. The addition of site-related traffic under future total traffic conditions has minimal impact on the signalized intersections in the study area; they continue to operate under capacity with overall v/c ratios of 0.36 or better in the weekday morning and 0.41 or better in the weekday afternoon peak hours.

35. Traffic operations at all unsignalized intersections within the study area are at acceptable level of service under all scenarios, without any need for road improvements or mitigation measures, with the exception of the intersection of **Elm Street / Yonge Street** which is experiencing significant delays at the existing weekday afternoon peak period. The delay is exacerbated by over 2,000 pedestrians in the existing condition moving north-south across Elm Street during the weekday afternoon peak period.

    Based on the technical review above, the Site generated traffic volumes can be acceptably accommodated at all the intersections surrounding the subject site. In addition, the Site's transportation elements – namely the vehicle parking supply, number of loading space and bicycle parking are appropriately designed to support the proposed development programme.

Transit Considerations

36. The Site is well-served by streetcar transit services operated by the Toronto Transit Commission (TTC). Specifically, TTC Line 1 Dundas Station is located 220 metres (4 minute walk) from the Site.

37. The Project is anticipated to generate in the order of approximately **25** and **20** two-way transit trips during the weekday morning and afternoon peak hours, respectively.

38. Site transit trips will be predominately oriented to / from Dundas Station, as resident-based transit riders tend to route to / from the major employment areas in Downtown Toronto via the fast, frequent subway service on Line 1.

39. Given the access to various transit routes in the immediate area and the relatively low volume of trips generated by the proposed development, the impact on area transit services are expected to be minimal, and future transit expansion will further reduce impacts on individual routes

Pedestrian Considerations

40. The Site is located in the Downtown Yonge District on the east side of the downtown Toronto core. The location of the Site is highly pedestrianized as it is situated within walking distance of numerous employment, entertainment, shopping, and amenity centres.

41. At most, the Site is expected to generate 90 net new two-way pedestrian trips on an external sidewalk segment in a peak hour.

42. The Site is well connected to a robust existing pedestrian network and pedestrians have options for connecting and crossing at intersections in the vicinity of the Site.

Cycling Considerations

43. The Site is well connected to the City's cycling network and is within 400m of existing formal bicycle infrastructure.

44. The proposed development is expected to generate in the order of 5 two-way morning and afternoon peak hours.

45. The proposed development provides adequate cycling facilities for residents and visitors and the Site is well connected to the City's cycling network.

APPENDIX A:
Architectural Plans

1. SITE INFO	
1.0 SITE INFORMATION	
SITE AREA (includes building area, paved area, and private road)	793 sm
PROPOSED TOTAL GFA	14,287 sm
PROPOSED AREA OF PRIVATE ROAD	96 sm
PROPOSED FSI GROSS	18.02
PROPOSED RESIDENTIAL GFA	14,087 sm
PROPOSED NUMBER OF UNITS	174
PAVED AREA	69 sm
BUILDING HEIGHT	99 m

1.1 RESIDENTIAL GFA		1.2 NON-RESIDENTIAL GFA		1.3 TOTAL GFA PER 425-1993	
SF	SM	SF	SM	SF	SM
151,633	14,087	2,153	200	153,786	14,287

NOTES

*as per By-law 569-2013, Gross Floor Area is reduced by: Parking, Loading & Bicycle spaces below-ground; Storage rooms, Washrooms, Elec, Utility, Mech and Ventilation rooms in the Basement; required Shower & Change facilities; required Indoor Amenity space; Elevator shafts; Garbage shafts; Mech. Penthouse and Exit stairwells.

1.5 UNIT COUNT TOTALS

UNIT TYPE	TOTAL AREA SM	TOTAL AREA SF	TOTAL UNIT COUNT	% OF TOTAL UNIT	REQUIRED %
STUDIO	501.0	5,393	5	3%	10%
1B	6075.0	65,391	95	55%	65%
2B	2297.0	24,725	51	29%	15%
3B	1510.0	16,254	23	13%	10%
TOTAL	**10383.0**	**111,762**	**174**	**100%**	

2. PARKING INFO

2.1 PARKING SUMMARY PROVIDED

LEVEL	RES	TOTAL
P1	0	
P2	22	22

2.2 BICYCLE PARKING

LEVEL	SHORT TERM	REQUIRED (0.1 spaces/unit)	LONG TERM	REQUIRED (0.9 spces/unit)
LEVEL 1	34	28	0	157
LEVEL 2			86	
LEVEL P1			72	
TOTAL	**34**		**158**	

3. LOADING

3.0 LOADING SUMMARY

	COUNT	REQUIRED	
TYPE G	1	1	
GARBAGE & STAGING	55	64	*25SM for the first 50 units, plu

4. AMENITY

4.0 RESIDENTIAL AMENITY INDOOR

*Required to provide 2sm indo
*Required indoor amenity dedi

LEVEL	SM	SF	Required (SM)
LEVEL 21	348	3,746	2SM / Unit
			348
TOTAL	**348**		

4.2 AMENITY OUTDOOR

*Required to provide 2sm outd

LEVEL	SM	SF	Required	
GROUND	74	797	2SM / Unit	
LEVEL 21	141	1,518		
ROOFTOP	88	947	348	*green roof can only be 25% o
TOTAL	**303**	3,262		

2 Project Stats
A0001 1 : 1

TOTAL GFA PER FLOOR / **TOTAL UNIT COUNT PER FLOOR**

FLOOR	BYLAW GFA 569-2013 TOTAL BUILDING GFA ft2	m2		<50 Studio	51-65 1 Bedroom	66-85 2 Bedroom	>85 3 Bedroom	TOTAL PER FLOOR	
			% required:	10%	65%	15%	10%		
			total required:	17	113	26	17		
P2	0	0	P2						
P1	0	0	P1						
1	1636	152	1	0	0	0	0		
2	3197	297	2	0	0	3	0	3	
3	5920	550	3	1	4	0	2	7	
4	6049	562	4	1	4	0	2	7	
5	6135	570	5	1	4	0	2	7	
6	6469	601	6	1	4	0	2	7	
7	6480	602	7	1	4	0	2	7	
8	6797	632	8	0	2	3	2	7	
9	6797	632	9	0	2	3	2	7	
10	5776	537	10	0	4	3	0	7	terrace
11	5726	532	11	0	4	3	0	7	
12	5490	510	12	0	4	3	0	7	
13	5560	517	13	0	4	3	0	7	
14	5560	517	14	0	4	3	0	7	
15	5726	532	15	0	4	3	0	7	
16	5694	529	16	0	4	3	0	7	
17	5490	510	17	0	4	3	0	7	
18	5560	517	18	0	4	3	0	7	
19	5560	517	19	0	4	3	0	7	
20	5560	517	20	0	4	3	0	7	
21	334	31	21	0	0	0	0	0	terrace
22	4446	413	22	0	3	1	1	5	
23	4446	413	23	0	3	1	1	5	
24	4446	413	24	0	3	1	1	5	
25	4446	413	25	0	3	1	1	5	
26	4446	413	26	0	3	1	1	5	
27	4446	413	27	0	3	1	1	5	
28	4446	413	28	0	3	1	1	5	
29	4446	413	29	0	3	1	1	5	
30	4446	413	30	0	3	1	1	5	
31 - MPH	0	0	31 - MPH					0	
32 - MPH	0	0	32 - MPH					0	
TOTALS	151525.9	14077.1		5	95	51	23	174	
			15% of units to be accessible	1	14	8	3		
				3%	55%	29%	13%		

*By-law GFA includes area of residential suites, office, and retail, mechanical areas above grade (excluding penthouse), space allocated for storage lockers above grade

1 Residential Count
A0001 1 : 1

SPA	
Permit	
Tender	
Contract	
Construction	

No.	DESCRIPTION	Date
1	Issued for SPA	Aug 22, 2022

NOT FOR CONSTRUCTION

PARTISANS
116 Geary Ave Unit 204, Toronto, ON, Canada, M6H 4H1
www.partisanprojects.com

Certificate of Practice No.: ????
Architect's BCIN: 7211

North Arrow — True North

Scale 1 : 1
Drawn Author
Checked Checker
Approved Approver

Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title
Project Statistics

Project Number 88
Drawing Number A0001

RESIDENTIAL UNIT BREAKDOWN

	UNIT NAME	UNIT TYPE	UNIT AREA SM
Level 2	2B	C1	76
		C2	83
		C3	76
			235.0
Level 3	STUDIO	A1	43
	1B	B1	63
		B2	60
		B3	63
		B4	64
	3B	D1	92
		D2	94
			479.0
Level 4	STUDIO	A1	44
	1B	B1	63
		B2	60
		B3	63
		B4	65
	3B	D1	92
		D2	97
			484.0
Level 5	STUDIO	A1	44
	1B	B1	67
		B2	62
		B3	62
		B4	71
	3B	D1	92
		D2	95
			493.0
Level 6	STUDIO	A1	50
	1B	B1	68
		B2	69
		B3	61
		B4	71
	3B	D1	97
		D2	108
			524.0
Level 7	STUDIO	A1	55
	1B	B1	69
		B2	75
		B3	64
		B4	65
	3B	D1	99
		D2	115
			542.0
Level 8	1B	B1	63
		B2	70
	2B	C1	72
		C2	72
		C3	84
		C4	90
	3B	D1	105
			556.0
Level 9	1B	B1	63
		B2	70
	2B	C1	72
		C2	72
		C3	84
		C4	90
	3B	D1	105
			556.0
Level 10 (Podium w Terrace)	1B	B1	49
		B2	54
	2B	C1	0
		C2	79
		C3	63
		C4	53
	3B	D1	81
			379.0
Level 11	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 12	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 13	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 14	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 15	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 16	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 17	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 18	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 19	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 20	1B	B1	43
		B2	51
		B3	65
		B4	59
		B5	73
	2B	C1	74
		C2	81
			446.0
Level 21 (Amenity)	STUDIO		
	1B		
	2B		
	3B		
			0.0
Level 22	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
Level 23	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
Level 24	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
Level 25	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
Level 26	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
Level 27	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
Level 28	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
Level 29	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
Level 30	1B	B1	60
		B2	52
		B3	60
	3B	D1	75
	3B	D2	95
			342.0
TOTALS			**11,786**

1 Saleable Area
A0002 1 : 1

SPA	
Permit	
Tender	
Contract	
Construction	

No.	DESCRIPTION	Date
1	Issued for SPA	Aug 22, 2022

NOT FOR CONSTRUCTION

PARTISANS
116 Geary Ave Unit 204, Toronto, ON, Canada, M6H 4H1
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Certificate of Practice No.: ????
Architect's BCIN: 7211

North Arrow
True North

Scale 1 : 1
Drawn Author
Checked Checker
Approved Approver

Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title
Saleable Area

Project Number 88
Drawing Number A0002

TOTAL GCA PER FLOOR

	FLOOR	TOTAL BUILDING GFA SF	TOTAL BUILDING GFA SM (Total)	Balconies	Interior Area
Below Grade	P2	8481	788		
	P1	8481	788		
total		16963	1576		
Above Grade	1	5648	525	0	525
	2	5006	465	21	444
	3	6507	605	33	572
	4	6567	610	39	571
	5	6666	619	39	580
	6	7000	650	39	611
	7	7276	676	22	654
	8	7420	689	38	652
	9	7397	687	38	650
	10	7422	690	116	574
	11	6334	588	48	540
	12	6226	578	26	552
	13	6198	576	33	543
	14	6200	576	33	544
	15	6270	582	48	534
	16	6326	588	45	543
	17	6218	578	26	552
	18	6201	576	33	544
	19	6193	575	33	543
	20	6181	574	33	542
	21	6260	582	0	582 *amenity flc
	22	5004	465	39	426
	23	5004	465	39	426
	24	5004	465	39	426
	25	4922	457	39	418
	26	4944	459	39	420
	27	5004	465	39	426
	28	5004	465	39	426
	29	5004	465	39	426
	30	4553	423	39	384
	31	4520	420	0	
	32	4162	387	0	
total		188642.3	17525.3	1090.1	15628.7

TOTAL GCA		SF	SM
		205604.8	19101.2

2 GCA
A0003 1 : 1

NON-RESIDENTIAL GFA PER BYLAW 569-2013				RESIDENTIAL GFA PER BYLAW 569-2013								BYLAW GFA 569-2013	
BOH, CIRCULATION		TOTAL NON-RESIDENTIAL		LOBBY , CIRCULATION, BOH		BALCONIES		SUITE AREA		TOTAL RESIDENTIAL		TOTAL BUILDING GFA	
ft2	m2			ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2
0		0	0	108	10	0	0	0	0	108	10	108	10
0		1711	159	0	0	0	0	0	0	0	0	1711	159
0	0	441	41	1636	152	0	0	0	0	1636	152	2077	193
	0	0	0	441	41	226	21	2530	235	3197	297	3197	297
0	0	0	0	409	38	355	33	5156	479	5920	550	5920	550
0	0	0	0	420	39	420	39	5210	484	6049	562	6049	562
0	0	0	0	409	38	420	39	5307	493	6135	570	6135	570
0	0	0	0	409	38	420	39	5640	524	6469	601	6469	601
0	0	0	0	409	38	237	22	5834	542	6480	602	6480	602
0	0	0	0	409	38	404	38	5985	556	6797	632	6797	632
0	0	0	0	409	38	404	38	5985	556	6797	632	6797	632
0	0	0	0	452	42	1244	116	4080	379	5776	537	5776	537
0	0	0	0	409	38	517	48	4801	446	5726	532	5726	532
0	0	0	0	409	38	280	26	4801	446	5490	510	5490	510
0	0	0	0	409	38	350	33	4801	446	5560	517	5560	517
0	0	0	0	409	38	350	33	4801	446	5560	517	5560	517
0	0	0	0	409	38	517	48	4801	446	5726	532	5726	532
0	0	0	0	409	38	484	45	4801	446	5694	529	5694	529
0	0	0	0	409	38	280	26	4801	446	5490	510	5490	510
0	0	0	0	409	38	350	33	4801	446	5560	517	5560	517
0	0	0	0	409	38	350	33	4801	446	5560	517	5560	517
0	0	0	0	409	38	350	33	4801	446	5560	517	5560	517
0	0	0	0	334	31	0	0	0	0	334	31	334	31
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
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0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0	0.0	2152.8	200.0	13035.2	1211.0	11733.8	1090.1	126864.5	11786.0	151633.5	14087.1	153786.3	14287.1

*By-law GFA incudes area of residential suites, office, and retail, mechanical areas above grade (excluding penthouse), space allocated for storage lockers above grade

1 GFA
A0003 1 : 1

SPA	[redacted]
Permit	
Tender	
Contract	
Construction	

No.	DESCRIPTION	Date
1	Issued for SPA	Aug 22, 2022

NOT FOR CONSTRUCTION

PARTISANS

Certificate of Practice No. ????

Architect's BCIN 7211

Scale 1 : 1

Drawn Author

Checked Checker

Approved Approver

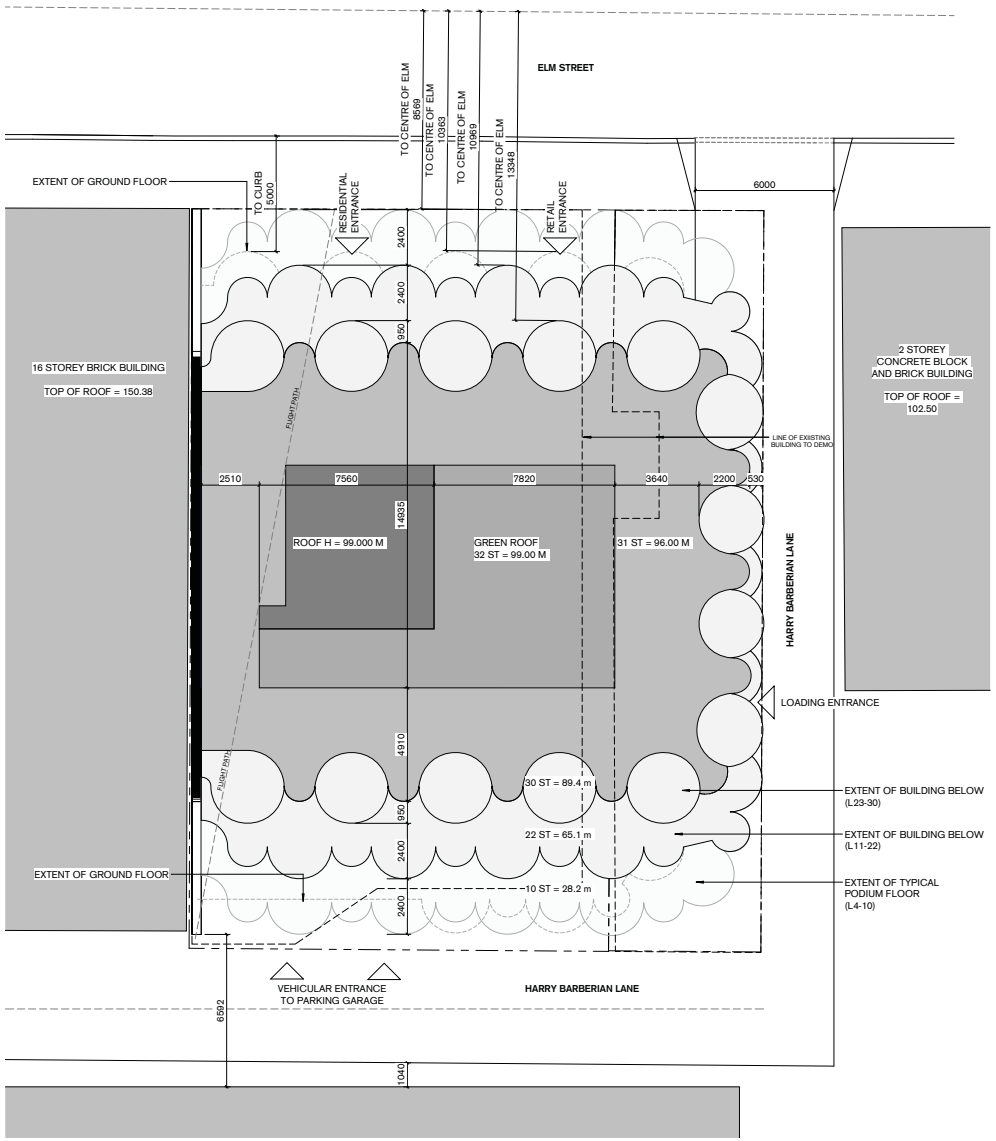
Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title
GCA & GFA

Project Number 88
Drawing Number A0003



1 Roof Plan Site plan
1 : 100

2 Context Plan
1 : 1000

SPA	
Permit	
Display	
Contract	
Construction	

No.	DESCRIPTION	Date
1	Issued for SPA	Aug 23, 2022

NOT FOR CONSTRUCTION

PARTISANS
149 Sherbourne Street, Toronto, ON, Canada, M5A 2R2
www.partisansarchitects.com

Certificate of Practice No. 9999
Architects BCIN 7211

Scale	As indicated
Drawn by	Author
Checked by	Checker
Date	Approver

Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title
Site Plan

Project Number	Drawing Number
88	A0011

NOTES:

-PARKING SYSTEM IS AUTOMATED. ARROWS SHOW DIRECTION THAT PALLETS MOVE.

SPA	
Permit	
Tender	
Contract	
Construction	

No.	DESCRIPTION	Date
1	Issued for SPA	Aug 22, 2022

BICYCLE PARKING & LOCKERS LEGEND:

610
1766
2134
STACK (HORIZONTAL)

BICYCLE PARKING STATISTICS:

LEVEL	SHORT-TERM BICYCLE		LONG-TERM BICYCLE	
	RES.	COM.	RES.	COM.
L2	0	0	86	0
GROUND	28	6	0	0
P1	0	0	72	0
TOTAL	28	6	158	0
	34		158	
	185			

PARKING NOTES:

1. PARKING IS AN AUTOMATED SYSTEM
2. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED): 2450mm WIDE X 5650mm LONG
3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.
4. ALL SPACES ARE EQUIPPED WITH EVSE

PARKING LEGEND:

(R1) PARKING SPACE

C=COMMERCIAL PARKING
R=RESIDENTIAL PARKING
V=VISITOR PARKING
E=EXISTING PARKING

2450
5650
TYPICAL - AUTOMATED PARKING
ACCESSIBLE AND EVSE

VEHICLAR PARKING:

LEVEL	RESIDENTIAL
P2	22

NOT FOR CONSTRUCTION

PARTISANS
116 Geary Ave Unit 204, Toronto, ON, Canada, M6H 4H1
www.partisanprojects.com

Certificate of Practice No.: ????
Architect's BCIN: 7211

North Arrow
True North

Scale: As indicated
Drawn: Author
Checked: Checker
Approved: Approver

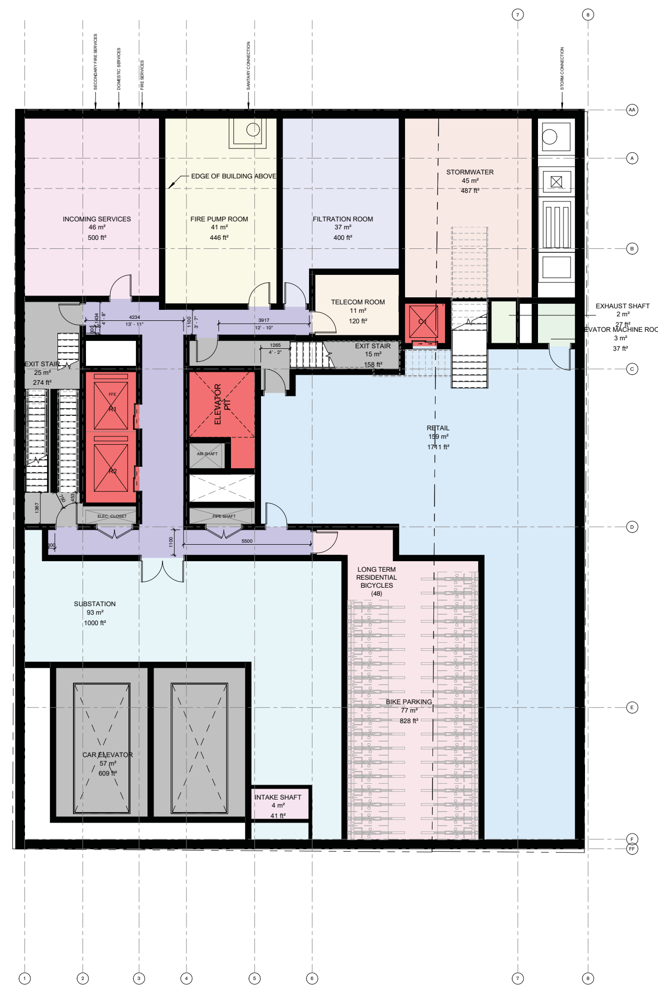
Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title
Level P2

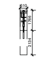
Project Number: 88
Drawing Number: A900



SPA	
Permit	
Tender	
Contract	
Construction	

No.	DESCRIPTION	Date
1	Issued for SPA	Aug 22, 2022

BICYCLE PARKING & LOCKERS LEGEND:



STACK (HORIZONTAL)

BICYCLE PARKING STATISTICS:

LEVEL	SHORT-TERM BICYCLE		LONG-TERM BICYCLE	
	RES.	COM.	RES.	COM.
L2	0	0	86	0
GROUND	28	6	0	0
P1	0	0	72	0
TOTAL	28	6	158	0
	34		158	
	185			

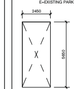
PARKING NOTES:

1. PARKING IS AN AUTOMATED SYSTEM
2. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED): 2450mm WIDE X 5650mm LONG
3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.
4. ALL SPACES ARE EQUIPPED WITH EVSE

PARKING LEGEND:

(R1) PARKING SPACE

C=COMMERCIAL PARKING
R=RESIDENTIAL PARKING
V=VISITOR PARKING
E=EXISTING PARKING



TYPICAL - AUTOMATED PARKING
ACCESSIBLE AND EVSE

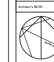
VEHICLAR PARKING:

LEVEL	RESIDENTIAL
P2	22

NOT FOR CONSTRUCTION

PARTISANS
116 Geary Ave Unit 204, Toronto, ON, Canada, M6H 4H1
www.partisanprojects.com

Certificate of Practice No.: ????
Architect's BCIN: 7211



Scale: As indicated
Drawn: Author
Checked: Checker
Approved: Approver

Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

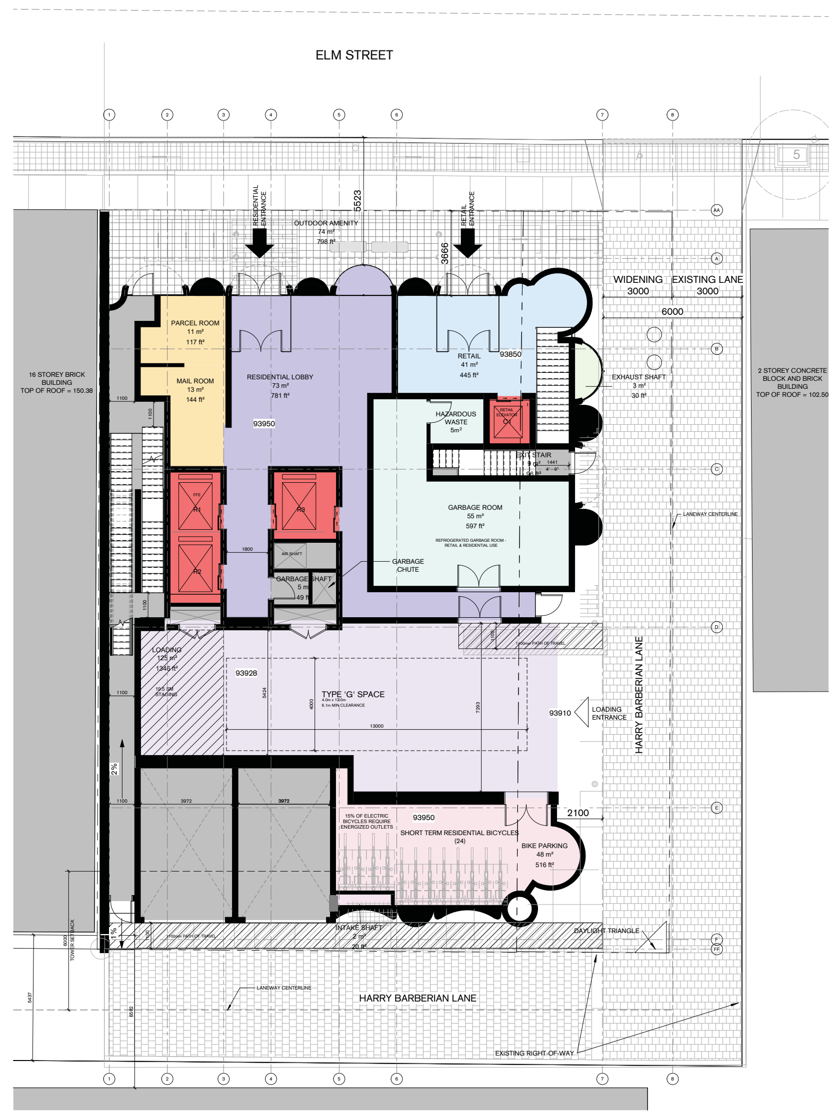
Drawing Title
Level P1

Project Number: 88
Drawing Number: A901

ARCH_D (24x36)   2022-08-17 11:00:02 AM   C:\Users\trisha\Documents\17 ELM - PAR - MAIN_v2_trishaJBKF4.rvt

NOTES:

-ANY ROOFTOP AND FACADE ILLUMINATION WILL BE DIRECTED DOWNWARD AND TURNED OFF BETWEEN 11PM-6AM
- LIGHTING AND PHOTOMETRIC LAYOUTS PROVIDED BY MCW



SPA	
Permit	
Tender	
Contract	
Construction	

No.	DESCRIPTION	Date
1	Issued for SPA	Aug 22, 2022

BICYCLE PARKING & LOCKERS LEGEND:

STACK (HORIZONTAL)

BICYCLE PARKING STATISTICS:

LEVEL	SHORT-TERM BICYCLE		LONG-TERM BICYCLE	
	RES.	COM.	RES.	COM.
L2	0	0	86	0
GROUND	28	6	0	0
P1	0	0	72	0
TOTAL	28	6	158	0
	34		158	
	185			

PARKING NOTES:

1. PARKING IS AN AUTOMATED SYSTEM
2. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED): 2450mm WIDE X 5650mm LONG
3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.
4. ALL SPACES ARE EQUIPPED WITH EVSE

PARKING LEGEND:

R1 PARKING SPACE

C=COMMERCIAL PARKING
R=RESIDENTIAL PARKING
V=VISITOR PARKING
E=EXISTING PARKING

TYPICAL - AUTOMATED PARKING *ACCESSIBLE AND EVSE*

VEHICLAR PARKING:

LEVEL	RESIDENTIAL
P2	22

SITE LEGEND:

PROPERTY LINE
LINE OF BUILDING ABOVE
GROUND FLOOR OUTLINE
MAIN BUILDING ENTRANCE
LOADING ENTRANCE / EXIT

NOT FOR CONSTRUCTION

PARTISANS
116 Geary Ave Unit 204, Toronto, ON, Canada, M6H 4H1
www.partisanprojects.com

Certificate of Practice No.: ????
Architect's BCIN: 7211

North Arrow | True North

Scale: As indicated
Drawn: Author
Checked: Checker
Approved: Approver

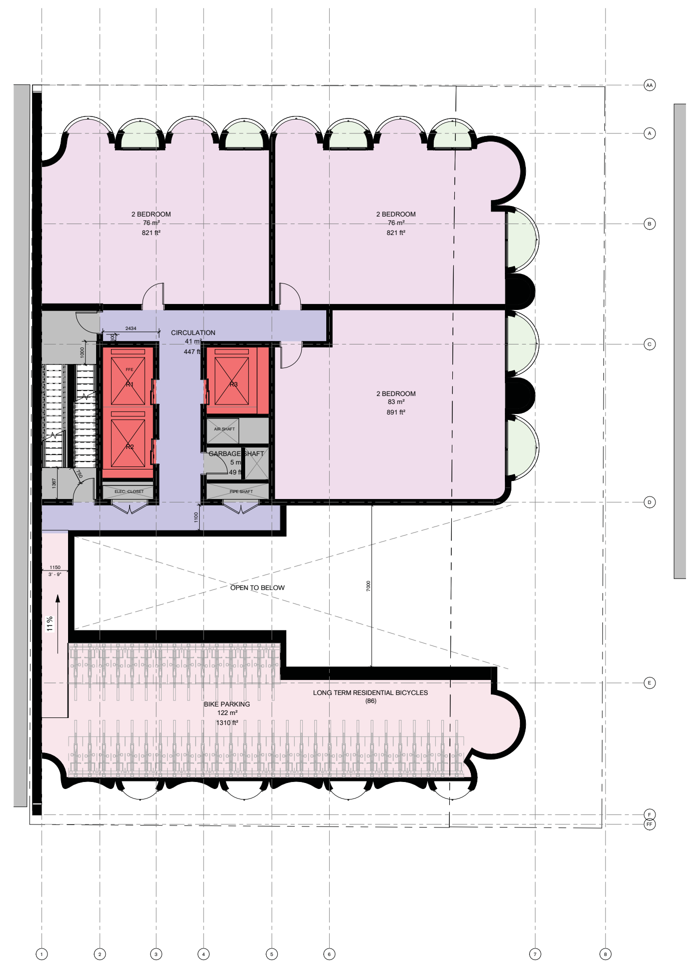
Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title
Ground Floor Plan

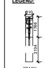
Project Number: 88
Drawing Number: A1000



SPA	
Permit	
Tender	
Contract	
Construction	

No.	DESCRIPTION	Date
1	Issued for SPA	Aug 22, 2022

BICYCLE PARKING & LOCKERS LEGEND:



STACK (HORIZONTAL)

BICYCLE PARKING STATISTICS:

LEVEL	SHORT-TERM BICYCLE		LONG-TERM BICYCLE	
	RES.	COM.	RES.	COM.
L2	0	0	86	0
GROUND	28	6	0	0
P1	0	0	72	0
TOTAL	28	6	158	0
	34		158	
	185			

NOT FOR CONSTRUCTION

PARTISANS
116 Geary Ave Unit 204, Toronto, ON, Canada, M6H 4H1
www.partisanprojects.com

Certificate of Practice No.: ????
Architect's BCIN: 7211

North Arrow

Scale: As indicated
Drawn: Author
Checked: Checker
Approved: Approver

Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

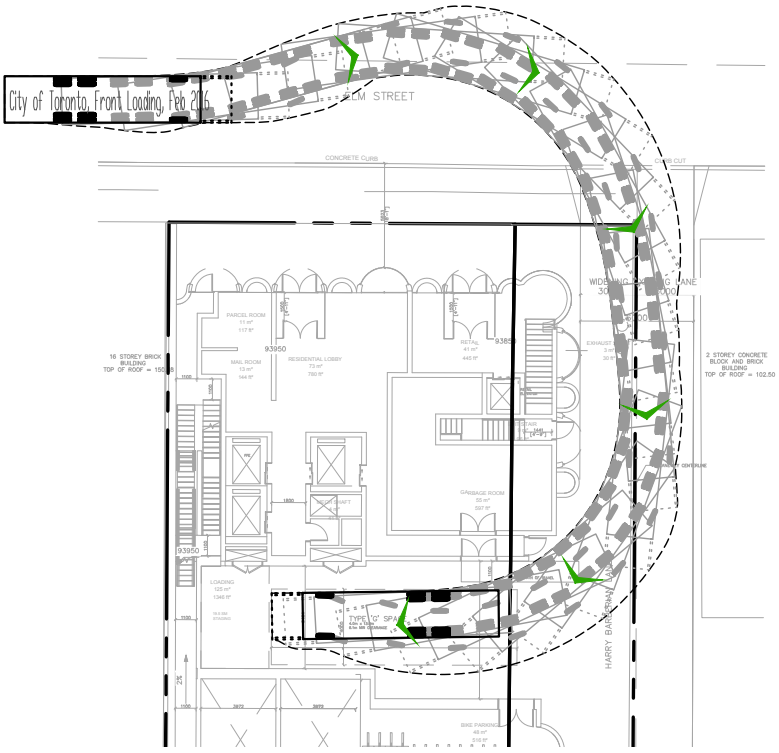
Drawing Title
Level 2

Project Number: 88
Drawing Number: A1002

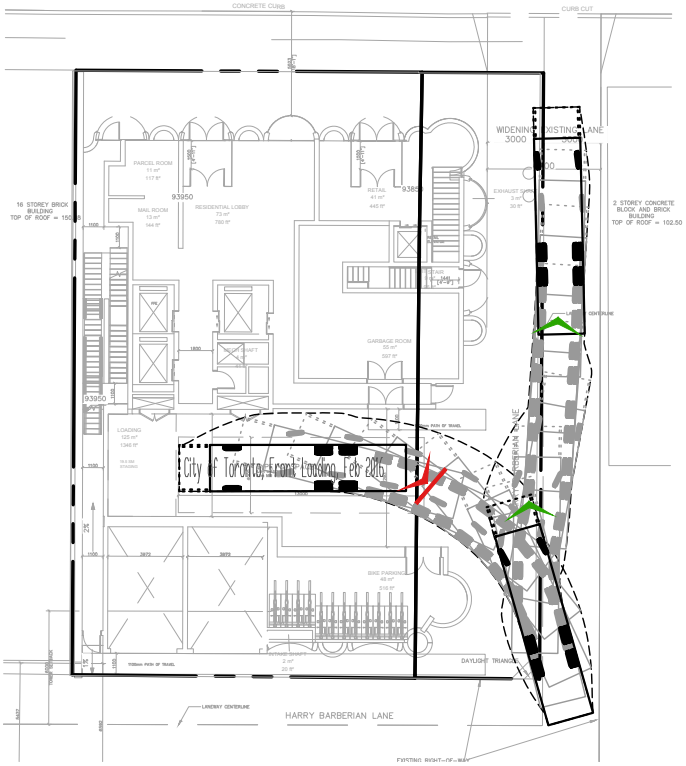
ARCH_D (24x36) 2022-08-17 11:00:05 AM C:\Users\trisha\Documents\17 ELM - PAR - MAIN_v2_trishaJBKF4.rvt

APPENDIX B:
Vehicle Manoeuvering Diagrams

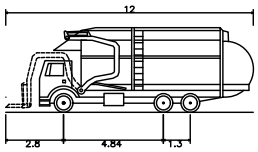
INBOUND



OUTBOUND



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



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

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

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

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

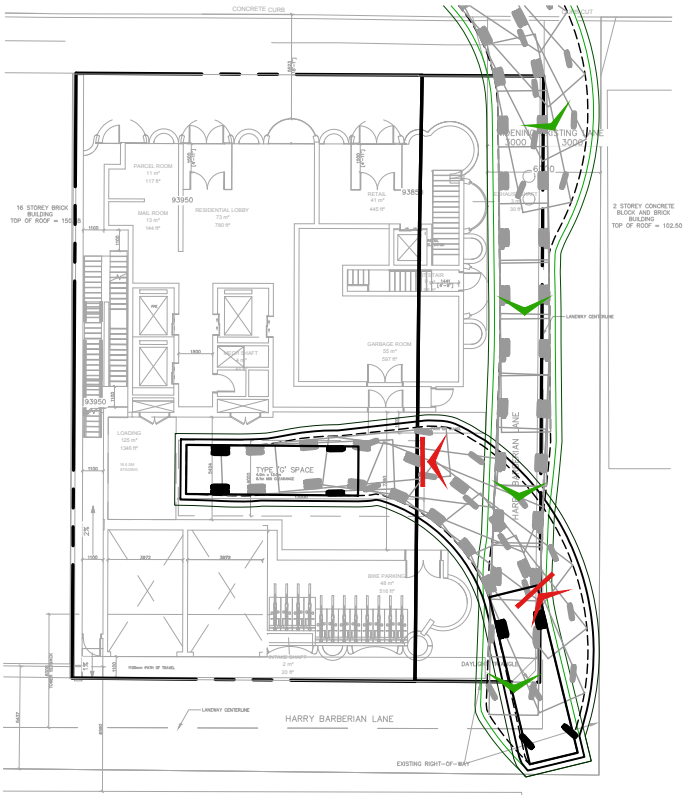
BA Group

17 ELM STREET

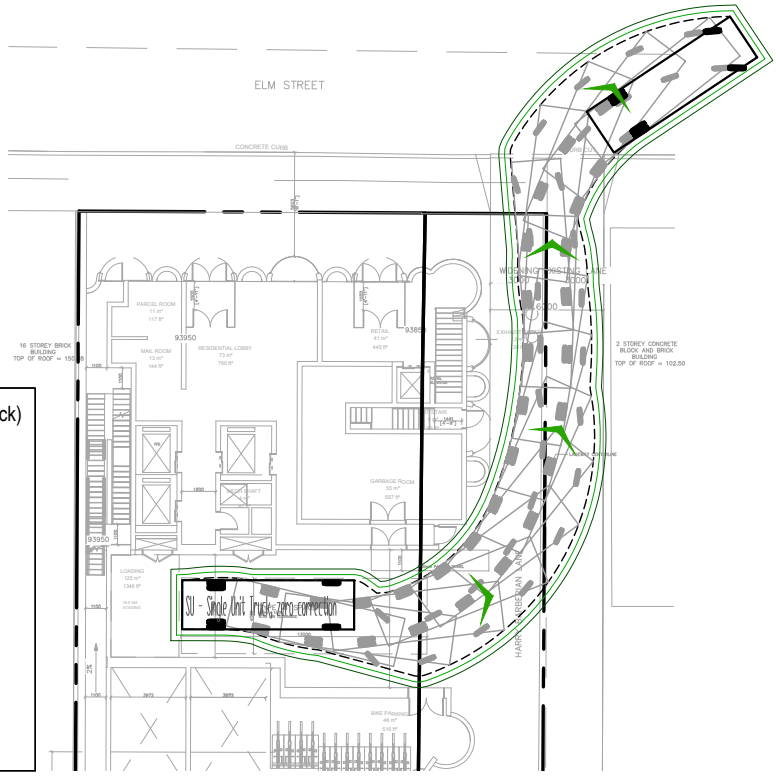
VEHICULAR MANOEUVRING DIAGRAM
TYPE 'G' SPACE - CITY OF TORONTO
REFUSE COLLECTION VEHICLE

Project:	17 ELM STREET
Project No.	8159-01
Date:	JUNE 3, 2022
Revised:	AUGUST 09, 2022
Drawing No.	VMD-01

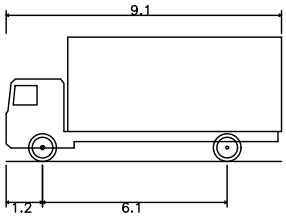
INBOUND



OUTBOUND



Design Vehicle - TAC SU (Single Unit Truck)



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

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

Date Plotted: August 9, 2022 Filename: J:\8159-01\BA\Site Plan Review\2022\R06-Aug 09 2022\BA-17 ELM-SPR-R06-8159-01_Aug09-2022.dwg

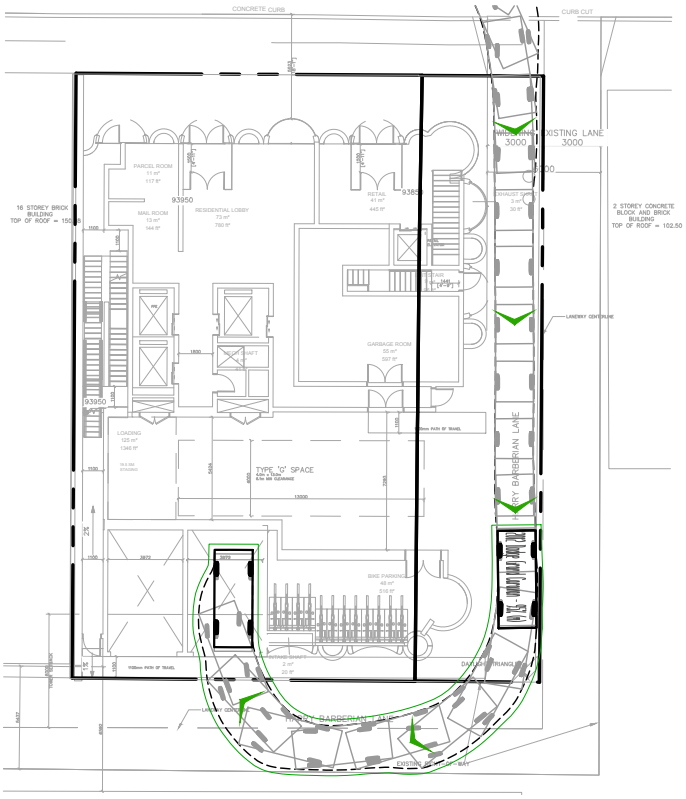
BA Group

17 ELM STREET

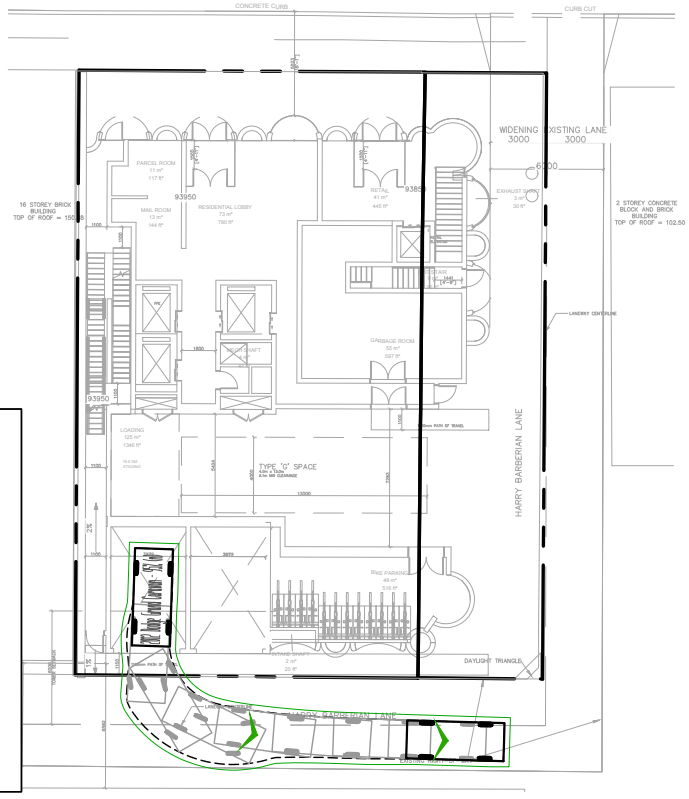
VEHICULAR MANOEUVRING DIAGRAM
TYPE 'G' SPACE - TAC SINGLE-UNIT VEHICLE

Project:	17 ELM STREET
Project No.	8159-01
Date:	JUNE 3, 2022
Revised:	AUGUST 09, 2022
Drawing No.	VMD-02

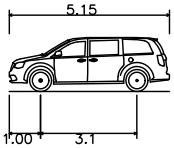
INBOUND



OUTBOUND



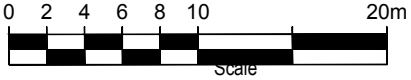
Design Vehicle - 2012 DODGE GRAND CARAVAN (95% Passenger Vehicle)



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

*Field Measurements By BA Group

1:400



BA Group

17 ELM STREET

VEHICULAR MANOEUVRING DIAGRAM 2012 DODGE GRAND CARAVAN (95TH PERCENTILE VEHICLE)

Project:	17 ELM STREET
Project No.	8159-01
Date:	JUNE 3, 2022
Revised:	AUGUST 09, 2022
Drawing No.	VMD-03

APPENDIX C:
Turning Movement Counts

Spectrum

Turning Movement Count
Location Name: BAY ST & ELM ST
Date: Tue, Jun 28, 2022 Deployment Lead: Tasos Issaakidis

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

Turning Movement Count (1 . BAY ST & ELM ST)

Start Time	N Approach BAY ST						E Approach ELM ST						S Approach BAY ST						W Approach ELM 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	22	118	2	0	20	142	8	24	1	0	59	33	7	77	0	0	25	84	6	8	22	0	54	36	295	
07:45:00	32	130	0	0	33	162	9	17	8	0	94	34	9	77	1	0	23	87	6	8	19	0	70	33	316	
08:00:00	33	151	0	0	31	184	4	15	9	0	101	28	8	89	0	0	31	97	3	11	27	0	95	41	350	
08:15:00	36	138	0	0	57	174	6	24	7	0	168	37	9	89	0	0	28	98	0	3	12	0	89	15	324	1285
08:30:00	20	154	1	0	41	175	9	19	4	0	188	32	4	109	0	0	30	113	8	10	14	0	98	32	352	1342
08:45:00	21	138	1	0	51	160	7	17	8	0	202	32	5	114	0	0	40	119	4	15	23	0	121	42	353	1379
09:00:00	19	167	0	0	34	186	3	15	3	0	157	21	8	103	0	0	33	111	7	9	15	0	115	31	349	1378
09:15:00	13	135	0	0	42	148	5	15	5	0	123	25	12	99	1	0	31	112	5	8	15	0	107	28	313	1367
BREAK																										
16:00:00	8	101	1	0	53	110	9	8	4	0	188	21	16	153	1	0	36	170	9	17	32	0	158	58	359	
16:15:00	5	108	0	0	46	113	13	12	10	0	215	35	7	155	0	0	55	162	5	23	27	0	139	55	365	
16:30:00	9	126	1	0	80	136	10	15	8	0	225	33	12	139	0	0	91	151	3	22	41	0	149	66	386	
16:45:00	11	157	1	0	51	169	11	7	7	0	240	25	6	147	0	0	57	153	4	18	32	0	159	54	401	1511
17:00:00	10	130	1	0	52	141	8	12	11	0	256	31	10	142	1	0	69	153	7	16	36	0	163	59	384	1536
17:15:00	11	125	1	0	35	137	6	7	5	0	250	18	12	117	0	0	68	129	6	16	29	0	152	51	335	1506
17:30:00	10	100	2	0	40	112	11	10	7	0	253	28	18	147	1	0	66	166	7	17	33	0	131	57	363	1483
17:45:00	8	121	0	0	47	129	9	13	9	0	242	31	12	127	0	0	58	139	7	16	21	0	119	44	343	1425
Grand Total	268	2099	11	0	713	2378	128	230	106	0	2961	464	155	1884	5	0	741	2044	87	217	398	0	1919	702	**5588**	-
Approach%	11.3%	88.3%	0.5%	0%		-	27.6%	49.6%	22.8%	0%		-	7.6%	92.2%	0.2%	0%		-	12.4%	30.9%	56.7%	0%		-	-	-
Totals %	4.8%	37.6%	0.2%	0%		42.6%	2.3%	4.1%	1.9%	0%		8.3%	2.8%	33.7%	0.1%	0%		36.6%	1.6%	3.9%	7.1%	0%		12.6%	-	-
Heavy	5	90	2	0		-	7	8	2	0		-	6	82	1	0		-	5	9	11	0		-	-	-
Heavy %	1.9%	4.3%	18.2%	0%		-	5.5%	3.5%	1.9%	0%		-	3.9%	4.4%	20%	0%		-	5.7%	4.1%	2.8%	0%		-	-	-
Bicycles	25	367	5	0		-	9	27	4	0		-	11	315	1	0		-	14	36	10	0		-	-	-
Bicycle %	9.3%	17.5%	45.5%	0%		-	7%	11.7%	3.8%	0%		-	7.1%	16.7%	20%	0%		-	16.1%	16.6%	2.5%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: BAY ST & ELM ST
Date: Tue, Jun 28, 2022 Deployment Lead: Tasos Issaakidis

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

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (14.28 °C)

Start Time	N Approach BAY ST						E Approach ELM ST						S Approach BAY ST						W Approach ELM 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	
08:00:00	33	151	0	0	31	184	4	15	9	0	101	28	8	89	0	0	31	97	3	11	27	0	95	41	350
08:15:00	36	138	0	0	57	174	6	24	7	0	168	37	9	89	0	0	28	98	0	3	12	0	89	15	324
08:30:00	20	154	1	0	41	175	9	19	4	0	188	32	4	109	0	0	30	113	8	10	14	0	98	32	352
08:45:00	21	138	1	0	51	160	7	17	8	0	202	32	5	114	0	0	40	119	4	15	23	0	121	42	353
Grand Total	110	581	2	0	180	693	26	75	28	0	659	129	26	401	0	0	129	427	15	39	76	0	403	130	**1379**
Approach%	15.9%	83.8%	0.3%	0%		-	20.2%	58.1%	21.7%	0%		-	6.1%	93.9%	0%	0%		-	11.5%	30%	58.5%	0%		-	-
Totals %	8%	42.1%	0.1%	0%		50.3%	1.9%	5.4%	2%	0%		9.4%	1.9%	29.1%	0%	0%		31%	1.1%	2.8%	5.5%	0%		9.4%	-
PHF	0.76	0.94	0.5	0		0.94	0.72	0.78	0.78	0		0.87	0.72	0.88	0	0		0.9	0.47	0.65	0.7	0		0.77	-
Heavy	2	27	1	0		30	2	2	0	0		4	1	25	0	0		26	1	2	4	0		7	-
Heavy %	1.8%	4.6%	50%	0%		4.3%	7.7%	2.7%	0%	0%		3.1%	3.8%	6.2%	0%	0%		6.1%	6.7%	5.1%	5.3%	0%		5.4%	-
Lights	108	554	1	0		663	24	73	28	0		125	25	376	0	0		401	14	37	72	0		123	-
Lights %	98.2%	95.4%	50%	0%		95.7%	92.3%	97.3%	100%	0%		96.9%	96.2%	93.8%	0%	0%		93.9%	93.3%	94.9%	94.7%	0%		94.6%	-
Single-Unit Trucks	1	15	0	0		16	1	2	0	0		3	0	19	0	0		19	1	0	3	0		4	-
Single-Unit Trucks %	0.9%	2.6%	0%	0%		2.3%	3.8%	2.7%	0%	0%		2.3%	0%	4.7%	0%	0%		4.4%	6.7%	0%	3.9%	0%		3.1%	-
Buses	1	10	1	0		12	1	0	0	0		1	0	4	0	0		4	0	2	1	0		3	-
Buses %	0.9%	1.7%	50%	0%		1.7%	3.8%	0%	0%	0%		0.8%	0%	1%	0%	0%		0.9%	0%	5.1%	1.3%	0%		2.3%	-
Articulated Trucks	0	2	0	0		2	0	0	0	0		0	1	2	0	0		3	0	0	0	0		0	-
Articulated Trucks %	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	3.8%	0.5%	0%	0%		0.7%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	175	-	-	-	-	-	656	-	-	-	-	-	129	-	-	-	-	-	401	-	-
Pedestrians%	-	-	-	-	12.8%		-	-	-	-	47.8%		-	-	-	-	9.4%		-	-	-	-	29.2%		-
Bicycles on Crosswalk	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	-	-	0.4%		-	-	-	-	0.2%		-	-	-	-	0%		-	-	-	-	0.1%		-
Bicycles on Road	10	138	1	0	0	-	1	4	1	0	0	-	0	28	0	0	0	-	1	8	1	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (23.37 °C)

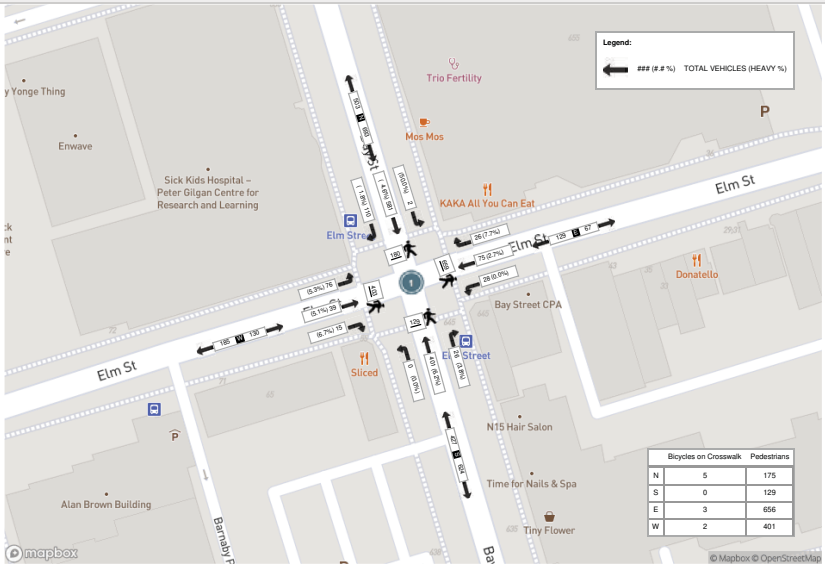
Start Time	N Approach BAY ST						E Approach ELM ST						S Approach BAY ST						W Approach ELM ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	5	108	0	0	46	113	13	12	10	0	215	35	7	155	0	0	55	162	5	23	27	0	139	55	365
16:30:00	9	126	1	0	80	136	10	15	8	0	225	33	12	139	0	0	91	151	3	22	41	0	149	66	386
16:45:00	11	157	1	0	51	169	11	7	7	0	240	25	6	147	0	0	57	153	4	18	32	0	159	54	401
17:00:00	10	130	1	0	52	141	8	12	11	0	256	31	10	142	1	0	69	153	7	16	36	0	163	59	384
Grand Total	35	521	3	0	229	559	42	46	36	0	936	124	35	583	1	0	272	619	19	79	136	0	610	234	**1536**
Approach%	6.3%	93.2%	0.5%	0%		-	33.9%	37.1%	29%	0%		-	5.7%	94.2%	0.2%	0%		-	8.1%	33.8%	58.1%	0%		-	-
Totals %	2.3%	33.9%	0.2%	0%		36.4%	2.7%	3%	2.3%	0%		8.1%	2.3%	38%	0.1%	0%		40.3%	1.2%	5.1%	8.9%	0%		15.2%	-
PHF	0.8	0.83	0.75	0		0.83	0.81	0.77	0.82	0		0.89	0.73	0.94	0.25	0		0.96	0.68	0.86	0.83	0		0.89	-
Heavy	0	19	0	0		19	2	0	0	0		2	2	14	0	0		16	2	4	0	0		6	-
Heavy %	0%	3.6%	0%	0%		3.4%	4.8%	0%	0%	0%		1.6%	5.7%	2.4%	0%	0%		2.6%	10.5%	5.1%	0%	0%		2.6%	-
Lights	35	502	3	0		540	40	46	36	0		122	33	569	1	0		603	17	75	136	0		228	-
Lights %	100%	96.4%	100%	0%		96.6%	95.2%	100%	100%	0%		98.4%	94.3%	97.6%	100%	0%		97.4%	89.5%	94.9%	100%	0%		97.4%	-
Single-Unit Trucks	0	9	0	0		9	1	0	0	0		1	1	12	0	0		13	1	1	0	0		2	-
Single-Unit Trucks %	0%	1.7%	0%	0%		1.6%	2.4%	0%	0%	0%		0.8%	2.9%	2.1%	0%	0%		2.1%	5.3%	1.3%	0%	0%		0.9%	-
Buses	0	10	0	0		10	1	0	0	0		1	1	2	0	0		3	0	3	0	0		3	-
Buses %	0%	1.9%	0%	0%		1.8%	2.4%	0%	0%	0%		0.8%	2.9%	0.3%	0%	0%		0.5%	0%	3.8%	0%	0%		1.3%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	5.3%	0%	0%	0%		0.4%	-
Pedestrians	-	-	-	-	227	-	-	-	-	-	933	-	-	-	-	-	270	-	-	-	-	-	608	-	-
Pedestrians%	-	-	-	-	11.1%		-	-	-	-	45.6%		-	-	-	-	13.2%		-	-	-	-	29.7%		-
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	-	-	0.1%		-	-	-	-	0.1%		-	-	-	-	0.1%		-	-	-	-	0.1%		-
Bicycles on Road	5	65	0	0	0	-	5	12	1	0	0	-	4	134	1	0	0	-	4	10	2	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: BAY ST & ELM ST
Date: Tue, Jun 28, 2022 Deployment Lead: Tasos Issaakidis

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

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (14.28 °C)



Spectrum

Turning Movement Count
Location Name: BAY ST & ELM ST
Date: Tue, Jun 28, 2022 Deployment Lead: Tasos Issaakidis

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

Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (23.37 °C)

Spectrum

Turning Movement Count
Location Name: ELM ST & HARRY BARBERIAN LN (E)
Date: Tue, Jun 28, 2022 Deployment Lead: Tasos Issaakidis

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

Turning Movement Count (3 . ELM ST & HARRY BARBERIAN LN (E))

Start Time	E Approach ELM ST					S Approach HARRY BARBERIAN LN (E)					W Approach ELM ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:30:00	31	0	0	3	31	0	0	0	14	0	0	9	0	3	9	40	
07:45:00	30	1	0	0	31	1	0	0	18	1	0	9	0	0	9	41	
08:00:00	25	1	0	0	26	0	0	0	12	0	0	14	0	1	14	40	
08:15:00	35	0	0	1	35	0	0	0	18	0	0	12	0	0	12	47	168
08:30:00	27	0	0	0	27	0	0	0	10	0	0	11	0	1	11	38	166
08:45:00	31	2	1	1	34	0	0	0	19	0	1	12	0	1	13	47	172
09:00:00	26	0	0	0	26	0	0	0	6	0	0	9	0	0	9	35	167
09:15:00	25	0	0	4	25	0	0	0	19	0	0	6	0	0	6	31	151
BREAK																	
16:00:00	17	0	0	0	17	1	0	0	37	1	0	23	1	6	24	42	
16:15:00	26	0	0	0	26	0	0	0	48	0	0	24	0	0	24	50	
16:30:00	24	0	1	2	25	0	0	0	56	0	0	28	0	2	28	53	
16:45:00	23	0	1	7	24	0	1	0	41	1	0	23	0	0	23	48	193
17:00:00	24	0	0	2	24	0	0	0	44	0	0	22	0	7	22	46	197
17:15:00	16	0	0	3	16	0	0	0	52	0	0	20	0	3	20	36	183
17:30:00	23	0	0	3	23	0	0	0	64	0	0	21	0	5	21	44	174
17:45:00	18	0	0	2	18	0	1	0	34	1	0	20	0	1	20	39	165
Grand Total	401	4	3	28	408	2	2	0	492	4	1	263	1	30	265	**677**	-
Approach%	98.3%	1%	0.7%		-	50%	50%	0%		-	0.4%	99.2%	0.4%		-	-	-
Totals %	59.2%	0.6%	0.4%		60.3%	0.3%	0.3%	0%		0.6%	0.1%	38.8%	0.1%		39.1%	-	-
Heavy	18	0	0		-	0	0	0		-	0	5	0		-	-	-
Heavy %	4.5%	0%	0%		-	0%	0%	0%		-	0%	1.9%	0%		-	-	-
Bicycles	37	2	0		-	0	0	0		-	0	62	0		-	-	-
Bicycle %	9.2%	50%	0%		-	0%	0%	0%		-	0%	23.6%	0%		-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (14.28 °C)

Start Time	E Approach ELM ST					S Approach HARRY BARBERIAN LN (E)					W Approach ELM ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:00:00	25	1	0	0	26	0	0	0	12	0	0	14	0	1	14	40
08:15:00	35	0	0	1	35	0	0	0	18	0	0	12	0	0	12	47
08:30:00	27	0	0	0	27	0	0	0	10	0	0	11	0	1	11	38
08:45:00	31	2	1	1	34	0	0	0	19	0	1	12	0	1	13	47
Grand Total	118	3	1	2	122	0	0	0	59	0	1	49	0	3	50	**172**
Approach%	96.7%	2.5%	0.8%		-	0%	0%	0%		-	2%	98%	0%		-	**-**
Totals %	68.6%	1.7%	0.6%		70.9%	0%	0%	0%		0%	0.6%	28.5%	0%		29.1%	**-**
PHF	0.84	0.38	0.25		0.87	0	0	0		0	0.25	0.88	0		0.89	**-**
Heavy	4	0	0		4	0	0	0		0	0	1	0		1	**-**
Heavy %	3.4%	0%	0%		3.3%	0%	0%	0%		0%	0%	2%	0%		2%	**-**
Lights	114	3	1		118	0	0	0		0	1	48	0		49	**-**
Lights %	96.6%	100%	100%		96.7%	0%	0%	0%		0%	100%	98%	0%		98%	**-**
Single-Unit Trucks	3	0	0		3	0	0	0		0	0	0	0		0	**-**
Single-Unit Trucks %	2.5%	0%	0%		2.5%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Buses	1	0	0		1	0	0	0		0	0	0	0		0	**-**
Buses %	0.8%	0%	0%		0.8%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	0	0		0	0	0	0		0	0	1	0		1	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	2%	0%		2%	**-**
Pedestrians	-	-	-	2	-	-	-	-	59	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	3.1%		-	-	-	92.2%		-	-	-	4.7%		**-**
Bicycles on Road	8	1	0	0	-	0	0	0	0	-	0	11	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (23.37 °C)

Start Time	E Approach ELM ST					S Approach HARRY BARBERIAN LN (E)					W Approach ELM ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:15:00	26	0	0	0	26	0	0	0	48	0	0	24	0	0	24	50
16:30:00	24	0	1	2	25	0	0	0	56	0	0	28	0	2	28	53
16:45:00	23	0	1	7	24	0	1	0	41	1	0	23	0	0	23	48
17:00:00	24	0	0	2	24	0	0	0	44	0	0	22	0	7	22	46
Grand Total	97	0	2	11	99	0	1	0	189	1	0	97	0	9	97	**197**
Approach%	98%	0%	2%		-	0%	100%	0%		-	0%	100%	0%		-	**-**
Totals %	49.2%	0%	1%		50.3%	0%	0.5%	0%		0.5%	0%	49.2%	0%		49.2%	**-**
PHF	0.93	0	0.5		0.95	0	0.25	0		0.25	0	0.87	0		0.87	**-**
Heavy	2	0	0		2	0	0	0		0	0	1	0		1	**-**
Heavy %	2.1%	0%	0%		2%	0%	0%	0%		0%	0%	1%	0%		1%	**-**
Lights	95	0	2		97	0	1	0		1	0	96	0		96	**-**
Lights %	97.9%	0%	100%		98%	0%	100%	0%		100%	0%	99%	0%		99%	**-**
Single-Unit Trucks	1	0	0		1	0	0	0		0	0	1	0		1	**-**
Single-Unit Trucks %	1%	0%	0%		1%	0%	0%	0%		0%	0%	1%	0%		1%	**-**
Buses	1	0	0		1	0	0	0		0	0	0	0		0	**-**
Buses %	1%	0%	0%		1%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
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	-	-	-	11	-	-	-	-	189	-	-	-	-	9	-	**-**
Pedestrians%	-	-	-	5.3%		-	-	-	90.4%		-	-	-	4.3%		**-**
Bicycles on Road	14	1	0	0	-	0	0	0	0	-	0	18	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (14.28 °C)

Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (23.37 °C)

Turning Movement Count (2 . ELM ST & & HARRY BARBERIAN LN (W))

Start Time	E Approach ELM ST					S Approach HARRY BARBERIAN LN (W)					W Approach ELM ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:30:00	31	0	0	0	31	0	0	0	17	0	1	15	0	1	16	47	
07:45:00	34	0	0	1	34	1	1	0	15	2	0	17	0	1	17	53	
08:00:00	26	0	0	2	26	0	1	0	15	1	1	18	0	1	19	46	
08:15:00	39	1	0	1	40	0	1	0	11	1	0	12	0	1	12	53	199
08:30:00	29	0	0	7	29	1	0	0	21	1	1	14	0	2	15	45	197
08:45:00	30	0	1	6	31	1	0	0	18	1	0	22	0	2	22	54	198
09:00:00	24	2	0	0	26	1	0	0	8	1	0	17	0	0	17	44	196
09:15:00	21	0	1	5	22	3	1	0	23	4	0	17	1	4	18	44	187
BREAK																	
16:00:00	22	0	0	0	22	0	0	0	31	0	0	34	0	1	34	56	
16:15:00	30	0	0	5	30	0	0	0	47	0	3	26	1	0	30	60	
16:30:00	31	0	1	7	32	1	0	0	59	1	0	35	0	5	35	68	
16:45:00	27	0	0	5	27	1	0	0	43	1	1	25	0	3	26	54	238
17:00:00	29	0	1	6	30	0	0	0	45	0	1	25	0	2	26	56	238
17:15:00	17	0	2	4	19	0	1	0	59	1	0	31	0	2	31	51	229
17:30:00	24	0	1	4	25	0	2	0	62	2	2	36	0	1	38	65	226
17:45:00	27	0	0	1	27	0	0	0	64	0	1	26	0	1	27	54	226
Grand Total	441	3	7	54	451	9	7	0	538	16	11	370	2	27	383	**850**	-
Approach%	97.8%	0.7%	1.6%		-	56.3%	43.8%	0%		-	2.9%	96.6%	0.5%		-	**-**	-
Totals %	51.9%	0.4%	0.8%		53.1%	1.1%	0.8%	0%		1.9%	1.3%	43.5%	0.2%		45.1%	**-**	-
Heavy	16	1	0		-	1	0	0		-	2	14	0		-	**-**	-
Heavy %	3.6%	33.3%	0%		-	11.1%	0%	0%		-	18.2%	3.8%	0%		-	**-**	-
Bicycles	36	0	0		-	1	0	0		-	1	57	0		-	**-**	-
Bicycle %	8.2%	0%	0%		-	11.1%	0%	0%		-	9.1%	15.4%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: ELM ST & & HARRY BARBERIAN LN (W)
Date: Tue, Jun 28, 2022 Deployment Lead: Tasos Issaaakidis

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

Peak Hour: 07:30 AM - 08:30 AM Weather: Clear Sky (14.28 °C)

Start Time	E Approach ELM ST					S Approach HARRY BARBERIAN LN (W)					W Approach ELM ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
07:30:00	31	0	0	0	31	0	0	0	17	0	1	15	0	1	16	47
07:45:00	34	0	0	1	34	1	1	0	15	2	0	17	0	1	17	53
08:00:00	26	0	0	2	26	0	1	0	15	1	1	18	0	1	19	46
08:15:00	39	1	0	1	40	0	1	0	11	1	0	12	0	1	12	53
Grand Total	130	1	0	4	131	1	3	0	58	4	2	62	0	4	64	**199**
Approach%	99.2%	0.8%	0%		-	25%	75%	0%		-	3.1%	96.9%	0%		-	**-**
Totals %	65.3%	0.5%	0%		65.8%	0.5%	1.5%	0%		2%	1%	31.2%	0%		32.2%	**-**
PHF	0.83	0.25	0		0.82	0.25	0.75	0		0.5	0.5	0.86	0		0.84	**-**
Heavy	6	0	0		6	1	0	0		1	1	7	0		8	**-**
Heavy %	4.6%	0%	0%		4.6%	100%	0%	0%		25%	50%	11.3%	0%		12.5%	**-**
Lights	124	1	0		125	0	3	0		3	1	55	0		56	**-**
Lights %	95.4%	100%	0%		95.4%	0%	100%	0%		75%	50%	88.7%	0%		87.5%	**-**
Single-Unit Trucks	5	0	0		5	1	0	0		1	1	2	0		3	**-**
Single-Unit Trucks %	3.8%	0%	0%		3.8%	100%	0%	0%		25%	50%	3.2%	0%		4.7%	**-**
Buses	1	0	0		1	0	0	0		0	0	5	0		5	**-**
Buses %	0.8%	0%	0%		0.8%	0%	0%	0%		0%	0%	8.1%	0%		7.8%	**-**
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	-	-	-	4	-	-	-	-	57	-	-	-	-	4	-	**-**
Pedestrians%	-	-	-	6.1%		-	-	-	86.4%		-	-	-	6.1%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	1.5%		-	-	-	0%		**-**
Bicycles on Road	3	0	0	0	-	0	0	0	0	-	0	8	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (23.37 °C)

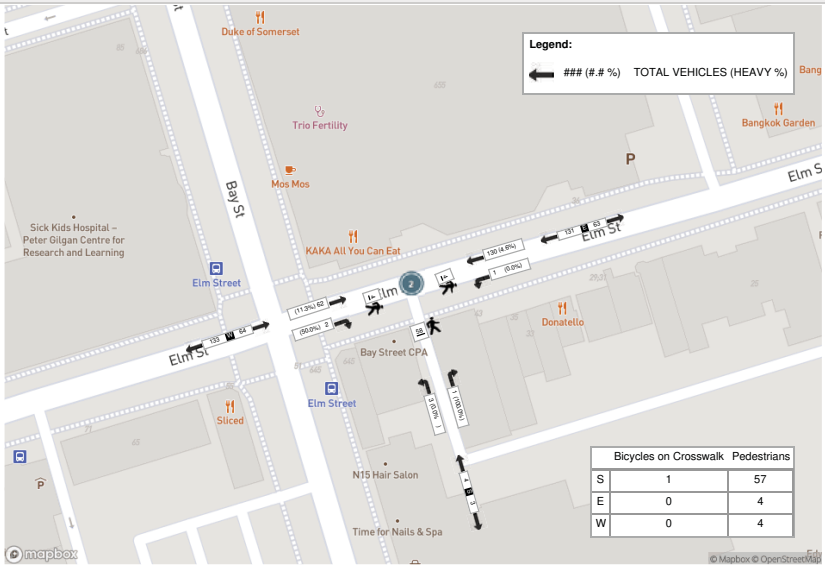
Start Time	E Approach ELM ST					S Approach HARRY BARBERIAN LN (W)					W Approach ELM ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:15:00	30	0	0	5	30	0	0	0	47	0	3	26	1	0	30	60
16:30:00	31	0	1	7	32	1	0	0	59	1	0	35	0	5	35	68
16:45:00	27	0	0	5	27	1	0	0	43	1	1	25	0	3	26	54
17:00:00	29	0	1	6	30	0	0	0	45	0	1	25	0	2	26	56
Grand Total	117	0	2	23	119	2	0	0	194	2	5	111	1	10	117	**238**
Approach%	98.3%	0%	1.7%		-	100%	0%	0%		-	4.3%	94.9%	0.9%		-	**-**
Totals %	49.2%	0%	0.8%		50%	0.8%	0%	0%		0.8%	2.1%	46.6%	0.4%		49.2%	**-**
PHF	0.94	0	0.5		0.93	0.5	0	0		0.5	0.42	0.79	0.25		0.84	**-**
Heavy	2	0	0		2	0	0	0		0	1	5	0		6	**-**
Heavy %	1.7%	0%	0%		1.7%	0%	0%	0%		0%	20%	4.5%	0%		5.1%	**-**
Lights	115	0	2		117	2	0	0		2	4	106	1		111	**-**
Lights %	98.3%	0%	100%		98.3%	100%	0%	0%		100%	80%	95.5%	100%		94.9%	**-**
Single-Unit Trucks	1	0	0		1	0	0	0		0	1	1	0		2	**-**
Single-Unit Trucks %	0.9%	0%	0%		0.8%	0%	0%	0%		0%	20%	0.9%	0%		1.7%	**-**
Buses	1	0	0		1	0	0	0		0	0	4	0		4	**-**
Buses %	0.9%	0%	0%		0.8%	0%	0%	0%		0%	0%	3.6%	0%		3.4%	**-**
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	-	-	-	23	-	-	-	-	194	-	-	-	-	10	-	**-**
Pedestrians%	-	-	-	10.1%		-	-	-	85.5%		-	-	-	4.4%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Road	14	0	0	0	-	0	0	0	0	-	0	15	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: ELM ST & & HARRY BARBERIAN LN (W)
Date: Tue, Jun 28, 2022 Deployment Lead: Tasos Issaakidis

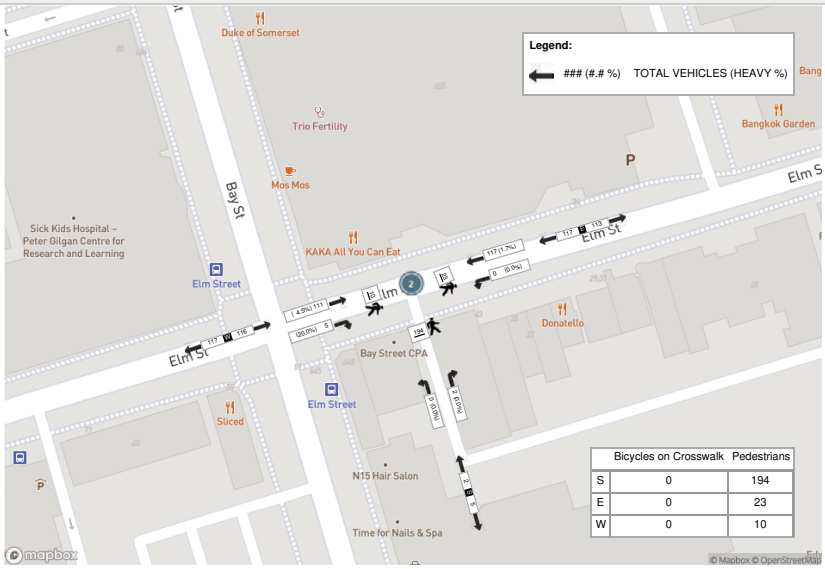
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Clear Sky (14.28 °C)



	Bicycles on Crosswalk	Pedestrians
S	1	57
E	0	4
W	0	4

Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (23.37 °C)



	Bicycles on Crosswalk	Pedestrians
S	0	194
E	0	23
W	0	10

Turning Movement Count (4 . YONGE ST & ELM ST)

Start Time	N Approach BAY STEL					E Approach SMELTER Sg Mht				S Approach BAY STEL					W Approach ShN TEL					Int. Total (15 min)	Int. Total (1 hr)
	: Wue Yfg	Luluh YfE	PLnlull YfY	spoa Yf	Mcclll 07uTLI e03	PLnlull SfS	spoa Sf	Mcclll 07uTLI e03	Luluh EfY	hp2e Efg	PLnlull EfE	spoa Ef	Mcclll 07uTLI e03	: Wue g fE	hp2e g fY	PLnlull g fg	spoa g f	Mcclll 07uTLI e03		
18f41f11	5	96	1	6	*1	1	K1	1	4*	64	1	4	9-	5	1	1	91	5	. 68	
18fK9f11	. 9	9-	1	5	8K	1	K-	1	44	. 5	1	4	9.	8	9	1	5.	. 6	. 48	
15f11f11	. 6	9*	1	.	*5	1	K*	1	46	. 4	1	9	K9	5	K	1	85	. 6	. 69	
15f. 9f11	. 4	94	1	9	**	1	96	1	49	6.	1	K	9*	9	K	1	. 1.	-	. 4.	961
15f41f11	. .	*K	1	6	89	1	81	1	K1	. 8	1	.	98	*	*	1	. 41	. 6	. KK	948
15fK9f11	. *	91	1	4	**	1	5-	1	K1	. *	1	K	9*	*	9	1	. 4K	. .	. 44	944
1- f11f11	. 6	*5	1	6	51	1	81	1	4-	. 9	1	.	9K	*	K	1	. 1*	. 1	. KK	996
1- f. 9f11	8	*1	1	5	*8	1	*K	1	4-	. 8	1	K	9*	6	K	1	. 1*	*	. 6-	991
%%G: SM %%																				
. *f11f11	9	K5	1	. 9	94	1	. - 6	1	*9	. 6	1	-	88	. 9	9	1	4- 5	61	. 91	
. *f. 9f11	. 9	*9	.	-	5.	1	. 5*	1	94	. 6	.	. 4	**	. 5	-	1	4- 8	68	. 8K	
. *f41f11	. .	KK	1	. 1	99	1	65K	1	96	. .	1	*	*4	. 8	5	1	K. .	69	. K4	
. *fK9f11	. 6	91	1	. 9	*6	1	6. -	1	95	. 6	1	6	81	. K	. 1	1	K8K	6K	. 9*	*64
. 8f11f11	5	K6	1	. 1	91	1	649	1	9-	. K	1	6	84	. 9	8	1	K51	66	. K9	*. 5
. 8f. 9f11	K	*5	1	. 1	86	1	414	1	*6	. .	1	. 1	84	5	5	1	9K5	. *	. *.	*19
. 8f41f11	. 6	9*	1	-	*5	1	6K*	1	99	. 1	1	. 8	*9	. 1	. 1	1	91.	61	. 94	*. 9
. 8fK9f11	. 4	*.	1	5	8K	1	6K5	1	86	8	6	4	5.	. .	-	1	919	61	. 89	*4K
Grand Total	. 8K	5- *	.	. . 8	. 18.	1	64- 4	1	881	66-	4	58	. 116	. 9*	- 5	1	K911	69K	**2327**	C
Approach%	. *I6V	54I8V	1I. V		C	1V		C	8* I5V	66I- V	1I4V		C	*. IKV	45I* V	1V		C	-	C
Totals %	8I9V	45I9V	1V		K* V	1V		1V	44I. V	- I5V	1I. V		K4I. V	* I8V	KI6V	1V		. 1I- V	-	C
Heavy	*	K*	1		C	1		C	91	-	1		C	9	.	1		C	-	C
Heavy %	4IKV	9I. V	1V		C	1V		C	*I9V	4I- V	1V		C	4I6V	. V	1V		C	-	C
Bicycles	. 6	6* 4	1		C	1		C	. 55	6.	6		C	KK	-	1		C	-	C
Bicycle %	*I- V	6- IKV	1V		C	1V		C	6KIKV	- I6V	**I8V		C	65I6V	- I6V	1V		C	-	C

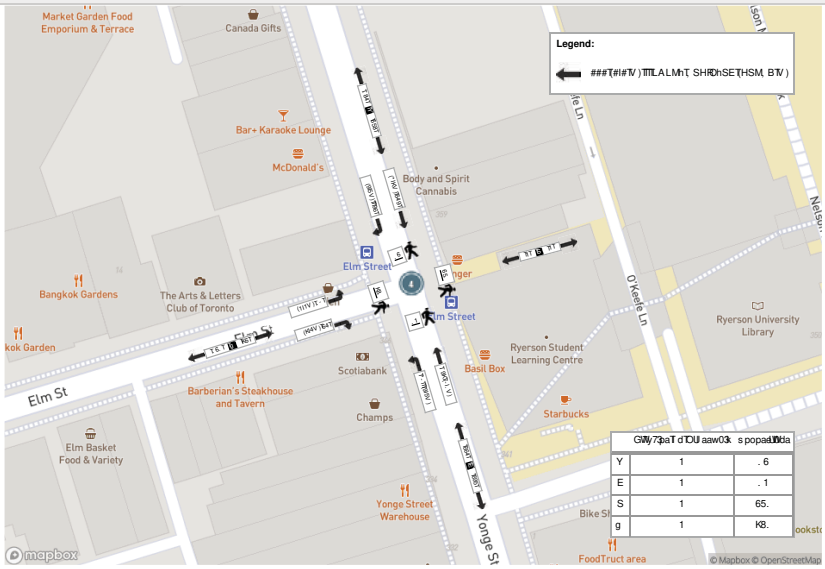
Peak Hour: 08:15 AM - 09:15 AMTTTTWeather: Clear Sky (14.28 °C)

Start Time	N Approach BAY STEL					E Approach SMELTER Sg Mht			S Approach BAY STEL					W Approach ShNTEL					Int. Total (15 min)
	: Wue	LuUh	PLnUd	spoa	MccUI07uTLIe03	PLnUd	spoa	MccUI07uTLIe03	LuUh	hp2e	PLnUd	spoa	MccUI07uTLIe03	: Wue	hp2e	PLnUd	spoa	MccUI07uTLIe03	
15f. 9f11	. 4	94	1	9	* *	1	96	1	49	6.	1	K	9*	9	K	1	. 1.	-	. 4.
15f41f11	. .	* K	1	6	89	1	81	1	K1	. 8	1	.	98	*	*	1	. 41	. 6	. KK
15fK9f11	. *	91	1	4	* *	1	5-	1	K1	. *	1	K	9*	*	9	1	. 4K	. .	. 44
1- f11f11	. 6	* 5	1	6	51	1	81	1	4-	. 9	1	.	9K	*	K	1	. 1*	. 1	. KK
Grand Total	96	649	1	. 6	658	1	65.	1	. 9K	* -	1	. 1	664	64	. -	1	K8.	K6	**552**
Approach%	. 5I. V	5. I- V	1V		C	1V		C	* - I. V	41I- V	1V		C	9KI5V	K9I6V	1V		C	-
Totals %	- IKV	K6I* V	1V		96V	1V		1V	68I- V	. 6I9V	1V		K1IKV	KI6V	4IKV	1V		8I* V	-
PHF	1I5.	1I5*	1		1I-	1		1	1I- *	1I56	1		1I- 5	1I- *	1I8-	1		1I55	-
Heavy	4	. 9	1		. 5	1		1	. K	K	1		. 5	.	1	1		.	-
Heavy %	9I5V	* IKV	1V		* I4V	1V		1V	- I. V	9I5V	1V		5I. V	KI4V	1V	1V		6IKV	-
Lights	K-	661	1		6* -	1		1	. K1	* 9	1		619	66	. -	1		K.	-
Lights %	- KI6V	- 4I* V	1V		- 4I8V	1V		1V	- 1I- V	- KI6V	1V		- . I- V	- 9I8V	. 11V	1V		- 8I* V	-
Single-Unit Trucks	6	. 1	1		. 6	1		1	. .	4	1		. K	1	1	1		1	-
Single-Unit Trucks %	4I5V	KI4V	1V		KI6V	1V		1V	8I. V	KI4V	1V		* I4V	1V	1V	1V		1V	-
Buses	1	9	1		9	1		1	4	.	1		K	1	1	1		1	-
Buses %	1V	6I. V	1V		. I8V	1V		1V	. I- V	. IKV	1V		. I5V	1V	1V	1V		1V	-
Articulated Trucks	.	1	1		.	1		1	1	1	1		1	.	1	1		.	-
Articulated Trucks %	. I- V	1V	1V		1I4V	1V		1V	1V	1V	1V		1V	KI4V	1V	1V		6IKV	-
Pedestrians	C	C	C	. 6	C	C	65.	C	C	C	C	. 1	C	C	C	C	K8.	C	-
Pedestrians%	C	C	C	. I* V	T	C	4* I4V	T	C	C	C	. I4V	T	C	C	C	* 1I- V	T	-
Bicycles on Crosswalk	C	C	C	1	C	C	1	C	C	C	C	1	C	C	C	C	1	C	-
Bicycles on Crosswalk%	C	C	C	1V	T	C	1V	T	C	C	C	1V	T	C	C	C	1V	T	-
Bicycles on Road	.	KK	1	1	C	1	1	C	. 6	8	1	1	C	. .	6	1	1	C	-
Bicycles on Road%	C	C	C	1V	T	C	1V	T	C	C	C	1V	T	C	C	C	1V	T	-

Peak Hour: 05:00 PM - 06:00 PMTTTTWeather: Clear Sky (23.37 °C)

Start Time	N Approach BAY STEL					E Approach SMELTER Sg Mht			S Approach BAY STEL					W Approach ShNTEL					Int. Total (15 min)
	: Wue	LuUh	PLnUd	spoa	MccUI07uTLIe03	PLnUd	spoa	MccUI07uTLIe03	LuUh	hp2e	PLnUd	spoa	MccUI07uTLIe03	: Wue	hp2e	PLnUd	spoa	MccUI07uTLIe03	
. 8f11f11	5	K6	1	. 1	91	1	649	1	9-	. K	1	6	84	. 9	8	1	K51	66	. K9
. 8f. 9f11	K	* 5	1	. 1	86	1	414	1	* 6	. .	1	. 1	84	5	5	1	9K5	. *	. * .
. 8f41f11	. 6	9*	1	-	* 5	1	6K*	1	99	. 1	1	. 8	* 9	. 1	. 1	1	91.	61	. 94
. 8fK9f11	. 4	* .	1	5	8K	1	6K5	1	86	8	6	4	5.	. .	-	1	919	61	. 89
Grand Total	48	668	1	48	6* K	1	. 146	1	6K5	K6	6	46	6- 6	KK	4K	1	614K	85	**634**
Approach%	. KV	5* V	1V		C	1V		C	5KI- V	. KIKV	1I8V		C	9* IKV	K4I* V	1V		C	-
Totals %	9I5V	49I5V	1V		K. I* V	1V		1V	4- I. V	* I* V	1I4V		K* I. V	* I- V	9IKV	1V		. 6I4V	-
PHF	1I8.	1I54	1		1I5-	1		1	1I5*	1I89	1I69		1I-	1I84	1I59	1		1I5-	-
Heavy	1	5	1		5	1		1	. .	6	1		. 4	1	1	1		1	-
Heavy %	1V	4I9V	1V		4V	1V		1V	KIKV	KI5V	1V		KI9V	1V	1V	1V		1V	-
Lights	48	6. -	1		69*	1		1	648	K1	6		68-	KK	4K	1		85	-
Lights %	. 11V	- * I9V	1V		- 8V	1V		1V	- 9I* V	- 9I6V	. 11V		- 9I9V	. 11V	. 11V	1V		. 11V	-
Single-Unit Trucks	1	8	1		8	1		1	*	.	1		8	1	1	1		1	-
Single-Unit Trucks %	1V	4I. V	1V		6I8V	1V		1V	6IKV	6IKV	1V		6IKV	1V	1V	1V		1V	-
Buses	1	.	1		.	1		1	9	.	1		*	1	1	1		1	-
Buses %	1V	1IKV	1V		1IKV	1V		1V	6V	6IKV	1V		6I. V	1V	1V	1V		1V	-
Articulated Trucks	1	1	1		1	1		1	1	1	1		1	1	1	1		1	-
Articulated Trucks %	1V	1V	1V		1V	1V		1V	1V	1V	1V		1V	1V	1V	1V		1V	-
Pedestrians	C	C	C	48	C	C	. 16-	C	C	C	C	46	C	C	C	C	614K	C	-
Pedestrians%	C	C	C	. I6V	T	C	46I5V	T	C	C	C	. V	T	C	C	C	* KI- V	T	-
Bicycles on Crosswalk	C	C	C	1	C	C	4	C	C	C	C	1	C	C	C	C	1	C	-
Bicycles on Crosswalk%	C	C	C	1V	T	C	1I. V	T	C	C	C	1V	T	C	C	C	1V	T	-
Bicycles on Road	K	. 14	1	1	C	1	1	C	58	9	.	1	C	. K	K	1	1	C	-
Bicycles on Road%	C	C	C	1V	T	C	1V	T	C	C	C	1V	T	C	C	C	1V	T	-

Peak Hour: 08:15 AM - 09:15 AMTTTTTWeather: Clear Sky (14.28 °C)



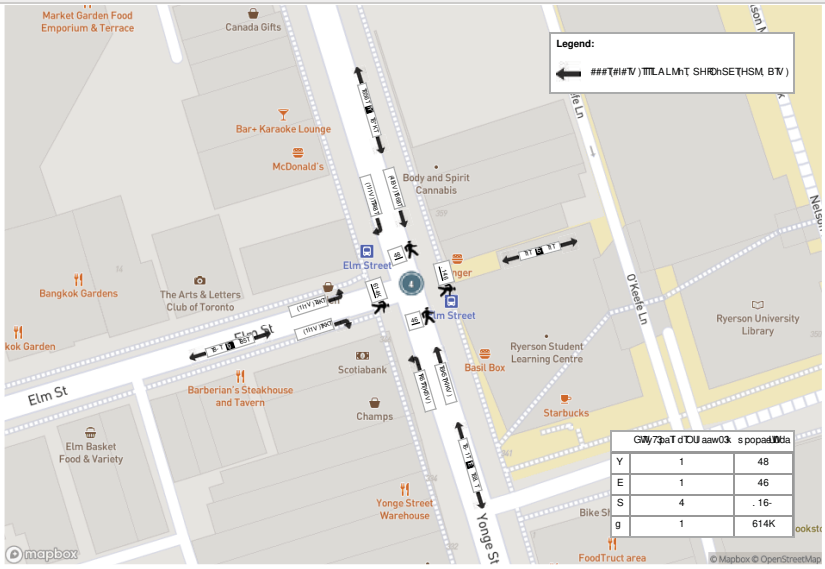
GWy73paT dTDUaaw03k spopaaWda		
Y	1	. 6
E	1	. 1
S	1	65.
g	1	K8.

Spectrum

LnLdWdr TNI vpmpde Ol nde
hl 70aNdTY0mpfBAY STEL T&TShN TEL
i 0qpfTLnpDUndT65D6166TTTTTT pc3 ympdeNp0ofTL0al aTRaa000kWW

GMT Ul nc
411TK9TELITDhMR TM STg
LA: AYLATATYLM: FADNK, Tt -
OMYM M

Peak Hour: 05:00 PM - 06:00 PMTTTTTWeather: Clear Sky (23.37 °C)



GWy73paT dTDUaaw03k spopaaWda		
Y	1	48
E	1	46
S	4	. 16-
g	1	614K

Turning Movement Count (5 . YONGE ST & GOULD ST)

Start Time	N Approach ELM STHA					E Approach L RYBTHA					S Approach ELM STHA					Int. Total (15 min)	Int. Total (1 hr)
	Al N(MWM	Y) hr MWS	RA(Nu MWM	:) ef MW	t UUNhPdl TAnrPs	pcal r SWM	Y) hr SWM	RA(Nu SWS	:) ef SW	t UUNhPdl TAnrPs	pcal r HWS	Al N(HWM	RA(Nu HWM	:) ef HW	t UUNhPdl TAnrPs		
cl WcWc	g0	c	c	7	g0	c	3	c	g3	3	1	g5	c	l	6c	116	
cl WgWc	l 3	c	c	l	l 3	c	1	c	g1	1	c	gc	c	16	gc	13i	
c7WcWc	6c	c	c	1i	6c	c	3	c	0i	3	3	06	c	1i	07	11c	
c7WgWc	61	1	c	1g	63	i	1	c	l c	0	1	gi	c	1c	g0	13c	065
c7WcWc	60	c	c	3g	60	c	c	c	l i	c	1	gl	c	1i	g7	133	0l g
c7WgWc	gl	1	c	3i	g7	1	1	c	1c3	3	0	gg	c	3g	g5	115	0l 1
c5WcWc	l 7	c	c	31	l 7	c	c	c	l l	c	1	g0	c	30	gg	1i i	050
c5WgWc	g6	c	c	3i	g6	1	c	c	l 0	1	l	gg	c	3c	63	115	05i
4442 p St 8444																	
16WcWc	g0	3	c	7l	g6	i	i	c	3g7	6	0	l 0	c	67	l 7	10c	
16WgWc	l l	3	c	67	l 5	0	3	c	3g6	6	1	63	1	l 1	60	105	
16WcWc	67	c	c	0l	67	c	3	c	35l	3	c	6g	c	l l	6g	1i g	
16WgWc	60	3	c	66	66	1	1	c	3gl	3	0	l c	c	g6	l 0	103	g66
1l WcWc	63	1	c	61	6i	3	c	c	355	3	1	l c	1	76	l 3	1i l	g6i
1l WgWc	l 6	1	c	7i	l l	3	c	c	37g	3	i	l 1	1	63	l g	1g0	g67
1l WcWc	6c	c	c	0g	6c	3	1	c	37c	i	c	63	c	l c	63	13g	gg7
1l WgWc	71	3	c	l 1	7i	3	3	c	373	0	3	l 5	c	l 3	71	167	g70
Grand Total	1c00	13	c	66i	1cg6	31	17	c	3l g6	i 5	i 3	573	i	65c	1c1l	**2112**	9
Approach%	57*5K	1*1K	cK		9	gi *7K	06*3K	cK		9	i *1K	56*6K	c*i K		9	-	9
Totals %	05*0K	c*6K	cK		gcK	1K	c*5K	cK		1*7K	1*gK	06*gK	c*1K		07*3K	-	9
Heavy	gl	c	c		9	i	0	c		9	11	g6	c		9	-	9
Heavy %	g*gK	cK	cK		9	10*i K	33*3K	cK		9	i 0*0K	g*l K	cK		9	-	9
Bicycles	37l	3g	c		9	17	17	c		9	15	16g	1		9	-	9
Bicycle %	3l *gK	3c7*i K	cK		9	7g*l K	1ccK	cK		9	g5*0K	16*7K	i i *i K		9	-	9

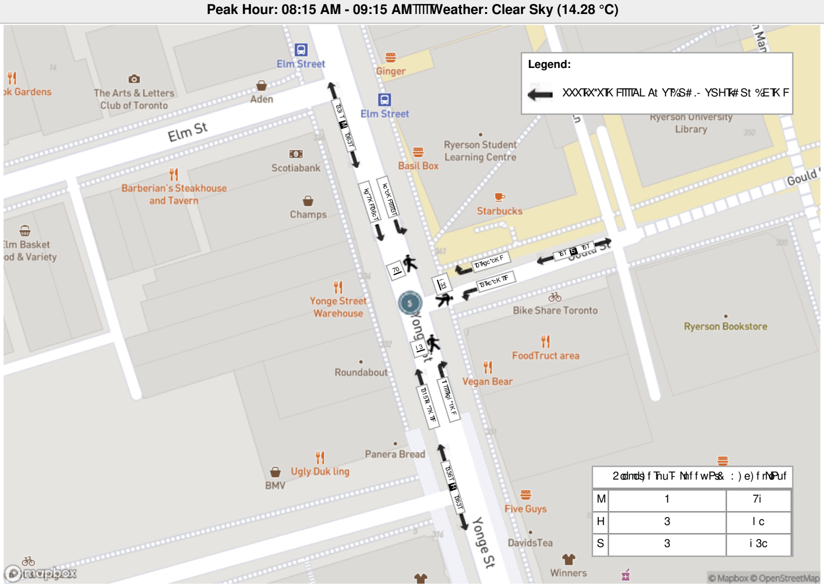
Peak Hour: 08:15 AM - 09:15 AMTTTTWeather: Clear Sky (14.28 °C)

Start Time	N Approach ELM STHA					E Approach L RYBTHA					S Approach ELM STHA					Int. Total (15 min)
	Al N(	Y) hr	RA(Nu	:) ef	t UUNhPdl TAnrPs	pcal r	Y) hr	RA(Nu	:) ef	t UUNhPdl TAnrPs	pcal r	Al N(	RA(Nu	:) ef	t UUNhPdl TAnrPs	
c7WgWc	61	1	c	1g	63	i	1	c	l c	0	1	gi	c	1c	g0	13c
c7WcWc	60	c	c	3g	60	c	c	c	l i	c	1	gl	c	1i	g7	133
c7WgWc	gl	1	c	3i	g7	1	1	c	1c3	3	0	gg	c	3g	g5	115
c5WcWc	l 7	c	c	31	l 7	c	c	c	l l	c	1	g0	c	30	gg	1i i
Grand Total	36c	3	c	70	363	0	3	c	i 33	6	l	315	c	l 3	336	**494**
Approach%	55*3K	c*7K	cK		9	66*l K	i i *i K	cK		9	i *1K	56*5K	cK		9	-
Totals %	g3*6K	c*0K	cK		gi K	c*7K	c*0K	cK		1*3K	1*0K	00*i K	cK		0g*l K	-
PHF	c*7i	c*g	c		c*70	c*i i	c*g	c		c*i 7	c*00	c*56	c		c*56	-
Heavy	1g	c	c		1g	3	c	c		3	0	1l	c		31	-
Heavy %	g*7K	cK	cK		g*l K	gcK	cK	cK		i i *i K	gl *1K	l *7K	cK		5*i K	-
Lights	30g	3	c		30l	3	3	c		0	i	3c3	c		3cg	-
Lights %	50*3K	1ccK	cK		50*i K	gcK	1ccK	cK		66*l K	03*5K	53*3K	cK		5c*l K	-
Single-Unit Trucks	1c	c	c		1c	3	c	c		3	0	1i	c		1l	-
Single-Unit Trucks %	i *7K	cK	cK		i *7K	gcK	cK	cK		i i *i K	gl *1K	g*5K	cK		l *gK	-
Buses	0	c	c		0	c	c	c		c	c	0	c		0	-
Buses %	1*gK	cK	cK		1*gK	cK	cK	cK		cK	cK	1*7K	cK		1*7K	-
Articulated Trucks	1	c	c		1	c	c	c		c	c	c	c		c	-
Articulated Trucks %	c*0K	cK	cK		c*0K	cK	cK	cK		cK	cK	cK	cK		cK	-
Pedestrians	9	9	9	7i	9	9	9	9	i 3c	9	9	9	9	l c	9	-
Pedestrians%	9	9	9	1l *0K	T	9	9	9	66*5K	T	9	9	9	10*6K	T	-
Bicycles on Crosswalk	9	9	9	1	9	9	9	9	3	9	9	9	9	3	9	-
Bicycles on Crosswalk%	9	9	9	c*3K	T	9	9	9	c*0K	T	9	9	9	c*0K	T	-
Bicycles on Road	07	1c	c	c	9	l	g	c	c	9	0	11	c	c	9	-
Bicycles on Road%	9	9	9	cK	T	9	9	9	cK	T	9	9	9	cK	T	-

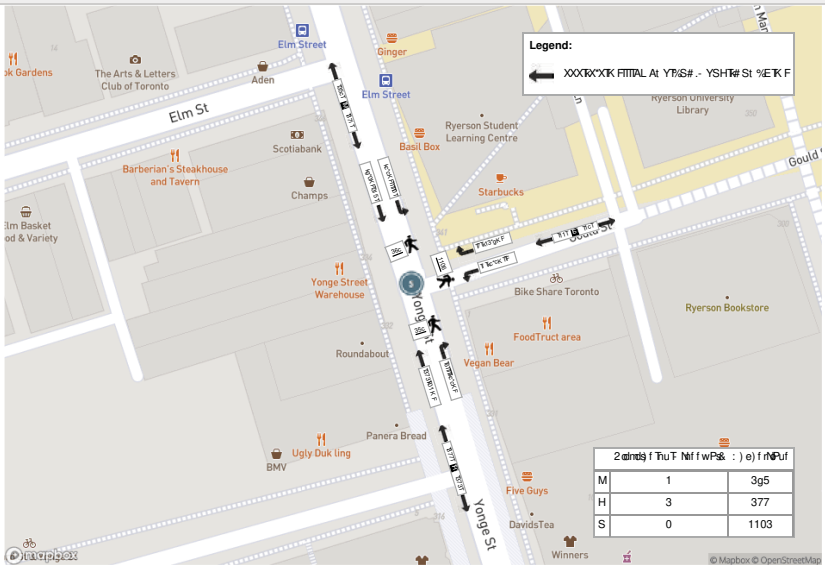
Peak Hour: 05:00 PM - 06:00 PMTTTTWeather: Clear Sky (23.37 °C)

Start Time	N Approach ELM STHA					E Approach LRYBTHA					S Approach ELM STHA					Int. Total (15 min)
	AI N	Y) hr	RA(Nu	:) ef	t UUNhPdI TAnrPs	pcal r	Y) hr	RA(Nu	:) ef	t UUNhPdI TAnrPs	pcal r	AI N	RA(Nu	:) ef	t UUNhPdI TAnrPs	
1l WcWc	63	1	c	61	6i	3	c	c	355	3	1	l c	1	76	l 3	1i l
1l WgWc	l 6	1	c	7i	l l	3	c	c	37g	3	i	l 1	1	63	l g	1g0
1l WcWc	6c	c	c	0g	6c	3	1	c	37c	i	c	63	c	l c	63	13g
1l W0gWc	71	3	c	l 1	7i	3	3	c	373	0	3	l 5	c	l 3	71	167
Grand Total	3l 5	0	c	36c	37i	7	i	c	1106	11	6	373	3	35c	35c	**584**
Approach%	57*6K	1*0K	cK		9	l 3*l K	3l *i K	cK		9	3*1K	5l *3K	c*l K		9	-
Totals %	0l *7K	c*l K	cK		07*gK	1*0K	c*gK	cK		1*5K	1K	07*i K	c*i K		05*l K	-
PHF	c*76	c*g	c		c*7g	1	c*i 7	c		c*65	c*g	c*75	c*g		c*5	-
Heavy	1g	c	c		1g	1	c	c		1	c	13	c		13	-
Heavy %	g*0K	cK	cK		g*i K	13*gK	cK	cK		5*1K	cK	0*i K	cK		0*1K	-
Lights	360	0	c		367	l	i	c		1c	6	3l c	3		3l 7	-
Lights %	50*6K	1ccK	cK		50*l K	7l *gK	1ccK	cK		5c*5K	1ccK	5g*l K	1ccK		5g*5K	-
Single-Unit Trucks	l	c	c		l	1	c	c		1	c	6	c		6	-
Single-Unit Trucks %	3*gK	cK	cK		3*gK	13*gK	cK	cK		5*1K	cK	3*1K	cK		3*1K	-
Buses	7	c	c		7	c	c	c		c	c	6	c		6	-
Buses %	3*5K	cK	cK		3*7K	cK	cK	cK		cK	cK	3*1K	cK		3*1K	-
Articulated Trucks	c	c	c		c	c	c	c		c	c	c	c		c	-
Articulated Trucks %	cK	cK	cK		cK	cK	cK	cK		cK	cK	cK	cK		cK	-
Pedestrians	9	9	9	3g5	9	9	9	9	1103	9	9	9	9	377	9	-
Pedestrians%	9	9	9	1g*i K	T	9	9	9	6l *i K	T	9	9	9	1l K	T	-
Bicycles on Crosswalk	9	9	9	1	9	9	9	9	0	9	9	9	9	3	9	-
Bicycles on Crosswalk%	9	9	9	c*1K	T	9	9	9	c*3K	T	9	9	9	c*1K	T	-
Bicycles on Road	1cl	6	c	c	9	6	i	c	c	9	i	l 3	c	c	9	-
Bicycles on Road%	9	9	9	cK	T	9	9	9	cK	T	9	9	9	cK	T	-

Peak Hour: 08:15 AM - 09:15 AMTTTTWeather: Clear Sky (14.28 °C)



Peak Hour: 05:00 PM - 06:00 PMTTTTTWeather: Clear Sky (23.37 °C)



2 cdnnds) f TnuT Ntf f wPs& :) e) f nNPuf		
M	1	3g5
H	3	377
S	0	1103

APPENDIX D:
TTS Trip Distribution

Fri Jul 29 2022 17:44:26 GMT-0400 (Eastern Daylight Time) - Run Time: 3125ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
Start time of trip - start_time In 600-859
and
Primary travel mode of trip - mode_prime M P T U
and
Trip purpose of origin - purp_orig In H
and
2006 GTA zone of origin - gta06_orig In 38 50 51 52 53

Trip 2016
Table:

	37	38	50	51	53	**Total**
PD 1 of Toronto	42	120	84	24	0	**270**
PD 2 of Toronto	0	22	0	0	8	**30**
PD 3 of Toronto	0	0	36	0	0	**36**
PD 4 of Toronto	27	22	137	19	41	**246**
PD 5 of Toronto	21	10	0	0	0	**31**
PD 6 of Toronto	26	13	0	0	0	**39**
PD 7 of Toronto	0	11	0	0	0	**11**
PD 8 of Toronto	0	12	20	0	0	**32**
PD 10 of Toronto	0	11	0	0	0	**11**
PD 11 of Toronto	0	0	0	24	0	**24**
PD 13 of Toronto	19	22	10	0	0	**51**
Pickering	0	0	24	0	0	**24**
Ajax	0	0	7	0	0	**7**
Oshawa	11	21	18	0	0	**50**
Clarington	0	0	59	0	0	**59**
Newmarket	0	0	49	0	0	**49**
Richmond Hill	0	0	56	0	0	**56**
Markham	0	0	24	19	29	**72**
Vaughan	23	11	0	0	0	**34**
Brampton	0	0	0	21	0	**21**
Mississauga	55	31	70	21	27	**204**
Oakville	0	11	0	0	15	**26**
Burlington	13	0	0	0	0	**13**
Barrie	0	0	19	0	0	**19**
External	8	0	0	0	0	**8**

Fri Jul 29 2022 18:04:40 GMT-0400 (Eastern Daylight Time) - Run Time: 3086ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
Start time of trip - start_time In 600-859
and
Primary travel mode of trip - M P T U
and
Trip purpose of origin - pu
and
2006 GTA zone of origin - 38 50 51 52 53
and
Planning district of destination - pd_dest In 1

Trip 2016
Table:

	37	38	50	51	**Total**
5	0	16	0	0	**16**
22	16	0	0	0	**16**
25	0	19	0	0	**19**
26	0	14	0	0	**14**
45	0	0	8	19	**27**
46	0	0	19	0	**19**
51	0	0	19	0	**19**
65	13	0	0	0	**13**
68	0	39	0	0	**39**
71	0	10	0	0	**10**
75	0	0	20	5	**25**
81	13	0	0	0	**13**
89	0	21	0	0	**21**
90	0	0	19	0	**19**
					270

Fri Jul 29 2022 18:23:08 GMT-0400 (Eastern Daylight Time) - Run Time: 2607ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
Start time of trip - start_time In 1500-1759
and
Primary travel mode of trip - mode M P T U
and
Trip purpose of destination - purp
and
2006 GTA zone of destination - gt 38 50 51 52 53

Trip 2016
Table:

	37	38	50	51	53	**Total**
PD 1 of Toronto	117	136	76	5	0	**334**
PD 2 of Toronto	0	33	0	0	0	**33**
PD 4 of Toronto	27	22	134	0	19	**202**
PD 5 of Toronto	0	10	12	0	0	**22**
PD 6 of Toronto	14	0	0	0	22	**36**
PD 7 of Toronto	0	11	0	0	0	**11**
PD 8 of Toronto	0	12	20	0	0	**32**
PD 10 of Toronto	0	25	0	0	0	**25**
PD 11 of Toronto	0	0	0	24	0	**24**
PD 12 of Toronto	0	0	0	0	31	**31**
PD 13 of Toronto	0	0	10	0	0	**10**
Pickering	0	0	24	0	0	**24**
Oshawa	0	0	18	0	0	**18**
Clarington	0	0	59	0	0	**59**
Richmond Hill	0	0	56	0	0	**56**
Markham	0	0	24	19	29	**72**
Vaughan	23	11	0	0	0	**34**
Brampton	0	0	0	21	0	**21**
Mississauga	71	21	37	21	27	**177**
Oakville	0	11	0	0	0	**11**
Burlington	15	0	0	0	0	**15**

Fri Jul 29 2022 18:34:46 GMT-0400 (Eastern Daylight Time) - Run Time: 2713ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
Start time of trip - start_time In 1500-1759
and
Primary travel mode of trip M P T U
and
Trip purpose of destination
and
2006 GTA zone of destinati 38 50 51 52 53
and
Planning district of origin - pd_orig In 1

Trip 2016
Table:

	37	38	50	51	**Total**
17	9	0	43	0	**52**
19	57	0	0	0	**57**
22	16	0	0	0	**16**
25	0	19	0	0	**19**
26	0	25	0	0	**25**
37	13	0	0	0	**13**
40	0	21	0	0	**21**
43	0	0	15	0	**15**
46	0	0	19	0	**19**
52	22	0	0	0	**22**
75	0	0	0	5	**5**
77	0	50	0	0	**50**
89	0	21	0	0	**21**
					335

AM	RESIDENTIAL VEHICLE TRIP DISTRIBUTION
OUTBOUND	Traffic Volume Allocation
6/22/2022	

Zone	Trips	%	NORTH Bay Street	SOUTH Bay Street	NORTH Yonge Street	SOUTH Yonge Street	TOTAL
5	16	1%			20%	80%	100.00%
22	16	1%	40%		60%		100.00%
25	19	1%	5%		95%		100.00%
26	14	1%			30%	70%	100.00%
45	27	2%	50%		50%		100.00%
46	19	1%	70%		30%		100.00%
51	DOES NOT APPLY						
65	13	1%	20%	80%			100.00%
68	39	3%	50%	50%			100.00%
71	10	1%	90%		10%		100.00%
75	25	2%	20%	80%			100.00%
81	13	1%		50%		50%	100.00%
89	21	2%		80%		20%	100.00%
90	19	1%		80%		20%	100.00%
PD 2 of Toronto	30	2%	50%		50%		100.00%
PD 3 of Toronto	36	3%	90%		10%		100.00%
PD 4 of Toronto	246	18%	50%		50%		100.00%
PD 5 of Toronto	31	2%	25%		75%		100.00%
PD 6 of Toronto	39	3%	10%		90%		100.00%
PD 7 of Toronto	11	1%	20%	80%			100.00%
PD 8 of Toronto	32	2%	20%	80%			100.00%
PD 10 of Toronto	11	1%	90%		10%		100.00%
PD 11 of Toronto	24	2%	90%		10%		100.00%
PD 13 of Toronto	51	4%	50%		50%		100.00%
Pickering	24	2%	25%		75%		100.00%
Ajax	7	1%	25%		75%		100.00%
Oshawa	50	4%	25%		75%		100.00%
Clarington	59	4%			100%		100.00%
Newmarket	49	4%			100%		100.00%
Richmond Hill	56	4%			100%		100.00%
Markham	72	5%			100%		100.00%
Vaughan	34	2%			100%		100.00%
Brampton	21	2%		100%			100.00%
Mississauga	204	15%		100%			100.00%
Oakville	26	2%		100%			100.00%
Burlington	13	1%		100%			100.00%
Barrie	19	1%		50%	50%		100.00%
	1396	100%					

Route Split Totals

NORTH Bay Street	SOUTH Bay Street	NORTH Yonge Street	SOUTH Yonge Street	TOTAL
0.00%	0.00%	0.23%	0.92%	1.1%
0.46%	0.00%	0.69%	0.00%	1.1%
0.07%	0.00%	1.29%	0.00%	1.4%
0.00%	0.00%	0.30%	0.70%	1.0%
0.97%	0.00%	0.97%	0.00%	1.9%
0.95%	0.00%	0.41%	0.00%	1.4%
DOES NOT APPLY				
0.19%	0.74%	0.00%	0.00%	0.9%
1.40%	1.40%	0.00%	0.00%	2.8%
0.64%	0.00%	0.07%	0.00%	0.7%
0.36%	1.43%	0.00%	0.00%	1.8%
0.00%	0.47%	0.00%	0.47%	0.9%
0.00%	1.20%	0.00%	0.30%	1.5%
0.00%	1.09%	0.00%	0.27%	1.4%
1.07%	0.00%	1.07%	0.00%	2.1%
2.32%	0.00%	0.26%	0.00%	2.6%
8.81%	0.00%	8.81%	0.00%	17.6%
0.56%	0.00%	1.67%	0.00%	2.2%
0.28%	0.00%	2.51%	0.00%	2.8%
0.16%	0.63%	0.00%	0.00%	0.8%
0.46%	1.83%	0.00%	0.00%	2.3%
0.71%	0.00%	0.08%	0.00%	0.8%
1.55%	0.00%	0.17%	0.00%	1.7%
1.83%	0.00%	1.83%	0.00%	3.7%
0.43%	0.00%	1.29%	0.00%	1.7%
0.13%	0.00%	0.38%	0.00%	0.5%
0.90%	0.00%	2.69%	0.00%	3.6%
0.00%	0.00%	4.23%	0.00%	4.2%
0.00%	0.00%	3.51%	0.00%	3.5%
0.00%	0.00%	4.01%	0.00%	4.0%
0.00%	0.00%	5.16%	0.00%	5.2%
0.00%	0.00%	2.44%	0.00%	2.4%
0.00%	1.50%	0.00%	0.00%	1.5%
0.00%	14.61%	0.00%	0.00%	14.6%
0.00%	1.86%	0.00%	0.00%	1.9%
0.00%	0.93%	0.00%	0.00%	0.9%
0.00%	0.68%	0.68%	0.00%	1.4%
24.2%	**28.4%**	**44.7%**	**2.7%**	**100.0%**

Rounded	**24.00%**	**28.00%**	**45.00%**	**3.00%**	100%
	x	x	x	x	

CARDINAL DIRECTION	
Bay Street NORTH	24.00%
Bay Street SOUTH	28.00%
Yonge Street NORTH	45.00%
Yonge Street SOUTH	3.00%

PM
INBOUND
6/22/2022

RESIDENTIAL VEHICLE TRIP DISTRIBUTION

Traffic Volume Allocation

Zone	Trips	%	NORTH Bay Street	SOUTH Bay Street	NORTH Yonge Street	SOUTH Yonge Street	TOTAL
17	52	4%		25%		75%	100.00%
19	57	5%	50%		50%		100.00%
22	16	1%	50%		50%		100.00%
25	19	2%		55%		45%	100.00%
26	25	2%		55%		45%	100.00%
37	13	1%		55%		45%	100.00%
40	21	2%	10%		90%		100.00%
43	15	1%	25%		75%		100.00%
46	19	2%	50%		50%		100.00%
52	22	2%		50%		50%	100.00%
75	5	0%			100%		100.00%
77	50	4%		50%		50%	100.00%
89	21	2%		100%			100.00%
PD 2 of Toronto	33	3%	50%	50%			100.00%
PD 4 of Toronto	202	16%	75%		25%		100.00%
PD 5 of Toronto	22	2%	25%		75%		100.00%
PD 6 of Toronto	36	3%	25%		75%		100.00%
PD 7 of Toronto	11	1%	50%	50%			100.00%
PD 8 of Toronto	32	3%	50%	50%			100.00%
PD 10 of Toronto	25	2%	100%				100.00%
PD 11 of Toronto	24	2%	80%		20%		100.00%
PD 12 of Toronto	31	2%	100%				100.00%
PD 13 of Toronto	10	1%	75%		25%		100.00%
Pickering	24	2%	50%		50%		100.00%
Oshawa	18	1%	50%		50%		100.00%
Clarington	59	5%	50%		50%		100.00%
Richmond Hill	56	4%	50%		50%		100.00%
Markham	72	6%	50%		50%		100.00%
Vaughan	34	3%	50%		50%		100.00%
Brampton	21	2%	80%		20%		100.00%
Mississauga	177	14%		80%		20%	100.00%
Oakville	11	1%		80%		20%	100.00%
Burlington	15	1%		80%		20%	100.00%
	1248	100%					

Route Split Totals

NORTH Bay Street	SOUTH Bay Street	NORTH Yonge Street	SOUTH Yonge Street	TOTAL
0.00%	1.04%	0.00%	3.13%	4.2%
2.28%	0.00%	2.28%	0.00%	4.6%
0.64%	0.00%	0.64%	0.00%	1.3%
0.00%	0.84%	0.00%	0.69%	1.5%
0.00%	1.10%	0.00%	0.90%	2.0%
0.00%	0.57%	0.00%	0.47%	1.0%
0.17%	0.00%	1.51%	0.00%	1.7%
0.30%	0.00%	0.90%	0.00%	1.2%
0.76%	0.00%	0.76%	0.00%	1.5%
0.00%	0.88%	0.00%	0.88%	1.8%
0.00%	0.00%	0.40%	0.00%	0.4%
0.00%	2.00%	0.00%	2.00%	4.0%
0.00%	1.68%	0.00%	0.00%	1.7%
1.32%	1.32%	0.00%	0.00%	2.6%
12.14%	0.00%	4.05%	0.00%	16.2%
0.44%	0.00%	1.32%	0.00%	1.8%
0.72%	0.00%	2.16%	0.00%	2.9%
0.44%	0.44%	0.00%	0.00%	0.9%
1.28%	1.28%	0.00%	0.00%	2.6%
2.00%	0.00%	0.00%	0.00%	2.0%
1.54%	0.00%	0.38%	0.00%	1.9%
2.48%	0.00%	0.00%	0.00%	2.5%
0.60%	0.00%	0.20%	0.00%	0.8%
0.96%	0.00%	0.96%	0.00%	1.9%
0.72%	0.00%	0.72%	0.00%	1.4%
2.36%	0.00%	2.36%	0.00%	4.7%
2.24%	0.00%	2.24%	0.00%	4.5%
2.88%	0.00%	2.88%	0.00%	5.8%
1.36%	0.00%	1.36%	0.00%	2.7%
1.35%	0.00%	0.34%	0.00%	1.7%
0.00%	11.35%	0.00%	2.84%	14.2%
0.00%	0.71%	0.00%	0.18%	0.9%
0.00%	0.96%	0.00%	0.24%	1.2%
39.0%	**24.2%**	**25.5%**	**11.3%**	**100.0%**

Rounded	**39.00%**	**24.00%**	**26.00%**	**11.00%**	100%
	x	x	x	x	

	CARDINAL DIRECTION	
Bay Street	NORTH	39.00%
	SOUTH	24.00%
Yonge Street	NORTH	26.00%
	SOUTH	11.00%

APPENDIX E:
Signal Timing Plans

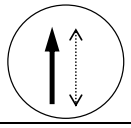
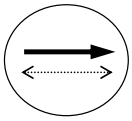
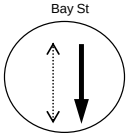
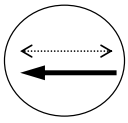
LOCATION:	**Yonge St & Gould St**	*DISTRICT:*	**Toronto & East York**
TCS:	**909**	*COMPUTER SYSTEM:*	**TransSuite**
MODE/COMMENT:	**SAP with PR**	*CONTROLLER/CABINET TYPE:*	**PEEK ATC-1000 / TS2T1**
PREPARED BY/DATE:	***CIMA+* / March 10, 2020**	*CONFLICT FLASH:*	**Red & Red**
CHECKED BY/DATE:	***Ameneh Dialameh* / March 31, 2020**	*DESIGN WALK SPEED:*	**1.0m/s (FDW based on full crossing @ 1.2m/s)**
IMPLEMENTATION DATE:	**April 20, 2020**	*CHANNEL/DROP:*	**4009/22**
		CONTROLLER FIRMWARE:	**3.018.1.2976**

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/Callable)	Remarks
	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 NOT USED	WLK FDW MIN MAX1 AMB ALR SPLIT							Pedestrian Minimums: NSWK = 7 sec NSFD = 10 sec EWWK = 7 sec EWFD = 12 sec WB phase is callable by vehicle or pedestrian actuation. If a vehicle and/or pedestrian call is received, the maximum WBG is served. The EWWK & EWFD are displayed on the pedestrian signal heads if a vehicle and/or pedestrian call is received.
2 Yonge St	WLK 7 FDW 10 MIN 17 MAX1 40 AMB 3.0 ALR 2.5 SPLIT	46	56	56	46	46	Fixed	
3 NOT USED	WLK FDW MIN MAX1 AMB ALR SPLIT							
4 Gould St	WLK 7 FDW 12 MIN 19 MAX1 19 AMB 3.0 ALR 1.8 SPLIT	24	24	24	24	24	South side pedestrian crossing callable by pushbutton.	
5 NOT USED	WLK FDW MIN MAX1 AMB ALR SPLIT							
6 Yonge St	WLK 7 FDW 10 MIN 17 MAX1 40 AMB 3.0 ALR 2.5 SPLIT	46	56	56	46	46	Fixed	
7 NOT USED	WLK FDW MIN MAX AMB ALR SPLIT							
8 Gould St	WLK 7 FDW 12 MIN 19 MAX1 19 AMB 3.0 ALR 1.8 SPLIT	24	24	24	24	24	Callable by stopbar loop and/or pushbutton	
	CL OF	70 64	80 56	80 36	70 64	70 1		

NOTES: T- Intersection without west leg. NS pedestrian crossing on east side only.
TransSuite Pickup on May 27, 2014

LOCATION:	**Bay St & Elm St**	*ATO / DISTRICT / WARD:*	**Area 1 / Toronto & East York / Ward 11**
MODE/COMMENT:	**FT with 2-wire Polara APS**	*COMPUTER SYSTEM:*	**TransSuite**
TCS:	**913**	*CONTROLLER/CABINET TYPE:*	**Peek ATC-1000 / TS2T1**
PREPARED BY / DATE:	***HDR* / March 02, 2020**	*CONFLICT FLASH:*	**Red & Red**
CHECKED BY / DATE:	**Brian Fu / Ihtesham Ahmad / March 24, 2020**	*DESIGN WALK SPEED:*	**1.0 m/s (FDW based on full crossing at 1.2 m/s)**
IMPLEMENTATION DATE:	**April 7, 2020**	*CHANNEL/DROP:*	**5010/4**
		CONTROLLER FIRMWARE:	**3.018.1.2976**

N

NEMA Phase		OFF All Other Times	AM 06:30-09:30 M-F	PM 15:00-19:00 M-F	NGHT 23:00-06:30 Daily	WKND 10:00-19:00 Sat & Sun	Phase Mode (Fixed/Demanded/Callable)	Remarks
	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 NOT USED	WLK							Pedestrian Minimums: NSWK = 7 seconds, NSFD = 13 seconds EWWK = 7 seconds, EWFD = 15 seconds
	FDW							
	MIN							
	MAX 1							Actuated APS on during Full WALK periods.
	AMB							Extended APS Push Activation = 3 seconds
	ALLR							
	SPLIT							
2 Bay St 	WLK 7						Fixed	
	FDW 13							
	MIN 20							
	MAX 1 34							
	AMB 3.0							
	ALLR 3.2							
	SPLIT	41	51	51	41	41		
3 NOT USED	WLK							
	FDW							
	MIN							
	MAX 1							
	AMB							
	ALLR							
	SPLIT							
4 Elm St 	WLK 7						Fixed	
	FDW 15							
	MIN 22							
	MAX 1 22							
	AMB 3.0							
	ALLR 3.2							
	SPLIT	29	29	29	29	29		
5 NOT USED	WLK							
	FDW							
	MIN							
	MAX 1							
	AMB							
	ALLR							
	SPLIT							
6 Bay St 	WLK 7						Fixed	
	FDW 13							
	MIN 20							
	MAX 1 34							
	AMB 3.0							
	ALLR 3.2							
	SPLIT	41	51	51	41	41		
7 NOT USED	WLK							
	FDW							
	MIN							
	MAX 1							
	AMB							
	ALLR							
	SPLIT							
8 Elm St 	WLK 7						Fixed	
	FDW 15							
	MIN 22							
	MAX 1 22							
	AMB 3.0							
	ALLR 3.2							
	SPLIT	29	29	29	29	29		
	CL	70	80	80	70	70		
	OF	7	61	57	44	19		

Notes:

APPENDIX F:
Synchro Worksheets

Existing Traffic Conditions

Lanes, Volumes, Timings
1: Bay Street & Elm Street

Existing Traffic AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	40	15	30	75	25	0	400	25	0	580	110
Future Volume (vph)	75	40	15	30	75	25	0	400	25	0	580	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	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	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.83	0.96		0.87	0.95			0.96			0.90	
Frt		0.960			0.962			0.991			0.976	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1700	1643	0	1785	1662	0	0	3208	0	0	3040	0
Flt Permitted	0.690			0.720								
Satd. Flow (perm)	1030	1643	0	1177	1662	0	0	3208	0	0	3040	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			17			14			46	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		72.7			35.5			93.5			85.2	
Travel Time (s)		8.7			4.3			8.4			7.7	
Confl. Peds. (#/hr)	175		129	129		175	401		656	656		401
Confl. Bikes (#/hr)			8			4			28			138
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	5%	5%	6%	0%	2%	7%	0%	6%	3%	50%	4%	1%
Adj. Flow (vph)	77	41	15	31	77	26	0	408	26	0	592	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	56	0	31	103	0	0	434	0	0	704	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)		3.5			3.5			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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2			2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			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	0.6			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			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Bay Street & Elm Street

Existing Traffic AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8			2			6	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0			20.0			20.0	
Minimum Split (s)	28.2	28.2		28.2	28.2			26.2			26.2	
Total Split (s)	29.0	29.0		29.0	29.0			51.0			51.0	
Total Split (%)	36.3%	36.3%		36.3%	36.3%			63.8%			63.8%	
Maximum Green (s)	22.8	22.8		22.8	22.8			44.8			44.8	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
All-Red Time (s)	3.2	3.2		3.2	3.2			3.2			3.2	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Recall Mode	None	None		None	None			C-Max			C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0			13.0			13.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	23.0	23.0		23.0	23.0			53.3			53.3	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.67			0.67	
v/c Ratio	0.26	0.12		0.09	0.21			0.20			0.35	
Control Delay	24.9	17.3		19.5	17.0			7.2			8.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	24.9	17.3		19.5	17.0			7.2			8.0	
LOS	C	B		B	B			A			A	
Approach Delay		21.7			17.6			7.2			8.0	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 61 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 10.0		Intersection LOS: A	
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Bay Street & Elm Street

Queues
1: Bay Street & Elm Street

Existing Traffic AM

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	77	56	31	103	434	704
v/c Ratio	0.26	0.12	0.09	0.21	0.20	0.35
Control Delay	24.9	17.3	19.5	17.0	7.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	17.3	19.5	17.0	7.2	8.0
Queue Length 50th (m)	9.5	4.8	3.6	10.2	15.5	27.0
Queue Length 95th (m)	21.0	13.4	10.1	22.5	22.9	38.2
Internal Link Dist (m)		48.7		11.5	69.5	61.2
Turn Bay Length (m)	15.0		15.0			
Base Capacity (vph)	306	499	350	506	2141	2040
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.11	0.09	0.20	0.20	0.35

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Bay Street & Elm Street

Existing Traffic AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	40	15	30	75	25	0	400	25	0	580	110
Future Volume (vph)	75	40	15	30	75	25	0	400	25	0	580	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.96		1.00	0.95			0.96			0.90	
Flpb, ped/bikes	0.83	1.00		0.87	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.96			0.99			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1419	1642		1553	1662			3208			3042	
Flt Permitted	0.69	1.00		0.72	1.00			1.00			1.00	
Satd. Flow (perm)	1031	1642		1177	1662			3208			3042	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	77	41	15	31	77	26	0	408	26	0	592	112
RTOR Reduction (vph)	0	12	0	0	13	0	0	5	0	0	17	0
Lane Group Flow (vph)	77	44	0	31	90	0	0	429	0	0	687	0
Confl. Peds. (#/hr)	175		129	129		175	401		656	656		401
Confl. Bikes (#/hr)			8			4			28			138
Heavy Vehicles (%)	5%	5%	6%	0%	2%	7%	0%	6%	3%	50%	4%	1%
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	17.6	17.6		17.6	17.6			50.0			50.0	
Effective Green, g (s)	18.6	18.6		18.6	18.6			51.0			51.0	
Actuated g/C Ratio	0.23	0.23		0.23	0.23			0.64			0.64	
Clearance Time (s)	6.2	6.2		6.2	6.2			6.2			6.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	239	381		273	386			2045			1939	
v/s Ratio Prot		0.03			0.05			0.13			c0.23	
v/s Ratio Perm	c0.07			0.03								
v/c Ratio	0.32	0.12		0.11	0.23			0.21			0.35	
Uniform Delay, d1	25.5	24.2		24.2	24.9			6.1			6.8	
Progression Factor	1.00	1.00		0.89	0.87			1.00			1.00	
Incremental Delay, d2	0.8	0.1		0.2	0.3			0.2			0.5	
Delay (s)	26.3	24.4		21.7	22.0			6.3			7.3	
Level of Service	C	C		C	C			A			A	
Approach Delay (s)		25.5			22.0			6.3			7.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
2: Harry Barberian Lane & Elm Street

Existing Traffic AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	60	0	0	130	5	0
Future Volume (vph)	60	0	0	130	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1693	0	0	1807	1685	0
Flt Permitted					0.950	
Satd. Flow (perm)	1693	0	0	1807	1685	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	35.5			124.0	57.6	
Travel Time (s)	4.3			14.9	6.9	
Confl. Peds. (#/hr)		57	57		4	4
Confl. Bikes (#/hr)		8				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	11%	50%	0%	4%	0%	100%
Adj. Flow (vph)	64	0	0	138	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	0	138	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: Harry Barberian Lane & Elm Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	60	0	0	130	5	0
Future Volume (Veh/h)	60	0	0	130	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	64	0	0	138	5	0
Pedestrians	4			4	57	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	35					
pX, platoon unblocked						
vC, conflicting volume			121		263	125
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			121		263	125
tC, single (s)			4.1		6.4	7.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	4.2
p0 queue free %			100		99	100
cM capacity (veh/h)			1421		699	687

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	138	5
Volume Left	0	0	5
Volume Right	0	0	0
cSH	1700	1421	699
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		23.1%	ICU Level of Service	A
Analysis Period (min)		15		

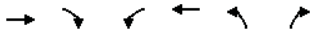
Lanes, Volumes, Timings
3: Harry Barberian Lane & Elm Street

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	50	0	5	120	0	0
Future Volume (vph)	50	0	5	120	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected				0.998		
Satd. Flow (prot)	1842	0	0	1822	1773	0
Flt Permitted				0.998		
Satd. Flow (perm)	1842	0	0	1822	1773	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	124.0			75.4	55.0	
Travel Time (s)	14.9			9.0	6.6	
Confl. Peds. (#/hr)		59	59		3	2
Confl. Bikes (#/hr)		11				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	0%	0%	3%	0%	0%
Adj. Flow (vph)	55	0	5	132	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	0	137	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	22.6%		ICU Level of Service	A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
3: Harry Barberian Lane & Elm Street

Existing Traffic AM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	0	5	120	0	0
Future Volume (Veh/h)	50	0	5	120	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	55	0	5	132	0	0
Pedestrians	3			2	59	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	159					
pX, platoon unblocked						
vC, conflicting volume			114		259	116
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			114		259	116
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1427		700	902

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	55	137	0
Volume Left	0	5	0
Volume Right	0	0	0
cSH	1700	1427	1700
Volume to Capacity	0.03	0.00	0.00
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.3	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		22.6%	ICU Level of Service A
Analysis Period (min)		15	

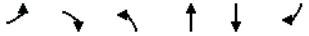
Lanes, Volumes, Timings
4: Yonge Street & Elm Street

Existing Traffic AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	25	70	155	235	50
Future Volume (vph)	20	25	70	155	235	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.925				0.974	
Flt Protected	0.978			0.985		
Satd. Flow (prot)	1663	0	0	3263	3286	0
Flt Permitted	0.978			0.985		
Satd. Flow (perm)	1663	0	0	3263	3286	0
Link Speed (k/h)	30			40	40	
Link Distance (m)	75.4			53.0	61.6	
Travel Time (s)	9.0			4.8	5.5	
Confl. Peds. (#/hr)	12	10	471			471
Confl. Bikes (#/hr)						44
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	5%	9%	6%	5%
Adj. Flow (vph)	21	26	73	161	245	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	234	297	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.8%		ICU Level of Service A	
Analysis Period (min) 15			

HCM Unsignalized Intersection Capacity Analysis
4: Yonge Street & Elm Street



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	25	70	155	235	50
Future Volume (Veh/h)	20	25	70	155	235	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	21	26	73	161	245	52
Pedestrians	471			10	12	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	38			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				53		
pX, platoon unblocked	0.99					
vC, conflicting volume	980	630	768			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	961	630	768			
tC, single (s)	6.8	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	90	86			
cM capacity (veh/h)	134	258	509			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	47	127	107	163	134
Volume Left	21	73	0	0	0
Volume Right	26	0	0	0	52
cSH	182	509	1700	1700	1700
Volume to Capacity	0.26	0.14	0.06	0.10	0.08
Queue Length 95th (m)	7.9	4.0	0.0	0.0	0.0
Control Delay (s)	31.5	8.5	0.0	0.0	0.0
Lane LOS	D	A			
Approach Delay (s)	31.5	4.6		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lanes, Volumes, Timings
5: Yonge Street & Gould Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	0	5	220	5	0	260	
Future Volume (vph)	0	5	220	5	0	260	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.89		0.99				
Frt	0.865		0.997				
Flt Protected							
Satd. Flow (prot)	959	0	3256	0	0	3400	
Flt Permitted							
Satd. Flow (perm)	959	0	3256	0	0	3400	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	178		5				
Link Speed (k/h)	30		40			40	
Link Distance (m)	59.2		114.5			53.0	
Travel Time (s)	7.1		10.3			4.8	
Confl. Peds. (#/hr)	70	83		320	320		
Confl. Bikes (#/hr)				11			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles (%)	0%	50%	7%	57%	0%	5%	
Adj. Flow (vph)	0	5	237	5	0	280	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	5	0	242	0	0	280	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0		0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot		NA			NA	
Protected Phases	8		2			6	4

Lanes, Volumes, Timings
5: Yonge Street & Gould Street

Existing Traffic AM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	19.0		17.0		17.0	17.0	19.0
Minimum Split (s)	23.8		23.5		23.5	23.5	23.8
Total Split (s)	24.0		56.0		56.0	56.0	24.0
Total Split (%)	30.0%		70.0%		70.0%	70.0%	30%
Maximum Green (s)	19.2		50.5		50.5	50.5	19.2
Yellow Time (s)	3.0		3.0		3.0	3.0	3.0
All-Red Time (s)	1.8		2.5		2.5	2.5	1.8
Lost Time Adjust (s)	-1.0		-1.0			-1.0	
Total Lost Time (s)	3.8		4.5			4.5	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effct Green (s)	20.2		51.5			51.5	
Actuated g/C Ratio	0.25		0.64			0.64	
v/c Ratio	0.01		0.12			0.13	
Control Delay	0.0		5.5			5.7	
Queue Delay	0.0		0.0			0.0	
Total Delay	0.0		5.5			5.7	
LOS	A		A			A	
Approach Delay			5.5			5.7	
Approach LOS			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 56 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.13
Intersection Signal Delay: 5.6 Intersection LOS: A
Intersection Capacity Utilization 37.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Yonge Street & Gould Street

Queues
5: Yonge Street & Gould Street

Existing Traffic AM

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	5	242	280
v/c Ratio	0.01	0.12	0.13
Control Delay	0.0	5.5	5.7
Queue Delay	0.0	0.0	0.0
Total Delay	0.0	5.5	5.7
Queue Length 50th (m)	0.0	6.7	8.0
Queue Length 95th (m)	0.0	10.8	12.6
Internal Link Dist (m)	35.2	90.5	29.0
Turn Bay Length (m)			
Base Capacity (vph)	375	2097	2188
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.01	0.12	0.13

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & Gould Street

Existing Traffic AM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	5	220	5	0	260
Future Volume (vph)	0	5	220	5	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8		4.5			4.5
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.89		0.99			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.86		1.00			1.00
Flt Protected	1.00		1.00			1.00
Satd. Flow (prot)	959		3256			3400
Flt Permitted	1.00		1.00			1.00
Satd. Flow (perm)	959		3256			3400
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	5	237	5	0	280
RTOR Reduction (vph)	4	0	2	0	0	0
Lane Group Flow (vph)	1	0	240	0	0	280
Confl. Peds. (#/hr)	70	83		320	320	
Confl. Bikes (#/hr)				11		
Heavy Vehicles (%)	0%	50%	7%	57%	0%	5%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	19.2		50.5			50.5
Effective Green, g (s)	20.2		51.5			51.5
Actuated g/C Ratio	0.25		0.64			0.64
Clearance Time (s)	4.8		5.5			5.5
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	242		2096			2188
v/s Ratio Prot	c0.00		0.07			c0.08
v/s Ratio Perm						
v/c Ratio	0.01		0.11			0.13
Uniform Delay, d1	22.4		5.5			5.5
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.0		0.1			0.1
Delay (s)	22.4		5.6			5.7
Level of Service	C		A			A
Approach Delay (s)	22.4		5.6			5.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
1: Bay Street & Elm Street

Existing Traffic PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	80	20	35	45	40	0	585	35	5	520	35
Future Volume (vph)	135	80	20	35	45	40	0	585	35	5	520	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	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	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.78	0.94		0.75	0.88			0.96			0.96	
Frt		0.970			0.929			0.992			0.991	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1785	1614	0	1785	1503	0	0	3312	0	0	3300	0
Flt Permitted	0.699			0.690							0.950	
Satd. Flow (perm)	1026	1614	0	966	1503	0	0	3312	0	0	3127	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			2			13			14	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		72.7			35.5			93.5			85.2	
Travel Time (s)		8.7			4.3			8.4			7.7	
Confl. Peds. (#/hr)	227		270	270		227	608		933	933		608
Confl. Bikes (#/hr)			10			12			134			65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	10%	0%	0%	4%	0%	2%	5%	0%	3%	0%
Adj. Flow (vph)	141	83	21	36	47	42	0	609	36	5	542	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	104	0	36	89	0	0	645	0	0	583	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)		3.5			3.5			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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Bay Street & Elm Street

Existing Traffic PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0			20.0		20.0	20.0	
Minimum Split (s)	28.2	28.2		28.2	28.2			26.2		26.2	26.2	
Total Split (s)	29.0	29.0		29.0	29.0			51.0		51.0	51.0	
Total Split (%)	36.3%	36.3%		36.3%	36.3%			63.8%		63.8%	63.8%	
Maximum Green (s)	22.8	22.8		22.8	22.8			44.8		44.8	44.8	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	3.2	3.2		3.2	3.2			3.2		3.2	3.2	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0			13.0		13.0	13.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	23.2	23.2		23.2	23.2			46.4			46.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.58			0.58	
v/c Ratio	0.48	0.22		0.13	0.20			0.33			0.32	
Control Delay	29.7	19.7		23.5	23.5			9.2			9.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	29.7	19.7		23.5	23.5			9.2			9.0	
LOS	C	B		C	C			A			A	
Approach Delay		25.5			23.5			9.2			9.0	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 57 (71%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 12.7		Intersection LOS: B	
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Bay Street & Elm Street

Queues
1: Bay Street & Elm Street

Existing Traffic PM

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	141	104	36	89	645	583
v/c Ratio	0.48	0.22	0.13	0.20	0.33	0.32
Control Delay	29.7	19.7	23.5	23.5	9.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	19.7	23.5	23.5	9.2	9.0
Queue Length 50th (m)	18.5	10.7	4.5	11.0	25.1	22.3
Queue Length 95th (m)	36.0	22.6	12.1	23.2	36.0	32.6
Internal Link Dist (m)		48.7		11.5	69.5	61.2
Turn Bay Length (m)	15.0		15.0			
Base Capacity (vph)	305	490	287	448	1927	1821
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.21	0.13	0.20	0.33	0.32

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Bay Street & Elm Street

Existing Traffic PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	80	20	35	45	40	0	585	35	5	520	35
Future Volume (vph)	135	80	20	35	45	40	0	585	35	5	520	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.88			0.96			0.96	
Flpb, ped/bikes	0.78	1.00		0.75	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.99			0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1394	1613		1330	1503			3311			3290	
Flt Permitted	0.70	1.00		0.69	1.00			1.00			0.95	
Satd. Flow (perm)	1026	1613		966	1503			3311			3128	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	141	83	21	36	47	42	0	609	36	5	542	36
RTOR Reduction (vph)	0	11	0	0	1	0	0	5	0	0	6	0
Lane Group Flow (vph)	141	93	0	36	88	0	0	640	0	0	577	0
Confl. Peds. (#/hr)	227		270	270		227	608		933	933		608
Confl. Bikes (#/hr)			10			12			134			65
Heavy Vehicles (%)	0%	5%	10%	0%	0%	4%	0%	2%	5%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)	22.2	22.2		22.2	22.2			45.4			45.4	
Effective Green, g (s)	23.2	23.2		23.2	23.2			46.4			46.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.58			0.58	
Clearance Time (s)	6.2	6.2		6.2	6.2			6.2			6.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	297	467		280	435			1920			1814	
v/s Ratio Prot		0.06			0.06			c0.19				
v/s Ratio Perm	c0.14			0.04							0.18	
v/c Ratio	0.47	0.20		0.13	0.20			0.33			0.32	
Uniform Delay, d1	23.4	21.4		20.9	21.4			8.7			8.7	
Progression Factor	1.00	1.00		1.05	1.05			1.00			1.00	
Incremental Delay, d2	1.2	0.2		0.2	0.2			0.5			0.5	
Delay (s)	24.6	21.6		22.2	22.7			9.2			9.1	
Level of Service	C	C		C	C			A			A	
Approach Delay (s)		23.3			22.6			9.2			9.1	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.38			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.4	
Intersection Capacity Utilization	46.7%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes, Volumes, Timings
2: Harry Barberian Lane & Elm Street

Existing Traffic PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	110	5	0	115	0	0
Future Volume (vph)	110	5	0	115	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994					
Flt Protected						
Satd. Flow (prot)	1783	0	0	1860	1773	0
Flt Permitted						
Satd. Flow (perm)	1783	0	0	1860	1773	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	35.5			124.0	57.6	
Travel Time (s)	4.3			14.9	6.9	
Confl. Peds. (#/hr)		194	194		10	23
Confl. Bikes (#/hr)		15				
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	20%	0%	1%	0%	0%
Adj. Flow (vph)	125	6	0	131	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	0	0	131	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.7%	ICU Level of Service A	
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: Harry Barberian Lane & Elm Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	110	5	0	115	0	0
Future Volume (Veh/h)	110	5	0	115	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	125	6	0	131	0	0
Pedestrians	10			23	194	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			2	13	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	35					
pX, platoon unblocked			0.98		0.98	0.98
vC, conflicting volume			325		463	345
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			300		441	320
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1078		485	603

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	131	131	0
Volume Left	0	0	0
Volume Right	6	0	0
cSH	1700	1078	1700
Volume to Capacity	0.08	0.00	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	0.0
Approach LOS			A

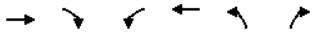
Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		28.7%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes, Volumes, Timings
3: Harry Barberian Lane & Elm Street

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	95	0	0	95	0	0
Future Volume (vph)	95	0	0	95	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1860	0	0	1842	1773	0
Flt Permitted						
Satd. Flow (perm)	1860	0	0	1842	1773	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	124.0			75.4	55.0	
Travel Time (s)	14.9			9.0	6.6	
Confl. Peds. (#/hr)		189	189		9	11
Confl. Bikes (#/hr)		18				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	102	0	0	102	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	102	0	0	102	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Harry Barberian Lane & Elm Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	95	0	0	95	0	0
Future Volume (Veh/h)	95	0	0	95	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	102	0	0	102	0	0
Pedestrians	9			11	189	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			1	13	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	159					
pX, platoon unblocked						
vC, conflicting volume			291		402	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			291		402	302
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1114		524	639

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	102	102	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1114	1700
Volume to Capacity	0.06	0.00	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	0.0
Approach LOS			A

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		26.4%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes, Volumes, Timings
4: Yonge Street & Elm Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	45	40	250	225	35
Future Volume (vph)	35	45	40	250	225	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.924				0.980	
Flt Protected	0.979			0.993		
Satd. Flow (prot)	1700	0	0	3409	3410	0
Flt Permitted	0.979			0.993		
Satd. Flow (perm)	1700	0	0	3409	3410	0
Link Speed (k/h)	30			40	40	
Link Distance (m)	75.4			53.0	61.6	
Travel Time (s)	9.0			4.8	5.5	
Confl. Peds. (#/hr)	37	32	678			678
Confl. Bikes (#/hr)						103
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	4%	3%	0%
Adj. Flow (vph)	38	49	44	275	247	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	87	0	0	319	285	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: Yonge Street & Elm Street

Existing Traffic PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	45	40	250	225	35
Future Volume (Veh/h)	35	45	40	250	225	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	38	49	44	275	247	38
Pedestrians	678			32	37	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	55			3	3	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				53		
pX, platoon unblocked	0.98					
vC, conflicting volume	1206	852	963			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1162	852	963			
tC, single (s)	*5.2	*4.9	*6.6			
tC, 2 stage (s)						
tF (s)	*2.6	*2.4	*3.5			
p0 queue free %	64	82	64			
cM capacity (veh/h)	104	271	122			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	87	136	183	165	120
Volume Left	38	44	0	0	0
Volume Right	49	0	0	0	38
cSH	159	122	1700	1700	1700
Volume to Capacity	0.55	0.36	0.11	0.10	0.07
Queue Length 95th (m)	22.1	11.7	0.0	0.0	0.0
Control Delay (s)	51.8	29.2	0.0	0.0	0.0
Lane LOS	F	D			
Approach Delay (s)	51.8	12.4		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	12.3		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Lanes, Volumes, Timings
5: Yonge Street & Gould Street

Existing Traffic PM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	5	10	280	5	5	280	
Future Volume (vph)	5	10	280	5	5	280	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.71		0.98			0.99	
Frt	0.913		0.997				
Flt Protected	0.983					0.999	
Satd. Flow (prot)	1250	0	3368	0	0	3399	
Flt Permitted	0.983					0.950	
Satd. Flow (perm)	1112	0	3368	0	0	3199	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	4		5				
Link Speed (k/h)	30		40			40	
Link Distance (m)	59.2		114.5			53.0	
Travel Time (s)	7.1		10.3			4.8	
Confl. Peds. (#/hr)	288	259		1142	1142		
Confl. Bikes (#/hr)				72			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Heavy Vehicles (%)	0%	12%	4%	0%	0%	5%	
Adj. Flow (vph)	6	11	322	6	6	322	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	17	0	328	0	0	328	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0		0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	4

Lanes, Volumes, Timings
5: Yonge Street & Gould Street

Existing Traffic PM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	19.0		17.0		17.0	17.0	19.0
Minimum Split (s)	23.8		23.5		23.5	23.5	23.8
Total Split (s)	24.0		56.0		56.0	56.0	24.0
Total Split (%)	30.0%		70.0%		70.0%	70.0%	30%
Maximum Green (s)	19.2		50.5		50.5	50.5	19.2
Yellow Time (s)	3.0		3.0		3.0	3.0	3.0
All-Red Time (s)	1.8		2.5		2.5	2.5	1.8
Lost Time Adjust (s)	-1.0		-1.0			-1.0	
Total Lost Time (s)	3.8		4.5			4.5	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effct Green (s)	20.2		51.5			51.5	
Actuated g/C Ratio	0.25		0.64			0.64	
v/c Ratio	0.05		0.15			0.16	
Control Delay	20.2		5.7			5.9	
Queue Delay	0.0		0.0			0.0	
Total Delay	20.2		5.7			5.9	
LOS	C		A			A	
Approach Delay	20.2		5.7			5.9	
Approach LOS	C		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 36 (45%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.16			
Intersection Signal Delay: 6.2		Intersection LOS: A	
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Yonge Street & Gould Street

Queues
5: Yonge Street & Gould Street

Existing Traffic PM

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	17	328	328
v/c Ratio	0.05	0.15	0.16
Control Delay	20.2	5.7	5.9
Queue Delay	0.0	0.0	0.0
Total Delay	20.2	5.7	5.9
Queue Length 50th (m)	1.6	9.4	9.6
Queue Length 95th (m)	6.2	13.8	14.1
Internal Link Dist (m)	35.2	90.5	29.0
Turn Bay Length (m)			
Base Capacity (vph)	318	2169	2059
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.05	0.15	0.16

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	10	280	5	5	280
Future Volume (vph)	5	10	280	5	5	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8		4.5			4.5
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.80		0.98			1.00
Flpb, ped/bikes	1.00		1.00			0.99
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1249		3369			3364
Flt Permitted	0.98		1.00			0.95
Satd. Flow (perm)	1249		3369			3198
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	11	322	6	6	322
RTOR Reduction (vph)	3	0	2	0	0	0
Lane Group Flow (vph)	14	0	326	0	0	328
Confl. Peds. (#/hr)	288	259		1142	1142	
Confl. Bikes (#/hr)				72		
Heavy Vehicles (%)	0%	12%	4%	0%	0%	5%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	19.2		50.5			50.5
Effective Green, g (s)	20.2		51.5			51.5
Actuated g/C Ratio	0.25		0.64			0.64
Clearance Time (s)	4.8		5.5			5.5
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	315		2168			2058
v/s Ratio Prot	c0.01		0.10			
v/s Ratio Perm						c0.10
v/c Ratio	0.04		0.15			0.16
Uniform Delay, d1	22.6		5.6			5.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.1		0.1			0.2
Delay (s)	22.7		5.8			5.8
Level of Service	C		A			A
Approach Delay (s)	22.7		5.8			5.8
Approach LOS	C		A			A

Intersection Summary				
HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.13			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.3	
Intersection Capacity Utilization	37.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Future Background Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	55	20	35	90	45	0	450	25	0	580	120
Future Volume (vph)	80	55	20	35	90	45	0	450	25	0	580	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	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	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.84	0.96		0.87	0.93			0.96			0.90	
Frt		0.961			0.950			0.992			0.974	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1700	1646	0	1785	1606	0	0	3225	0	0	3011	0
Flt Permitted	0.669			0.708								
Satd. Flow (perm)	1008	1646	0	1162	1606	0	0	3225	0	0	3011	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			15			12			51	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		72.7			35.5			93.5			85.2	
Travel Time (s)		8.7			4.3			8.4			7.7	
Confl. Peds. (#/hr)	175		129	129		175	401		656	656		401
Confl. Bikes (#/hr)			8			4			28			138
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	5%	5%	6%	0%	2%	7%	0%	6%	3%	50%	4%	1%
Adj. Flow (vph)	82	56	20	36	92	46	0	459	26	0	592	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	76	0	36	138	0	0	485	0	0	714	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)		3.5			3.5			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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2			2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			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	0.6			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			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8			2			6	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0			20.0			20.0	
Minimum Split (s)	28.2	28.2		28.2	28.2			26.2			26.2	
Total Split (s)	29.0	29.0		29.0	29.0			51.0			51.0	
Total Split (%)	36.3%	36.3%		36.3%	36.3%			63.8%			63.8%	
Maximum Green (s)	22.8	22.8		22.8	22.8			44.8			44.8	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
All-Red Time (s)	3.2	3.2		3.2	3.2			3.2			3.2	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Recall Mode	None	None		None	None			C-Max			C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0			13.0			13.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	23.0	23.0		23.0	23.0			53.3			53.3	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.67			0.67	
v/c Ratio	0.28	0.16		0.11	0.29			0.23			0.35	
Control Delay	25.4	17.6		20.7	20.3			7.4			8.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	25.4	17.6		20.7	20.3			7.4			8.0	
LOS	C	B		C	C			A			A	
Approach Delay		21.7			20.4			7.4			8.0	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 61 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Bay Street & Elm Street

Queues
1: Bay Street & Elm Street

Future Background Traffic AM

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	82	76	36	138	485	714
v/c Ratio	0.28	0.16	0.11	0.29	0.23	0.35
Control Delay	25.4	17.6	20.7	20.3	7.4	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	17.6	20.7	20.3	7.4	8.0
Queue Length 50th (m)	10.1	6.6	4.2	15.3	17.7	27.3
Queue Length 95th (m)	22.2	16.7	11.4	30.4	25.7	38.8
Internal Link Dist (m)		48.7		11.5	69.5	61.2
Turn Bay Length (m)	15.0		15.0			
Base Capacity (vph)	299	503	345	488	2151	2022
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.15	0.10	0.28	0.23	0.35

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Bay Street & Elm Street

Future Background Traffic AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	55	20	35	90	45	0	450	25	0	580	120
Future Volume (vph)	80	55	20	35	90	45	0	450	25	0	580	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.96		1.00	0.93			0.96			0.90	
Flpb, ped/bikes	0.84	1.00		0.87	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.95			0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1432	1644		1559	1606			3225			3014	
Flt Permitted	0.67	1.00		0.71	1.00			1.00			1.00	
Satd. Flow (perm)	1008	1644		1161	1606			3225			3014	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	82	56	20	36	92	46	0	459	26	0	592	122
RTOR Reduction (vph)	0	15	0	0	12	0	0	4	0	0	18	0
Lane Group Flow (vph)	82	61	0	36	126	0	0	481	0	0	696	0
Confl. Peds. (#/hr)	175		129	129		175	401		656	656		401
Confl. Bikes (#/hr)			8			4			28			138
Heavy Vehicles (%)	5%	5%	6%	0%	2%	7%	0%	6%	3%	50%	4%	1%
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	17.6	17.6		17.6	17.6			50.0			50.0	
Effective Green, g (s)	18.6	18.6		18.6	18.6			51.0			51.0	
Actuated g/C Ratio	0.23	0.23		0.23	0.23			0.64			0.64	
Clearance Time (s)	6.2	6.2		6.2	6.2			6.2			6.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	234	382		269	373			2055			1921	
v/s Ratio Prot		0.04			0.08			0.15			c0.23	
v/s Ratio Perm	c0.08			0.03								
v/c Ratio	0.35	0.16		0.13	0.34			0.23			0.36	
Uniform Delay, d1	25.7	24.5		24.3	25.6			6.2			6.8	
Progression Factor	1.00	1.00		0.93	0.93			1.00			1.00	
Incremental Delay, d2	0.9	0.2		0.2	0.5			0.3			0.5	
Delay (s)	26.6	24.7		23.0	24.3			6.4			7.4	
Level of Service	C	C		C	C			A			A	
Approach Delay (s)		25.6			24.0			6.4			7.4	
Approach LOS		C			C			A			A	

Intersection Summary					
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.36				
Actuated Cycle Length (s)	80.0	Sum of lost time (s)		10.4	
Intersection Capacity Utilization	71.1%	ICU Level of Service		C	
Analysis Period (min)	15				
c Critical Lane Group					

Lanes, Volumes, Timings
2: Harry Barberian Lane & Elm Street

Future Background Traffic AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	75	0	0	170	5	0
Future Volume (vph)	75	0	0	170	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1693	0	0	1807	1685	0
Flt Permitted					0.950	
Satd. Flow (perm)	1693	0	0	1807	1685	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	35.5			124.0	57.6	
Travel Time (s)	4.3			14.9	6.9	
Confl. Peds. (#/hr)		57	57		4	4
Confl. Bikes (#/hr)		8				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	11%	50%	0%	4%	0%	100%
Adj. Flow (vph)	80	0	0	181	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	181	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: Harry Barberian Lane & Elm Street

Future Background Traffic AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	75	0	0	170	5	0
Future Volume (Veh/h)	75	0	0	170	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	80	0	0	181	5	0
Pedestrians	4			4	57	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	35					
pX, platoon unblocked						
vC, conflicting volume			137		322	141
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			137		322	141
tC, single (s)			4.1		6.4	7.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	4.2
p0 queue free %			100		99	100
cM capacity (veh/h)			1402		647	671

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	80	181	5
Volume Left	0	0	5
Volume Right	0	0	0
cSH	1700	1402	647
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	10.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	65	0	5	160	0	0
Future Volume (vph)	65	0	5	160	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected				0.999		
Satd. Flow (prot)	1842	0	0	1824	1773	0
Flt Permitted				0.999		
Satd. Flow (perm)	1842	0	0	1824	1773	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	124.0			75.4	55.0	
Travel Time (s)	14.9			9.0	6.6	
Confl. Peds. (#/hr)		59	59		3	2
Confl. Bikes (#/hr)		11				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	0%	0%	3%	0%	0%
Adj. Flow (vph)	71	0	5	176	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	0	181	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

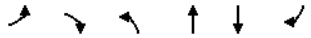
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	65	0	5	160	0	0
Future Volume (Veh/h)	65	0	5	160	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	71	0	5	176	0	0
Pedestrians	3			2	59	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	159					
pX, platoon unblocked						
vC, conflicting volume			130		319	132
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			130		319	132
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1408		647	883

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	71	181	0
Volume Left	0	5	0
Volume Right	0	0	0
cSH	1700	1408	1700
Volume to Capacity	0.04	0.00	0.00
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.2	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lanes, Volumes, Timings
4: Yonge Street & Elm Street

Future Background Traffic AM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	45	30	75	195	240	75
Future Volume (vph)	45	30	75	195	240	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.946				0.964	
Flt Protected	0.971			0.986		
Satd. Flow (prot)	1699	0	0	3263	3254	0
Flt Permitted	0.971			0.986		
Satd. Flow (perm)	1699	0	0	3263	3254	0
Link Speed (k/h)	30			40	40	
Link Distance (m)	75.4			53.0	61.6	
Travel Time (s)	9.0			4.8	5.5	
Confl. Peds. (#/hr)	12	10	471			471
Confl. Bikes (#/hr)						44
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	5%	9%	6%	5%
Adj. Flow (vph)	47	31	78	203	250	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	0	0	281	328	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: Yonge Street & Elm Street

Future Background Traffic AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	30	75	195	240	75
Future Volume (Veh/h)	45	30	75	195	240	75
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	47	31	78	203	250	78
Pedestrians	471			10	12	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	38			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				53		
pX, platoon unblocked	0.99					
vC, conflicting volume	1030	645	799			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1001	645	799			
tC, single (s)	6.8	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	62	88	84			
cM capacity (veh/h)	124	252	495			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	146	135	167	161
Volume Left	47	78	0	0	0
Volume Right	31	0	0	0	78
cSH	155	495	1700	1700	1700
Volume to Capacity	0.50	0.16	0.08	0.10	0.09
Queue Length 95th (m)	19.4	4.4	0.0	0.0	0.0
Control Delay (s)	49.8	8.3	0.0	0.0	0.0
Lane LOS	E	A			
Approach Delay (s)	49.8	4.3		0.0	
Approach LOS	E				

Intersection Summary				
Average Delay	7.4			
Intersection Capacity Utilization	38.1%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	25	25	245	5	0	270	
Future Volume (vph)	25	25	245	5	0	270	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.90		0.99				
Frt	0.932		0.997				
Flt Protected	0.976						
Satd. Flow (prot)	1289	0	3263	0	0	3400	
Flt Permitted	0.976						
Satd. Flow (perm)	1232	0	3263	0	0	3400	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	27		5				
Link Speed (k/h)	30		40			40	
Link Distance (m)	59.2		114.5			53.0	
Travel Time (s)	7.1		10.3			4.8	
Confl. Peds. (#/hr)	70	83		320	320		
Confl. Bikes (#/hr)				11			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles (%)	0%	50%	7%	57%	0%	5%	
Adj. Flow (vph)	27	27	263	5	0	290	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	54	0	268	0	0	290	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0		0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot		NA			NA	
Protected Phases	8		2			6	4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	19.0		17.0		17.0	17.0	19.0
Minimum Split (s)	23.8		23.5		23.5	23.5	23.8
Total Split (s)	24.0		56.0		56.0	56.0	24.0
Total Split (%)	30.0%		70.0%		70.0%	70.0%	30%
Maximum Green (s)	19.2		50.5		50.5	50.5	19.2
Yellow Time (s)	3.0		3.0		3.0	3.0	3.0
All-Red Time (s)	1.8		2.5		2.5	2.5	1.8
Lost Time Adjust (s)	-1.0		-1.0			-1.0	
Total Lost Time (s)	3.8		4.5			4.5	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effct Green (s)	20.2		51.5			51.5	
Actuated g/C Ratio	0.25		0.64			0.64	
v/c Ratio	0.16		0.13			0.13	
Control Delay	15.4		5.6			5.7	
Queue Delay	0.0		0.0			0.0	
Total Delay	15.4		5.6			5.7	
LOS	B		A			A	
Approach Delay	15.4		5.6			5.7	
Approach LOS	B		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 56 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.16			
Intersection Signal Delay: 6.5		Intersection LOS: A	
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Yonge Street & Gould Street

Queues
5: Yonge Street & Gould Street

Future Background Traffic AM

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	54	268	290
v/c Ratio	0.16	0.13	0.13
Control Delay	15.4	5.6	5.7
Queue Delay	0.0	0.0	0.0
Total Delay	15.4	5.6	5.7
Queue Length 50th (m)	3.3	7.5	8.3
Queue Length 95th (m)	12.3	11.9	12.9
Internal Link Dist (m)	35.2	90.5	29.0
Turn Bay Length (m)			
Base Capacity (vph)	345	2102	2188
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.16	0.13	0.13

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & Gould Street

Future Background Traffic AM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	25	245	5	0	270
Future Volume (vph)	25	25	245	5	0	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8		4.5			4.5
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.94		0.99			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.93		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1289		3264			3400
Flt Permitted	0.98		1.00			1.00
Satd. Flow (perm)	1289		3264			3400
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	27	27	263	5	0	290
RTOR Reduction (vph)	20	0	2	0	0	0
Lane Group Flow (vph)	34	0	266	0	0	290
Confl. Peds. (#/hr)	70	83		320	320	
Confl. Bikes (#/hr)				11		
Heavy Vehicles (%)	0%	50%	7%	57%	0%	5%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	19.2		50.5			50.5
Effective Green, g (s)	20.2		51.5			51.5
Actuated g/C Ratio	0.25		0.64			0.64
Clearance Time (s)	4.8		5.5			5.5
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	325		2101			2188
v/s Ratio Prot	c0.03		0.08			c0.09
v/s Ratio Perm						
v/c Ratio	0.10		0.13			0.13
Uniform Delay, d1	23.0		5.5			5.6
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.1		0.1			0.1
Delay (s)	23.1		5.7			5.7
Level of Service	C		A			A
Approach Delay (s)	23.1		5.7			5.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	100	25	40	50	50	0	610	40	5	530	40
Future Volume (vph)	145	100	25	40	50	50	0	610	40	5	530	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	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	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.79	0.94		0.75	0.87			0.95			0.95	
Frt		0.970			0.925			0.991			0.989	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1785	1615	0	1785	1482	0	0	3291	0	0	3275	0
Flt Permitted	0.690			0.674							0.950	
Satd. Flow (perm)	1019	1615	0	955	1482	0	0	3291	0	0	3104	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			2			14			16	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		72.7			35.5			93.5			85.2	
Travel Time (s)		8.7			4.3			8.4			7.7	
Confl. Peds. (#/hr)	227		270	270		227	608		933	933		608
Confl. Bikes (#/hr)			10			12			134			65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	10%	0%	0%	4%	0%	2%	5%	0%	3%	0%
Adj. Flow (vph)	151	104	26	42	52	52	0	635	42	5	552	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	130	0	42	104	0	0	677	0	0	599	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)		3.5			3.5			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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0			20.0		20.0	20.0	
Minimum Split (s)	28.2	28.2		28.2	28.2			26.2		26.2	26.2	
Total Split (s)	29.0	29.0		29.0	29.0			51.0		51.0	51.0	
Total Split (%)	36.3%	36.3%		36.3%	36.3%			63.8%		63.8%	63.8%	
Maximum Green (s)	22.8	22.8		22.8	22.8			44.8		44.8	44.8	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	3.2	3.2		3.2	3.2			3.2		3.2	3.2	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0			13.0		13.0	13.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	23.2	23.2		23.2	23.2			46.4			46.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.58			0.58	
v/c Ratio	0.51	0.27		0.15	0.24			0.35			0.33	
Control Delay	31.0	21.1		23.7	23.9			9.3			9.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	31.0	21.1		23.7	23.9			9.3			9.1	
LOS	C	C		C	C			A			A	
Approach Delay		26.4			23.8			9.3			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 57 (71%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 62.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Bay Street & Elm Street

Queues
1: Bay Street & Elm Street

Future Background Traffic PM

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	151	130	42	104	677	599
v/c Ratio	0.51	0.27	0.15	0.24	0.35	0.33
Control Delay	31.0	21.1	23.7	23.9	9.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	21.1	23.7	23.9	9.3	9.1
Queue Length 50th (m)	20.1	14.1	5.2	13.0	26.6	23.0
Queue Length 95th (m)	38.6	27.8	13.4	25.9	38.1	33.6
Internal Link Dist (m)		48.7		11.5	69.5	61.2
Turn Bay Length (m)	15.0		15.0			
Base Capacity (vph)	303	491	284	442	1916	1808
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.26	0.15	0.24	0.35	0.33

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Bay Street & Elm Street

Future Background Traffic PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	100	25	40	50	50	0	610	40	5	530	40
Future Volume (vph)	145	100	25	40	50	50	0	610	40	5	530	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.87			0.95			0.95	
Flpb, ped/bikes	0.79	1.00		0.75	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.99			0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1402	1615		1346	1482			3290			3268	
Flt Permitted	0.69	1.00		0.67	1.00			1.00			0.95	
Satd. Flow (perm)	1018	1615		955	1482			3290			3107	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	151	104	26	42	52	52	0	635	42	5	552	42
RTOR Reduction (vph)	0	11	0	0	1	0	0	6	0	0	7	0
Lane Group Flow (vph)	151	119	0	42	103	0	0	671	0	0	592	0
Confl. Peds. (#/hr)	227		270	270		227	608		933	933		608
Confl. Bikes (#/hr)			10			12			134			65
Heavy Vehicles (%)	0%	5%	10%	0%	0%	4%	0%	2%	5%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)	22.2	22.2		22.2	22.2			45.4			45.4	
Effective Green, g (s)	23.2	23.2		23.2	23.2			46.4			46.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.58			0.58	
Clearance Time (s)	6.2	6.2		6.2	6.2			6.2			6.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	295	468		276	429			1908			1802	
v/s Ratio Prot		0.07			0.07			c0.20				
v/s Ratio Perm	c0.15			0.04							0.19	
v/c Ratio	0.51	0.26		0.15	0.24			0.35			0.33	
Uniform Delay, d1	23.7	21.8		21.1	21.7			8.9			8.7	
Progression Factor	1.00	1.00		1.04	1.04			1.00			1.00	
Incremental Delay, d2	1.5	0.3		0.3	0.3			0.5			0.5	
Delay (s)	25.2	22.1		22.2	22.8			9.4			9.2	
Level of Service	C	C		C	C			A			A	
Approach Delay (s)		23.7			22.6			9.4			9.2	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.4	
Intersection Capacity Utilization	62.1%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes, Volumes, Timings
2: Harry Barberian Lane & Elm Street

Future Background Traffic PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	135	5	0	140	0	0
Future Volume (vph)	135	5	0	140	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995					
Flt Protected						
Satd. Flow (prot)	1787	0	0	1860	1773	0
Flt Permitted						
Satd. Flow (perm)	1787	0	0	1860	1773	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	35.5			124.0	57.6	
Travel Time (s)	4.3			14.9	6.9	
Confl. Peds. (#/hr)		194	194		10	23
Confl. Bikes (#/hr)		15				
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	20%	0%	1%	0%	0%
Adj. Flow (vph)	153	6	0	159	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	159	0	0	159	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: Harry Barberian Lane & Elm Street

Future Background Traffic PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	135	5	0	140	0	0
Future Volume (Veh/h)	135	5	0	140	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	153	6	0	159	0	0
Pedestrians	10			23	194	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			2	13	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	35					
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			353		519	373
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			311		483	331
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1052		452	585

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	159	159	0
Volume Left	0	0	0
Volume Right	6	0	0
cSH	1700	1052	1700
Volume to Capacity	0.09	0.00	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	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lanes, Volumes, Timings
3: Harry Barberian Lane & Elm Street

Future Background Traffic PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	120	0	0	120	0	0
Future Volume (vph)	120	0	0	120	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1860	0	0	1842	1773	0
Flt Permitted						
Satd. Flow (perm)	1860	0	0	1842	1773	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	124.0			75.4	55.0	
Travel Time (s)	14.9			9.0	6.6	
Confl. Peds. (#/hr)		189	189		9	11
Confl. Bikes (#/hr)		18				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	129	0	0	129	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	0	129	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Harry Barberian Lane & Elm Street

Future Background Traffic PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	120	0	0	120	0	0
Future Volume (Veh/h)	120	0	0	120	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	129	0	0	129	0	0
Pedestrians	9			11	189	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			1	13	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	159					
pX, platoon unblocked						
vC, conflicting volume			318		456	329
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			318		456	329
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1089		488	617

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	129	129	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1089	1700
Volume to Capacity	0.08	0.00	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	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	50	50	305	235	70
Future Volume (vph)	55	50	50	305	235	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.935				0.966	
Flt Protected	0.975			0.993		
Satd. Flow (prot)	1713	0	0	3409	3371	0
Flt Permitted	0.975			0.993		
Satd. Flow (perm)	1713	0	0	3409	3371	0
Link Speed (k/h)	30			40	40	
Link Distance (m)	75.4			53.0	61.6	
Travel Time (s)	9.0			4.8	5.5	
Confl. Peds. (#/hr)	37	32	678			678
Confl. Bikes (#/hr)						103
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	4%	3%	0%
Adj. Flow (vph)	60	55	55	335	258	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	0	390	335	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	50	50	305	235	70
Future Volume (Veh/h)	55	50	50	305	235	70
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	60	55	55	335	258	77
Pedestrians	678			32	37	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	55			3	3	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				53		
pX, platoon unblocked	0.97					
vC, conflicting volume	1289	878	1013			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1230	878	1013			
tC, single (s)	*5.2	*4.9	*6.6			
tC, 2 stage (s)						
tF (s)	*2.6	*2.4	*3.5			
p0 queue free %	22	79	52			
cM capacity (veh/h)	77	263	114			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	115	167	223	172	163
Volume Left	60	55	0	0	0
Volume Right	55	0	0	0	77
cSH	117	114	1700	1700	1700
Volume to Capacity	0.99	0.48	0.13	0.10	0.10
Queue Length 95th (m)	51.7	17.3	0.0	0.0	0.0
Control Delay (s)	149.9	42.8	0.0	0.0	0.0
Lane LOS	F	E			
Approach Delay (s)	149.9	18.3		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	29.0		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	25	25	330	5	5	295	
Future Volume (vph)	25	25	330	5	5	295	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.71		0.99			0.99	
Frt	0.932		0.998				
Flt Protected	0.976					0.999	
Satd. Flow (prot)	1361	0	3379	0	0	3399	
Flt Permitted	0.976					0.949	
Satd. Flow (perm)	1148	0	3379	0	0	3200	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	3		4				
Link Speed (k/h)	30		40			40	
Link Distance (m)	59.2		114.5			53.0	
Travel Time (s)	7.1		10.3			4.8	
Confl. Peds. (#/hr)	288	259		1142	1142		
Confl. Bikes (#/hr)				72			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Heavy Vehicles (%)	0%	12%	4%	0%	0%	5%	
Adj. Flow (vph)	29	29	379	6	6	339	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	58	0	385	0	0	345	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0		0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	19.0		17.0		17.0	17.0	19.0
Minimum Split (s)	23.8		23.5		23.5	23.5	23.8
Total Split (s)	24.0		56.0		56.0	56.0	24.0
Total Split (%)	30.0%		70.0%		70.0%	70.0%	30%
Maximum Green (s)	19.2		50.5		50.5	50.5	19.2
Yellow Time (s)	3.0		3.0		3.0	3.0	3.0
All-Red Time (s)	1.8		2.5		2.5	2.5	1.8
Lost Time Adjust (s)	-1.0		-1.0			-1.0	
Total Lost Time (s)	3.8		4.5			4.5	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effct Green (s)	20.2		51.5			51.5	
Actuated g/C Ratio	0.25		0.64			0.64	
v/c Ratio	0.17		0.18			0.17	
Control Delay	24.0		5.9			5.9	
Queue Delay	0.0		0.0			0.0	
Total Delay	24.0		5.9			5.9	
LOS	C		A			A	
Approach Delay	24.0		5.9			5.9	
Approach LOS	C		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 36 (45%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.18			
Intersection Signal Delay: 7.2		Intersection LOS: A	
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Yonge Street & Gould Street

Queues
5: Yonge Street & Gould Street

Future Background Traffic PM

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	58	385	345
v/c Ratio	0.17	0.18	0.17
Control Delay	24.0	5.9	5.9
Queue Delay	0.0	0.0	0.0
Total Delay	24.0	5.9	5.9
Queue Length 50th (m)	6.9	11.3	10.2
Queue Length 95th (m)	15.9	16.1	14.8
Internal Link Dist (m)	35.2	90.5	29.0
Turn Bay Length (m)			
Base Capacity (vph)	345	2176	2060
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.18	0.17

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & Gould Street

Future Background Traffic PM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	25	330	5	5	295
Future Volume (vph)	25	25	330	5	5	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8		4.5			4.5
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.84		0.99			1.00
Flpb, ped/bikes	1.00		1.00			0.99
Frt	0.93		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1362		3378			3369
Flt Permitted	0.98		1.00			0.95
Satd. Flow (perm)	1362		3378			3201
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	29	29	379	6	6	339
RTOR Reduction (vph)	2	0	1	0	0	0
Lane Group Flow (vph)	56	0	384	0	0	345
Confl. Peds. (#/hr)	288	259		1142	1142	
Confl. Bikes (#/hr)				72		
Heavy Vehicles (%)	0%	12%	4%	0%	0%	5%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	19.2		50.5			50.5
Effective Green, g (s)	20.2		51.5			51.5
Actuated g/C Ratio	0.25		0.64			0.64
Clearance Time (s)	4.8		5.5			5.5
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	343		2174			2060
v/s Ratio Prot	c0.04		c0.11			
v/s Ratio Perm						0.11
v/c Ratio	0.16		0.18			0.17
Uniform Delay, d1	23.3		5.7			5.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.2		0.2			0.2
Delay (s)	23.5		5.9			5.9
Level of Service	C		A			A
Approach Delay (s)	23.5		5.9			5.9
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Future Total Traffic Conditions

Lanes, Volumes, Timings
1: Bay Street & Elm Street

Future Total Traffic AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	56	20	39	90	48	0	450	26	0	580	120
Future Volume (vph)	80	56	20	39	90	48	0	450	26	0	580	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	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	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.84	0.96		0.87	0.93			0.96			0.90	
Frt		0.961			0.948			0.992			0.974	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1700	1647	0	1785	1597	0	0	3221	0	0	3011	0
Flt Permitted	0.666			0.707								
Satd. Flow (perm)	1005	1647	0	1160	1597	0	0	3221	0	0	3011	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			15			12			51	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		72.7			35.5			93.5			85.2	
Travel Time (s)		8.7			4.3			8.4			7.7	
Confl. Peds. (#/hr)	175		129	129		175	401		656	656		401
Confl. Bikes (#/hr)			8			4			28			138
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	5%	5%	6%	0%	2%	7%	0%	6%	3%	50%	4%	1%
Adj. Flow (vph)	82	57	20	40	92	49	0	459	27	0	592	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	77	0	40	141	0	0	486	0	0	714	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)		3.5			3.5			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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2			2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			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	0.6			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			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Bay Street & Elm Street

Future Total Traffic AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8			2			6	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0			20.0			20.0	
Minimum Split (s)	28.2	28.2		28.2	28.2			26.2			26.2	
Total Split (s)	29.0	29.0		29.0	29.0			51.0			51.0	
Total Split (%)	36.3%	36.3%		36.3%	36.3%			63.8%			63.8%	
Maximum Green (s)	22.8	22.8		22.8	22.8			44.8			44.8	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
All-Red Time (s)	3.2	3.2		3.2	3.2			3.2			3.2	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Recall Mode	None	None		None	None			C-Max			C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0			13.0			13.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	23.0	23.0		23.0	23.0			53.3			53.3	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.67			0.67	
v/c Ratio	0.28	0.16		0.12	0.30			0.23			0.35	
Control Delay	25.5	17.7		20.9	20.5			7.4			8.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	25.5	17.7		20.9	20.5			7.4			8.0	
LOS	C	B		C	C			A			A	
Approach Delay		21.7			20.6			7.4			8.0	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 61 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Bay Street & Elm Street

Queues
1: Bay Street & Elm Street

Future Total Traffic AM

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	82	77	40	141	486	714
v/c Ratio	0.28	0.16	0.12	0.30	0.23	0.35
Control Delay	25.5	17.7	20.9	20.5	7.4	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	17.7	20.9	20.5	7.4	8.0
Queue Length 50th (m)	10.1	6.7	4.7	15.7	17.8	27.3
Queue Length 95th (m)	22.2	16.9	12.6	31.0	25.8	38.8
Internal Link Dist (m)		48.7		11.5	69.5	61.2
Turn Bay Length (m)	15.0		15.0			
Base Capacity (vph)	298	504	345	485	2149	2022
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.15	0.12	0.29	0.23	0.35

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Bay Street & Elm Street

Future Total Traffic AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	56	20	39	90	48	0	450	26	0	580	120
Future Volume (vph)	80	56	20	39	90	48	0	450	26	0	580	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.96		1.00	0.93			0.96			0.90	
Flpb, ped/bikes	0.84	1.00		0.87	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.95			0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1433	1646		1559	1596			3220			3014	
Flt Permitted	0.67	1.00		0.71	1.00			1.00			1.00	
Satd. Flow (perm)	1005	1646		1160	1596			3220			3014	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	82	57	20	40	92	49	0	459	27	0	592	122
RTOR Reduction (vph)	0	15	0	0	12	0	0	4	0	0	18	0
Lane Group Flow (vph)	82	62	0	40	129	0	0	482	0	0	696	0
Confl. Peds. (#/hr)	175		129	129		175	401		656	656		401
Confl. Bikes (#/hr)			8			4			28			138
Heavy Vehicles (%)	5%	5%	6%	0%	2%	7%	0%	6%	3%	50%	4%	1%
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	17.6	17.6		17.6	17.6			50.0			50.0	
Effective Green, g (s)	18.6	18.6		18.6	18.6			51.0			51.0	
Actuated g/C Ratio	0.23	0.23		0.23	0.23			0.64			0.64	
Clearance Time (s)	6.2	6.2		6.2	6.2			6.2			6.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	233	382		269	371			2052			1921	
v/s Ratio Prot		0.04			0.08			0.15			c0.23	
v/s Ratio Perm	c0.08			0.03								
v/c Ratio	0.35	0.16		0.15	0.35			0.23			0.36	
Uniform Delay, d1	25.7	24.5		24.4	25.6			6.2			6.8	
Progression Factor	1.00	1.00		0.94	0.93			1.00			1.00	
Incremental Delay, d2	0.9	0.2		0.3	0.6			0.3			0.5	
Delay (s)	26.6	24.7		23.1	24.4			6.5			7.4	
Level of Service	C	C		C	C			A			A	
Approach Delay (s)		25.7			24.1			6.5			7.4	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.36			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.4	
Intersection Capacity Utilization	71.1%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes, Volumes, Timings
2: Harry Barberian Lane & Elm Street

Future Total Traffic AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	78	0	0	177	5	0
Future Volume (vph)	78	0	0	177	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1693	0	0	1807	1685	0
Flt Permitted					0.950	
Satd. Flow (perm)	1693	0	0	1807	1685	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	35.5			124.0	57.6	
Travel Time (s)	4.3			14.9	6.9	
Confl. Peds. (#/hr)		57	57		4	4
Confl. Bikes (#/hr)		8				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	11%	50%	0%	4%	0%	100%
Adj. Flow (vph)	83	0	0	188	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	83	0	0	188	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: Harry Barberian Lane & Elm Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	78	0	0	177	5	0
Future Volume (Veh/h)	78	0	0	177	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	83	0	0	188	5	0
Pedestrians	4			4	57	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	35					
pX, platoon unblocked			1.00		1.00	1.00
vC, conflicting volume			140		332	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			139		331	143
tC, single (s)			4.1		6.4	7.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	4.2
p0 queue free %			100		99	100
cM capacity (veh/h)			1398		639	669

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	83	188	5
Volume Left	0	0	5
Volume Right	0	0	0
cSH	1700	1398	639
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	10.7
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.7
Approach LOS			B

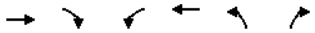
Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		23.2%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes, Volumes, Timings
3: Harry Barberian Lane & Elm Street

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	65	3	6	160	7	7
Future Volume (vph)	65	3	6	160	7	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.932	
Flt Protected				0.998	0.976	
Satd. Flow (prot)	1834	0	0	1823	1613	0
Flt Permitted				0.998	0.976	
Satd. Flow (perm)	1834	0	0	1823	1613	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	124.0			75.4	55.0	
Travel Time (s)	14.9			9.0	6.6	
Confl. Peds. (#/hr)		59	59		3	2
Confl. Bikes (#/hr)		11				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	0%	0%	3%	0%	0%
Adj. Flow (vph)	71	3	7	176	8	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	0	0	183	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	23.9%		ICU Level of Service	A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
3: Harry Barberian Lane & Elm Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	65	3	6	160	7	7
Future Volume (Veh/h)	65	3	6	160	7	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	71	3	7	176	8	8
Pedestrians	3			2	59	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	159					
pX, platoon unblocked						
vC, conflicting volume			133		324	134
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			133		324	134
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	99
cM capacity (veh/h)			1404		641	882

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	74	183	16
Volume Left	0	7	8
Volume Right	3	0	8
cSH	1700	1404	743
Volume to Capacity	0.04	0.00	0.02
Queue Length 95th (m)	0.0	0.1	0.5
Control Delay (s)	0.0	0.3	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	10.0
Approach LOS			A

Intersection Summary				
Average Delay		0.8		
Intersection Capacity Utilization		23.9%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes, Volumes, Timings
4: Yonge Street & Elm Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	51	30	75	195	240	76
Future Volume (vph)	51	30	75	195	240	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.950				0.964	
Flt Protected	0.969			0.986		
Satd. Flow (prot)	1704	0	0	3263	3254	0
Flt Permitted	0.969			0.986		
Satd. Flow (perm)	1704	0	0	3263	3254	0
Link Speed (k/h)	30			40	40	
Link Distance (m)	75.4			53.0	61.6	
Travel Time (s)	9.0			4.8	5.5	
Confl. Peds. (#/hr)	12	10	471			471
Confl. Bikes (#/hr)						44
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	5%	9%	6%	5%
Adj. Flow (vph)	53	31	78	203	250	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	0	281	329	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: Yonge Street & Elm Street

Future Total Traffic AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	30	75	195	240	76
Future Volume (Veh/h)	51	30	75	195	240	76
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	53	31	78	203	250	79
Pedestrians	471			10	12	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	38			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				53		
pX, platoon unblocked	0.99					
vC, conflicting volume	1030	646	800			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1001	646	800			
tC, single (s)	6.8	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	57	88	84			
cM capacity (veh/h)	123	251	494			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	84	146	135	167	162
Volume Left	53	78	0	0	0
Volume Right	31	0	0	0	79
cSH	152	494	1700	1700	1700
Volume to Capacity	0.55	0.16	0.08	0.10	0.10
Queue Length 95th (m)	22.3	4.4	0.0	0.0	0.0
Control Delay (s)	54.6	8.3	0.0	0.0	0.0
Lane LOS	F	A			
Approach Delay (s)	54.6	4.3		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay		8.4	
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)		15	

Lanes, Volumes, Timings
5: Yonge Street & Gould Street

Future Total Traffic AM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	25	25	245	5	0	270	
Future Volume (vph)	25	25	245	5	0	270	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.90		0.99				
Frt	0.932		0.997				
Flt Protected	0.976						
Satd. Flow (prot)	1289	0	3263	0	0	3400	
Flt Permitted	0.976						
Satd. Flow (perm)	1232	0	3263	0	0	3400	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	27		5				
Link Speed (k/h)	30		40			40	
Link Distance (m)	59.2		114.5			53.0	
Travel Time (s)	7.1		10.3			4.8	
Confl. Peds. (#/hr)	70	83		320	320		
Confl. Bikes (#/hr)				11			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles (%)	0%	50%	7%	57%	0%	5%	
Adj. Flow (vph)	27	27	263	5	0	290	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	54	0	268	0	0	290	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0		0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot		NA			NA	
Protected Phases	8		2			6	4

Lanes, Volumes, Timings
5: Yonge Street & Gould Street

Future Total Traffic AM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	19.0		17.0		17.0	17.0	19.0
Minimum Split (s)	23.8		23.5		23.5	23.5	23.8
Total Split (s)	24.0		56.0		56.0	56.0	24.0
Total Split (%)	30.0%		70.0%		70.0%	70.0%	30%
Maximum Green (s)	19.2		50.5		50.5	50.5	19.2
Yellow Time (s)	3.0		3.0		3.0	3.0	3.0
All-Red Time (s)	1.8		2.5		2.5	2.5	1.8
Lost Time Adjust (s)	-1.0		-1.0			-1.0	
Total Lost Time (s)	3.8		4.5			4.5	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effct Green (s)	20.2		51.5			51.5	
Actuated g/C Ratio	0.25		0.64			0.64	
v/c Ratio	0.16		0.13			0.13	
Control Delay	15.4		5.6			5.7	
Queue Delay	0.0		0.0			0.0	
Total Delay	15.4		5.6			5.7	
LOS	B		A			A	
Approach Delay	15.4		5.6			5.7	
Approach LOS	B		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 56 (70%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.16			
Intersection Signal Delay: 6.5		Intersection LOS: A	
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Yonge Street & Gould Street

Queues
5: Yonge Street & Gould Street

Future Total Traffic AM

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	54	268	290
v/c Ratio	0.16	0.13	0.13
Control Delay	15.4	5.6	5.7
Queue Delay	0.0	0.0	0.0
Total Delay	15.4	5.6	5.7
Queue Length 50th (m)	3.3	7.5	8.3
Queue Length 95th (m)	12.3	11.9	12.9
Internal Link Dist (m)	35.2	90.5	29.0
Turn Bay Length (m)			
Base Capacity (vph)	345	2102	2188
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.16	0.13	0.13

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & Gould Street

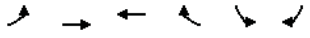
Future Total Traffic AM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	25	245	5	0	270
Future Volume (vph)	25	25	245	5	0	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8		4.5			4.5
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.94		0.99			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.93		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1289		3264			3400
Flt Permitted	0.98		1.00			1.00
Satd. Flow (perm)	1289		3264			3400
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	27	27	263	5	0	290
RTOR Reduction (vph)	20	0	2	0	0	0
Lane Group Flow (vph)	34	0	266	0	0	290
Confl. Peds. (#/hr)	70	83		320	320	
Confl. Bikes (#/hr)				11		
Heavy Vehicles (%)	0%	50%	7%	57%	0%	5%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	19.2		50.5			50.5
Effective Green, g (s)	20.2		51.5			51.5
Actuated g/C Ratio	0.25		0.64			0.64
Clearance Time (s)	4.8		5.5			5.5
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	325		2101			2188
v/s Ratio Prot	c0.03		0.08			c0.09
v/s Ratio Perm						
v/c Ratio	0.10		0.13			0.13
Uniform Delay, d1	23.0		5.5			5.6
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.1		0.1			0.1
Delay (s)	23.1		5.7			5.7
Level of Service	C		A			A
Approach Delay (s)	23.1		5.7			5.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
6: Harry Barberian Lane & Site Access

Future Total Traffic AM

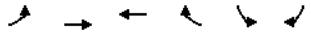


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	5	15	0
Future Volume (vph)	0	0	0	5	15	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1879	1625	0	1685	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1879	1625	0	1685	0
Link Speed (k/h)		30	30		30	
Link Distance (m)		62.2	57.2		26.7	
Travel Time (s)		7.5	6.9		3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	5	16	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	5	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Harry Barberian Lane & Site Access

Future Total Traffic AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	5	15	0
Future Volume (Veh/h)	0	0	0	5	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	0	5	16	0
Pedestrians		1	1			
Lane Width (m)		3.5	3.5			
Walking Speed (m/s)		1.2	1.2			
Percent Blockage		0	0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	5				4	4
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	5				4	4
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1630				1023	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	5	16
Volume Left	0	0	16
Volume Right	0	5	0
cSH	1700	1700	1023
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary				
Average Delay		6.5		
Intersection Capacity Utilization		13.3%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes, Volumes, Timings
1: Bay Street & Elm Street

Future Total Traffic PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	103	25	41	50	51	0	610	42	5	530	40
Future Volume (vph)	145	103	25	41	50	51	0	610	42	5	530	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	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	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.79	0.94		0.76	0.87			0.95			0.95	
Frt		0.971			0.924			0.990			0.989	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1785	1619	0	1785	1478	0	0	3280	0	0	3275	0
Flt Permitted	0.689			0.672							0.950	
Satd. Flow (perm)	1017	1619	0	953	1478	0	0	3280	0	0	3104	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			2			15			16	
Link Speed (k/h)		30			30			40			40	
Link Distance (m)		72.7			35.5			93.5			85.2	
Travel Time (s)		8.7			4.3			8.4			7.7	
Confl. Peds. (#/hr)	227		270	270		227	608		933	933		608
Confl. Bikes (#/hr)			10			12			134			65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	10%	0%	0%	4%	0%	2%	5%	0%	3%	0%
Adj. Flow (vph)	151	107	26	43	52	53	0	635	44	5	552	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	133	0	43	105	0	0	679	0	0	599	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)		3.5			3.5			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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings
1: Bay Street & Elm Street

Future Total Traffic PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0			20.0		20.0	20.0	
Minimum Split (s)	28.2	28.2		28.2	28.2			26.2		26.2	26.2	
Total Split (s)	29.0	29.0		29.0	29.0			51.0		51.0	51.0	
Total Split (%)	36.3%	36.3%		36.3%	36.3%			63.8%		63.8%	63.8%	
Maximum Green (s)	22.8	22.8		22.8	22.8			44.8		44.8	44.8	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	3.2	3.2		3.2	3.2			3.2		3.2	3.2	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0			13.0		13.0	13.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	23.2	23.2		23.2	23.2			46.4			46.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.58			0.58	
v/c Ratio	0.51	0.28		0.16	0.24			0.36			0.33	
Control Delay	31.0	21.2		23.7	23.9			9.3			9.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	31.0	21.2		23.7	23.9			9.3			9.1	
LOS	C	C		C	C			A			A	
Approach Delay		26.4			23.8			9.3			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 57 (71%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Bay Street & Elm Street

Queues
1: Bay Street & Elm Street

Future Total Traffic PM

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	151	133	43	105	679	599
v/c Ratio	0.51	0.28	0.16	0.24	0.36	0.33
Control Delay	31.0	21.2	23.7	23.9	9.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	21.2	23.7	23.9	9.3	9.1
Queue Length 50th (m)	20.1	14.5	5.3	13.2	26.6	23.0
Queue Length 95th (m)	38.6	28.3	13.5	26.4	38.3	33.6
Internal Link Dist (m)		48.7		11.5	69.5	61.2
Turn Bay Length (m)	15.0		15.0			
Base Capacity (vph)	302	492	283	441	1910	1808
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.27	0.15	0.24	0.36	0.33

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Bay Street & Elm Street

Future Total Traffic PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	103	25	41	50	51	0	610	42	5	530	40
Future Volume (vph)	145	103	25	41	50	51	0	610	42	5	530	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2			5.2	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.87			0.95			0.95	
Flpb, ped/bikes	0.79	1.00		0.76	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.92			0.99			0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1403	1618		1348	1479			3281			3268	
Flt Permitted	0.69	1.00		0.67	1.00			1.00			0.95	
Satd. Flow (perm)	1018	1618		953	1479			3281			3107	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	151	107	26	43	52	53	0	635	44	5	552	42
RTOR Reduction (vph)	0	11	0	0	1	0	0	6	0	0	7	0
Lane Group Flow (vph)	151	122	0	43	104	0	0	673	0	0	592	0
Confl. Peds. (#/hr)	227		270	270		227	608		933	933		608
Confl. Bikes (#/hr)			10			12			134			65
Heavy Vehicles (%)	0%	5%	10%	0%	0%	4%	0%	2%	5%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)	22.2	22.2		22.2	22.2			45.4			45.4	
Effective Green, g (s)	23.2	23.2		23.2	23.2			46.4			46.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.58			0.58	
Clearance Time (s)	6.2	6.2		6.2	6.2			6.2			6.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	295	469		276	428			1902			1802	
v/s Ratio Prot		0.08			0.07			c0.21				
v/s Ratio Perm	c0.15			0.05							0.19	
v/c Ratio	0.51	0.26		0.16	0.24			0.35			0.33	
Uniform Delay, d1	23.7	21.8		21.1	21.7			8.9			8.7	
Progression Factor	1.00	1.00		1.03	1.03			1.00			1.00	
Incremental Delay, d2	1.5	0.3		0.3	0.3			0.5			0.5	
Delay (s)	25.2	22.1		22.1	22.7			9.4			9.2	
Level of Service	C	C		C	C			A			A	
Approach Delay (s)		23.7			22.6			9.4			9.2	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.41			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.4	
Intersection Capacity Utilization	62.9%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes, Volumes, Timings
2: Harry Barberian Lane & Elm Street

Future Total Traffic PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	141	5	0	142	0	0
Future Volume (vph)	141	5	0	142	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995					
Flt Protected						
Satd. Flow (prot)	1788	0	0	1860	1773	0
Flt Permitted						
Satd. Flow (perm)	1788	0	0	1860	1773	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	35.5			124.0	57.6	
Travel Time (s)	4.3			14.9	6.9	
Confl. Peds. (#/hr)		194	194		10	23
Confl. Bikes (#/hr)		15				
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	20%	0%	1%	0%	0%
Adj. Flow (vph)	160	6	0	161	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	166	0	0	161	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.7%	ICU Level of Service A	
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: Harry Barberian Lane & Elm Street

Future Total Traffic PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	141	5	0	142	0	0
Future Volume (Veh/h)	141	5	0	142	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	160	6	0	161	0	0
Pedestrians	10			23	194	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			2	13	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	35					
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			360		528	380
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			315		490	336
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1046		447	581

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	166	161	0
Volume Left	0	0	0
Volume Right	6	0	0
cSH	1700	1046	1700
Volume to Capacity	0.10	0.00	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	0.0
Approach LOS			A

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		28.7%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes, Volumes, Timings
3: Harry Barberian Lane & Elm Street

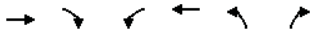
Future Total Traffic PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	120	6	3	120	2	2
Future Volume (vph)	120	6	3	120	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.932	
Flt Protected				0.999	0.976	
Satd. Flow (prot)	1850	0	0	1841	1613	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1850	0	0	1841	1613	0
Link Speed (k/h)	30			30	30	
Link Distance (m)	124.0			75.4	55.0	
Travel Time (s)	14.9			9.0	6.6	
Confl. Peds. (#/hr)		189	189		9	11
Confl. Bikes (#/hr)		18				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	129	6	3	129	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	135	0	0	132	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Harry Barberian Lane & Elm Street

Future Total Traffic PM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	120	6	3	120	2	2
Future Volume (Veh/h)	120	6	3	120	2	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	129	6	3	129	2	2
Pedestrians	9			11	189	
Lane Width (m)	3.5			3.5	3.0	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			1	13	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	159					
pX, platoon unblocked						
vC, conflicting volume			324		465	332
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			324		465	332
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1083		481	615

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	135	132	4
Volume Left	0	3	2
Volume Right	6	0	2
cSH	1700	1083	540
Volume to Capacity	0.08	0.00	0.01
Queue Length 95th (m)	0.0	0.1	0.2
Control Delay (s)	0.0	0.2	11.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	11.7
Approach LOS			B

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		26.4%	ICU Level of Service A
Analysis Period (min)		15	

Lanes, Volumes, Timings
4: Yonge Street & Elm Street

Future Total Traffic PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	57	50	51	305	235	72
Future Volume (vph)	57	50	51	305	235	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.937				0.965	
Flt Protected	0.974			0.993		
Satd. Flow (prot)	1715	0	0	3409	3368	0
Flt Permitted	0.974			0.993		
Satd. Flow (perm)	1715	0	0	3409	3368	0
Link Speed (k/h)	30			40	40	
Link Distance (m)	75.4			53.0	61.6	
Travel Time (s)	9.0			4.8	5.5	
Confl. Peds. (#/hr)	37	32	678			678
Confl. Bikes (#/hr)						103
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	4%	3%	0%
Adj. Flow (vph)	63	55	56	335	258	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	0	391	337	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.6%	ICU Level of Service A	
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: Yonge Street & Elm Street

Future Total Traffic PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	50	51	305	235	72
Future Volume (Veh/h)	57	50	51	305	235	72
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	63	55	56	335	258	79
Pedestrians	678			32	37	
Lane Width (m)	3.5			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	55			3	3	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				53		
pX, platoon unblocked	0.97					
vC, conflicting volume	1292	878	1015			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1233	878	1015			
tC, single (s)	*5.2	*4.9	*6.6			
tC, 2 stage (s)						
tF (s)	*2.6	*2.4	*3.5			
p0 queue free %	16	79	51			
cM capacity (veh/h)	75	263	113			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	118	168	223	172	165
Volume Left	63	56	0	0	0
Volume Right	55	0	0	0	79
cSH	113	113	1700	1700	1700
Volume to Capacity	1.04	0.49	0.13	0.10	0.10
Queue Length 95th (m)	55.8	17.9	0.0	0.0	0.0
Control Delay (s)	169.7	44.1	0.0	0.0	0.0
Lane LOS	F	E			
Approach Delay (s)	169.7	18.9		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay		32.4	
Intersection Capacity Utilization		44.6%	ICU Level of Service A
Analysis Period (min)		15	

* User Entered Value

Lanes, Volumes, Timings
5: Yonge Street & Gould Street

Future Total Traffic PM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	25	25	331	5	5	295	
Future Volume (vph)	25	25	331	5	5	295	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.71		0.99			0.99	
Frt	0.932		0.998				
Flt Protected	0.976					0.999	
Satd. Flow (prot)	1361	0	3379	0	0	3399	
Flt Permitted	0.976					0.949	
Satd. Flow (perm)	1148	0	3379	0	0	3200	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	3		4				
Link Speed (k/h)	30		40			40	
Link Distance (m)	59.2		114.5			53.0	
Travel Time (s)	7.1		10.3			4.8	
Confl. Peds. (#/hr)	288	259		1142	1142		
Confl. Bikes (#/hr)				72			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Heavy Vehicles (%)	0%	12%	4%	0%	0%	5%	
Adj. Flow (vph)	29	29	380	6	6	339	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	58	0	386	0	0	345	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0		0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	4

Lanes, Volumes, Timings
5: Yonge Street & Gould Street

Future Total Traffic PM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	19.0		17.0		17.0	17.0	19.0
Minimum Split (s)	23.8		23.5		23.5	23.5	23.8
Total Split (s)	24.0		56.0		56.0	56.0	24.0
Total Split (%)	30.0%		70.0%		70.0%	70.0%	30%
Maximum Green (s)	19.2		50.5		50.5	50.5	19.2
Yellow Time (s)	3.0		3.0		3.0	3.0	3.0
All-Red Time (s)	1.8		2.5		2.5	2.5	1.8
Lost Time Adjust (s)	-1.0		-1.0			-1.0	
Total Lost Time (s)	3.8		4.5			4.5	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effct Green (s)	20.2		51.5			51.5	
Actuated g/C Ratio	0.25		0.64			0.64	
v/c Ratio	0.17		0.18			0.17	
Control Delay	24.0		5.9			5.9	
Queue Delay	0.0		0.0			0.0	
Total Delay	24.0		5.9			5.9	
LOS	C		A			A	
Approach Delay	24.0		5.9			5.9	
Approach LOS	C		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 36 (45%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.18			
Intersection Signal Delay: 7.2		Intersection LOS: A	
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Yonge Street & Gould Street

Queues
5: Yonge Street & Gould Street

Future Total Traffic PM

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	58	386	345
v/c Ratio	0.17	0.18	0.17
Control Delay	24.0	5.9	5.9
Queue Delay	0.0	0.0	0.0
Total Delay	24.0	5.9	5.9
Queue Length 50th (m)	6.9	11.3	10.2
Queue Length 95th (m)	15.9	16.2	14.8
Internal Link Dist (m)	35.2	90.5	29.0
Turn Bay Length (m)			
Base Capacity (vph)	345	2176	2060
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.18	0.17

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Yonge Street & Gould Street

Future Total Traffic PM

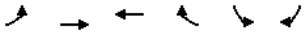
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	25	331	5	5	295
Future Volume (vph)	25	25	331	5	5	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8		4.5			4.5
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.84		0.99			1.00
Flpb, ped/bikes	1.00		1.00			0.99
Frt	0.93		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1362		3378			3369
Flt Permitted	0.98		1.00			0.95
Satd. Flow (perm)	1362		3378			3201
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	29	29	380	6	6	339
RTOR Reduction (vph)	2	0	1	0	0	0
Lane Group Flow (vph)	56	0	385	0	0	345
Confl. Peds. (#/hr)	288	259		1142	1142	
Confl. Bikes (#/hr)				72		
Heavy Vehicles (%)	0%	12%	4%	0%	0%	5%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	19.2		50.5			50.5
Effective Green, g (s)	20.2		51.5			51.5
Actuated g/C Ratio	0.25		0.64			0.64
Clearance Time (s)	4.8		5.5			5.5
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	343		2174			2060
v/s Ratio Prot	c0.04		c0.11			
v/s Ratio Perm						0.11
v/c Ratio	0.16		0.18			0.17
Uniform Delay, d1	23.3		5.7			5.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.2		0.2			0.2
Delay (s)	23.5		5.9			5.9
Level of Service	C		A			A
Approach Delay (s)	23.5		5.9			5.9
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

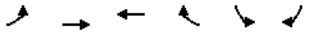
Lanes, Volumes, Timings
6: Harry Barberian Lane & Site Access

Future Total Traffic PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	10	5	0
Future Volume (vph)	0	0	0	10	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1879	1625	0	1685	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1879	1625	0	1685	0
Link Speed (k/h)		30	30		30	
Link Distance (m)		62.2	57.2		26.7	
Travel Time (s)		7.5	6.9		3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	11	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	11	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.09	1.09
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	10	5	0
Future Volume (Veh/h)	0	0	0	10	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	0	11	5	0
Pedestrians		1	1			
Lane Width (m)		3.5	3.5			
Walking Speed (m/s)		1.2	1.2			
Percent Blockage		0	0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	11				6	6
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				6	6
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1621				1019	1081

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	11	5
Volume Left	0	0	5
Volume Right	0	11	0
cSH	1700	1700	1019
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	8.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX G:
Delay Study

Project No: **8159-01** **Peak Hour:** 17:00 - 18:00
Project Name: **17 Elm**
Study Location: **Elm St & Yonge St**
Municipality: **City of Toronto**
Study Date: **Tuesday June 28, 2022**
Study Time: **17:00-18:00**

Delay Study

Veh	Start	Position	Start	Stop	Delay	Turning Movement				Courtesy Gap				2 -Stage Gap				Queue
Obs.	Time	in Queue	Time (sec)	Time (sec)	Time (sec)	EBL	EBR	NBL	SBR	EBL	EBR	NBL	SBR	EBL	EBR	NBL	SBR	Blocking
1	17:00	1	4	18	14			1										
2	17:00	2	8	19	11			1										
3	17:00	1	55	63	8				1									
4	17:01	1	11	30	19			1										
5	17:01	1	34	34	0			1										
6	17:01	1	40	55	15				1									
7	17:01	1	47	79	32	1												
8	17:02	1	21	68	47		1											
9	17:02	2	44	109	65		1											
10	17:03	1	5	19	14			1										
11	17:03	1	29	50	21				1									
12	17:04	1	1	25	24		1											
13	17:04	1	11	25	14				1									
14	17:04	2	12	32	20		1											
15	17:04	2	14	45	31				1									
16	17:04	1	43	64	21	1												
17	17:04	2	45	128	83	1												
18	17:05	2	17	82	65		1											
19	17:05	3	29	91	62		1											
20	17:05	1	55	67	12			1										
21	17:07	1	0	15	15		1											
22	17:07	2	2	68	66		1											
23	17:07	1	48	57	9			1										
24	17:08	2	3	23	20		1											
25	17:08	3	5	33	28	1												
26	17:08	4	7	67	60	1												
27	17:08	3	25	168	143	1												
28	17:08	3	48	96	48		1											
29	17:09	1	3	42	39				1									
30	17:09	3	16	111	95	1												
31	17:09	4	20	95	75		1											
32	17:09	2	31	99	68				1									
33	17:10	4	20	53	33		1											
34	17:10	3	48	67	19		1											
35	17:11	1	9	19	10			1										
36	17:11	1	33	62	29		1		1									
37	17:11	1	45	47	2			1										
38	17:12	1	5	27	22		1											
39	17:12	2	16	62	46		1											
40	17:13	1	3	8	5			1										
41	17:14	1	50	50	0			1										
42	17:14	1	52	62	10		1											
43	17:15	1	27	53	26	1												
44	17:16	1	49	91	42		1											
45	17:17	1	6	8	2			1										
46	17:18	1	23	54	31	1												
47	17:18	1	23	29	6				1									
48	17:18	2	37	72	35	1												
49	17:18	3	43	96	53	1												
50	17:18	3	55	152	97	1												
51	17:19	1	45	59	14			1										
52	17:19	2	50	62	12			1										
53	17:20	2	9	103	94	1												
54	17:21	2	27	45	18		1											
55	17:21	3	37	96	59	1												
56	17:22	2	1	51	50		1											
57	17:22	3	15	70	55		1											
58	17:22	1	34	56	22			1										
59	17:22	2	41	65	24			1										
60	17:23	2	6	38	32		1											
61	17:23	3	8	81	73		1											
62	17:23	1	48	76	28			1										
63	17:24	2	6	24	18			1										
64	17:24	2	16	40	24			1										
65	17:25	1	16	40	24				1									
66	17:25	1	26	41	15			1										
67	17:26	1	47	50	3		1											
68	17:27	1	26	50	24	1												
69	17:28	1	59	64	5				1									
70	17:29	1	15	36	21			1										
71	17:29	1	35	44	9				1									
72	17:30	1	30	66	36		1											
73	17:30	1	42	66	24			1										
74	17:31	1	42	50	8			1										
75	17:31	2	45	66	21			1										
76	17:33	1	0	35	35				1									
77	17:33	1	18	49	31	1												
78	17:33	2	19	49	30		1											
79	17:33	1	38	44	6				1									
80	17:34	1	26	46	20		1											
81	17:34	1	39	39	0			1										
82	17:35	1	22	49	27		1											
83	17:35	2	24	84	60	1												
84	17:35	3	35	96	61	1												
85	17:35	1	50	78	28			1										
86	17:36	2	11	32	21			1										
87	17:36	2	27	52	25		1											
88	17:36	2	39	149	110	1												
89	17:36	1	52	59	7				1									
90	17:37	2	5	128	123		1											
91	17:37	3	9	68	59		1											
92	17:37	1	32	48	16			1										
93	17:37	1	39	63	24				1									
94	17:38	1	15	24	9				1									
95	17:38	1	51	59	8				1									
96	17:39	2	28	68	40	1												
97	17:39	3	35	70	35		1											
98	17:39	1	36	44	8				1									
99	17:40	2	7	13	6		1											
100	17:40	3	8	39	31	1												
101	17:40	4	9	71	62		1											
102	17:40	1	16	16	0			1										
103	17:40	3	21	89	68	1												
104	17:40	1	43	60	17				1									
105	17:41	1	12	21	9				1									
106	17:41	1	41	60	19	1												
107	17:42	1	54	71	17			1										
108	17:43	1	15	101	86	1												
109	17:43	1	32	39	7				1									
110	17:43	2	38	48	10				1									
111	17:43	2	45	63	18				1									
112	17:44	2	5	79	74		1											
113	17:44	1	28	33	5			1										
114	17:44	3	30	100	70		1											
115	17:46	1	50	72	22	1												
116	17:47	1	19	66	47				1									
117	17:47	1	58	70	12			1										
118	17:48	2	0	13	13			1										
119	17:48	1	40	44	4				1									
120	17:49	1	15	27	12		1											
121	17:49	2	20	55	35		1											
122	17:49	1	34	50	16				1									
123	17:50	1	1	19	18				1									
124	17:50	1	30	57	27		1											
125	17:50	2	48	85	37		1											
126	17:50	3	49	101	52		1											
127	17:50	1	50	58	8			1										
128	17:51	3	2	64	62													
129	17:51	1	18	49	31				1									
130	17:51	2	23	67	44				1									
131	17:51	4	20	59	39	1												
132	17:51	4	33	49	16		1											
133	17:51	5	35	84	49	1												
134	17:51	3	35	74	39				1									
135	17:51	4	40	75	35				1									
136	17:52	1	52	59	7		1											
137	17:53	1	22	122	100	1												
138	17:55	1	40	45	5				1									
139	17:55	1	50	86	36		1											
140	17:56	2	16	87	71													
141	17:56	3	21	105	84	1												
142	17:57	1	6	27	21			1										
143	17:57	2	11	34	23			1										
144	17:57	3	22	82	60	1												
145	17:57	3	29	100	71	1												
146	17:58	1	55	104	49				1									
147	17:59	1	0	59	59	1												
148	17:59	1	44	53	9				1									
149	17:59	1	46	54	8			1										
Total						**32**	**44**	**37**	**35**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Minimum					**0**	**19**	**3**	**0**	**4**	-	-	-	-	-	-	-	-	
Average					**33**	**58**	**39**	**14**	**21**	-	-	-	-	-	-	-	-	
85th Percentile					**62**	**94**	**65**	**23**	**39**	-	-	-	-	-	-	-	-	
95th Percentile					**85**	**105**	**74**	**25**	**48**	-	-	-	-	-	-	-	-	
Maximum					**143**	**143**	**123**	**28**	**68**	-	-	-	-	-	-	-	-	
Peak Hour						**32**	**44**	**37**	**35**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Minimum					**0**	**19**	**3**	**0**	**4**	-	-	-	-	-	-	-	-	
Average					**33**	**58**	**39**	**14**	**21**	-	-	-	-	-	-	-	-	
85th Percentile					**62**	**94**	**65**	**23**	**39**	-	-	-	-	-	-	-	-	
95th Percentile					**85**	**105**	**74**	**25**	**48**	-	-	-	-	-	-	-	-	
Maximum					**143**	**143**	**123**	**28**	**68**	-	-	-	-	-	-	-	-	

* When adjusting the ranges for the peak hour, hit CTRL+SHIFT+ENTER while your cursor is in the text bar in the menu to process the new range

Project No: 8159-01
Project: 17 Elm
Study Location: Elm St & Yonge St
Municipality: City of Toronto
Study Date: Tuesday June 28, 2022
Study Time: 17:00-18:00

Delay Study

	Overall Delay (sec)	EB Left Delay (sec)	EB Right Delay (sec)	NB Left Delay (sec)	SB Right Delay (sec)
PM Peak Hour 17:00 - 18:00					
Minimum Delay	0	19	3	0	4
Average Delay	33	58	39	14	21
85th Percentile	62	94	65	23	39
95th Percentile	85	105	74	25	48
Maximum Delay	143	143	123	28	68
Total Vehicles Measured	148	32	44	37	35
Total from Traffic Count	157	34	44	42	37
Sample	94%	94%	100%	88%	95%